From:	Bernabe, Gayle (NIH/NIAID) [E]
To:	Handley, Gray (NIH/NIAID) [E]
Subject:	China
Date:	Monday, July 1, 2019 1:07:00 PM
Attachments:	US-China Evaluation_Prelim Evaluation (Full)_4.8.15.doc US-China Bilateral Program_ Prelim Evaluation Summary 4.8.15.doc

---

Gray:

Attached are the full report and summary of the preliminary evaluation of the U.S.-China Program.

The FY16 FOA does include Data Sharing Plan as part of the Resource Sharing Plan: https://grants.nih.gov/grants/guide/rfa-files/RFA-AI-16-006.html. NINDS even had specific language/requirements for data sharing.

Hope these are helpful.

Kind regards,
Gayle

Updated: Wednesday, April 08, 2015

A Preliminary Evaluation of the Accomplishments and Challenges of the U.S.-China Program for Biomedical Research Cooperation

The National Institutes of Health (NIH), in collaboration with the National Natural Science Foundation of China (NSFC), have developed a joint initiative to co-fund U.S. and Chinese scientists to conduct collaborative basic and translational biomedical research. Researchers at the National Cancer Institute (NCI), National Institute for Allergy and Infectious Diseases (NIAID), National Institute of Mental Health (NIMH), National Institute of Neurological Disorders and Stroke (NINDS), and the Office of AIDS Research (OAR) have been awarded through administrative supplements or RO1 mechanisms that support projects to conduct scientifically meritorious investigations of mutual interest to both countries.

To determine accomplishments and challenges from the United States–China Program for Biomedical Research Cooperation, as well as the effectiveness of this program across NIH, evaluation surveys were developed to identify 1) accomplishments and challenges of the awards, 2) unique findings or opportunities due to the international collaborations, and 3) areas for capacity building facilitated through these collaborations. The information will be collected one year into the award and at the end of the award, when possible.

The following preliminary evaluation data represents surveys received via email from U.S. principal investigators (PIs) prior to COB, on Wednesday, April 8, 2015.

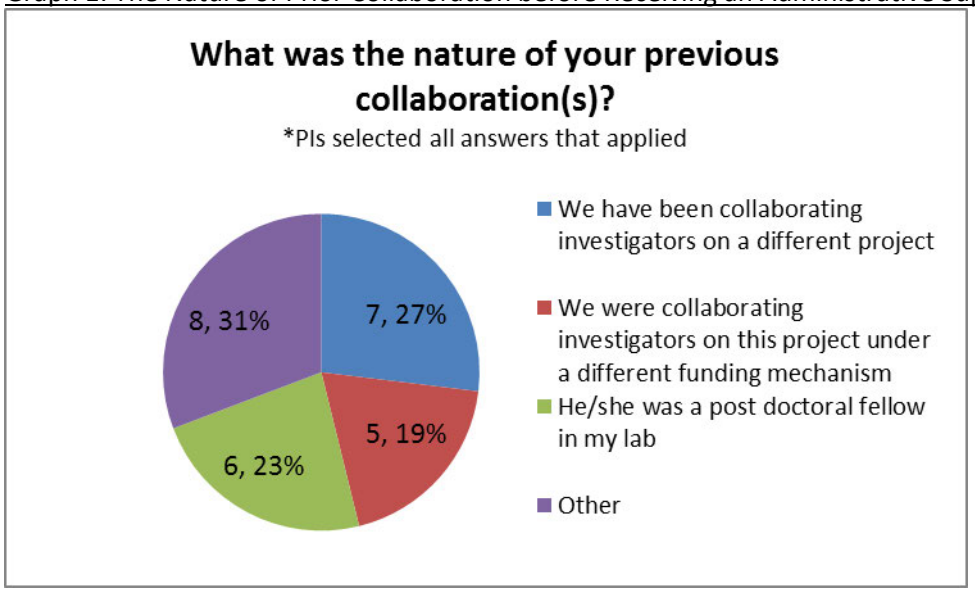
For the preliminary analysis, twenty-eight Administrative Supplement surveys were received, out of eighty-five for first round (FY11) and second round (FY12) of the program. Eighteen surveys looking at R01s approximately one year into the award were received, out of a possible thirty-nine for the third round (FY13) of the program. The overall response rate was 37% (33% for FY11-12 Administrative Supplements, 46% for FY13 R01s).

Collaborations

Administrative Supplements

The majority of PIs (61%, N=17), who received an administrative supplement in FY11-FY12, had collaborated with their co-PIs prior to application for the supplement. Investigators, who had collaborated prior to the award, indicated that they had been collaborating investigators on a different project; collaborating investigators on this project under a different funding mechanism; or that their co-PIs were a post-doctoral fellow in their lab (Graph 1).

Graph 1. The Nature of Prior Collaboration before Receiving an Administrative Supplement



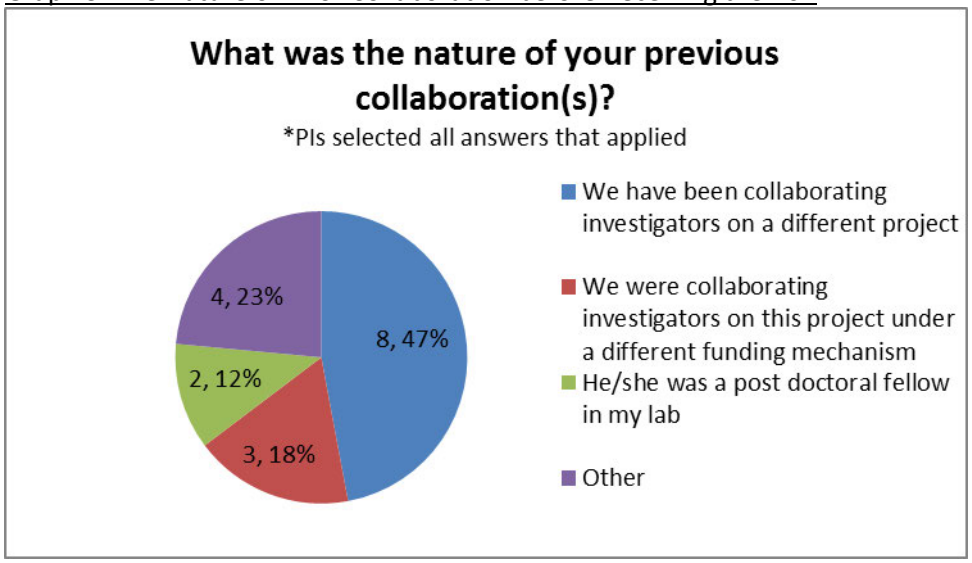
Administrative supplement awardees indicated that they identified their collaborating investigator through the following ways: they knew their collaborator's research and contacted them directly; he/she was contacted by his/her collaborator; or a colleague introduced them.

Graph 2. How Administrative Supplement Awardees Identified Collaborators

R01s

The majority of PIs (61%, N=11), who received an R01 in FY13, collaborated with their co-PIs previously. Approximately half of the participating PIs indicated that they had been collaborating on a different project prior to receiving the R01.

Graph 3. The Nature of Prior Collaboration before Receiving the R01



R01 grantees primarily identified their collaborating investigator through two ways: by introductions made through colleagues, or he/she was approached about collaboration by his/her collaborator. U.S. R01 PIs were less likely to know of their co-collaborators work previously and contact them directly, compared to administrative supplement awardees. PIs also self-selected the "other "option, indicating examples such as identifying their Chinese collaborators through co-mentoring graduate students together.

Graph 4. How R01 Grantees Identified Collaborators

Accomplishments

Administrative Supplements

PIs reported 47 publications associated with the work of the U.S. and/or Chinese laboratory/teams. Five publications were in PLoS ONE, two in PLoS Pathogens, two in Nature, and two were in the Journal of Biological Chemistry. (See full list of journals in the Appendix 1.) Additionally, PIs indicated that an additional 4 manuscripts have been submitted and another 5 manuscript are being prepared. Eight of the 26 PIs indicated that they have not yet published, but 4 of the 8 are currently preparing articles.

The U.S.-China laboratories/teams have made 25 presentations, and secured 1 patent (US 8,933,075 , 2013 Compounds Useful as Antiviral Agents, Compositions, and Methods of Use).

Unique scientific findings or opportunities:

Survey respondents indicated that the NIH-NSFC collaboration specifically allowed investigators to perform novel research and build research capacity, by strengthening collaboration between university partners; helping develop Chinese laboratory abilities; building local research capacity; and training students (exchange of students/fellows and faculties between the two institutions).

Many reported that their research led to publications, and that the ability to access/study unique populations (e.g. comparing populations across geography and genetic differences; accessing endemic sites in biomedical research) was made possible by this collaboration.

Themes regarding the ability to exchange data, ideas, and research were also cited as a unique opportunity from the award.

More minor themes, that came out of the open ended responses, referenced being able to focus on specific disease areas, and how this opportunity has set up researchers for additional collaborations.

R01s

PIs who received R01s in FY13 were not surveyed at this time about the status of potential publications, patents, or presentations. Instead, these questions will be asked at the end of the award.

However, data from QVR, supplied by NIMH, indicates that NIMH grantees have already published 6 articles in the following journals: Biol. Psychiatry, J Neurogenet, Prog Mol Biol Transl Sci, Schizophr Res., Dialogues in clinical neuroscience, Neurogastroenterology & Motility, Neuroscience Bulletin, and Molecular Psychiatry.

Unique scientific findings or opportunities:

Survey respondents attributed the NIH-NSFC collaboration specifically allowed U.S.-China laboratories/teams to build research capacity, expand the knowledge and abilities of both laboratories, train fellows and perform novel research in disease specific areas and validate findings.

A reoccurring theme was that this opportunity helped investigators to build strong collaborations, and furthered their ability to access unique populations, allowing researchers the ability to move research from bench to bedside.

Respondents indicated that this award allowed them to conduct cross-cultural analyses and have helped to establish a foundation for future collaborative research studies.

One PI reported that the grant allowed the collaborators to come together, since their research was a naturally pairing, and allowed them to sustain research and venture into new areas (e.g. HIV latency), as well.

Challenges

Administrative Supplements

Surveyed awardees indicated that biospecimen transfer issues and shipping delays were one of the most prominent issues caused by the international collaboration. These themes emerged in both the open ended and the multiple-choice questions about challenges. (Graph 5 below indicates responses from a multiple choice question.)

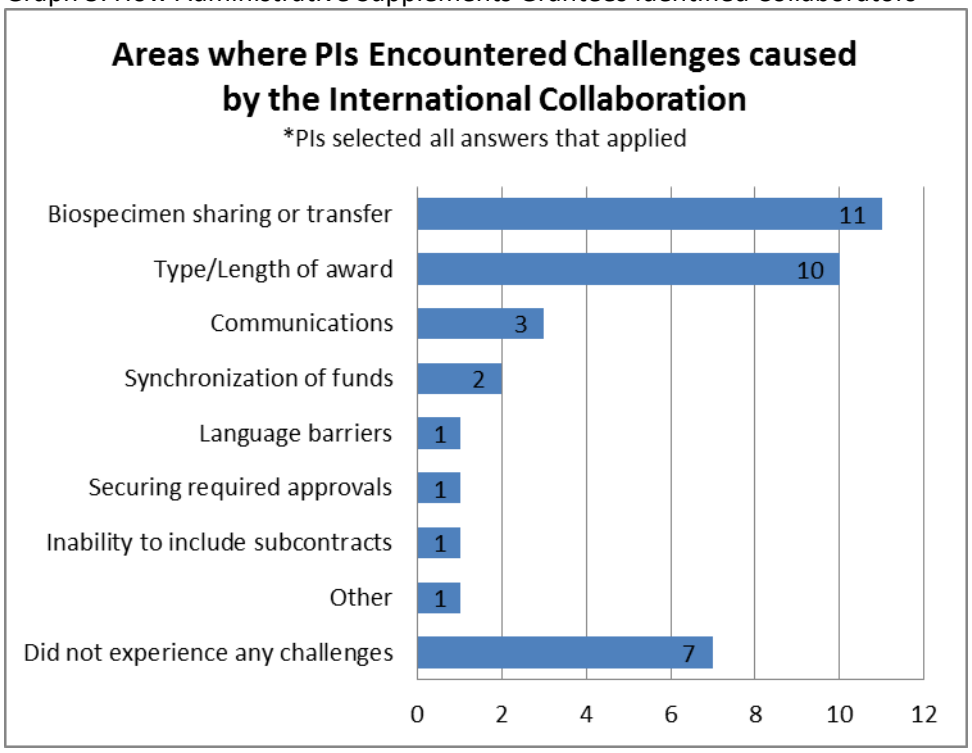
Open ended responses were analyzed for prominent themes. In their open ended responses, PIs indicated that biospecimen transfer and shipping provided varying levels of difficultly, depending on the individual collaboration. (Some experienced delays in transferring samples or receiving approvals, whiles others were not allowed to transfer any samples.)

Approximately a third of the respondents also indicated that the award period was too short in length to promote substantial collaborations.

U.S. PIs also faced logistical communication issues (e.g. scheduling, poor Skype/telephone connection, cultural differences, etc.), and experience delays with the release of funding.

Individuals reported difficulties in receiving timely responses from their Chinese collaborators, receiving general approvals, and difficulties sharing clinical and epi data across the collaborating teams.

Graph 5. How Administrative Supplements Grantees Identified Collaborators



R01s

Similar to the open responses from PIs receiving administrative supplements, themes from the R01 grantees' surveys indicated that data sharing/transfer, and transferring biospecimens, and delayed approvals (IRB, etc.) delays are important challenges that they're facing due to the nature of their international collaboration.

Other main themes that came out from the open ended responses were the perceptions that the award period was too short in length and was not enough funding to produce strong collaborative work.

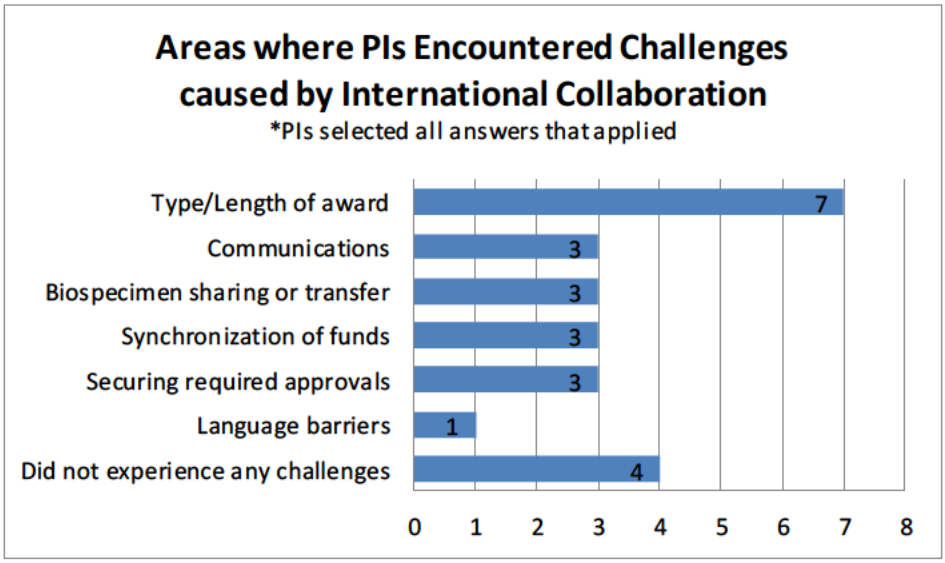
Another recurring challenge was that PI's Chinese collaborators faced delays in funding disbursements and substantial reductions in funding for their collaborator. Survey respondents indicated that these delays and reductions were forcing them to change/adapt their projects accordingly.

The following is an excerpt from one PI's survey: "*First major challenge: The US portion of the grant was funded 6 months prior to the Chinese portion, significantly delaying our ability to start the research. Because of the significant time and energy needed to obtain permission to ship biospecimens out of China (for us, 18 months from funding), we were unable to start any US based experiments and all studies had to be conducted in China for the first 1.5 years of the grant. The 6 month delay in Chinese funding was, therefore, particularly damaging. Second major challenge: obtaining permission to ship specimens out of China. This took 18 months.*"

Similar to PIs who received administrative supplements, grantees reported experiencing issues with communication issues s (e.g. scheduling, poor Skype/telephone connection, cultural differences, etc.). Two PIs also mentioned that the distance was a challenge.

The following graph (Graph 6) illustrates R01 U.S. PIs' responses to a multiple-choice question about challenges they are currently facing due to their international collaboration.

Graph 6. How R01 Grantees Identified Collaborators



Capacity Building

Administrative Supplements

The following tables demonstrate the number of people from the U.S. and Chinese Laboratory/Teams, who were trained in particular areas specficially for their project.

Table 1: Number of U.S. Laboratory/Team Trained under Administrative Supplement Awards

U.S. Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	38
Number trained in trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	37
Number people trained in bioethics or IRB rules and regulations	17
Number trained in (either through mentoring or training courses) in grant writing	21
Number trained in(either through mentoring or training courses) in scientific manuscript writing	30
Number trained in medical procedures	4
Number trained in lab or bench science techniques	37

Table 2: Number of Chinese Laboratory/Team Trained under Administrative Supplement Awards

International Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	43
Number trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	30
Number trained in bioethics or IRB rules and regulations	24
Number trained (either through mentoring or training courses) in grant writing	17
Number trained (either through mentoring or training courses) in scientific manuscript writing	33
Number trained in medical procedures	6
Number trained in administrative and financial grant management	14
Number trained in lab or bench science techniques	41

R01s

The following tables demonstrate the number of people from the U.S. and Chinese Laboratory/Teams, who were trained in particular areas specficially for their project.

Table 3: Number of U.S. Laboratory/Team Trained under R01 Awards

U.S. Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	39
Number trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	22
Number trained in bioethics or IRB rules and regulations	35
Number trained (either through mentoring or training courses) in grant writing	19
Number trained (either through mentoring or training courses) in scientific manuscript writing	27
Number trained in medical procedures	4
Number trained in lab or bench science techniques	43

Table 4: Number of Chinese Laboratory/Team Trained under Administrative Supplement Awards

International Lab/Team Capacity Building	
Number trained in quantitative data collection and analysis	39
Number trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	44
Number trained in bioethics or IRB rules and regulations	23
Number trained (either through mentoring or training courses) in grant writing	31
Number trained (either through mentoring or training courses) in scientific manuscript	46
Number trained in medical procedures	39
Number trained in administrative and financial grant management	11
Number trained in lab or bench science techniques	42

Most of the PIs reported to not know what additional training areas members of the international laboratory/team had received; although two individuals reported that that their counterparts received training in project and experiment design, and on specific lab/bench science techniques.

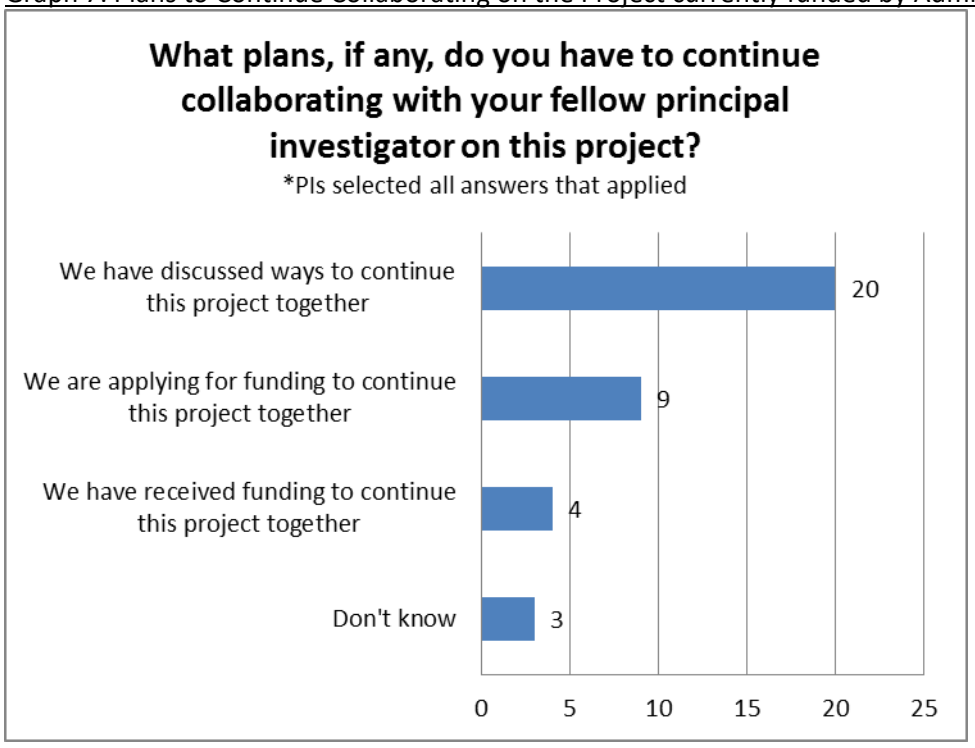
Continued Collaboration

Adminstrative Supplements

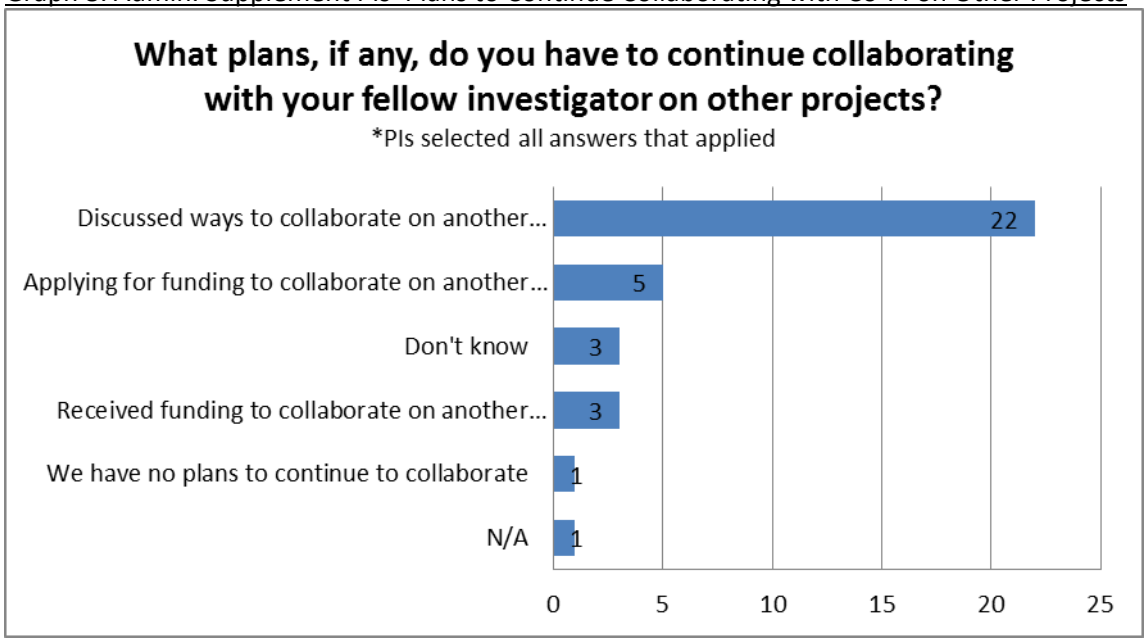
The majority of PIs,who received Administrative Supplements, plan to contine to collaborate together on this project and sought additional funding for it (Graph 7). The majority has also discussed ways of continuring to collaborate on different projects, as well (Graph 8).

Two PIs indicated they do not plan to continue collaborating; their responses site changes due to shifting research focus areas as the reason they plan to discontinue collaboration.

Graph 7. Plans to Continue Collaborating on the Project currently funded by Administrative Supplements



Graph 8. Admin. Supplement PIs' Plans to Continue Collaborating with Co-PI on Other Projects

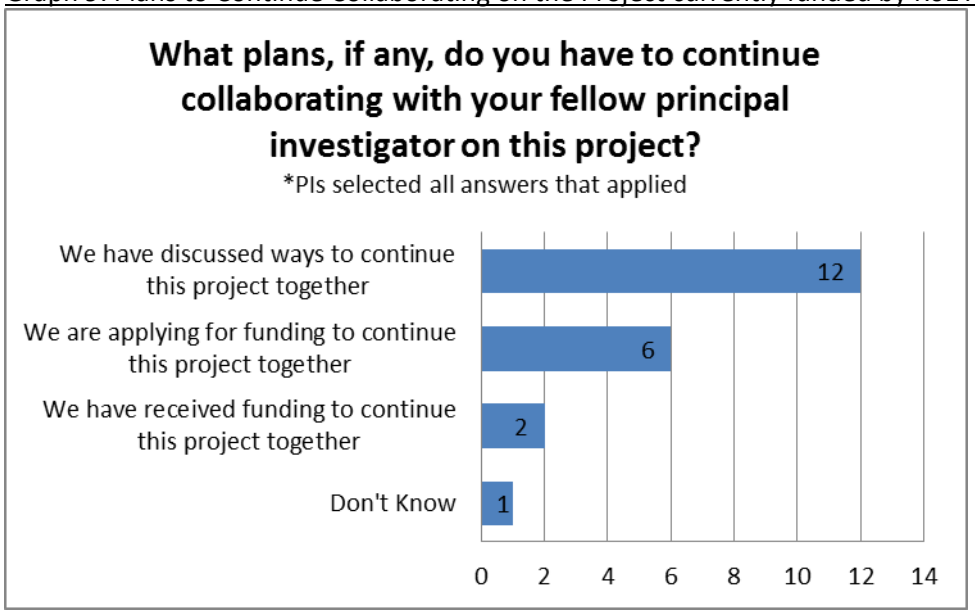


R01

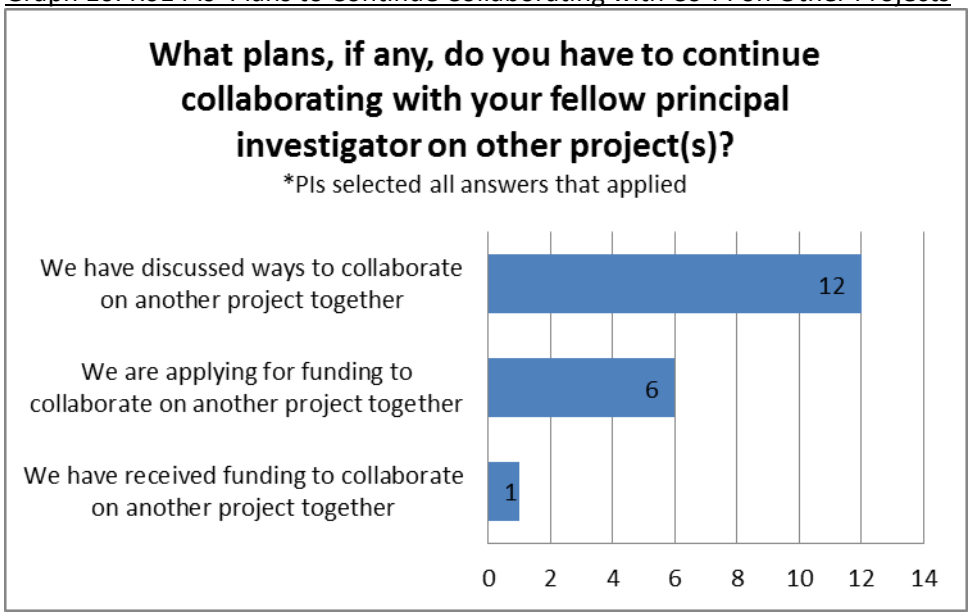
The majority of PIs who received a R01, plan to contine to collaborate together on this project (Graph 9). They also have discussed ways of continuring to collaborate on different projects, as well (Graph 10).

One PI indicated that s/he had not yet spoken with his/her co-PI about collaborating on different projects in the future, so that not yet decided whether or not that they would continue to work together on this project or others. Another indicated that only after the competition of their experiments would they decide to pursue potential future projects.

Graph 9. Plans to Continue Collaborating on the Project currently funded by R01 Award



Graph 10. R01 PIs' Plans to Continue Collaborating with Co-PI on Other Projects



Feedback

Administartive Supplements

PIs felt that these kinds of international bilateral programs were beneficial, and some continued to collaborate after the end of the award. Their main suggestions centered around the desire for multiyear collaboration support, and the need to find solutions for the biospecimen sharing issues. PIs also expressed their interest in pursuing future porgrams geared towards building and maintaining international collaborations.

R01

PIs gave positive feedback, indicating that they thought this type of award is a good way to encourage international collaboration. Mutiple PIs suggested that additional funding would be beneficial, as would extending the collaboration for additional years (lengthening the award). A longer award period/collaboration would allow for time to understand international team's capabilities (capacity) and allow for IRB delays. One PI suggested brining in additional funding partnerships (e.g. NIH-Chinese Ministry of Health or Chinese Ministry of Science and Technology) to further collaborations arund public health and human health-related research.

A PI suggested that the program should be expanded and offered annually without restriction of applying for only one award. Three PIs suggested streamlining the proposal and sychronizing the timing of the grant awards would improve efficency.

Other suggestions included: explaining grant policies to Chinese collaborators (future opportunities), and finding a way to better the supply chain/biospecimen shipping requirements/policies, to combat issues that arise. Other feedback from PIs was about the logistical communication issues that came up and the need for solutions to combat those communication issues/distance.

Updated: Wednesday, April 08, 2015

Appendix

Appendix 1: Journals where Publications associated with NIH-NSFC Administrative Supplements have been published

Administrative Supplements Publications	
Journal Title	**Number of Articles per Journal**
Acta Tropica	1
ACS Chemical Biology	2
Advanced Drug Delivery Reviews	1
AIDS Research and Human Retroviruses	1
American Journal of Neuroradiology	1
Angewandte Chemie International Edition	1
Antiviral Research	1
Biomedicine Pharmacotherapy	1
British Journal of Cancer	1
Carcinogenesis	1
Clinical Microbiology and Infection	1
Cytotherapy	1
PhD Dissertation	1
European Radiology	1
Food Chemistry	1
Handbook of Therapeutic Antibodies	1
Human Brain Mapping	1
International Journal of Cancer	1
Journal of Biological Chemistry	2
Journal of Immunology	1
Journal of Leukocyte Biology	1
Journal of Theoretical Biology	1
Journal of Virology	2
Magnetic Resonance in Medicine	1
Molecular Cell	1
Nature	2
Neuroimage	1
Organic & Biomolecular Chemistry	1
PLoS Genetics	1
PLoS One	5
PLoS Pathogens	2
Proceedings of the National Academy of Sciences, 2013	1
Science	1
The EMBO Journal	1
Zhonghua Zhong Liu Za Zhi	1

United States–China Program for Biomedical Research Cooperation

A Preliminary Evaluation of Accomplishments and Challenges

BACKGROUND

The National Institutes of Health (NIH), in collaboration with the National Natural Science Foundation of China (NSFC), have developed a joint initiative to co-fund U.S. and Chinese scientists to conduct collaborative basic and translational biomedical research. Extramural and Intramural grantees were funded by the National Cancer Institute (NCI), National Institute for Allergy and Infectious Diseases (NIAID), National Institute of Mental Health (NIMH), National Institute of Neurological Disorders and Stroke (NINDS), and the Office of AIDS Research (OAR) through administrative supplements or R01 mechanisms that support projects to conduct scientifically meritorious investigations of mutual interest to both countries.

To determine accomplishments and challenges from the United States–China Program for Biomedical Research Cooperation, as well as the effectiveness of this program across NIH, evaluation surveys were developed to identify 1) accomplishments and challenges of the awards, 2) unique findings or opportunities due to the international collaborations, and 3) areas for capacity building facilitated through these collaborations. The information will be collected one year into the award and at the end of the award, when possible.

For the preliminary analysis, twenty-eight Administrative Supplement surveys were received, out of eighty-five for first round (FY11) and second round (FY12) of the program. Eighteen surveys looking at R01s approximately one year into the award were received, out of a possible thirty-nine for the third round (FY13) of the program. The overall response rate was 37% (33% for FY11-12 Administrative Supplements, 46% for FY13 R01s).

COLLABORATIONS

One of the objectives of the U.S.-China Program for Biomedical Research Cooperation was to create sustainable international partnerships. Many of the projects funded through this program stemmed from established relationships, with the majority of primary investigators (PIs) noting prior collaboration with their Chinese counterparts. This goal was further actualized as PIs indicated their intention to seek further collaboration with partners on this or other projects. In total, 61% of those having received funding through administrative supplements and 61% of those having received funding through R01s had indicated having worked together previously. Of those surveyed, most PIs anticipate continuing their collaborative efforts through an extension of their current project, or on another joint research project.

ACCOMPLISHMENTS

Accomplishments were varied among PIs responding to the surveys, and were measured in the form of unique scientific findings or opportunities, publications, presentations, and patents.

Unique scientific findings or opportunities created as a result of the NIH-NSFC program included the ability to access and study unique populations, comparing populations across geographic and genetic difference, and access to endemic sites in biomedical research. Opportunities for training were also noted as an accomplishment evolving from this program, and included the exchange of students, fellows, and faculties between the partner institutions; and expanding the knowledge and abilities of both laboratories. Themes regarding the ability to exchange data, ideas, and research were also cited as unique opportunities presenting from the award.

The number of publications, presentations, and patents reported by administrative supplement and R01 grantees totaled: 53, with an additional nine reported in progress; 20; and 1, respectively.

CHALLENGES

Similar to the challenges presented under accomplishments, the PIs responded to the surveys with a variety of challenges. Overall, the challenges for both those having received funding through administrative supplements and through R01s reported

the most prominent barriers were related to biospecimen transfer, and length of award - with over one third of respondents citing the latter.

Similar to the open responses from PIs receiving administrative supplements, themes from the R01 grantees' surveys indicated that data sharing/transfer, transferring biospecimens, and delayed approvals (IRB, etc.) are important challenges that they have faced due to the nature of their international collaboration. In addition, grantees of both groups reported experiencing issues with communication (e.g. scheduling, poor Skype/telephone connection, cultural differences, etc.).

Capacity Building

Capacity building was achieved through training of both US and Chinese investigators across projects, and was captured in the responses below:

U.S. Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	77
Number trained in trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	59
Number people trained in bioethics or IRB rules and regulations	52
Number trained in (either through mentoring or training courses) in grant writing	40
Number trained in(either through mentoring or training courses) in scientific manuscript writing	57
Number trained in medical procedures	8
Number trained in lab or bench science techniques	80

International Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	82
Number trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	74
Number trained in bioethics or IRB rules and regulations	47
Number trained (either through mentoring or training courses) in grant writing	48
Number trained (either through mentoring or training courses) in scientific manuscript writing	79
Number trained in medical procedures	45
Number trained in administrative and financial grant management	25
Number trained in lab or bench science techniques	83

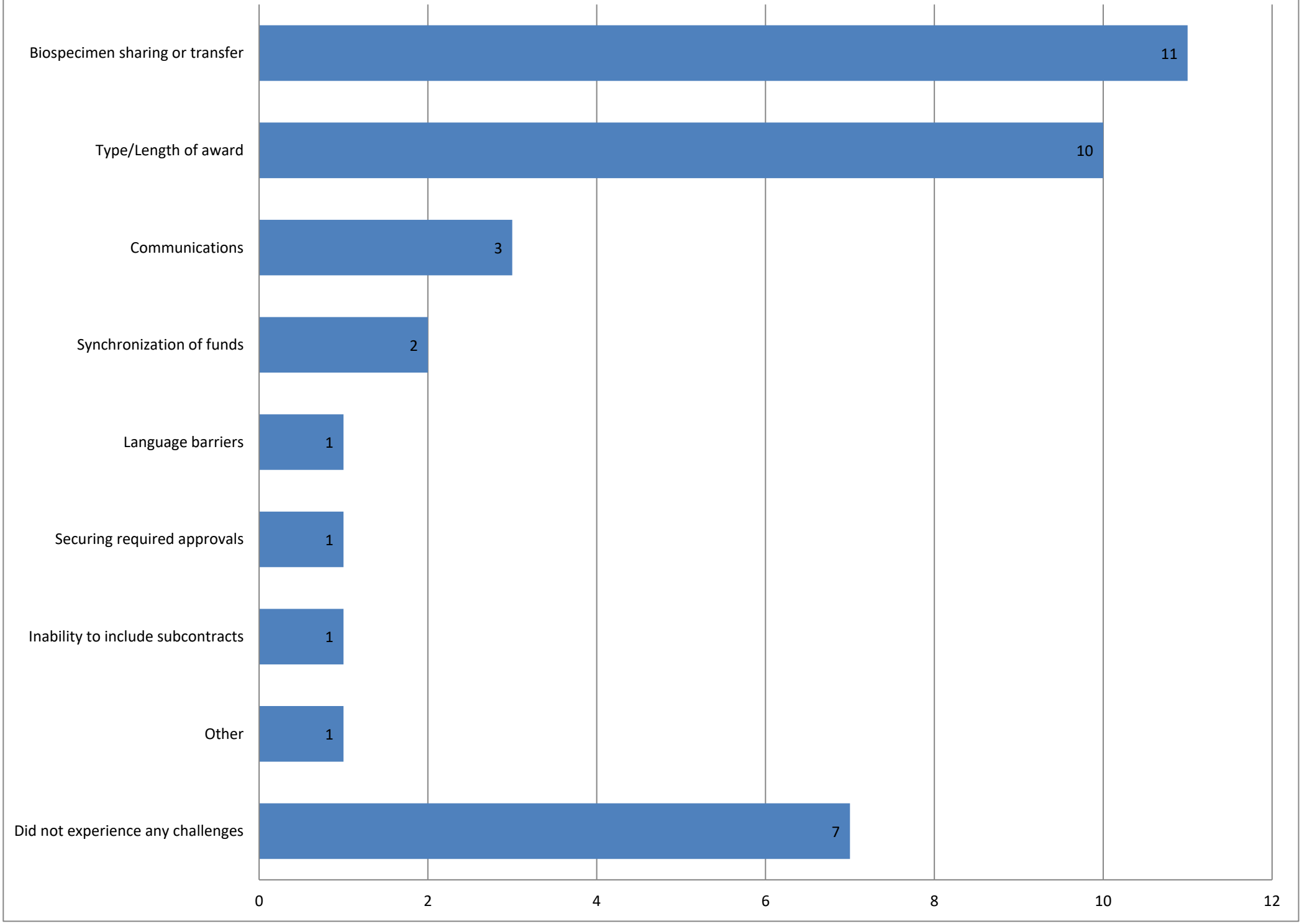
Feedback/Conclusion

In general, preliminary feedback from U.S. PIs indicated that the U.S.-China Program for Biomedical Research Cooperation was immensely beneficial. Recommendation for expanding the program was received from researchers funded through administrative supplements, as well as those funded through R01s, with suggestions that included minor adjustments to address challenges that centered on multiyear collaboration support, and the need to find solutions for issues that surrounded biospecimen sharing.

While recommendations for additional funding were addressed across the board, comments from grantees were overall positive and reiterative that the U.S.-China Program for Biomedical Research Cooperation was an ideal model for encouraging international collaboration.

Areas where PIs Encountered Challenges caused by the International Collaboration

*PIs selected all answers that applied



Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS	(b) (6)			.	MH_Survey1A_101	This administrative supplement facilitated the collaboration between [US Institution] and [Chinese Institution] with a [Joint Center]. [Chinese Institution] has some state-of-the-art equipment (e.g. 7 Tesla human MR scanner) while [US Institution] has some unique pediatric data. It also facilitated the exchange of students/fellows and faculties between the two institutions.	Type/Length of award	
AS				.	MH_Survey1A_151	We found some consistent alterations of synaptic proteins in [Gene Name] hypomorphic mice. We are preparing a manuscript on the findings.	Biospecimen sharing or transfer	
AS				N/A	Multispecific HIV-1 Entry Inhibitors Targeting Both gp120 and gp41	Novel potent, cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the collaborating group in China. These inhibitors are highly promising as drug candidates for prevention and therapy of HIV-1 infection.	Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?
		The funding period of 1yr was not enough to build long-term collaborations	The [US Institution] team was able to collect pilot data from the 7T MR scanner at [Chinese Institution] and published a few papers. The [Chinese Institution] team performed preliminary analysis of the pediatric imaging data collected at [US Institution] and published a few abstracts but not papers.	I have collaborated with him/her before
		There was a long delay for shipping [Gene Name] mouse brain tissues.	[Named Individual]'s group has finished proteomic analysis of mouse [Gene Name] brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since shifted to proteomic analysis of human tumors.	I have not collaborated with him/her before
		The award to U.S. investigators is too small ($50,000 per year) to conduct non-human primate studies and sometimes was not received timely. In addition, the support is not continuous which makes it difficult for us to translate our findings to human clinical trials.	Our collaborators in China tested a combination of our antibodies with their peptide-based inhibitors for synergistic effects on neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the antibodies and peptides. They are currently extensively characterizing the fusion proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in humanized mice and found that they potently suppressed HIV-1 infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.	I have collaborated with him/her before

What was the nature of your previous collaboration(s)? (please mark all that apply)			**Had you collaborated with your fellow principal investigator prior to this project?**	**What was the nature of your previous collaboration(s)? (please mark all that apply)**		**How did you identify your international collaborating investigator? (please mark all that apply)**
Other: We overlapped during early career	Other		I have collaborated with him/her before	Other: We overlapped during early career	Other	I knew of his/her research and contacted him/her to work on this project
Other: She is from the group of my former collaborator [Named Individual]]	Other				Other	A colleague introduced me to my international collaborating investigator
We have been collaborating investigators on a different project			I have collaborated with him/her before	We have been collaborating investigators on a different project		He/she knew of my research and contacted me to work on this project

How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
		(b) (6)				N/A
						N/A
						N/A

Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?
0	N/A	(b) (6)				
0	N/A					
0	The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.					

How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?
								(b) (6)

What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?
						(b) (6)

How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
							(b) (6)

How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.		
(b) (6)			We have discussed ways to continue this project together	We have discussed ways to continue this project together	.	We have discussed ways to collaborate on another project together		
			DK		She has shifted her research focus more to oncology because of insufficient funding in her group on psychiatric disorders.	DK		
			We have received funding to continue this project together	We have received funding to continue this project together	.	We have discussed ways to collaborate on another project together		

Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
.	I feel international collaboration is necessary for sharing resources, so the program should continue although the results may not be immediate. The program should have a cycle of every 2-3 years although funding doesn't have to be large.
She has shifted her research focus more to oncology.	DK
.	The process of applying for the funding should be simplified. Currently, two proposals are required to be submitted to NIH and NSFC of China separately, which takes unnecessary more time and efforts.

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS	(b) (6)			R01 AI087849	Manipulating the biosynthesis of capuramycin-type antibiotics for new anti-TB drugs	Sample collection: The Chinese PI has access to 100 L+ fermentors that have enabled the large scale production of an advanced precursor of an anti-TB drug. This precursor, which would not be available otherwise was chemically modified by my research group to make novel compounds. On-going screening of anti-TB activity: Around 50 new analogues have been semisynthetically prepared. These compounds will be tested against a variety of clinical isolates through the NIAID Antitubercular Drug Testing (coordinated by Dr. (b) (6) This parallel international testing is a unique opportunity to establish efficacy against a variety of Mycobacterium tuberculosis genotypes and phenotypes not available in the respective country.	I did not experience any challenges due to the international collaboration			
AS				5R01AI089999	Selenoprotein K modulates calcium-dependent signaling in immune cells	I must admit that most of this work was not uniquely suited to a US/China collaboration. It was our mutual interest in a signaling pathway in inflammation and atherosclerosis that led to our collaborative studies. The fact that cardiovascular disease and chronic inflammation are common health concerns for both the US and China strengthened this research. We have set up long-term collaborations and recently published more work together.	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)			
AS				30973863 and 81161120429	The effect of Myristica fragrans on colon cancer and its mechanism of action Research	N/A	I did not experience any challenges due to the international collaboration			

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)
.	Our primary goal was to generate novel capuramycin analogues using a semisynthetic and mutasynthetic approach. An advanced capuramycin precursor was isolated in gram quantities, which was utilized to gerate around fifty novel analogues using a novel chemoenzymatic approach or synthetic methods. Several of these analogues have improved activity against Mycobacterium smegmatis. These efforts have led to 2 submitted manuscripts with contributors from both groups.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab			I have collaborated with him/her before	He/she was a post doctoral fellow in my lab
Sending samples and reagents both ways was problematic. Sharing resources like mice was very challenging. Travel between institutes was most often sponsored by (b) (6) (b) (6)	We uncovered a role for selenoprotein K in foam cell formation and atherosclerosis (PMID23444136). The molecular mechanism involved palmitoylation of scavenger receptor, CD36. This led to a major breakthrough in uncovering how selenoprotein K functions in immune cells that we subsequently published in PNAS (PMID 25368151). The latter publication came after (b) (6), and he is not a co-author. However, his work led to this later study.	I have collaborated with him/her before	Other: He had been a visiting scholar in my lab.		Other	I have collaborated with him/her before	Other: He had been a visiting scholar in my lab.
N/A	Discovered that neolignans from the spice nutmeg prevented colon cancer in a mouse colon cancer model.	I have not collaborated with him/her before	.				

	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
	I knew of his/her research and contacted him/her to work on this project						(b) (6)	N/A
Other	Other: initial collaboration had just begun	Other						N/A
	I knew of his/her research and contacted him/her to work on this project							N/A

Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?
0	DK							
0	The findings provide insight into dietary selenium related to risk of atherosclerosis							
0	Chemoprevention of colon cancer							

(b) (6)

How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.		
(b) (6)				N/A	We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We have discussed ways to collaborate on another project together		
				DK	We are applying for funding to continue this project together	We are applying for funding to continue this project together	I received an impact score of 25 on the ZAI1 BDP-M (M1) National Institute of Allergy and Infectious Diseases Special Emphasis Panel U.S.-China Program for Biomedical Collaborative Research (R01) - 1. However, this was not funded and thus we only sporadically collaborate.	We have discussed ways to collaborate on another project together		
				N/A	We have no plans to continue to collaborate on this project together	We have no plans to continue to collaborate on this project together	We have no more funding to continue this collaboration.	We have no plans to continue to collaborate on another project together		

Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
.	This collaboration is/was very beneficial to both groups! My only concern is the short time frame of funding, and it would be nice to have a mechanism to support multiyear collaborations specific for research in China and US.
.	DK
We have no funding for more projects.	D/K

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS	(b) (6)			CA-133569	Molecular Epidemiology of Infection with Human Papillomavirus Variants	1) Identified differences in intratypic variation of oncogenic HPV genome between two geographic locations (US and China) 2) Determined the impact of viral load on HPV-associated pathogenesis of cervical lesion.	I did not experience any challenges due to the international collaboration		
AS				R37 CA030488	Relationship between Translation and Stability of HIV-1 mRNA	This supplementary award provided support in the form of a partial stipend for a student, and allowed us to pursue a new project in collaboration with a laboratory in Beijing headed by (b) (6) The US funds were important for our student's contribution and the China funds were necessary for Dr. (b) (6) effort. We were able to n preliminary results and then, later, to apply for and obtain funding in a more substantial way in a separate R01 application (in response to RFA-AI-12-021).	I did not experience any challenges due to the international collaboration		
AS				NOT-CA-12-002	System-wide immunohistochemical and proteomic analyses of Sp4 mouse brain	We found some consistent alterations of synaptic proteins in Sp4 hypomorphic mice. We are preparing a manuscript on the findings.	Biospecimen sharing or transfer		

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)		
	N/A	1) Characterized the variants of oncogenic HPV types in a Chinese population. 2) Examined epidemiologic features of variants of oncogenic HPV type in a Chinese population.	I have not collaborated with him/her before	.		
	None	We studied the decay of retroviral RNAs, specifically showing that these RNAs are stabilized by extending translation of the Gag-Pol protein through a stop codon, acting in opposition to the Nonsense-Mediated Decay (NMD) machinery.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project	
	There was a long delay for shipping Sp4 mouse brain tissues.	(b) (6) group has finished proteomic analysis of mouse Sp4 brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since shifted to proteomic analysis of human tumors.	I have not collaborated with him/her before	She is from the group of my former collaborator (b) (6)	Other	

Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)		How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
			Other: I contacted her colleague, a visiting scholar in our university, to initiate this collaboration	Other	A colleague introduced me to my international collaborating investigator	(b) (6)	
I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project	I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project			
			A colleague introduced me to my international collaborating investigator				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	Analysis of infections at the level of variants furthers our understanding of why the natural history of HPV infections is so variable. The findings of the variant-associated risk of cervical lesion are important as most HPV infections resolve spontaneously with only a small fraction leading to disease progression.		(b) (6)
		N/A	0	N/A		
		N/A	0	N/A		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
(b) (6)							

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.		
(b) (6)				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together		
				We have received funding to continue this project together		.	We have discussed ways to collaborate on another project together		
				DK		She has shifted her research focus more to oncology because of insufficient funding in her group on psychiatric disorders.	Don't Know		

Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
.	D/K
.	This program is a superb mechanism to support international collaborations.
She has shifted her research focus more to oncology.	D/K

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS	(b) (6)			3PO1CA132714-04S1	Directing tumor-specific T cells to tumors	The US-China Research Supplement allowed us to launch an interesting and potentially very important long-term collaboration aimed at the development of new immune therapies of cancer for different groups of cancer patients in Chine and the US. In brief, the Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system (at baseline and following different forms of therapy), originally identified within our PO1 in the settings of colon- and ovarian cancers, melanoma and glioblastoma, are also relevant to the cancers that are rare in the US population but highly prevalent in China. The direct implications of these findings are that the new therapeutic methods of reprogramming of the chemokine system developed within the PO1 (b) (6) group) can be rapidly evaluated in China (b) (6) group), either as stand-alone treatments or in combination	Language Barriers	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Type/Length of award	Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our Chinese partners
AS				R01AI081995	T-cell Immune Responses to Schistosome Infection in the elderly	This collaboration promoted Dr. (b) (6) project development in China.	Securing required approvals (IRBs and others)	Type/Length of award	Biospecimen sharing or transfer	
AS				P01 AI083214	US-China Program to Identify Novel Antimicrobials	The study allowed us to screen a library of natural compounds isolated and characterized in the laboratory of (b) (6) for their ability to prevent Staphylococcus aureus from killing the model nematode Caenorhabditis elegans. This required developing a novel screening platform that could be carried out in (b) (6) laboratory. Several novel compounds were identified as hits, one of which has been studied extensively during the funding period as well as subsequently. We are just about ready to write up the data for a major joint publication.	Type/Length of award			

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
Language and communication barriers (time difference/need for video conferencing) barriers were initially very significant, but were alleviated with time. From a personal standpoint, the biggest challenge was to start to appreciate that a statement "no, it is impossible" is sometimes replaced by " it is difficult", as a polite euphemism. I also suspect that I might have been perceived as being too direct on a few occasions...	This Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system identified within our PO1 in the settings of colon- and ovarian cancers, melanoma and glioblastoma, are also relevant to cancers rare in the US population but highly prevalent in China. In similar ex vivo models and in limited amount of mouse experiments, we also verified that the new therapeutic methods of reprogramming the chemokine system developed within the PO1 are also applicable to additional cancers, prevalent in China.The results have led to a total of four published papers and additional two papers currently submitted and undergoing scientific review.	I have not collaborated with him/her before	(b) (6), one of the participants of the PO1 had personal contacts with the Chilese partner	Other				
1. transfer experimental animal (mouse) took a long time (6 months) -- it suffered many approvals (from both sides); 2. the period of time is too short (only one year); 3. Biospecimen sharing or transfer has too many limitations.	Our side trained their three people with techniques and methods. China side finished some key preliminary data and based on these data they (b) (6) (b) (6) developed new projects and obtained two new big grants from NSFC (National Science Foundation of China).	I have not collaborated with him/her before	.					
It would have been preferable if the award were longer. However, the collaboration that was initiated during the funding period has continued and has been very successful and productive.	We screened a library of natural compounds isolated and characterized in the laboratory of (b) (6) at the Chinese Academy of Sciences in Beijing for their ability to prevent Staphylococcus aureus from killing the model nematode Caenorhabditis elegans. To do this, we developed a novel screening platform that could be carried out in (b) (6) laboratory without the use of a robot to distribute worms to assay plates and without the use of a specialized screening microscope. This required the development of a novel assay using methylene blue to distinguish live and dead worms and the use of a commercial scanner to identify and count stained worms. Several novel compounds were identified as hits, one of which has been studied extensively during the funding period as well as subsequently. We are just about ready to write up the data for a major joint publication between our laboratories.	I have not collaborated with him/her before	.					

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
He/she knew of my research and contacted me to work on this project	He/she knew of my research and contacted me to work on this project		(b) (6)				No patents from my lab. I am not aware of any patents from my collaborators, but I would need additional time to verify.	0
He/she knew of my research and contacted me to work on this project; We graduated from the same university.							N/A	0
A colleague introduced me to my international collaborating investigator							N/A	0

Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
The insights from Dr. (b) (6) lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors.ThThe insights from Dr. (b) (6) lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors.The insights from my lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors and to design improved cell-based treatments in cancer which involve DCs and tumor-specific CTLs. I understand that the (b) (6) of the First Affiliated Hospital of (b) (6) currently runs about 200 CIK treatments of cancer patients per months, which dwarfs the scope of our own cell-therapy-related operations at the UPCI. Overall the First Affiliated Hospital of (b) (6) has several thousands of cancer patients at any given time. Taking into account the scope of their current operations, the unmet therapeutic needs, ability									(b) (6)
to help improve therapeutics in the elderly infected with Schistosome									
The primary compound identified in the screen activates the innate immune response. Developing therapeutics that activate host immunity is a novel approach to treating bacterial infections.									

How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together		* (Explanation of the nature of potential prospective collaboration) Our collaboration has been extended to the area of new platforms of cell-based therapies of cancer. While current grant applications involving both sides have only been submitted on ther Chinese end, and involve me only as an unpaid consultant, we are discussing additional options of more direct collaboration. As an example, in case of successful results of the Sponsored Research Agreement between (b) (6) is likely to be involved in the clinical trial of any new platforms of DC therapies performed in China.	So far, our ability to participate in follow up projects developed by our Chinese partners has been limited to being involved as consultants and proposed hosts of visiting researchers from China. None of the follow up grants allows transfer of research funds to the US, limiting the scope of the collaborative work. The ability of NCI to negotiate at least a limited transfer of research funds to US-based labs, or to identify potential alternative sources of funding in the US, would help to promote continued collaborations. A second venue of promoting such collaborations would be an annual research symposium co-sponsored by the NCI and NCI's counterparts in China and focused on the results on the collaborative projects.
		We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together			.	NIH should provide more opportunities of this collaboration by providing long term (at least 3 years for each collaboration) and more fundings (at least same as an R21 or small R01).
		We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together			.	The one year time frame for this project was not long enough to develop and bring the project to a successful conclusion. Fortunately, we were able to continue the collaboration despite the expiration of the supplemental funding.

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS-FY11	(b) (6)			U01-AI-035040	Epidemiology of HIV-related Malignancies in China	Using China's National prospective database of HIV/AIDS, we compared HIV-related cancer incidence and mortality experience with western countries, HIV/AIDS population in China had lower risk of Kaposi Sarcoma, lymphomas, similar risk of female cervical cancer, however higher risk of non-AIDS-defining cancers including lung, liver, and stomach cancers. This indicates that China may have different HIV-Cancer spectrum than Western countries (one manuscript is completed). In addition, we have recruited 39 KS cases and 93 controls among HIV-infected Uyghur in Xingjiang Province. We found potential HIV transmission by sex is a risk factor while antiretroviral treatment is a protective factor for KS in HIV-infected Uyghur population. Non-obvious findings in odds ratio of CD4 cell counts level may be due to selection bias.	Type/Length of award	Biospecimen sharing or transfer		
AS-FY11				P01AI082274-02	Neutralizing antibodies targeting HIV-1 Env CD4bs in Chinese HIV patients	Produced useful information and a research publication.	Biospecimen sharing or transfer			
AS-FY11				R01 AI087135	Analytical and Estimation Methods for Hybrid Differential Equation Models in AIDS Research	We have developed novel hybrid differential equation models for HIV viral dynamics that were used to study antiviral treatment strategies. Several papers are published in top journals. The unique strengths from US and China collaborators were efficiently utilized. In particular, Chinese collaborators are strong in mathematical modeling of HIV dynamics and US PI is strong in statistical methods for the mathematical model parameter estimation. Thus the two sides' expertise and strength are complementary. In addition, we also established a collaboration for training biomathematical modelers in China through a summer school, which is critical to bridge the collaborations of biomathematical modelers and statisticians for the next generation between US and China.	Type/Length of award, Data sharing	Data sharing		

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
This is only one-year award, which is not enough to set-up a study in a remote area of China. Biological specimens are difficult to be transferred form China to the US.	Because it is very difficult to get an approval from Chinese government for sending biological specimens from China to the US, our work was done at Fudan Department of Epidemiology. It is very hard to have sufficient quality control while the lab work is done in China.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
Hard to transfer biological samples from China to USA	With the support from the P01 Administrative Supplement we collaborated with (b) (6) group in studying the Env-specific and neutralizing antibody responses in HIV-1 patient sera collected from Youan Hospital in Beijing, China. The results demonstrated that different levels of NAb activities were detected in the patients against a panel of 44 HIV-1 pseudotyped viruses covering clades B, C, AE isolated from China and other parts of the world.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
Only one year of the award is too short. Clinical data and epidemiological data sharing is challenging between US and China.	Chinese collaborator, (b) (6) and his associates, have developed novel hybrid mathematical models for HIV dynamics and performed all computational simulations. The dynamic properties for the developed models were also carefully investigated numerically and theoretically by my Chinese collaborators.	I have collaborated with him/her before	We have been collaborating investigators on a different project	Both were PhD students of (b) (6) Epidemiology	Other	I have collaborated with him/her before	We have been collaborating investigators on a different project	Both were PhD (b) (6) Epidemiology

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:
Other: Teacher-student relationship	Other		(b) (6)				N/A	0	The finding on new spectrum of HIV-related malignancies in China may change the strategy for HIV-related cancer prevention and control in China. The study of HIV-related KS in Xingjiang will be of importance to have more research in the area.
He/she knew of my research and contacted me to work on this project							N/A	0	N/A
A colleague introduced me to my international collaborating investigator							N/A	0	Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.

How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
(b) (6)										

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?

(b) (6)

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together			.	Change China's regulation of limiting biological specimens to be transported to the US.
DK		Difficult to get funding for such collaboration	DK			.	N/A
We have discussed ways to continue this project together		3	We have discussed ways to collaborate on another project together			.	Identify the needs and weakness from either side so that another side could help or strengthen, (the rest of the comment did not capture)

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS-FY11			(b) (6)	U19AI089672	Southeast Asia Malaria Research Center: Antimalarial drug resistance in P. falciparum	This study aimed to enhance the collaboration between (b) (6) in the area of antimalarial drug resistance, especially with the emergence of artemisinin resistance in SE Asia. Yunnan is a place with the longest artemisinin use, and artemisinin resistance in the area is still unknown. During this collaboration, we identified high level quinine resistance in parasites from this region. This supplement further strengthened the collaboration between US and endemic sites in biomedical research, helped building local research capacity in the area of drug resistance, and laid the foundation for further validation of genetic markers for drug resistance surveillance.	Type/Length of award			
AS-FY11				AI077343	Mechanical Priming of Selectin-Ligand Interactions	We found that mechanical priming (which we now re-name it as cyclic mechanical reinforcement, or CMR) is not an isolated phenomenon. We have now observed this phenomenon in several receptor-ligand interaction systems. The original observation was made in the interaction between integrin a5b1 with fibronectin. The interaction systems exhibiting such phenomenon now include L-selectin interactions with two ligands, P-selectin glycoprotein ligand 1 (PSGL-1) and 6-sulfo-Lex (a peripheral lymph node addressins mimic), actin homotypic interaction, and T cell receptor interaction with peptide-major histocompatibility complex molecule. This funded supplement allowed the experimental data generated in the lab of the US scientist to be analyzed and modeled in the lab of the Chinese scientist.	I did not experience any challenges due to the international collaboration			
AS-FY12				R01AI093278	US-China program for Biomed Collab Res	This mechanism provided an opportunity for my lab to collaborate with an old colleague who had moved back to China and now has access to state of the art microscopy tools. My colleague had branched to stadying many other viruses, but this program allowed him to return to the HIV field.	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Type/Length of award	Biospecimen sharing or transfer	

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
The short period of the grant makes the continuity of the collaboration problematic.	1. Procured ~100 field parasite isolates and culture-adapted ~60 parasites for future studies; 2. Assessed sensitivities of the field isolates from two geographic regions to 10 commonly used antimalarials	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism		I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism
N/A	(b) (6) performed molecular dynamics (MD) simulations to model the experimental results of my group (b) (6) also sent a student of his to study in my lab to build an experimental system.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project		I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project
skype connection was poor. length of the award was insufficient (1 year) to solve problems.	We shared 2 or 3 packages of VLP samples with our colleague to try to answer a variety of questions related to these particles as vaccine antigens. Including spike density, purity, stability, as well as to investigate ligand binding. Progress was marred by the fact that majority particles were "bald". Whether these were vesicles or true Gag-containing VLPs was unclear. We hypothesize that apoptotic vesicles were co-produced with VLPs, making our analysis of Env difficult. We have since modified our protocols and plasmids to try to address this problem	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism We have been collaborating investigators on a different project			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism We have been collaborating investigators on a different project	

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:
I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project		(b) (6)				N/A	0	N/A
I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project						N/A	0	N/A
I knew of his/her research and contacted him/her to work on this project							N/A	0	N/A

How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
										(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?

(b) (6)

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
We have discussed ways to continue this project together		.	We have received funding to collaborate on another project together	We have discussed ways to collaborate on another project together		.	Funding for continuation of collaboration would be great to continue the collaborative network established from the previous work
We are applying for funding to continue this project together		.	We have discussed ways to collaborate on another project together			.	.
We have discussed ways to continue this project together		The project has been "on ice" until the quality of our preparations can be improved. There are various collaborators in the US who we could work with once these problems are solved. We are interested to continue, but the expense and complexity of shipping (permits) is a barrier	N/A			HIV particle immunogens is the main focus, so there are no other projects relevant here	I think we needed longer for it to yield fruit. Also the import regulations were something of a barrier (as compared to working with a US collaborator).

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
AS-FY12	(b) (6)			1 R01 AI081604	Rational Design of antivirals targeted to HIV-1 capsid	The US-China collaboration presented unique opportunity for us to get access to the HIV-1 clinical isolates from China through our collaborators in China for studying the susceptibility of our unique stapled-peptide base HIV-1 inhibitors.	Biospecimen sharing or transfer		
AS-FY12				R01AI084816-04	Screening for anti-HIV bNAbs in huCD4/CCR5 transgenic mice immunized with mu	Multivalent anti-HIV vaccine can effectively induce broad humoral immune response in huCD4 B cell transgenic mouse model.	Biospecimen sharing or transfer		
AS-FY12				AI049104-15	CHINESE HERBS	Found a number of chinese herbs with potential use in HIV/AIDS	Type/Length of award		

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
	Due to very strict Chines and US rules it was not easy to exchange biospecimens on a timely manner.	The susceptibility of 14 Env-Pseudoviruses (10 CRF07_BC and 4 CRF01_AE) of Chinese origin to stapled peptides was tested by virus inhibition assay. NYAD-36 and NYAD-67 of i,i+7 stapled peptides showed the best anti-virus activity. The sequences of their env genes were analyzed to correlate with the antiviral activity. Furthermore, in resistance study we found four polymorphic sites (A281V/I, N300G/S, D474N and V496I, respectively) on gp120 which significantly correlated with the antiviral activity of i,i+7 stapled peptides. Our results suggest that there are significant differences in the susceptibility among the Env-Pseudoviruses in China to stapled peptides and the differences may partly result from the naturally occurring polymorphisms in these subtypes. This study provides useful information for rational design of stapled peptides for HIV-1-infected patients in China.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	
	Because the censorship of export by Chinese government, it is difficult for us to transfer or share the samples with Chinese collaborator.	Constructed 80 HIV-1 env-based SHIV vaccine candidates. Immunized human CD4 B cell transgenic mice and detected the induced immune responses. Screening of neutralizing anti-HIV antibodies from immunized mice through generation and testing over 400 hybridoma cell lines from vaccinated mice.	I have not collaborated with him/her before	Other: I was a Ph.D. student in his institute.	Other
	a delay in getting approvals, but otherwise OK	looked at compounds that inhibit CTD kinases, especially CDK12 and also started working on agents that active PKC and thus reactivate HIV from latency.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	

	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)		How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab		I knew of his/her research and contacted him/her to work on this project			(b) (6)
				I knew of his/her research and contacted him/her to work on this project			
	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab		I knew of his/her research and contacted him/her to work on this project			

Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)			N/A	0	HIV is very diverse in different countries. Therefore, for any anti-HIV drug to work universally it is of utmost importance to learn how they function against different isolates. The data from Chinese isolate will be important for designing drugs with much broader activity.	(b) (6)
			N/A	0	Our findings will help with the development of an effective anti-HIV vaccine and prevention of HIV infection.	
			N/A	0	could lead to compounds that inhibit CTD kinases and others that activate HIV	

How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
							(b) (6)

How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.
						(b) (6)		
							We have discussed ways to continue this project together	
							We are applying for funding to continue this project together	We have discussed ways to continue this project together
							We have discussed ways to continue this project together	

Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
.	DK			.	Frequency of this type funding may be increased.
.	We have discussed ways to collaborate on another project together			.	Suggestions: 1) Extend the period of the collaborative grant to 3-5 years, so we may keep the consistency and complete one entire project; 2) Establish some specific mechanism for sample transfer and sharing between U.S. and China.
.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together		we plan to continue to work on collaborative projects	.

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
0	(b) (6)			R01 AI094562	MP3-China for Phylogenetic Analysis of HIV Transmission Clusters among MSM in Beijing	The collaborating between US and Chinese scientists provided the following unique opportunities: 1. Access to a large number (N=416) blood sample of newly diagnosed HIV-infected MSM in Beijing recruited within a relatively short period of time (12 months from March 2013-March 2014). About three fourths of the participants were migrants, so the sample allows for phylogenetic analysis of HIV transmission clusters. 2. We identified two novel HIV-1 second-generation recombinant forms comprising of gene regions from two circulating recombinant forms, CRF01_AE and CRF07_BC. The parental CRF01_AE region of the recombinants clustered together with a previously described cluster 4 lineage of CRF01_AE. The CRF07_BC regions of both the recombinants clustered within the CRF07_BC radiation, but were distinct from other CRF07_BC reference sequences (PMID: 25495675).	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Other: Delays in responses to US team's requests	Other	
AS-FY12				AI069120	Viral Mediated Type I Interferon Induction	During the period of the R01 grant studies, we found an antiviral function of TRAF3 that is unique to TRAF3 among six TRAF family members. To understand the molecular mechanisms responsible for the specificity of TRAF3, we collaborated with (b) (6) laboratory at the institute of biophysics, Chinese academy of science and solved the crystal structures of TRAF3 and TRAF5, a close relative of TRAF3. Our studies led to the identification of a single amino acid difference responsible for the anti-viral specificity of TRAF3, which was published as a cover story by Science signaling.	I did not experience any challenges due to the international collaboration			
AS				CA75093A2	Kaposi's sarcoma and human herpesvirus in China	We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able bring Chinese researchers to the US for training and perform some of the studies in the US. This has built the research capability of or Chinese partner institution.	Type/Length of award	Biospecimen sharing or transfer		

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
Time differences for three locations (Nashville, Beijing and UK); The Chinese team is sometimes overburdened with their daily work which led to delays in responses to US team's requests.	The Chinese team collected and processed the samples, performed RT-PCR, and completed the basic phylogenetic analysis for geno-typing and assessed any recombinations.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
.	The international laboratory solved the crystal structure of TRAF3 and TRAF5. They also identified potential amino acid sequence differences responsible for the functional specificity between TRAF3 and TRAF5. Their studies have greatly helped us to determine the mechanism responsible for the important antiviral function of TRAF3.	I have not collaborated with him/her before	.					
There are difficulties in sending shipping specimens, especially DNA and infected tissues and cells to the US to study, but these studies were carried out in China.	We have found that early childhood infection by KSHV is common in Xinjiang province in the ethnic minority population, which is reflected in the higher incidence of Kaposi's sarcoma in the adults in both HIV+and HIV- individuals. One difference between the Chinese infected individuals versus the African population is that neutralizing antibodies is rare in the African population but very prevalent in the Chinese population. Whether it leads to lower incidence of KS in China as compared to Africa needs to be studied.	I have collaborated with him/her before	We have been collaborating investigators on a different project			I have collaborated with him/her before	We have been collaborating investigators on a different project	

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
I knew of his/her research and contacted him/her to work on this project			(b) (6)				None.	0
I knew of his/her research and contacted him/her to work on this project								0
I met him/her at a professional meeting							N/A	0

Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China, and help develop targeted interventions for reducing HIV risk in this group and in global settings.									(b) (6)
Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAF5 to similar levels as its family member TRAF3, which may improve future antiviral immunity.									
Preventing saliva contact with infants to avoid transmission of the herpesvirus.									

How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together			.	We hope the US-China collaborating research grant announcements become routine, so we can prepare for applying for new research grants with several months in advance.
		We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together			.	International collaborations in the biomedical sciences should be significantly increased, especially in the areas that can complement each other and in specific diseases areas where patient samples are lack in US.
		We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together		.	Longer period of funding and more funding will enhance and sustain the collaboration.

Award	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?
AS	(b) (6)			R01CA140972	Role of BRCA1 and its Association Protein CtIP in DNA Double-Strand Break Repair	Opportunity for sharing different expertise and expand research capacity.	Biospecimen sharing or transfer				Biospecimen are not allowed to be transported out from China.	BRCA1 and CtIP are important for homologous recombination (HR)-mediated DSB repair. 53BP1 inhibits BRCA1-mediated end resection and promotes non homologous end joining (NHEJ). We found that the oligomerization and tudor domains of 53BP1 are required for 53BP1 localization to damage-induced foci. CtIP as well as the CDK sites on CtIP including S327 which mediates CtIP interaction with BRCA1 and T847 are important for preventing RIF1 a 53BP1 association protein to form damage-induced foci in S-phase thereby suppressing NHEJ. Loss of 53BP1 in BRCA1 deficient cells reactivates end resection which is dependent on CtIP. These studies reveal the role of BRCA1 CtIP and 53BP1 in the regulation of HR and NHEJ and will help understand the underlying mechanisms of how BRCA1-deficient cells are sensitive to PARP1 inh bitors and how loss of 53BP1 in BRCA1-deficient breast cancers causes resistance to PARP1 inhibitors.	I have not collaborated with him/her before
AS				3U54GM094618-0252	GPCR Network	Build a G protein-coupled receptor (GPCR) structural biology platform at Shanghai Institute of Materia Medica (SIMM) Chinese Academy of Sciences. After this supplemental period Drs (b) (6) applied for and received funding for an R01 (through PAR-11-145) to perform a more long range study leading to the development of new and better anti-retroviral therapeutics that could be used for AIDS patients.	Biospecimen sharing or transfer	.	.	.	Long delays of shipments in Chinese customs offices	A GPCR structural biology platform has been established at SIMM. By using this platform a series of available and designed inhibitors of the HIV co-receptor CCR5 were screened to improve protein thermal stability. Co-crystallization studies of CCR5 with the most prioritized ligands were then performed leading to the structure determination of CCR5 in complex with the HIV entry inhibitor maraviroc. Establishment of the platform laid the foundation for a series of papers (citations provided below) in high profile journals like Science and Nature.	I have not collaborated with him/her before
AS				RO1-AI050468	Cytomegalovirus Gene Fur	Completion of the collaborative rese	I did not experience any cha leng	.	.	.	N/A	(1) Interaction of murine cytomegalovirus (	I have collaborated with him/her before

n=28

Language Barriers	1
Communications (e.g. scheduling poor telephone/internet connection cultural differences etc.)	3
Type/Length of award	10
Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our Chinese partners	1
Securing required approvals (IRBs and others)	1
Biospecimen sharing or transfer	11
I did not experience any challenges due to the international collaboration	7
Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)	2
Other	1

I have collaborated with him/her before	17
I have not collaborated with him/her before	11
We have been collaborating investigators on a different project	7
We were co laborating investigators on this project under a different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	8
Missing	10

What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)		How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
											(b) (6)		
Other: He was in our neighboring institute in USA and we had collaboration before.	Other					He/she knew of my research and contacted me to work on this project							N/A
						A colleague introduced me to my international collaborating investigator							
We have been collaborating investigators or						He/she knew of my research and c	A colleague introduced me to	I met him	(b) (6)	2	(b) (6)	4	0

I have collaborated v	16
I have not collaborat	0
We have been collat	6
We were collaborating investigators on this project under a d fferent funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	3
Missing	0

How did you identify your international collaborating investigator? (please m	sum
A colleague introduced me to my i	9
He/she knew of my research and c	9
Other	3
I knew of his/her research and contacted him/her to work on this project	12
I met him/her at a professional meeting	2
	35

	47		25
A manuscript is being prepared.	4		

Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?
0	Our findings will help establish new strategies to treat PARP inhibitor-resistant breast cancers.													
0	CCR5 structure will lead to developing a deeper understanding of how the HIV virus enters the cell and will assist in the design of new therapeutics.													
0	N/A													
1		sum	38	sum		37	17		21		30		4	
		DK	1	DK		1								

(b) (6)

How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?
[redacted]															

(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.			Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)					We have discussed ways to continue this project together			We have discussed ways to collaborate on another project together				This type of grant is very helpful for initiating international collaborations.
					We have received funding to continue this project together			We have received funding to collaborate on another project together	We have discussed ways to collaborate on another project together			Continuing programs like this are key to enabling and improving international collaborations and making a real and lasting impact on global health.
					We are applying for funding to continue this project together	We have discussed ways to continue this project together		We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together			

We have discussed ways to	20
DK	3
We have received funding to continue this project together	4
We are applying for funding to continue this project together	9

We are applying for f	5
We have discussed w	22
N/A	1
DK	3
We have no plans to continue to collaborate on another project together	1
We have received funding to collaborate on another project together	3

Award	AS	AS	AS
PI	(b) (6)		
Institution			
Coll. Invest.			
Grant No.	.	.	N/A
Title	MH_Survey1A_101	MH_Survey1A_151	Multispec fic HIV-1 Entry Inhibitors Targeting Both gp120 and gp41
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	This administrative supplement facilitated the collaboration between [US Institution] and [Chinese Institution] with a [Joint Center]. [Chinese Institution] has some state-of-the-art equipment (e.g. 7 Tesla human MR scanner) while [US Institution] has some unique pediatric data. It also facilitated the exchange of students/fellows and faculties between the two institutions.	We found some consistent alterations of synaptic proteins in [Gene Name] hypomorphic mice. We are preparing a manuscript on the findings.	Novel potent cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the collaborating group in China. These inh bitors are highly promising as drug candidates for prevention and therapy of HIV-1 infection.
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Type/Length of award	Biospecimen sharing or transfer	Type/Length of award Acquisition or synchronization of release of funds between US and international funding agencies (if applicable
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	The funding period of 1yr was not enough to build long-term collaborations	There was a long delay for shipping [Gene Name] mouse brain tissues.	The award to U.S. investigators is too small ($50 000 per year) to conduct non-human primate studies and sometimes was not received timely. In addition the support is not continuous which makes it difficult for us to translate our findings to human clinical trials.
Please give a short summary of the work completed by the international laboratory/team for this study.	The [US Institution] team was able to collect pilot data from the 7T MR scanner at [Chinese Institution] and published a few papers. The [Chinese Institution] team performed preliminary analysis of the pediatric imaging data collected at [US Institution] and pub lished a few abstracts but not papers.	[Named Individual]'s group has finished proteomic analysis of mouse [Gene Name] brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since shifted to proteomic analysis of human tumors.	Our collaborators in China tested a combination of our antibodies with their peptide-based inh bitors for synergistic effects on neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the ant bodies and peptides. They are currently extensively characterizing the fusion proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in humanized mice and found that they potently suppressed HIV-1 infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.
Had you collaborated with your fellow principal investigator prior to this project?	I have collaborated with him/her before	I have not collaborated with him/her before	I have collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	Other: We overlapped during early career	Other: She is from the group of my former collaborator [Named Individual]]	We have been collaborating investigators on a different project
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project	A colleague introduced me to my international collaborating investigator	He/she knew of my research and contacted me to work on this project
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)		
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):			
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	N/A	N/A	The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)		
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?			
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the US laboratory/team were trained in medical procedures specifically for this project?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?			
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?			
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?			
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the international laboratory/team were trained in medical procedures specifically for this project?			
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?			
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?			
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We have discussed ways to continue this project together	DK	We have received funding to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	.	She has shifted her research focus more to oncology because of insufficient funding in her group on psychiatric disorders.	.
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together	DK	We have discussed ways to collaborate on another project togethe
Please explain why you have no plans to collaborate on other projects:	.	She has shifted her research focus more to oncology.	.
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	I feel International collaboration is necessary for sharing resources so the program should continue although the results may not be immediate. The program should have a cycle of every 2-3 years although funding doesn't have to be large.	DK	The process of applying for the funding should be simplified. Currently two proposals are required to be submitted to NIH and NSFC of China separately which takes unnecessary more time and efforts.

Award	a5	a5	a5
PI	(b) (6)		
Institution			
Coll. Invest.			
Grant No.	R01 AI087849	5R01AI089999	30973863 and 81161120429
Title	Manipulating the biosynthesis of capuramycin-type antibiotics for new anti-TB drugs	Selenoprotein K modulates calcium-dependent signaling in immune cells	The effect of Myristica fragrans on colon cancer and its mechanism of action Research
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Sample collection: The Chinese PI has access to 00 L fermentors that have enabled the large scale production of an advanced precursor of an anti-TB drug. This precursor which would not be available otherwise was chemically modified by my research group to make novel	I must admit that most of this work was not uniquely suited to a US/China collaboration. It was our mutual interest in a signaling pathway in inflammation and atherosclerosis that led to our collaborative studies. The fact that cardiovascular disease and chronic	N/A
Please mark each area where you encountered challenges that were caused by the international collaboration.	I did not experience any challenges due to the international co laboration	[illegible] telephone/internet connection cultural differences etc) Biospecimen sharing or transfer	I did not experience any challenges due to the international collaboration
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	[illegible]	Sending samples and reagents both ways was problematic. Sharing resources like mice was very challenging. Travel between institutes was most often sponsored by Jinan University.	N/A
Please give a short summary of the work completed by the international laboratory/team for this study.	capuramycin analogues using a semisynthetic and mutasynthetic approach. An advanced capuramycin precursor was isolated in gram quantities which was utilized to gerate around fifty novel analogues using a novel chemoenzymatic approach or synthetic methods. Several of these analogues have improved activity against Mycobacterium smegmatis. These efforts have led to 2 submitted manuscripts with contributors from both groups.	We uncovered a role for selenoprotein K in foam cell formation and atherosclerosis (PMID23444136). The molecular mechanism involved palmitoylation of scavenger receptor CD36. This led to a major breakthrough in uncovering how selenoprotein K functions in immune cells that we subsequently published in PNAS (PMID 25368151). The latter publication came after (b) (6) and he is not a co-author. However, his work led to this later study.	Discovered that neolignans from the spice nutmeg prevented colon cancer in a mouse colon cancer model.
Had you collaborated with your fellow principal investigator prior to this project?	I have collaborated with him/her before	I have co laborated with him/her before	I have not collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	He/she was a post doctoral fe low in my lab	Other: He had been a visiting scholar in my lab.	.
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project	Other: initial co laboration had just begun	I knew of his/her research and contacted him/her to work on this project
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)		
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):			
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	DK	The findings provide insight into dietary selenium related to risk of atherosclerosis	Chemoprevention of colon cancer
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)		
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?			
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the US laboratory/team were trained in medical procedures specifically for this project?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?			
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?			
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?			
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the international laboratory/team were trained in medical procedures specifically for this project?			
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?			
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?			
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We are applying for funding to continue this project together We have discussed ways to continue this project together	We are applying for funding to continue this project together	We have no plans to continue to collaborate on this project together
Please explain why you have no plans to continue to collaborate on this project:	.	BDP-M (M1) National Institute of A lergy and Infectious Diseases Special Emphasis Panel	We have no more funding to continue this collaboration.
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together	We have discussed ways to collaborate on another project together	We have no plans to continue to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	.	.	We have no funding for more projects.
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	[illegible] both groups! My only concern is the short time frame of funding and it would be nice to have a mechanism to support multiyear collaborations specific for research in China	DK	D/K

Award	a5	a5	a5
PI			(b) (6)
Institution			
Coll. Invest.			
Grant No.	CA-133569	R37 CA030488	NOT-CA-12-002
Title	Molecular Epidemiology of Infection with Human Papillomavirus Variants	Relationship between Translation and Stability of HIV-1 mRNA	System-wide immunohistochemical and proteomic analyses of Sp4 mouse brain
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	) Identified differences in intratypic variation of oncogenic HPV genome between two geographic locations (US and China) 2) Determined the impact of viral load on HPV-associated pathogenesis o cervical lesion.	This supplementary award provided support n the form of a partial stipend for a student and allowed us to pursue a new project in collaboration with a laboratory in Beijing headed by (b) (6) The US funds were important for our student's (b) (6) and the China funds were necessary for the effort. We were able to obtain pre iminary results and then later	We found some consistent alterations of synaptic proteins in Sp4 hypomorphic mice. We are preparing a manuscript on the findings.
Please mark each area where you encountered challenges that were caused by the international collaboration.	I did not experience any challenges due to the international collaboration	I did not experience any challenges due to the international collaboration	Biospecimen sharing or transfer
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	N/A	None	There was a long delay for shipping Sp4 mouse brain tissues.
Please give a short summary of the work completed by the international laboratory/team for this study.	) Characterized the variants of oncogenic HPV types in a Chinese population. 2) Examined epidemiologic features of variants of oncogenic HPV type in a Chinese population.	We studied the decay of retroviral RNAs specifically showing that these RNAs are stabilized by extending translation of the Gag-Pol protein through a stop codon acting in opposition to the Nonsense-Mediated Decay (NMD) machinery.	(b) (6) has finished proteomic analysis of mouse Sp4 brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since sh fted to proteomic analysis of human tumors.
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before	I have collaborated with him/her before	I have not co laborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	.	He/she was a post doctoral fellow in my lab; We have been collaborating investigators on a different project	She is from the group of my former collaborator Dr. Lin He
How did you identify your international collaborating investigator? (please mark all that apply)	I contacted her colleague a visiting scholar in our university to initiate this collaboration	I knew of his/her research and contacted him/her to ork on this project; He/she knew of my research and contacted me to work on this project	A colleague introduced me to my international collaborating investigator
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)			(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):			
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	of why the natural history of HPV infections is so variable. The findings of the variant-associated risk of cervical lesion are important as most HPV infections resolve spontaneously with only a small fraction leading to disease progression.	N/A	N/A
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?			(b) (6)
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?			
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the US laboratory/team were trained in medical procedures specifically for this project?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?			
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?			
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?			
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the international laboratory/team were trained in medical procedures specifically for this project?			
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?			
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?			
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We have discussed ways to continue this project together	We have received funding to continue this project together; We have discussed ways to continue this project together	Don't Know
Please explain why you have no plans to continue to collaborate on this project:	.	.	She has shifted her research focus more to oncology because of insufficient funding in her group on psychiatric disorders.
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together	We have discussed ways to collaborate on another project together	Don't Know
Please explain why you have no plans to collaborate on other projects:	.	.	She has shifted her research focus more to oncology.
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	D/K	This program is a superb mechanism to support international collaborations.	D/K

Award	AS	AS
PI		(b) (6)
Institution		
Coll. Invest.		
Grant No.	PO1CA132714-0451	R01AI081995
Title	Directing tumor-specific T cells to tumors	T-cell Immune Responses to Schistosome Infection in the elderly
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	The US-China Research Supplement allowed us to launch an interesting and potentially very important long-term co laboration aimed a the development of new immune therapies of cancer for different groups of cancer patients in Chine and the US. In brief the Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system (at base line and fo lowing different forms of therapy) originally identified within our PO1 in the settings of colon- and ovarian cancers melanoma and glioblastoma are also relevant to the cancers that are rare in the US population but highly prevalent in China. The direct implications of these findings are that the new therapeutic methods of reprogramming of the chemokine system	This collaboration promotes (b) (6) project development in China.
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Language Barriers; Communications (e.g. scheduling poor telephone/internet connection cultural differences etc); Type/Length of award; Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our Chinese partners	Securing required approvals (IRBs and others); Type/Length of award; Biospecimen sharing or transfer
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Language and communication barriers (time difference/need for video conferencing) barriers were initially very significant but were alleviated with time. From a personal standpoint the biggest cha lenge was to start to appreciate that a statement "no it is impossible" i sometimes replaced by " it is difficult" as a polite euphemism. I also suspect that I might have been perceived as being too direct on a few occasions...	1. transfer experimental animal (mouse) took a long time (6 months) -- it suffered many approvals (from both sides);2. the period of time is too short (only one year);3. Biospecimen sharing or transfer has too many limitations.
Please give a short summary of the work completed by the international laboratory/team for this study.	This Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system identified within our PO1 in the settings of colon- and ovarian cancers melanoma and glioblastoma are also relevant to cancers rare in the US population but highly prevalent in China. In similar ex vivo models and in limited amount of mouse experiments we also verified that the new therapeutic methods of reprogramming the chemokine system developed within the PO1 are also applicabl to additional cancers prevalent in China.The results have led to a total of four published papers and additional two papers currently submitted and undergoing scientific review.	Our side trained their three people with techniques and methods. China side finished some key preliminary data and based on these data they (b) (6) developed new projects and obtained two new b g grants from NSFC (National Science Foundation of China).
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before	I have not collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	(b) one of the participants of the PO1 had personal contacts with the Chilese partner	.
How did you identify your international collaborating investigator? (please mark all that apply)	He/she knew of my research and contacted me to work on this project; A co league introduced me to my international collaborating investigator	He/she knew of my research and contacted me to work on this project; We graduated from the same university.
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)		(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):		
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	No patents from my lab. I am not aware of any patents from my co laborators but I would need additional time to verify.	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	cells into tumors.ThThe insights from (b) lab are being used by our partners in China to improve CIK therapies by faci ltating enhanced entry of CIK cells into tumors.The ins ghts from my lab are being used by our partners in China to improve C K therapies by facilitating enhanced entry of CIK cells into tumors and to design improved ce l-based treatments in cancer which involve DCs and tumor-specific CTLs. I understand that the (b) (6) of the First Affiliated Hospital o (b) (6) currently runs about 200 CIK	to help improve therapeutics in the elderly infected with Schistosome
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	One visiting researcher from China (b) (6) vas trained i (b) (6) ab. He was trained in multiple aspects of data collection and analysis.	N/A
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?		(b) (6)
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the US laboratory/team were trained in medical procedures specifically for this project?		
How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?		
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?		
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?		
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the international laboratory/team were trained in medical procedures specifically for this project?		
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?		
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We are applying for funding to continue this project together; We have discussed ways to continue this project together	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	.	.
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We are applying for funding to collaborate on another project together; We have discussed ways to collaborate on another project together	We have discussed ways to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	[illegible] cell-based therapies of cancer. While current grant applications involving both sides have only been submitted on ther Chinese end and involve me only as an unpaid consultant we are discussing additional options of more direct collaboration. As an example in case of [illegible]	.
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	[illegible] and proposed hosts of visiting researchers from China. None of the fo low up grants a lows transfer of research funds to the US limiting the scope of the collaborative work. The ability of NCI to negotiate at least a limited transfer of research funds to US-based labs or to identify potential alternative sources of funding in the US would help to promote continued collaborations. A second venue of promoting such collaborations would be an annual research symposium co-sponsored by the NCI and NCI's counterparts in China and focused on the	NIH should provide more opportunities of this co laboration by providing long term (at least 3 years for each collaboration) and more fundings (at least same as an R21 or small R01).

Award	A5	A5-FY11
PI		(b) (6)
Institution		
Coll. Invest.		
Grant No.	P01 AI083214	U01-AI-035040
Title	US-China Program to Identify Novel Antimicrobials	Epidemiology of HIV-related Ma ignancies in China
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	The study allowed us to screen a l brary of natural compounds isolated and characterized in the laboratory of (b) (6) for their ability to prevent Staphylococcus aureus from k ll ng the model nematode Caenorhabditis elegans. This required developing a novel screening platform that could be carried out in (b) (6) laboratory. Several novel compounds were identified as hits one of	Using China's National prospective database of HIV/AIDS we compared HIV-related cancer incidence and mortality experience with western countries HIV/AIDS population in China had lower risk of Kaposi Sarcoma lymphomas sim lar risk of female cervical cancer however higher risk of non-AIDS-defining cancers including lung liver and stomach cancers. This indicates that China may have different HIV-Cancer spectrum than Western countries (one manuscript is completed). In addition we have recruited 39 KS cases and 93 controls among HIV-infected Uyghur in Xinglang Province
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Type/Length of award	Type/Length of award Biospecimen sharing or transfer
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	It would have been preferable if the award were longer. However the collaboration that was initiated during the funding period has continued and has been very successful and productive.	This is only one-year award which is not enough to set-up a study in a remote area of China. Biological specimens are difficult to be transferred form China to the US.
Please give a short summary of the work completed by the international laboratory/team for this study.	characterized in the laboratory of (b) (6) at the Chinese Academy of Sciences in Beijing for their ability to prevent Staphylococcus aureus from kl ling the model nematode Caenorhabditis elegans. To do this we developed a novel screening platform that could be carried out in (b) laboratory without the use of a robot to distribute worms to assay plates and without th use of a specialized screening microscope. This required the development of a novel assay using methylene blue to distinguish live and dead worms and the use of a commercial scanner to identify and count stained worms. Several novel compounds were identified as hits one of which has been studied extensively during the funding	Because it is very difficult to get an approval from Chinese government for sending biological specimens from China to the US our work was done at Fudan Department of Epidemiology. It is very hard to have sufficient quality control while the lab work is done in China.
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before	I have co laborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	-	We were collaborating investigators on this project under a different funding mechanism Both were PhD students of (b) Epidemiology
How did you identify your international collaborating investigator? (please mark all that apply)	A colleague introduced me to my international collaborating investigator	Other: Teacher-student relationship
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)		(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):		
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	The primary compound identified in the screen activates the innate immune response. Developing therapeutics that activate host immunity is a novel approach to treating bacterial infections.	The finding on new spectrum of HIV-related malignancies in China may change the strategy for HIV-related cancer prevention and control in China. The study of HIV-related KS in Xinglang wi l be of importance to have more research in the area.
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?		(b) (6)
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?		
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the US laboratory/team were trained in medical procedures specifically for this project?		
How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?		
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?		
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?		
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the international laboratory/team were trained in medical procedures specifically for this project?		
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?		
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We have discussed ways to continue this project together	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	-	-
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together	We have discussed ways to co laborate on another project together
Please explain why you have no plans to co laborate on other projects:	-	-
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	The one year time frame for this project was not long enough to develop and bring the project to a successful conclusion. Fortunately we were able to continue the collaboration despite the expiration of the supplemental funding.	Change China's regulation of limiting biological specimens to be transported to the US.

Award	A5-FY11	A5-FY11
PI	(b) (6)	
Institution		
Coll. Invest.		
Grant No.	P01AI082274-02	R01 AI087135
Title	Neutralizing ant bodies targeting HIV-1 Env CD4bs in Chinese HIV patients	Analytical and Estimation Methods for Hybrid Differential Equation Models in AIDS Research
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Produced useful information and a research publication.	We have developed novel hybrid differential equation models for HIV viral dynamics that were used to study antiviral treatment strategies. Several papers are published in top journals. The unique strengths from US and China collaborators were efficiently uti lized. In particular Chinese collaborators are strong in mathematical modeling of HIV dynamics and US PI is strong in statistical methods for the mathematical model parameter estimation. Thus the two sides' expertise and strength are complementary. In addition, we also established a collaboration for
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Biospecimen sharing or transfer	Type/Length of award Data sharing
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Hard to transfer biological samples from China to USA	Only one year of the award is too short. Clinical data and epidemiological data sharing is challenging between US and China.
Please give a short summary of the work completed by the international laboratory/team for this study.	With the support from the P01 Administrative Supplement we collaborated with (b) (6) roup in studying the Env-specific and neutra lizing antibody responses in HIV-1 patient sera collected from Youan Hospital in Beijing China. The results demonstrated that different levels of NAb activities were detected in the patients against a panel of 44 HIV-1 pseudotyped viruses covering clades B C AE isolated from China and other parts of the world.	Chinese collaborator (b) (6) and his associates have developed novel hybrid mathematical models for HIV dynamics and performed all computational simulations. The dynamic properties for the developed models were also carefully investigated numerica ly and theoretically by my Chinese collaborators.
Had you collaborated with your fellow principal investigator prior to this project?	I have collaborated with him/her before	I have collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	We were co laborating investigators on this project under a different funding mechanism	We have been collaborating investigators on a different project
How did you identify your international collaborating investigator? (please mark all that apply)	He/she knew of my research and contacted me to work on this project	A colleague introduced me to my international collaborating investigator
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)	
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):		
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	N/A	Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)	
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?		
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the US laboratory/team were trained in medical procedures specifically for this project?		
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?		
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?		
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?		
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?		
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the international laboratory/team were trained in medical procedures specifically for this project?		
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?		
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	DK	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	Difficult to get funding for such collaboration	3
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	DK	We have discussed ways to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	-	-
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	N/A	Identify the needs and weakness from either side so that another side could help or strengthen (the rest of the comment did not capture)

Award	AS-FY11	AS-FY11
PI	(b) (6)	
Institution		
Coll. Invest.		
Grant No.	U19AI089672	R01 AI080669
Title	Southeast Asia Malaria Research Center: Antimalarial drug resistance in P. falciparum	Study of novel influenza virus inhibitors
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	This study aimed to enhance the collaboration between (b) (6) in the area of antimalarial drug resistance especially on the emergence of artemisinin resistance in SE Asia. Yunnan is a place with the longest artemisinin use and artemisinin resistance in the area is still unknown. During this collaboration we ident fied high level quinine resistance in parasites from this region. This supplement further strengthened the collaboration between US and	The international collaborator identified new inh bitors of influenza virus by high throughput screen. Some inhibitors have sim lar properties of the fusion inh bitors we work on whereas other inhibitors are novel. Through our collaboration two new classes of influenza virus inhibitors are investigated. The results will help in further development of these inhibitors are potential drugs for treatment of influenza virus infection in humans.
Please mark each area where you encountered challenges that were caused by the international collaboration.	Type/Length of award	Type/Length of award Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	The short period of the grant makes the continuity of the collaboration problematic	The funding was in small amount for only one year. Interesting preliminary results were generated but could not follow up due to the end of the funding period. In addition the fund from the international agency was released a few months later than announced but must be spent within the year.
Please give a short summary of the work completed by the international laboratory/team for this study.	1. Procured 100 field parasite isolates and culture-adapted 60 parasites for future studies; 2. Assessed sensitivities of the field isolates from two geographic regions to 0 commonly used antimalarials	Two classes of novel influenza virus inhibitors are identified and their mechanisms of action were investigated. Future collaboration will continue to develop these inh bitors as potential drugs for influenza treatment.
Had you collaborated with your fellow principal investigator prior to this project?	I have collaborated with him/her before	I have collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	He/she was a post doctoral fe low in my lab; We were collaborating investigators on this project under a different funding mechanism	We were collaborating investigators on this project under a different funding mechanism We have been collaborating investigators on a different project
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project He/she knew of my research and contacted me to work on this project	A colleague introduced me to my international collaborating investigator
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)	
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):		
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	US 8 933 075 2013 COMPOUNDS USEFUL AS ANTIVIRAL AGENTS COMPOSITIONS AND METHODS OF USE
Please describe how your findings may be used to inform the development or implementation of health programs:	N/A	Through this collaboration we have identified two groups of new inhibitors that block the replication of influenza virus. With further development they may become new drugs for treatment of influenza virus infection in humans. In addition the international collaborator acquired the capability of high through screening of inh bitors of infectious diseases. We
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)	
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?		
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?		
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the US laboratory/team were trained in medical procedures specifically for this project?		
How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?		
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?		
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?		
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?		
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?		
How many people from the international laboratory/team were trained in medical procedures specifically for this project?		
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?		
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?		
What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We have discussed ways to continue this project together	We are applying for funding to continue this project together We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	-	-
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have received funding to collaborate on another project together We have discussed ways to collaborate on another project together	We have received funding to collaborate on another project together We are applying for funding to collaborate on another project together We have discussed ways to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	-	-
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Funding for continuation of collaboration would be great to continue the collaborative network established from the previous work	The funding period needs to be much longer (minimum 3 years).

Award	AS-FY11	AS-FY12	AS-FY12
PI			(b) (6)
Institution			
Coll. Invest.			
Grant No.	AI077343	R01AI093278	1 R01 AI081604
Title	Mechanical Priming of Selectin-Ligand Interactions	US-China program for Biomed Collab Res	Rational Design of antivirals targeted to HIV-1 capsid
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	We found that mechanical priming (which we now re-name it as cyclic mechanical reinforcement or CMR) is not an isolated phenomenon. We have now observed this phenomenon in several receptor-ligand interaction systems. The original observation was made in the interaction between integrin aSb1 with f bronectin. The interaction systems exhibiting such phenomenon now include L-selectin interactions with two ligands P-selectin glycoprotein ligand 1 (PSGL-1) and 6-sulfo-Lex (a peripheral lymph node addressins mimic) actin homotypic interaction and T ce l receptor interaction wit?	This mechanism provided an opportun ty for my lab to collaborate with an old colleague who had moved back to China and now has access to state of the art microscopy tools. My colleague had branched to studying many other viruses but this program allowed him to return to the HIV field.	The US-China col aboration presented unique opportunity for us to get access to the HIV-1 clinical isolates from China through our collaborators in China for studying the suscept bility of our unique stapled-peptide base HIV-1 inhibitors.
Please mark each area where you encountered challenges that were caused by the international collaboration.	I did not experience any challenges due to the international collaboration	telephone/internet connection cultural differences etc.) Type/Length of award	Biospecimen sharing or transfer
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	N/A	skype connection was poor. length of the award was insufficient (1 year) to solve problems.	Due to very strict Chines and US rules it was not easy to exchange biospecimens on a timely manner
Please give a short summary of the work completed by the international laboratory/team for this study.	(b) and his students performed molecular dynamics (MD) simulations to model the experimental results of my group. (b) also sent a student of his to study in my lab to build an experimental system.	colleague to try to answer a variety of questions related to these particles as vaccine antigens. Including spike density purity stability as well as to investigate ligand binding. Progress was marred by the fact that majority particles were "bald". Whether these were vesicles or true Gag-containing VLPs was unclear. We hypothesize that apoptotic vesicles were co-produced with VLPs making our analysis of Env difficult. We have since modified our protocols and plasmids to try to address this problem	CRF07_BC and 4 CRF01_AE) of Chinese origin to stapled peptides was tested by virus inhibition assay. NYAD-36 and NYAD-67 of I I 7 stapled peptides showed the best anti-virus activity. The sequences of their env genes were analyzed to correlate with the antiviral activity. Furthermore in resistance study we found four polymorphic sites (A281V/I N300G/S D474N and V496I respectively) on gp120 which significantly correlated with the antiviral activity of I I 7
Had you collaborated with your fellow principal investigator prior to this project?	I have collaborated with him/her before	I have collaborated with him/her before	I have co laborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	He/she was a post doctoral fe low in my lab We have been collaborating investigators on a different project	We were collaborating investigators on th s project under a different funding mechanism We have been collaborating investigators on a	He/she was a post doctoral fellow in my lab
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project He/she knew of my researc and contacted me to work on this project	I knew of his/her research and contacted him/her to work on this project	I knew of his/her research and contacted him/her to work on this project
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)			(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):			
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
Please describe how your findings may be used to inform the development or implementation of health programs:	N/A	N/A	Therefore for any anti-HIV drug to work universally It is of utmost importance to learn how they function against different isolates. The data from Chinese isolate w ll be
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?			(b) (6)
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?			
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the US laboratory/team were trained in medical procedures specifically for this project?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?			
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?			
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?			
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the international laboratory/team were trained in medical procedures specifically for this project?			
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?			
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?			
What, if any, other areas did members of the international laboratory/team receive training n spec fically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We are applying for funding to continue this project together	We have discussed ways to continue this project togethe	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	-	preparations can be improved. There are various co laborators in the US who we could work with once these problems are solved. We are	-
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together	N/A	DK
Please explain why you have no plans to collaborate on other projects:	-	HIV particle immunogens is the main focus so there are no other projects relevant here	-
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	-	I think we needed longer for it to yield fruit. Also the import regulations were something of a barrier (as compared to working with a US collaborator).	Frequency of this type funding may be increased.

Award	AS-FY12	AS-FY12	AS-FY12
PI	(b) (6)		
Institution			
Coll. Invest.			
Grant No.	R01AI084816-04	AI049104-15	R01 AI094562
Title	Screening for anti-HIV bNAbs in huCD4/CCR5 transgenic mice immunized with mu	CHINESE HERBS	MP3-China for Phylogenetic Analysis of HIV Transmission Clusters among MSM in Beijing
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Multivalent anti-HIV vaccine can effectively induce broad humoral immune response in huCD4 B cell transgenic mouse model.	Found a number of chinese herbs with potential use in HIV/AIDS	The col aborating between US and Chinese scientists provided the following unique opportunities: 1. Access to a large number (N=416) blood sample of newly diagnosed HIV-infected MSM in Beijing recruited within a relatively short period of time (12 months from March 2013-March 2014). About three fourths of the participants were migrants so the sample
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Biospecimen sharing or transfer	Type/Length of award	Communications (e.g. scheduling poor telephone/Internet connection cultural differences etc.) Other: Delays in responses to US team's requests
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Because the censorship of export by Chinese government it is d fficult for us to transfer or share the samples with Chinese collaborator.	a delay in getting approvals but otherwise OK	Time differences for three locations (Nashville Beijing and UK); The Chinese team is sometimes overburdened with their daily work which led to delays in responses to US team's requests.
Please give a short summary of the work completed by the international laboratory/team for this study.	Constructed 80 HIV-1 env-based SHIV vaccine candidates. Immunized human CD4 B cell transgenic mice and detected the induced immune responses. Screening of neutralizing anti-HIV antibodies from immunized mice through generation and testing over 400 hybridoma cell lines from vaccinated mice.	looked at compounds that inhibit CTD kinases especially CDK12 and also started working on agents that active PKC and thus reactivate HIV from latency.	The Chinese team collected and processed the samples performed RT-PCR and completed the basic phylogenetic analysis for geno-typing and assessed any recombinations.
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before	I have collaborated with him/her before	I have collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	Other: I was a Ph.D. student in his institute.	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project	I knew of his/her research and contacted him/her to work on this project	I knew of his/her research and contacted him/her to work on this project
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)		
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):			
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	None.
Please describe how your findings may be used to inform the development or implementation of health programs:	Our findings w ll help with the development of an effectiv anti-HIV vaccine and prevention of HIV infection.	could lead to compounds that inhibit CTD kinases and others that activate HIV	The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China and help develop targeted interventions for reducing HIV risk in this group and in global settings.
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)		
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?			
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?			
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?			
How many people from the US laboratory/team were trained in medical procedures specifically for this project?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fically for this project?			
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?			
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?			
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?			
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scient fic manuscript writing specifically for this project?			
How many people from the international laboratory/team were trained in medical procedures specifically for this project?			
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?			
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?			
What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	We are applying for funding to continue this project together We have discussed ways to continue this project together	We have discussed ways to continue this project together	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	-	-	-
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another projec together	We are applying for funding to collaborate on another project together We have discussed ways to collaborate on another project together	We have discussed ways to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	-	we plan to continue to work on collaborative projects	-
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	suggestions: 1) Extend the period of the collaborative grant to 3-5 years so we may keep the consistency and complete one entire project; 2) Establish some specific mechanism for sample transfer and sharing between U.S. and China.	-	We hope the US-China collaborating research grant announcements become routine so we can prepare for applying for new research grants with several months in advance.

Award	AS-FY12
PI	(b) (6)
Institution	
Coll. Invest.	
Grant No.	AI069120
Title	Viral Mediated Type I Interferon Induction
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	During the period of the R01 grant studies we found an antiviral function of TRAF3 that is unique to TRAF3 among six TRAF family members. To understand the molecular mechanisms responsible for the specificity of TRAF3 we collaborated with Dr (b) (6) laboratory at the Institute of biophysics Chinese academy of science and solved the crystal structures of TRAF and TRAF5 a close relative of TRAF3. Our studies led to the identification of a single amino acid difference responsible for the anti-viral specificity of TRAF3 which was published as a cover story by Science signaling.
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	I did not experience any challenges due to the international collaboration
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	
Please give a short summary of the work completed by the international laboratory/team for this study.	The international laboratory solved the crystal structure of TRAF3 and TRAF5. They also identified potential amino acid sequence differences respons ble for the functional specificity between TRAF3 and TRAF5. Their studies have greatly helped us to determine the mechanism respons ble for the important antiviral function of TRAF3.
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before
What was the nature of your previous collaboration(s)? (please mark all that apply)	
How did you identify your international collaborating investigator? (please mark all that apply)	I knew of his/her research and contacted him/her to work on this project
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	
Please describe how your findings may be used to inform the development or implementation of health programs:	Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAF5 to similar levels as its family member TRAF3 which may improve future antiviral immunity.
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	(b) (6)
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	
How many people from the US laboratory/team were trained in medical procedures specifically for this project?	
How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifica ly for this project?	
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	
How many people from the international laboratory/team were trained in medical procedures specifically for this project?	
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	
What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on this project? Please mark all that apply.	We have discussed ways to continue this project together
Please explain why you have no plans to continue to collaborate on this project:	
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal investigator on other project(s)? Please mark all that apply.	We have discussed ways to collaborate on another project together
Please explain why you have no plans to collaborate on other projects:	
Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	International co laborations in the biomedical sciences should be significantly increased especially in the areas that can complement each other and in specific diseases areas where patient samples are lack in US.

Award	AS
PI	(b) (6)
Institution	
Coll. Invest.	
Grant No.	CA75093A2
Title	Kaposi's sarcoma and human herpesvirus in China
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able bring Chinese researchers to the US for training and perform some of the studies in the US. This has built the research capability of or Chinese partner institution.
Please mark each area where you encountered challenges that were caused by the international collaboration.	Type/Length of award
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Biospecimen sharing or transfer
Please give a short summary of the work completed by the international laboratory/team for this study.	
Had you collaborated with your fellow principal investigator prior to this project?	
What was the nature of your previous collaboration(s)? (please mark all that apply)	There are difficulties in sending shipping specimens, especially DNA and infected tissues and cells to the US to study, but these studies were carried out in China.
How did you identify your international collaborating investigator? (please mark all that apply)	We have found that early childhood infection by KSHV is common in Xinjiang province in the ethnic minority population, which is reflected in the higher incidence of Kaposi's sarcoma in the adults in both
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(b) (6)
Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	

Please describe how your findings may be used to inform the development or implementation of health programs:	
How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	(b) (6)
How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	
How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	
How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	
How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	
How many people from the US laboratory/team were trained in medical procedures specifically for this project?	
How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	
What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	
How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	
How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	
How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	
How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	
How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	
How many people from the international laboratory/team were trained in medical procedures specifically for this project?	
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	
How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	
What, if any, other areas did members of the international laboratory/team receive training n specifically for this project (excluding quantitative and qualitative data collection/analysis IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	
Please explain why you have no plans to continue to collaborate on this project:	
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
Please explain why you have no plans to collaborate on other projects:	

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	0
	(b) (6)
	We are applying for funding to continue this project together
	We have discussed ways to continue this project together
	.
	We are applying for funding to collaborate on another project together
	We have discussed ways to collaborate on another project together
	.

Longer period of funding and more funding will enhance and sustain the collaboration.

AS

(b) (6)

CA75093A2

Kaposi's sarcoma and human herpesvirus in China

We were able to study a unique cohort in China, an ethnic minority in

Type/Length of award

Biospecimen sharing or transfer

There are difficulties in sending shipping specimens, especially DNA ar

We have found that early childhood infection by KSHV is common in X

I have collaborated with him/her before

We have been collaborating investigators on a different project

I met him/her at a professional meeting

(b) (6)

1

Prevalence of early childhood infection by Kaposi's sarcoma-associate

1

N/A

0

Preventing saliva contact with infants to avoid transmission of the he

(b) (6)

We are applying for funding to continue this project together

We have discussed ways to continue this project together

.

We are applying for funding to collaborate on another project togeth

We have discussed ways to collaborate on another project together

.

Longer period of funding and more funding will enhance and sustain t

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			R01NS083435	US-China Collaborative Research on Stroke Imaging	This collaboration has greatly expanded my clinical research capacity.	I did not experience any challenges due to the international collaboration	
R01				5R01NS083503-02	Culprit Plaque in Acute Cerebral Infarction: A Histological and MRI Assessment	and long term serious disability globally, and cerebrovascular atherosclerosis is a major etiologic contributor. However, autopsy evidence suggests that the location of the culprit plaque responsible for ischemic stroke may vary by race, with intracranial disease more prevalent amongst Asians, and extracranial carotid high-risk plaques more common amongst Caucasians. The overall goal of our proposal is to compare the location of high-risk culprit plaques in patients who have had a recent ischemic anterior-circulation stroke in Beijing and in the U.S. using high-resolution MRI. Furthermore, we aim to examine whether there is an association between genetic and environmental risk factors and the fibrous cap rupture by histology and MRI in the two cohorts. Thus, the funding provided by NINDS and NSFC provides a unique opportunity to establish standardized imaging and histological protocols, conduct cross-cultural analyses, and has helped to establish a foundation	Securing required approvals (IRB and others)	Type/Length of award

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
			N/A	The international team will be performing specific Aim 2 Determine the characteristics and clinical values of pH imaging of hyperacute and acute ischemic stroke patients (n 200). This includes human subject recruitment, MRI data acquisition, imaging analysis, and statistical analysis.	I have collaborated with him/her before	We have been collaborating investigators on a different project		
Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable), Biospecimen sharing or transfer	Biospecimen sharing or transfer	Securing IRB approval was a major barrier, as our respective institutional review boards had not often dealt with jointly funded studies such as ours. Multiple questions were raised regarding processes for data transfer, analysis of the histological specimens, and plans for GWAS dbGaP data-sharing. As such, funds for the project were not released until early 2014 which has delayed subject enrollment. The duration (three years) and cap on award to $200,000 (direct plus indirect) has been a challenge, given the number of subjects needed for recruitment, study procedure costs, and travel expenses.	above, major technical accomplishments have been achieved during year 1 that resulted in significant improvement for intracranial arterial wall MR imaging, as detailed in our first year annual report. Furthermore, 3D image analysis tools have been developed that improve the efficiency and reproducibility of carotid and intracranial vessel wall image analysis. Working closely with collaborators in Beijing, standardization and onsite training was performed for procedures to excise the carotid plaque intact with minimal disruption during carotid endarterectomy, sectioning and staining of the specimen in its entirety, and transfer of digitized images of the histological slides to the (b) (6) for analysis. Following IRB approval, procedures were confirmed on test specimens that were collected during carotid endarterectomy procedures performed at Tiantan Hospital in Beijing. During the site visit to Tiantan Hospital, procedures for sample	I have not collaborated with him/her before	Other Many of the key faculty co-investigators at the China site were former senior research fellows in our laboratory at the (b) (6) is the departmental chairman.	Other	

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	I knew of his/her research and contacted him/her to work on this project					DK	(b) (6)	
	A colleague introduced me to my international collaborating investigator,	Other (b) (6) is the departmental chairman of our key co-investigators who were former fellows in our research lab		Other		Stroke is a leading cause of death in China. The standardized protocols for high-resolution plaque imaging, histological processing and genotyping established in this study will streamline further clinical research programs at our respective institutions. We have already begun to implement our state-of-the-art imaging procedures at other medical centers throughout China. Using these techniques, our goal is to improve our ability to identify those at risk for the development of high-risk cerebrovascular disease at an earlier stage, and to provide better tools for selection of appropriate therapy for secondary stroke prevention.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
[redacted]								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
(b) (6)							

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
(b) (6)								

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We have discussed ways to continue this project together		.	We have received funding to collaborate on another project together	We are applying for funding to collaborate on another project together
				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	

	Please explain why you have no plans to collaborate on other projects:	**Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).**
We have discussed ways to collaborate on another project together	.	DK
	.	Support from this novel, joint funding mechanism has allowed establishment of a strong foundation for future collaborative research, by helping to standardize protocols across sites. It is difficult to find other sources for funding international collaborative research, and we highly recommend that the joint NINDS/NSFC venture be considered for renewal.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			N/A	Trispecific Multivalent HIV-1 Inactivator Combined with Activator as a Strategy for Curing AIDS	Novel potent, cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the collaborating group in China. These inhibitors are highly promising as drug candidates for prevention and therapy of HIV-1 infection.	Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)
R01				R01CA177372	The Role of miRNA Network in Gastric Cancer	This unique opportunity has allowed us to establish a strong collaboration with our Chinese partners to take advantage of the large number of patients with gastric cancer that are available in their institution. For the time in literature, we were able to analyse and compare changes in the miRNA and RNA expression networks in our TFF1 knockout mouse model of gastric cancer to human gastric cancer patients samples. The resources provided by NCI were instrumental to move our collaboration forward. I have hosted a Ph.D. student in my lab who has completed his Ph.D. degree and returned back to my lab to pursue a post doctoral training. To date more than 40 samples from mice and 100 human tissue samples have been analysed using Next Generation sequencing. Through this mechanism, we have been successful in expanding our research capacities at both sites and performing analysis of a unique sample that is available in each institution. Our second phase of validation of data and developing biomarkers for early detection of	I did not experience any challenges due to the international collaboration	

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
agencies (if applicable)	agencies (if applicable)	The award to U.S. investigators is too small ($50,000 per year) to conduct non-human primate studies and sometimes was not received timely. In addition, the support is not continuous which makes it difficult for us to translate our findings to human clinical trials.	Our collaborators in China tested a combination of our antibodies with their peptide-based inhibitors for synergistic effects on neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the antibodies and peptides. They are currently extensively characterizing the fusion proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in humanized mice and found that they potently suppressed HIV-1 infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.	I have collaborated with him/her before	We have been collaborating investigators on a different project		
		N/A	(b) (6) team have collected and built a gastric tissue bank containing over 500 human gastric cancer tissue samples with adjacent non-cancer and normal gastric tissue as well as human blood samples. In the first year of this study, they finished histopathology evaluation, tissue processing, RNA purification, and miRNA and RNA deqq sequencing of 119 human gastric tissue samples. The bioinformatics analysis has been completed by the Chinese partner. Following consultation with our bioinformatics at (b) (6) we have requested and received the raw sequecing data from China (500 GB). These results will be analyzed together with our sequencing data from mouse tissues to establish markers related to H.pylori infection and early stages of gastric cancer.	I have collaborated with him/her before	We have been collaborating investigators on a different project		

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	He/she knew of my research and contacted me to work on this project					The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.	(b) (6)	
	A colleague introduced me to my international collaborating investigator					Our second phase of validation of data and developing biomarkers for early detection of gastric cancer and/or monitoring response to therapy is starting. With the exceptional tissue and serum biobanking in China, we have the opportunity to move our results from bench to bed to decrease the burden of gastric cancer, the second most frequent cancer world-wide.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We have received funding to continue this project together		.	We have discussed ways to collaborate on another project together	
				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	

	Please explain why you have no plans to collaborate on other projects:	**Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).**
	.	The process of applying for the funding should be simplified. Currently, two proposals are required to be submitted to NIH and NSFC of China separately, which takes unnecessary more time and efforts.
	.	International collaborations should be offered the opportunity to go for a competitive renewal/evaluation to renew their funds to continue their collaborative research forward. A three year one time funding is not realistic to achieve a significant global impact.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			R01CA177377	KSHV microRNAs in cellular transformation and tumorigenesis	The collaboration has expanded our research capacity to delineate the functions of KSHV and cellular microRNAs, and their roles in KSHV-induced pathogenesis and KSHV life cycle. Specifically, it has allowed us to examine the roles of KSHV and cellular microRNAs in cell invasion and angiogenesis and KSHV life cycle, and the underlying mechanisms that mediate these processes.	Type/Length of award	
R01				.	MH_Survey1B_130	This is an exome sequencing project, we have not finished the sequencing yet, so we don't have anything important to report at this time. We did analyzed some GWAS data of Asian populations and compared them with that of Caucasians. Preliminary results indicated that there were substantial overlaps in genetic risks between Asians and Caucasians. This project did provide us an opportunity to access valuable schizophrenia patient samples in China, which is not possible otherwise since the Chinese government prohibits DNA sample from leaving China, even for the purpose of scientific research. This collaborative project provides an avenue for sharing data produced by our Chinese collaborators.	Other	

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		The grant is for 3 years, which has somewhat limited the extent of collaboration as these are long-term project.	The China team has examined KSHV pre-miRNAs and miRNAs on cellular transformation, and identified those that regulate cell growth, survival, angiogenesis and invasion. They have also identified several novel targets of KSHV miRNAs, which has led to the delineation the mechanism of action. Furthermore, the China team has expanded the scope and identified KSHV and cellular miRNAs that inhibit KSHV lytic replication.	I have not collaborated with him/her before			
		The Chinese government reduced the funds by 40% to my collaborator, therefore, they have to scale down what we proposed to do.	We have established consistent sequencing pipeline to ensure that all samples are sequenced by the same methods and standards. We also applied the same criteria for sample selection. Both sides have started sending samples for sequencing.	I have collaborated with him/her before	Other: we worked together as coauthors to cross verify findings from each other.	Other	

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	I knew of his/her research and contacted him/her to work on this project,					The results of these collaborative works allow us to better understand the pathogenesis of KSHV-induced malignancies and the molecular basis of KSHV life cycle. The knowledge can be used to develop novel therapeutic approaches for KSHV-related malignancies.	(b) (6)	
	I knew of his/her research and contacted him/her to work on this project	I met him/her at a professional meeting	He/she knew of my research and contacted me to work on this project	Other We were coauthers on several papers.	Other	There may be ethnic specific genetic risks for schizophrenia. By comparing these risk factors between different ethnic populations, it provides the basis if there should be different implementation of health policies on different ethnic populations.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
[redacted]							

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)			No	We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	
			DK	We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We have discussed ways to collaborate on another project together	

	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
	.	This grant has really helped the research programs in both sides. I suggest that NIH continues to support the program, ideally with a RFA for renewal application. The funding period was short (3 years) and the amount was small, which had limited the scope of collaboration. I recommend a 5 years collaborative project with each year's funding amount similar to a traditional R01, which is $250,000 per year.
	.	my collaborators know very little of NIH grant application process, and whether they can apply for grants from US government. It would be very helpful that these policies can be made ready for them.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			.	MH_Survey1B_133	This collaborative funding allowed us to characterize two lines of [Gene Name] conditional knockout transgenic mice and discover brain developmental defects in two lines of universal [Gene Name] knockout mice. We also discovered the infertility in males of these two lines of universal [Gene Name] knockout mice. These findings support the clinical observation that [Gene Name] mutation is closely associated with neurodevelopmental disorders such as mental retardation, autism, etc. These valuable models and resource will expand our research capacity. In zebrafish studies, we found that [Gene Name] is required for early stage of neurogenesis and late neuronal lineage differentiation. This finding is consistent with our finding in mouse using in vitro neural stem cell culture and in vivo lineage analysis.	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)	
R01				.	MH_Survey1B_148	Large samples of sick patients are available for study in china, and in contrast, it is very difficult to do this work in the US because only small sample are available.	Language Barriers	Securing required approvals (IRB and others)

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		The USA side released the funds in a timely way but China side delayed the release date and also reduced the funding amount significantly as compared with the funds estimated or promised at the application period.	The China team focuses on the role and mechanism of [Gene Name] in neurogenesis in zebrafish. In the first year, they have characterized the dynamic changes in neural induction and lineage differentiation in zebrafish after [Gene Name] morpholino knockdown. By in situ hybridization, they found that down-regulation of [Protein Name] decreased the number of NSCs in zebrafish embryos at 24 h post-fertilization (hpf) determined by the levels of [Protein Name] and [Protein Name]. However, the number of NSCs recovered to normal levels at 48 hpf. The formation of motor neurons was reduced obviously. Knockdown of [Protein Name] inhibited the expression of [Gene Name], the earliest marker of pan-neuronal cells in the fore-, mid- and hindbrain at 48 hpf, and disturbed [Gene Name] expression pattern suggested abnormal morphology of brain. The expression pattern of [Protein Name] was significantly increased in the morphants, but the [Protein Name] expression	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	We have been collaborating investigators on a different project	Other: Co-mentoring graduate students
Type/Length of award	Biospecimen sharing or transfer	We have Chinese /American member of our team which help, and we visit china frequently but the distance, and expense is a problem, and language is a problem for Chinese visiting our lab. IRB problem are unnecessarily complex, over ritualized, and this hold up the study, making it hard to do in a short period of funding. The inability to ship DNA from China to US is a problem and we have trained Chinese to do the assays in China.	1) Dr. [Named Individual], from the [Chinese Institution] joint our laboratory in Chicago from May to September 2015 to became familiar with the methods used to study the biomarkers. 2) The Chinese laboratory team began to collect the lymphocyte samples and have now collected approximately 150 out of 390 expected samples.	I have collaborated with him/her before	We have been collaborating investigators on a different project		

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
Other	He/she knew of my research and contacted me to work on this project	Other We knew each other since college	Other			Our findings suggest that [Gene Name] is essential for early neurogenesis and neuronal lineage differentiation. These findings will help to develop therapeutic strategies that will improve neurogenesis and functional recovery for neurodevelopmental disorders and neurodegenerative diseases. The detailed molecular and cellular mechanisms of the [Gene Name]/[Gene Name] signaling and their downstream targets in the differentiation of NSCs will advance our understanding of the embryonic and adult neurogenesis, and further unveil the critical barriers for the therapeutic approaches for neural diseases.	(b) (6)	
	A colleague introduced me to my international collaborating investigator					Our work may potentially lead to a better treatment for schizophrenia.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
[redacted]								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
(b) (6)							

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together
				We have received funding to continue this project together	We are applying for funding to continue this project together	.	We have received funding to continue this project together	We are applying for funding to continue this project together

	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
	.	This international collaboration project is very useful to combine the strength of both sides and facilitate science advancement. Such project should be expanded to at least annual funding announcement. Also, the number of application proposals should be not limited to only one for each collaborator. We have several interesting projects for collaboration but the restriction for applicant qualification prevented further collaboration. The funding power for this US-China R01 mechanism is too small. We are doing the same tasks as regular NIH-R01 but this US-China R01 grant funded only $125,000 direct cost per year, similar to the exploratory NIH-R21 grant.
	.	.
	.	DK

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			R01AI106498-01	Aspartic Protease Inhibitors as Novel Antimalarials	Malaria is an international health crisis that demands international partnerships to combat it, particularly due to the rise in drug resistant strains of the parasite. Without this grant, it would be difficult to continue this important work that could benefit the hundreds of thousands who die every year due to malaria. This grant allowed the US team with expertise in drug discovery combine with the Chinese team with lab and clinical expertise in malaria biology to explore novel mechanisms for antimalarial drug discovery.	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences)	
R01				R01 AI 106629	Regulation of HIV-1 Gene Expression in Latency by YY1, RuvB2	This study activated a cooperative investigation into the role of post-transcriptional regulation in maintainance of HIV-1 latency in patients during long-term treatment with antivirals. It connected the US lab, with experience in NMD and the ZAP antiviral protein, with the China lab with expertise in RuvB2 and also with ZAP. While we were natural partners and with close ties, this grant allowed us to pursue work that neither could sustain without this new funding. We both have moved into the area of latency, and into study of primary human cells, as a result.	Securing required approvals (IRB and others)	

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		Mostly technical difficulties due to internet connections/audio problems during teleconferences using either Skype or Fuze Meeting. Also, finding common meeting times to conduct full team meetings is challenging due to the 13-14 hour time difference. However, these challenges were not insurmountable.	Synthesis of new analogs and assay of compounds in enzyme, parasite and animal models.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism		
		We had difficulties with IRB approvals in the US, but these were not related to the international collaboration. We simply had not worked with patient materials before and had to learn how to deal with obtaining approvals.	We have uncovered a mechanism by which RuvB2 regulates expression of HIV-1 Gag, and does so in response to levels of the Env protein. A paper describing these findings is under review. Work to address the role of NMD and ZAP is underway.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism	

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	A colleague introduced me to my international collaborating investigator					Our findings will hopefully result in the identification of novel antimalaria drug candidates for further testing and/or identification of new biological targets that could be exploited to identify new antimalarial drugs.	(b) (6)	
We have been collaborating investigators on a different project	I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project				This work is providing information about the suppression of HIV-1 gene expression in latently infected cells. The work may directly suggest methods, including the use of small molecules, that would be suitable for "shock and kill" induction of virus and clearance of latent virus pools.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	
				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	

	Please explain why you have no plans to collaborate on other projects:	**Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).**
	.	DK
	.	These awards are very helpful for both participants. The plan works well; we could probably use more funding committed to the program!

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01			(b) (6)	AI106586-01	HBV Response to Tenofovir or Lamivudine-Based ART in HIV-HBV Co-Infected Chinese	We have been able to study HIV-HBV co infection in China while building research capacity in the lab in Beijing. One of the collaborators from (b) (6) lab spent 3 months in my laboratory learning techniques for HBV and HCV. We have also been able to study HIV-HCV co-infection in china as a bonus to what we proposed to do.	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences)	Type/Length of award
R01				R01AI106633	Antiviral Synergism of Inhibitors Targeting HIV-1 Env and Host Cell Receptors	This project offers the opportunity to expand research on HIV-1 antagonists and cell entry inhibitors. Access to unique CCR5 and CXCR4 inhibitors from the Long Laboratory is afforded in order to evaluate potential for identifying combinations of virus Env gp120 - target cell coreceptor inhibitors. A new opportunity also is being afforded to design and test covalent fusions that will combine peptide triazole HIV-1 inactivators targeting gp120 and co-receptor inhibitors targeting CCR5 or CXCR4. Overall, this joint research enables Chinese medicinal chemists and US structural and molecular biologists to work together to develop new combinations of HIV-1 inhibitors targeting both HIV-1 Env gp120 and host cell co-receptors involved in the HIV entry process. Synergistic combinations are being tested with the goal to improve antiviral activity and decrease susceptibility to function-compromising viral resistance.	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences)	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
Data sharing		The internet connection for our telephone meetings is poor at time so they are not always as productive as they should be. Having Jing come to my lab was helpful to facilitate communication. The length of this award is 3 years, which is short for an international collaboration since it took several months to get the appropriate approvals to get started. We have not found an efficient way to share data besides sending large files back and forth. Hopkins has a secure drop box system but the Chinese government does not allow access to that so we were not able to use that feature. It would be helpful to have a secure way to share files that is approved by the Chinese government allowing investigators from China and abroad access.	We have characterized liver disease in a cohort of HIV-HBV co-infected Chinese. We have also characterized HIV-HCV co-infection across China. We have performed HBV DNA testing and and started the immunology work for the study.	I have not collaborated with him/her before			
		Distance and difference in funding start timing for the two project sites caused initial communications gaps. A four month start date delay occurred in China NSFC funding vs US NIH funding. Regular Skype meetings have been established between the Chinese and US laboratories, and the plan is that these will achieve sufficient regularity to accelerate the research program.	The (b) (6) at the Chinese Academy of Science in Shanghai is working on the design and discovery of new CCR5 and CXCR4 antagonists. By analyzing the structures of potent small molecule CCR5 antagonists, our Chinese collaborators deduced a general pharmacophore model of propane-1,3-diamine skeleton flanked by two hydrophobic domains for effective CCR5 inhibition. Furthermore, by reassembling the privileged structures based on the pharmacophore model, they identified a series of new structures with potent CCR5 antagonism functions at low nanomolar IC50 values in cell signaling assays. Analyses in our US Lab of the international collaboration have now shown that these compounds also exhibit potent antiviral activities with low nanomolar EC50 values. In addition, by employing a scaffold hopping strategy, our Chinese collaborators discovered new CXCR4 antagonists that again we in the US lab have found to have potent	I have not collaborated with him/her before	Other, see next answer	Other	

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	A colleague introduced me to my international collaborating investigator					Our findings demonstrate the advanced liver disease in a substantial proportion of co-infected subjects as well as the widespread prevalence of both HIV-HBV and HIV-HCV co-infection across China. To date, our data support better screening for viral hepatitis in HIV-infected persons across China.	(b) (6)	
	A colleague introduced me to my international collaborating investigator					Combination therapy is the most likely way to treat HIV-1 due to the risk of resistance to individual inhibitors. Hence, the synergistic combinations (both noncovalent and covalent) we seek in this project could be of great therapeutic value.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
							(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We have discussed ways to continue this project together		.	We have discussed ways to collaborate on another project together	
				OK		So far, the topic of next step funding has not arisen, but the improved momentum of our current project, enhanced by recent use of Skype meetings, is bolstering our chances to obtain strong results, and in turn this will set the stage to consider next step funding development.	DK	

	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
	.	A longer period of funding would be most beneficial since collaborations internationally especially in developing countries takes time to get started. Until you actually work on a project, you don't have a good sense of what their capabilities are and what kind of training is needed. Getting the IRB approvals also takes time and cuts into the time for research.
	New project development has simply not yet been addressed. Nonetheless, further progress in the current project and increasing awareness of the combined expertises and mutual interests of the Chaiken/Drexel and Long/CAS laboratories could well lead to future efforts.	Better anticipate distance limitations; accelerate establishment of vehicles such as regular Skype meetings.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			R01 AI106574	Inhibition of HIV by GPI-anchored antibody derivatives	The project brings together an HIV virologist (b) (6) a vaccinologist (b) (6) nd immunotherapist (b) (6) to drive forward a cure strategy. We have developed new ideas for how membrane-associated anti-scFv with neutralizing capacity against HIV can be used to protect ex vivo expanded T-cells for adaptive T-cell therapy for HIV infection and how these scFvs might be incorporated into new constructs to engineer improved T-cell function and clearance of HIV.	Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)
R01				R01HL064560	IL2/Treg-based immunity to TB and AIDS-related TB	Our findings indicated that strong responses of CD8+ T effectors and TB-reactive Yδ T effectors correlated with prevention from latent to active TB.	I did not experience any challenges due to the international collaboration	

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		Funding of the Chinese investigator seems to lag behind NIH funding to the US investigator, slowing the research. The limited funding creates challenges for carrying out the research.	For our studies, the Chinese investigator has produced many of the constructs we have tested since he is the expert in antibody cloning. His laboratory typically carries out the initial investigations testing the expression and anti-HIV inhibitory activity of all the constructs in cell lines before sending to us to test in primary cell culture models. The work has been high quality and generally timely. We had worked together before, so our research relationship is quite strong.	I have collaborated with him/her before	We have been collaborating investigators on a different project		
		N/A	Study was designed by USA PI and China PI. In this study, both HIV + TB and HIV + LTB groups had low levels of PPD-specific IFNgamma+ CD4+ T cells regardless of CD4+ peripheral blood lymphocytes counts. However, numbers of PPD-specific IFNgamma+ CD8+ T cells in the HIV + LTB group were significantly greater than those in the HIV + TB group. Surprisingly, numbers of phosphoantigen hydroxy-3-methyl-but-2-enyl pyrophosphate-specific IFNgamma+ Vgamma2Vdelta2+ T cells in the HIV + LTB group were much greater than those in the HIV + TB group ($P < 0.001$). This difference was present in the subgroups of HIV + LTB whatever the levels of CD4+ T-cell counts more than 200/microl or less than 200/microl. Numbers of hydroxy-3-methyl-but-2-enyl pyrophosphate-specific IFNgamma+ Vgamma2Vdelta2+ T cells were even five times greater than those of PPD-specific IFNgamma+ CD8 T cells within the HIV + LTB group. Our data indicated the potent immune	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab		

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	Other We had previously worked at the same institution in the US.					N/A	(b) (6)	
	Other He worked at my Lab.	Other				Enhance understanding anti-TB immunity in HIV+ humans.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
(b) (6)							

How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
									(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We have discussed ways to continue this project together		.	We are applying for funding to collaborate on another project together	
				We are applying for funding to continue this project together		.	We are applying for funding to collaborate on another project together	

	Please explain why you have no plans to collaborate on other projects:	**Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).**
	.	One of the challenges of collaborating with a scientist in China is sending and receiving reagents. These collaborations would be considerably easier if the process could be improved.
	.	Continue to support this program.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)				MH_Survey1B_119	Unique ability to study the impact of dramatic rural vs urban childhoods on adult brain functioning, given a) the large differences in these environments in China the last 20 years, b) the ability of the collaborating institution to conduct, in partnership with the US institution, state-of-the-art neuroimaging (MRI) studies at a high throughput.	Type/Length of award	
R01				R01CA177337	HBV Replication and Carcinogenesis	HBV is the major cause of hepatocellular carcinoma in China. The support of this grant has allowed me to share my unique HBV transgenic mouse model with (b) (6) who has expertise in DNA-damage response and a large collection of clinical specimens from HBV and HCC patients in China. We have collaborated to study the mechanism of HBV-induced hepatocarcinogenesis. Through this research collaboration, we discovered that HBV could increase the population of CD133+CD49f+ stem-like cells in the liver. We also elucidated the role of autophagy in hepatocarcinogenesis and how it affects the population of tumor-initiating stem-like cells.	I did not experience any challenges due to the international collaboration	

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		A longer award period would have been more ideal as it takes time to set up human studies, even in the US.	We have to date recruited some 140 + human subjects into the study, all of whom completed very detailed clinical, neuropsychological, genetic (blood draw) and neuroimaging (MRI) protocols. We have recruited and trained some 10+ local research students/ associates who are highly motivated to do this work. Quality control procedures have also been established.	I have not collaborated with him/her before	.	.	.
		N/A	(b) (6) has assisted us to study the mechanism of HBV-induced hepatocarcinogenesis. He has analyzed HBV-infected hepatocytes for the identification of CD133+ cells. He is also helping us to analyze the effect of HBV and autophagy on the expression of Nanog and Myc, two genes important for maintaining stem cells. He has also taken a sabbatical leave to my lab and sent his postdoctoral research associate Dr. (b) to my lab to collaborate with me on our research on HBV carcinogenesis.	I have not collaborated with him/her before	.	.	.

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
.	A colleague introduced me to my international collaborating investigator	.	.	.	.	As we understand the biology of how childhood environment affects brain function associated with risk for psychosis, we may better understand early intervention and prevention strategies.	(b) (6)	
.	He/she knew of my research and contacted me to work on this project	I knew of his/her research and contacted him/her to work on this project	.	.	.	Our findings indicated the possibility of targeting the autophagic pathway to treat HBV-induced HCC.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
[redacted]							

(b) (6)

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
(b) (6)								

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together
				We have discussed ways to collaborate on another project together	.	.	We have discussed ways to collaborate on another project together	.

	Please explain why you have no plans to collaborate on other projects:	**Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).**
	.	More funding partnerships eg between NIH and Chinese Ministry of Health or Ministry of Science and Technology on public health, human health related research of common interest.
.	.	This grant has provided a wonderful opportunity for me to collaborate with my Chinese colleagues in China and I hope this bi-national funding mechanism can continue in the future.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.
R01	(b) (6)			R01AI106613	The role of cell wall lipids in pathogenesis of rifampin-resistant TB	This study has created the opportunity to collect and analyze Mycobacterium tuberculosis clinical isolates with monoresistance to rifampin and to expand research capacity to include metabolomics and lipidomics studies.	Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)
R01				R01 DA037244	The HIV-1 and HCV Transmission Bottleneck in Chinese Injection Drug Users	Because of the collaboration between Chinese and US investigators, this study enabled the study of plasma samples from Chinese injection drug users. The experiments are still ongoing, but the collaboration allows us to apply US-based sequencing technology to samples unique to China. The collaboration has also enabled our Chinese counterparts to develop new techniques at their laboratories.	Securing required approvals (IRB and others)	Acquisition or synchronization of release of funds between US and international funding

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	What was the nature of your previous collaboration(s)? (please mark all that apply)	
		There was a delay of ~ 1 year in obtaining the funding while the grant was being reviewed by the Chinese authorities. Also, the amount and duration of funding limits our abilities to conduct in-depth analyses on the clinical isolates obtained from our Chinese collaborators.	The Chinese team of collaborators at (b) (6) have collected M. tuberculosis clinical isolates with resistance to the first-line anti-TB drug, rifampin. They have confirmed phenotypic susceptibility to the other first-line and second-line agents and are performing DNA sequencing to analyze drug resistance mutations. They will send us samples for further analysis, including transcriptomics and lipidomics.	I have collaborated with him/her before	We have been collaborating investigators on a different project	-	-
Biospecimen sharing or transfer	-	First major challenge: The US portion of the grant was funded 6 months prior to the Chinese portion, significantly delaying our ability to start the research. Because of the significant time and energy needed to obtain permission to ship biospecimens out of China (for us, 18 months from funding), we were unable to start any US based experiments and all studies had to be conducted in China for the first 1.5 years of the grant. The 6 month delay in Chinese funding was, therefore, particularly damaging. Second major challenge: obtaining permission to ship specimens out of China. This took 18 months.	Our application described a 50/50 split of the actual lab experiments between the two teams. Because the shipment of biospecimens was not approved until March 2015, the vast majority of the work was performed by the Chinese lab team with direct input from the US PI. The Chinese lab team organized the biospecimens, had them shipped to the central Beijing lab, screened for HIV and HCV acute infection, genotyped the HIV and HCV positive samples, performed single genome sequencing of the HIV specimens (about 2/3 of samples) and began sequencing of some of the HCV samples.	I have not collaborated with him/her before	-	-	-

What was the nature of your previous collaboration(s)? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
.	He/she knew of my research and contacted me to work on this project	.	.	.	.	We will determine if there are specific genetic mutations, which can compensate for the fitness cost associated with rifampin resistance-conferring mutations. This information could pave the way for new treatment strategies to treat multidrug-resistant TB and novel rapid molecular diagnostics to identify rifampin resistance.	(b) (6)	
.	A colleague introduced me to my international collaborating investigator	.	.	.	.	Understanding the transmission bottleneck in HIV and HCV infection for IDUs will have important public health implications as we work to better prevent HIV and HCV in this unique group.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?
(b) (6)							

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
								(b) (6)

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this project:	What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
(b) (6)				We are applying for funding to continue this project together	We have discussed ways to continue this project together	.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together
				DK	.	We are still in the middle of the experiments. Depending on our results, we hope to plan for potential future projects.	DK	.

	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
	.	The review process between the two agencies (NIH and foreign) may be better coordinated so that that there is a joint funding decision at the same time.
.	.	Strongly suggest that the US and Chinese agencies coordinate the timing of the grant awards. Similar start dates would significantly improve efficiency of project ramp-up.

n=18

Challenges	I did not experience any challenges due to the international collaboration	4
	Securing required approvals (IRB and others)	3
	Type/Length of award	7
	Acquisition or synchronization of release of funds between US and international funding	3
	Biospecimen sharing or transfer	3
	Language Barriers	1
	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences)	3

Have collaborated before:	
	11
Have not collaborated before:	
	4
We have been collaborating investigators on a different project	8
We were collaborating investigators on this project under a different funding mechanism	3
He/she was a post doctoral fellow in my lab	2
Other	2

How did you identify your international collaborating investigator?	
I knew of his/her research and contacted him/her to work on this	4
He/she knew of my research and contacted me to work on this project	6
A colleague introduced me to my international collaborating investigator	7
Other	4

How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
Total	39		22		35		19		27

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	What, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, medical procedures, and lab/bench techniques)?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?
4		43		Total	39		44		23
				DK	4		3		3

How many people from the international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in medical procedures specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?
31		46		39		11		42
4		4		2				4

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	
We have discussed ways to continue this project together	12
We are applying for funding to continue this project together	6
We have received funding to continue this project together	2
DK	1

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.	
We have received funding to collaborate on another project together	1
We are applying for funding to collaborate on another project together	6
We have discussed ways to collaborate on another project together	12

Award Type	R01	R01	R01
PI			(b) (6)
Inst tution			
Coll. Invest.			
Grant No.	R01NS083435	5R01NS083503-02	N/A
Title	US-Ch na Collabo at ve Resea ch on St oke Imag ng	Culp t Plaque n Acute Ce eb al Infa ct on A H stolog cal and MRI Assessment	T spec f c Mult valent HIV-1 Inact vato Comb ned w th Act vato as a St ategy fo Cu ng A DS
Please describe any unique scientific findings or opportunit es created by this study, spec fically because it involved co laboration between U S. and nternat onal scientists.	Th s co labo at on has g eatly expanded my cl n cal reea ch capac ty.	St oke s a lead ng cause of mo tal ty and long te m se ous d sab l ty globally, and ce eb ovascula athe oscle os s s a majo et olog c cont buto . However , autopsy ev dence suggests that the locat on of the culp t plaque espons ble fo schem c st oke may va y by age, w th nt ac an al d sease mo e p evalent amongst As ans, and ext ac an al ca ot d h gh- sk plaques mo e common amongst Caucas ans. The ove all goal of ou p oposal s to compa e the locat on of h gh- sk culp t plaques n past ents who have had a ecent schem c ante o -c culat on at oke n Be j ng and n the U S. us ng h gh- eso ut on MRI. Fu the mo e, we a m to exam ne whethe the e s an assoc at on between genet c and env ronmental sk facto s and the f b rous cap uptu e by h stology and MRI n the two coho ts. Thus, the fund ng p ov ded by NINDS and NSFC p ov des a un que oppo tun ty to establ sh standa d zed mag ng and h stolog cal p otocols, conduct c oss-cultu al analyses, and has helped to establ sh a foundat on fo futu e co labo at ve reea ch stud es.	Novel potent, c oss- eact ve HIV-1 nh b to s we e gene ated and cha acte zed by comb n ng the expe t se of NCI g oup and the co labo at ng g oup n Ch na. These nh b to s a e h ghly p om s ng as d ug cand dates fo p event on and the apy of HIV 1 nfect on.
Please mark each area where you encountered challenges that were caused by the nternat onal collaborat on.	I d d not expe ence any challenges due to the nte nat onal collabo at on	Secu ng equ ed app ovals (IRB and othe s), Type/Length of awa d, Acquis t on o synch on zat on of elease of funds between US and nte nat onal fund ng agenc es (f appl cable), Bi ospec men sha ng o t ansfe	Type/Length of awa d, Acquis t on o synch on zat on of elease of funds between US and nte nat onal fund ng agenc es (f appl cable)
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, secur ng required approvals, communicat ons, type/length of award, acqu sition/synchronization of funds, biospecimen shar ng/transfer, data shar ng, and/or other).	N/A	Secu ng RB app oval was a majo ba e , as ou espect ve nst tut onal ew aw boa ds had not often dealt w th jo ntly funded stud es such as ou s. Mult ple quest ons we e a sked egu d ng p ocesses fo data t ansfe , analys s of the h stolog cal spec mens, and plans fo GWAS dbGaP data-sha ng. As such, funds fo the p oject we e not eleased unt l ea ly 2014 wh ch has delayed sub ect en ollment. The du at on th ee yea s) and cap on awa d to $200 000 (d ect plus nd ect) has been a cha lenge, g ven the numbe of subjects needed fo ec u tment, study p ocedu e costs, and t avel expenses.	The awa d to U S. nvest gato s s too small ($50,000 pe yea) to conduct non-human p mate stud es and somet mes was not ece ved t mely. In add t on, the suppo t s not cont nuous wh ch makes t d ff cult fo us to t anslate ou f nd ngs to human cl n cal t als.
Please give a short summary of the work completed by the international laboratory/team for this study.	The nte nat onal team w l be pe fo m ng spec f c Aim 2. Dete m ne the cha acte st cs and cl n cal values of pH mag ng of hype acute and acute schem c st oke pat ents (n = 200). Th s ncludes human sub ect ec u tment, MRI data acqu s t on, mag ng analys s, and stat st cal analys s.	Deep te the cha lenges desc bed above, majo techn cal accompl shments have been ach eved du ng yea 1 that esulted n s gn f cant mp ovement fo nt ac an al a te al wa l MR mag ng, an deta led s ou f nd yea annual epo t. Fu the mo e, 3D mage analys s tools have been developed that mp ove the eff c ency and ep oduc b l ty of ca ot d and nt ac an al vessel wall mage analys s. Wo k ng closely w th collabo ato s n Be j ng, stands d zat on and one te t a n ng was pe fo med fo p ocedu es to esc se the ca ot d plaque ntact w th m n mal d s upt on du ng ca ot d enda te ectomy, sect on ng and sta n ng of the spec men n ts ent ety, and t ansfe of d g t zed mages of the h stolog cal sl des to th (b) (6) fo analys s. Follow ng IRB app oval, p ocedu es and Th test spec mens that we e collected du ng ca ot d enda te ectomy p ocedu es pe fo med at T antan Hosp tal n Be j ng. Du ng the s te v s t to T antan Hosp tal, p ocedu es fo sample collect on and genotyp ng we e ev ewed and stands d zed to those pe fo med at th (b)	Ou collabo ato s n Ch na tested a comb nat on of ou ant bod es w th the pept de-based nh b to s fo syne g st c effects on neut al z ng HIV-1. They dent f ed the best comb nat ons and have gene ated a se es of fus on p otе ns of the ant bod es and pept des. They a e cu ently estens vely cha acte z ng the fus on p otе ns n te ms of neut al z ng act v ty and d ug- elated p ope t es. Ou g oup n NCI has been test ng the fus on p otе ns n human zed m ce and found that they potently supp essed HIV-1 nfect on and eff c ently k lled HIV-1-infected ce ls. Non-human p mate stud es have been planed.
Had you collaborated w th your fo low principal invest gator prior to this project?	I have collabo ated w th h m/he befo e	I have not collabo ated w th h m/he befo e	I have co labo ated w th h m/he befo e
What was the nature of your previous collaborat on(s)? (please mark all that apply)	We have been collabo at ng nvest gato s on a d ffe ent p oject	Othe Many of the key facu ty co- nvest gato s at the Ch (b) (6) fo me sen o eea ch fellows n ou labo ato y at the (b) (6) s the depa tmental cha man.	We have been collabo at ng nvest gato s on a d ffe ent p o ect
How did you identify your international collaborat ng invest gator? (please mark all that apply)	I knew of h s/he eea ch and contacted h m/he to wo k on th s p oject	A co league nt oduced me to my nte nat onal collabo at ng nvest gato , Othe (b) s the depa tmental cha man of ou key co- nvest gato s w s (b) me fellows n ou eea ch lab	He/she knew of my eea ch and contacted me to wo k on th s p oject
Please describe how your findings may be used to nform the development or implementation of hea th programs	OK	St oke s a lead ng cause of death n Ch na. The standa d zed p otocols fo h gh- eso ut on plaque mag ng, h stolog cal p ocess ng, and genotyp ng estabi shed n th s study w l st eami ne fu the cl n cal eea ch p ng ams at ou espect ve nst tut ons. We have al eady begun to mplement ou state-of-the-a t mag ng p ocedu es at othe med cal cente s th oughout Ch na. Us ng these techn ques, ou goal s to mp ove ou ab l ty to dent fy those at sk fo the development of h gh- sk ce eb ovascula d sease at an ea l e stage, and to p ov de bette tools fo select on of app op ate the apy fo seconda y st oke p event on.	The novel h ghly potent HIV-1 nh b to s that we gene ated th ough the collabo at on a e among the best cu ently ava lable and a e potent ally useful fo p event on and the apy of HIV-1 nfect on.
How many people from the US laboratory/team were trained in quant tative data collect on and analysis specifically for this pro ect?			(b) (6)
How many people from the US laboratory/team were trained in qual tative data co lection and analysis (e.g. focus group d scussions, guided nterviews, etc.) spec f cally for th s project?			
How many people from the US laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in grant wr ting specifica ly for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in sc entific manuscript writ ng spec fica ly for this project?			
How many people from the US laboratory/team were trained in medical procedures spec f cally for th s pro ect?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fica ly for this project?			
What, if any, other areas did members of the US laboratory/team rece ve tra ning in spec f cally for th s pro ect (excluding quant tative and qualitative data collection/analysis, IRB/bioethics, grant/manuscr pt writ ng, medical procedures, and lab/bench techn ques)?			
How many people from the International laboratory/team were trained in quant tative data collection and analysis specifically for this project?			
How many people from the International laboratory/team were trained in qual tative data collect on and analysis (e.g. focus group discussion, gu ded nterviews, etc.) spec f cally for th s pro ect?			
How many people from the International laboratory/team were trained in b oethics or IRB rules and regulations specifically for this project?			
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in grant writing specifically for this project?			
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in scientific manuscript wr ting specifically for this project?			
How many people from the International laboratory/team were trained in med cal procedures spec fica ly for this project?			
How many people from the International laboratory/team were trained in adm nistrat ve and financ al grant management specifically for this project?			
How many people from the International laboratory/team were trained in lab or bench sc ence techniques spec f cally for th s project?			
What, if any, other areas did members of the international laboratory/team rece ve training in spec fica ly for this project (excluding quantitat ve and qual tative data collect on/analysis, IRB/bioeth cs, grant/manuscr pt writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fo low principal invest gator on this project? Please mark a l that apply.	We have d scussed ways to cont nue th s p oject togethe	We have d scussed ways to cont nue th s p oject togethe	We have ece ved fund ng to cont nue th s p oject togethe
Please explain why you have no plans to continue to collaborate on this project	.	.	.
What, if any, plans do you have (or efforts have you made) to cont nue co laborating with your fellow or ncipal nvestigator on other project(s)? Please mark all that apply.	We have ece ved fund ng to collabo ate on anothe p oject togethe We a e apply ng fo fund ng to collabo ate on anothe p oject togethe have d scussed ways to collabo ate on anothe p o ect togethe	We have d scussed ways to collabo ate on anothe p oject togethe	We have d scussed ways to collabo ate on anothe p o ect togethe
Please explain why you have no plans to collaborate on other projects	.	.	.
Please provide any other feedback or suggestions to mprove nternational co laborations. (This could include suggestions on the process of applying for and receiv ng funding for nternat onal collaborat ons).	OK	Suppo t f om th s novel, o nt fund ng mechan sm has allowed establ shment of a st ong foundat on fo futu e co labo at ve eea ch, by help ng to standa d ze p otocols ac oss s tes. It s d ff cult to f nd othe sou ces fo fund ng nte nat onal collabo at ve eea ch, and we h ghly ecommend that the Jo nt NINDS/NSFC ventu e be cons de ed fo renewal.	The p ocess of apply ng fo the fund ng should be s mpl f ed. Cu ently, two p oposals a e equ ed to be subm tted to NIH and NSFC of Ch na sepa ately, wh ch takes unnecessa y mo e t me and effo ts.

Award Type	R01	R01	R01
PI	(b) (6)		
Inst tution			
Coll. Invest.			
Grant No.	R01CA177372	R01CA177377	.
Title	The Role of m RNA Netwo k n Gast c Cance	KSHV m c oRNAs n ce lula t ansfo mat on and tumo genes s	Mill_Su vey18_130
Please describe any unique scientific findings or opportunit es created by this study, spec fically because it involved co laboration between U S. and nternat onal scientists.	collabo at on w th ou Ch nese pa tne s to take advantage of the la ge numbe of pat ents w th gast c cance that a e ava lable n the nat tut on. Fo t he t me n l fe stu e, we we e able to analyse and compa e changes n the m RNA and RNA exp ess on netwo ks n ou TFF1 knockout mouse model of gast c cance to human gast c cance pat ents samples. The expe ments p ov ded by NCI we e not ssential to move ou co labo at on fo wa d. I have hosted a Ph.D. student n my lab who has completed h s Ph.D. deg ee and etu ned back to my lab to pu sue a post docto al t a n ng. To date mo e than 40 samples f om m ce and 100 human t ssue samples have been analysed us ng Next Gene at on sequenc ng. Th ough th s mechan sm, we have been successful n expand ng ou exper ch capac t es at both s tes and pe fo m ng analys s of a un que sample that s ava lable n each nst tut on. Ou second phase of val dat on of data and develop ng b oma ke s fo ea ly detect on of gast c cance and/o mon to ng response to the apy s tra t ng. W th the except onal t ssue and se um b otbank ng n Ch na, we have the oppo tun ty to move ou esults f om bench to bed to dec ease the bu den of gast c cance , the	The collabo at on has expanded ou exper ch capac ty to del neate the funct ons of KSHV and cellula m c oRNAs, and the r oles n KSHV- nduced pathogenes s and KSHV l fe cycle. Spec f ca ly, t has allowed us to exam ne the r oles of KSHV and ce lula m c oRNAs n ce l nvas on and ang ogenes s and KSHV l fe cycle, and the unde ly ng mechan sms that med ate these p ocesses.	Th s s an exome sequenc ng p oject, we have not f n shed the sequenc ng yet, so we don t have anyth ng mpo tant to epo t at th s t me. We d d analyzed some GWAS data of As an popular ons and compa ed them w th that of Caucas ans. P el m na y esu ts nd cated that the e we e substant al ove laps n genet c sks between As ans and Caucas ans. Th s p oject d d p ov de us an oppo tun ty to access valuable sch zoph en a pat ent samples. Ch na, wh ch s not poss ble othe w se s nce the Ch nese gove nment p oh b ts DNA sample f om leav ng Ch na, even fo the pu pose of sc ent f c exper ch. Th s collabo at ve p o ect p ov des an avenue fo sha ng data p oduced by ou Ch nese collabo ato s.
Please mark each area where you encountered challenges that were caused by the nternat onal collaborat on.	I d d not expe ence any challenges due to the nte nat onal collabo	Type/Length of awa d	Othe
Please describe each of the challenges caused by the international collaborat on that you marked on the previous question (language barriers, secur ng required approvals, communicat ons, type/length of award, acqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	N/A	The g ant s fo 3 yea s, wh ch has somewhat l m ted the extent of co labo at on as these a e long-te m p oject.	The Ch nese gove nment educed the funds by 40% to my collabo ato , the effo e, they have to scale down what we p oposed to do.
Please give a short summary of the work completed by the International laboratory/team for this study.	(b) team have collected and bu lt a gast c t ssue bank and ha ve over 500 human gast c cance t ssue samples w th adjacent non-cance and no mal gast c t ssue as we l as human blood samples. In the f st yea of th s study, they f n shed h stopathology evaluat on, t ssue p ocess ng, RNA pu f cat on, and m RNA and RNA deep sequenc ng of 119 human gast c t ssue samples. The b o nfo mat cs analys s has been completed by the Ch nese pa tne . Follow ng consu tat on w th ou b o nfo mat cs at (b) we have equested and ece ved the aw sequenc ng data (~3 Ch na (500 GB). These esu ts w ll be analyzed togethe w th ou sequenc ng data f om mouse t ssues to establ sh ma ke s elated to H pylo nfect on and ea ly stages of gast c cance .	The Ch na team has exam ned KSHV p e-m RNAs and m RNAs on ce lula t ansfo mat on, and dent f ed those that egulate ce l g owth, su v val, ang ogenes s and mmun. They have also dent f ed seve al novel ta gets of KSHV m RNAs, wh ch has led to the del neat on of the mechan sm of act on. Fu the mo e, the Ch na team has expanded the scope and dent f ed KSHV and ce lula m RNAs that nh b t KSHV lyt c epl cat on.	We have establ shed cons stent sequenc ng p pel ne to ensu e that all samples a e sequenced by the same methods and standa ds. We also appl ed the same c te a fo sample select on. Both s des have ste ted send ng samples fo sequenc ng.
Had you collaborated w th your fo low principal invest gator prior to this project?	I have collabo ated w th h m/he befo e	I have not collabo ated w th h m/he befo e	I have collabo ated w th h m/he befo e
What was the nature of your previous collaborat on(s)? (please mark all that apply)	We have been collabo at ng nvest gato s on a d ffe ent p oject	.	Othe we wo ked togethe as coautho s to c oss ve fy f ndings f om each othe .
How did you identify your international collaborat ng invest gator? (please mark all that apply)	. A colleague nt oduced me to my nte nat onal co labo at ng nve	I knew of h s/he exper ch and contacted h m/he to wo k on th s p oject, I met h m/he at a p ofess onal meet ng	I knew of h s/he exper ch and contacted h m/he to wo k on th s p o ect, He/she knew of my exper ch and contacted me to wo k on th s p o ect, I met h m/he at a p ofess onal meet ng, Othe We we e coauthe s on seve al pape s.
Please describe how your findings may be used to nform the development or implementation of hea th programs	Ou second phase of val dat on of data and develop ng b oma ke s fo ea ly detect on of gast c cance and/o mon to ng esponse to the apy s tra t ng. W th the except onal t ssue and se um b otbank ng n Ch na, we have the oppo tun ty to move ou esults f om bench to bed to dec ease the bu den of gast c cance , the second most f equent cance wo ld-w de.	The esults of these collabo at ve wo ks allow us to bette unde stand the pathogenes s of KSHV- nduced mal gnanc es and the molecula bas s of KSHV l fe cycle. The knowledge can be used to develop novel the apeut c app oaches fo KSHV- elated mal gnanc es.	The e may be ethn c spec f c genet c sks fo sch zoph en a. By compa ng these sk facto s between d ffe ent ethn c popular ons, t p ov des the bas s f the e should be d ffe ent mplementat on of health pol c es on d ffe ent ethn c popular ons.
How many people from the US laboratory/team were trained in quant tative data collect on and analysis specifically for this pro ect?	(b) (6)		
How many people from the US laboratory/team were trained in qual tative data co lection and analysis (e.g. focus group d scussions, guided nterviews, etc.) spec fically for th s project?			
How many people from the US laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in grant wr ting specifica ly for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in sc entific manuscript writ ng spec fically for this project?			
How many people from the US laboratory/team were trained in medical procedures specif cally for th s pro ect?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fica ly for this project?			
What, if any, other areas did members of the US laboratory/team rece ve tra ning in specif cally for th s pro ect (excluding quant tative and qualitative data collection/analysis, RB/bioethics, grant/manuscr pt writ ng, medical procedures, and lab/bench techn ques)?			
How many people from the International laboratory/team were trained in quant tative data collection and analysis specifically for this project?			
How many people from the International laboratory/team were trained in qual tative data collect on and analysis (e.g. focus group discussion, gu ded nterviews, etc.) specif cally for th s pro ect?			
How many people from the International laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?			
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in grant writing specifically for this project?			
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in scientific manuscript wr ting specifica ly for this project?			
How many people from the International laboratory/team were trained in med cal procedures spec fica ly for this project?			
How many people from the International laboratory/team were trained in adm nistrat ve and financ al grant management specifica ly for this project?			
How many people from the International laboratory/team were trained in lab or bench sc ence techniques specif cally for th s pro ect?			
What, if any, other areas did members of the nternational laboratory/team rece ve tra ning in spec fica ly for this project (excluding quantitat ve and qual tative data collection/analysis, RB/bioeth cs, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fo low principal invest gator on this project? Please mark a l that apply.	We have d scussed ways to cont nue th s p o ect togethe	We have d scussed ways to cont nue th s p oject togethe	We a e apply ng fo fund ng to cont nue th s p oject togethe , We have d scussed ways to cont nue th s p oject togethe
Please explain why you have no plans to continue to collaborate on this project	.	.	.
What, if any, plans do you have (or efforts have you made) to cont nue co laborating with your fellow pr ncipal nvestigator on other project(s)? Please mark all that apply.	We have d scussed ways to co labo ate on anothe p oject togethe	We have d scussed ways to collabo ate on anothe p oject togethe	We have d scussed ways to collabo ate on anothe p oject togethe
Please explain why you have no plans to collaborate on other projects	.	.	.
Please provide any other feedback or suggestions to mprove nternational co laborations. (This could include suggestions on the process of applying for and receiv ng funding for nternat onal collaborat ons).	nte nat onal collabo at ons should be offe ed the oppo tun ty to go fo a compet t ve renewal/evaluat on to renew the funds to cont nue the collabo at ve rese ch fo wa d. A th ee yea one t me fund ng s not eal st c to ach eve a s gn f cant global mpact.	Th s g ant has eally helped the rese ch p og ams n both s des. I suggest that NIH cont nues to suppo t the p og ams, dea ly w th a RFA fo renewal appl cat on. The fund ng pe od was sho t (3 yea s) and the amount was sma l, wh ch had l m ted the scope of co labo at on. I ecommend a 5 yea s co labo at ve p o ect w th each yea 's fund ng amount s m la to a t ad t onal R01, wh ch s $250,000 pe yea .	my co labo ato s know ve y l ttle of NIH g ant appl cat on p ocess, and whethe they can apply fo g ants f om US gove nment. t would be ve y helpful that these pol c es can be made eady fo them.

Award Type	R01	R01	R01
PI			(b) (6)
Inst tution			
Coll. Invest.			
Grant No.			
Title	MH_Su vey1B_133	MH_Su vey1B_148	Aspa t c P otease Inh b to s as Novel Ant mala als
Please describe any unique scientific findings or opportunit es created by this study, spec fically because it involved co laboration between U S. and nternat onal scientists.	Th s co labo at ve fund ng a lowed us to cha acte ze two l nes of [Gene Name] cond t onal knockout t ansgen c m ce and d scove b a n developmental defects n two l nes of un ve sal [Gene Name] knockout m ce. We also d scove ed the nfe t l ty n males of these two l nes of un ve sal [Gene Name] knockout m ce. These f nd ngs suppo t the cl n cal obse vat on that [Gene Name] mutat on s closely assoc ated w th neu odevelopmental d so de s such as mental eta dat on, aut sm, etc. These valuable models and esou ce w ll expand ou esea ch capac ty. In zeb af sh stud es, we found that [Gene Name] s equ ed fo ea ly stage of neu ogenes s and late neu onal l neage d ffe ent at on. Th s f nd ng s cons stent w th ou f nd ng n mouse us ng n v t o neu al stem ce l cultu e and n v vo l neage analy s.	La ge samples of s ck pat ents a e ava lable fo study n ch na, and n cont ast, t s ve y d ff cu t to do th s wo k n the US because only sma l sample a e ava lable.	Mala a s an nte nat onal hea th c s s that demands nte nat onal pa tne sh ps to combat t, pa t cula ly due to the se n d ug es stant st a ns of the pa as te. W thout th s g ant, t would be d ff cult to cont nue th s mpo tant wo k that could benef t the hund eds of thousands who d e eve y yea due to mala a. Th s g ant allowed the US team w th expe t se n d ug d scove y comb ne w th the Ch nese team w th lab and cl n cal expe t se n mala a b ology to explo e novel mechan sms fo ant mala al d ug d scove y.
Please mark each area where you encountered challenges that were caused by the nternat onal collaborat on.	Acqu s t on o synch on zat on of elease of funds between US and nte nat onal fund ng agenc es (f appl cable)	Language Ba e s, Secu ng equ ed app ovals (IRB and othe s), Type/Length of awa d, B ospec men sha ng o t ansfe	Commun cat ons (e.g. schedul ng, poo telephone/ nte net connect on, cu tu al d ffe ences)
Please describe each of the challenges caused by the international collaborat on that you marked on the previous question (language barriers, secur ng required approvals, communicat ons, type/length of award, acqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	The USA s de eleased the funds n a t mely way but Ch na s de delayed the elease date and also educed the fund ng amount s gn f cantly as compa ed w th the funds est mated o p om sed at the appl cat on pe od.	We have Ch nese /Ame can membe of ou team wh ch help, and we v s t ch na f equently but the d stance, and expense s a p oblem, and language s a p oblem fo Ch nese v s t ng ou lab. IRB p oblem a e unnecessa ly complex, ove tual zed, and th s hold up the study, mak ng t ha d to do n a sho t pe od of fund ng. The nab l ty to sh p DNA f om Ch na to US s a p oblem and we have t a ned Ch nese to do the assays n Ch na.	Mostly techn cal d ff cult es due to nte net connect ons/aud o p oblems du ng teleconfe ences us ng e the Skype o Fuze Meet ng. Also, f nd ng common meet ng t mes to conduct full team meet ngs s cha leng ng due to the 13-14 hou t me d ffe ence. Howeve , these challenges we e not nsu mountable.
Please give a short summary of the work completed by the international laboratory/team for this study.	Name] n neu ogenes s n zeb af sh. In the f st yea , they have cha acte zed the dynam c changes n neu al nduct on and l neage d ffe ent at on n zeb af sh afte [Gene Name] mo ghol no knockdown. By n s tu hyb d zat on, they found that down- egulat on of [P ote n Name] dec eased the numbe of NSCs n zeb af sh emb yos at 24 h post fe t l zat on (hpf) dete m ned by the levels of P ote n Name] and [P ote n Name]. Howeve , the numbe of NSCs ecove ed to no mal levels at 48 hpf. The fo mat on of moto neu ons was educed obv ously. Knockdown of [P ote n Name] nh b ted the exp ess on of [Gene Name], the ea l est ma ke of pan-neu onal calls n the fo e , m d- and h ndb a n at 48 hpf, and d stu bed [Gene Name] exp ess on patte n suggested abno mal mo phology of b a n. The exp ess on patte n of [P ote n Name] was s gn f cantly nc eased n the mo phants, but the [P ote n Name] exp ess on was d stu bed n the h ndb a n. The [P ote n Name] exp ess on was nc eased n the end of h ndb a n when n bp was knockdown. F nally, the flo mat on of senso y neu ons was not a fected at 96 hpf because [P ote n Name] exp ess on was s m la between the cont ol emb yos and	1) D . [Named Ind v dual], f om the [Ch nese Inst tut on] o nt ou labo ato y n Ch cago f om May to Septembe 2015 to became fam l a w th the methods used to study the b oma ke s. 2) The Ch nese labo ato y team began to collect the lymphocyte samples and have now collected app ox mately 150 out of 390 expected samples.	Synthes s of new analogs and assay of compounds n enzyme, pa as te and an mal models.
Had you collaborated w th your fe low principal invest gator prior to this project?	I have collabo ated w th h m/he befo e	I have co labo ated w th h m/he befo e	I have collabo ated w th h m/he befo e
What was the nature of your previous collaborat on(s)? (please mark all that apply)	We we e co labo at ng nvest gato s on th s p oject unde a d ffe ent fund ng mechan sm, We have been collabo at ng nvest gato s on a d ffe ent p oject, Othe Co-mento ng g aduate students	We have been co labo at ng nvest gato s on a d ffe ent p oject	We we e collabo at ng nvest gato s on th s p o ect unde a d ffe ent fund ng mechan sm
How did you identify your international collaborat ng invest gator? (please mark all that apply)	, He/she knew of my esea ch and contacted me to wo k on th s p oject, Othe We knew each othe s nce co lege	A colleague nt oduced me to my nte nat onal collabo at ng nvest gato	A co league nt oduced me to my nte nat onal co labo at ng nvest gato
Please describe how your findings may be used to nform the development or implementation of hea th programs	Ou f nd ngs suggest that [Gene Name] s essent al fo ea ly neu ogenes s and neu onal l neage d ffe ent at on. These f nd ngs w ll help to develop the apeut c st ateg es that w l mp ove neu ogenes s and funct onal ecove y fo neu odevelopmental d so de s and neu odegene at ve d seases. The deta led molecula and cellula mechan sms of the [Gene Name]/[Gene Name] s gnal ng and the downst eam ta gets n the d ffe ent at on of NSCs w l advance ou unde stand ng of the emb yon c and adult neu ogenes s, and fu the unve l the c t cal ba e s fo the th t h f l	Ou wo k may potent ally lead to a bette t eatment fo h h	Ou f nd ngs w ll hopefu ly esult n the dent f cat on of novel ant mala a d ug cand dates fo fu the test ng and/o dent f cat on of new b olog cal ta gets that could be explo ted to dent fy new t l l
How many people from the US laboratory/team were trained in quant tative data collect on and analysis specifically for this pro ect?			(b) (6)
How many people from the US laboratory/team were trained in qual tative data co lection and analysis (e.g. focus group d scussions, guided nterviews, etc.) specif cally for th s project?			
How many people from the US laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in grant wr ting specifica ly for this project?			
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in sc entific manuscript writ ng spec fically for this project?			
How many people from the US laboratory/team were trained in medical procedures specif cally for th s pro ect?			
How many people from the US laboratory/team were trained in lab or bench science techniques spec fica ly for this project?			
What, if any, other areas did members of the US laboratory/team rece ve tra ning in specif cally for th s pro ect (excluding quant tative and qualitative data collection/analysis, IRB/bioethics, grant/manuscr pt writ ng, medical procedures, and lab/bench techn ques)?			
How many people from the international laboratory/team were trained in quant tative data collection and analysis specifically for this project?			
How many people from the international laboratory/team were trained in qual tative data collect on and analysis (e.g. focus group discussion, gu ded nterviews, etc.) specif cally for th s pro ect?			
How many people from the international laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?			
How many people from the international laboratory/team were trained (e ther through mentoring or training courses) in grant writing specifically for this project?			
How many people from the international laboratory/team were trained (e ther through mentoring or training courses) in scientific manuscript wr ting specifically for this project?			
How many people from the international laboratory/team were trained in med cal procedures spec fica ly for this project?			
How many people from the international laboratory/team were trained in adm nistrat ve and financ al grant management specifica ly for this project?			
How many people from the international laboratory/team were trained in lab or bench sc ence techniques specif cally for th s pro ect?			
What, if any, other areas did members of the nternational laboratory/team rece ve training in spec fica ly for this project (excluding quantitat ve and qual tative data collection/analysis, IRB/bioeth cs, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fe low principal invest gator on this project? Please mark a l that apply.	We a e apply ng fo fund ng to cont nue th s p oject togethe , We have d scussed ways to cont nue th s p oject togethe	We have ece ved fund ng to cont nue th s p oject togethe , We a e apply ng fo fund ng to cont nue th s p o ect togethe	We have d scussed ways to cont nue th s p o ect togethe
Please explain why you have no plans to continue to collaborate on this project	.	.	.
What, if any, plans do you have (or efforts have you made) to cont nue co laborating with your fellow pr ncipal nvestigator on other project(s)? Please mark all that apply.	We a e apply ng fo fund ng to collabo ate on anothe p oject togethe , We have d scussed ways to co labo ate on anothe p oject togethe	We have ece ved fund ng to cont nue th s p oject togethe , We a e apply ng fo fund ng to cont nue th s p o ect togethe	We have d scussed ways to collabo ate on anothe p oject togethe
Please explain why you have no plans to collaborate on other projects		.	.
Please provide any other feedback or suggestions to mprove nternational co laborations. (This could include suggestions on the process of applying for and receiv ng funding for nternat onal collaborat ons).	Th s nte nat onal collabo at on p oject s ve y useful to comb ne the st engths of both s des and fac l tate sc ence advancement. Such p o ect should be expanded to at least annual fund ng announcement. Also, the numbe of appl cat on p oposals should be not l m ted to only one fo each collabo ato . We have seve al nte est ng p ojects fo co labo at on but the est ct on fo appl cant qual f cat on p evented fu the collabo at on. The fund ng powe fo th s US-Ch na R01 mechan sm s too small.	.	DK

Award Type	R01	R01
PI		(b) (6)
Inst tution		
Coll. Invest.		
Grant No.	R01 AI 106629	AI106586-01
Title	Regulat on of HIV-1 Gene Exp ess on n Latency by YY1, Rav82	HIV Response to Tenofov o Lam vud ne-Based ART n HIV-HBV Co-Infected Ch nese
Please describe any unique scientific findings or opportunit es created by this study, spec fically because it involved co laboration between U S. and nternat onal scientists.	Th s study act vated a coope at ve nvest gat on nto the ole of post-t ansc pt onal egulat on n ma nta nance of HIV-1 latency n pat ents du ng long-te m t eatment w th ant v rals. It connected the US lab, w th expe ence n NMD and the ZAP ant v ral p ote n, w th the Ch na lab w th expe t se n Rav82 and also w th ZAP. Wh le we we e natu al pa tne s and w th close t es, th s g ant a lowed us to pu sue wo k that ne the could susta n w thout th s new fund ng. We both have moved nto the a ea of latency, and nto study of p ma y human ce ls, as a esult.	We have been able to study HIV-HBV co- nfect on n Ch na wh le bu l ng ea ch capac ty n the lab n Be j ng. One of the collabo ato s f om lab spent 3 months n my labo ato y lea n ng techn ques fo HBV and HCV. We have also been able to study HIV-HCV co- nfect on n ch na as a bonus to what we p oposed to do.
Please mark each area where you encountered challenges that were caused by the nternat onal collaborat on.	Secu ng equ ed app ovals (IRB and othe s)	Commun cat ons (e.g. schedul ng, poo telephone/ nte net connect on, cultu al d ffe ences), Type/Length of awa d, Data sha ng
Please describe each of the challenges caused by the international collaborat on that you marked on the previous question (language barriers, secur ng required approvals, communicat ons, type/length of award, acqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	We had d ff cu t ies w th IRB app ovals n the US, but these we e not elated to the nte nat onal collabo at on. We s mply had not wo ked w th pat ent mate als befo e and had to lea n how to deal w th obta n ng app ovals.	The nte net connect on fo ou telephone meet ngs s poo at t me so they a e not always as p oduct ve as they should be. Hav n come to my lab was helpful to fac l tate commun cat on. The length of t ne d x 3 yea s, wh ch s sho t fo an nte nat onal collabo at on s nce t took seve al months to get the app op ate app ovals to get sta ted. We have not found an eff c ent way to sha e data bes des send ng la ge f les back and fo th (b) has a secu e d cp box system but the Ch nese gove nment does not allow access to that so we we e not able to use that featu e. It would be helpful to have a secu e way to sha e f les that s app oved by the Ch nese gove nment allow ng nvest gato s f om Ch na and ab oad access.
Please give a short summary of the work completed by the international laboratory/team for this study.	We have uncove ed a mechan sm by wh ch Rav82 egulates exp ess on of HIV-1 Gag, and does so n esponse to levels of the Env p ote n. A pape desc b ng these f nd ngs s unde ew ew. Wo k to add ess the ole of NMD and ZAP s unde way.	We have cha acte zed l ve d sease n a coho t of HIV-HBV co- nfected Ch nese. We have also cha acte zed HIV-HCV co- nfect on ac oss Ch na. We have pe fo med HBV DNA test ng and and sta ted the mmunology wo k fo the study.
Had you collaborated w th your fo low principal invest gator prior to this project?	I have collabo ated w th h m/he befo e	I have not collabo ated w th h m/he befo e
What was the nature of your previous collaborat on(s)? (please mark all that apply)	He/she was a post docto al fellow n my lab, We we e collabo at ng nvest gato s on th s p oject unde a d ffe ent fund ng mechan sm, We have been co labo at ng nvest gato s on a d ffe ent p oject	-
How did you identify your international collaborat ng invest gator? (please mark all that apply)	I knew of h s/he exas ch and contacted h m/he to wo k on th s p o ect, He/she knew of my exas ch and contacted me to wo k on th s p oject	A co league nt oduced me to my nte nat onal co labo at ng nvest gato
Please describe how your findings may be used to nform the development or implementation of hea th programs	Th s wo k s p ov d ng nfo mat on about the supp ess on of HIV-1 gene exp ess on n latently nfected ce ls. The wo k may d rectly suggest methods, nclud ng the use of small molecules, that would be su table fo shock and k l nduct on of v us and clea ance of latent v us pools.	Ou f nd ngs demonst ate the advanced l ve d sease n a substant al p opo t on of co- nfected subjects as we l as the w deep exp evalence of both HIV-HBV and HIV HCV co- nfect on ac oss Ch na. To date, ou data suppo t bette sc een ng fo v al hepat t s n HIV- nfected pe sons ac oss Ch na.
How many people from the US laboratory/team were trained in quant tative data collect on and analysis specifically for this pro ect?		(b) (6)
How many people from the US laboratory/team were trained in qual tative data co lection and analysis (e.g. focus group d scussions, guided nterviews, etc.) spec fically for th s project?		
How many people from the US laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in grant wr ting specifica ly for this project?		
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in sc entific manuscript writ ng spec fica ly for this project?		
How many people from the US laboratory/team were trained in medical procedures specif cally for th s pro ect?		
How many people from the US laboratory/team were trained in lab or bench science techniques spec fica ly for this project?		
What, if any, other areas did members of the US laboratory/team rece ve tra ning in specif cally for th s pro ect (excluding quant tative and qualitative data collection/analysis, RB/bioethics, grant/manuscr pt writ ng, medical procedures, and lab/bench techn ques)?		
How many people from the International laboratory/team were trained in quantitative data collection and analysis specifically for this project?		
How many people from the International laboratory/team were trained in qual tative data collect on and analysis (e.g. focus group discussion, gu ded nterviews, etc.) specif cally for th s pro ect?		
How many people from the International laboratory/team were trained in b oethics or IRB rules and regulations specifically for this project?		
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) n grant writing specifically for this project?		
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) n scientific manuscript wr ting specifically for this project?		
How many people from the International laboratory/team were trained in med cal procedures spec fica ly for this project?		
How many people from the International laboratory/team were trained in adm nistrat ve and financ al grant management specifically for this project?		
How many people from the International laboratory/team were trained in lab or bench sc ence techniques specif cally for th s project?		
What, if any, other areas did members of the nternational laboratory/team rece ve training in spec fica ly for this project (excluding quantitat ve and qual tative data collect on/analysis, IRB/bioeth cs, grant/manuscr pt writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fo low principal invest gator on this project? Please mark a l that apply.	We have d scussed ways to cont nue th s p o ect togethe	We have d scussed ways to cont nue th s p oject togethe
Please explain why you have no plans to continue to collaborate on this project	-	-
What, if any, plans do you have (or efforts have you made) to cont nue co laborating with your fellow or ncipal nvestigator on other project(s)? Please mark all that apply.	We have d scussed ways to co labo ate on anothe p oject togethe	We have d scussed ways to collabo ate on anothe p oject togethe
Please explain why you have no plans to collaborate on other projects	-	-
Please provide any other feedback or suggestions to mprove nternational co laborations. (This could include suggestions on the process of applying for and receiv ng funding for nternat onal collaborat ons).	These awa ds a e ve y helpful fo both pa t c pants. The plan wo ks we l we could p obably use mo e fund ng comm tted to the p og ams	A longe pe od of fund ng would be most benef c al s nce collabo at ons nte nat ona ly espec ally n develop ng count es takes t me to get sta ted. Unt l you actually wo k on a p oject, you don't have a good sense of what the capab l t es a e and what k nd of t a n ng s needed. Gett ng the IRB app ovals also takes t me and cuts nto the t me fo esea ch.

Award Type	R01	R01
PI		(b) (6)
Inst tution		
Coll. Invest.		
Grant No.	R01AI106633	R01 AI106574
Title	Ant v al Syne g em of Inh b to s Ta get ng HIV-1 Env and Host Cell Recepto s	Inh b t on of HIV by GPI-ancho ed ant body de vat ves
Please describe any unique scientific findings or opportunit es created by this study, spec fically because it involved co laboration between U S. and nternat onal scientists.	Th s p oject offe s the oppo tun ty to expand exis ch on HIV-1 antagon sts and cell ent y nh b to s. Access to un que CCR5 and CXCR4 nh b to s f om the Long Labo ato y s affo ded n o de to evaluate potent al flo dent fy ng comb nat ons of v us Env gp120 - ta get cell co ecepto nh b to s. A new oppo tun ty also x be ng affo ded to des gn and test covalent flu ons that w ll comb ne pept de t azole HIV 1 nact veto s ta get ng gp120 and co- ecepto nh b to s ta get ng CCR5 o CXCR4. Ove all, th s jo nt exas ch enables Ch nese med c nal chem sts and US st uctu al and molecule b olog sts to wo k togethe to develop new comb nat ons of HIV-1 nh b to s ta get ng both HIV-1 Env gp120 and host cell co- ecepto s involved n the HIV ent y p ocess. Syne g st c comb nat ons a e be ng tested w th the goal to mp ove ant v al act v ty and dec ease suscept b l ty to funct on-comp om s ng v al es stance.	The p oject b ngs togethe an HIV v olog s a vacc nolog s and mmunothe ap st s to d ve lo wa d a cu e nt ategy. We (b) eveloped new s (b) how memb ane-ad ant -scFv w th neut al z ng capac ty ags nst HIV can be used to p otect ex v vo expanded T-cells fo adapt ve T-cell the apy fo HIV nfect on and how these scFvs m ght be nco po ated nto new const ucts to eng nee mp oved T-cell funct on and clea ance of HIV.
Please mark each area where you encountered challenges that were caused by the nternat onal collaborat on.	Commun cat ons [e g, schedul ng, poo telephone/ nte net connect on, cultu al diffe ences], Acqu s t on o synch on zat on of elease of funds between US and nte nat onal fund ng agenc es (f appl cable)	Type/Length of awa d, Acqu s t on o synch on zat on of elease of funds between US and nte nat onal fund ng agenc es (f appl cable)
Please describe each of the challenges caused by the international collaborat on that you marked on the previous question (language barriers, secur ng required approvals, communicat ons, type/length of award, acqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	D stance and diffe ence n fund ng sta t t m ng fo the two p oject s tes caused n t al commun cat ons gaps. A fou month sta t date delay occu ed n Ch na NSFC fund ng vs US N H fund ng. Regula Skype meet ngs have been estabi shed between the Ch nese and US labo ato es, and the plan s that these w l ach eve staff c ent egula ty to accele ate the exas ch p ng an.	Fund ng of the Ch nese nvest gato seems to lag beh nd N H fund ng to the US nvest gato , slow ng the exas ch. The l m ted fund ng c eates cha lenges fo cx y ng out the exas ch.
Please give a short summary of the work completed by the international laboratory/team for this study.	The Long Lab at the Ch nese Academy of Sc ence n Shangha s wo k ng on the des gn and d scove y of new CCR5 and CXCR4 antagon sts. By analyz ng the st uctu es of potent small molecule CCR5 antagon sts, ou Ch nese co labo ato s deduced a gene al pha macropha e model of p opane-1,3-d am ne skeleton flanked by two hyd ophob c doma ns fo effect ve CCR5 nh b t on. Fu the mo e, by easembl ng the p v laged st uctu es based on the pha macropha e model, they dent f ed a ew es of new st uctu es w th potent CCR5 antagon sm funct ons at low nanomola IC50 values n cell s gnal ng assays. Analyses n ou US Lab of the nte nat onal collabo at on have now shown that these compounds also exh b t potent ant v al act v t es w th low nanomola EC50 values. In addi t on, by employ ng a scaffold hopp ng st ategy, ou Ch nese collabo ato s d scove ed new CXCR4 antagon sts that aga n we n the US lab have found to have potent ant v al act v t es and h gh select v ty. Impo tantly, these compounds avo d ca d otoxc ty such as the adve se QT nte val p olongat on effect typ ca ly found w th p ev ously dent f ed CXCR4 antagon sts. The newly d scove ed small molecule CCR5 and CXCR4 nh b to s, w th novel scaffolds, se ve as cand dates fo con uget on w th the pept de t azole gp120 nh b to s to gene ate novel ch me c nh b to fus ons ta get ng both co ecepto s and HIV env gp120.	Fo ou stud es, the Ch nese nvest gato has p oduced many of the const ucts we have tested s nce he s the expe t n ant body clon ng. It s labo ato y hyp cally ca es out the n t al nvest gat ons test ng the exp es on and ant -HIV nh b to y act v ty of all the const ucts n ce l l nes befo e send ng to us to test n p ma y cell cultu e models. The wo k has been h gh qual ty and gene ally t mely. We had wo ked togethe befo e, so ou exas ch elat onsh p s qu te st ong.
Had you collaborated w th your fo low principal invest gator prior to this project?	I have not co labo ated w th h m/he befo e	I have co labo ated w th h m/he befo e
What was the nature of your previous collaborat on(s)? (please mark all that apply)	Othe , see next answe	We have been collabo at ng nvest gato s on a d ffe ent p o ect
How did you identify your international collaborat ng invest gator? (please mark all that apply)	A colleague nt oduced me to my nte nat onal collabo at ng nvest gato	Othe We had p ev ously wo ked at the same nst tut on s the US.
Please describe how your findings may be used to nform the development or implementation of hea th programs	Comb nat on the apy s the most l kely way to t eat HIV-1 due to the sk of es stance to nd v dual nh b to s. Hence, the syne g st c comb nat ons (both noncovalent and covalent) we seek n th s p oject could be of g eat the apeut c value.	N/A
How many people from the US laboratory/team were trained in quant tative data collect on and analysis specifically for this pro ect?	(b) (6)	
How many people from the US laboratory/team were trained in qual tative data co lection and analysis (e.g. focus group d scussions, guided nterviews, etc.) spec fically for th s project?		
How many people from the US laboratory/team were trained in bioethics or RB rules and regulations specifically for this project?		
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in grant wr ting specifica ly for this project?		
How many people from the US laboratory/team were trained (e ther through mentoring or tra ning courses) in sc entific manuscript writ ng spec fica ly for this project?		
How many people from the US laboratory/team were trained in medical procedures specif cally for th s pro ect?		
How many people from the US laboratory/team were trained in lab or bench science techniques spec fica ly for this project?		
What, if any, other areas did members of the US laboratory/team rece ve tra ning in specif cally for th s pro ect (excluding quant tative and qualitative data collection/analysis, IRB/bioethics, grant/manuscr pt writ ng, medical procedures, and lab/bench techn ques)?		
How many people from the International laboratory/team were trained in quant tative data collection and analysis specifically for this project?		
How many people from the International laboratory/team were trained in qual tative data collect on and analysis (e.g. focus group discussion, gu ded nterviews, etc.) specif cally for th s pro ect?		
How many people from the International laboratory/team were trained in b oethics or IRB rules and regulations specifically for this project?		
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in grant writing specifically for this project?		
How many people from the International laboratory/team were trained (e ther through mentoring or training courses) in scientific manuscript wr ting specifically for this project?		
How many people from the International laboratory/team were trained in med cal procedures spec fica ly for this project?		
How many people from the International laboratory/team were trained in adm nistrat ve and financ al grant management specifically for this project?		
How many people from the International laboratory/team were trained in lab or bench sc ence techniques specif cally for th s project?		
What, if any, other areas did members of the nternational laboratory/team rece ve training in spec fica ly for this project (excluding quantitat ve and qual tative data collect on/analysis, IRB/bioeth cs, grant/manuscr pt writing, grants management, medical procedures, and lab/bench techniques)?		
What, if any, plans do you have (or efforts have you made) to continue co laborating with your fo low principal invest gator on this project? Please mark a l that apply.	OK	We have d scussed ways to cont nue th s p oject togethe
Please explain why you have no plans to continue to collaborate on this project	So fa , the top c of next step fund ng has not a sen, but the mp oved momentum of ou cu ent p oject, enhanced by ecent use of Skype meet ngs, s bsta ng ou chances to obta n st ong	.
What, if any, plans do you have (or efforts have you made) to cont nue co laborating with your fellow pr ncipal nvestigator on other project(s)? Please mark all that apply.	OK	We a e apply ng fo fund ng to co labo ate on anothe p o ect togethe
Please explain why you have no plans to collaborate on other projects	New p o ect development has s mply not yet been add essed. Nonetheless, fu the p ng ess n the cu ent p oject and nc ea ng mu tiness of the comb ned expe t se and mutual nte ests of the (b) (6) labo ato es could we l lead to futu e e fo ts.	.
Please provide any other feedback or suggestions to mprove nternational co laborations. (This could include suggestions on the process of applying for and receiv ng funding for nternat onal collaborat ons).	Bette ant c pate distance / t me tat ons accele ate establ shment of veh cles such as egula Skype meet ngs.	One of the cha lenges of collabo at ng w th a sc ent st n Ch na s send ng and ece v ng eagents. These co labo at ons would be cons de ably eas e f the p ocess could be mp oved.

Award Type	R01
PI	(b) (6) [redacted]
Institution	
Coll. Invest.	
Grant No.	R01HL064560
T tle	IL2/T eg-based mmun ty to TB and AIDS- elated TB
Please desc ibe any unique sc ent fic findings or opportun ties created by th s study, spec fically because t nvolved co laborat on between U.S. and nternational scientists.	Ou f nd ngs nd cated that st ong esponses of CD8 T e fecto s and TB- eact veΥδ T effecto s co elated w th p event on f om latent to act ve TB.
Please mark each a ea where you encountered cha lenges that were caused by the nternational collaboration.	I d d not expe ence any cha lenges due to the nte nat onal collabo at on
Please desc ibe each of the challenges caused by the internat onal co laboration that you marked on he previous question (language barriers, secur ng required approvals, commun cat ons, type/length o award, acquisition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	
Please give a short summary of the work completed by the nternational laboratory/team for h s study.	
Had you collaborated with your fellow pr nc pal investigator prior to h s pro ect?	
What was he nature of your p evious collaboration(s)? (please ma k all that apply)	N/A
How did you ident fy your internat onal collaborating nvestigator? (please ma k all that apply)	Study was des gned by USA PI and Ch na PI. In th s study, both HIV TB and HIV LTB g oups had low levels of PPD-spec f c IFNgamma CD4 T cells ega dless of CD4 pe phe
Please desc ibe how your f nd ngs may be used to inform the development or implementat on of health prog ams	I have collabo ated w th h m/he befo e
How many people from the US laboratory/team we e trained in quantitat ve data collect on and analysis specifically for this project?	He/she was a post docto al fe low n my lab
How many people from the US laboratory/team we e trained in qual tative data collection and analysis (e.g. focus group d scuss ons, guided interviews, etc.) specif cally for this project?	
How many people from the US laboratory/team we e trained in bioe h cs or IRB rules and regulat ons specif ca ly for this project?	
How many people from the US laboratory/team we e trained (either through mentor ng or training courses) n g ant writ ng specif cally for this project?	
How many people from the US laboratory/team were trained (either through mentor ng or training courses) n scient fic manuscript writ ng specif ca ly for this project?	Othe He wo ked at my Lab.
How many people from the US laboratory/team were trained in med cal procedures spec fically for h s pro ect?	Othe
How many people from the US laboratory/team were trained in lab or bench sc ence techn ques specif ca ly for this project?	
What, if any, other areas did members of the US laborato y/team receive tra n ng n spec fically for h s pro ect (exclud ng quantitative and qual tative data co lection/analysis, IRB/bioethics, grant/manuscript writ ng, med cal procedu es, and lab/bench techn ques)?	
How many people from the nternational laboratory/team were trained in quantitat ve data collection and analys s spec fically for h s pro ect?	
How many people from the nternational laboratory/team were trained in qualitative data collect on nd analys s (e.g. focus group discussion, guided nterv ews, etc.) spec fically for h s pro ect?	Enhance unde stand ng ant -TB mmun ty n HIV humans.
How many people from the nternational laboratory/team were trained in bioeth cs or RB rules and egulations spec fica ly for th s pro ect?	(b) (6) [redacted]
How many people from the nternational laboratory/team were trained (either through mentor ng o ra ning courses) n grant writing spec fically for this p o ect?	
How many people from the nternational laboratory/team were trained (either through mentor ng o ra ning courses) n scientif c manuscr pt writ ng specifically for this project?	
How many people from the nternational laboratory/team were trained in medical procedures pecif ca ly for this project?	
How many people from the nternational laboratory/team were trained in administrative and f nanci rant management spec fically for this pro ect?	
How many people from the nternational laboratory/team were trained in lab or bench science echniques specif ca ly for this project?	
What, if any, other areas did members of the internat onal laboratory/team receive t a n ng in pecif ca ly for this project (excluding quantitat ve and qualitative data collect on/analys s, RB/bioethics, grant/manuscript wr ting, grants management, medical procedures, and lab/bench echniques)?	
What, f any, plans do you have (or efforts have you made) to continue collaborating with yo fe low pr ncipal invest gator on this pro ect? Please mark a l that apply.	
Please explain why you have no plans to continue to collabo ate on th s pro ect	
What, if any, plans do you have (or efforts have you made) to continue co laborat ng with your fellow pr nc pal invest gator on other project(s)? Please mark all that apply.	
Please explain why you have no plans to co laborate on other projects	
Please prov de any other feedback or suggestions to mprove international co laborat ons. (Th s could nclude suggest ons on the process of apply ng for and receiving fund ng for international collaborations).	
	We a e apply ng fo fund ng to cont nue th s p oject togethe
	.
	We a e apply ng fo fund ng to collabo ate on anothe p o ect togethe
	.
	Cont nue to suppo t th s p og am.

AS Publications

Grant No.	Please ist all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	No. Pubs	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Pubs	Pubs	Pubs	Pubs	Pubs
.								
.								
N/A								
R01 AI087849								
5R01AI089999								
30973863 and 81 61120429								
CA-133569								
R37 CA030488								
NOT-CA-12-002								
3PO1CA132714-04S1								
R01AI081995								

(b) (6)

(b) (6)

P01 AI083214

U01-AI-035040

P01AI082274-02

R01 AI087135

U19AI089672

R01 AI080669

AI077343

R01AI093278

1 R01 AI08 604

R01AI0848 6-04

AI049104-15

R01 AI094562

AI069120

CA75093A2	(b) (6)
R01CA140972	

(b) (6)

	sum	47	sum	
	A manuscript is being prepared.	0	A manuscript is being prepared.	
zero pubs		8	International Journal of Cancer	

R01s	
NIMH	Biol. Psychiatry, J Neurogenet, Prog Mol Biol Transl Sci, Schizophr Res., Dialogues in clinical neuroscience, Neurogastroenterology & Moti

Administrative Supplements Publications	
Journal Title	Number of Articles per Journal
Acta Tropica	1
ACS Chemical Biology	2
Advanced Drug Delivery Re	1
AIDS Research and Human	1
American Journal of Neuro	1
Angewandte Chemie Inter	1
Antiviral Research	1
Biomedicine Pharmacothe	1
British Journal of Cancer	1
Carcinogenesis	1
Clinical Microbiology and I	1
Cytotherapy	1
PhD Dissertation	1
European Radiology	1
Food Chemistry	1
Handbook of Therapeutic A	1
Human Brain Mapping	1
International Journal of Ca	1
Journal of Biological Chem	2
Journal of Immunology	1
Journal of Leukocyte Biolo	1
Journal of Theoretical Biolo	1
Journal of Virology	2
Magnetic Resonance in Me	1
Molecular Cell	1
Nature	2
Neuroimage	1
Organic & Biomolecular Ch	1
PLoS Genetics	1
PLoS One	5
PLoS Pathogens	2
Proceedings of the Nationa	1
Science	1
The EMBO Journal	1
Zhonghua Zhong Liu Za Zhi	1
A manuscript is being prep	5
Manuscript submitted	4
No publications yet	8, but 4 are preparing articles

That doesn't count the phd dissertation as 0

Please mark each area where you encountered challenges that were caused by the international collaboration.	
Please mark each area where you encountered challenges that were caused by the international collaboration.	Number of PI Responses
Did not experience any challenges	7
Other	1
Inability to include subcontracts	1
Securing required approvals	1
Language barriers	1
Synchronization of funds	2
Communications	3
Type/Length of award	10
Biospecimen sharing or transfer	11

Had you collaborated with your fellow principal investigator prior to this project?	
I have collaborated with him/her before	16
I have not collaborated with him/her before	10

What was the nature of your previous collaboration(s)? (please mark all that apply)	
We have been collaborating investigators on a different project	6
We were collaborating investigators on this project under a different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	8
Missing	5

Publications	41
A manuscript is being prepared.	4

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue): 20

Patents 1

US Laboratory/Team Capcacity Building	
Number trained in quantitative data collection and analysis	32
Number trained in trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	28
Number people trained in bioethics or IRB rules and regulations	15
Number trained in (either through mentoring or training courses) in grant writing	19
Number trained in(either through mentoring or training courses) in scientific manuscript writing	28
Number trained in medical procedures	4
Number trained in lab or bench science techniques	35

International Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	32
Number trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	27
Number trained in bioethics or IRB rules and regulations	19
Number trained (either through mentoring or training courses) in grant writing	12
Number trained (either through mentoring or training courses) in scientific manuscript writing	30
Number trained in medical procedures	6
Number trained in administrative and financial grant management	9
Number trained in lab or bench science techniques	35

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal	
Don't Know	3
We have received funding to continue this project together	3
We are applying for funding to continue this project together	8
We have discussed ways to continue this project together	19

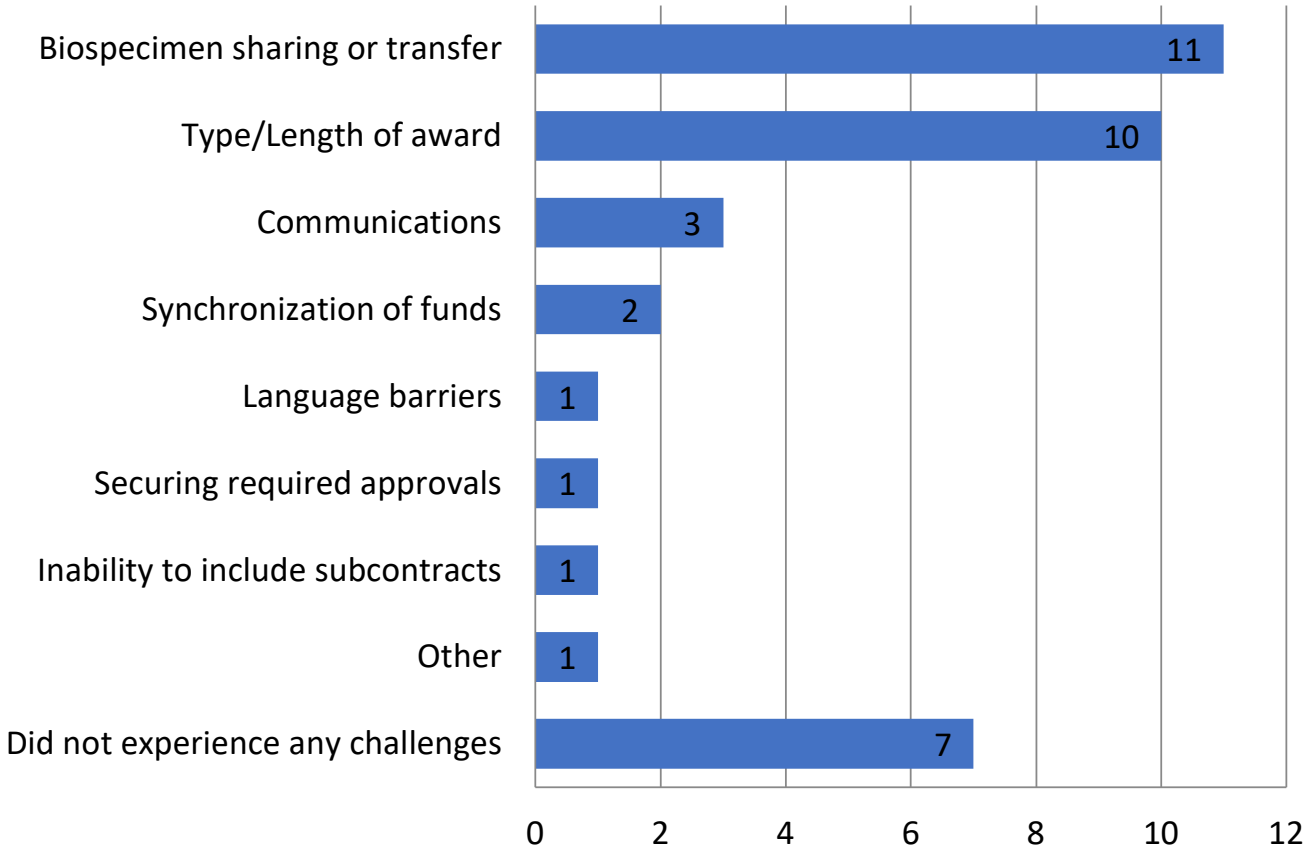
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal	
N/A	1
We have no plans to continue to collaborate	1
Received funding to collaborate on another project	2
Don't Know	3
Applying for funding to collaborate on another project together	4
Discussed ways to collaborate on another project	20

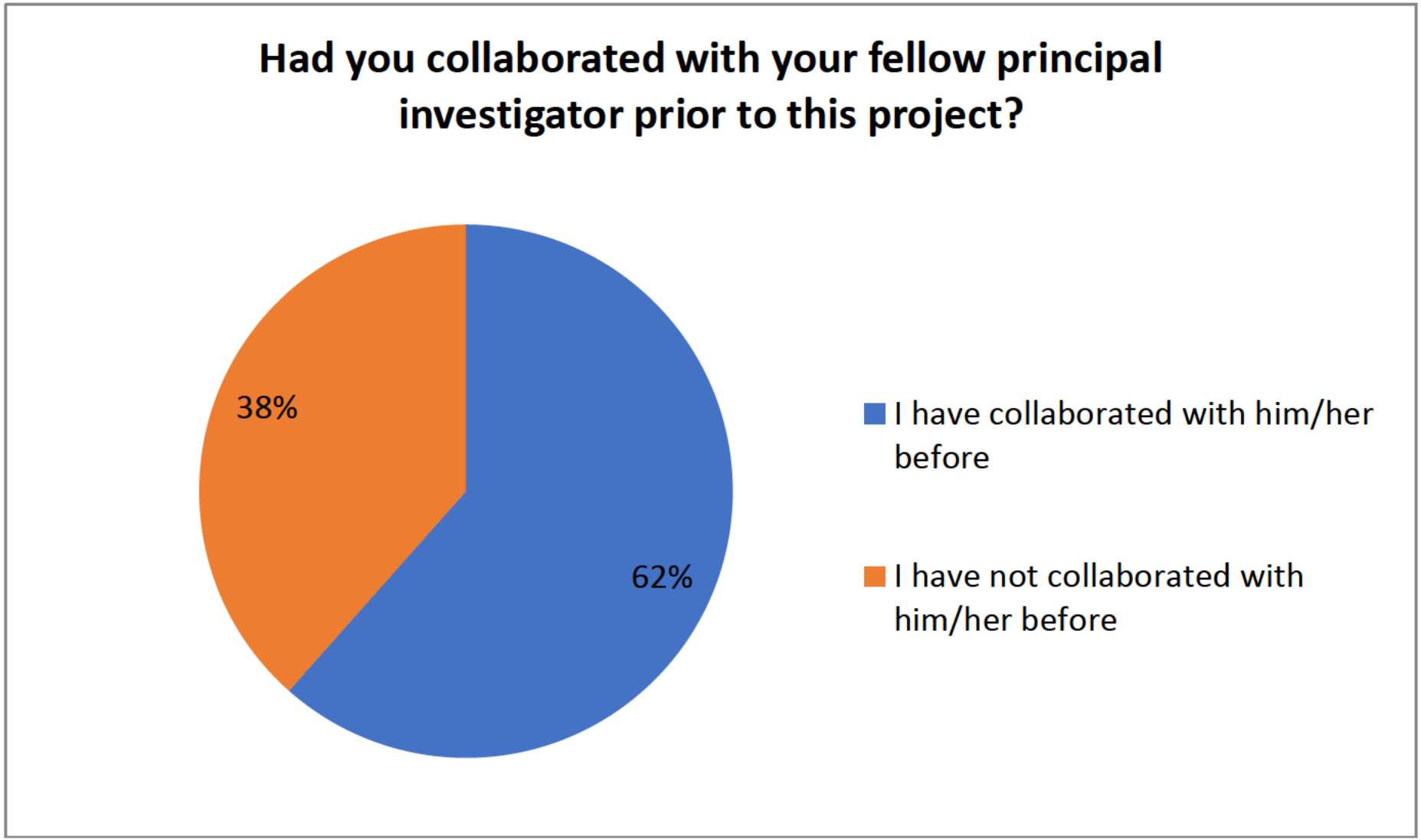
How did you identify your international collaborating investigator? (please mark all that apply)

I met him/her at a professional meeting	1
Other	3
A colleague introduced me to my international collaborating invest	7
He/she knew of my research and contacted me to work on this pro	8
I knew of his/her research and contacted him/her to collaborate	12

Areas where PIs Encountered Challenges caused by the International Collaboration

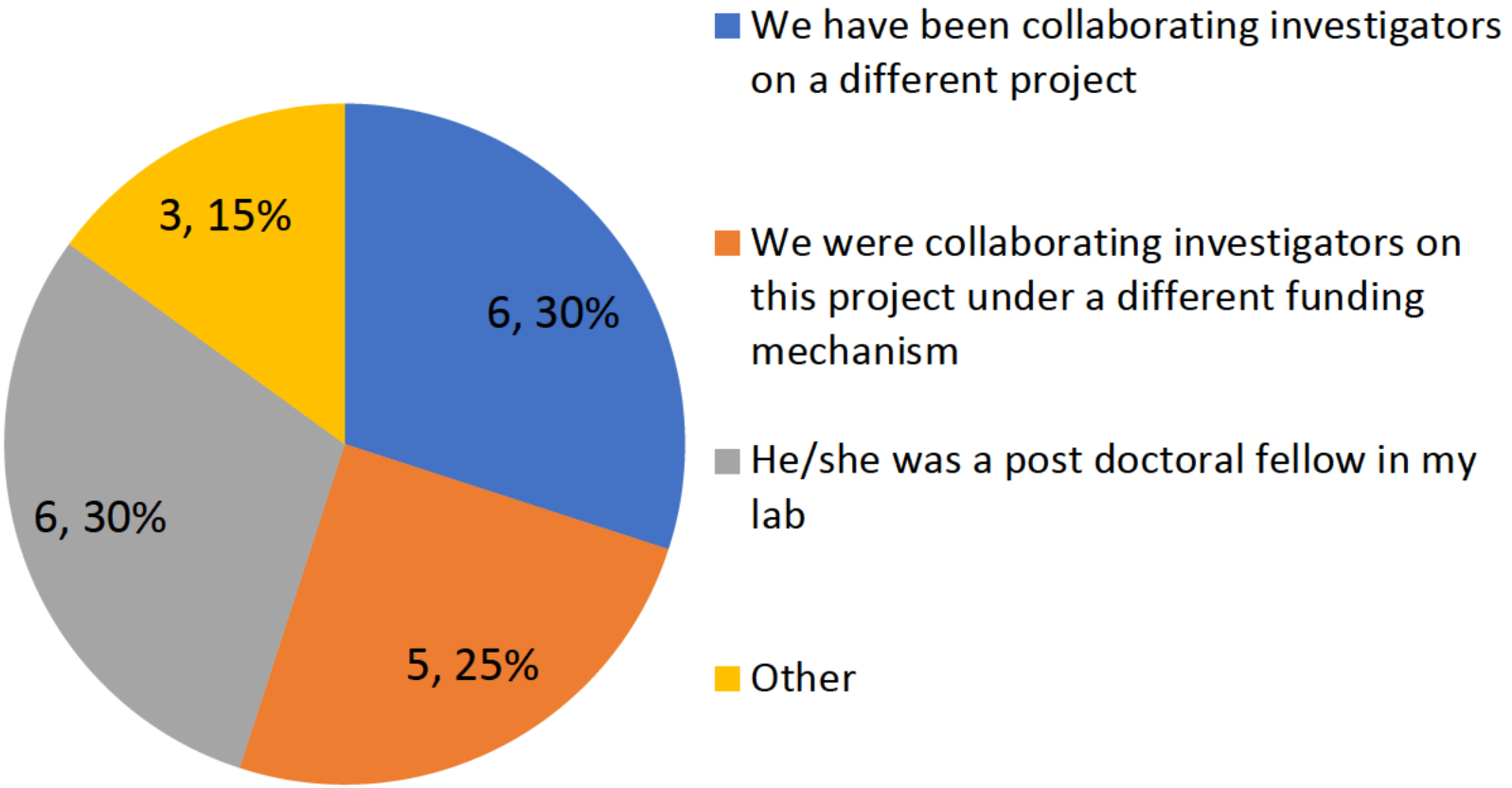
*PIs selected all answers that applied

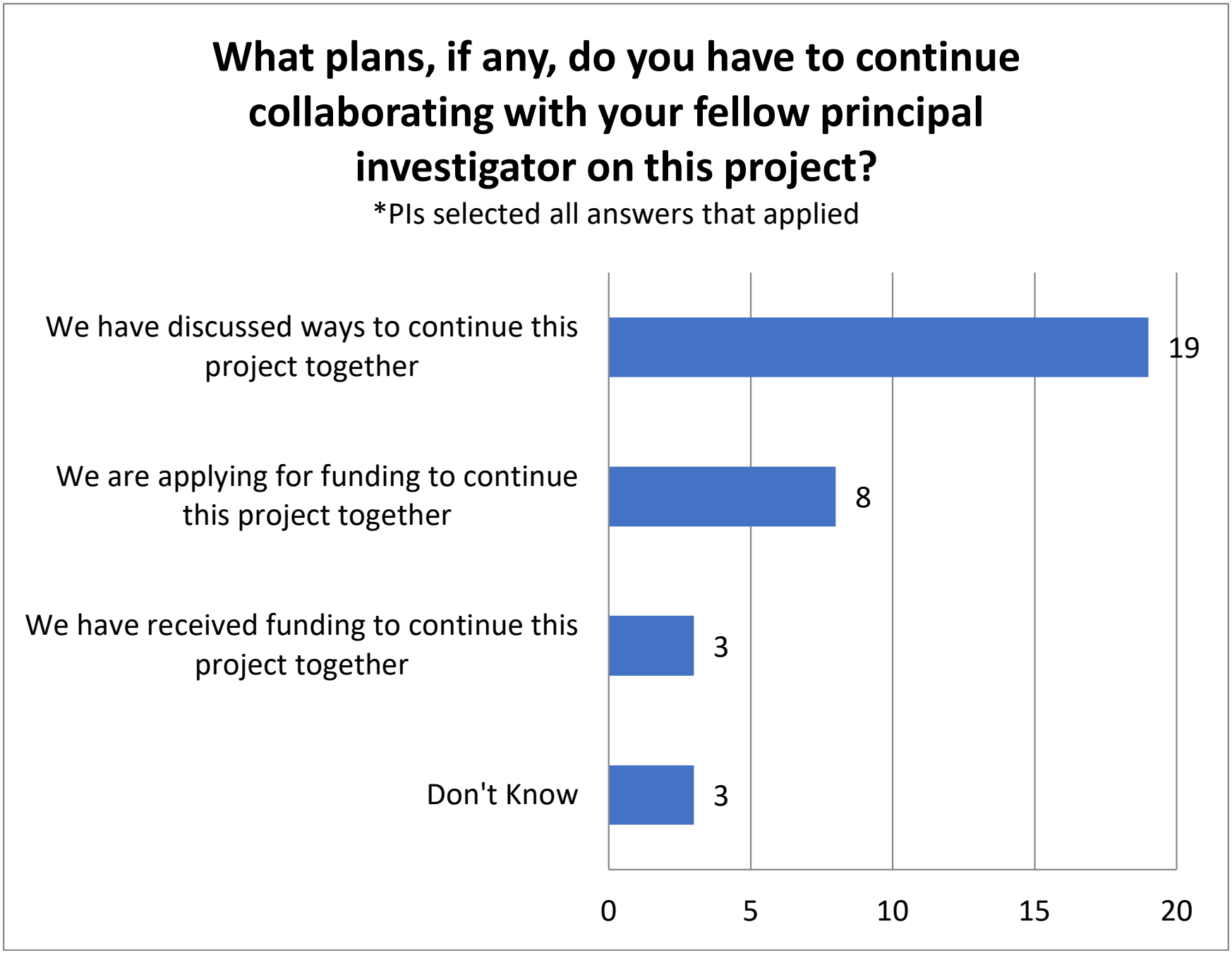



Had you collaborated with your fellow principal investigator prior to this project?
38%
62%
I have collaborated with him/her before
I have not collaborated with him/her before

What was the nature of your previous collaboration(s)?

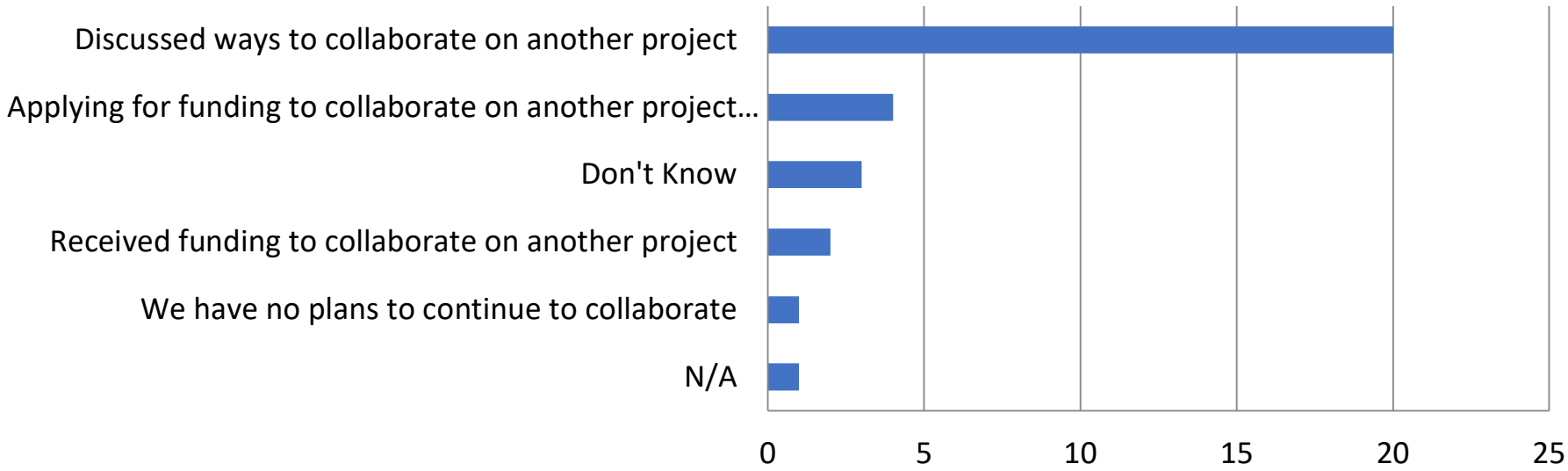
*PIs selected all answers that applied




What plans, if any, do you have to continue collaborating with your fellow principal investigator on this project?
*PIs selected all answers that applied
We have discussed ways to continue this project together
19
We are applying for funding to continue this project together
8
We have received funding to continue this project together
3
Don't Know
3
0
5
10
15
20

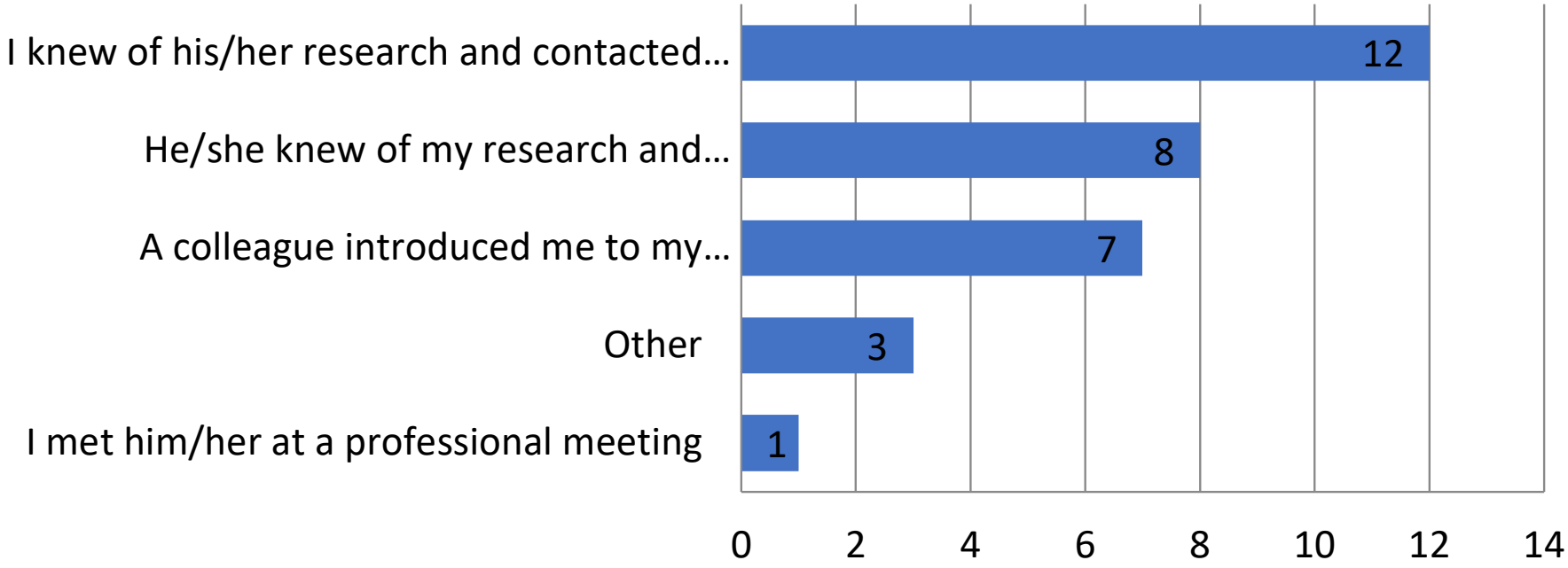
What plans, if any, do you have to continue collaborating with your fellow investigator on other projects?

*PIs selected all answers that applied



How did you identify your international collaborating investigator?

*PIs selected all answers that applied



Language Barriers	1
Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	3
Type/Length of award	10
Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our Chinese partners	1
Securing required approvals (IRBs and others)	1
Biospecimen sharing or transfer	11
I did not experience any challenges due to the international collaboration	7
Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)	2
Other	1

I have collaborated with him/her before	16
I have not collaborated with him/her before	0

We have been collaborating investigators on a different project	6
We were collaborating investigators on this project under a different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	3

How many people from the US laboratory/team were trained in X specifically for this project?

Acta Tropica
ACS Chemical Biology
Advanced Drug Delivery Reviews
AIDS Research and Human Retroviruses
American Journal of Neuroradiology
Angewandte Chemie International Edition
Antiviral Research
Biomedicine Pharmacotherapy
British Journal of Cancer
Carcinogenesis
Clinical Microbiology and Infection
Cytotherapy
Dissertation. https://escholarship.org/uc/item/0wq0v1zt
European Radiology
Food Chemistry
Handbook of Therapeutic Antibodies
Human Brain Mapping
International Journal of Cancer
Journal of Biological Chemistry
Journal of Biological Chemistry
Journal of Immunology
Journal of Leukocyte Biology
Journal of Theoretical Biology
Journal of Virology
Magnetic Resonance in Medicine
Molecular Cell
Neuroimage
Organic & Biomolecular Chemistry
PLoS Genetics
PLoS One
PLoS Pathogens
Proceedings of the National Academy of Sciences, 2013
The EMBO Journal
Zhonghua Zhong Liu Za Zhi

A manuscript is being prepared.
Manuscript submitted

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS	(b) (6)			.	NIMH	MH_Survey1A_101	This administrative supplement facilitated the collaboration between [US Institution] and [Chinese Institution] with a [Joint Center]. [Chinese Institution] has some state-of-the-art equipment (e.g. 7 Tesla human MR scanner) while [US Institution] has some unique pediatric data. It also facilitated the exchange of students/fellows and faculties between the two institutions.
AS				.	NIMH	MH_Survey1A_151	We found some consistent alterations of synaptic proteins in [Gene Name] hypomorphic mice. We are preparing a manuscript on the findings.
AS				N/A	NCI	Multispecific HIV-1 Entry Inhibitors Targeting Both gp120 and gp41	Novel potent, cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the collaborating group in China. These inhibitors are highly promising as drug candidates for prevention and therapy of HIV-1 infection.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Type/Length of award				facilitated exchange of data, access to state-of-the art equipment, and exchange of students/fellows and faculties between the two institutions	The funding period of 1yr was not enough to build long-term collaborations	not long enough to build long-term collaborations
Biospecimen sharing or transfer				discovery leading to publication	There was a long delay for shipping [Gene Name] mouse brain tissues.	long shipping delays (supply chain) for biospecimens
Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)			novel research that have promise for HIV drug therapies and prevention	The award to U.S. investigators is too small ($50,000 per year) to conduct non-human primate studies and sometimes was not received timely. In addition, the support is not continuous which makes it difficult for us to translate our findings to human clinical trials.	not enough money, delays in funding, wants longer support

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
The [US Institution] team was able to collect pilot data from the 7T MR scanner at [Chinese Institution] and published a few papers. The [Chinese Institution] team performed preliminary analysis of the pediatric imaging data collected at [US Institution] and published a few abstracts but not papers.	I have collaborated with him/her before	Other: We overlapped during early career	Other		I have collaborated with him/her before	Other: We overlapped during early career	Other
[Named Individual]'s group has finished proteomic analysis of mouse [Gene Name] brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since shifted to proteomic analysis of human tumors.	I have not collaborated with him/her before	Other: She is from the group of my former collaborator [Named Individual]]	Other				Other
Our collaborators in China tested a combination of our antibodies with their peptide-based inhibitors for synergistic effects on neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the antibodies and peptides. They are currently extensively characterizing the fusion proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in humanized mice and found that they potently suppressed HIV-1 infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.	I have collaborated with him/her before	We have been collaborating investigators on a different project			I have collaborated with him/her before	We have been collaborating investigators on a different project	

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I knew of his/her research and contacted him/her to work on this project			(b) (6)	
A colleague introduced me to my international collaborating investigator				
He/she knew of my research and contacted me to work on this project				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	N/A		(b) (6)
		N/A	0	N/A		
		N/A	0	The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)					I feel international collaboration is necessary for sharing resources, so the program should continue although the results may not be immediate. The program should have a cycle of every 2-3 years although funding doesn't have to be large.	collaborations should last longer
			She has shifted her research focus more to oncology.	research shift, co-PI	DK	.
		Generation of novel HIV-1 nhibitors, with potentially use for prevention and therapy of HIV-1 nfection.	.	.	The process of applying for the funding should be simplified. Currently, two proposals are required to be submitted to NIH and NSFC of China separately, which takes unnecessary more time and efforts.	streamline application to 1

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS	(b) (6)			R01 AI087849	NIAID	Manipulating the biosynthesis of capuramycin-type antibiotics for new anti-TB drugs	Sample collection: The Chinese PI has access to 100 L+ fermentors that have enabled the large scale production of an advanced precursor of an anti-TB drug. This precursor, which would not be available otherwise was chemically modified by my research group to make novel compounds. On-going screening of anti-TB activity: Around 50 new analogues have been semisynthetically prepared. These compounds will be tested against a variety of clinical isolates through the NIAID Antitubercular Drug Testing (coordinated by (b) (6) and a Chinese collaborator arranged by (b) (6) This parallel international testing is a unique opportunity to establish efficacy against a variety of Mycobacterium tuberculosis genotypes and phenotypes not available in the respective country.
AS				5R01AI089999	NIAID	Selenoprotein K modulates calcium-dependent signaling in immune cells	I must admit that most of this work was not uniquely suited to a US/China collaboration. It was our mutual interest in a signaling pathway in inflammation and atherosclerosis that led to our collaborative studies. The fact that cardiovascular disease and chronic inflammation are common health concerns for both the US and China strengthened this research. We have set up long-term collaborations and recently published more work together.
AS				30973863 and 81161120429	NCI	The effect of Myristica fragrans on colon cancer and its mechanism of action Research	N/A

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
I did not experience any challenges due to the international collaboration				exchanging of data, cross country testing	.	.
Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)				Not due to collaboration but rather that work was similar; publications	Sending samples and reagents both ways was problematic. Sharing resources like mice was very challenging. Travel between institutes was most often sponsored by Jinan University.	supply chain/biospecimen issues
I did not experience any challenges due to the international collaboration				.	N/A	.

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
Our primary goal was to generate novel capuramycin analogues using a semisynthetic and mutasynthetic approach. An advanced capuramycin precursor was isolated in gram quantities, which was utilized to gerate around fifty novel analogues using a novel chemoenzymatic approach or synthetic methods. Several of these analogues have improved activity against Mycobacterium smegmatis. These efforts have led to 2 submitted manuscripts with contributors from both groups.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab			I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	
We uncovered a role for selenoprotein K in foam cell formation and atherosclerosis (PMID23444136). The molecular mechanism involved palmitoylation of scavenger receptor, CD36. This led to a major breakthrough in uncovering how selenoprotein K functions in immune cells that we subsequently published in PNAS (PMID 25368151). The latter publication came after (b) (6) and he is not a co-author. However, his work led to this later study.	I have collaborated with him/her before	Other: He had been a visiting scholar in my lab.	Other		I have collaborated with him/her before	Other: He had been a visiting scholar in my lab.	Other
Discovered that neolignans from the spice nutmeg prevented colon cancer in a mouse colon cancer model	I have not collaborated with him/her before						

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I knew of his/her research and contacted him/her to work on this project			(b) (6)	
Other: initial collaboration had just begun	Other			
I knew of his/her research and contacted him/her to work on this project				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	DK		(b) (6)
		N/A	0	The findings provide insight into dietary selenium related to risk of atherosclerosis		
		N/A	0	Chemoprevention of colon cancer		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
(b) (6)							

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)						
					This collaboration is/was very beneficial to both groups! My only concern is the short time frame of funding, and it would be nice to have a mechanism to support multiyear collaborations specific for research in China and US.	multiyear collaboration support
		nsight into risk of atherosclerosis	.	.	DK	.
		Chemoprevention of colon cancer	We have no funding for more projects.	no funding	D/K	.

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS	(b) (6)			CA-133569	NCI	Molecular Epidemiology of Infection with Human Papillomavirus Variants	1) Identified differences in intratypic variation of oncogenic HPV genome between two geographic locations (US and China) 2) Determined the impact of viral load on HPV-associated pathogenesis of cervical lesion.
AS				R37 CA030488	NCI	Relationship between Translation and Stability of HIV-1 mRNA	This supplementary award provided support in the form of a partial stipend for a student, and allowed us to pursue a new project in collaboration with a laboratory in Beijing headed by (b) (6) The US funds were important for our student's contribution and the China funds were necessary for (b) (6) effort. We were able to obtain preliminary results and then, later, to apply for and obtain funding in a more substantial way in a separate R01 application (in response to RFA-AI-12-021).
AS				NOT-CA-12-002	NCI	System-wide immunohistochemical and proteomic analyses of Sp4 mouse brain	We found some consistent alterations of synaptic proteins in Sp4 hypomorphic mice. We are preparing a manuscript on the findings.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
I did not experience any challenges due to the international collaboration				scientific collaborations across countries; novel research	N/A	.
I did not experience any challenges due to the international collaboration				capacity building, training for student & help for Chinese lab; successful R01	None	.
Biospecimen sharing or transfer				novel research and publication	There was a long delay for shipping Sp4 mouse brain tissues.	long shipping delays (supply chain) biospecimen

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
1) Characterized the variants of oncogenic HPV types in a Chinese population. 2) Examined epidemiologic features of variants of oncogenic HPV type in a Chinese population.	I have not collaborated with him/her before	.					
We studied the decay of retroviral RNAs, specifically showing that these RNAs are stabilized by extending translation of the Gag-Pol protein through a stop codon, acting in opposition to the Nonsense-Mediated Decay (NMD) machinery.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project		I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project
(b) (6) group has finished proteomic analysis of mouse Sp4 brains. I discussed with her about the studies when I visited China in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major funding has since shifted to proteomic analysis of human tumors.	I have not collaborated with him/her before	She is from the group of my former collaborator Dr. Lin He	Other				

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I contacted her colleague, a visiting scholar in our university, to initiate this collaboration	Other	A colleague introduced me to my international collaborating investigator	(b) (6)	
I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project			
A colleague introduced me to my international collaborating investigator				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	Analysis of infections at the level of variants furthers our understanding of why the natural history of HPV infections is so variable. The findings of the variant-associated risk of cervical lesion are important as most HPV infections resolve spontaneously with only a small fraction leading to disease progression.		(b) (6)
		N/A	0	N/A		
		N/A	0	N/A		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		Further our understanding of HPV nfections	.	.	D/K	.
			.	.	This program is a superb mechanism to support international collaborations.	great support
			She has shifted her research focus more to oncology.	research shift, co-PI	D/K	.

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS	(b) (6)			3PO1CA132714-04S1	NCI	Directing tumor-specific T cells to tumors	The US-China Research Supplement allowed us to launch an interesting and potentially very important long-term collaboration aimed at the development of new immune therapies of cancer for different groups of cancer patients in Chine and the US. In brief, the Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system (at baseline and following different forms of therapy), originally identified within our PO1 in the settings of colon- and ovarian cancers, melanoma and glioblastoma, are also relevant to the cancers that are rare in the US population but highly prevalent in China. The direct implications of these findings are that the new therapeutic methods of reprogramming of the chemokine system developed within the PO1 (b) (6) can be rapidly evaluated in China (b) (6) either as stand-alone treatments or in combination with CIK or other cellular therapies of cancer (currently focusing on esophageal cancer with prospective expansion to liver- H&N and gastric cancers). The overall number of cancer patients currently treated in (b) (6) center counts in thousands, with about 200 cellular products prepared monthly. Both these numbers are 1-2 log higher than the respective numbers for the UPCI, highlighting very high potential for accelerated clinical testing of our newly-developed therapies, and their eventual accelerated introduction as routine treatments for different groups of cancer patients in both countries. Our collaboration has been extended to the area of new platforms of cell-based therapies of cancer. While the only follow up grant applications involving both sides have been submitted on the Chinese end, and currently involve the US participants only as unpaid consultant, we are discussing additional options for extended collaboration (see my suggestions in the last item of the survey). An indirect result of the current supplement has been the introduction of (b) (6) to a Shanghai-based Biotech company (b) (6) (b) (6), which develops new cellular therapeutics for patients with cancer and other diseases. That introduction recently resulted in the development of a Sponsored Research Agreement between the (b) (6) at the (b) (6) and (b) (6) (b) (6), in attempt to develop new platforms of cell-based therapies. That agreement has been signed on March 27, 2015. Although the scope of this initial agreement is limited (a 1 year -ong pilot project) it has potential to be extended in the future, and may prospectively involve additional projects performed at other labs of the (b) (6). With regard to formal scientific output, the current Supplement and its counterpart in China allowed this group of collaborators to publish and submit a total of six scientific papers (see below). The practical long-term effects of the collaboration initiated by the PO1 Administrative Supplement can only be evaluated in the next few years, but they are likely to be wide-ranging.
AS				R01AI081995	NCI	T-cell Immune Responses to Schistosome Infection in the elderly	This collaboration promoted (b) (6) project development in China.
AS				P01 AI083214	NCI	US-China Program to Identify Novel Antimicrobials	The study allowed us to screen a library of natural compounds isolated and characterized in the laboratory of (b) (6) for their ability to prevent Staphylococcus aureus from killing the model nematode Caenorhabditis elegans. This required developing a novel screening platform that could be carried out in (b) (6) laboratory. Several novel compounds were identified as hits, one of which has been studied extensively during the funding period as well as subsequently. We are just about ready to write up the data for a major joint publication.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Language Barriers	Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Type/Length of award	Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our Chinese partners	novel research, capacity building, looking at additional collaboration	Language and communication barriers (time difference/need for video conferencing) barriers were initially very significant, but were alleviated with time. From a personal standpoint, the biggest challenge was to start to appreciate that a statement "no, it is impossible" is sometimes replaced by " it is difficult", as a polite euphemism. I also suspect that I might have been perceived as being too direct on a few occasions...	logistical communication issues, cross-cultural communication issues
Securing required approvals (IRBs and others)	Type/Length of award	Biospecimen sharing or transfer		capacity building	**1.** transfer experimental animal (mouse) took a long time (6 months) -- it suffered many approvals (from both sides); **2.** the period of time is too short (only one year); **3.** Biospecimen sharing or transfer has too many limitations.	long shipping delays (supply chain) for biospecimen, too short of time, Biospecimen sharing or transfer limitations.

Type/Length of award				novel research, publication coming	It would have been preferable if the award were longer. However, the collaboration that was initiated during the funding period has continued and has been very successful and productive.	Longer award

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
This Administrative Supplement-funded project allowed us to perform ex vivo studies to verify that the paradigms of the regulation of the chemokine system identified within our PO1 in the settings of colon- and ovarian cancers, melanoma and glioblastoma, are also relevant to cancers rare in the US population but highly prevalent in China. In similar ex vivo models and in limited amount of mouse experiments, we also verified that the new therapeutic methods of reprogramming the chemokine system developed within the PO1 are also applicable to additional cancers, prevalent in China.The results have led to a total of four published papers and additional two papers currently submitted and undergoing scientific review.	I have not collaborated with him/her before	(b) (6), one of the participants of the PO1 had personal contacts with the Chilese partner	Other				
Our side trained their three people with techniques and methods. China side finished some key preliminary data and based on these data, they (b) (6) (b) (6) developed new projects and obtained two new big grants from NSFC (National Science Foundation of China).	I have not collaborated with him/her before	.					
We screened a library of natural compounds isolated and characterized in the laboratory of (b) (6) at the Chinese Academy of Sciences in Beijing for their ability to prevent Staphylococcus aureus from killing the model nematode Caenorhabditis elegans. To do this, we developed a novel screening platform that could be carried out in (b) (6) laboratory without the use of a robot to distribute worms to assay plates and without the use of a specialized screening microscope. This required the development of a novel assay using methylene blue to distinguish live and dead worms and the use of a commercial scanner to identify and count stained worms. Several novel compounds were identified as hits, one of which has been studied extensively during the funding period as well as subsequently. We are just about ready to write up the data for a major joint publication between our laboratories.	I have not collaborated with him/her before	.					

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
He/she knew of my research and contacted me to work on this project	A colleague introduced me to my international collaborating investigator		(b) (6)	
He/she knew of my research and contacted me to work on this project; We graduated from the same university.				
A colleague introduced me to my international collaborating investigator				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		No patents from my lab. I am not aware of any patents from my collaborators, but I would need additional time to verify.	0	The insights from (b) (6) lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors.ThThe insights from (b) (6) lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors.The insights from my lab are being used by our partners in China to improve CIK therapies by facilitating enhanced entry of CIK cells into tumors and to design improved cell-based treatments in cancer which involve DCs and tumor-specific CTLs. I understand that the (b) (6) of the First Affiliated Hospital of (b) (6) currently runs about 200 CIK treatments of cancer patients per months, which dwarfs the scope of our own cell-therapy-related operations at the UPCI. Overall, the First Affiliated Hospital of (b) (6) has several thousands of cancer patients at any given time. Taking into account the scope of their current operations, the unmet therapeutic needs, ability to advance preclinical work in the types of cancers that are rare in the US (such as gastric or esophageal cancer) and to advance clinical trials 9both in cancers common in both cancers and in cancers that are rare in the US), the long term translational potential for our interactions is enormous. Although in the first phase, our collaboration is likely to advance new cancer treatments in China, in a longer run, it is also highly likely to advance cancer care in the US.		(b) (6)
		N/A	0	to help improve therapeutics in the elderly infected with Schistosome		
		N/A	0	The primary compound identified in the screen activates the innate immune response. Developing therapeutics that activate host immunity is a novel approach to treating bacterial infections.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
(b) (6)							

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		improve CIK therapies and knowledge by facilitating enhanced entry of CIK cells into tumors	* (Explanation of the nature of potential prospective collaboration) Our collaboration has been extended to the area of new platforms of cell-based therapies of cancer. While current grant applications involving both sides have only been submitted on ther Chinese end, and involve me only as an unpaid consultant, we are discussing additional options of more direct collaboration. As an example, in case of successful results of the Sponsored Research Agreement between the (b) (6) is likely to be involved in the clinical trial of any new platforms of DC therapies performed in China.	future consultancy opportunities available	So far, our ability to participate in follow up projects developed by our Chinese partners has been limited to being involved as consultants and proposed hosts of visiting researchers from China. None of the follow up grants allows transfer of research funds to the US, limiting the scope of the collaborative work. The ability of NCI to negotiate at least a limited transfer of research funds to US-based labs, or to identify potential alternative sources of funding in the US, would help to promote continued collaborations. A second venue of promoting such collaborations would be an annual research symposium co-sponsored by the NCI and NCI's counterparts in China and focused on the results on the collaborative projects.	struggling to maintain follow-up without funds, suggested second venue to promote collaboration (symposium)
		to help improve therapeutics in the elderly infected with Schistosome	.	.	NIH should provide more opportunities of this collaboration by providing long term (at least 3 years for each collaboration) and more fundings (at least same as an R21 or small R01).	more funded, longer, collaboration opportunities
		Developing therapeutics that activate host immunity is a novel approach to treating bacterial infections.	.	.	The one year time frame for this project was not long enough to develop and bring the project to a successful conclusion. Fortunately, we were able to continue the collaboration despite the expiration of the supplemental funding.	need longer time frame, maintaining collaborations anyway

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS-FY11			(b) (6)	U01-AI-035040	NCI	Epidemiology of HIV-related Malignancies in China	Using China's National prospective database of HIV/AIDS, we compared HIV-related cancer incidence and mortality experience with western countries, HIV/AIDS population in China had lower risk of Kaposi Sarcoma, lymphomas, similar risk of female cervical cancer, however higher risk of non-AIDS-defining cancers including lung, liver, and stomach cancers. This indicates that China may have different HIV-Cancer spectrum than Western countries (one manuscript is completed). In addition, we have recruited 39 KS cases and 93 controls among HIV-infected Uyghur in Xingjiang Province. We found potential HIV transmission by sex is a risk factor while antiretroviral treatment is a protective factor for KS in HIV-infected Uyghur population. Non-obvious findings in odds ratio of CD4 cell counts level may be due to selection bias.
AS-FY11				P01AI082274-02	NCI	Neutralizing antibodies targeting HIV-1 Env CD4bs in Chinese HIV patients	Produced useful information and a research publication.
AS-FY11				R01 AI087135	NCI	Analytical and Estimation Methods for Hybrid Differential Equation Models in AIDS Research	We have developed novel hybrid differential equation models for HIV viral dynamics that were used to study antiviral treatment strategies. Several papers are published in top journals. The unique strengths from US and China collaborators were efficiently utilized. In particular, Chinese collaborators are strong in mathematical modeling of HIV dynamics and US PI is strong in statistical methods for the mathematical model parameter estimation. Thus the two sides' expertise and strength are complementary. In addition, we also established a collaboration for training biomathematical modelers in China through a summer school, which is critical to bridge the collaborations of biomathematical modelers and statisticians for the next generation between US and China.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Type/Length of award	Biospecimen sharing or transfer			comparing populations	This is only one-year award, which is not enough to set-up a study in a remote area of China. Biological specimens are difficult to be transferred form China to the US.	Too short, biospecimen issues
Biospecimen sharing or transfer				publication	Hard to transfer biological samples from China to USA	biospecimen shipping difficulties
Type/Length of award, Data sharing	Data sharing			publications, capacity building, training students	Only one year of the award is too short. Clinical data and epidemiological data sharing is challenging between US and China.	Too short, difficulties sharing clinical and epi data

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
Because it is very difficult to get an approval from Chinese government for sending biological specimens from China to the US, our work was done at Fudan Department of Epidemiology. It is very hard to have sufficient quality control while the lab work is done in China.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
With the support from the P01 Administrative Supplement, we collaborated with (b) (6) group in studying the Env-specific and neutralizing antibody responses in HIV-1 patient sera collected from Youan Hospital in Beijing, China. The results demonstrated that different levels of NAb activities were detected in the patients against a panel of 44 HIV-1 pseudotyped viruses covering clades B, C, AE isolated from China and other parts of the world.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
Chinese collaborator, (b) (6) and his associates, have developed novel hybrid mathematical models for HIV dynamics and performed all computational simulations. The dynamic properties for the developed models were also carefully investigated numerically and theoretically by my Chinese collaborators.	I have collaborated with him/her before	We have been collaborating investigators on a different project	Both were PhD students of (b) (6) Epidemiology	Other	I have collaborated with him/her before	We have been collaborating investigators on a different project	Both were PhD students of (b) (6) Epidemiology

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
Other: Teacher-student relationship	Other		(b) (6)	
He/she knew of my research and contacted me to work on this project				
A colleague introduced me to my international collaborating investigator				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	The finding on new spectrum of HIV-related malignancies in China may change the strategy for HIV-related cancer prevention and control in China. The study of HIV-related KS in Xingjiang will be of importance to have more research in the area.		(b) (6)
		N/A	0	N/A		
		N/A	0	Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
[redacted]							

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		findings may change the strategy for HIV-related cancer prevention and control in China	.	.	Change China's regulation of limiting biological specimens to be transported to the US.	China's biospecimen regulation
			.	.	N/A	.
		Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.	.	.	Identify the needs and weakness from either side so that another side could help or strengthen, (the rest of the comment did not capture)	identify capacity building opportunities

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS-FY11	(b) (6)			U19AI089672	NCI	Southeast Asia Malaria Research Center: Antimalarial drug resistance in P. falciparum	This study aimed to enhance the collaboration between (b) (6) in the area of antimalarial drug resistance, especially with the emergence of artemisinin resistance in SE Asia. Yunnan is a place with the longest artemisinin use, and artemisinin resistance in the area is still unknown. During this collaboration, we identified high level quinine resistance in parasites from this region. This supplement further strengthened the collaboration between US and endemic sites in biomedical research, helped building local research capacity in the area of drug resistance, and laid the foundation for further validation of genetic markers for drug resistance surveillance.
AS-FY11				R01 AI080669	NCI	Study of novel influenza virus inhibitors	The international collaborator identified new inhibitors of influenza virus by high throughput screen. Some inhibitors have similar properties of the fusion inhibitors we work on, whereas other inhibitors are novel. Through our collaboration, two new classes of influenza virus inhibitors are investigated. The results will help in further development of these inhibitors are potential drugs for treatment of influenza virus infection in humans.
AS-FY11				AI077343	NCI	Mechanical Priming of Selectin-Ligand Interactions	We found that mechanical priming (which we now re-name it as cyclic mechanical reinforcement, or CMR) is not an isolated phenomenon. We have now observed this phenomenon in several receptor-ligand interaction systems. The original observation was made in the interaction between integrin a5b1 with fibronectin. The interaction systems exhibiting such phenomenon now include L-selectin interactions with two ligands, P-selectin glycoprotein ligand 1 (PSGL-1) and 6-sulfo-Lex (a peripheral lymph node addressins mimic), actin homotypic interaction, and T cell receptor interaction with peptide-major histocompatibility complex molecule. This funded supplement allowed the experimental data generated in the lab of the US scientist to be analyzed and modeled in the lab of the Chinese scientist.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Type/Length of award				strengthened the collaboration between university partners, access to endemic sites in biomedical research, helped building local research capacity, and novel research	The short period of the grant makes the continuity of the collaboration problematic.	Too short
Type/Length of award	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)			influenza research	The funding was in small amount for only one year. Interesting preliminary results were generated, but could not follow up due to the end of the funding period. In addition, the fund from the international agency was released a few months later than announced, but must be spent within the year.	Too short, delays with funding release
I did not experience any challenges due to the international collaboration				access to research/exchanging of ideas	N/A	.

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
1. Procured ~100 field parasite isolates and culture-adapted ~60 parasites for future studies; 2. Assessed sensitivities of the field isolates from two geographic regions to 10 commonly used antimalarials	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism		I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism
Two classes of novel influenza virus inhibitors are identified, and their mechanisms of action were investigated. Future collaboration will continue to develop these inhibitors as potential drugs for influenza treatment.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	We have been collaborating investigators on a different project		I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	We have been collaborating investigators on a different project
(b) and his students performed molecular dynamics (MD) simulations to model the experimental results of my group. (b) also sent a student of his to study in my lab to build an experimental system.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project		I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project			(b) (6)
A colleague introduced me to my international collaborating investigator				
I knew of his/her research and contacted him/her to work on this project	He/she knew of my research and contacted me to work on this project			

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	N/A		(b) (6)
		US 8,933,075 , 2013 COMPOUNDS USEFUL AS ANTIVIRAL AGENTS, COMPOSITIONS, AND METHODS OF USE	1	Through this collaboration, we have identified two groups of new inhibitors that block the replication of influenza virus. With further development, they may become new drugs for treatment of influenza virus infection in humans. In addition, the international collaborator acquired the capability of high through screening of inhibitors of infectious diseases. We expect more results out of our continuing collaboration.		
		N/A	0	N/A		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)			.	.	Funding for continuation of collaboration would be great to continue the collaborative network established from the previous work	multiyear collaboration support
		found novel inhibitors that block the replication of influenza virus. mplications for new drugs for treatment of influenza virus nfection in humans.	.	.	The funding period needs to be much longer (minimum 3 years).	multiyear collaboration support
			.	.	.	.

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS-FY12	(b) (6)			R01AI093278	NCI	US-China program for Biomed Collab Res	This mechanism provided an opportunity for my lab to collaborate with an old colleague who had moved back to China and now has access to state of the art microscopy tools. My colleague had branched to stadying many other viruses, but this program allowed him to return to the HIV field.
AS-FY12				1 R01 AI081604	NCI	Rational Design of antivirals targeted to HIV-1 capsid	The US-China collaboration presented unique opportunity for us to get access to the HIV-1 clinical isolates from China through our collaborators in China for studying the susceptibility of our unique stapled-peptide base HIV-1 inhibitors.
AS-FY12				R01AI084816-04	NCI	Screening for anti-HIV bNAbs in huCD4/CCR5 transgenic mice immunized with mu	Multivalent anti-HIV vaccine can effectively induce broad humoral immune response in huCD4 B cell transgenic mouse model.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Type/Length of award	Biospecimen sharing or transfer		research capacity	skype connection was poor. length of the award was insufficient (1 year) to solve problems.	logistical communication issues, too short
Biospecimen sharing or transfer				studying unique populations	Due to very strict Chines and US rules it was not easy to exchange biospecimens on a timely manner.	shipping delays for biospecimens
Biospecimen sharing or transfer				novel research	Because the censorship of export by Chinese government, it is difficult for us to transfer or share the samples with Chinese collaborator.	shipping delays for biospecimens (specified Chinese govt)

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
We shared 2 or 3 packages of VLP samples with our colleague to try to answer a variety of questions related to these particles as vaccine antigens. Including spike density, purity, stability, as well as to investigate ligand binding. Progress was marred by the fact that majority particles were "bald". Whether these were vesicles or true Gag-containing VLPs was unclear. We hypothesize that apoptotic vesicles were co-produced with VLPs, making our analysis of Env difficult. We have since modified our protocols and plasmids to try to address this problem	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism We have been collaborating investigators on a different project			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism We have been collaborating investigators on a different project	
The susceptibility of 14 Env-Pseudoviruses (10 CRF07_BC and 4 CRF01_AE) of Chinese origin to stapled peptides was tested by virus inhibition assay. NYAD-36 and NYAD-67 of i,i+7 stapled peptides showed the best anti-virus activity. The sequences of their env genes were analyzed to correlate with the antiviral activity. Furthermore, in resistance study we found four polymorphic sites (A281V/I, N300G/S, D474N and V496I, respectively) on gp120 which significantly correlated with the antiviral activity of i,i+7 stapled peptides. Our results suggest that there are significant differences in the susceptibility among the Env-Pseudoviruses in China to stapled peptides and the differences may partly result from the naturally occurring polymorphisms in these subtypes. This study provides useful information for rational design of stapled peptides for HIV-1-infected patients in China.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab			I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	
Constructed 80 HIV-1 env-based SHIV vaccine candidates. immunized human CD4 B cell transgenic mice and detected the induced immune responses. Screening of neutralizing anti-HIV antibodies from immunized mice through generation and testing over 400 hybridoma cell lines from vaccinated mice.	I have not collaborated with him/her before	Other: I was a Ph.D. student in his institute.	Other				

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I knew of his/her research and contacted him/her to work on this project			(b) (6)	
I knew of his/her research and contacted him/her to work on this project				
I knew of his/her research and contacted him/her to work on this project				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	N/A		(b) (6)
		N/A	0	HIV is very diverse in different countries. Therefore, for any anti-HIV drug to work universally it is of utmost importance to learn how they function against different isolates. The data from Chinese isolate will be important for designing drugs with much broader activity.		
		N/A	0	Our findings will help with the development of an effective anti-HIV vaccine and prevention of HIV infection.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
(b) (6)							

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)			HIV particle immunogens is the main focus, so there are no other projects relevant here	moving on?	I think we needed longer for it to yield fruit. Also the import regulations were something of a barrier (as compared to working with a US collaborator).	multiyear collaboration support; biospecimen bans
		studying how anti-HIV drug function against different (Chinese) solates	.	.	Frequency of this type funding may be increased.	multiyear collaboration support
		Our findings will help with the development of an effective anti-HIV vaccine and prevention of HIV nfection.	.	.	Suggestions: 1) Extend the period of the collaborative grant to 3-5 years, so we may keep the consistency and complete one entire project; 2) Establish some specific mechanism for sample transfer and sharing between U.S. and China.	multiyear collaboration support; biospecimen transfer mechanism needed

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS-FY12	(b) (6)			AI049104-15	NCI	CHINESE HERBS	Found a number of chinese herbs with potential use in HIV/AIDS
0				R01 AI094562	NCI	MP3-China for Phylogenetic Analysis of HIV Transmission Clusters among MSM in Beijing	The collaborating between US and Chinese scientists provided the following unique opportunities: 1. Access to a large number (N=416) blood sample of newly diagnosed HIV-infected MSM in Beijing recruited within a relatively short period of time (12 months from March 2013-March 2014). About three fourths of the participants were migrants, so the sample allows for phylogenetic analysis of HIV transmission clusters. 2. We identified two novel HIV-1 second-generation recombinant forms comprising of gene regions from two circulating recombinant forms, CRF01_AE and CRF07_BC. The parental CRF01_AE region of the recombinants clustered together with a previously described cluster 4 lineage of CRF01_AE. The CRF07_BC regions of both the recombinants clustered within the CRF07_BC radiation, but were distinct from other CRF07_BC reference sequences (PMID: 25495675). 3. With consultation from (b) (6), the MP3 study team has had enhanced phylogenetic analysis capability.
AS-FY12				AI069120	NCI	Viral Mediated Type I Interferon Induction	During the period of the R01 grant studies, we found an antiviral function of TRAF3 that is unique to TRAF3 among six TRAF family members. To understand the molecular mechanisms responsible for the specificity of TRAF3, we collaborated with (b) (6) laboratory at the institute of biophysics, Chinese academy of science and solved the crystal structures of TRAF3 and TRAF5, a close relative of TRAF3. Our studies led to the identification of a single amino acid difference responsible for the anti-viral specificity of TRAF3, which was published as a cover story by Science signaling.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Type/Length of award				novel research due to unique geographic access	a delay in getting approvals, but otherwise OK	approval delays (didn't specify)
Communications (e.g. scheduling, poor telephone/internet connection, cultural differences, etc.)	Other: Delays in responses to US team's requests	Other		study unique population; novel research; building research capacity	Time differences for three locations (Nashville, Beijing and UK); The Chinese team is sometimes overburdened with their daily work which led to delays in responses to US team's requests.	logistical communication issues, delayed responses from Chinese team
I did not experience any challenges due to the international collaboration				research to publication	.	.

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
looked at compounds that inhibit CTD kinases, especially CDK12 and also started working on agents that active PKC and thus reactivate HIV from latency.	I have collaborated with him/her before	He/she was a post doctoral fellow in my lab			I have collaborated with him/her before	He/she was a post doctoral fellow in my lab	
The Chinese team collected and processed the samples, performed RT-PCR, and completed the basic phylogenetic analysis for geno-typing and assessed any recombinations.	I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism			I have collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism	
The international laboratory solved the crystal structure of TRAF3 and TRAF5. They also identified potential amino acid sequence differences responsible for the functional specificity between TRAF3 and TRAF5. Their studies have greatly helped us to determine the mechanism responsible for the important antiviral function of TRAF3.	I have not collaborated with him/her before	.					

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)		Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)
I knew of his/her research and contacted him/her to work on this project			(b) (6)	
I knew of his/her research and contacted him/her to work on this project				
I knew of his/her research and contacted him/her to work on this project				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	could lead to compounds that inhibit CTD kinases and others that activate HIV		(b) (6)
		None.	0	The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China, and help develop targeted interventions for reducing HIV risk in this group and in global settings.		
			0	Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAF5 to similar levels as its family member TRAF3, which may improve future antiviral immunity.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		could lead to compounds that nhibit CTD kinases and others that activate HIV	we plan to continue to work on collaborative projects	.	.	.
		The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China, and help develop targeted nterventions for reducing HIV risk n this group and in global settings.	.	.	We hope the US-China collaborating research grant announcements become routine, so we can prepare for applying for new research grants with several months in advance.	hope for more opportunities w/ more leadway
		Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAF5 to similar levels as ts family member TRAF3, which may improve future antiviral mmunity.	.	.	International collaborations in the biomedical sciences should be significantly increased, especially in the areas that can complement each other and in specific diseases areas where patient samples are lack in US.	collaboration support should be increased, esp. around disease topic areas

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS	(b) (6)			CA75093A2	NCI	Kaposi's sarcoma and human herpesvirus in China	We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able bring Chinese researchers to the US for training and perform some of the studies in the US. This has built the research capability of or Chinese partner institution.
AS				R01CA140972	NCI	Role of BRCA1 and its Association Protein CtIP in DNA Double-Strand Break Repair	Opportunity for sharing different expertise and expand research capacity.

Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
Type/Length of award	Biospecimen sharing or transfer			study unique population; building research capacity	There are difficulties in sending shipping specimens, especially DNA and infected tissues and cells to the US to study, but these studies were carried out in China.	shipping delays for biospecimens (work-around, studies in China)
Biospecimen sharing or transfer				building research capacity	Biospecimen are not allowed to be transported out from China.	biospecimens shipping not allowed

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)			Had you collaborated with your fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
We have found that early childhood infection by KSHV is common in Xinjiang province in the ethnic minority population, which is reflected in the higher incidence of Kaposi's sarcoma in the adults in both HIV+and HIV- individuals. One difference between the Chinese infected individuals versus the African population is that neutralizing antibodies is rare in the African population but very prevalent in the Chinese population. Whether it leads to lower incidence of KS in China as compared to Africa needs to be studied.	I have collaborated with him/her before	We have been collaborating investigators on a different project			I have collaborated with him/her before	We have been collaborating investigators on a different project	
BRCA1 and CtIP are important for homologous recombination (HR)-mediated DSB repair. 53BP1 inhibits BRCA1-mediated end resection and promotes non-homologous end joining (NHEJ). We found that the oligomerization and tudor domains of 53BP1 are required for 53BP1 localization to damage-induced foci. CtIP as well as the CDK sites on CtIP including S327 which mediates CtIP interaction with BRCA1, and T847, are important for preventing RIF1 , a 53BP1 association protein, to form damage-induced foci in S-phase, thereby suppressing NHEJ. Loss of 53BP1 in BRCA1 deficient cells reactivates end resection, which is dependent on CtIP. These studies reveal the role of BRCA1, CtIP and 53BP1 in the regulation of HR and NHEJ, and will help understand the underlying mechanisms of how BRCA1-deficient cells are sensitive to PARP1 inhibitors and how loss of 53BP1 in BRCA1-deficient breast cancers causes resistance to PARP1 inhibitors.	I have not collaborated with him/her before	Other: He was in our neighboring institute in USA and we had collaboration before.	Other				

How did you identify your international collaborating investigator? (please mark all that apply)	**How did you identify your international collaborating investigator? (please mark all that apply)**		**Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)**	**Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)**
I met him/her at a professional meeting			(b) (6)	
He/she knew of my research and contacted me to work on this project				

Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please describe how your findings may be used to inform the development or implementation of health programs:	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
(b) (6)		N/A	0	Preventing saliva contact with infants to avoid transmission of the herpesvirus.		(b) (6)
		N/A	0	Our findings will help establish new strategies to treat PARP inhibitor-resistant breast cancers.		

How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?

(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	Please describe how your findings may be used to inform the development or implementation of health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
(b) (6)		Preventing saliva contact with nfants to avoid transmission of the herpesvirus.	.	.	Longer period of funding and more funding will enhance and sustain the collaboration.	multiyear collaboration support
		Our findings will help establish new strategies to treat PARP inhibitor-resistant breast cancers.	.	.	This type of grant is very helpful for initiating international collaborations.	great support

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the nternational ollaboration.	Please mark each area where you encountered challenges that were caused by the international collaboration.	Please mark each area where you encountered challenges that were caused by the i ternational collaboration.	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).
	Language Barriers	1					10 for biospecimen transfer issues
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.							9 too short
novel research	8						
building research capacity	12	strengthened the collaboration between university partners helping develop Chinese			laboratory abilities building local research capacity	training students (exchange of students/fellows and faculties between the two institutions)	
study unique population comparing populations	4						
research collaborations have led to publications or will lead to	7	discovery leading to publications					
access (geographic; access to endemic sites in biomedical research cross country testing	2						
access to research/exchanging of idea exchaning data facilitated exchange of data	3						
influenza research	1						
looking at additional collaboration successful R01	1						
scientific collaborations across countries	1						
similar work not related to collaboration	1						
novel research that have promise for HIV drug therapies and prevention	1						
access to stat-of-the-art equipment							

Please give a short summary of the work completed by the international laboratory/team for this study.	Had you collaborated with your fellow principal investigator prior to this project?
I have collaborated with him/her before	16
I have not collaborated with him/her before	10
We have been collaborating investigators on a different project	6
We were collaborating investigators on this project under a different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	8
Missing	5

What was the nature of your previous collaboration(s)? (please mark all that apply)	Had you collaborated with your fellow principal investigator prior to this project?
I have collaborated with him/her before	16
I have not collaborated with him/her before	0
We have been collaborating investigators on a different project	6
We were collaborating investigators on this project under a different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	3
Missing	0

How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply)
I knew of his/her research and contacted him/her to work on this project	12
A colleague introduced me to my international collaborating investigator	7
He/she knew of my research and contacted me to work on this project	7
Other	3
I knew of his/her research and contacted him/her to work on this project	12
I met him/her at a professional meeting	1

Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
sum	41		20		1
A manuscript is being prepared.	4				

How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this project?	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. ocus group discussions, uided interviews, etc.) pecifically for this project?	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	How many people from the US laboratory/team were trained in bioethics r IRB rules and egulations specifically for his project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training ourses) in scientific manuscript writing pecifically for this project?	How many people from the US laboratory/team were trained (either through mentoring or training courses) in cientific manuscript writing specifically for his project?	How many people from the US laboratory/team were ained in medical rocedures specifically for his project?	How many people from the US aboratory/team were trained in medical procedures specifically for his project?
sum	32	sum	28		15		19		28		4
DK	1	DK	1								

Please explain why you have no plans to collaborate on other projects:	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
We received a few responses about Pis don't plan to continue collaborating, most centered around research shifts.		Pis felt that these kind of international bilateral programs were immensly beneficial, and some continued to collaborate after the end of the award. They main suggestions centered around the desire for multiyear collaboration support, and the need to find solutions for the biospecimen sharing issues.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	
novel research	8
building research capacity	12 strengthened the collaboration between university partners, helping develop Chinese laboratory abilities, building local research capacity, training students (exchange of students/fellows and faculties between the two institutions)
study unique population, comparing populations	4
research collaborations have led to publications, or will lead to	7 discovery leading to publications
access (geographic; access to endemic sites in biomedical research, cross country testing	2
access to research/exchanging of idea, exchaning data, facilitated exchange of data	3
influenza research	1
looking at additional collaboration, successful R01	1
scientific collaborations across countries	1
similar work, not related to collaboration	1
novel research that have promise for HIV drug therapies and prevention	1
access to stat-of-the-art equipment	

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	
10 for biospecimen transfer issues, not allowed	12 shipping delays for biospecimens (work-around, studies in China); shipping delays for biospecimens (specified Chinese govt)
9 too short	9
logistical communication issues	4 cultural communication and logistic
delayed responses from Chinese team	1
approval delays (didn't specify)	1
delays with funding release	3 not enough money, delays in funding, wants longer support
difficulties sharing clinical and epi data	1

Please describe how your findings may be used to inform the development or implementation of health programs:
.
.
Generation of novel HIV-1 inhibitors, with potentially use for prevention and therapy of HIV-1 infection.
.
insight into risk of atherosclerosis
Chemoprevention of colon cancer
Further our understanding of HPV infections
.
.
improve CIK therapies and knowledge by facilitating enhanced entry of CIK cells into tumors
to help improve therapeutics in the elderly infected with Schistosome
Developing therapeutics that activate host immunity is a novel approach to treating bacterial infections.
findings may change the strategy for HIV-related cancer prevention and control in China
.
Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.
.
found novel inhibitors that block the replication of influenza virus. implications for new drugs for treatment of influenza virus infection in humans.
.
.
studying how anti-HIV drug function against different (Chinese) isolates
Our findings will help with the development of an effective anti-HIV vaccine and prevention of HIV infection.
could lead to compounds that inhibit CTD kinases and others that activate HIV
The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China, and help develop targeted interventions for reducing HIV risk in this group and in global settings.
Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAF5 to similar levels as its family member TRAF3, which may improve future antiviral immunity.
Preventing saliva contact with infants to avoid transmission of the herpesvirus.
Our findings will help establish new strategies to treat PARP inhibitor-resistant breast cancers.

Please explain why you have no plans to collaborate on other projects:	
We received a few responses about Pis don't plan to continue collaborating, most centered around research shifts.	

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	
collaborations should last longer, multiyear collaboration support	8
streamline application to 1	
great support	2
struggling to maintain follow-up without funds	
suggested second venue to promote collaboration (symposium)	
more funded, longer, collaboration opportunities	
need longer time frame, maintaining collaborations anyway	
China's biospecimen regulation; biospecimen transfer mechanism needed	3
identify capacity building opportunities	
hope for more opportunities w/ more leadway	
collaboration support should be increased, esp. around disease topic areas	
Pis felt that these kind of international bilateral programs were immensly beneficial, and some continued to collaborate after the end of the award. They main suggestions centered around the desire for multiyear collaboration support, and the need to find solutions for the biospecimen sharing issues.	

R01s
n=14

Please mark each area where you encountered challenges that were caused by the international collaboration.

Did not experience any challenges	2
Language barriers	1
Securing required approvals	2
Synchronization of funds	2
Biospecimen sharing or transfer	2
Communications	3
Type/Length of award	5

Had you collaborated with your fellow principal investigator prior to this project?

I have collaborated with him/her before	10
I have not collaborated with him/her before	4

What was the nature of your previous collaboration(s)? (please mark all that apply)

We have been collaborating investigators on a different project	7
We were collaborating investigators on this project under a different funding mechanism	3
He/she was a post doctoral fellow in my lab	2
Other	2

How did you identify your international collaborating investigator? (please mark all that apply)

How did you ID collab. PI	
I knew of his/her research and contacted him/her to work on this	3
He/she knew of my research and contacted me to work on this project	4
A colleague introduced me to my international collaborating investigator	5
Other	4

What plans, if any, do you have to continue collaborating with your fellow principal investigator on this project?

Don't Know	1
We have received funding to continue this project together	2
We are applying for funding to continue this project together	4
We have discussed ways to continue this project together	10

What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal investigator on other project(s)? Please mark all that apply.

We have received funding to colla	1
We are applying for funding to co	4
We have discussed ways to collab	9

Capacity Building

US Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	34
Number trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	22
Number trained in bioethics or IRB rules and regulations	30
Number trained (either through mentoring or training courses) in grant writing	17
Number trained (either through mentoring or training courses) in scientific manuscript writing	22
Number trained in medical procedures	4
Number trained in lab or bench science techniques	35

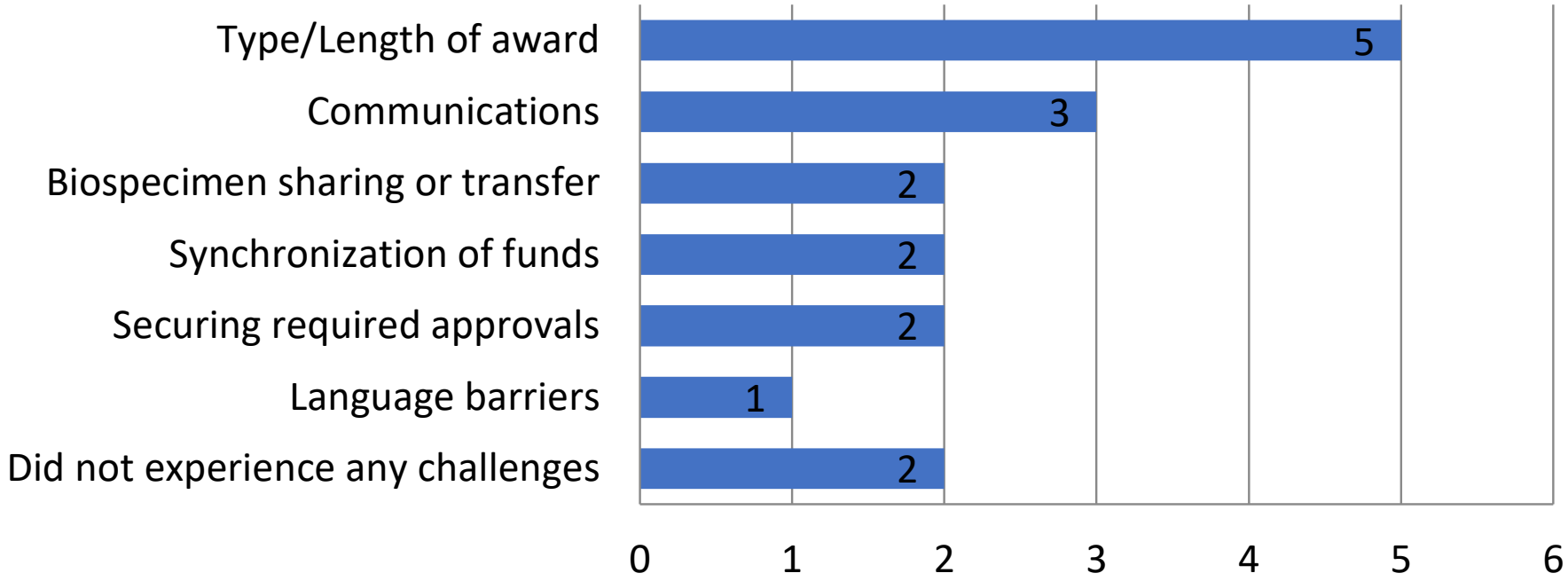
International Lab/Team Capacity Building		
Number trained in quantitative data collection and analysis	34	4
Number trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	39	3
Number trained in bioethics or IRB rules and regulations	17	3
Number trained (either through mentoring or training courses) in grant writing	28	4
Number trained (either through mentoring or training courses) in scientific manuscript	41	4
Number trained in medical procedures	37	2
Number trained in administrative and financial grant management	9	
Number trained in lab or bench science techniques	33	4

How did you identify your international collaborating investigator?

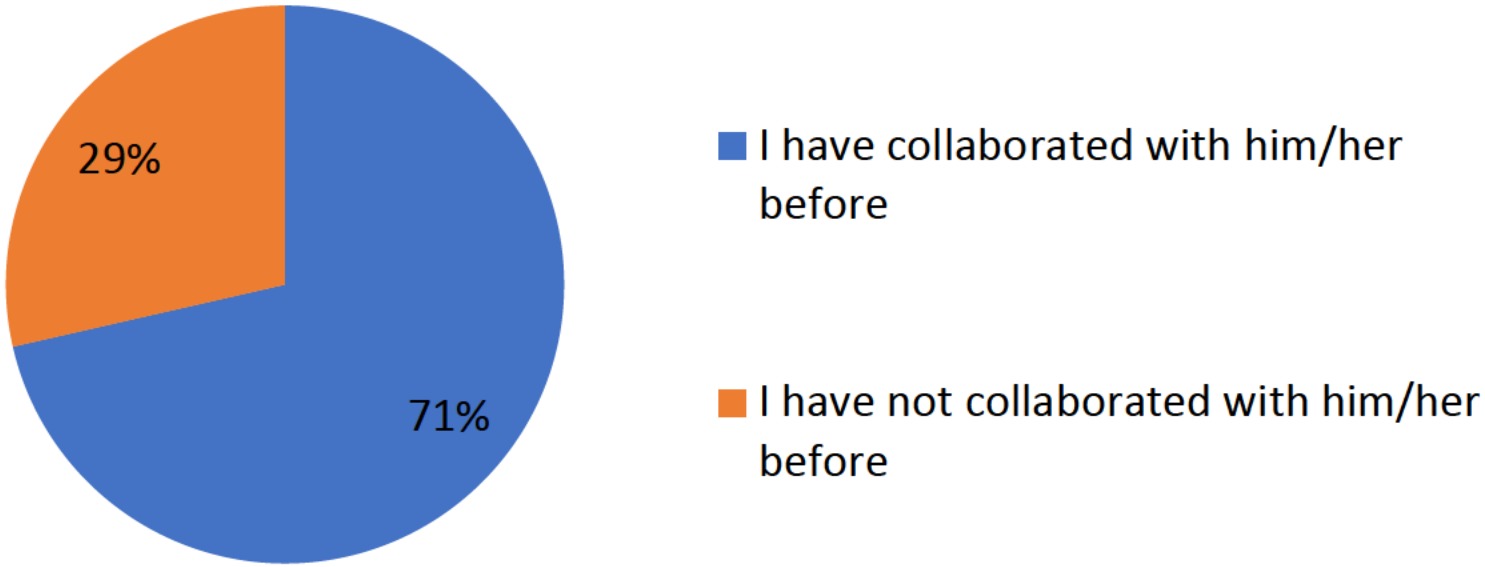
Other	4
I knew of his/her research and contacted him/her to work on this	3
He/she knew of my research and contacted me to work on this project	4
A colleague introduced me to my international collaborating investigator	5

Areas where PIs Encountered Challenges caused by International Collaboration

*PIs selected all answers that applied

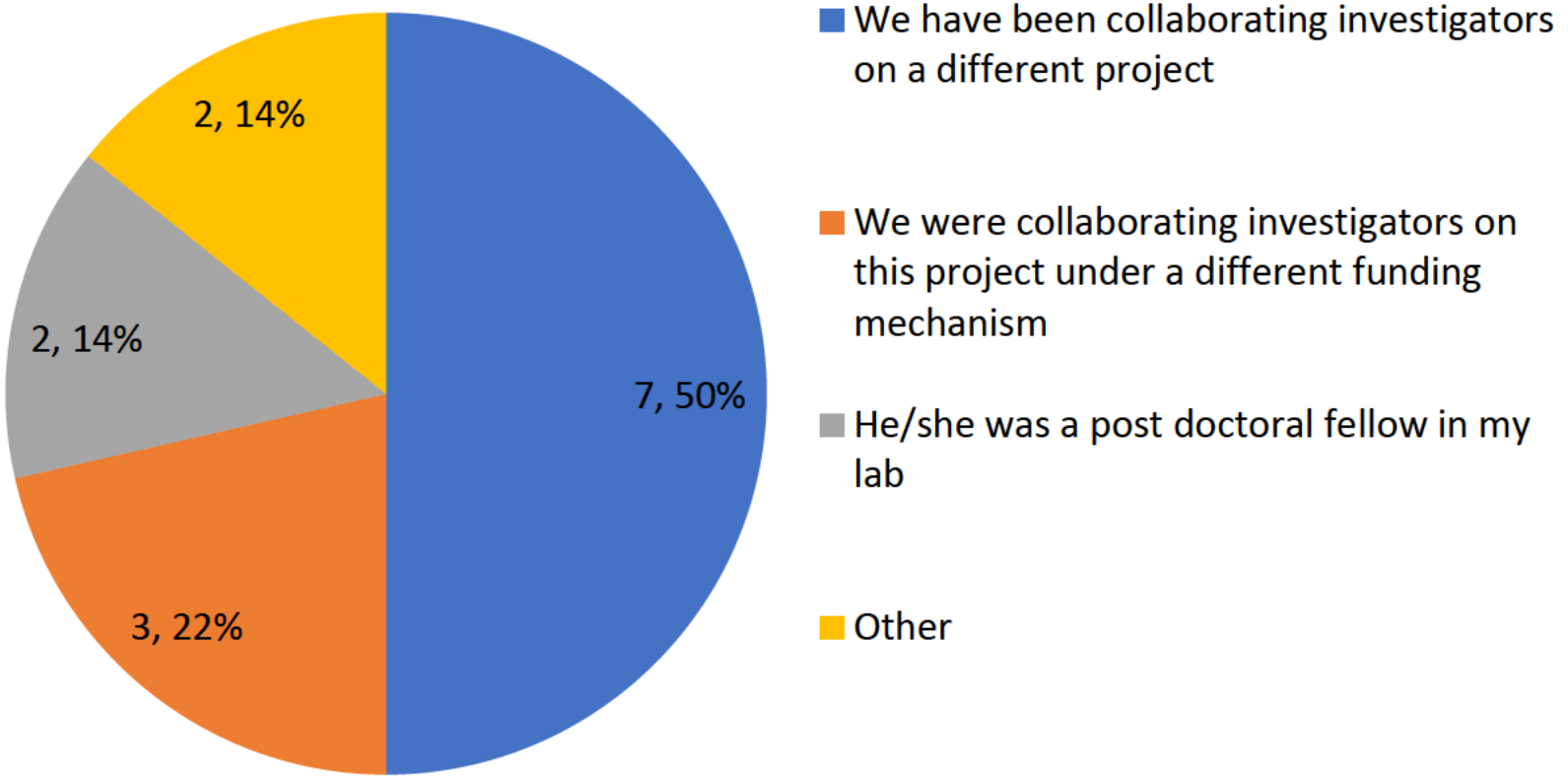


Had you collaborated with your fellow principal investigator prior to this project?



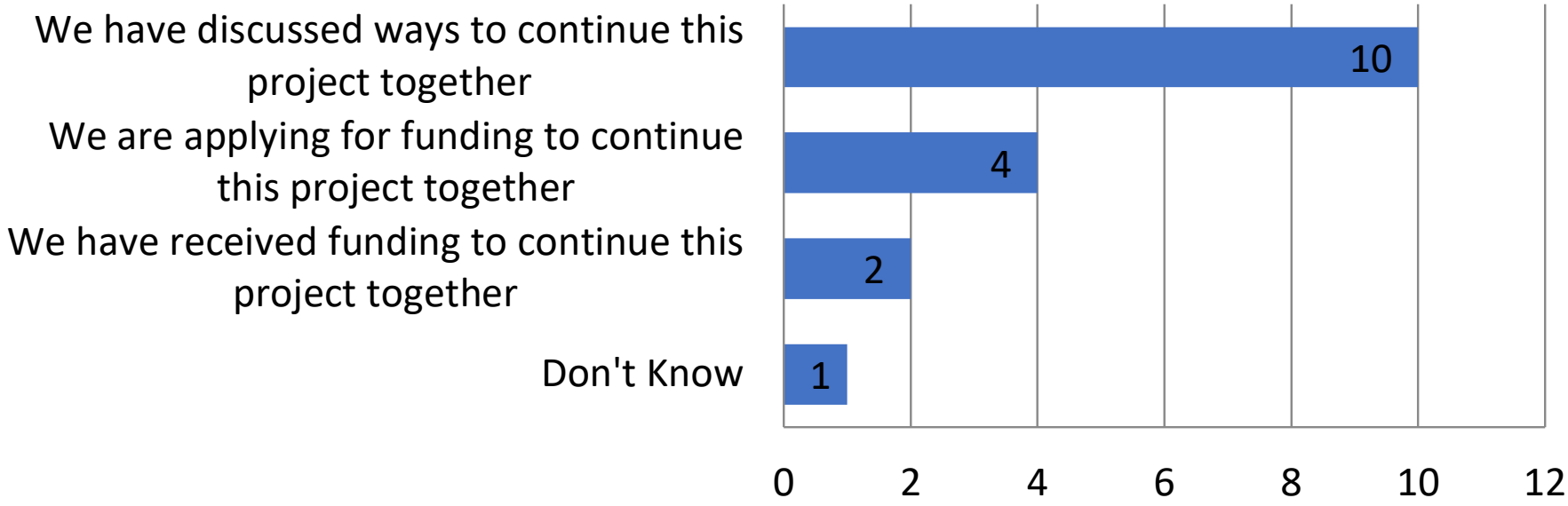
What was the nature of your previous collaboration(s)?

*PIs selected all answers that applied



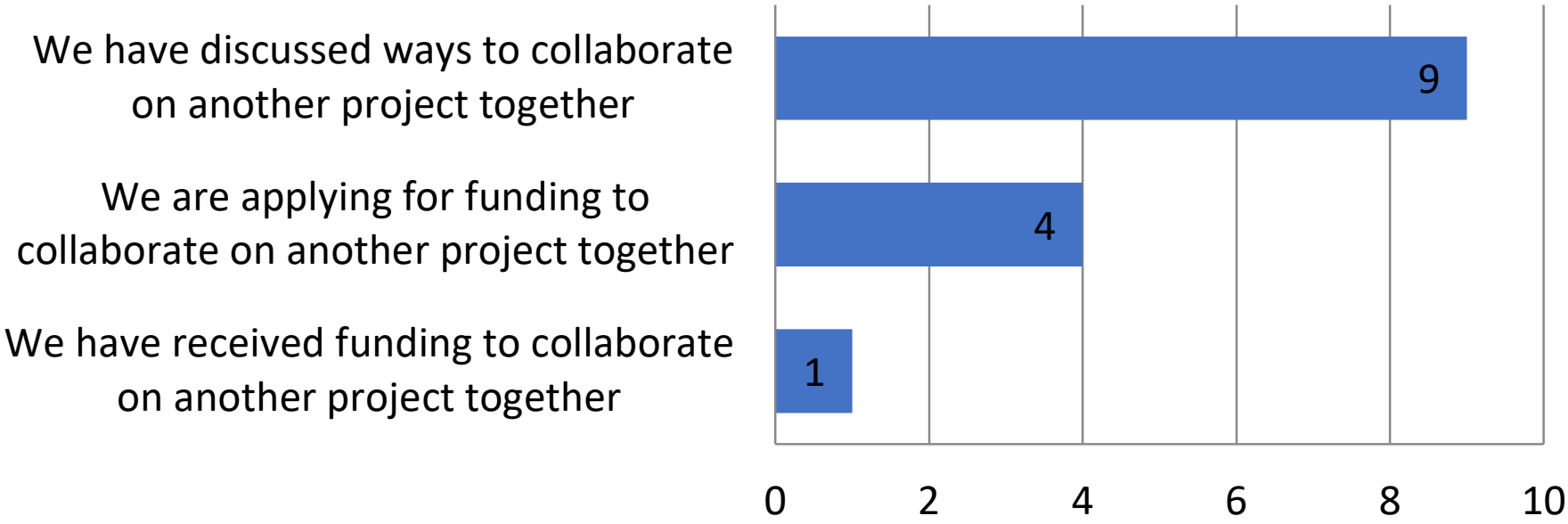
What plans, if any, do you have to continue collaborating with your fellow principal investigator on this project?

*PIs selected all answers that applied



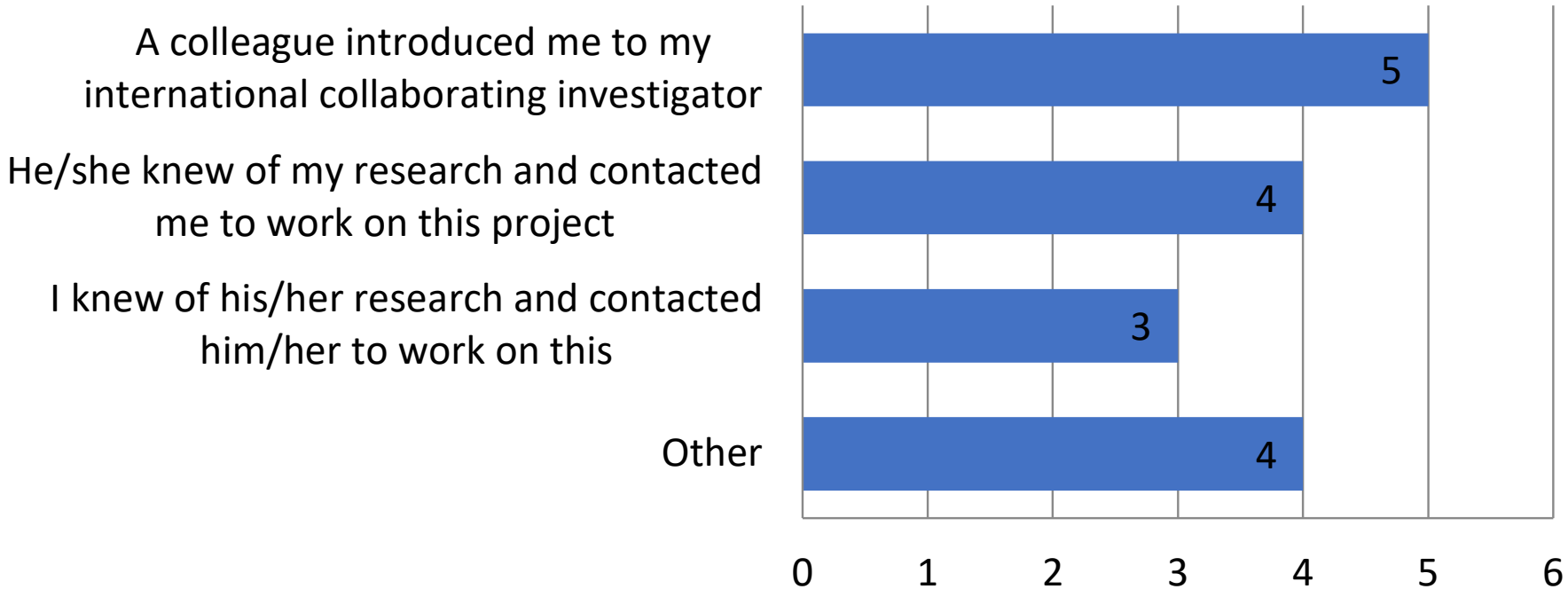
What plans, if any, do you have to continue collaborating with your fellow principal investigator on other project(s)?

*PIs selected all answers that applied



How did you identify your international collaborating investigator?

*PIs selected all answers that applied



Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			R01NS083435	US-China Collaborative Research on Stroke Imaging	This collaboration has greatly expanded my clinical research capacity.
R01				5R01NS083503-02	Culprit Plaque in Acute Cerebral Infarction: A Histological and MRI Assessment	Stroke is a leading cause of mortality and long term serious disability globally, and cerebrovascular atherosclerosis is a major etiologic contributor. However, autopsy evidence suggests that the location of the culprit plaque responsible for ischemic stroke may vary by race, with intracranial disease more prevalent amongst Asians, and extracranial carotid high-risk plaques more common amongst Caucasians. The overall goal of our proposal is to compare the location of high-risk culprit plaques in patients who have had a recent ischemic anterior-circulation stroke in Beijing and in the U.S. using high-resolution MRI. Furthermore, we aim to examine whether there is an association between genetic and environmental risk factors and the fibrous cap rupture by histology and MRI in the two cohorts. Thus, the funding provided by NINDS and NSFC provides a unique opportunity to establish standardized imaging and histological protocols, conduct cross-cultural analyses, and has helped to establish a foundation for future collaborative research studies.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
research capacity building	N/A	.	The international team will be performing specific Aim 2: Determine the characteristics and clinical values of pH imaging of hyperacute and acute ischemic stroke patients (n = 200). This includes human subject recruitment, MRI data acquisition, imaging analysis, and statistical analysis.	.		DK
funding provided by NINDS and NSFC provides a unique opportunity to establish standardized imaging and histological protocols, conduct cross-cultural analyses, and has helped to establish a foundation for future collaborative research studies.	Securing IRB approval was a major barrier, as our respective institutional review boards had not often dealt with jointly funded studies such as ours. Multiple questions were raised regarding processes for data transfer, analysis of the histological specimens, and plans for GWAS dbGaP data-sharing. As such, funds for the project were not released until early 2014 which has delayed subject enrollment. The duration (three years) and cap on award to $200,000 (direct plus indirect) has been a challenge, given the number of subjects needed for recruitment, study procedure costs, and travel expenses.	IRB approval, data sharing/transfer, biospecimen transfer, delayed funding release, money/time	Despite the challenges described above, major technical accomplishments have been achieved during year 1 that resulted in significant improvement for intracranial arterial wall MR imaging, as detailed in our first year annual report. Furthermore, 3D image analysis tools have been developed that improve the efficiency and reproducibility of carotid and intracranial vessel wall image analysis. Working closely with collaborators in Beijing, standardization and onsite training was performed for procedures to excise the carotid plaque intact with minimal disruption during carotid endarterectomy, sectioning and staining of the specimen in its entirety, and transfer of digitized images of the histological slides to the (b) (6) for analysis. Following IRB approval, procedures were confirmed on test specimens that were collected during carotid endarterectomy procedures performed at Tiantan Hospital in Beijing. During the site visit to Tiantan Hospital, procedures for sample collection and genotyping were reviewed and standardized to those performed at the (b) (6).	.		Support from this novel, joint funding mechanism has allowed establishment of a strong foundation for future collaborative research, by helping to standardize protocols across sites. It is difficult to find other sources for funding international collaborative research, and we highly recommend that the joint NINDS/NSFC venture be considered for renewal.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
.	DK	.	N/A		.
furthering additional collaboration	Stroke is a leading cause of death in China. The standardized protocols for high-resolution plaque imaging, histological processing and genotyping established in this study will streamline further clinical research programs at our respective institutions. We have already begun to implement our state-of-the-art imaging procedures at other medical centers throughout China. Using these techniques, our goal is to improve our ability to identify those at risk for the development of high-risk cerebrovascular disease at an earlier stage, and to provide better tools for selection of appropriate therapy for secondary stroke prevention.	Stroke is a leading cause of death in China. The standardized protocols for high-resolution plaque imaging, histological processing and genotyping established in this study will streamline further clinical research programs at our respective institutions. We have already begun to implement our state-of-the-art imaging procedures at other medical centers throughout China. Using these techniques, our goal is to improve our ability to identify those at risk for the development of high-risk cerebrovascular disease at an earlier stage, and to provide better tools for selection of appropriate therapy for secondary stroke prevention.	DK		.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			N/A	Trispecific Multivalent HIV-1 Inactivator Combined with Activator as a Strategy for Curing AIDS	Novel potent, cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the collaborating group in China. These inhibitors are highly promising as drug candidates for prevention and therapy of HIV-1 infection.
R01				R01CA177372	The Role of miRNA Network in Gastric Cancer	This unique opportunity has allowed us to establish a strong collaboration with our Chinese partners to take advantage of the large number of patients with gastric cancer that are available in their institution. For the time in literature, we were able to analyse and compare changes in the miRNA and RNA expression networks in our TFF1 knockout mouse model of gastric cancer to human gastric cancer patients samples. The resources provided by NCI were instrumental to move our collaboration forward. I have hosted a Ph.D. student in my lab who has completed his Ph.D. degree and returned back to my lab to pursue a post doctoral training. To date more than 40 samples from mice and 100 human tissue samples have been analysed using Next Generation sequencing. Through this mechanism, we have been successful in expanding our research capacities at both sites and performing analysis of a unique sample that is available in each institution. Our second phase of validation of data and developing biomarkers for early detection of gastric cancer and/or monitoring response to therapy is starting. With the exceptional tissue and serum biobanking in China, we have the opportunity to move our results from bench to bed to decrease the burden of gastric cancer, the second most frequent cancer world-wide.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
novel research, disease specific	The award to U.S. investigators is too small ($50,000 per year) to conduct non-human primate studies and sometimes was not received timely. In addition, the support is not continuous which makes it difficult for us to translate our findings to human clinical trials.	money/time	Our collaborators in China tested a combination of our antibodies with their peptide-based inhibitors for synergistic effects on neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the antibodies and peptides. They are currently extensively characterizing the fusion proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in humanized mice and found that they potently suppressed HIV-1 infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.	.		The process of applying for the funding should be simplified. Currently, two proposals are required to be submitted to NIH and NSFC of China separately, which takes unnecessary more time and efforts.
strong collaborations, ability to access unique populations, expanding research capablities at both sites, ability to move research from bench to bedside	N/A	.	(b) (6) team have collected and built a gastric tissue bank containing over 500 human gastric cancer tissue samples with adjacent non-cancer and normal gastric tissue as well as human blood samples. In the first year of this study, they finished histopathology evaluation, tissue processing, RNA purification, and miRNA and RNA deqq sequencing of 119 human gastric tissue samples. The bioinformatics analysis has been completed by the Chinese partner. Followine consultation with our bioinformatics at (b) (6) we have requested and received the raw sequecing data from China (500 GB). These results will be analyzed together with our sequencing data from mouse tissues to establish markers related to H.pylori infection and early stages of gastric cancer.	.		International collaborations should be offered the opportunity to go for a competitive renewal/evaluation to renew their funds to continue their collaborative research forward. A three year one time funding is not realistic to achieve a significant global impact.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
streamline proposal	The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.	The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.	design of project and experiment		.
muliyear collaboration, additional funding	Our second phase of validation of data and developing biomarkers for early detection of gastric cancer and/or monitoring response to therapy is starting. With the exceptional tissue and serum biobanking in China, we have the opportunity to move our results from bench to bed to decrease the burden of gastric cancer, the second most frequent cancer world-wide.	Our second phase of validation of data and developing biomarkers for early detection of gastric cancer and/or monitoring response to therapy is starting. With the exceptional tissue and serum biobanking in China, we have the opportunity to move our results from bench to bed to decrease the burden of gastric cancer, the second most frequent cancer world-wide.	DK		.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			R01CA177377	KSHV microRNAs in cellular transformation and tumorigenesis	The collaboration has expanded our research capacity to delineate the functions of KSHV and cellular microRNAs, and their roles in KSHV-induced pathogenesis and KSHV life cycle. Specifically, it has allowed us to examine the roles of KSHV and cellular microRNAs in cell invasion and angiogenesis and KSHV life cycle, and the underlying mechanisms that mediate these processes.
R01				.	MH_Survey1B_130	TA1:G7his is an exome sequencing project, we have not finished the sequencing yet, so we don't have anything important to report at this time. We did analyzed some GWAS data of Asian populations and compared them with that of Caucasians. Preliminary results indicated that there were substantial overlaps in genetic risks between Asians and Caucasians. This project did provide us an opportunity to access valuable schizophrenia patient samples in China, which is not possible otherwise since the Chinese government prohibits DNA sample from leaving China, even for the purpose of scientific research. This collaborative project provides an avenue for sharing data produced by our Chinese collaborators.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
expanded research capabilities, disease specific	The grant is for 3 years, which has somewhat limited the extent of collaboration as these are long-term project.	too short	The China team has examined KSHV pre-miRNAs and miRNAs on cellular transformation, and identified those that regulate cell growth, survival, angiogenesis and invasion. They have also identified several novel targets of KSHV miRNAs, which has led to the delineation the mechanism of action. Furthermore, the China team has expanded the scope and identified KSHV and cellular miRNAs that inhibit KSHV lytic replication.	.		This grant has really helped the research programs in both sides. I suggest that NIH continues to support the program, ideally with a RFA for renewal application. The funding period was short (3 years) and the amount was small, which had limited the scope of collaboration. I recommend a 5 years collaborative project with each year's funding amount similar to a traditional R01, which is $250,000 per year.
.A1:G7	The Chinese government reduced the funds by 40% to my collaborator, therefore, they have to scale down what we proposed to do.	Chinese govt funding reduced	We have established consistent sequencing pipeline to ensure that all samples are sequenced by the same methods and standards. We also applied the same criteria for sample selection. Both sides have started sending samples for sequencing.	.		my collaborators know very little of NIH grant application process, and whether they can apply for grants from US government. It would be very helpful that these policies can be made ready for them.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
longer, with more money (traditional R01)	The results of these collaborative works allow us to better understand the pathogenesis of KSHV-induced malignancies and the molecular basis of KSHV life cycle. The knowledge can be used to develop novel therapeutic approaches for KSHV-related malignancies.	The results of these collaborative works allow us to better understand the pathogenesis of KSHV-induced malignancies and the molecular basis of KSHV life cycle. The knowledge can be used to develop novel therapeutic approaches for KSHV-related malignancies.	No		.
explaining grant policies to Chinese collaborators (future opportunities)	There may be ethnic specific genetic risks for schizophrenia. By comparing these risk factors between different ethnic populations, it provides the basis if there should be different implementation of health policies on different ethnic populations.	There may be ethnic specific genetic risks for schizophrenia. By comparing these risk factors between different ethnic populations, it provides the basis if there should be different implementation of health policies on different ethnic populations.	DK		.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)				MH_Survey1B_133	This collaborative funding allowed us to characterize two lines of [Gene Name] conditional knockout transgenic mice and discover brain developmental defects in two lines of universal [Gene Name] knockout mice. We also discovered the infertility in males of these two lines of universal [Gene Name] knockout mice. These findings support the clinical observation that [Gene Name] mutation is closely associated with neurodevelopmental disorders such as mental retardation, autism, etc. These valuable models and resource will expand our research capacity. In zebrafish studies, we found that [Gene Name] is required for early stage of neurogenesis and late neuronal lineage differentiation. This finding is consistent with our finding in mouse using in vitro neural stem cell culture and in vivo lineage analysis.
R01					MH_Survey1B_148	Large samples of sick patients are available for study in china, and in contrast, it is very difficult to do this work in the US because only small sample are available.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
novel research, validate findings	The USA side released the funds in a timely way but China side delayed the release date and also reduced the funding amount significantly as compared with the funds estimated or promised at the application period.	Chinese govt funding reduced, and delays	The China team focuses on the role and mechanism of [Gene Name] in neurogenesis in zebrafish. In the first year, they have characterized the dynamic changes in neural induction and lineage differentiation in zebrafish after [Gene Name] morpholino knockdown. By in situ hybridization, they found that down-regulation of [Protein Name] decreased the number of NSCs in zebrafish embryos at 24 h post-fertilization (hpf) determined by the levels of [Protein Name] and [Protein Name]. However, the number of NSCs recovered to normal levels at 48 hpf. The formation of motor neurons was reduced obviously. Knockdown of [Protein Name] inhibited the expression of [Gene Name], the earliest marker of pan-neuronal cells in the fore-, mid- and hindbrain at 48 hpf, and disturbed [Gene Name] expression pattern suggested abnormal morphology of brain. The expression pattern of [Protein Name] was significantly increased in the morphants, but the [Protein Name] expression was disturbed in the hindbrain. The [Protein Name] expression was increased in the end of hindbrain when nibp was knockdown. Finally, the formation of sensory neurons was not affected at 96 hpf because [Protein Name] expression was similar between the control embryos and [Gene Name] morphants. These findings suggest that [Gene Name] is required for early stage of neurogenesis and late neuronal lineage differentiation.	.		This international collaboration project is very useful to combine the strength of both sides and facilitate science advancement. Such project should be expanded to at least annual funding announcement. Also, the number of application proposals should be not limited to only one for each collaborator. We have several interesting projects for collaboration but the restriction for applicant qualification prevented further collaboration. The funding power for this US-China R01 mechanism is too small. We are doing the same tasks as regular NIH-R01 but this US-China R01 grant funded only $125,000 direct cost per year, similar to the exploratory NIH-R21 grant.
access to bigger study population in China	We have Chinese /American member of our team which help, and we visit china frequently but the distance, and expense is a problem, and language is a problem for Chinese visiting our lab. IRB problem are unnecessarily complex, over ritualized, and this hold up the study, making it hard to do in a short period of funding. The inability to ship DNA from China to US is a problem and we have trained Chinese to do the assays in China.	money, communication, travel, IRB issues, and biospecimen issues	1) Dr. [Named Individual], from the [Chinese Institution] joint our laboratory in Chicago from May to September 2015 to became familiar with the methods used to study the biomarkers. 2) The Chinese laboratory team began to collect the lymphocyte samples and have now collected approximately 150 out of 390 expected samples.	.		.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
program should be expanded, offered annually without restriction of applying to only one	Our findings suggest that [Gene Name] is essential for early neurogenesis and neuronal lineage differentiation. These findings will help to develop therapeutic strategies that will improve neurogenesis and functional recovery for neurodevelopmental disorders and neurodegenerative diseases. The detailed molecular and cellular mechanisms of the [Gene Name]/[Gene Name] signaling and their downstream targets in the differentiation of NSCs will advance our understanding of the embryonic and adult neurogenesis, and further unveil the critical barriers for the therapeutic approaches for neural diseases.	Our findings suggest that [Gene Name] is essential for early neurogenesis and neuronal lineage differentiation. These findings will help to develop therapeutic strategies that will improve neurogenesis and functional recovery for neurodevelopmental disorders and neurodegenerative diseases. The detailed molecular and cellular mechanisms of the [Gene Name]/[Gene Name] signaling and their downstream targets in the differentiation of NSCs will advance our understanding of the embryonic and adult neurogenesis, and further unveil the critical barriers for the therapeutic approaches for neural diseases.	N/A		.
.	Our work may potentially lead to a better treatment for schizophrenia.	Our work may potentially lead to a better treatment for schizophrenia.	DK		.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			R01AI106498-01	Aspartic Protease Inhibitors as Novel Antimalarials	Malaria is an international health crisis that demands international partnerships to combat it, particularly due to the rise in drug resistant strains of the parasite. Without this grant, it would be difficult to continue this important work that could benefit the hundreds of thousands who die every year due to malaria. This grant allowed the US team with expertise in drug discovery combine with the Chinese team with lab and clinical expertise in malaria biology to explore novel mechanisms for antimalarial drug discovery.
R01				R01 AI 106629	Regulation of HIV-1 Gene Expression in Latency by YY1, RuvB2	This study activated a cooperative investigation into the role of post-transcriptional regulation in maintainance of HIV-1 latency in patients during long-term treatment with antivirals. It connected the US lab, with experience in NMD and the ZAP antiviral protein, with the China lab with expertise in RuvB2 and also with ZAP. While we were natural partners and with close ties, this grant allowed us to pursue work that neither could sustain without this new funding. We both have moved into the area of latency, and into study of primary human cells, as a result.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
novel research, drug specific	Mostly technical difficulties due to internet connections/audio problems during teleconferences using either Skype or Fuze Meeting. Also, finding common meeting times to conduct full team meetings is challenging due to the 13-14 hour time difference. However, these challenges were not insurmountable.	logistical communication issues	Synthesis of new analogs and assay of compounds in enzyme, parasite and animal models.	.		DK
grant allowed sustain collaboration, new research areas/expand labs research in both	We had difficulties with IRB approvals in the US, but these were not related to the international collaboration. We simply had not worked with patient materials before and had to learn how to deal with obtaining approvals.	IRB approval	We have uncovered a mechanism by which RuvB2 regulates expression of HIV-1 Gag, and does so in response to levels of the Env protein. A paper describing these findings is under review. Work to address the role of NMD and ZAP is underway.	.		These awards are very helpful for both participants. The plan works well; we could probably use more funding committed to the program!

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
.	Our findings will hopefully result in the identification of novel antimalaria drug candidates for further testing and/or identification of new biological targets that could be exploited to identify new antimalarial drugs.	Our findings will hopefully result in the identification of novel antimalaria drug candidates for further testing and/or identification of new biological targets that could be exploited to identify new antimalarial drugs.	DK		.
great, more funding	This work is providing information about the suppression of HIV-1 gene expression in latently infected cells. The work may directly suggest methods, including the use of small molecules, that would be suitable for "shock and kill" induction of virus and clearance of latent virus pools.	This work is providing information about the suppression of HIV-1 gene expression in latently infected cells. The work may directly suggest methods, including the use of small molecules, that would be suitable for "shock and kill" induction of virus and clearance of latent virus pools.	DK		.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			R01 AI106574	Inhibition of HIV by GPI-anchored antibody derivatives	The project brings together an HIV virologist (b) (6) a vaccinologist (b) (6) and immunotherapist (b) (6) to drive forward a cure strategy. We have developed new ideas for how membrane-associated anti-scFv with neutralizing capacity against HIV can be used to protect ex vivo expanded T-cells for adaptive T-cell therapy for HIV infection and how these scFvs might be incorporated into new constructs to engineer improved T-cell function and clearance of HIV.
R01				R01HL064560	IL2/Treg-based immunity to TB and AIDS-related TB	Our findings indicated that strong responses of CD8+ T effectors and TB-reactive Yδ T effectors correlated with prevention from latent to active TB.

n=13

Challenges

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
building research capability, training fellows	The internet connection for our telephone meetings is poor at time so they are not always as productive as they should be. Having (b) come to my lab was helpful to facilitate communication. The length of this award is 3 years, which is short for an international collaboration since it took several months to get the appropriate approvals to get started. We have not found an efficient way to share data besides sending large files back and forth. (b) has a secure drop box system but the Chinese government does not allow access to that so we were not able to use that feature. It would be helpful to have a secure way to share files that is approved by the Chinese government allowing investigators from China and abroad access.	logistical communication issues, too short, approvals took months	We have characterized liver disease in a cohort of HIV-HBV co-infected Chinese. We have also characterized HIV-HCV co-infection across China. We have performed HBV DNA testing and and started the immunology work for the study.	.		A longer period of funding would be most beneficial since collaborations internationally especially in developing countries takes time to get started. Until you actually work on a project, you don't have a good sense of what their capabilities are and what kind of training is needed. Getting the IRB approvals also takes time and cuts into the time for research.
disease specific, expand knowledge, opportunity to collaborate	Distance and difference in funding start timing for the two project sites caused initial communications gaps. A four month start date delay occurred in China NSFC funding vs US NIH funding. Regular Skype meetings have been established between the Chinese and US laboratories, and the plan is that these will achieve sufficient regularity to accelerate the research program.	logistical communication issues, delays in funding	The Long Lab at the Chinese Academy of Science in Shanghai is working on the design and discovery of new CCR5 and CXCR4 antagonists. By analyzing the structures of potent small molecule CCR5 antagonists, our Chinese collaborators deduced a general pharmacophore model of propane-1,3-diamine skeleton flanked by two hydrophobic domains for effective CCR5 inhibition. Furthermore, by reassembling the privileged structures based on the pharmacophore model, they identified a series of new structures with potent CCR5 antagonism functions at low nanomolar IC50 values in cell signaling assays. Analyses in our US Lab of the international collaboration have now shown that these compounds also exhibit potent antiviral activities with low nanomolar EC50 values. In addition, by employing a scaffold hopping strategy, our Chinese collaborators discovered new CXCR4 antagonists that again we in the US lab have found to have potent antiviral activities and high selectivity. Importantly, these compounds avoid cardiotoxicity such as the adverse QT interval prolongation effect typically found with previously identified CXCR4 antagonists. The newly discovered small molecule CCR5 and CXCR4 inhibitors, with novel scaffolds, serve as candidates for conjugation with the peptide triazole gp120 inhibitors to generate novel chimeric inhibitor fusions targeting both coreceptors and HIV env gp120.	New project development has simply not yet been addressed. Nonetheless, further progress in the current project and increasing awareness of the combined expertises and mutual interests of the Chaiken/Drexel and Long/CAS laboratories could well lead to future efforts.		Better anticipate distance limitations; accelerate establishment of vehicles such as regular Skype meetings.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
muliyear collaboration to allow for time to understand capabilities (capacity), IRB	Our findings demonstrate the advanced liver disease in a substantial proportion of co-infected subjects as well as the widespread prevalence of both HIV-HBV and HIV-HCV co-infection across China. To date, our data support better screening for viral hepatitis in HIV-infected persons across China.	Our findings demonstrate the advanced liver disease in a substantial proportion of co-infected subjects as well as the widespread prevalence of both HIV-HBV and HIV-HCV co-infection across China. To date, our data support better screening for viral hepatitis in HIV-infected persons across China.	N/A		.
logistical communication issues, distance	Combination therapy is the most likely way to treat HIV-1 due to the risk of resistance to individual inhibitors. Hence, the synergistic combinations (both noncovalent and covalent) we seek in this project could be of great therapeutic value.	Combination therapy is the most likely way to treat HIV-1 due to the risk of resistance to individual inhibitors. Hence, the synergistic combinations (both noncovalent and covalent) we seek in this project could be of great therapeutic value.	Peptide synthesis; GPCR structural analysis		So far, the topic of next step funding has not arisen, but the improved momentum of our current project, enhanced by recent use of Skype meetings, is bolstering our chances to obtain strong results, and in turn this will set the stage to consider next step funding development.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
R01	(b) (6)			R01 AI106574	Inhibition of HIV by GPI-anchored antibody derivatives	The project brings together an HIV virologist (b) (6) a vaccinologist (b) (6) and immunotherapist (b) (6) to drive forward a cure strategy. We have developed new ideas for how membrane-associated anti-scFv with neutralizing capacity against HIV can be used to protect ex vivo expanded T-cells for adaptive T-cell therapy for HIV infection and how these scFvs might be incorporated into new constructs to engineer improved T-cell function and clearance of HIV.
R01				R01HL064560	IL2/Treg-based immunity to TB and AIDS-related TB	Our findings indicated that strong responses of CD8+ T effectors and TB-reactive Υδ T effectors correlated with prevention from latent to active TB.

Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	Please give a short summary of the work completed by the international laboratory/team for this study.	Please explain why you have no plans to collaborate on other projects:		Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).
disease specific	Funding of the Chinese investigator seems to lag behind NIH funding to the US investigator, slowing the research. The limited funding creates challenges for carrying out the research.	delays in funding, not enough money	For our studies, the Chinese investigator has produced many of the constructs we have tested since he is the expert in antibody cloning. His laboratory typically carries out the initial investigations testing the expression and anti-HIV inhibitory activity of all the constructs in cell lines before sending to us to test in primary cell culture models. The work has been high quality and generally timely. We had worked together before, so our research relationship is quite strong.	.		One of the challenges of collaborating with a scientist in China is sending and receiving reagents. These collaborations would be considerably easier if the process could be improved.
novel	N/A	.	Study was designed by USA PI and China PI. In this study, both HIV + TB and HIV + LTB groups had low levels of PPD-specific IFNgamma+ CD4+ T cells regardless of CD4+ peripheral blood lymphocytes counts. However, numbers of PPD-specific IFNgamma+ CD8+ T cells in the HIV + LTB group were significantly greater than those in the HIV + TB group. Surprisingly, numbers of phosphoantigen hydroxy-3-methyl-but-2-enyl pyrophosphate-specific IFNgamma+ Vgamma2Vdelta2+ T cells in the HIV + LTB group were much greater than those in the HIV + TB group ($P < 0.001$). This difference was present in the subgroups of HIV + LTB whatever the levels of CD4+ T-cell counts more than 200/microl or less than 200/microl. Numbers of hydroxy-3-methyl-but-2-enyl pyrophosphate-specific IFNgamma+ Vgamma2Vdelta2+ T cells were even five times greater than those of PPD-specific IFNgamma+ CD8 T cells within the HIV + LTB group. Our data indicated the potent immune responses of hydroxy-3-methyl-but-2-enyl pyrophosphate-specific IFNgamma+ Vgamma2Vdelta2+ T cells and PPD-specific IFNgamma+ CD8+ T cells were detected in HIV + LTB persons but not HIV + TB patients. The findings suggested that robust immune responses of Vgamma2Vdelta2+ and CD8+ T effector cells were associated with the latent stage of Mycobacterium tuberculosis coinfection in HIV-1-infected humans.	.		Continue to support this program.

Please provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the process of applying for and receiving funding for international collaborations).	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**Please describe how your findings may be used to inform the development or implementation of health programs:**	**What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?**		**Please explain why you have no plans to continue to collaborate on this project:**
better understanding of supply chain/biospecimen shipping, combat issues	N/A	.	DK		.
great	Enhance understanding anti-TB immunity in HIV+ humans.	Enhance understanding anti-TB immunity in HIV+ humans.	2 people.		.

Please give a short summary of the work completed by the international laboratory/team for this study.

Have collaborated before:
Have not collaborated before:

We have been collaborating investigators on a different project

We were collaborating investigators on this project under a different funding mechanism

He/she was a post doctoral fellow in my lab
Other

What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?

What, if any, other areas did members of the international laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?

We have discussed ways to continue this project together

We are applying for funding to continue this project together

We have received funding to continue this project together

DK

Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	
data sharing/transfer, and transfering biospecimens, delays, approvals took months, IRB approvals	8
logistical communication issues	4
travel/distance	1
Delays in funding disbursements and reductions in funding for Chinese PIs	5
The length of the award is too short and there's not enough funding	8

only one PI indicated that they had not yet spoken with their co-PI about collaborating on different projects in the future or whether or not that they would continue to work toegther on this project.

Please describe how your findings may be used to inform the development or implementation of health programs:
.
Stroke is a leading cause of death in China. The standardized protocols for high-resolution plaque imaging, histological processing and genotyping established in this study will streamline further clinical research programs at our respective institutions. We have already begun to implement our state-of-the-art imaging procedures at other medical centers throughout China. Using these techniques, our goal is to improve our ability to identify those at risk for the development of high-risk cerebrovascular disease at an earlier stage, and to provide better tools for selection of appropriate therapy for secondary stroke prevention.
The novel highly potent HIV-1 inhibitors that we generated through the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.
Our second phase of validation of data and developing biomarkers for early detection of gastric cancer and/or monitoring response to therapy is starting. With the exceptional tissue and serum biobanking in China, we have the opportunity to move our results from bench to bed to decrease the burden of gastric cancer, the second most frequent cancer world-wide.
The results of these collaborative works allow us to better understand the pathogenesis of KSHV-induced malignancies and the molecular basis of KSHV life cycle. The knowledge can be used to develop novel therapeutic approaches for KSHV-related malignancies.
There may be ethnic specific genetic risks for schizophrenia. By comparing these risk factors between different ethnic populations, it provides the basis if there should be different implementation of health policies on different ethnic populations.
Our findings suggest that [Gene Name] is essential for early neurogenesis and neuronal lineage differentiation. These findings will help to develop therapeutic strategies that will improve neurogenesis and functional recovery for neurodevelopmental disorders and neurodegenerative diseases. The detailed molecular and cellular mechanisms of the [Gene Name]/[Gene Name] signaling and their downstream targets in the differentiation of NSCs will advance our understanding of the embryonic and adult neurogenesis, and further unveil the critical barriers for the therapeutic approaches for neural diseases.
Our work may potentially lead to a better treatment for schizophrenia.
Our findings will hopefully result in the identification of novel antimalaria drug candidates for further testing and/or identification of new biological targets that could be exploited to identify new antimalarial drugs.
This work is providing information about the suppression of HIV-1 gene expression in latently infected cells. The work may directly suggest methods, including the use of small molecules, that would be suitable for "shock and kill" induction of virus and clearance of latent virus pools.
Our findings demonstrate the advanced liver disease in a substantial proportion of co-infected subjects as well as the widespread prevalence of both HIV-HBV and HIV-HCV co-infection across China. To date, our data support better screening for viral hepatitis in HIV-infected persons across China.
Combination therapy is the most likely way to treat HIV-1 due to the risk of resistance to individual inhibitors. Hence, the synergistic combinations (both noncovalent and covalent) we seek in this project could be of great therapeutic value.
Enhance understanding anti-TB immunity in HIV+ humans.