From: Bernabe, Gayle (NIH/NIAID) [E] Handley, Gray (NIH/NIAID) [E] To:

Subject:

Date: Monday, July 1, 2019 1:07:00 PM

**Attachments:** 

<u>US-China Evaluation Prelim Evaluation (Full) 4.8.15.doc</u> <u>US-China Bilateral Program Prelim Evaluation Summary 4.8.15.doc</u>

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

# 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.

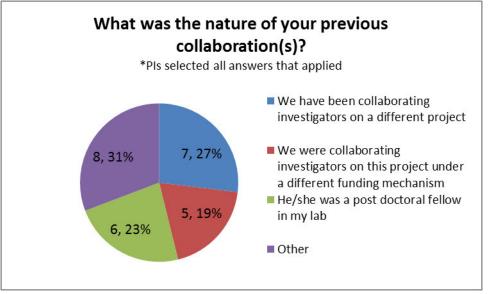
The following preliminary evaluation data represents surveys received via email from U.S. principal investigators (PIs) prior to COB, on Wednesday, April 8, 2015.

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**

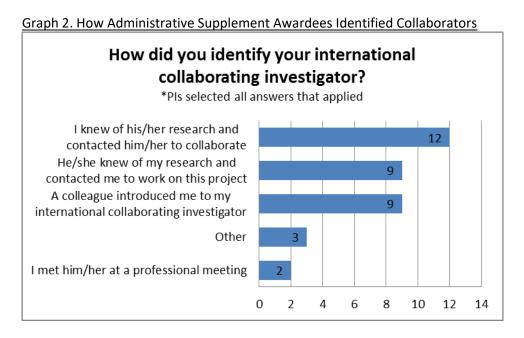
# **Administrative Supplements**

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.



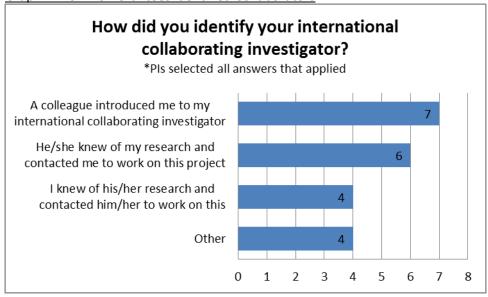
#### **R01s**

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.

What was the nature of your previous collaboration(s)? \*PIs selected all answers that applied We have been collaborating investigators on a different project ■ We were collaborating 4,23% investigators on this project under 8,47% a different funding mechanism 2,12% ■ He/she was a post doctoral fellow in my lab 3, 18% Other

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. Pls 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**

Pls 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**

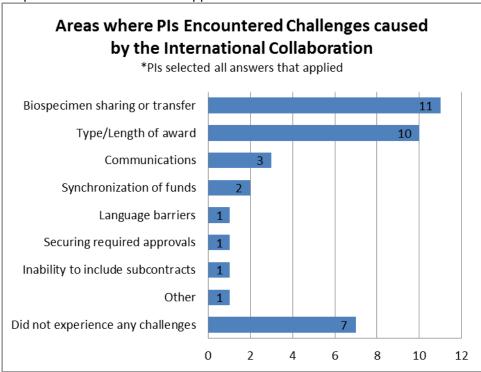
Surveyed awardees indicated that biospecimen transfer issues and shipping delays were one of the most prominent issues caused by the international collaboration. These themes emerged in both the open ended and the multiple-choice questions about challenges. (Graph 5 below indicates responses from a multiple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

**Areas where PIs Encountered Challenges** caused by International Collaboration \*PIs selected all answers that applied Type/Length of award Communications Biospecimen sharing or transfer Synchronization of funds Securing required approvals Language barriers Did not experience any challenges 0 1 2 3 4 5 6 7 8

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 specifically 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 specifically 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**

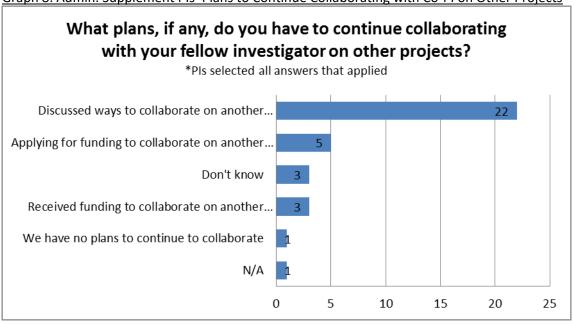
# **Adminstrative Supplements**

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.

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 20 this project together We are applying for funding to continue this project together We have received funding to continue this project together Don't know 3 0 5 10 15 20 25

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

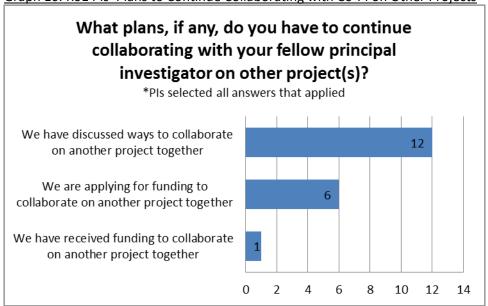
#### **R01**

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 efficiency.

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.

# **Appendix**

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

<u>been published</u>	
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 (Pls) noting prior collaboration with their Chinese counterparts. This goal was further actualized as Pls 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 Pls 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:

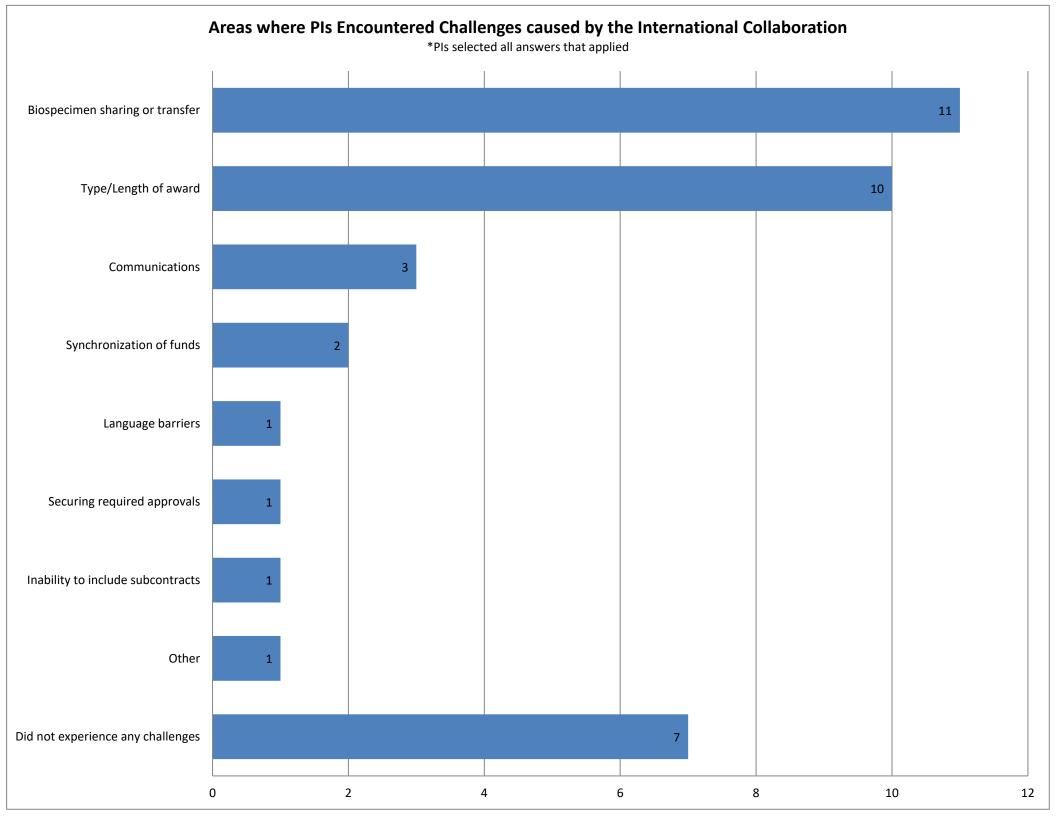
U.S. Laboratory/Team Capacity Building	
Number trained in quantitative data collection and analysis	77
Number trained in trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	59
Number people trained in bioethics or IRB rules and regulations	52
Number 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. Pls 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.



						Please describe any unique		
						scientific findings or opportunities		Please mark each area
							Please mark each area where	where you encountered
						because it involved collaboration	you encountered challenges	challenges that were caused
						between U.S. and international	that were caused by the	by the international
Award	PI	Institution		Grant No.	Title		international collaboration.	collaboration.
			(b) (6)			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	- 6 . 6 .	
AS					MH_Survey1A_101	between the two institutions.	Type/Length of award	
AS							Biospecimen sharing or transfer	
					Multispecific HIV-1 Entry Inhibitors Targeting Both	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		Acquisition or synchronization of release of funds between US and international funding
AS				N/A	gp120 and gp41	infection.	Type/Length of award	agencies (if applicable)
							· · · · · · · · · · · · · · · · · · ·	

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

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

associated with this administrative	Please describe how your findings may be used to inform the development or implementation of	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	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?  (b) (6)
	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		
			How many people from	How many people from		people from the		
How many people from	How many people from		the US laboratory/team	the US laboratory/team		US	How many people from	
the US laboratory/team	the US laboratory/team	How many people from the	were trained (either	were trained (either		laboratory/tea	the US	How many people from
were trained in	were trained (either	US laboratory/team were	through mentoring or	through mentoring or	How many people from	m were trained	laboratory/team were	the US laboratory/team
bioethics or IRB rules	through mentoring or	trained (either through	training courses) in	training courses) in	the US laboratory/team	in medical	trained in lab or bench	were trained in lab or
and regulations	training courses) in grant	mentoring or training	scientific manuscript	scientific manuscript	were trained in medical	procedures	science techniques	bench science techniques
specifically for this	writing specifically for this	courses) in grant writing	writing specifically for	writing specifically for	procedures specifically	specifically for	specifically for this	specifically for this
project?	project?	specifically for this project?	this project?	this project?	for this project?	this project?	project?	project?
								(b) (6)

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

		How many people from the					
	How many people from the		How many people from the			How many people from the	How many people from
				How many people			the international
		• • • • • • • • • • • • • • • • • • • •	laboratory/team were trained			laboratory/team were	laboratory/team were
were trained (either through	trained (either through	mentoring or training	(either through mentoring or	laboratory/team were	laboratory/team were	trained in administrative	trained in administrative
mentoring or training courses)	mentoring or training	courses) in scientific	training courses) in scientific	trained in medical	trained in medical	and financial grant	and financial grant
		_			procedures specifically for	management specifically	management specifically
this project?	specifically for this project?	specifically for this project?	specifically for this project?	for this project?	this project?	for this project?	for this project?
							(b) (6)
4							

from the international laboratory/team were trained in lab or bench science techniques specifically for this	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench	collaborating with your fellow principal investigator on this project? Please mark all	you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please	Please explain why you have no plans to continue to collaborate	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.	
project:	Project:	(b) (6		mark an mat appry.	on ans project.	αργιγ.	
			We have discussed ways to continue this project	We have discussed ways to continue this		We have discussed ways to collaborate on another project	
				project together		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 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 F	PI	Institution		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	Please mark each area where you encountered challenges that were caused by the international collaboration.	-	
			(b) (6)							
AS				R01 A1087849	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				5R01Al089999	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.)			
				30973863 and	The effect of Myristica fragrans on colon cancer and its mechanism of		I did not experience any challenges due to the			
AS				81161120429	action Research	N/A	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).		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 procurs		He/she was a post doctoral fellow in my		I have collaborated with him ther 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,	I have collaborated with him/her before	lab		I have collaborated with him/her before	TELIOW IN MY IAD
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)	CD36. This led to a major breakthrough in uncovering how selenoprotein K functions in immune cells that we	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				

i	international collaborating investigator? (please mark all	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),	(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue),	Please list all of the presentations associated with this administrative supplement	Please list all of the presentations associated with this administrative supplement	
1	that apply)	all that apply)	Page Numbers)	Page Numbers)	(presenter, title, and venue):	(presenter, title, and venue): (b) (6	and year):
	l knew of his/her research and						
	contacted him/her to work on this project						N/A
	Other: initial collaboration had						
		Other					N/A
	I knew of his/her research and contacted him/her to work on this project						v/a

associated with this administrative	Please describe how your findings may be used to inform the development or implementation of	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	qualitative data collection and analysis (e.g. focus group	collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB	were trained in bioethics or IRB rules and regulations specifically for this	the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?
								(b) (6)
0	DK							
	The findings provide insight into dietary selenium related to risk of atherosclerosis							
0	Chemoprevention of colon cancer							

1									
!									
!									
!							What, if any, other areas did		
!				How many			members of the US		
4 '	How many people from	How many people from		people from the			laboratory/team receive training in		
4 '	the US laboratory/team	the US laboratory/team		US	How many people from		specifically for this project		
How many people from the	were trained (either	were trained (either		laboratory/tea	the US	How many people from	(excluding quantitative and		
US laboratory/team were	through mentoring or	through mentoring or	How many people from	m were trained	laboratory/team were	the US laboratory/team	qualitative data	How many people from the	How many people from the
trained (either through	training courses) in	training courses) in	the US laboratory/team	in medical	trained in lab or bench	were trained in lab or	collection/analysis, IRB/bioethics,	international laboratory/team	international laboratory/team
mentoring or training	scientific manuscript	scientific manuscript	were trained in medical	procedures	science techniques	bench science techniques	grant/manuscript writing, medical	were trained in quantitative	were trained in quantitative
courses) in grant writing	writing specifically for	writing specifically for	procedures specifically	specifically for	specifically for this	specifically for this	procedures, and lab/bench	data collection and analysis	data collection and analysis
specifically for this project?	this project?	this project?	for this project?	this project?	project?	project?	techniques)?	specifically for this project?	specifically for this project?
									(b) (6)

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

How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	the international laboratory/team were	from the international laboratory/team were trained in lab or bench science techniques specifically for this	laboratory/team were trained in lab or bench science techniques specifically for this project?	quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	made) to continue collaborating with your fellow principal investigator on this project? Please mark all	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 other project(s)? Please mark all that apply.	
			(b) (6)						
					We are applying for	We have discussed		We have discussed ways to collaborate	
				N/A	funding to continue this project together	ways to continue this project together		on another 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.SChina Program for Biomedical Collaborative	Ma have d	
						We are applying for funding to continue this	Research (R01) - 1. However, this was not funded and thus we only	We have discussed ways to collaborate on another project	
				DK	-	project together	sporadically collaborate.	together	
								We have no plans to	
					We have no plans to continue to collaborate on	We have no plans to continue to collaborate	We have no more funding to continue this	continue to collaborate on another project	
						on this project together		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

					because it involved collaboration	you encountered challenges	challenges that were caused	Please mark each area where you encountered challenges that were caused by the international
Award	PI	Institution		Title		international collaboration.		collaboration.
			(b) (6)	Molecular Epidemiology of Infection with Human		I did not experience any challenges due to the		
AS				Relationship between Translation and Stability	pathogenesis of cervical lesion.  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	I did not experience any challenges due to the		
AS AS				immunohistochemical and proteomic analyses		international collaboration  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).	completed by the international		What was the nature of your previous collaboration(s)? (please mark all that apply)		
			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.		He/she was a post doctoral fellow in my	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	I have not collaborated with him/her	She is from the group of my former	Other	

П

Had you collaborated with your fellow principal investigator prior to this	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)		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)
					A colleague introduce d me to my internatio nal collaborating investigat or		(b) (6)
			Other: I contacted her colleague, a visiting scholar in our university, to initiate this collaboration	Other			
	He/she was a post doctoral	a different		He/she knew of my research and contacted me to work on this project			
			international collaborating investigator				

administrative supplement	presentations associated with this administrative supplement		associated with this administrative supplement (patent number,	Please describe how your findings may be used to inform the development or implementation of	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for	US laboratory/team were trained in quantitative data collection and analysis
(presenter, title, and venue):	(presenter, title, and venue): (b) (6)	year):	country, and year):	health programs:	this project?	specifically for this project? (b) (6)
				Analysis of infections at the level of variants furthers our understanding		
		N/A		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	0	N/A		
		N/A	0	N/A		

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

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

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

the international laboratory/team were trained in administrative and financial grant management specifically	from the international laboratory/team were trained in lab or bench science techniques specifically for this	the international laboratory/team were	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.	you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please	Please explain why you have no plans to continue to collaborate	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	
				We have received funding to continue this project			ways to collaborate on another project	
				together			together	
						She has shifted her		
						research focus more to oncology because of insufficient funding in her		
				DK		group on psychiatric	Don't Know	

Please explain why you have no plans to collaborate on	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.	challenges that were	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.
Awaru	JF1	moditution	(b)		THE	Supplement allowed us to launch	international consporation.	conduction.	conado auon.	conduct dutili.
						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		Communications (e.g. scheduling, poor telephone/internet		Inability to include subcontracts to the US partners in the resulting follow-up
AS				3PO1CA132714- 04S1	Directing tumor-specific T cells to tumors	(b) (6) group), either as stand- alone treatments or in combination		connection, cultural differences, etc.)	Type/Length of award	grant applications submitted by our Chinese partners
AS				R01AI081995	T-cell Immune Responses to Schistosome Infection in the elderly	This collaboration promoted Dr.	Securing required approvals (IRBs and others)	Type/Length of award	Biospecimen sharing or transfer	emicae parareis
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	Type/Length of award			

funds, biospecimen sharing/transfer, data	work completed by the international	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						
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	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	based on these data they (b) (6) (b) (6) developed new projects and obtained two new big grants from NSFC (National Science Foundation	l 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	We are just about ready to write up the data for a major joint publication	I have not collaborated with him/her before					

international collaborating	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)	(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue),	Please list all of the presentations associated with this administrative supplement	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):
					(b) (6)		
						No patents from my lab. I am	
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					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.  A colleague introduced me to my international collaborating investigator						N/A	0
Ü							
						N/A	0

Please describe how your findings may be used to inform the development or implementation of	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	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	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	the US laboratory/team were trained (either through mentoring or training courses) in grant	How many people from the	through mentoring or training courses) in scientific manuscript writing specifically for this project?
being used by our partners in China to improve CIK therapies by facilitating									(b) (6)
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									
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.

				l ' "					
	How many			members of the US			the international	from the international	
	people from the			laboratory/team receive training			laboratory/team were	laboratory/team were	
	US	How many people from		in specifically for this project			trained in qualitative	trained in qualitative	
	laboratory/tea	the US	How many people from	(excluding quantitative and			data collection and	data collection and	How many people from the
How many people from	m were trained	laboratory/team were	the US laboratory/team	qualitative data	How many people from the	How many people from the	analysis (e.g. focus group	analysis (e.g. focus	international
the US laboratory/team	in medical	trained in lab or bench	were trained in lab or	collection/analysis, IRB/bioethics,	international laboratory/team	international laboratory/team	discussion, guided	group discussion,	laboratory/team were
were trained in medical	procedures	science techniques	bench science techniques	grant/manuscript writing, medical	were trained in quantitative	were trained in quantitative	interviews, etc.)	guided interviews, etc.)	trained in bioethics or IRB
procedures specifically	specifically for	specifically for this	specifically for this	procedures, and lab/bench	data collection and analysis	data collection and analysis	specifically for this	specifically for this	rules and regulations
for this project?	this project?	project?	project?	techniques)?	specifically for this project?	specifically for this project?	project?	project?	specifically for this project?
									(b) (6)
1	How many people from the US laboratory/team were trained in medical procedures specifically	US laboratory/tea m were trained in medical procedures specifically specifically for	people from the US laboratory/tea m were trained the US laboratory/team in medical were trained in medical procedures specifically specifically for this	How many people from the US  Iaboratory/tea mover trained in medical procedures specifically by the US and the	people from the US laboratory/tea m were trained in medical procedures specifically for specifically for this specifically for this project the US laboratory/team merceive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, specifically for this specifically for this  laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data collection/analysis, IRB/bioethics, specifically for this specifically for this	How many people from the US  Iaboratory/team were trained in medical procedures specifically for this  How many people from the US Iaboratory/team were trained in medical procedures specifically for this  How many people from the US Iaboratory/team receive training in specifically for this project (excluding quantitative and the US Iaboratory/team were trained in lab or bench were trained in lab or bench science techniques specifically for this  Members of the US Iaboratory/team receive training in specifically for this collection/analysis, IRB/bioethics, international laboratory/team were trained in quantitative grant/manuscript writing, medical procedures, and lab/bench	How many people from the US  Iaboratory/team receive training in specifically for this project  (excluding quantitative and quantitative data collection and analysis  The W many people from the US laboratory/team were trained in lab or bench science techniques specifically for this specifically for this  The W many people from the US laboratory/team were trained in lab or bench science techniques specifically for this  The W many people from the US laboratory/team were trained in lab or bench science techniques specifically for this  The W many people from the US laboratory/team receive training in specifically for this project (excluding quantitative and quantitative data collection/analysis, IRB/bioethics, specifically for this  The W many people from the usualitative data collection/analysis, IRB/bioethics, specifically for this  The W many people from the decivity from the international laboratory/team were trained in quantitative data collection and analysis	How many people from the US Iaboratory/team were trained in laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided international laboratory/team were trained in quantitative data collection and analysis vere trained in quantitative data collection and analysis vere trained in quantitative data collection and analy	How many people from the US laboratory/team were trained in lab or bench were trained in lab or bench were trained in medical procedures specifically for this  Trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in lab or bench were trained in lab or bench were trained in lab or bench science techniques specifically for this  Trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)  Trained in qualitative data collection and analysis (e.g. focus were trained in quantitative data collection and analysis data collection and analysis data collection and analysis specifically for this

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

How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this	quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench	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.	you have (or efforts have you made) to continue collaborating with your fellow principal investigator	Please explain why you have no plans to	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 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 are applying for	We have discussed		We are applying for funding to collaborate on	We have discussed ways to collaborat e on another project	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)	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
		funding to continue this project together  We have discussed ways to continue this project together	ways to continue this project together		We have discussed ways to collaborate on another project together	together	performed in China.	counterparts in China and focused on the results on the collaborative projects.  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 AS-FY11	PI	Institution	Coll. Invest.	<b>Grant No.</b> JU01-Al-035040	<b>Title</b> Epidemiology of HIV-	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.  Using China's National prospective	Please mark each area where you encountered challenges that were caused by the international collaboration. Type/Length of award	challenges that were caused by the international	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.
					related Malignancies in China	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. Nonobvious findings in odds ratio of CD4 cell counts level may be due to selection bias.		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					Methods for Hybrid Differential Equation	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		

and/or other).	completed by the international laboratory/team for this study.	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)	
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.		We were collaborating investigators on this project under a different funding mechanism				We were collaborating investigators on this project under a different funding mechanism	
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.		We were collaborating investigators on this project under a different funding mechanism				We were collaborating investigators on this project under a different funding mechanism	
Clinical data and epidemiological data sharing is challenging between US and China.	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.	-	on a different project	Both were PhD students of (b) (6) Epidemiology	Other		We have been collaborating investigators on a different project	Both were PhD  (b) (6) Epidemiology

international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all that apply) Other	Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue),	Please list all of the presentations associated with this administrative supplement	Please list all of the presentations associated with this administrative supplement	and year):	associated with this administrative supplement (patent number, country, and year):	development or implementation of
relationship								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		Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.

laboratory/team were trained in quantitative data collection and analysis specifically for	How many people from the US laboratory/team were trained in quantitative data collection and analysis	laboratory/team were trained in qualitative data collection and analysis (e.g. focus group	collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB	bioethics or IRB rules and regulations specifically for this	the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this	How many people from the US laboratory/team were trained (either through mentoring or training	the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for	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			What, if any, other areas did members of the US				How many people from the international		
people from the			laboratory/team receive training in			laboratory/team were	laboratory/team were		
	How many people from		specifically for this project				trained in qualitative		
		How many people from the US laboratory/team	(excluding quantitative and qualitative data	How many people from the				How many people from the international	How many people from the
	trained in lab or bench		1.						international laboratory/team
					· ·	1 1 1	•		were trained in bioethics or IRB
					•			•	rules and regulations specifically
this project?	project?	project?	techniques)?	specifically for this project?	specifically for this project?	project?	project?	specifically for this project?	(b) (6)
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										What, if any, other areas did	
										members of the international	
										laboratory/team receive	
										training n specifically for this	
	l l	How many people from the								project (excluding	
How	w many people from the i	international	How many people from the			How many people from the	How many people from	How many people	How many people	quantitative and qualitative	
How many people from the inter	ernational	aboratory/team were	international	How many people	How many people from the	international	the international	from the international	from the international	data collection/analysis,	
international laboratory/team labor	oratory/team were t	trained (either through	laboratory/team were trained	from the international	international	laboratory/team were	laboratory/team were	laboratory/team were	laboratory/team were	IRB/bioethics,	
were trained (either through train	ned (either through	mentoring or training	(either through mentoring or	laboratory/team were	laboratory/team were	trained in administrative	trained in administrative	trained in lab or bench	trained in lab or bench	grant/manuscript writing,	
mentoring or training courses) ment	ntoring or training	courses) in scientific	training courses) in scientific	trained in medical	trained in medical	and financial grant	and financial grant	science techniques	science techniques	grants management, medical	
in grant writing specifically for cours	rses) in grant writing	manuscript writing	manuscript writing	procedures specifically	procedures specifically for	management specifically	management specifically	specifically for this	specifically for this	procedures, and lab/bench	
this project? speci	cifically for this project?	specifically for this project?	specifically for this project?	for this project?	this project?	for this project?	for this project?	project?	project?	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.	you have (or efforts have you made) to continue collaborating with your fellow principal investigator	Please explain why you have no plans to	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 AS-FY11	PI	Institution	Coll. Invest. (b) (6)	Grant No. )U19Al089672	Title Southeast Asia Malaria Research Center: Antimalarial drug resistance in P. falciparum  Mechanical Priming of	because it involved collaboration	Please mark each area where you encountered challenges that were caused by the international collaboration. Type/Length of award	Please mark each area where you encountered challenges that were caused by the international collaboration.	encountered challenges that were	Please mark each area where you encountered challenges that were caused by the international collaboration.
A\$+Y11				AI0//343	Mechanical Priming of Selectin-Ligand Interactions	(which we now re-name it as cyclic	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)			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.	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		He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism		He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism
	4) (0	I have collaborated with him/her before			I have collaborated with him/her before		
N/A	(b) (6) performed		He/she was a post doctoral fellow in my lab			He/she was a post doctoral	We have been
	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		collaborating investigators on a different project	I have collaborated with him/her before	fellow in my lab	collaborating investigators on a different project
	We shared 2 or 3 packages of VLP samples	I have collaborated with him/her before			I nave collaborated with him/her before		
	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					We were collaborating investigators on this project	
	that apoptotic vesicles were co-produced		We were collaborating investigators on this			under a different funding	
skype connection was poor. length of the	with VLPs, making our analysis of Env difficult. We have		project under a different funding mechanism			mechanism We have been collaborating	
award	since modified our protocols and plasmids		We have been collaborating investigators			investigators on a different	
was insufficient (1 year) to solve problems.	to try to address this problem	I have collaborated with him/her before	on a different project		I have collaborated with him/her before	project	

international collaborating investigator? (please mark all	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	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	Please list all of the presentations associated with this administrative supplement	year):	associated with this administrative supplement (patent number, country, and year):	development or implementation of
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	How many people from	
			How many people from the					the US laboratory/team	the US laboratory/team	
		How many people from the US	US laboratory/team were		How many people from	How many people from the	How many people from the	were trained (either	were trained (either	
How many people from the US	How many people from the	laboratory/team were trained in	trained in qualitative data	How many people from the	the US laboratory/team	US laboratory/team were	US laboratory/team were	through mentoring or	through mentoring or	How many people from
laboratory/team were trained	US laboratory/team were	qualitative data collection and	collection and analysis (e.g.	US laboratory/team were	were trained in bioethics	trained (either through	trained (either through	training courses) in	training courses) in	the US laboratory/team
in quantitative data collection	trained in quantitative data	analysis (e.g. focus group	focus group discussions,	trained in bioethics or IRB	or IRB rules and	mentoring or training	mentoring or training	scientific manuscript	scientific manuscript	were trained in medical
and analysis specifically for this	collection and analysis	discussions, guided interviews,	guided interviews, etc.)	rules and regulations	regulations specifically	courses) in grant writing	courses) in grant writing	writing specifically for	writing specifically for	procedures specifically
project?	specifically for this project?	etc.) specifically for this project?	specifically for this project?	specifically for this project?	for this project?	specifically for this project?	specifically for this project?	this project?	this project?	for this project?
										(b) (6)

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

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										What, if any, other areas did	ı
										members of the international	ı
										laboratory/team receive	ı
										training n specifically for this	ı
										project (excluding quantitative	ı
	How many people from the	How many people from the				How many people from the	How many people from	How many people from	How many people from	and qualitative data	ı
How many people from the	international	international laboratory/team	How many people from the	How many people from	How many people from the	international	the international	the international	the international	collection/analysis,	ı
international laboratory/team	laboratory/team were	were trained (either through	international laboratory/team	the international	international	laboratory/team were	laboratory/team were	laboratory/team were	laboratory/team were	IRB/bioethics,	ı
were trained (either through	trained (either through	mentoring or training courses)	were trained (either through	laboratory/team were	laboratory/team were	trained in administrative	trained in administrative	trained in lab or bench	trained in lab or bench	grant/manuscript writing,	ı
mentoring or training courses) in	mentoring or training	in scientific manuscript	mentoring or training courses)	trained in medical	trained in medical	and financial grant	and financial grant	science techniques	science techniques	grants management, medical	ı
grant writing specifically for this	courses) in grant writing	writing specifically for this	in scientific manuscript writing	procedures specifically	procedures specifically for	management specifically for	management specifically	specifically for this	specifically for this	procedures, and lab/bench	ı
project?	specifically for this project?	project?	specifically for this project?	for this project?	this project?	this project?	for this project?	project?	project?	techniques)?	ı
										(b) (6)	)
											1
											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	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:	Please mark all that apply.  We have received funding to collaborate on another project together	We have discussed ways to collaborat e 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).  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 I	Institution	Coll. Invest.	Grant No.		because it involved collaboration between U.S. and international	Please mark each area where you encountered challenges that were caused by the	challenges that were caused by the international	Please mark each area where you encountered challenges that were caused by the international collaboration.
			(b) (d	5)					
						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			
AS-FY12				1 R01 Al081604	antivirals targeted to HIV-	studying the susceptibility of our unique stapled-peptide base HIV-1 inhibitors.	Biospecimen sharing or transfer		
AS-FY12					bNAbs in huCD4/CCR5 transgenic mice		Biospecimen sharing or transfer		
						9			
AS-FY12				AI049104-15		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).	completed by the international	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 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 antivirus 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	
	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	I have not collaborated with him/her before	Other: I was a Ph.D. student in his institute.  He/she was a post doctoral fellow in my lab	Other

Had you collaborated with your fellow principal investigator prior to this	What was the nature of your previous collaboration(s)? (please mark all that apply)	international collaborating investigator? (please mark all	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)
				(b) (b)
	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		
		I knew of his/her research and contacted him/her to work on this project		
	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 Please list all of the presentations (provide full citations: Author(s), associated with this Title, Journal, Year; Vol. (Issue), administrative supplement Page Numbers) (presenter, title, and venue):	Please list all of the presentations associated with this administrative supplement	year):	associated with this administrative	Please describe how your findings may be used to inform the development or implementation of	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?
	(0) (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 deciming drugs with	
		N/A		important for designing drugs with much broader activity.	
		N/A		Our findings will help with the development of an effective anti-HIV vaccine and prevention of HIV infection.	
		N/A		could lead to compounds that inhibit CTD kinases and others that activate HIV	

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

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

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

the international laboratory/team were trained in medical procedures specifically	How many people from the international laboratory/team were trained in medical procedures specifically for	laboratory/team were trained in administrative and financial grant management specifically	the international laboratory/team were trained in administrative and financial grant management specifically	laboratory/team were trained in lab or bench science techniques specifically for this	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this	quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?	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	
							funding to continue this	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	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		Please explain why you have no plans to collaborate on	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)
on this project:	apply.		other projects:	collaborations).
	DK			Frequency of this type funding may be increased.
	We have discussed ways to collaborate on another project together  We are applying for funding to collaborate on another project together	We have discussed ways to collaborat e 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.

Award	PI	Institution	Coll. Invest.		Grant No.		because it involved collaboration between U.S. and international	Please mark each area where	Please mark each area where you encountered challenges that were caused by the international collaboration.	caused by the international	Please mark each area where you encountered challenges that were caused by the international collaboration.	
.waru		sacucon		(b) (6)			Chinese scientists provided the following unique opportunities:		conduction:	Condition of the Condit	conduction and a second a second and a second a second and a second a second and a second and a second and a	
							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					
						MP3-China for	of both the recombinants clustered					
						Phylogenetic Analysis of HIV Transmission	within the CRF07_BC radiation, but were distinct from other CRF07_BC					
						Clusters among MSM in	reference sequences (PMID:	connection, cultural	Other: Delays in responses			
0					R01 Al094562	Beijing	25495675).  During the period of the R01 grant	differences, etc.)	to US team's requests	Other		
							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	I did not experience any				
							published as a cover story by	challenges due to the				
AS-FY12					AI069120	Interferon Induction	Science signaling.	international collaboration				1
							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		Biospecimen sharing or			
AS					CA75093A2			Type/Length of award	transfer			
												-

	work completed by the international	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)	
(Nashville, Beijing and UK); The Chinese team is sometimes overburdened with their daily work which led		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					
	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						
There are difficulties in sending shipping specimens, especially DNA and infected	African population is that neutralizing antibodies is rare in the African population but very prevalent in the Chinese population. Whether it leads to					We have been collaborating	
tissues and cells to the US to study, but these studies were carried out in China.	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	investigators on a different project	

international collaborating investigator? (please mark all	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)	(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue),	Please list all of the presentations associated with this administrative supplement	Please list all of the presentations associated with this administrative supplement (presenter, title, and venue):	and year):	Please list all of the patents associated with this administrative supplement (patent number, country, and year):
					(b) (6)		
I knew of his/her research and contacted him/her to work on this project						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

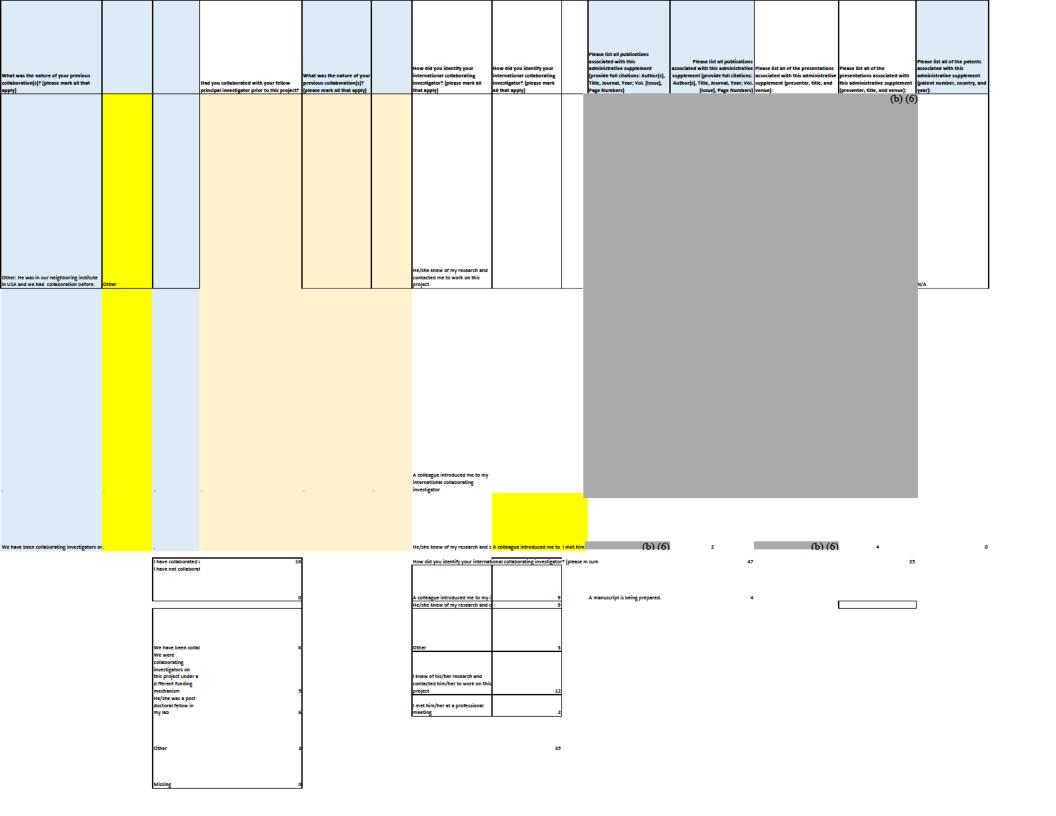
Please describe how your findings may be used to inform the development or implementation of	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?	How many people from the US laboratory/team were trained in quantitative data collection and analysis	How many people from the US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group	focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB	bioethics or IRB rules and regulations specifically for this	the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this project?	through mentoring or training courses) in scientific manuscript writing specifically for this project?
									(b) (6)
The findings from the supplementary									
Ine indings 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.									

					What, if any, other areas did			How many people from	How many people	
		How many			members of the US			the international	from the international	
How many people from		people from the			laboratory/team receive training			laboratory/team were	laboratory/team were	
the US laboratory/team		US	How many people from		in specifically for this project			trained in qualitative	trained in qualitative	
were trained (either		laboratory/tea	the US	How many people from	(excluding quantitative and			data collection and	data collection and	How many people from the
through mentoring or	How many people from	m were trained	laboratory/team were	the US laboratory/team	qualitative data	How many people from the	How many people from the	analysis (e.g. focus group	analysis (e.g. focus	international
training courses) in	the US laboratory/team	in medical	trained in lab or bench	were trained in lab or	collection/analysis, IRB/bioethics,	international laboratory/team	international laboratory/team	discussion, guided	group discussion,	laboratory/team were
scientific manuscript	were trained in medical	procedures	science techniques	bench science techniques	grant/manuscript writing, medical	were trained in quantitative	were trained in quantitative	interviews, etc.)	guided interviews, etc.)	trained in bioethics or IRB
writing specifically for	procedures specifically	specifically for	specifically for this	specifically for this	procedures, and lab/bench	data collection and analysis	data collection and analysis	specifically for this	specifically for this	rules and regulations
this project?	for this project?	this project?	project?	project?	techniques)?	specifically for this project?	specifically for this project?	project?	project?	specifically for this project?
										(b) (6)
1										

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

How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench	fellow principal		Please explain why you have no plans to continue to collaborate	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).
project:	(b) (6)		пак ап тас арру.	on this project.	арріу.		on one; projects.	international consistency;
		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 have discussed ways to		
		We are applying for	We have discussed		funding to collaborate on	collaborat e on another		
		funding to continue this project together	ways to continue this project together		another project together	project together		Longer period of funding and more funding will enhance and sustain the collaboration.

Award	PI Institution	Coll. Invest.		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	Piease 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.	Piesse 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 approvels, communications, type-flength 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?
		(b) (б)		Role of BRCA1 and its Association Protein CEP in DNA Double-Strand	Opportunity for sharing different expertise and expand research					Biospecimen are not allowed to be transported	BRCA1 and CtIP are important for homologous recombination (HR)-mediated (DS repair, 13891 inhibits BRCA1-mediated end resection and promotes non-homologous end joining (NHEI). We found that the oligomerization and tudor domains of 338P1 are required for 338P1 collisions of 338P1 are required for 338P1 as the CDK sites on CtIP including 327 which mediates CUP interaction with BRCA1 and T847 are important for preventing RR1 a 338P1 association protein to form damage-induced foci in 57882 the 1982 suppressing NHEI, Loss of 338P1 in BRCA1 deficient cells reactivates and resection which is dependent on CtIP. These studies reveal the role of BRCA1 CLIP and 338P1 in the regulation of HR and NHEI and will help understand the underlying mechanisms of how BRCA1 efficient cells are sensitive to PARP1 in bltors and how loss of 338P2 in BRCA1 deficient to PARP1 in bltors and how loss of 338P2 in BRCA1 deficient to PARP1.	
AS			3U34GM094618-		Build a G protein-coupled receptor (GPCR) structural biology platform at Shanghai institute of Materia Shanghai institute of Materia Shanghai institute of Materia (SIMM) Oninese Academy of Sciences. After this supplimentary of Sciences. After this supplied part and received funding for an ROI (through PAR-11-143) to perform a more long range study leading to the development of new and better anti-retrovinal therapeutics that could be used for					Long delays of shipments in Chinese customs		
AS				GPCR Network	AIDS patients.	Biospecimen sharing or transfer				offices N/A	journals like Science and Nature.	I have not collaborated with him/her before
n=28						Language Barriers  Communications (e.g. scheduling poor telephone/internet connection cultural differences etc.)  Types/Length of award  Inability to include subcontracts to the US partners in the resulting hollow-up grant applications submitted by our Chinese partners	: : ::				It have collaborated with him/her before It have not collaborated with him/her before  We have been collaborating investigators on a different project	17
						Securing required approvals (IRBs and others) Biospecimen sharing or transfer	1				We were co laborating investigators on this project under a different funding mechanism He/she was a post doctoral fellow in my lab	5
						I did not experience any challenges due to the international collaboration Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)	;				Other	s 10



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	laboratory/team were trained in qualitative data collection and analysis (e.g. focus group	collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	the US laboratory/team were trained in bioethics or IRB rules and regulations specifically	US laboratory/team were trained (either through mentoring or training courses) in grant writing	How many people from the US laboratory/team were	the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for	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?	were trained in medical procedures specifically for	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?
														(6)
	Our findings will help establish new strategies to treat PARP inhibitor-resistant breast cancers.													
	CCRS structure will lead to developing a deeper understanding of how the HIV													
0	virus enters the cell and will assist in the design of new therapeutics.	sum	38	sum	3:	7	17		21		30		4	

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1 DK

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

laboratory/team were trained in administrative and financial grant management specifically for	the international laboratory/team were trained in administrative and financial grant	the international laboratory/team were	the international	What, if any, other areas did members of the international laboratory/team receive training a 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)	made) to continue collaborating with your fellow principal investigator on this project? Please mark all that apply.	you have (or efforts have you made) to continue collaborating with your fellow principal investigator on this project? Please	Please explain why you have no plans to continue to collaborate on this	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			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 collaborat e on another project together We have		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	discussed ways to		
					We have discussed ways to	20		We are applying for f	5		
					DK  We have received funding to continue this project	, з		We have discussed w	22		
					to continue this project together We are applying for funding to continue this project together	9		N/A  DK  We have no plans to continue to collaborate on another project together  We have received funding to collaborate on another project together	1 1		

Award	AS	AS	AS
Award Pl	AS .	IAS .	(b) (6)
Institution			(0) (0)
Coll. Invest.			
Grant No.			N/A
Title	MH_Survey1A_101	MH_Survey1A_151	Multispec fic HIV-1 Entry Inhibitors Targeting Both gp120 and gp41
	This administrative supplement facilitated the collaboration between [US		N
Ì	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	We found some consistent alterations of synaptic proteins in [Gene Name] hypomorphi	Novel potent cross-reactive HIV-1 inhibitors were generated and characterized by combining the expertise of NCI group and the
Please describe any unique scientific findings or opportunities created by this study,	Institution) has some unique pediatric data. It also facilitated the exchange of	mice. We are preparing a manuscript on the	collaborating group in China. These inh bitors are highly promising
specifically because it involved collaboration between U.S. and international scientists.	students/fellows and faculties between the two institutions.	findings.	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			Type/Length of award Acquisition or synchronization of release of
International collaboration.	Type/Length of award	Biospecimen sharing or transfer	funds between US and international funding agencies (if applicable
			The award to U.S. investigators is too small (\$50 000 per year) to
Please describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals,			conduct non-human primate studies and sometimes was not received timely. In addition the support is not continuous which
communications, type/length of award, acquisition/synchronization of funds, biospecimen		There was a long delay for shipping [Gene	makes it difficult for us to translate our findings to human clinical
sharing/transfer, data sharing, and/or other).	The funding period of 1yr was not enough to build long-term collaborations	Name] mouse brain tissues.	trials.
			Our collaborators in China tested a combination of our antibodies
			with their peptide-based inh bitors for synergistic effects on
		[Named Individual]'s group has finished proteomic analysis of mouse [Gene Name]	neutralizing HIV-1. They identified the best combinations and have generated a series of fusion proteins of the ant bodies and
		brains. I discussed with her about the studies	peptides. They are currently extensively characterizing the fusion
	The [US Institution] team was able to collect pilot data from the 7T MR scanner at	when I visited China in 2014. Her graduate students were working on summarizing the	proteins in terms of neutralizing activity and drug-related properties. Our group in NCI has been testing the fusion proteins in
	[Chinese Institution] and published a few papers. The [Chinese Institution] team	findings. Her studies were slowed down	humanized mice and found that they potently suppressed HIV-1
Please give a short summary of the work completed by the international laboratory/team for this study.	performed preliminary analysis of the pediatric imaging data collected at [US Institution] and pub ished a few abstracts but not papers.	because her major funding has since shifted to proteomic analysis of human tumors.	infection and efficiently killed HIV-1-infected cells. Non-human primate studies have been planed.
		and the second comors.	The state of the s
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
		Other: She is from the group of my former	
What was the nature of your previous collaboration(s)? (please mark all that apply)	Other: We overlapped during early career	collaborator [Named Individual]]	We have been collaborating investigators on a different project
How did you identify your international collaborating investigator? (please mark all that	L	A colleague introduced me to my international	He/she knew of my research and contacted me to work on this
apply)	I know of his that measureh and contacted him that to work on this neciast	scomshoratina insactinator	(b) (6)
			(0)
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 patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
county, and year).	N/A	19/8	N/O
Story double become feel to see the state of the double over the			The novel highly potent HIV-1 inhibitors that we generated through
Please describe how your findings may be used to inform the development or implementation of health programs:	N/A	N/A	the collaboration are among the best currently available and are potentially useful for prevention and therapy of HIV-1 infection.
			(b) (6)
			(0)(0)
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Institution			
Coll. Invest.			
Grant No.	R01 AI087849	5R01AI089999	30973863 and 81161120429
Title	Manipulating the biosynthesis of capuramycin- type antibiotics for new anti-TB drugs	signaling in immune cells	The effect of Myristica fragrans on colon cancer and its mechanism of action Research
	OO L fermentors that have enabled the large	uniquely suited to a US/China collaboration. It	
	scale production of an advanced precursor of an anti-TB drug. This precursor which would	in inflammation and atherosclerosis that led to	
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	not be available otherwise was chemically modified by my research group to make novel	our collaborative studies. The fact that cardiovascular disease and chronic	N/A
		telephone/internet connection cultural	
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	differences etc.) Biospeamen 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		Sending samples and reagents both ways was	
rease describe each of the changings caused by the international condoctation that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen		problematic. Sharing resources like mice was very challenging. Travel between institutes	
sharing/transfer, data sharing, and/or other).	. , , ,	was most often sponsored by Jinan University.	N/A
	capuramycin analogues using a semisynthetic and mutasynthetic approach. An advanced	We uncovered a role for selenoprotein K in foam cell formation and atherosclerosis	
	capuramycin precursor was isolated in gram quantities which was utilized to gerate around	(PMID23444136). The molecular mechanism involved palmitoylation of scavenger receptor	
	fifty novel analogues using a novel chemoenzymatic approach or synthetic	CD36. This led to a major breakthrough in uncovering how selenoprotein K functions in	
	methods. Several of these analogues have improved activity against Mycobacterium	immune cells that we subsequently published in PNAS (PMID 25368151). The latter	
Please give a short summary of the work completed by the international laboratory/team	smegmatis. These efforts have led to 2 submitted manuscripts with contributors from	publication came after and he is not a co-author by (6) is	Discovered that neolignans from the spice nutmeg prevented colon cancer in a mouse colon cancer
for this study.	both groups.	work led to this later study.	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	
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	I knew of his/her research and contacted	PRIV.	I knew of his/her research and contacted him/her to
apply)	him/her to work on this project	Other: initial co laboration had iust beaun	work on this project (b) (6)
			(0) (0)
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 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		The findings provide insight into dietary	
Implementation of health programs:	DK		Chemoprevention of colon cancer
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IRS/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench techniques)?			
	We are applying for funding to continue this	We are analysis to the state of	We have no along to continue to the
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.	project together We have discussed ways to continue this project together	project together	We have no plans to continue to collaborate on this project together
		BDP-M (M1) National Institute of A lergy and Infectious	We have no more funding to continue this
		les a site is seen to	collaboration.
Please explain why you have no plans to continue to collaborate on this project:		Diseases Special Emphasis Panel	
What, if any, plans do you have (or efforts have you made) to continue collaborating with	We have discussed ways to collaborate on	We have discussed ways to collaborate on	We have no plans to continue to collaborate on
	We have discussed ways to collaborate on another project together		
What, if any, plans do you have (or efforts have you made) to continue collaborating with	another project together	We have discussed ways to collaborate on	We have no plans to continue to collaborate on
What, if any, plans do you have (or efforts have you made) to continue collaborating with your fellow principal leverifigator 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 co laborations.		We have discussed ways to collaborate on	We have no plans to continue to collaborate on another project together
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:	another project together  THE CONSIDER SHOW THE	We have discussed ways to collaborate on	We have no plans to continue to collaborate on another project together

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PI	•		(b) (6)
Institution			***
Coll. Invest.			
S	C1 477FC0	227 C4020400	NOT C4 43 C00
Grant No.	CA-133569  Molecular Epidemiology of Infection with Human Papillomavirus	R37 CA030488	NOT-CA-12-002 System-wide immunohistochemical and proteomic analyses of
Title	Variants	Relationship between Translation and Stability of HIV-1 mRNA	Sp4 mouse brain
		This supplementary award provided support in the form of a partial stipend for a student and allowed us to pursue a new	
	) Identified differences in intratypic variation of oncogenic HPV genome between two geographic locations (US and China) 2)	project in collaboration with a laboratory in Beijing headed by	We found some consistent alterations of synaptic proteins in Sp4
Please describe any unique scientific findings or opportunities created by this study,	Determined the impact of viral load on HPV-associated pathogenesis o	The US funds were important for our student's count button and the China funds were necessary for (b) (6 effort. We were able to obtain pre iminary results and then later	hypomorphic mice. We are preparing a manuscript on the
specifically because it involved collaboration between U.S. and international scientists.	cervical lesion.	effort. We were able to obtain pre iminary results and then later	findings.
Please mark each area where you encountered challenges that were caused by the	I did not experience any challenges due to the international	I did not experience any challenges due to the international	
International collaboration.	collaboration	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.
			A > CC> has finished proteomic analysis of mouse Sn4
		We studied the decay of retroviral RNAs specifically showing that	has finished proteomic analysis of mouse Sp4 brams. I discussed with her about the studies when I visited China
Please give a short summary of the work completed by the international laboratory/team	) Characterized the variants of oncogenic HPV types in a Chinese population. 2) Examined epidemiologic features of variants of	these RNAs are stabilized by extending translation of the Gag-Pol protein through a stop codon acting in opposition to the	in 2014. Her graduate students were working on summarizing the findings. Her studies were slowed down because her major
for this study.	oncogenic HPV type in a Chinese population.	Nonsense-Mediated Decay (NMD) machinery.	funding has since shifted 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	I contacted her colleague a visiting scholar in our university to initiate	collaborating investigators on a different project Tkine or insylver research and contacted minymer to one on one project: He/she knew of my research and contacted me to work	
apply)	this collaboration	on this project	investigator
			(b) (6)
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 patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A	N/A
County, and year).	of why the natural history of HPV infections is so variable. The findings	Inyn	IN/A
	or why the natural history of HPV infections is so variable. The findings	1	
	of the variant-associated risk of cervical lesion are important as most		
Please describe how your findings may be used to inform the development or implementation of health programs:		N/A	N/A
implementation of health programs:	of the variant-associated risk of cervical lesion are important as most HPV infections resolve spontaneously with only a small fraction leading	N/A	(b) (6)
Please describe how your findings may be used to inform the development or implementation of health programs: New many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?	of the variant-associated risk of cervical lesion are important as most HPV infections resolve spontaneously with only a small fraction leading	N/A	
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Grant No.	PO1CA132714-0451	R01Al081995
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Title	Directing tumor-specific T cells to tumors The US-China Research Supplement allowed us to launch an interesting and potentially very important long-term co laboration aimed a	elderly
	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 ine and fo lowing different forms of therapy) originally identified within our PO1 in the settings of colon- and	
Please describe any unique scientific findings or opportunities created by this study,	ovarian cancers melanoma and glioblastoma are also relevant to the cancers that are rare in the US population but highly prevalent in	This collaboration promoted (b) (6) project
specifically because it involved collaboration between U.S. and international scientists.	China. The direct implications of these findings are that the new therapeutic methods of reprogramming of the chemokine system	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
international constraint.	award, making to mode succentract to the co-partners in the resulting follow-up grant applications submitted by our critical partners	award, bidapedinen anamig or transfer
Please describe each of the challenges caused by the international collaboration that you	Language and communication barriers (time difference/need for video conferencing) barriers were initially very significant: but were	1. transfer experimental animal (mouse) took a long time (6
marked on the previous question (language barriers, securing required approvals,	alleviated with time. From a personal standpoint the biggest challenge was to start to appreciate that a statement "no it is impossible" i	months) — it suffered many approvals (from both sides), 2. the
communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	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	period of time is too short (only one year);3. Biospecimen sharing or transfer has too many limitations.
snaring/transfer, data snaring, and/or other).	occision	snaring or transfer has too many limitations.
	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	Our side trained their three people with techniques and methods. China side finished some key preliminary data and
Please give a short summary of the work completed by the international laboratory/team	to additional cancers prevalent in China. The results have led to a total of four published papers and additional two papers currently	developed new projects and obtained two new big grants
for this study.	submitted and undergoing scientific review.	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
plant to the project.		
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	He/she knew of my research and contacted me to work on this project; A co league introduced me to my international collaborating	He/she knew of my research and contacted me to work on
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	this project: We graduated from the same university.
		(b) (6)
		.,,,
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 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
	cells into tumors. ThThe insights from the properties of the properties of the properties of the properties by facilitating enhanced entry of CIK cells into tumors. The visual mats from my lab are being used by our partners in China to improve CIK therapies by	
Please describe how your findings may be used to inform the development or	facilitating enhanced entry of CIK cells into tumors and to design improved ce I-based treatments in cancer which involve DCs and tumor-	to help improve therapeutics in the elderly infected with
Implementation of health programs:	specific CTLs. I understand that the (b) (6) of the First Affiliated Hospital o (b) (6) currently runs about 200 CIK	Schistosome
How many people from the US laboratory/team were trained in quantitative data collection	specific CTLs. I understand that the One visiting researcher from China (b) (6) of the First Affiliated Hospital o (h) (6) corrently runs about 200 CIK One visiting researcher from China (b) (b) (d) ab. He was trained in multiple aspects of data collection and	
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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/malpix, implications, medical procedures, and lab/brach-techniques)? show 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 specifically for the project?  How many people from the international laboratory/team were trained in bioethics or IRD relate and requisitions specifically for this project?  How many people from the international laboratory/team were trained (either through memoring or training course) is scientific manuscript writing specifically for this project?  How many people from the international laboratory/team were trained (either through memoring or training course) is scientific manuscript writing specifically for this project?  How many people from the international laboratory/team were trained in medical procedures specifically for 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 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 administrative and financial g	We are applying for funding to collaborate on another project together; We have discussed ways to collaborate on another project together  cell-based therapies of cancer. While current grant applications involving both dides have only been submitted on ther Chinese end and months of the collaborate on the Chinese end and the collaborate on the collaborate of the collabora	We have discussed ways to collaborate on another project together  Nit should provide more opportunities of this co laboration by providing long term (at least 3 years for each collaboration) and more fundings at least saw as a R21 or

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Award Pi	AS	(b) (6)
Institution		
Coll. Invest.		1101-41-035040
Grant No.	P01 Al083214	Epidemiology of HIV-related Ma ignancies in China
Title	US-China Program to Identify Novel Antimicrobials The study allowed us to screen a 1 brary of natural compounds	Epidemiology of HIV-related Malignancies in China
	isolated and characterized in the laboratory of (15) (6) for	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
	their ability to prevent Staphylococcus aureus from kindig the model nematode Caenorhabditis elegans. This required developing a novel	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
Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.	screening platform that could be carried out in (b) (6)	spectrum than Western countries (one manuscript is completed).
		In addition, we have recruited 39 KS cases and 93 controls among HIV-infected Uvshur in Xingilians Province. Type/Length of award. Biospecimen sharing or transfer
Please mark each area where you encountered cha lenges that were caused by the international collaboration.	Type/Length of award	
		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 describe each of the challenges caused by the international collaboration that you marked on the previous question (language barriers, securing required approvals,	It would have been preferable if the award were longer. However	
communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	the collaboration that was initiated during the funding period has continued and has been very successful and productive.	
maning transfer, data snaming and/or other).	characterized in the laboratory of Academy of Sciences in Beijing for their ability to prevent	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
	Academy of Sciences in Beijing for triefr at it it it by prevent Staphylococcus aureus from ki ling the model nematode	sufficient quality control while the lab work is done in China.
	Caenorhabditis elegans. To do this we developed a novel screening platform that could be carried out in Alexandra without	
	platform that could be carried out in the use of a robot to distribute worms to acts 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	
Please give a short summary of the work completed by the international laboratory/team	count stained worms. Several novel compounds were identified as	
for this study.	hits one of which has been studied extensively during the funding	I have co laborated with him/her before
Had you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before	We were collaborating investigators on this project under a different funding mechanism. Both were PhD
What was the nature of your previous collaboration(s)? (please mark all that apply)		students of the Epidemiology
How did you identify your international collaborating investigator? (please mark all that	A colleague introduced me to my international collaborating	Other: Teacher-student relationship
apply)	investigator	(b) (6)
		(6) (0)
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):		hada .
Please list all of the patents associated with this administrative supplement (patent number, country, and year):	N/A	N/A
Country, and year):		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 Xingjang will be of importance to
Please describe how your findings may be used to inform the development or	immune response. Developing therapeutics that activate host	cancer prevention and control in China. The study of Hiv-related KS in Xingjang will be of importance to have more research in the area.
Implementation of health programs:	immunity is a novel approach to treating bacterial infections.	(b) (6)
How many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?		(8) (8)
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 by 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 in 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)?		
		We have discussed ways to continue this project together
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	
p per l'institution de	and the program of the second	
Please explain why you have no plans to continue to collaborate on this project:		
		We have discussed ways to co laborate on another project together
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 co laborate on other projects:	The one year time frame for this project way and in	Change China's regulation of limiting biological specimens to be transported to the US.
	The one year time frame for this project was not long enough to	
Please provide any other feedback or suggestions to improve international co laborations.	develop and bring the project to a successful conclusion. Fortunately	
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).	develop and bring the project to a successful conclusion. Fortunately we were able to continue the collaboration despite the expiration of the supplemental funding.	

	AS-FY11	AS-FY11
Award Pl	ASTIT .	(b) (6)
Institution	-	(0) (0)
	-	
Coll. Invest.	P01AI082274-02	R01 Al087135
Grant No.		
	Neutralizing ant bodies targeting HIV-1 Env CD4bs in Chinese HIV patients	Analytical and Estimation Methods for Hybrid Differential Equation Models in AIDS Research
Title	Produced useful information and a research publication.	We have developed novel hybrid differential equation models for HIV viral dynamics that were
	Produced disertal miorimation and a research publication.	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
Please describe any unique scientific findings or opportunities created by this study,		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'
specifically because it involved collaboration between U.S. and international scientists.		expertise and strength are complementary. In addition, we also established a collaboration for
	Biospecimen sharing or transfer	Type/Length of award Data sharing
Please mark each area where you encountered cha lenges that were caused by the international collaboration.		
International Constitution	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
Please describe each of the challenges caused by the international collaboration that you		challenging between US and China.
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).	With the support from the P01 Administrative Supplement, we collaborated with	Chinese collaborator (L) (C) and his associates have developed novel hybrid
	(b) (6) roup in studying the Env-specific and neutra izing antibody response in HIV-1 patient sera collected from Youan Hospital in Beijing China. The results	Chinese collaborator Andrew Andrews and his associates have developed novel hybrid smathematical models for HIV dynamics and performed all computational simulations. The
	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	dynamic properties for the developed models were also carefully investigated numerically and theoretically by my Chinese collaborators.
	against a panel of 44 HIV-1 pseudotyped viruses covering clades B. C. AE isolated	, , , , , , , , , , , , , , , , , , , ,
	from China and other parts of the world.	
Please give a short summary of the work completed by the international laboratory/team		
for this study.	I have collaborated with him/her before	I have collaborated with him/her before
Had you collaborated with your fellow principal investigator prior to this project?		
prior to the property	We were co laborating investigators on this project under a different funding	We have been collaborating investigators on a different project
What was the nature of your previous collaboration(s)? (please mark all that apply)	mechanism	
How did you identify your international collaborating investigator? (please mark all that	He/she knew of my research and contacted me to work on this project	A colleague introduced me to my international collaborating investigator
How did you identify your international collaborating investigator? (please mark all that apply)		
		(b) (6)
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)		
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):	1.11	
Please list all of the patents associated with this administrative supplement (patent number,	N/A	N/A
country, and year):		
	N/A	
	N/A	Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.
Please describe how your findings may be used to inform the development or	N/A	Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.
	N/A	
Please describe how your findings may be used to beform the development or implementation of health programs:  How many people from the US abovetory/team were trained in quantitative data collection	N/A	Our findings provide guidance to develop antitiviral treatment strategies for HN/AIDS patients.  (b) (6)
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 spec fixely for this project?	N/A	
Flease 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 spec fleasly for this project?  How many people from the US laboratory/team were trained in qualitative data collection	N/A	
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 spec fixely for this project?	N/A	
Please describe how your findings may be used to inform the development or lamplementation of health programs:  Now many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?  How many people from the US laboratory/team were trained in qualitative data collection and snahysis (social group discussions, guided interviews, etc.) specifically for this project?  Now many people from the US laboratory/team were trained in bloothics or IRB rules and	N/A	
Flease 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 quantizative data collection and analysis spec fleatly for this project?  How many people from the US isboratory/team were trained in qualitative data collection and analysis (e.g. focus proup discussions, gadded interviews, etc.) specifically for this project?  How many people from the US isboratory/team were trained in bioethics or IRS rules and regulations geofficially for this project.	N/A	
Please describe how your findings may be used to inform the development or lamplementation of health programs:  Now many people from the US laboratory/team were trained in quantitative data collection and analysis spec fically for this project?  How many people from the US laboratory/team were trained in qualitative data collection and snalysis (e.g. focus proug discussions, guided interviews, etc.) specifically for this project?  How many people from the US laboratory/team were trained in bloothics or IRB rules and regulations specifically for this project?	N/A	
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Coll. Invest.		
Grant No.	U19AI089672	R01 Al080669
Title	Southeast Asia Malaria Research Center: Antimalarial drug resistance in P. falciparum	Study of novel influenza virus inhibitors
lios	This study aimed to enhance the collaboration between in the area of antimalarial drug resistance especially with the area of antimalarial drug resistance.	The international collaborator identified new inh bitors of influenza virus by high throughput
	emergence of artemisinin resistance in SE Asia. Yunnan is a place with the longest	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
Please describe any unique scientific findings or opportunities created by this study,	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	inhibitors are investigated. The results will help in further development of these inhibitors are potential drugs for treatment of influenza virus infection in humans.
specifically because it involved collaboration between U.S. and international scientists.	region. This supplement further strengthened the collaboration between US and Type/Length of award	Type/Length of award Acquisition or synchronization of release of funds between US and
Please mark each area where you encountered challenges that were caused by the	The contract of the contract o	international funding agencies (if applicable)
International collaboration.	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
Please describe each of the challenges caused by the international collaboration that you	, , , , , , , , , , , , , , , , , , , ,	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
marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen		spent within the year.
sharing/transfer, data sharing, and/or other).		Two classes of novel influenza virus inhibitors are identified and their mechanisms of action
	studies; 2. Assessed sensitivities of the field isolates from two geographic regions to	were investigated. Future collaboration will continue to develop these inh bitors as potential
	0 commonly used antimalarials	drugs for influenza treatment.
Please give a short summary of the work completed by the international laboratory/team for this study.		
	I have collaborated with him/her before	I have collaborated with him/her before
Had you collaborated with your fellow principal investigator prior to this project?	He/she was a post doctoral fe low in my lab; We were collaborating investigators or	We were collaborating investigators on this project under a different funding mechanism. We
What was the nature of your previous collaboration(s)? (please mark all that apply)	this project under a different funding mechanism	have been collaborating investigators on a different project
How did you identify your international collaborating investigator? (please mark all that	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
apply)		(1) (0)
		(b) (6)
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 patents associated with this administrative supplement (patent number,	N/A	US 8 933 075 2013 COMPOUNDS USEFUL AS ANTIVIRAL AGENTS COMPOSITIONS AND METHODS OF USE
country, and year):	N/A	Through this collaboration we have identified two groups of new inhibitors that block the
Please describe how your findings may be used to inform the development or		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
implementation of health programs:		acquired the capability of high through screening of inh bitors of infectious diseases. We
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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 discussed ways to continue this project together.
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.		
property and the state of the s		
Please explain why you have no plans to continue to collaborate on this project:		
	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
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.	p special control of the control of	another project together
Please explain why you have no plans to collaborate on other projects:	Funding for continuation of collaboration would be great to continue the	The funding period needs to be much longer (minimum 3 years).
	collaborative network established from the previous work	
Please provide any other feedback or suggestions to improve international co laborations.		
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).		

Award	AS-FY11	AS-FY12	AS-FY12
Pi			(b) (6)
Institution			
Coll. Invest.	A1077343	1	
Grant No.		R01AI093278	1 R01 Al081604
Title	Mechanical Priming of Selectin-Ligand Interactions	US-China program for Biomed Collab Res	Rational Design of antivirals targeted to HIV-1 capsid
	We found that mechanical priming (which we now re-name it as cyclic mechanical reinforcement or CMRI is not an isolated phenomenon. We have now observed this phenomenon in several receptor-	This mechanism provided an opportunity for my lab to collaborate with an old colleague who had	The US-China col aboration presented unique opportunity for us to get access to the HIV-1
	igand interaction systems. The original observation was made in the interaction between integrin	moved back to China and now has access to state of	clinical isolates from China through our
Please describe any unique scientific findings or opportunities created by this study,	a5b1 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	the art microscopy tools. My colleague had branched to stadying many other viruses but this	collaborators in China for studying the suscept bility of our unique stapled-peptide
specifically because it involved collaboration between U.S. and international scientists.	lymph node addressins mimic) actin homotypic interaction, and Tice I receptor interaction with I did not experience any challenges due to the international collaboration	program allowed him to return to the HIV field.	base HIV-1 inhibitors.
Please mark each area where you encountered challenges that were caused by the	The first experience any changes due to the international constonation	telephone/internet connection cultural differences etc.)	
International collaboration.	N/A	Type/Length of award	Biospecimen sharing or transfer
Please describe each of the challenges caused by the international collaboration that you	N/A		
marked on the previous question (language barriers, securing required approvals,			Due to very strict Chines and US rules it was
communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).		skype connection was poor. length of the award was insufficient (1 year) to solve problems.	not easy to exchange biospecimens on a timely manner
	and his students performed molecular dynamics (MD) simulations to model the experimental system.  also sent a student of his to study in my lab to build an experimental system.	colleague to try to answer a variety of	CRF07_BC and 4 CRF01_AE) of Chinese origin
	system.	antigens. Including spike density purity stability as	to stapled peptides was tested by virus inhibition assay. NYAD-36 and NYAD-67 of
		well as to investigate ligand binding. Progress was marred by the fact that majority particles were	ii 7 stapled peptides showed the best anti- virus activity. The sequences of their env
		"bald". Whether these were vesicles or true Gag- containing VLPs was unclear. We hypothesize	genes were analyzed to correlate with the antiviral activity. Furthermore in resistance
		that apoptotic vesicles were co-produced with VLPs	study we found four polymorphic sites
Please give a short summary of the work completed by the international laboratory/team		making our analysis of Env difficult. We have since modified our protocols and plasmids to try to	(A281V/I N300G/S D474N and V496I respectively) on gp120 which significantly
for this study.	I have collaborated with him/her before	address this problem	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 We were collaborating investigators on this project	I have co laborated with him/her before
	He/she was a post doctoral fe low in my lab. We have been collaborating investigators on a different project	under a different funding mechanism	
What was the nature of your previous collaboration(s)? (please mark all that apply)	project  I knew of his/her research and contacted him/her to work on this project. He/she knew of my research	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 research and contacted me to work on this project.	work on this project	I knew of his/her research and contacted him/her to work on this project
			(b) (6)
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 patents associated with this administrative supplement (patent number,	N/A		
country, and year):	N/A	N/A	N/A
	n/n		Therefore for any anti-HIV drug to work universally it is of utmost importance to learn
Please describe how your findings may be used to inform the development or implementation of health programs:		N/A	how they function against different isolates.  The data from Chinese isolate w II be
How many people from the US laboratory/team were trained in quantitative data collection			(b) (6)
and analysis spec fically 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 (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?			
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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)?			1
lab/bench techniquesi?	We are applying for funding to continue this project together		
lab/bench techniques)?  What, if any, plans do you have (or efforts have you made) to continue co laborating with	We are applying for funding to continue this project together	We have discussed ways to continue this project	We have discussed ways to continue this
lab/bench techniquesi?	We are applying for funding to continue this project together	We have discussed ways to continue this project ogethe preparations can be improved. There are	We have discussed ways to continue this project together
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	ogethe preparations can be improved. There are various co laborators in the US who we could work	We have discussed ways to continue this project together
lab/bench techniques)?  What, if any, plans do you have (or efforts have you made) to continue co laborating with	We are applying for funding to continue this project together  -  We have discussed ways to collaborate on another project together	ogethe preparations can be improved. There are	We have discussed ways to continue this project together
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.  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		ogethe preparations can be improved. There are various co laborators in the US who we could work with once these problems are solved. We are	project together
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.  Please explain why you have no plans to continue to collaborate on this project:		ogethe preparations can be improved. There are preparations can be improved. There are various collaborators in the US who we could work with once these problems are solved. We are N/A	We have discussed ways to continue this project together
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lab/bench techniques(?  What, if any, plans do you have (or efforts have you made) to continue co laborating with your fellow principal inventigator 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 inventigator on other project(s)? Please mark all that apply.  Please explain why you have no plans to collaborate on improve the projects.  Please provide any other feedback or suggestions to improve international co laborations. (This could include suggestions to the process)		ogethe preparations can be improved. There are various on laborators in the US who we could work with once these problems are solved. We are  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	project together
ally beach techniques 27  What, if any, plans do you have (or efforts have you made) to continue co laborating with your fadlow 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 follow principal investigator on other project(s)? Please much all that apply.  Please explain why you have no plans to collaborate on other projects:		ogethe preparations can be improved. There are various co laborators in the US who we could work with once these problems are solved. We are N/A HRV particle immunogens is the main focus so there are no other projects relevant here. It think we needed longer for it to yield fruit. Also the	project together

Award	AC-FV12	AS-PV12	AS-PY12
Pi	ZGW3	IACEVITY	(b) (6)
Institution			****
Coll. Invest.			
Grant No.	R01Al084816-04	Al049104-15	R01 Al094562
	Screening for anti-HIV bNAbs in huCD4/CCRS transgenic		MP3-China for Phylogenetic Analysis of HIV Transmission Clusters
Title	mice immunized with mu	CHINESE HERBS	among MSM in Beijing 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
Please describe any unique scientific findings or opportunities created by this study,	Multivalent anti-HIV vaccine can effectively induce broad humoral immune response in huCD4 B cell transgenic	Found a number of chinese herbs with	diagnosed HIV-infected MSM in Beijing recruited within a relatively short period of time (12 months from March 2013-March 2014).
specifically because it involved collaboration between U.S. and international scientists.	mouse model.	potential use in HIV/AIDS	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			Communications (e.g. scheduling poor telephone/internet connection cultural differences etc.)
International collaboration.	Biospecimen sharing or transfer	Type/Length of award	Other: Delays in responses to US team's requests
Please describe each of the challenges caused by the international collaboration that you			
rease describe electron or comminger cause by the international consideration (near you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen	Because the censorship of export by Chinese government it is difficult for us to transfer or share the samples with		Time differences for three locations (Nashville Beijing and UK);
communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	it is difficult for us to transfer or share the samples with Chinese collaborator.	a delay in getting approvals but otherwise OK	The Chinese team is sometimes overburdened with their daily work which led to delays in responses to US team's requests.
	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	looked at compounds that inhibit CTD kinases	The Chinese team collected and processed the samples performed
Please give a short summary of the work completed by the international laboratory/team for this study.	immunized mice through generation and testing over 400		RT-PCR and completed the basic phylogenetic analysis for geno-
for this study.	hybridoma cell lines from vaccinated mice.	from latency.	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
What was the nature of your previous collaboration(s)? (please mark all that appry)  How did you identify your international collaborating investigator? (please mark all that	I knew of his/her research and contacted him/her to work		l knew of his/her research and contacted him/her to work on this
apply)	on this project	him/her to work on this project	project
			(b) (6)
Please list all publications associated with this administrative supplement (provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)			
CREMONS: Author(s), Hee, 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 patents associated with this administrative supplement (patent number,	1		
country, and year):	N/A	N/A	None.
			The findings from the supplementary grant will help understanding HIV transmission networks among MSM in Beijing China and help
Please describe how your findings may be used to inform the development or implementation of health programs:	Our findings w II 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	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	,		(b) (6)
and analysis spec fically 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			
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Grant No.	A1069120
Title	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 Dr
	habratory at the institute of biophysics. Shinese academy of science and solved the crystal structures of TRAF close relative of TRAF3. Our studies led to the identification of a single amino acid difference responsible for the
lease describe any unique scientific findings or opportunities created by this study, pecifically because it involved collaboration between U.S. and international scientists.	and TRAPY 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.
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ternational collaboration.	I did not experience any challenges due to the international collaboration
fease describe each of the challenges caused by the international collaboration that you narked on the previous question (language barriers, securing required approvals,	
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	The international laboratory solved the crystal structure of TRAF3 and TRAF5. They also identified potential amino acid
lease give a short summary of the work completed by the international laboratory/team or this study.	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.
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ad you collaborated with your fellow principal investigator prior to this project?	I have not collaborated with him/her before
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lease describe how your findings may be used to inform the development or applementation of health programs:	Our finding presents the first example on how a single amino acid substitution can gain the antiviral activity of TRAFS to similar levels as its family member TRAF3, which may improve future antiviral immunity.
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animg course) is cleantife manuscript writing specifically for this project?  ow many people from the US laboratory/team were trained in medical procedures specifically for this project?  ow many people from the US laboratory/team were trained in lab or bench science exheriges specifically for this project?  that, if any, other areas did members of the US laboratory/team receive training in specifically for this project (excluding quantitative and qualitative data coffection/analysis, at/alborative, grant/manuscript writing, medical procedures, and lab/branch techniques!)  for many people from the international laboratory/neam were trained in quantitative data sollection and analysis specifically for this project?  ow many people from the international laboratory/neam were trained in quantitative data sollection and analysis (e.g. focus group discussion, guided interviews, etc.) specifically for this project?  ow many people from the international laboratory/neam were trained in bloethics or #BB idea and regulations specifically for this project?  ow many people from the international laboratory/neam were trained (either through sentoring or training courses) in grant writing specifically for this project?  ow many people from the international laboratory/neam were trained in medical rocardures specifically for this project?  ow many people from the international laboratory/neam were trained in medical rocardures specifically for this project?  ow many people from the international laboratory/neam were trained in administrative data in the project?  ow many people from the international laboratory/neam were trained in administrative data in the project?  ow many people from the international laboratory/neam were trained in lab or bench denne techniques specifically for this project?  ow many people from the international laboratory/neam were trained in lab or bench denne techniques specifically for this project?  here are area did members or the international laboratory/team were trained in lab or bench denne t	We have discussed ways to continue this project together

Award	AS
PI	(b) (б)
Institution	
Coll. Invest.	
Grant No.	CA75093A2
Title	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
Please describe any unique scientific findings or opportunities created by this study,	the US. This has built the research capability of or Chinese partner
specifically because it involved collaboration between U.S. and international scientists.	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?	There are difficulties in sending shipping specimens, especially DNA
	and infected tissues and cells to the US to study, but these studies
What was the nature of your previous collaboration(s)? (please mark all that apply)	were carried out in China.
	vve nave round that early childhood infection by KSHV is common in
	Xinjiang province in the ethnic minority population, which is reflected
apply)	in the higher incidence of Kaposi's sarcoma in the adults in both (b) (6)
	(-)(-)
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 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 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:

(b) (6)

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)
	Management of the first transfer of the second of the seco
	We are applying for funding to continue this project together
	NAVA beneditaria and construction above
	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 perio	od of funding a	and more	funding wi	ll enhance	and su
the collaboli	ation.				

AS	
	(b
CA7509	3A2
Kaposi'	sarcoma and human herpesvirus in China
	e able to study a unique cohort in China, an ethnic minori
	ength of award imen sharing or transfer
1	
	re difficulties in sending shipping specimens, especially DN e found that early childhood infection by KSHV is commor
	ollaborated with him/her before
We hav	e been collaborating investigators on a different project
I met hi	m/her at a professional meeting
	4.7
	(b)
Prevale	nce of early childhood infection by Kaposi's sarcoma-assoc
N/A	
Prevent	ing saliva contact with infants to avoid transmission of the
	applying for funding to continue this project together
	e discussed ways to continue this project together

	_
	_
•	

						Please describe any unique scientific		
						findings or opportunities created by	Please mark each area where you	Please mark each area where you
						this study, specifically because it	encountered challenges that were	encountered challenges that were
Award						involved collaboration between U.S.	caused by the international	caused by the international
Туре	PI	Institution	Coll. Invest.	Grant No.	Title	and international scientists.	collaboration.	collaboration.
			(b) (6	)				
				1				
					US-China Collaborative Research on	This collaboration has greatly expanded	I did not experience any challenges	
R01				R01NS083435	Stroke Imaging	my clinical research capacity.	due to the international collaboration	
						or one sa caa beause or o carry		
						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		
					Culprit Plaque in Acute Cerebral	imaging and histological protocols,		
					Infarction: A Histological and MRI	conduct cross-cultural analyses, and	Securing required approvals (IRB and	_ , , , , ,
R01				5R01NS083503-02	Assessment	has helped to establish a foundation	others)	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,					
Please mark each area where you			acquisition/synchronization of					
encountered challenges that were	Please mark each area where you	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow		What was the nature of your previous	
caused by the international	encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international	principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
collaboration.	by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
				The international team will be				$\Box$
1		l		performing specific Aim 2 Determine		I		1
		l		the characteristics and clinical		I		1
1				values of pH imaging of hyperacute		I		1
1		l		and acute ischemic stroke patients (n		I		1
1				200). This includes		I		1
				human subject recruitment, MRI data		We have been collaborating		1
		l		acquisition, imaging analysis, and		investigators on a different		1
			N/A	statistical analysis.	I have collaborated with him/her before			
						pj		-
				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				
			Securing IRB approval was a major	reproducibility of carotid and				
			barrier, as our respective	intracranial vessel wall image analysis.				
			institutional review boards had not	Working closely with collaborators in				
			often dealt with jointly funded	Beijing, standardization and onsite				
			studies such as ours. Multiple	training was performed for				
			questions were raised regarding	procedures to excise the carotid				
			processes for data transfer,	plaque intact with minimal disruption				
			analysis of the histological	during carotid endarterectomy,				
			specimens, and plans for GWAS	sectioning and staining of the				
				specimen in its entirety, and transfer				
			for the project were not released	of digitized images of the histological				
			until early 2014 which has delayed					
			subject enrollment. The duration	for analysis. Following IRB approval,		Other Many of the key faculty		
			(three years) and cap on award to	procedures were confirmed on test		co-investigators at the China		
			\$200,000 (direct plus indirect) has	specimens that were collected during		site were former senior		
	Acquisition or synchronization of release of		been a challenge, given the	carotid endarterectomy procedures		research fellows in our		
	funds between US and international funding		number of subjects needed for	performed at Tiantan Hospital in		laboratory at the (b) (6)		
	agencies (if applicable), Biospecimen sharing		recruitment, study procedure	Beijing. During the site visit to Tiantan	I have not collaborated with him/hor	naboratorvat the (b) (b)		
Type/Length of award	or transfer	Biospecimen sharing or transfer	costs, and travel expenses.	Hospital, procedures for sample	before	the departmental chairman.	Other	
Type/cenguror award	VI CIAIDICI	prospecimen sname or dansier	costs, and traver expenses.	nospital, procedures for sample	DEIGIE	uie ueparunental Chairman.	Other	

previous collaboration(s)? (please	How did you identify your international collaborating investigator? (please mark all that apply)	How did you identify your international collaborating investigator? (please mark all	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 apphy)	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)
						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		
	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		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.		

interviews, etc.) specifically for this	analysis (e.g. focus group discussions, guided interviews, etc.)	laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	trained in bioethics or IRB rules and regulations	(either through mentoring or training courses) in grant writing	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically	courses) in scientific manuscript writing	How many people from the US laboratory/team were trained in medical procedures specifically for this project?
								(0)

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

international laboratory/team were trained in administrative and financial grant management science techniques specifically	mem labor in spi (excli excli	suding quantitative and litative data ection/analysis, IRB/bioethics, nt/manuscript writing, grants nagement, medical cedures, and lab/bench	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.	
		,,,,	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 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
	<u>:</u>	
		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
	F	for renewal.

Award Type	PI	Institution	Coll. Invest.	Grant No.	Title		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.
			(b) (6)		Trispecific Multivalent HIV-1	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		Acquisition or synchronization of release of funds between US and
R01						candidates for prevention and therapy of HIV-1 infection.  The difference of the control of HIV-1 infection. The catablish 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	Type/Length of award  I did not experience any challenges due to the international collaboration	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	
	re of your previous
	lease mark all that
by the international collaboration. international collaboration. and/or other). laboratory/team for this study. project? (please mark all that apply) apply)	
Our collaborators in China tested a	
combination of our antibodies with	1 1
their peptide-based inhibitors for	
synergistic effects on neutralizing HIV-	
1. They identified the best	
combinations and have generated a	1 1
series of fusion proteins of the	
antibodies and peptides. They are	
currently extensively characterizing	
The award to U.S. investigators is the fusion proteins in terms of	
too small (\$50,000 per year) to eneutralizing activity and drug-related	
conduct non-human primate properties. Our group in NCI has been	
studies and sometimes was not testing the fusion proteins in	
received timely. In addition, the humanized mice and found that they	
support is not continuous which potently suppressed HIV-1 infection	
makes it difficult for us to translate and efficiently killed HIV-1-infected  We have been collaborating	
our findings to human clinical cells. Non-human primate studies investigators on a different	
agencies (if applicable) agencies (if applicable) trials. have been planed. I have collaborated with him/her before project	
(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	1 1
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	l l
consultation with our bioinformatics	
at (b) (6) we have requested and	
ensiting the saw servicing data from	
received the raw sequecing data from	
China (500 GB). These results will be	
China (500 GB). These results will be analyzed together with our	
China (500 GB). These results will be analyzed together with our sequencing data from mouse tissues	
China (500 GB). These results will be analyzed together with our	
China (500 GB). These results will be analyzed together with our sequencing data from mouse tissues	

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?  (b) (6)
								(6) (6)
						The novel highly potent HIV-1		
	He/she knew of my research and contacted me to work on this project					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		
	A colleague introduced me to my international collaborating investigator					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.		

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

6 laboratory/team were ained in medical ocedures specifically for	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	IRB/bioethics, grant/manuscript writing,	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	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 train in qualitative data collectior and analysis (e.g. focus grou discussion, guided interview etc.) specifically for this project?
							(b)

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

		<u> </u>					
How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?	international laboratory/team were trained in lab or bench science techniques specifically	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical	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	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	
				We have received funding to		collaborate on another project	
				continue this project together		We have discussed ways to collaborate on another project	

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.

						Please describe any unique scientific		
Award						findings or opportunities created by this study, specifically because it involved collaboration between U.S.	Please mark each area where you encountered challenges that were caused by the international	Please mark each area where you encountered challenges that were caused by the international
Туре	PI	Institution			Title	and international scientists.	collaboration.	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_Survey18_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.	-	

	1						
		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					
Please mark each area where you	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	What was the nature of your	What was the nature of your previous	
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international		previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
			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.				
		The grant is for 3 years, which has	Furthermore, the China team has				
		somewhat limited the extent of	expanded the scope and identified				
		collaboration as these are long-	KSHV and cellular miRNAs that inhibit				
		term project.	KSHV lytic replication.	before			
			We have established consistent				
			sequencing pipeline to ensure that all				
		The Chinese government reduced	samples are sequenced by the same				
		the funds by 40% to my	methods and standards. We also				
		collaborator, therefore, they have			Other: we worked together as		
		to scale down what we proposed	selection. Both sides have started		coauthors to cross verify		
		to do.	sending samples for sequencing.	I have collaborated with him/her before		Other	
	1		U		0	l .	

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	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)
	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.		
	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.		

qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this	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?	laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	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 in medical procedures specifically for this project?  (b) (6)

rocedures specifically for	How many people from the US laboratory/team were trained in lab or bench science techniques	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this	IRB/bioethics, grant/manuscript writing,	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	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?	international laboratory/team were trained in bioethics or IRB	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?	mentoring or training courses) in scientific manuscript writing	laboratory/team were trained in medical	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?

	,			1		T	
How many people from the international laboratory/team were international laboratory/team trained in administrative and were trained in lab or bench financial grant management science techniques specifically specifically for this project?	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for	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	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.	
specifically for this project? for this project?	this project?		арріу.		project.	шат арріу.	
	(b) (6)						
		No	We have discussed ways to continue this project together			We have discussed ways to collaborate on another project together	
			We are applying for funding to	We have discussed ways to continue		We have discussed ways to collaborate on another project	
		DK	continue this project together	this project together		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).
on other projects.	conductions).
	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.

						Please describe any unique scientific		
						findings or opportunities created by	Please mark each area where you	Please mark each area where you
						this study, specifically because it	encountered challenges that were	encountered challenges that were
A							_	
Award	, .	1	6-11 1	C	Ttal -	involved collaboration between U.S.	caused by the international	caused by the international
Туре	PI	Institution			Title	and international scientists.	collaboration.	collaboration.
			(b) (6)					
						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	Ai-tail	
						neuronal lineage differentiation. This	Acquisition or synchronization of	
						finding is consistent with our finding in	release of funds between US and	
DO1					MIL Compand D 122	mouse using in vitro neural stem cell	international funding	
R01	-				MH_Survey1B_133	culture and in vivo lineage analysis.	agencies (if applicable)	
						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		Securing required approvals (IRB and
R01					MH_Survey1B_148	sample are available.	Language Barriers	others)

		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					
Please mark each area where you	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	What was the nature of your	What was the nature of your previous	
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international	principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
			THE CHING COMPTOCUSES OF THE FORE	•			
			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				
		The USA side released the funds in	hpf, and disturbed [Gene Name]				
		a timely way but China side	expression pattern suggested				
		delayed the release date and also	abnormal morphology of brain. The				Other: Co-
		reduced the funding amount	expression pattern of [Protein Name]		We were collaborating		mentorin
		significantly as compared with the			investigators on this project		g
		funds estimated or promised at the			under a different funding	We have been collaborating investigators	graduate
		application period.	but the [Protein Name] expression	I have collaborated with him/her before		on a different project	students
		We have Chinese /American		·		. ,	
		member of our team which help,					
		and we visit china frequently but					
			1) Dr. [Named Individual], from the				
		problem, and language is a	[Chinese Institution] joint our				
		problem for Chinese visiting our	laboratory in Chicago from May to				
		lab. IRB problem are unnecessarily	September 2015 to became familiar				
		complex, over ritualized, and this	with the methods used to study the				
		hold up the study, making it hard	biomarkers.				
		to do in a short period of funding.	2) The Chinese laboratory team began				
		The inability to ship DNA from	to collect the lymphocyte samples and				
		China to US is a problem and we	have now collected approximately 150		We have been collaborating		
		have trained Chinese to do the	out of 390 expected samples.		investigators on a different		
Type/Length of award	Biospecimen sharing or transfer	assays in China.	out or 550 expected samples.	I have collaborated with him/her before			
Type/Length of award	piospecimen snaring or transfer	assays iii China.		i nave conaporated with him/her before	project		1

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?
								(b) (6)
						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		
Other	He/she knew of my research and contacted me to work on this project		Other			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 unweil the critical barriers for the therapeutic approaches for neural diseases.		
	A colleague introduced me to my international collaborating investigator					Our work may potentially lead to a better treatment for schizophrenia.		

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

trained in medical procedures specifically for	How many people from the US laboratory/team were trained in lab or bench science techniques	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this	IRB/bioethics, grant/manuscript writing,	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	were trained in quantitative data collection and analysis specifically	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?	international laboratory/team were trained in bioethics or IRB	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?	international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing	laboratory/team were trained in medical	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?
								(6) (6

international laboratory/team were international laboratory/team trained in administrative and were trained in lab or bench financial grant management science techniques specifically	members laboratory in specific (excluding qualitative collection, international laboratory/team were trained in lab or bench managem	we data h n/analysis, IRB/bioethics, r anuscript writing, grants c ment, medical res, and lab/bench psiss?	collaborating with your fellow orincipal investigator on this project? Please mark all that apply.		Please explain why you have no plans to continue to collaborate on this	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	We have discussed ways to continue this project together		We are applying for funding to collaborate on another project	We have discussed ways to collaborate on another project together
			We have received funding to	We are applying for funding to continue this project together		We have received funding to	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).
projects	Control of the contro
	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				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 R01			(b) (6)	R01Al106498-01 R01 Al 106629	Aspartic Protease Inhibitors as Novel Antimalarials Regulation of HIV-1 Gene Expression in Latency by YY1, RuvB2	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.  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 experience 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 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					
Please mark each area where you	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	What was the nature of your	What was the nature of your previous	
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international	principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
						1	
						1	
						1	
						1	
						1	
						1	
						1	
		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			We were collaborating		
		13-14 hour time difference.	Synthesis of new analogs and assay of		investigators on this project		
		However, these challenges were	compounds in enzyme, parasite and		under a different funding		
		not insurmountable.	animal models.	I have collaborated with him/her before	mechanism		
		We had difficulties with IRB	We have uncovered a mechanism by	I have collaborated with him/her before		We were collaborating investigators on	
		approvals in the US, but these were		,	fellow in my lab	this project under a different funding	
		not related to the international	HIV-1 Gag, and does so in response to			mechanism	
						meenanisili	
		collaboration. We simply had not	levels of the Env protein. A paper				
		worked with patient materials	describing these findings is under				
		before and had to learn how to	review. Work to address the role of				
		deal with obtaining approvals.	NMD and ZAP is underway.				

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	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)
We have been collaborating investigators on a different project	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				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.		

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

low many people from the IS laboratory/team were rained in medical rocedures specifically for his project?	laboratory/team were trained in lab or bench science techniques	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this project?	IRB/bioethics, grant/manuscript writing,	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	were trained in quantitative data	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 train in qualitative data collection and analysis (e.g. focus groud discussion, guided interview etc.) specifically for this project?
		le se se		1 6-5	1	1.1	(b) (

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			1					
	How many people from the	How many people from the		How many people from the	How many people from the	How many people from the		How many people from the
How many people from the	international	international laboratory/team	How many people from the	international laboratory/team	international laboratory/team		How many people from the	international laboratory/team
international laboratory/team were		were trained (either through	international laboratory/team were	were trained (either through		laboratory/team were	international laboratory/team	were trained in administrative
trained in bioethics or IRB rules and	trained in bioethics or IRB	mentoring or training courses) in	trained (either through mentoring or	mentoring or training courses)	mentoring or training courses)		were trained in medical	and financial grant
regulations specifically for this	rules and regulations	grant writing specifically for this	training courses) in grant writing		in scientific manuscript writing		procedures specifically for this	management specifically for
project?	specifically for this project?	project?	specifically for this project?	specifically for this project?	specifically for this project?	this project?	project?	this project?
								(b) (6)

When many places to the local control property and the local c	members of the international laboratory/learn verse international intern								
We have discussed ways to collaborate on another project together when was discussed ways to collaborate on another project together when have discussed ways to continue this project together when was discussed ways to continue this project together when when we want to the way to continue this project together when when we want to the way to continue this project together when when we want to the way to continue this project together when when we want to the way to continue this project together when we want to the way to continue this project together when when we want to the way to continue this project together when we want to the way to continue this project together when we want to the way to continue this project together when we want to the way to cont	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 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 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 continue this project together we have discussed ways to continue this project together when the project together we have discussed ways to continue this project together when the project together was the project together when the project together was the project together when the project together when the project together was the project together when the project together was the project together when the	international laboratory/team were interr trained in administrative and were financial grant management science	rnational laboratory/team i e trained in lab or bench nce techniques specifically	How many people from the international laboratory/team were trained in lab or bench	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	have (or efforts have you made) to continue collaborating with your fellow principal investigator on this	Please explain why you have no plans to continue	efforts have you made) to continue collaborating with your fellow principal investigator on	
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  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  We have discussed ways to continue this project together  We have discussed ways to continue this project together	We have discussed ways to  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  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  Collaborate on another project	specifically for this project? for th	his project?	this project?			project:	that apply.	
						We have discussed ways to continue this project together We have discussed ways to		collaborate on another project together We have discussed ways to collaborate on another project	

Please explain why you have no plans to collaborate	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).
on other projects:	collaborations).
	DV
	These awards are very helpful for both participants. The plan works well; we could probably use more funding committed to the program!

Award Type R01	Pi	Institution	Grant No. Al106586-01	Title HBV Response to Tenofovir or Lamivudine-Based ART in HIV-HBV Co- Infected Chinese	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.  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.	poor telephone/internet connection, cultural differences)	Please mark each area where you encountered challenges that were caused by the international collaboration.  Type/Length of award
R01			R01Al106633	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 coreceptor 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 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 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					
Please mark each area where you	Please mark each area where you encountered	funds, biospecimen		Had you collaborated with your fellow		What was the nature of your previous	
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,		principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
Data sharing		The internet connection for our	We have characterized liver disease in	I have not collaborated with him/her			
		telephone meetings is poor at time	a cohort of HIV-HBV co-infected	before			
		so they are not always as	Chinese. We have also characterized				
		productive as they should be.	HIV-HCV co-infection across China.				
		Having Jing come to my lab was	We have performed HBV DNA testing				
		helpful to facilitate	and and started the immunology work				
		communication. The length of this	for the study.				
		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	t				
		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.					
			- 0.00				
		Distance and difference in funding	The (b) (6) at the Chinese Academy	I have not collaborated with him/her	Other, see next answer	Other	
		start timing for the two project	of Science in Shanghai is working on	before			
	1	sites caused initial communications	the design and discovery of new CCR5				
	1	gaps. A four month start date	and CXCR4 antagonists. By analyzing				
	1	delay occurred in China NSFC	the structures of potent small				
	1	funding vs US NIH funding. Regular					
	1	Skype meetings have been	Chinese collaborators deduced a				
	1	established between the Chinese	general pharmacophore model of				
	1		propane-1,3-diamine skeleton flanked				
	1	that these will achieve sufficient	by two hydrophobic domains for				
1	1	regularity to accelerate the	effective CCR5 inhibition.				
	1	research program.	Furthermore, by reassembling the				
1	1		privileged structures based on the				
1	1		pharmacophore model, they				
1	1		identified a series of new structures				
1	1		with potent CCR5 antagonism				
1	1		functions at low nanomolar IC50				
1	1		values in cell signaling assays.				
1	1		Analyses in our US Lab of the				
1	1		international collaboration have now				
1	1		shown that these compounds also				
1	1		exhibit potent antiviral activities with				
1	1		low nanomolar EC50 values. In				
1	1		addition, by employing a scaffold				
1	1		hopping strategy, our Chinese				
	1		collaborators discovered new CXCR4				
	1		antagonists that again we in the US				
	1		lab have found to have potent				
	I .						

What was the nature of your previous collaboration(s)? (please mark all that apply)	that apply)  A colleague introduced me to my international collaborating investigator	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)	that apply)	Please describe how your findings may be used to inform the development or implementation of health programs:  Our findings demonstrate the advanced liver disease in a substantial proportion of co-infected subjects as well as the widespread prevalence obth 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.	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)
	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.		

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

rocedures specifically for	How many people from the US laboratory/team were trained in lab or bench science techniques	IRB/bioethics, grant/manuscript writing, medical procedures, and	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	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 traine in qualitative data collection and analysis (e.g. focus grour discussion, guided interview etc.) specifically for this project?
						(b) (

international in laboratory/team were wined in bioethics or IRB in	nternational laboratory/team vere trained (either through nentoring or training courses) in	trained (either through mentoring or training courses) in grant writing	were trained (either through mentoring or training courses) in scientific manuscript writing	international laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing	international laboratory/team were trained in medical procedures specifically for	international laboratory/team were trained in medical procedures specifically for this	How many people from the international laboratory/team were trained in administrative and financial grant management specifically for this project?
	international in laboratory/team were were were in bioethics or IRB in	ned in bioethics or IRB mentoring or training courses) in rules and regulations grant writing specifically for this	international international laboratory/team international laboratory/team were were trained (either through in bioethis or IRBI mentoring or training courses) in trained (either through mentoring or all trained (either through mentoring or	international international laboratory/team how many people from the laboratory/team were were trained (either through ned in bioethics or IRBI mentoring or training courses) in trained (either through mentoring or training courses) in trained (either through mentoring or training courses)	international international laboratory/team international laboratory/team were were trained (either through laboratory/team were were trained (either through laboratory/team were were trained (either through laboratory/team were trained (either t	international international laboratory/team international laboratory/team were were trained (either through end in bioethis or IRB) mentoring or training courses) in trained (either through end in bioethis or IRB) mentoring or training courses) mentoring or training courses in medical end of the control of training courses in medical end of the control of training courses in medical end of the control of training courses in medical end of the control of training courses in training	international laboratory/team laboratory/team laboratory/team laboratory/team were were trained (either through ned in bioethics or IRB) mentoring or training courses) in trained (either through laboratory/team were were trained (either through laboratory/team were trained laboratory/team were trained (either through laboratory/team were trained laboratory/team were train

How many people from the How many international laboratory/team were international rained in administrative and were tr financial grant management science specifically for this project? for this	ational laboratory/team inter rained in lab or bench were techniques specifically scier	w many people from the crnational laboratory/team re trained in lab or bench ence techniques specifically for	(excluding quantitative and qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench	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	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.	
specifically for this project: flor this	projecti	, project.		We have discussed ways to			
specifically for this project (10) tills	project: Juns	, projecti (t	(b) (6)	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:	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 R01	PI	Institution	R01 Al106574	Title Inhibition of HIV by GPI-anchored antibody derivatives		encountered challenges that were caused by the international collaboration.  Type/Length of award	Please mark each area where you encountered challenges that were caused by the international collaboration. Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)
R01				IL2/Treg-based immunity to TB and AIDS-related TB	Our findings indicated that strong responses of CD8+T effectors and TB-reactive Y6 T effectors correlated with prevention from latent to active TB.	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					
Please mark each area where you	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	What was the nature of your	What was the nature of your previous	
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international	principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
-1		Funding of the Chinese investigator		I have collaborated with him/her before			
			investigator has produced many of the		investigators on a different		
		the US investigator, slowing the	constructs we have tested since he is		project		
		research. The limited funding	the expert in antibody cloning. His		project		
			laboratory typically carries out the				
		the research.	initial investigations testing the				
		the research.					
			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.				
		N/A	Study was designed by USA PI and	I have collaborated with him/her before	He/she was a post doctoral		
			China PI. In this study, both HIV + TB	·	fellow in my lab		
			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				
			indicated the potent initialie				

mark all that apply)	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.		

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

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

international laboratory/team were international laboratory/team international laboratory/team were trained in lab or bench	mi lat in (ee que de	excluding quantitative and ualitative data ollection/analysis, IRB/bioethics, rant/manuscript writing, grants nanagement, medical	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	Please explain why you have no plans to continue	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	
		echniques)? (b) (6)	apply. We have discussed ways to continue this project together	project:	that apply.  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 provide any other feedback or suggestions to improve international collaborations. (This could include suggestions on the
Please explain why you have no plans to collaborate on other projects:	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		Grant No.	Title	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 tumorinitiating stem-like cells.	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					
Diamondo and a series and a ser	Please mark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	14/1-4 4b	What was the nature of your previous	
Please mark each area where you							
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international		previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
			We have to date recruited some 140 +		-		
		been more ideal as it takes time to	human subjects into the study, all of	before			
		set up human studies, even in the	whom completed very detailed				
		US.	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.				
		N/A	(b) (6)	I have not collaborated with him/her			
		N/A			•	•	
			the mechanism of HBV-induced	before			
			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.				
			carcinogenesis.				

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.		

laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this	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?	bioethics or IRB rules and regulations specifically for this	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?		laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically	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?
projecti	specialization and projects	lholetti	population this project?	ppeciniary for this projectr	ispectively to this project.	nor ans project:	paperintally for this project?	(b) (6)

How many people from the US laboratory/team were trained in medical procedures specifically for this project?	laboratory/team were trained in lab or bench science techniques	How many people from the US laboratory/team were trained in lab or bench science techniques specifically for this	IRB/bioethics, grant/manuscript writing, medical procedures, and	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	were trained in quantitative data	How many people from the international laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	How many people from the international laboratory/team were train qualitative data collection and analysis (e.g. focus gridiscussion, guided intervietc.) specifically for this project?
in project.	peculially to this project.	project.	jas senti cenniques.	ро спородесс	por this project.	pecinically to this project.	(b.

How many people from the international laboratory/team were trained in bioethics or IRB rules and regulations specifically for this project?	laboratory/team were trained in bioethics or IRB	international laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this	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?	laboratory/team were trained in medical	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?	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	Please explain why you have no plans to continue to collaborate on this project:	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					Please describe any unique scientific findings or opportunities created by this study, specifically because it involved culphoration between U.S.	Please mark each area where you encountered challenges that were	Please mark each area where you encountered challenges that were
Award Type	PI	Institution	Grant No.	Title	involved collaboration between U.S. and international scientists.	caused by the international collaboration.	caused by the international collaboration.
R01			R01Al106613	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.		Acquisition or synchronization of release of funds between US and international funding

					T		
		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					
Diagramark and area where you	Diagramark each area where you encountered	funds, biospecimen	Please give a short summary of the	Had you collaborated with your fellow	What was the nature of your	What was the nature of your previous	
Please mark each area where you	Please mark each area where you encountered						
encountered challenges that were caused	challenges that were caused by the	sharing/transfer, data sharing,	work completed by the international	principal investigator prior to this	previous collaboration(s)?	collaboration(s)? (please mark all that	
by the international collaboration.	international collaboration.	and/or other).	laboratory/team for this study.	project?	(please mark all that apply)	apply)	
		There was a delay of ~ 1 year in	The Chinese team of collaborators at	I have collaborated with him/her before			I: /
		obtaining the funding while the	(b) (6) have collected M.		investigators on a different		4
		grant was being reviewed by the	tuberculosis clinical isolates with		project		4
		Chinese authorities. Also, the	resistance to the first-line anti-TB				4
		amount and duration of funding	drug, rifampin. They have confirmed				4
		limits our abilities to conduct in-	phenotypic susceptibility to the other				
		depth analyses on the clinical	first-line and second-line agents and				
		isolates obtained from our Chinese					
		collaborators.	analyze drug resistance mutations.				
			They will send us samples for further				
			analysis, including transcriptomics and				
			lipidomics.				
							4
							4
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							4
							4
							4
				I have not collaborated with him/her	-		/- /
				before			
		First major challenge: The US					
		portion of the grant was funded 6					
		months prior to the Chinese	Our application described a 50/50 split				
		portion, significantly delaying our	of the actual lab experiments between				
		ability to start the research.	the two teams. Because the shipment				
			of biospecimens was not approved				
		energy needed to obtain	until March 2015, the vast majority of				
		permission to ship biospecimens	the work was performed by the				
		out of China (for us, 18 months	Chinese lab team with direct input				
		from funding), we were unable to	from the US PI. The Chinese lab team				
		start any US based experiments	organized the biospecimens, had				
		and all studies had to be conducted	them shipped to the central Beijing				
		in China for the first 1.5 years of	lab, screened for HIV and HCV acute				
		the grant. The 6 month delay in	infection, genotyped the HIV and HCV				
		Chinese funding was, therefore,	positive samples, performed single				
		particularly damaging. Second	genome sequencing of the HIV				
		major challenge: obtaining	specimens (about 2/3 of samples) and				
Biospecimen sharing or transfer		permission to ship specimens out of China. This took 18 months.	began sequencing of some of the HCV samples.				

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)  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)	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)	that apply)	Please describe how your findings may be used to inform the development or implementation of	How many people from the US laboratory/team were trained in quantitative data collection and analysis specifically for this project?  (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.	

poratory/team were trained in alitative data collection and analysis g. focus group discussions, guided perviews, etc.) specifically for this	qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	bioethics or IRB rules and regulations specifically for this	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?	laboratory/team were trained (either through mentoring or	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?

trained in medical procedures specifically for	laboratory/team were trained in lab or bench science techniques	techniques specifically for this	IRB/bioethics, grant/manuscript writing, medical procedures, and	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	were trained in quantitative data collection and analysis specifically	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 traine in qualitative data collection and analysis (e.g. focus grouj discussion, guided interview etc.) specifically for this project?
							(0) (

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

trained in administrative and were trained in lab or bench financial grant management science techniques specifically	How many people from the international laboratory/team were trained in lab or bench science techniques specifically for this project?	qualitative data collection/analysis, IRB/bioethics, grant/manuscript writing, grants management, medical procedures, and lab/bench	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.	
			We are applying for funding to continue this project together				
				We have discussed ways to continue this project together	We are still in the middle of the experiments. Depending on our results, we hope to plan for potential future projects.	We are applying for funding to collaborate on another project together	We have discussed ways to collaborate on another project together
			DK				

Please explain why you have no plans to collaborate on other projects:	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 rampup.

n=18

Challanas		
Challenges	I did not avanziones any shalloness	
	I did not experience any challenges	_
	due to the international collaboration	4
	Securing required approvals (IRB and	
	others)	3
	othersy	,
	Time /I smath of accord	7
	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)	2
	cultural uniterences)	3

Have collaborated before:	
Have not collaborated before:	11
nave not collaborated before:	
	4
	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
тту тар	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

t	low many people from he US laboratory/team			How many people from the US					How many people from the US	How many people from the US laboratory/team were
٧	vere trained in	How many people from the	laboratory/team were trained in	laboratory/team were trained in	How many people from the US	How many people from the	How many people from the US	How many people from the US	laboratory/team were trained	trained (either through
c	uantitative data	US laboratory/team were	qualitative data collection and analysis	qualitative data collection and	laboratory/team were trained in	US laboratory/team were	laboratory/team were trained	laboratory/team were trained	(either through mentoring or	mentoring or training
c	ollection and analysis	trained in quantitative data	(e.g. focus group discussions, guided	analysis (e.g. focus group	bioethics or IRB rules and	trained in bioethics or IRB	(either through mentoring or	(either through mentoring or training	training courses) in scientific	courses) in scientific
s	pecifically for this	collection and analysis	interviews, etc.) specifically for this	discussions, guided interviews, etc.)	regulations specifically for this	rules and regulations	training courses) in grant writing	courses) in grant writing specifically	manuscript writing specifically	manuscript writing
F	roject?	specifically for this project?	project?	specifically for this project?	project?	specifically for this project?	specifically for this project?	for this project?	for this project?	specifically for this project?

Total

39 22 35 19 27

ained in medical rocedures specifically for	How many people from the US laboratory/team were trained in lab or bench science techniques		IRB/bioethics, grant/manuscript writing, medical procedures, and	international laboratory/team were trained in quantitative data collection and analysis specifically	How many people from the international laboratory/team were trained in quantitative data collection and analysis specifically	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?	data collection and analysis (e.g. focus group discussion, guided interviews, etc.)	How many people from the international laboratory/team were trained in bloethics 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?
	1	4:	3	Total	39	3	44		23

DK 4 3 3

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

31 46 39 11 42

4 2

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  DK	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

We are applying for funding to collaborate on another project together

We have discussed ways to collaborate on another project together

1

6

12

Award Type	R01	[NOS	ROL
PI institution			(b) (6)
Coll. Invest.			
Grant No.	R01NS083435	5R01N5083503-02	N/A
L.		Culp t Plaque n Acute Ce eb al Infa ct on A H stolog cal and MRI	T specific Multi-valent HIV-1 inact vato. Comb ned with Act vato
Title	St oke Imag ng	Assessment	as a St ategy fo Cu ng A DS
		Do do a site of groups of mo tell y and long to mise must do the lift globally, and on sit ownship with each one is a major strong control buts. However, substance and concernagement that the local control and the properties of the control of the	Nowl joines, con-ext w HM-1 nh b to 1 we agree steed and
Please describe any unique adentific findings or opportunit es created by this study, spec fically because it involved so laboration between U.S. and internet onal adentifics.	This co laboration has gleatly expanded my clinical lesses chicapacity.	p ov des a un que oppo tun hy to establish standa dised imaging and histological protocols, conduct closs-cultural analyses, and has helped to establish a foundation for future collaborative essa chistudies.	cha acte zed by combining the experits of NC group and the collaborating out in China. These in bit to sie highly own ing as diugicand dates for prevention and the application.
		Securing equied approvals (IRB and others), Type/Length of award, Acquistion or synchion zation of elease of funds between US and	Type/Length of awa d, Acquistion or synch on zation of elease of
Please mark each area where you encountered challenges that were caused by the international collaboration.	I d d not expe ence any challenges due to the rate national collaboration	nte nat onal fund ng agenc es (f appl cable), il ospec men sha ng o t anafe	funds between US and rite national funding agencies (if applicable)
Please describe such of the desirings account by the interestional calibboration that you marked or of personal parties (program bearing, soon or properly depressed, communication, typy-longly of personal, any additional physical scale or in the land of the personal parties of the personal par		Securing 80 approved was a major be a passon expective not to do not one who do the do not offen death or the just by funded duct as such as one. Multiple quantities were a send rape of approvement to data. We have the properties of the propertie	The was d to U.S. revert gate a stoc small (550,000 pe yes ) to conduct non-human p: male stud es and somet mess was not ear well trainly. In add 1 on, the suppe 1 a not cont mouse which makes stiff could be not be sales or of large to humans of not
of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).	N/A	been a challenge, given the number of subjects needed for eclutiment, study procedure costs, and it avel expenses.	makes tdffcultfo us to tanslate ou findings to human cin call tals.
Please give a short summary of the work completed by the international laboratory/hears for this study.	The rate nat coal team w I be pe to magaper ( A m 2 Dete m ne the cha and a sto and cin not values or pil mag ng of type acute and acute suchem c to be pat exts in "	Due to the club lenger door: bed about, major techn cal account of themselv been and model or given 1 that excelled a rapif cast not powerwards. It at a said to at view 1 kill marge, as decided in our of said powerwards. It as a said to at view 1 kill marge, as decided in our of said powerwards and to the said to a said to said with kill marge, as do do by the said to sai	On collable ato a n.Ch sa testaded a comb nation of our ant bod on with the popular-based on hits to verse get effects on gene and as as on of the one pot on an of the annual popular and as as of the one pot one of the annual popular and as as of the one pot one and the popular of the popular and as an entire the one of the annual popular and as an entire the one of the annual popular and as any of the name of the one of the annual popular and as any of the name of the one of the
Had you collaborated with your fe low principal invest gator prior to this project?	I have collabo ated with him/he ibefore	I have not collabo ated with h m/he ibefo e	I have co labo ated with him/he ibefore
What was the nature of your previous collaborat co(s)? (please mark all that apply)	We have been collabo at ng neet gato s on a diffe ent p oject	Othe Many of the key faculty co-nevet gate s at the Ch to me seen o mean children nou labo ato y at the (h) (6) s the departmental chairman.	We have been collaboating investigatos on a different pioect
		A co league at oduced me to my ate aut onal collabo at as	
Now did you identify your international collaborating investigator? (please mark all that apply)	I knew of hs/he esea chand contacted h m/he to wo k on this p elect	nvest gato , Othe style of the construction of	He/she knew of my esea ch and contacted me to wo k on this piglect
Please describe how your findings may be used to inform the development or implementation of has th programs	DK .	20 cite to beding cause of deeth n Ch no. The stands of seely oroccis to high—easter on please energe, to intrologically soom ray and growing metal shed in this stately in it wan has to the of no and only again and in a spectrum on that only When and seely had growed to the standard of	The novel highly potent HV-1 in b to 1 that we gene and th ough the collabor stron a semeng the best cu. entity we table and a spotent ally useful to prevent on and the app of HV-1 effect on.
How many people from the US laboratory/team were trained in quant tative data collect on and			(b) (6)
analysis specifically for this pro ect?			
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 interviews, etc.) specifically for this project?			
How many people from the US laboratory/beam were trained in bloethics or RS rules and regulations specifically for this project?			
Now many people from the US laboratory/team were trained (e ther through mentoring or training			
courses) in grant wr ting specifics by for this project?  Now many people from the US laboratory/basm were trained (e ther through mentoring or tra ning			
course) in ac entific menuscript writing specifics by for this project?  Now many people from the US inhoratory/harm were trained in medical procedures specifically for	-		
th a pro-ect?			
Now many people from the US laboratory/beam were trained in lab or bench adence techniques spec fice by for this project?			
What, if any, other areas did members of the US laboratory/hears rece we be ning in specifically for the pro-oci (seadwith; quant to the and qualitative data collection/pensyle). Milifoliosthics, grant/pensure; art pre, pensure (seadwise, sell high-pens back pensure).			
Now many people from the international laboratory/fearn were trained in quant tative data			
new neary people in the immerisations associately place were trained in quant tenter usual collection and analysis specifically for this project?  Now many people from the international inboratory/beam were trained in qualitative data collect or			
and analyte (s.g. from group discussion, go ded referriews, etc.) specif cally for the pro-ect?  New many people from the international inhoratory/heam were trained in b oethics or ISB rules and regulations specifically for this project?			
Now many people from the international laboratory/heam were trained (a ther through mentoring or training courses) in grant writing specifically for this project?  Now many people from the international laboratory/heam were trained (a ther through mentoring			
new many peops in one is international information are unusually for this project?  To training courses) in identific managed we trig specifically for this project?  Now many people from the international laboratory/hears were trained in med cal procedures upon fice by for this project?	·		
Now many people from the international laboratory/hearn were trained in adm nistrat we and financ alignant management specifically for this project? Now many people from the international laboratory/hearn were trained in lab or bench ac ence			
techniques specifically for this project?  What, if any, other areas did members of the international laboratory/team receive training in			
What, if any, other areas did members of the international abcoratory/seam receive training in type; tile is print in project is excluding quantified we and qualitable data collect on/analysis. PR/blooth or, grant/manusor pt writing, grants management, medical procedures, and lab/bench activities.			
tactedques)? What, If any, plans do you have (or efforts have you made) to continue co laborating with	We have discussed ways to continue		
your fe low principal invest gator on this project? Please mark a I that apply.	this project togethe	We have d soussed ways to cost nue this ploject togethe	We have leceived funding to continue this project togethe
Please explain why you have no plans to continue to collaborate on this project	We have acceved funding to		
What, if any, plans do you have (or efforts have you made) to cont noe co laborating with your fello	collabo ate on anothe p oject togethe We a e applying for funding to collabo ate on anothe p oject togethe have discussed ways to collabo ate on		We have discussed weys to collaborate on another poiect
What, if any, plans do you have (or efforts have you made) to cont ruse oo leborating with your fellor pr notpall swedigetor on other project(s)? Please mark all that apply.	anothe poect togethe	We have discussed ways to collaborate on another project togethe	togethe
Please explain why you have no plans to collaborate on other projects			
i .	1	Support from this novel, ontifunding mechanism has allowed	1
Please provide any other feedback or suggestions to reprove international on laborations. (This coul include suggestions on the process of applying for and resolving backing for international		extablishment of act ong foundation for future co laborative less ch, by helping to standar day protocols across stee. It is difficult to find other sources for funding rite national collaborative less ch, and we highly ecommend that the joint NRNDS/NST venture be considered for	The p costs of applying for the funding should be simplified.  Cur entity, two proposals are equiled to be submitted to NBI and NSFC of China separately, which takes unnecessary more time and

Award Type	RO1	RO1	mo1
PI Institution			(b) (6)
Coll. Invert.			
Grant No.	R01CA177372	R01CA177377	
Title	The Role of m RNA Netwo k n Gast c Cance	KSHV m.c of NAs nce lula tansformation and tumo geness	MH_Su very18_130
-	collabo at on with our Chinese partners to take advantage of the		
	Is go number of patients with gast ic cancer that a ease lable in the institution. For the time in literature, we we eable to analyse		
	and compa is changes in the miRNA and RNA explicit on networks in our TFF1 knockout mouse model of gast it cancer to human		
	gast c cance pat ents samples. The esou ces p ov ded by NCI we e nst umental to move ou co labo at on fo wa d. I have		
	hosted a Ph.D. student in my lab who has completed his Ph.D.		This is an exome sequencing piliped, we have not finished the
	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		sequencing yet, so we don't have anything important to leport at this time. We did analyzed some GWAS data of As an populations
	t ssue samples have been analysed using Next Gene at on sequencing. Through this mechanism, we have been successful in		and compa ed them with that of Caucas ans. Piel mina yi esu ts nd cated that the eiwe e substant allowe laps in genetic lists
	expanding ou esea chicapacities at both sites and performing		between As ans and Caucas ans.
	analysis of a unique sample that is as lable in each institution.  Our second phase of validation of data and developing bioma ke s	The collabo at on has expanded ou exes ch capacity to delineate the functions of KSHV and cellula in collina, and the loies in	This project did provide us an opportunity to access valuable schizophien a patient samples in China, which is not possible
	fo es ly detect on of gast ic cance and/o monito ing esponse to the apy sists ting. With the exceptional tissue and se um	KSHV-nduced pathogenes a and KSHV   fe cycle. Spec fically, it has allowed us to examine the idles of KSHV and ceilula imic of RNAs in	othe wises not the Chinese gove inment plohibits DNA sample from leaving China, even for the pulpose of scientific lessaich.
Please describe any unique adentific findings or opportunit as created by this study, spec fically	b obanking in China, we have the opportunity to move ou esuits	ce I invasion and angiogenesis and KSHV I fe cycle, and the	This collaborative piolectip ovides an avenue folisha ingidata
because it involved to laboration between U.S. and international adentists.	f om bench to bed to dec ease the bu den of gast c cance , the	unde lying mechanisms that med ate these piocesses.	p oduced by ou Ch nese collabo ato s.
Please mark each area where you encountered challenges that were caused by the international collaboration.	I defeat once once you challenges due to the sale aut coul collection	Small anoth of sun d	Othe
wild by a con.	I d d not experence any challenges due to the rate national collabor	hypertengen or awa o	Cons
Please describe each of the challenges caused by the international collaborat on that you marked or			
the previous question (language barriers, secur ng required approvals, communicat ons, type/lengti of sward, scqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or		The g ant s fo 3 yeas, which has somewhat I mited the extent of	The Chinese government ieduced the funds by 40% to my collabolatio, the efolia, they have to scale down what we
other).	N/A	co labo at on as these a e long-te m p oject.	p oposed to do.
1			
1			
1	as a team have collected and built a good of superhants		
1	team have collected and built a gast of ssue bank ove 500 human gast occance it ssue samples with		
1	adjacent non-cance and no malgast of ssue as well as human blood samples. In the fist year of this study, they finished		
1	h stopathology evaluation, it issue placessing, RNA pullfication, and	The China team has examined KSHV pie-m RNAs and m RNAs on	
1	m RNA and RNA degg sequencing of 119 human gast ict saue samples. The bioinfo mat its analysis has been completed by the	ce lula it anafo mation, and identified those that ingulate ce l	
1	On nese pa tine . Following consultation with our biolinfo matics at we have equested and eceived the law sequecing	g owth, su vival, ang ogenes s and rivas on. They have also dentified seve all novel to gets of KSHV m RNAs, which has led to	We have established consistent sequencing pipeline to ensule that
Please give a short summary of the work completed by the international laboratory/team for this	we have equested and eceived the law sequecing of this (500 GB). These less its will be analyzed togethe with our sequencing data from mouse tissues to establish males.	the delineat on the mechanism of action. Full the mole, the China team has expanded the scope and identified KSRV and cellula	all samples a e sequenced by the same methods and standa ds.  We also applied the same cities a following selection. Both sides.
rtudy.	elated to H pylo nifect on and early stages of gast ic cance .	m RNAs that inh bit KSHV lytic legication.	have sta ted sending samples foll sequencing.
Had you collaborated with your te low principal levest gator prior to this project?	I have collabo ated with him/he before	I have not collabo ated with him/he ibefore	I have collabo ated with h m/he ibefore
What was the nature of your previous collaborat on is i? (please mark all that apply)	We have been collabo at ng rivest gato s on a different project		Other we worked together as cosuthors to crossive fly findings from each other.
			I knew of his/he exes chand contacted him/he to wolk on this
		I knew of ha/he exes chand contacted h m/he to wo k on tha	poect, He/she knew of my exes chand contacted me to wo k on this poect, I met him/he at a pofessional meeting, Other We
How did you identify your international collaborating invest gator? (please mark all that apply)	, A colleague nt oduced me to my nte national co labo at ng nve	p oject, I met h m/he at a p ofess onal meet ng	we e coauthe s on seve al pape s.
	Ou second phase of validation of data and developing bloma ke s to early detection of gast iciance and/o monito ng exponse	The equits of these collaborative works allow us to bette	
	to the apy s sta t ng. With the except onal t ssue and se um	unde stand the pathogenes s of KSHV-induced malignancies and	The e-may be ethnic specific genetic is also schooph en a. By
Please describe how your findings may be used to inform the development or implementation of	blobanking in China, we have the opportunity to move oulless if om bench to bed to declease the builden of gast iccance, the	the molecula basis of KSHV if ecycle. The knowledge can be used to develop novel the apeutic app caches for KSHV- elated	compaing these is factors between different ethnic populations, tip ovides the basis fithe eishould be different implementation of
hea th programe	to the apy sits 1 ng. With the except onal tissue andes um bobanking n China, we have the oppo hun ty to move ou esuits if on bench to bed to decisee the builder of gast in cance, the second most if equenticance, wo lid-	the molecula, but a of KSHV I fe cycle. The knowledge can be used	compaing these is kfacto's between different ethic coopulations, tip ovides the basis if the eishould be different implementation of health policies on different ethic coopulations.
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Award Type	R01	R01	R01
PI			(b) (6)
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			Aspa t c P otease Inh b to s as Novel
Title	MH_Su vey1B_133	MH_Su vey1B_148	Ant mala als
	This co laborative funding a lowed us to characte ize two lines of		Mala a san nte nat onal heath c ssthat
	(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)		demands nte national partne ships to combatit, particularly due to the sein diug
	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		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
	suppo t the clinical obseivation that [Gene Name] mutation is		th s mpo tant wo k that could benef t the hund eds of thousands who d e eve y yea
	closely associated with neu-odevelopmental diso de sisuch as mental eta dation, autism, etc. These valuable models and		due to mala a. This giant allowed the US
	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		team with expertise in drug discovery combine with the Chinese team with lab and
Please describe any unique scientific findings or opportunit es created by this study, spec fically	neu ogenes s and late neu onal I neage d ffe ent at on. Th s f nd ng s cons stent with oul finding in mouse using in vitio neu al	La ge samples of s ck pat ents a e ava lable fo study n ch na, and n cont ast. t s ve v d ff cu t to do th s wo k n the US because	cl n cal expe t se n mala a b ology to exolo e novel mechan sms fo ant mala al
because it involved co laboration between U.S. and international scientists.	stem ce i cultu e and in v vo i neage analysis.	only sma i sample a e ava lable.	d ug d scove y.
Please mark each area where you encountered challenges that were caused by the international	Acquisition or synch on zation of lelease of funds between US and international funding	Language Ba e s, Secu ng equ ed app ovals (IRB and othe s),	Commun cat ons (e.g. schedul ng, poo telephone/ nte net connect on, cu tu al
collaborat on.	agenc es ( f appl cable)	Type/Length of awa d, B ospec men sha ng o t ansfe	d ffe ences)
			Mostly technical difficulties due to internet
		We have Ch nese /Ame can membe of ou team which help, and we visit chinal flequently but the distance, and expense is a	connect ons/aud o p oblems du ng teleconfe ences us ng e the Skype o Fuze
		p oblem, and language s a p oblem fo Ch nese v s t ng ou lab.	Meet ng. Also, f nd ng common meet 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	The USA s de eleased the funds in a timely way but China side delayed the elease date and also educed the funding amount	IRB p oblem a e unnecessally complex, ove tual zed, and this hold up the study, making it had to do in a shoit period of	t mes to conduct full team meet ngs s cha leng ng due to the 13-14 hou t me
of award, acqu sition/synchronization of funds, biospecimen sharing/transfer, data shar ng, and/or other).	s gn f cantly as compa ed w th the funds est mated o p om sed at the appl cat on pe od.	funding. The nability to ship DNA from China to US is a problem and we have trained Chinese to do the assays in China.	d ffe ence. Howeve , these challenges we e not nsu mountable.
	Name] in neurogenesis in zeb afish. In the fiist year, 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 phol 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 obvously. 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 cells 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 mai 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,	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	
	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	fam I 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	
Please give a short summary of the work completed by the international laboratory/team for this	hindb a niwhen niby was knockdown. Finally, the formation of senso vineurous was not a forted at 96 hpf because IP ote n	samples and have now collected app ox mately 150 out of 390	Synthes s of new analogs and assay of
Please give a short summary of the work completed by the international laboratory/team for this study.	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	expected samples.	compounds in enzyme, pa as te and an mall models.
	I have collabo ated with h m/he befole		
Had you collaborated w th your fe low principal invest gator prior to this project?	I have collabo ated with him/he betole  We well on the poject under a	I have co labo ated with h m/he ibefo e	I have collabo ated w th h m/he befo e
	d ffe ent fund ng mechan sm, We have been collabo at ng		
What was the nature of your previous collaborat on(s)? (please mark all that apply)	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 invest gato s on this pio ect unde laid ffe ent funding mechanism
	, He/she knew of my esea ch and contacted me to wo k on th s	A colleague nt oduced me to my nte national collabo at ng	A co league nt oduced me to my
How did you identify your international collaborat ng invest gator? (please mark all that apply)	p oject, Othe We knew each othe since co lege	nvest gato	nte nat onal co labo at ng nvest gato
	Ou findings suggest that [Gene Name] is essential folioially		
	neu ogenes s and neu onal I neage d ffe ent at on. These f nd ngs		
	w II help to develop the apeut c st ateg es that w I mp ove neu ogenes s and funct onal ecove y fo neu odevelopmental		
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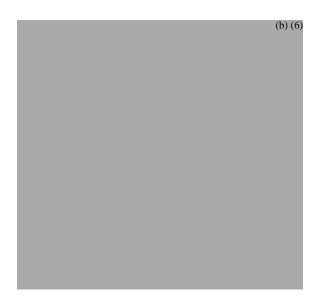
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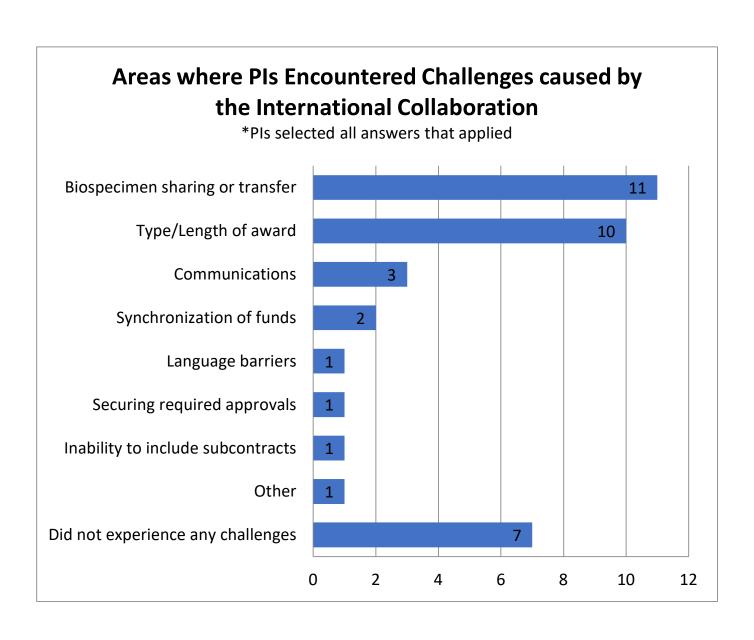
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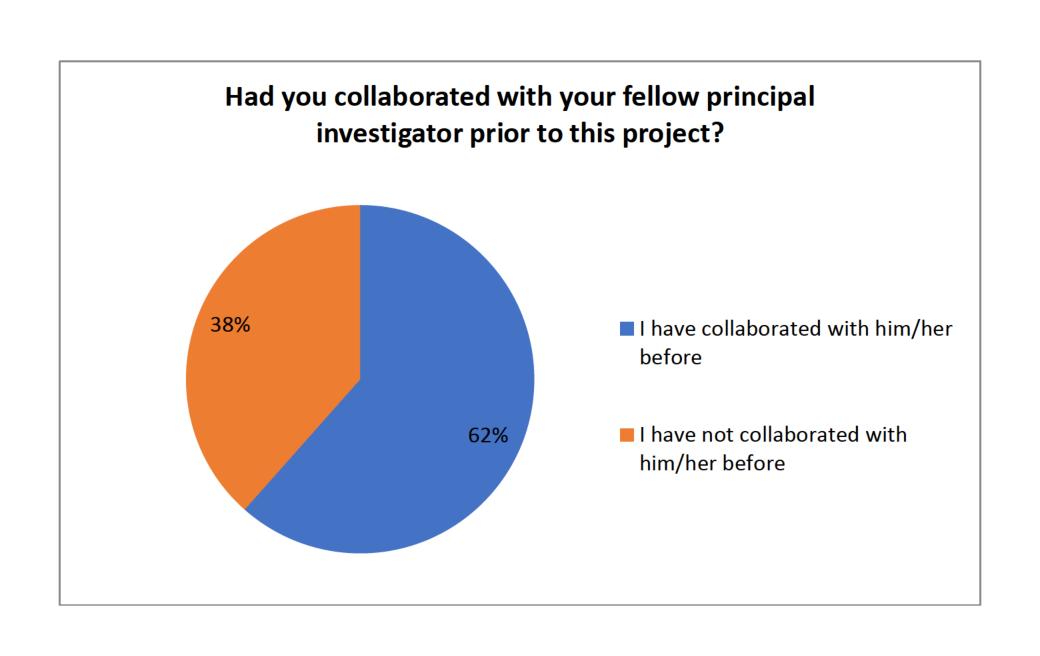
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## How did you identify your international collaborating investigator? (please mark all that apply)

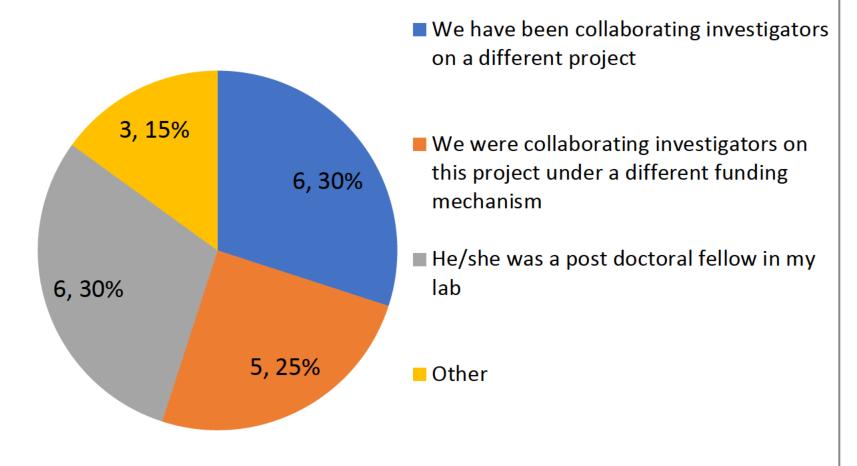
I met him/her at a professional meeting	1
Other	3
A colleague introduced me to my international collaborating invest	7
He/she knew of my research and contacted me to work on this pro	8
I knew of his/her research and contacted him/her to collaborate	12





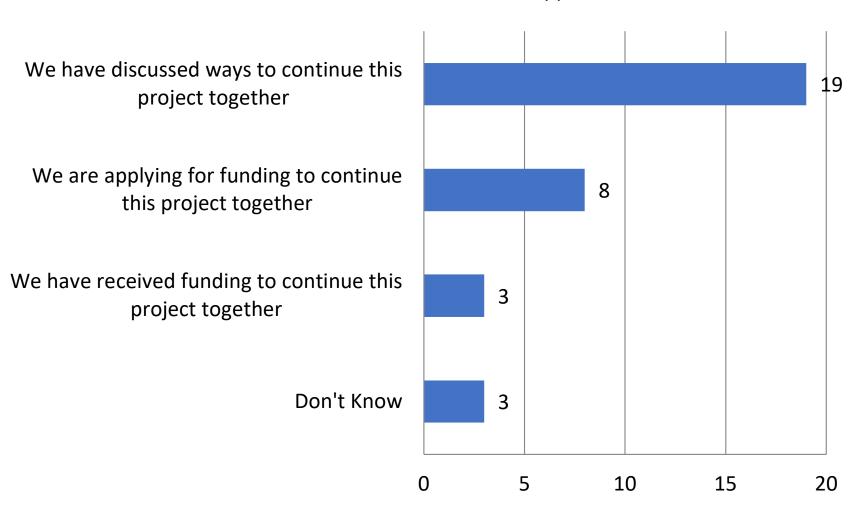


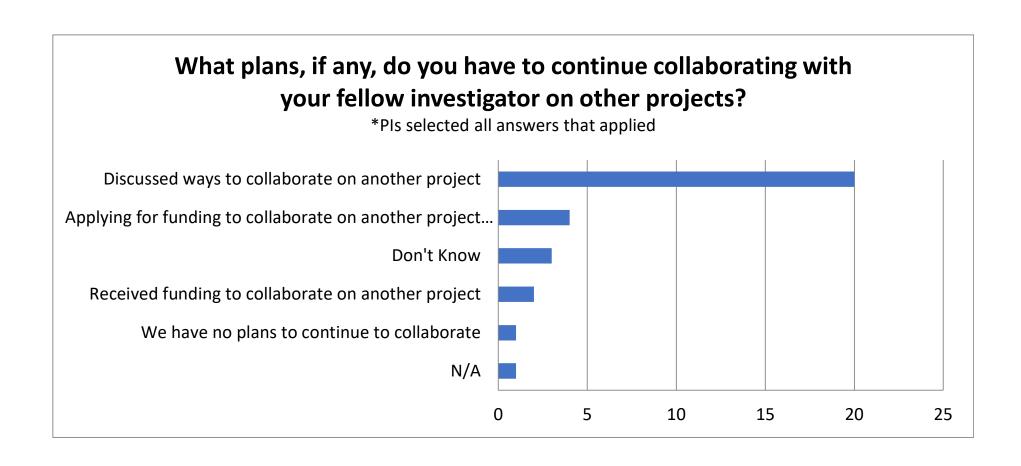
\*PIs selected all answers that applied

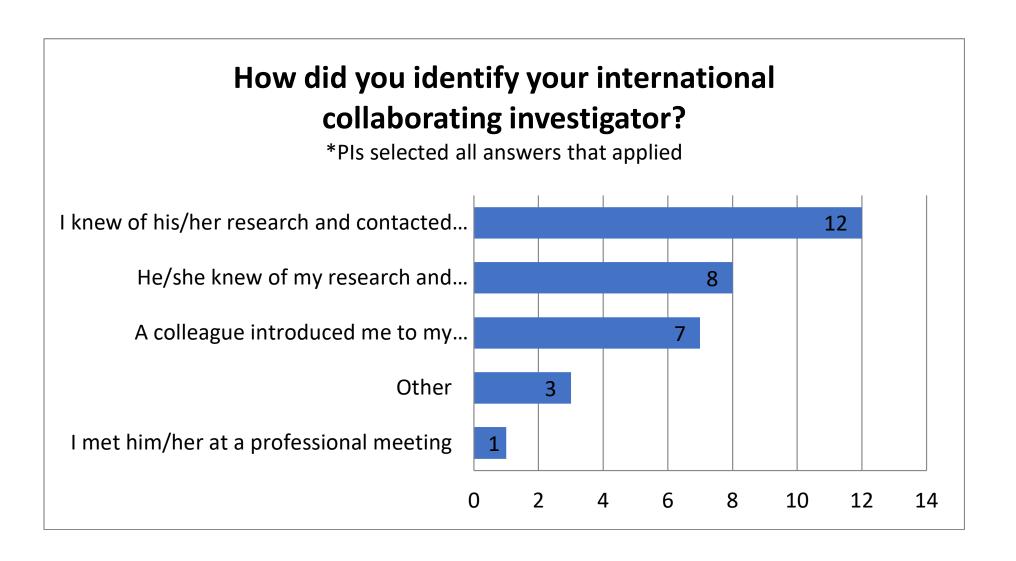


## What plans, if any, do you have to continue collaborating with your fellow principal investigator on this project?

\*PIs selected all answers that applied







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			(0) (0)		NIMH		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		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.	caused by the	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.	on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, 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).
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		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	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

	Had you collaborated with your fellow principal investigator prior to this project?	f				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.		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.		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 drugrelated 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	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) (б)
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 presentations associated with this administrative supplement (presenter, title, and venue):	associated with associated with this administrative supplement	d (patent number, country, and	; Please describe how your findings may be used to inform the development or	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 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		

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

trained in medical procedures specifically for	laboratory/team were trained in medical procedures specifically for this project?	health programs:		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	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-Pl	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

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١,	ward	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.
ŕ	waru	PI	Institution	(b) (6)		ic Grant	lide	specifically because it involved collaboration between 0.5. and international scientists.
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ı								Sample collection: The Chinese PI has access to 100 L+ fermentors that have enabled the
ı								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
ı								novel compounds. On-going screening of anti-TB activity: Around 50 new analogues have
ı								been semisynthetically prepared. These compounds will be tested against a variety of clinical
ı							Manipulating the biosynthesis of	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
ı							capuramycin-type antibiotics for	opportunity to establish efficacy against a variety of Mycobacterium tuberculosis genotypes
Α	NS .				R01 Al087849	NIAID	new anti-TB drugs	and phenotypes not available in the respective country.
ı								
								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
							Selenoprotein K modulates	our collaborative studies. The fact that cardiovascular disease and chronic inflammation are
Δ	ıs				5R01AI089999	NIAID	calcium-dependent signaling in immune cells	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.
۴	-						The effect of Myristica fragrans	
					30973863 and	NC	on colon cancer and its	N/A
Α	NS.				81161120429	NCI	mechanism of action Research	N/A

Please mark each area where you encountered challenges that were caused by the	where you encountered challenges that were caused by the	caused by the international	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.	acquisition/synchronization of funds,	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		
international conaboration				exchanging of data, cross country testing	•	•
Communications (e.g.					Conding samples and reagents both ways was	
scheduling, poor telephone/internet connection,					Sending samples and reagents both ways was problematic. Sharing resources like mice was very	
cultural					challenging. Travel between institutes was most	
differences, etc.)				was similar; publications	often sponsored by Jinan University.	supply chain/biospecimen issues
I did not experience any challenges due to the						
international collaboration					N/A	
					,	

	Had you collaborated with your					What was the nature of your	
Please give a short summary of the work completed	fellow principal investigator prior to					previous collaboration(s)? (please	
by the international laboratory/team for this study.	this project?	What was the nature of your	previous collaboration(s)? (please	mark all that apply)	to this project?	mark all that apply)	
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Our primary goal was to generate novel capuramycin							
analogues using a semisynthetic and mutasynthetic		l					
approach. An advanced capuramycin precursor was		l					
isolated in gram quantities, which was utilized to gerate		l					
around fifty novel analogues using a novel							
chemoenzymatic approach or synthetic methods.		l					
Several of these analogues have improved activity							
against Mycobacterium smegmatis. These efforts have		l					
led to 2 submitted manuscripts with contributors from	I have collaborated with him/her	He/she was a post doctoral			I have collaborated with him/her	He/she was a post doctoral fellow	
both groups.	before	fellow in my lab			before	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	I have collaborated with him/her	Other: He had been a visiting			I have collaborated with him/her	Other: He had been a visiting	
later study.	before	scholar in my lab.	Other		before	_	Other
Discovered that neolignans from the spice nutmeg	I have not collaborated with him/her						
prevented colon cancer in a mouse colon cancer model	. before						

international collaborating investigator? (please mark all	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)
			(b) (6)
I knew of his/her research and			
contacted him/her to work on			
this project			
Other: initial collaboration had			
just begun	Other		
I knew of his/her research and			
contacted him/her to work on			
this project	1		

Please list all of the presentations associated with this administrative this administrative supplement (presenter, title, and venue):	Please list all of the patents d with associated with this administrative supplement title, (patent number, country, and year): (b) (6)	(patent number, country, and year):	Please describe how your findings may be used to inform the development or	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 N/A		The findings provide insight into dietary selenium related to risk of atherosclerosis  Chemoprevention of colon cancer		

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

trained in medical laboratory/team were trained in procedures specifically for medical procedures specifically for	health programs:		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	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.	multiyear collaboration support
	nsight into risk of atherosclerosis  Chemoprevention of colon cancer	.  We have no funding for more projects.	no funding	D/K	

Award	PI	Institution	Coll. Invest.	Grant No.	IC Grant		Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
			(b) (6	)			
AS				CA-133569	NCI	Molecular Epidemiology of Infection with Human Papillomavirus Variants	I) 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				CA-133309	NCI	·	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
AS				R37 CA030488	NCI		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-Al-12-021).
				107 01000 100		and stability of the 2 minut	
						System-wide immunohistochemical and	
AS				NOT-CA-12-002	NCI	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.	caused by the international	you encountered challenges that were caused by the	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S.	on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, 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).
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					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	fellow principal investigator prior	What was the nature of your previous collaboration(s)? (please mark all that apply)	
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.	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	· ·	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.		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)		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,	presentations associated with this administrative supplement (presenter, title,	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	(patent number, country, and	s Please describe how your findings may be used to inform the development or	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)		yeary		Pr J 1	(b) (6)
				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		
		N/A	C	progression.		
		N/A	C	N/A		
		N/A		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?	US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for		How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing specifically for this project?
	, , , , , , , , , , , , , , , , , , , ,	J		p	p	, , , , , , , , , , , , , , , , , , , ,	(b) (6)

trained in medical procedures specifically for	How many people from the US laboratory/team were trained in medical procedures specifically for this project?	health programs:			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	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	
			:			great support
			She has shifted her research focus more			
			to oncology.	research shift, co-PI	D/K	

Award	PI Institution	Coll. Invest. Gr (b) (6)	rant No. IC Gra	ant T		Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.
AS			POICA132714-0451 NCI		Directing tumor-specific T cells to	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 colonand 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) conter 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) (a) a Shanghai-based Biotech company (b) (6) (b) (6)
AS		30	01Al081995 NCI	S	-cell Immune Responses to chistosome Infection in the iderly	This collaboration promoted (b) (6) project development in China.
AS			01 AI083214 NCI	U	JS-China Program to Identify	The study allowed us to screen a library of natural compounds isolated and characterized in the laboratory of 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.	caused by the	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	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).
Laguaga Operiors	Communications (e.g. scheduling, poor telephone/internet connection, cultural	Tuno () counts of our set	Inability to include subcontracts to the US partners in the resulting follow-up grant applications submitted by our	novel research, capacity building, looking at		logistical communication issues, cross-cultural
Language Barriers  Securing required approvals (IRBs and others)	differences, etc.)  Type/Length of award	Type/Length of award  Biospecimen sharing or transfer	<u>Chinese partners</u>	additional collaboration 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.

			It would have been preferable if the award were	
			longer. However, the collaboration that was	
			initiated during the funding period has continued	
Type/Length of award		novel research, publication coming	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)	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		(b) (6), one of the participants of the PO1 had				
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)  (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  I have not collaborated with him/her before	personal contacts with the Chilese partner	Other			
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 screaning 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					

	I		
How did you identify your	How did you identify your		Please list all publications associate with this administrative supplemental supple
international collaborating	international collaborating	Please list all publications associated with this administrative supplement	(provide full citations: Author
investigator? (please mark all that apply)	investigator? (please mark all that apply)	(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page Numbers)	Title, Journal, Year; Vol. (Issue), Pa Numbe
			(b) (
He/she knew of my research	A colleague introduced me to my		
and contacted me to work on this project	international collaborating investigator		
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	Please list all of the patents	Please list all of the patents		How many people from the US	How many people from the US
Diagon link all of the assessment in a second		associated with this	associated with this		laboratory/team were trained	laboratory/team were trained in
Please list all of the presentations associated with this administrative supplement (presenter,	with this administrative supplement (presenter, title,	administrative supplement (patent number, country, and	administrative supplement	Please describe how your findings may be used to inform the	in quantitative data collection and analysis specifically for this	quantitative data collection and analysis specifically for this
title, and venue):	and venue):	year):		development or implementation of health programs:	project?	project?
	(b) (6)					(b) (6)
				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		
		No patents from my lab. I am		potential for our interactions is enormous. Although in the first		
		not aware of any patents from		phase, our collaboration is likely to advance new cancer		
		my collaborators, but I would need additional time to verify.	0	treatments in China, in a longer run, it is also highly likely to advance cancer care in the US.		
		·				
				to help improve therapeutics in the elderly infected with		
		N/A	0	Schistosome	-	
				The primary compound identified in the screen activates the		
		N/A		innate immune response. Developing therapeutics that activate		
		N/A	0	host immunity is a novel approach to treating bacterial infections.		

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

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	* (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.  NIH should provide more opportunities of this collaboration by providing long	struggling to maintain follow-up
		to help improve therapeutics in the			term (at least 3 years for each collaboration) and more fundings (at	more funded longer
		elderly infected with Schistosome			collaboration) and more fundings (at least same as an R21 or small R01).	more funded, longer, collaboration opportunities
					The one year time frame for this project was not long enough to develop and bring the project to a successful	
		Developing therapeutics that activate host immunity is a novel			conclusion. Fortunately, we were able to continue the collaboration despite	need longer time frame,
		approach to treating bacterial			the expiration of the supplemental	maintaining collaborations
		nfections.		-	funding.	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 Al087135	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. Type/Length of award	Please mark each area where you encountered challenges that were caused by the international collaboration.  Biospecimen sharing or transfer	caused by the	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.  comparing populations	on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing,	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).  Too short, biospecimen issues
Biospecimen sharing or transfer  Type/Length of award, Data sharing	Data sharing				Only one year of the award is too short. Clinical data and epidemiological data sharing is	biospecimen shipping difficulties  Too short, difficulties sharing clinical and epi data
					challenging between US and China.	

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

	Numbers) (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):	supplement (presenter, title,	Please list all of the patents associated with this administrative supplement (patent number, country, and year):	year):		laboratory/team were trained in quantitative data collection and
		N/A		N/A  Our findings provide guidance to develop antiviral treatment strategies for HIV/AIDS patients.	

in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this	US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for	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	How many people from the US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing	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	Please describe how your findings may be used to inform the development or implementation of health programs:		Please explain why you have no plans	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			Change China's regulation of limiting	
		HIV-related cancer prevention and control in China			biological specimens to be transported to the US.	
					to the od.	
					N/A	China's biospecimen regulation
			•	•	IV/A	
		Our findings provide guidance to			Identify the needs and weakness from	
		develop antiviral treatment			either side so that another side could	
		strategies for HIV/AIDS patients.			help or strengthen, (the rest of the comment did not capture)	
						identify capacity building opportunities

Award AS-FY11	PI	Institution	Coll. Invest.	Grant No. )U19AI089672	IC Grant	Title Southeast Asia Malaria Research	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
					NCI	Center: Antimalarial drug resistance in P. falciparum	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 Al080669	NG	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. Type/Length of award	Please mark each area where you encountered challenges that were caused by the international collaboration.	caused by the international	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.	on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing,	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	Acquisition or synchronization of release of funds between US and international funding agencies (if applicable)				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.			previous collaboration(s)? (please	fellow principal investigator prior to this project?	What was the nature of your previous collaboration(s)? (please mark all that apply)	
<ol> <li>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</li> </ol>		He/she was a post doctoral fellow in my lab	We were collaborating investigators on this project under a different funding mechanism		in my lab	We were collaborating investigators on this project under a different funding mechanism
	have collaborated with him/her before			I have collaborated with him/her before		
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.		We were collaborating investigators on this project under a different funding mechanism	We have been collaborating investigators on a different project			We have been collaborating investigators on a different project
	have collaborated with him/her before			I have collaborated with him/her before		
(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.		fellow in my lab	We have been collaborating investigators on a different project		He/she was a post doctoral fellow in my lab	We have been collaborating investigators on a different project
	have collaborated with him/her pefore			l have collaborated with him/her before		

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	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	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)  (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):	presentations associated with this administrative supplement (presenter, title,	year):	year):	Please describe how your findings may be used to inform the	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)
		US 8,933,075 , 2013 COMPOUNDS USEFUL AS ANTIVIRAL AGENTS, COMPOSITIONS, AND METHODS OF USE		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		

and analysis (e.g. focus group discussions, guided interviews, etc.) specifically for this	US laboratory/team were trained in qualitative data collection and analysis (e.g.	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	were trained in bioethics or IRB rules and regulations specifically for	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	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

trained in medical procedures specifically for	laboratory/team were trained in medical procedures specifically for		Please explain why you have no plans	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	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 <sub>0</sub>			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
			•		multiyear collaboration support

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

ountered where you encountered challenges that were caused by the	you encountered challenges	Please describe any unique scientific findings or opportunities created by this study, specifically	the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds,	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 award transfer		research capacity	skype connection was poor. length of the award was insufficient (1 year) to solve problems.	logistical communication issues, too short
			Due to year strict Chines and US rules it was not	
		studying unique populations	easy to exchange biospecimens on a timely manner.	shipping delays for biospecimens
			Because the censorship of export by Chinese government, it is difficult for us to transfer or	shipping delays for biospecimens (specified
t	ountered the were you encountered challenges that were caused by the international collaboration.  Biospecimen sharing or	ountered the were caused by the international collaboration.  Biospecimen sharing or	where you encountered challenges that were caused by the international collaboration.  Biospecimen sharing or transfer  Biospecimen sharing or transfer  Biospecimen sharing or transfer	And are a word transfer  Biospecimen sharing or 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	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 Gagcontaining 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			

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			
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			

	Diagon list all of the	Please list all of the patents	Diagon list all of the metaute		Harri manus manula firam Aba HS	Have many manula from the HE
		associated with this	Please list all of the patents associated with this		How many people from the US laboratory/team were trained	How many people from the US laboratory/team were trained in
Please list all of the presentations associated with this		administrative supplement	administrative supplement		in quantitative data collection	quantitative data collection and
administrative supplement (presenter, title, and		(patent number, country, and			and analysis specifically for this	
	and venue):	year):			project?	project?
venue).	(b) (6)		year).	development of implementation of health programs.	project:	(b) (6)
	(8)					(8) (8)
		21/2		101/0		
		N/A	U	N/A		
				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		
		N/A		Chinese isolate will be important for designing drugs with much broader activity.		
		IN/A	U	broader activity.		
				Our findings will help with the development of an effective anti-		
		N/A	0	HIV vaccine and prevention of HIV infection.		

	this project?	training courses) in grant writing specifically for this project?	manuscript writing specifically for this project?	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?	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).
	(0) (0,		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.	

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.
			(b) (6)				
AS-FY12	2			AI049104-15	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
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.

the international collaboration that you marked on the previous question (language barriers, securing required approvals, communications, type/length of award, y, specifically between U.S. biospecimen sharing/transfer, data sharing, and/or other).  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).
graphic access a delay in getting approvals, but otherwise OK approval delays (didn't specify)
Time differences for three locations (Nashville, Beijing and UK); The Chinese team is sometimes overburdened search; with their daily work which led to delays in logistical communication issues, delayed
responses to US team's requests. responses from Chinese team
iy t

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	fellow principal investigator prior	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.		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.  The international laboratory solved the crystal	I have collaborated with him/her	We were collaborating investigators on this project under a different funding mechanism		I have collaborated with him/her	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					

international collaborating investigator? (please mark all	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			

presentations associated with this administrative supplement (presenter, title,	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	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)
			could lead to compounds that inhibit CTD kinases and others that		
	N/A	0	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		
	None.		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		
		C	levels as its family member TRAF3, which may improve future antiviral immunity.		

	T			Г	<u> </u>		
							How many people from
How many people from the US	How many people from the					How many people from the	the US laboratory/team
laboratory/team were trained	US laboratory/team were		How many people from	How many people from the US	How many people from the US	US laboratory/team were	were trained (either
in qualitative data collection	trained in qualitative data	How many people from the US	the US laboratory/team	laboratory/team were trained	laboratory/team were trained	trained (either through	through mentoring or
and analysis (e.g. focus group	collection and analysis (e.g.	laboratory/team were trained	were trained in bioethics	(either through mentoring or	(either through mentoring or	mentoring or training	training courses) in
discussions, guided interviews,	focus group discussions,	in bioethics or IRB rules and	or IRB rules and	training courses) in grant	training courses) in grant	courses) in scientific	scientific manuscript
etc.) specifically for this	guided interviews, etc.)	regulations specifically for this	regulations specifically for	writing specifically for this	writing specifically for this	manuscript writing	writing specifically for
project?	specifically for this project?	project?	this project?	project?	project?	specifically for this project?	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?	health programs:	Please explain why you have no plans to collaborate on other projects:	Please explain why you have no plans	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	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	we plan to continue to work on collaborative projects			hope for more opportunities w/
		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.			and in specific diseases areas where	collaboration support should be increased, esp. around disease topic areas

AS  CA75093A2 NCI herpesvirus in China research capability of or Chinese partner institution.  Role of BRCA1 and its Association									
AS    CA75099A2   NCI   Kaposi's sarcoma and human herpesvirus in China   NCI   Kaposi's sarcoma and human herpesvirus in China   NCI   Kaposi's sarcoma and human herpesvirus in China   NCI   Repeated to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were able to study a unique cohort in China.  **ASSOCIATION OF THE PROPERTY OF THE	Av	vard	PI	Institution	Coll. Invest.		IC Grant		
AS  CA75093A2  Kaposi's sarcoma and human herpesvirus in China  Kaposi's sarcoma and human herpesvirus in China  Role of BRCA1 and its Association					(b) (6)				We were able to study a unique cohort in China, an ethnic minority in China, where KS is most prevalent. We were
Role of BRCA1 and its Association	AS					CA75003A2		Kaposi's sarcoma and human	able bring Chinese researchers to the US for training and perform some of the studies in the US. This has built the
AS R01CA140972 NCI Strand Break Repair Opportunity for sharing different expertise and expand research capacity.								Role of BRCA1 and its Association Protein CtlP in DNA Double-	

Please mark each area where you encountered challenges	Please mark each area where you encountered challenges that were caused by the		you encountered challenges	Please describe any unique scientific findings or opportunities created by this study, specifically	on the previous question (language barriers, securing required approvals, communications, 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,
that were caused by the	international		-		biospecimen sharing/transfer, data sharing,	biospecimen sharing/transfer, data sharing,
international collaboration.	collaboration.	collaboration.	international collaboration.	and international scientists.	and/or other).	and/or other).
					There are difficulties in sending shipping specimens, especially DNA and infected tissues	
	Biospecimen sharing or			study unique population; building research		shipping delays for biospecimens (work-around,
Type/Length of award	transfer			capacity	were carried out in China.	studies in China)
Biospecimen sharing or transfe				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?	f			fellow principal investigator prior	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				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 (NHEI). 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 5327 which mediates CtIP interaction with BRCA1, and T847,							
which mediates cut interaction with sockut, and 1644, are important for preventing RIF1, a 538P1 association protein, to form damage-induced foci in S-phase, thereby suppressing NHE1. Loss of 538P1 in BRCA1 deficient cells reactivates end resection, which is dependent on CtIP. These studies reveal the role of BRCA1, CtIP and 538P1 in the regulation of IRR and NHEJ, and will help understand the underlying mechanisms of how BRCA1-deficient cells are sensitive to PARP1 inhibitors and how loss of 538P1 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				

international collaborating investigator? (please mark all	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			(b) (6)
meeting			
He/she knew of my research and contacted me to work on this project			

		1		I	
Please list all of the	Please list all of the patents	Please list all of the patents		How many people from the US	How many people from the US
presentations asso		associated with this		laboratory/team were trained	laboratory/team were trained in
Please list all of the presentations associated with this with this administr		administrative supplement		in quantitative data collection	quantitative data collection and
	nter, title, (patent number, country, and			and analysis specifically for this	
venue):	year):		development or implementation of health programs:	project?	project?
venue).	(b) (6)	year).	development of implementation of health programs.	project:	(b) (6)
	(0) (0)				(0) (0)
			Preventing saliva contact with infants to avoid transmission of the		
	N/A		herpesvirus.		
			Our findings will help establish new strategies to treat PARP		
	N/A	C	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?	US laboratory/team were trained in qualitative data collection and analysis (e.g. focus group discussions, guided interviews, etc.)	How many people from the US laboratory/team were trained in bioethics or IRB rules and regulations specifically for this	were trained in bioethics or IRB rules and regulations specifically for	How many people from the US laboratory/team were trained (either through mentoring or training courses) in grant writing specifically for this	US laboratory/team were trained (either through mentoring or training courses) in scientific manuscript writing	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)

trained in medical procedures specifically for	laboratory/team were trained in medical procedures specifically for	health programs:		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	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).
		Preventing saliva contact with		Longer period of funding and more	
		nfants to avoid transmission of the herpesvirus.		funding will enhance and sustain the collaboration.	multiyear collaboration support
		Our findings will help establish new			
		strategies to treat PARP inhibitor-		This type of grant is very helpful for	
		resistant breast cancers.		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.	where you encountered challenges that were caused by the nternational	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.	securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing,	
	Language Barriers	1					10 for biospecimen transfer issues
Please describe any unique scientific findings or opportunities created by this study, specifically because it inv	olved collaboration between U.S.	and international scientist	S.				9 too short
novel research	8	1					
building research capacity	12	strengthened the collabor	ation between university p	artners helping develop Chinese	laboratory abilities building local research capac	ity 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 public	ations				
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	1					
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 We were collaborating investigators on this project under a	6
different funding mechanism	5
He/she was a post doctoral fellow in my lab	6
Other	8
Missing	5

	Had you collaborated with your
	fellow principal investigator prior
What was the nature of your previous collaboration(s)? (please mark all that apply)	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
How did you identify your international	international collaborating
collaborating investigator? (please mark all that apply)	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		Please list all of the	Please list all of the patents	Please list all of the patents
	with this administrative supplement		presentations associated	associated with this	associated with this
Please list all publications associated with this administrative supplement	(provide full citations: Author(s),	Please list all of the presentations associated with this	with this administrative	administrative supplement	administrative supplement
(provide full citations: Author(s), Title, Journal, Year; Vol. (Issue), Page	Title, Journal, Year; Vol. (Issue), Page	administrative supplement (presenter, title, and	supplement (presenter, title,	(patent number, country, and	(patent number, country, and
Numbers)	Numbers)	venue):	and venue):	year):	year):

sum 41 20 1

A manuscript is being prepared. 4

										How many people from		
			How many people from the US	How many people from the					How many people from the	the US laboratory/team		
		l l	aboratory/team were trained	US laboratory/team were		How many people from	How many people from the US	How many people from the US	US laboratory/team were	were trained (either		
Ho	w many people from the US	How many people from the US	in qualitative data collection	trained in qualitative data	How many people from the US	the US laboratory/team	laboratory/team were trained	laboratory/team were trained	trained (either through	through mentoring or	How many people from the	
lab	oratory/team were trained	laboratory/team were trained in	and analysis (e.g. focus group	collection and analysis (e.g.	laboratory/team were trained	were trained in bioethics	(either through mentoring or	(either through mentoring or	mentoring or training	training courses) in	US laboratory/team were	How many people from the US
in c	quantitative data collection	quantitative data collection and	discussions, guided interviews,	ocus group discussions,	in bioethics or IRB rules and	r IRB rules and	training courses) in grant	training courses) in grant	ourses) in scientific	cientific manuscript	ained in medical	aboratory/team were trained in
and	d analysis specifically for this	analysis specifically for this	etc.) specifically for this	uided interviews, etc.)	regulations specifically for this	egulations specifically for	writing specifically for this	writing specifically for this	manuscript writing	writing specifically for	rocedures specifically for	medical procedures specifically for
pro	oject?	project?	project?	pecifically for this project?	project?	his project?	project?	project?	pecifically for this project?	his project?	his project?	his project?

 sum
 32 sum
 28

 DK
 1 DK
 1

Please explain why you have no plans to collaborate on other projects:	suggestions to improve international collaborations. (This could include	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).
		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
We received a few responses about Pis don't plan to continue collaborating,		around the desire for multiyear collaboration support, and the need to find solutions for the

biospecimen sharing issues.

most centered around research shifts.

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

building research capacity

study unique population, comparing populations research collaborations have led to publications, or will lead to access (geographic; access to endemic sites in biomedical research, cross country testing

access to research/exchanging of idea, exchaning data, facilitated exchange of data

influenza research

looking at additional collaboration, successful R01

scientific collaborations across countries

similar work, not related to collaboration

novel research that have promise for HIV drug therapies and prevention

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

9 too short

logistical communication issues

delayed responses from Chinese team

approval delays (didn't specify)

delays with funding release difficulties sharing clinical and epi data

strengthened the collaboration between university partners, helping develop Chinese laboratory abilities, building local research capacity, training students (exchange of students/fellows and 12 faculties between the two institutions)

7 discovery leading to publications

2

3 1

1

1

1

1

shipping delays for biospecimens (workaround, studies in China); shipping delays

12 for biospecimens (specified Chinese govt)

4 cultural communication and logistic

1 not enough money, delays in funding,

3 wants longer support

1

1

Please describe how your findings may be used to inform the developme or implementation of health programs:
in implementation of fleatin programs.
Generation of novel HIV-1 inhibitors, with potentially use for prevention as
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 CII
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 vaccin
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 streamline application to 1 great support 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 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.

8

2

3

#### R01s

n=14

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

Did not experience any

challenges2Language barriers1Securing required approvals2Synchronization of funds2Biospecimen sharing or transfer2Communications3Type/Length of award5

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
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

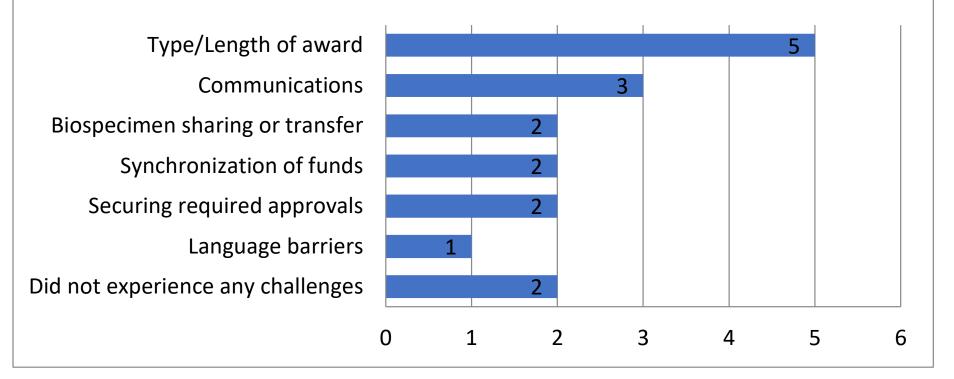
International Lab/Team Capacity	Building	
Number trained in quantitative		
data collection and analysis	34	4
Number trained in qualitative		
data collection and analysis (e.g.		
focus group discussion, guided		
interviews, etc.)	39	3
Number trained in bioethics or		
IRB rules and regulations	17	3
Number 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

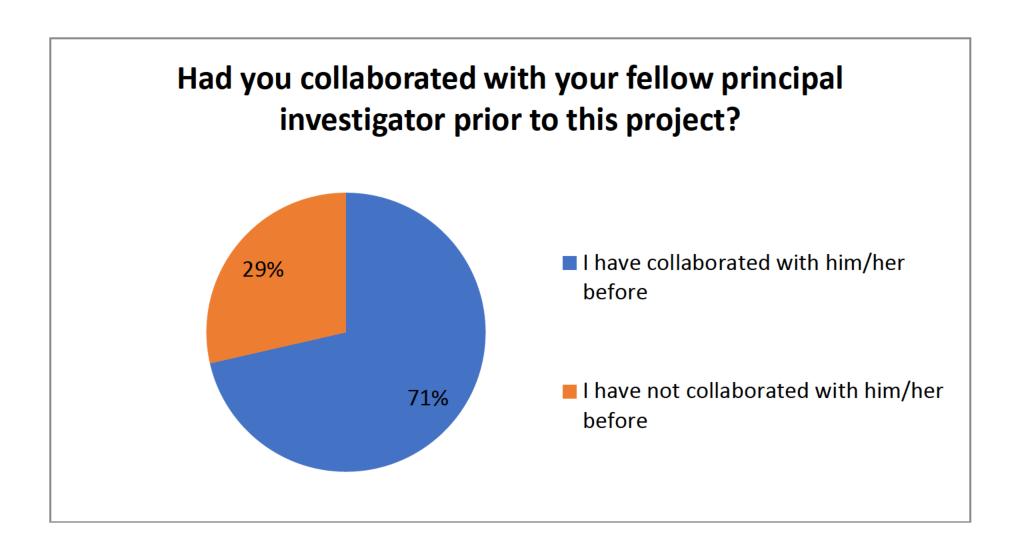
How did you identify your international collaborating investigator?

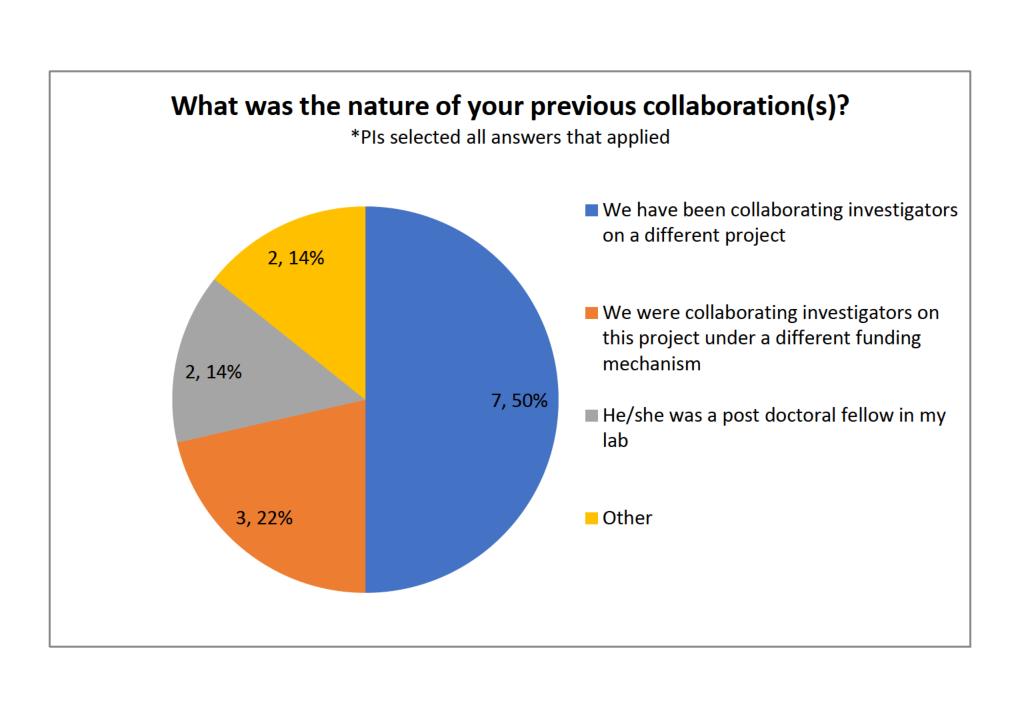
Other 4
I knew of his/her research and contacted him/her to work on this 3
He/she knew of my research and contacted me to work on this project 4
A colleague introduced me to my international collaborating investigator 5



\*PIs selected all answers that applied







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

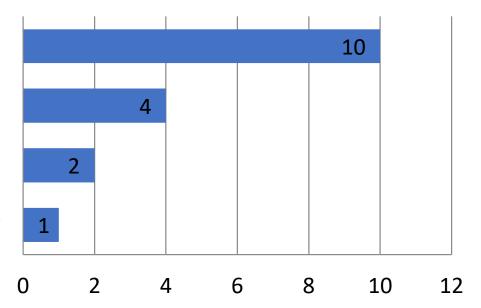
\*PIs selected all answers that applied

We have discussed ways to continue this project together

We are applying for funding to continue this project together

We have received funding to continue this project together

Don't Know



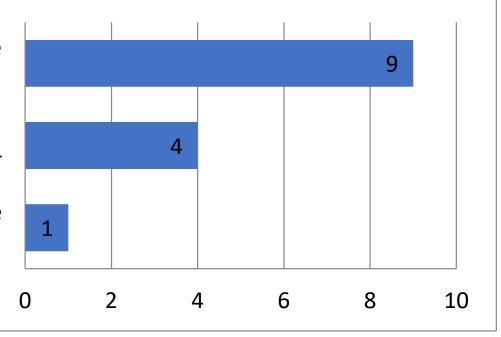
# What plans, if any, do you have to continue collaborating with your fellow principal investigator on other project(s)?

\*PIs selected all answers that applied

We have discussed ways to collaborate on another project together

We are applying for funding to collaborate on another project together

We have received funding to collaborate on another project together



### How did you identify your international collaborating investigator?

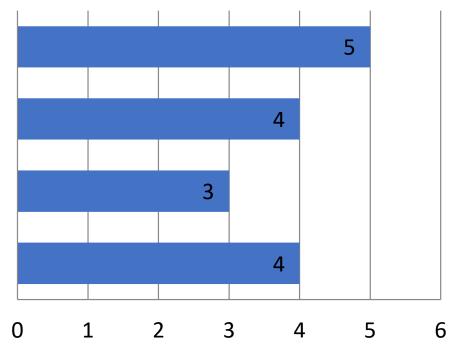
\*PIs selected all answers that applied

A colleague introduced me to my international collaborating investigator

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

Other



Ad T	BI	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.
Award Typ		institution	(b) (6)		nte	between 0.3. and international scientists.
R01				R01NS083435	US-China Collaborative Research on Stroke Imaging	This collaboration has greatly expanded my clinical research capacity.
					Culprit Plaque in Acute Cerebral	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
R01				5R01NS083503-02	Infarction: A Histological and MRI Assessment	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
	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-		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		Support from this novel, joint funding mechanism has allowed
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.	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,		(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)		tunding 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).	findings may be used to inform the development or implementation of health	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:
	DV.		N/A	
	DK		N/A	
	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	respective institutions. We have already begun to implement our state-of-the-art imaging		

Award Type	PI	Institution		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.
RO1			(b) (6)	<b>N/</b> 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.
RO1				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.		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.
ment is successful and a successful and	Contract Contract	The state of the s	(b) (6) team have collected and built a gastric tissue bank containing over 500 human		
strong collaborations, ability to access unique populations, expanding research capablities at both sites, ability to move research from bench to bedside	N/A		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 degq 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.		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	
	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 held to decrease the highest	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		
muliyear collaboration, additional funding	to bed to decrease the burden of gastric cancer, the second most frequent cancer world- wide.	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.	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	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					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.	previous question (language barriers, securing required approvals, communications, type/length of	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 premiRNAs 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 o 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).	findings may be used to inform the development or	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)	pathogenesis of KSHV-induced malignancies and the molecular basis of KSHV life cycle. The knowledge can be used to develop novel therapeutic	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	There may be ethnic specific genetic risks for schizophrenia. By comparing these risk factors	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.
RO1	Institution	(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-, midand 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 disturbed in the 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] 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 RO1 mechanism is too small. We are doing the same tasks as regular NIH-RO1 but this US-China RO1 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.		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	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] signaling and their downstream	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 neurodevelopmental disorders and neurodevelopmental disorders and neurodevelopmental disorders and neurodevelopmental disorders hamely [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	

						Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and
Award 1	Туре РІ	Institution	Coll. Invest.	Grant No.	Title	international scientists.
R01 R01			(b) (6	R01AI106498-01	Aspartic Protease Inhibitors as Novel Antimalarials Regulation of HIV-1 Gene Expression in Latency by YY1, RuvB2	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.  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	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 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).	findings may be used to inform the development or implementation of health	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:
	antimalaria drug candidates for further testing and/or identification of new biological targets that could be exploited to identify new antimalarial	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	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 R01	PI	Institution	Coll. Invest. (b) (6)	R01 Al106574	<b>Title</b> Inhibition of HIV by GPI-anchored antibody derivatives	Please describe any unique scientific findings or opportunities created by this study, specifically because it involved collaboration between U.S. and international scientists.  The project brings together an HIV virologist (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	AIDS-related TB	Our findings indicated that strong responses of CD8+ T effectors and TB-reactive Y8 T effectors correlated with prevention from latent to active TB.

		Please describe each of the			
		challenges caused by the			
		international collaboration that			
	Please describe each of the challenges				
	caused by the international	question (language barriers,			
	collaboration that you marked on the	securing required approvals,			Please provide any other feedback
	previous question (language barriers,	communications, type/length of			or suggestions to improve
Please describe any unique scientific	securing required approvals,	award,			international collaborations. (This
findings or opportunities created by this	communications, type/length of	acquisition/synchronization of			could include suggestions on the
study, specifically because it involved	award, acquisition/synchronization of	funds, biospecimen		Please explain why you have no	process of applying for and
collaboration between U.S. and	funds, biospecimen sharing/transfer,	sharing/transfer, data sharing,	Please give a short summary of the work completed by the	·	receiving funding for international
international scientists.	data sharing, and/or other).	and/or other).	international laboratory/team for this study.	projects:	collaborations).
building research capability, training fellows	The internet connection for our	logistical communication issues,	We have characterized liver disease in a cohort of HIV-HBV	-	A longer period of funding would be
	telephone meetings is poor at time so	too short, approvals took months			most beneficial since collaborations
	they are not always as productive as		co-infection across China. We have performed HBV DNA		internationally especially in
	they should be. Having(b) come to my		testing and and started the immunology work for the study.		developing countries takes time to
	lab was helpful to facilitate				get started. Until you actually work
	communication. The length of this				on a project, you don't have a good
	award is 3 years, which is short for an				sense of what their capabilities are
	international collaboration since it took several months to get the appropriate				and what kind of training is needed. Getting the IRB approvals also takes
	approvals to get started.				time and cuts into the time for
	We have not found an efficient way to				research.
	share data besides sending large files				research.
	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.				
disease specific, expand knowledge,	Distance and difference in funding start	logistical communication issues,	The Long Lab at the Chinese Academy of Science in	New project development has	Better anticipate distance
opportunity to collaborate	timing for the two project sites caused	delays in funding	Shanghai is working on the design and discovery of new	simply not yet been addressed.	limitations; accelerate
	initial communications gaps. A four		CCR5 and CXCR4 antagonists. By analyzing the structures of	Nonetheless, further progress in	establishment of vehicles such as
	month start date delay occurred in		potent small molecule CCR5 antagonists, our Chinese	the current project and	regular Skype meetings.
	China NSFC funding vs US NIH funding.		collaborators deduced a general pharmacophore model of	increasing awareness of the	
	Regular Skype meetings have been		propane-1,3-diamine skeleton flanked by two hydrophobic	combined expertises and mutual	
	established between the Chinese and		domains for effective CCR5 inhibition. Furthermore, by	interests of the Chaiken/Drexel	
	US laboratories, and the plan is that		reassembling the privileged structures based on the	and Long/CAS laboratories could	
	these will achieve sufficient regularity		pharmacophore model, they identified a series of new	well lead to future efforts.	
	to accelerate the research program.		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.		

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).  muliyear collaboration to allow for time to understand capabilities (capacity), IRB	the development or implementation of health programs: Our findings demonstrate the advanced liver disease in a substantial proportion of coinfected subjects as well as the widespread prevalence of both HIV-HBV and HIV-HCV co-	Please describe how your findings may be used to inform the development or implementation of health programs:  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.	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)?  N/A	Please explain why you have no plans to continue to collaborate on this project:
logistical communication issues, distance	likely way to treat HIV-1 due to the risk of resistance to	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 Typ	e 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						The project brings together an HIV virologist (b) (6) a vaccinologist (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	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.  disease specific	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). 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.	question (language barriers, securing required approvals, communications, type/length of award, acquisition/synchronization of funds, biospecimen sharing/transfer, data sharing, and/or other).  delays in funding, not enough	Please give a short summary of the work completed by the international laboratory/team for this study.  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.	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.
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-methylbut-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+ Vgamma2Vdelta2+ 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).  better understanding of supply chain/biospecimen shipping, combat issues	Please describe how your findings may be used to inform the development or	Please describe how your	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:
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
amerent randing 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	
logistical communication issues	
travel/distance	
Delays in funding disbursements and reductions in funding for Chinese	:
PIS	
The length of the award is too short and there's not enough funding	

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.

5

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.