From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Wellcome, Your Application for a Collaborative Award in Science - preliminary PLM21160
Date: Friday, May 22, 2020 7:57:00 AM

I see. I hope we find a way to continue our work.

[redacted]

From: [redacted]
Sent: Friday, May 22, 2020 9:45 PM
To: [redacted]
Cc: [redacted]
Subject: Fwd: Wellcome, Your Application for a Collaborative Award in Science - preliminary PLM21160

We don't get to write a full proposal to Wellcome for the Collaborative Award. I'm surprised.

Thanks all for your help pulling the preliminary proposal together.

[redacted]

---------- Forwarded message ---------
From: Sydney Ambrose <grants@wellcome.ac.uk>
Date: Fri, May 22, 2020 at 12:28 PM
Subject: Wellcome, Your Application for a Collaborative Award in Science – preliminary PLM21160
To: [redacted]

Dear [redacted]

Reference number: PLM21160, 'Rational design of seasonal influenza virus vaccines'

Thank you for your recent preliminary application for a Wellcome Trust Collaborative Award in Science.

We have now considered the preliminary applications for the current competition and I am sorry to tell you that your proposal was not shortlisted for further consideration. The applications were assessed for a number of criteria, including the strength of the research question; the articulated need for a collaborative approach and the track records of the applicants.

There was a great deal of interest in the scheme and a large number of high quality applications were received. I regret that, when viewed in competition with the other applications, your submission was not chosen to go forward for further consideration.

I realise that this decision will come as a disappointment and hope that you will be able to obtain support from elsewhere. I would be grateful if you could convey this decision to the other applicants.

If you have any questions, please do not hesitate to contact me

Yours sincerely

Sydney Ambrose

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: FW: REMINDER Fwd: Catch up after our annual update meeting
Date: Thursday, May 21, 2020 9:39:23 AM

---

yes, you were supposed to join the call. sorry you were not copied originally.

and thanks for coming in.

[redacted]

On Thu, May 21, 2020 at 3:01 PM [redacted]> wrote:

> The partnership announcement is an R21/R33 mechanism. The first two years are limited to R21 funding, i.e., not enough to continue at the current level.
>
> But it could be used to supplement other funding.
>
> Begin forwarded message:
>
> **From:** [redacted]
> **Date:** May 13, 2020 at 2:44:40 PM CDT
> **To:** [redacted]
> **Subject: FW: Catch up after our annual update meeting**
>
> ---
>
> **From:** [redacted]
> **Sent:** Thursday, May 14, 2020 1:56 AM
> **To:** [redacted]
> **Cc:** [redacted]
> **Subject:** Re: Catch up after our annual update meeting
>
> Thanks [redacted]. Zoom meeting details below for 9am ET, Thursday May 21

[redacted]

Topic: Next steps discussion
Time: May 21, 2020 02:00 PM London

Join Zoom Meeting
[redacted]

Meeting ID: [redacted]
One tap mobile
+442034815237,,8[redacted]# United Kingdom
+442034815240,,8[redacted]# United Kingdom

Dial by your location
+44 203 481 5237 United Kingdom
+44 203 481 5240 United Kingdom
+44 131 460 1196 United Kingdom
+44 203 051 2874 United Kingdom
+1 253 215 8782 US (Tacoma)
+1 301 715 8592 US (Germantown)
+1 312 626 6799 US (Chicago)
+1 346 248 7799 US (Houston)
+1 669 900 6833 US (San Jose)
+1 929 205 6099 US (New York)
+81 342 339 241 Japan
+81 3 4578 1488 Japan
+81 524 564 439 Japan
+31 20 794 6520 Netherlands
+31 20 794 7345 Netherlands
+31 20 241 0288 Netherlands
+31 20 794 0854 Netherlands
+31 20 794 6519 Netherlands
Meeting ID: [redacted]
Find your local number: https://us02web.zoom.us/u/kcdpvnUgkK

On Wed, May 13, 2020 at 4:27 PM [redacted] wrote:

> Works for me as well. Thanks!
>
> ---
>
> **From:** [redacted]
> **Sent:** Wednesday, May 13, 2020 11:15 AM
> **To:** [redacted]

Cc: [redacted]
Subject: RE: Catch up after our annual update meeting

Works for me [redacted] Thanks so much.

Diane

From: [redacted]
Sent: Wednesday, May 13, 2020 10:52 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Catch up after our annual update meeting

Thanks [redacted]

We are all available both days at the time you suggest, with a preference for the 21st.

If the 21st is OK with you both, and zoom is too, then we'll send out a zoom invite.

[redacted]

On Wed, May 13, 2020 at 1:28 AM [redacted]:

> Hi [redacted]
>
> Thanks for sending the presentations to us. We're sorry we couldn't stay the whole time! It would be good to talk to you all about next steps. Would Thursday May 21st at 9AM ET or Friday May 22nd and 9AM ET work for

everyone to speak about the project?

[redacted]

From: [redacted]>
Sent: Friday, May 8, 2020 2:38 AM
To: [redacted]
Cc: [redacted]
Subject: Catch up after our annual update meeting

[redacted]

Attached the minutes, and seasonal presentation from our BARDA-NIH annual update meeting a couple of weeks ago. The pandemic presentation is too big for email, you can download it here

[redacted]

Many thanks for the time you could spend with us, we understand you had a meeting you needed to attend part way though our seasonal presentation.

The seasonal and pandemic projects are succeeding beyond what even we could have imagined 5 years ago. The pandemic part you saw, and on the seasonal side the immunological backboost has been tested in practice by the recent WHO vaccine choices with considerable success measured with an immunological and vaccine effectiveness endpoint.

There are likely substantial further improvements to the seasonal vaccine that are in the pipeline, but all funding for this work runs out in March next year.

We realize the timing is bad, but wonder whether we could have a call with you on this please.

Best wishes

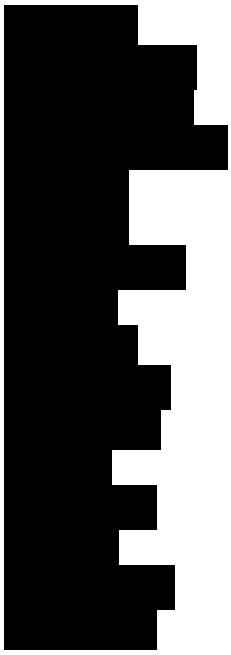
From: [redacted]
To: [redacted]
Subject: SARS-CoV-2 Weekly Investigators Meeting - May 12, 2020
Date: Friday, May 15, 2020 12:57:40 PM

Hi!

Thank you [redacted] your presentation on May 12th. Hopefully the discussion was helpful for everyone who dialed in.

Next week, [redacted] will be presenting preliminary sequencing results from recruited patients along with the detections and genomic characterization of a deletion variant.

Here is the attendance from last week. If your name is not listed and you attended the call, please let me know.



[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]

Subject: New ms from CRIP (and SEM CIVIC)
Date: Wednesday, May 13, 2020 7:51:39 AM
Attachments: 537924 [redacted] Manuscript, accepted.PDF

Just accepted in Frontiers Immunology

[redacted]

[redacted]

From: [redacted]
To: [redacted]
Cc:
Subject: Re: Catch up after our annual update meeting
Date: Wednesday, May 13, 2020 1:05:15 AM
Attachments: image001.png
image002.png
image003.png

Both days OK for me.

[redacted], please see below, how about you?

[redacted]

On Wed, May 13, 2020 at 6:33 AM [redacted] > wrote:

> I can make it on both days, with a preference for the 21st.
>
> [redacted]
>
> Yours sincerely,
>
> [redacted]
>
> [redacted]
>
> [redacted]
>
> [redacted]
>
> ---
>
> **Van:** [redacted]
> **Datum:** woensdag 13 mei 2020 om 02:33
> **Aan:** [redacted]
> **Onderwerp:** FW: Catch up after our annual update meeting
>
> I am available on May 21 9am ET and May 22 9am ET.

[redacted]

From: [redacted]>
Sent: Wednesday, May 13, 2020 9:28 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Catch up after our annual update meeting

Hi [redacted]

Thanks for sending the presentations to us. We're sorry we couldn't stay the whole time! It would be good to talk to you all about next steps. Would Thursday May 21st at 9AM ET or Friday May 22nd and 9AM ET work for everyone to speak about the project?

[redacted]

From: [redacted]
Sent: Friday, May 8, 2020 2:38 AM
To: [redacted]
Cc: [redacted]
Subject: Catch up after our annual update meeting

[redacted]

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[redacted]

Many thanks for the time you could spend with us, we understand you had a meeting you needed to attend part way though our seasonal presentation.

The seasonal and pandemic projects are succeeding beyond what even we could have imagined 5 years ago. The pandemic part you saw, and on the seasonal side the immunological backboost has been tested in practice by the recent WHO vaccine choices with considerable success measured with an immunological and vaccine effectiveness endpoint.

There are likely substantial further improvements to the seasonal vaccine that are in the pipeline, but all funding for this work runs out in March next year.

We realize the timing is bad, but wonder whether we could have a call with you on this please.

Best wishes

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Call with [redacted]
Date: Sunday, May 10, 2020 5:43:00 PM
Attachments: image001.png
image002.png
image003.png

Thank you for this detailed update, [redacted]
I am glad that you were able to talk to [redacted] I think this call was very important to keep [redacted]/BARDA thinking about our flu work during the COVID-19 crisis. I like the plan, which will ensure that we continue to have dialogues with BARDA/NIAID/CDC regarding funding.
[redacted]

From: [redacted]
Sent: Monday, May 11, 2020 3:52 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Call with [redacted]

Sounds great [redacted] As positive as could be, with covid-19 unfortunately an obstacle.
[redacted]

Yours sincerely,

[redacted]

Van: [redacted]
Datum: zondag 10 mei 2020 om 17:48
Aan: [redacted]
CC: [redacted]
Onderwerp: Call with [redacted]

Just got off a call with [redacted] I'll simply transcribe my notes.

- This is one of the very few calls on anything other than COVID-19 that we've had in month

- They wondered what NIAID have said to us ([redacted] have not replied yet)

- They can't think of a better approach than ours for either pandemic or seasonal

- Just that the timing is difficult

- They are not allowed to review anything non COVID-19, but they can try to get the discussion started if we put in a 3, 4, or 5 page concept that they will then circulate with NIAID and CDC. Put everything in it, pandemic CVV generation, pandemic trial, pandemic new work, and seasonal. Important to do more than H5 in pandemic work.

- HA remains prominent and important. NA remains of interest. Cellular immunity jury is out, especially after vaccitech's results https://www.vaccitech.co.uk/phase-2-clinical-results-for-vaccitech-universal-influenza/

- Putting the seasonal and pandemic proposal together is a sure-fire way to see if NIAID want to fund seasonal, just like last time.

- BARDA is leaderless at the moment, they don't know what will happen,[redacted]

- Our concept should be for what should be being done for flu vaccines. 1st para should be high level, and needs to grab attention, especially in the current times when it is very difficult to get any attention on flu.

- Will be interesting for them to see what it will look like to see a relatively modest concept like ours that can have so much impact as the other concepts they have are at $400m

-[redacted]

-[redacted].

- They will share our concept with NIAID and CDC.

- I reckon we should coordinate with NIAID and CDC re our concept before submitting to BARDA, maybe we submit it to all three? (This not discussed with [redacted] I just realised this now).

- We should submit the paperwork for a no-cost extension to the current BARDA contract of 6 months. Not for CVV manufacturing, that should go in the new concept. But to give us more time to complete because of lab shutdowns. Will be at least a month before the contracts people at BARDA can look at it.

- Will be 6 months to a year before BARDA can fund anything but COVID-19

[redacted] seemed relaxed, interested, and like he definitely wanted the work on seasonal and pandemic to continue. It is just a timing issue.

[redacted]

From: [redacted]
To: [redacted]
Subject: Fwd: Annual Literature Report OY5 | CRIP
Date: Tuesday, April 28, 2020 1:50:41 PM
Attachments: CRIP Annual Literature Report Apr 1, 2019 - Apr 11, 2020.docx

---

Hi all,

Please see the attached literature report. Let me know if anything is missing.

[redacted]

Begin forwarded message:

From: Andrew Taylor <ataylor@gryphonscientific.com>
Subject: Annual Literature Report OY5 | CRIP
Date: April 17, 2020 at 3:18:41 PM EDT
To: "[redacted]
>
Cc: [redacted]

USE CAUTION: External Message.

Good afternoon [redacted],

In preparation for the upcoming Annual Report deadline, the DPCC has prepared a Literature Surveillance Report with a list of publications from your Center for this contract year. This report captures publications that appeared in PubMed between April 1, 2019 and April 11, 2020. Manuscripts which have recently been accepted for publication or are in press will be captured in the next Literature Report.

If you have any additional publications to report from this period, please let us know by **Friday, May 1st**, and we will update the Literature Report accordingly.

Please let us know if you have any questions.

Thank you,

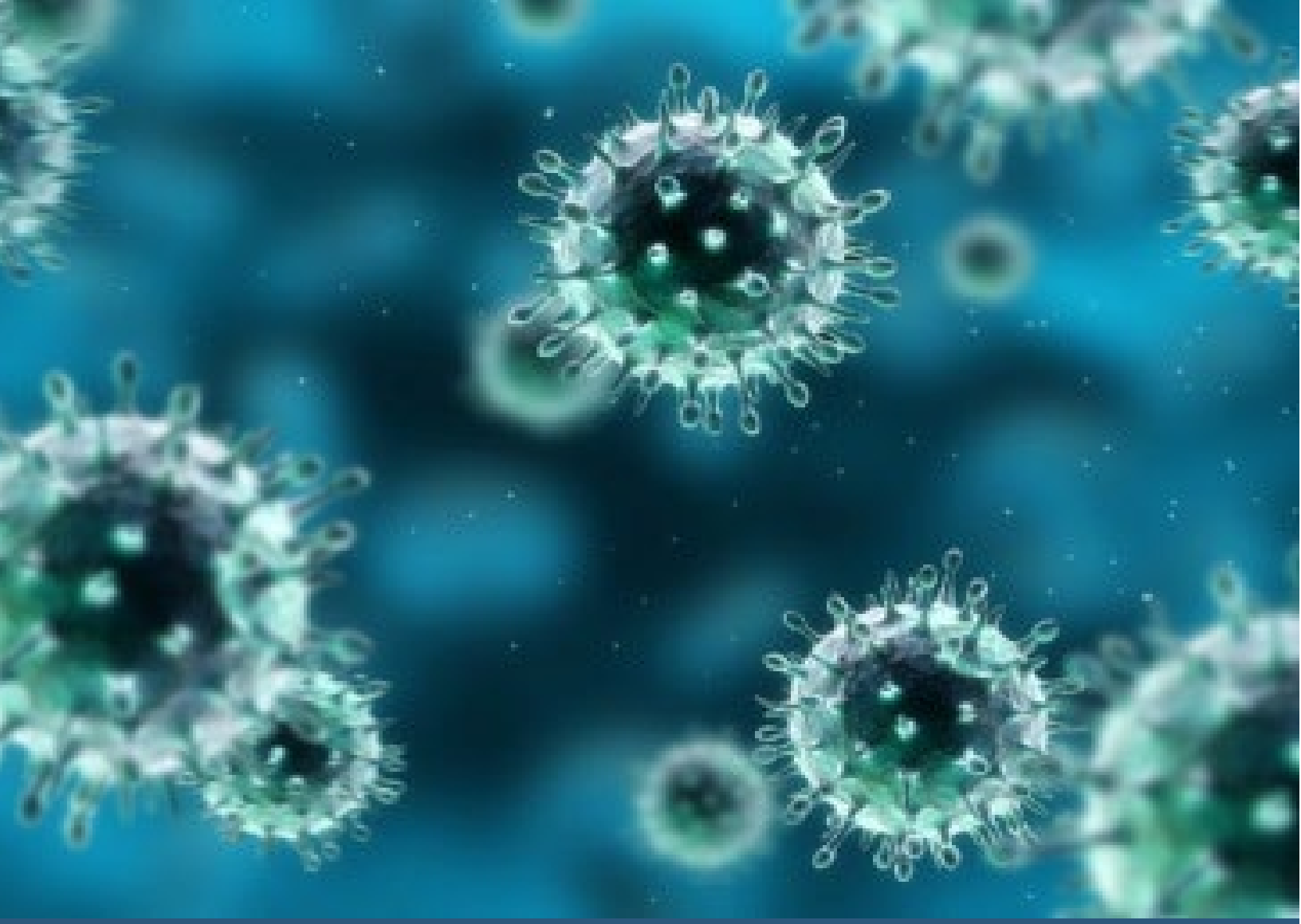
Andrew

--

Andrew Taylor
Research Assistant
CEIRS Data Processing and Coordinating Center (DPCC)
ataylor@gryphonscientific.com

Gryphon Scientific
http://www.gryphonscientific.com/
6930 Carroll Avenue, Suite 810
Takoma Park, MD 20912
240-485-1054 office
301-270-0673 facsimile

[redacted]



Center for Research on Influenza Pathogenesis

Annual CEIRS Literature Surveillance Report

April 17, 2020

Overview

This literature surveillance report captures the Center for Research on Influenza Pathogenesis (CRIP) contract publications published between April 1, 2019 and April 11, 2020. Ninety-two publications were identified that cite the current CRIP contract number, thirteen of which were cross-Center collaborations. One publication was identified that cites the USDA/SEPRL IAA number, three publications were identified that cite the previous CRIP contract number, and one publication was identified that does not cite a CEIRS contract number but was CEIRS-funded.

Citations Referencing the Current CRIP Contract Number: HHSN272201400008C

1. Anderson TK, Chang J, Arendsee ZW, Venkatesh D, Souza CK, Kimble JB, Lewis NS, Davis CT, Vincent AL. Swine Influenza A Viruses and the Tangled Relationship with Humans. Cold Spring Harb Perspect Med. 2020 Jan 27; PubMed PMID: 31988203.

2. Asthagiri Arunkumar G, McMahon M, Pavot V, Aramouni M, Ioannou A, Lambe T, Gilbert S, Krammer F. Vaccination with viral vectors expressing NP, M1 and chimeric hemagglutinin induces broad protection against influenza virus challenge in mice. Vaccine. 2019 Sep 03;37(37):5567-5577. PubMed PMID: 31399277; PubMed Central PMCID: PMC6717082.

3. Ang JC, Wang B, Wang JJF, Zeng PYF, Krammer F, Ward BJ, Russell ML, Loeb M, Miller MS. Comparative Immunogenicity of the 2014-2015 Northern Hemisphere Trivalent IIV and LAIV against Influenza A Viruses in Children. Vaccines (Basel). 2019 Aug 12;7(3) PubMed PMID: 31408963; PubMed Central PMCID: PMC6789519.

4. Barnard KN, Wasik BR, LaClair JR, Buchholz DW, Weichert WS, Alford-Lawrence BK, Aguilar HC, Parrish CR. Expression of 9-- and 7,9--Acetyl Modified Sialic Acid in Cells and Their Effects on Influenza Viruses. mBio. 2019 12 03;10(6) PubMed PMID: 31796537; PubMed Central PMCID: PMC6890989.

5. Broecker F, Liu STH, Suntronwong N, Sun W, Bailey MJ, Nachbagauer R, Krammer F, Palese P. A mosaic hemagglutinin-based influenza virus vaccine candidate protects mice from challenge with divergent H3N2 strains. NPJ Vaccines. 2019;4:31. PubMed PMID: 31341648; PubMed Central PMCID: PMC6642189.

6. Bangaru S, Lang S, Schotsaert M, Vanderven HA, Zhu X, Kose N, Bombardi R, Finn JA, Kent SJ, Gilchuk P, Gilchuk I, Turner HL, García-Sastre A, Li S, Ward AB, Wilson IA, Crowe JE. A Site of Vulnerability on the Influenza Virus Hemagglutinin Head Domain Trimer Interface. Cell. 2019 05 16;177(5):1136-1152.e18. PubMed PMID: 31100268; PubMed Central PMCID: PMC6629437.

7. Broszeit F, Tzarum N, Zhu X, Nemanichvili N, Eggink D, Leenders T, Li Z, Liu L, Wolfert MA, Papanikolaou A, Martínez-Romero C, Gagarinov IA, Yu W, García-Sastre A, Wennekes T, Okamatsu M, Verheije MH, Wilson IA, Boons GJ, de Vries RP. N-Glycolylneuraminic Acid as a Receptor for Influenza A Viruses. Cell Rep. 2019 06 11;27(11):3284-3294.e6. PubMed PMID: 31189111; PubMed Central PMCID: PMC6750725.

8. Bergervoet SA, Pritz-Verschuren SBE, Gonzales JL, Bossers A, Poen MJ, Dutta J, Khan Z, Kriti D, van Bakel H, Bouwstra R, Fouchier RAM, Beerens N. Circulation of low pathogenic avian influenza (LPAI) viruses in wild birds and poultry in the Netherlands, 2006-2016. Sci Rep. 2019 Sep 23;9(1):13681. PubMed PMID: 31548582; PubMed Central PMCID: PMC6757041.

9. Bernstein DI, Guptill J, Naficy A, Nachbagauer R, Berlanda-Scorza F, Feser J, Wilson PC, Solórzano A, Van der Wielen M, Walter EB, Albrecht RA, Buschle KN, Chen YQ, Claeys C, Dickey M, Dugan HL, Ermler ME, Freeman D, Gao M, Gast C, Guthmiller JJ, Hai R, Henry C, Lan LY, McNeal M, Palm AE, Shaw DG, Stamper CT, Sun W, Sutton V, Tepora ME, Wahid R, Wenzel H, Wohlbold TJ, Innis BL, García-Sastre A, Palese P, Krammer F. Immunogenicity of chimeric haemagglutinin-based, universal influenza virus vaccine candidates: interim results of a randomised, placebo-controlled, phase 1 clinical trial. Lancet Infect Dis. 2020 Jan;20(1):80-91. PubMed PMID: 31630990; PubMed Central PMCID: PMC6928577.

10. Bertran K, Pantin-Jackwood MJ, Criado MF, Lee DH, Balzli CL, Spackman E, Suarez DL, Swayne DE. Pathobiology and innate immune responses of gallinaceous poultry to clade 2.3.4.4A H5Nx highly pathogenic avian influenza virus infection. Vet. Res.. 2019 Nov 01;50(1):89. PubMed PMID: 31675983; PubMed Central PMCID: PMC6824115.

11. Broecker F, Zheng A, Suntronwong N, Sun W, Bailey MJ, Krammer F, Palese P. Extending the Stalk Enhances Immunogenicity of the Influenza Virus Neuraminidase. J. Virol.. 2019 Sep 15;93(18) PubMed PMID: 31375573; PubMed Central PMCID: PMC6714795.

12. Carnaccini S, Perez DR. H9 Influenza Viruses: An Emerging Challenge. Cold Spring Harb Perspect Med. 2019 Dec 30; PubMed PMID: 31871234.

13. Ciminski K, Ran W, Gorka M, Lee J, Malmlov A, Schinköthe J, Eckley M, Murrieta RA, Aboellail TA, Campbell CL, Ebel GD, Ma J, Pohlmann A, Franzke K, Ulrich R, Hoffmann D, García-Sastre A, Ma W, Schountz T, Beer M, Schwemmle M. Bat influenza viruses transmit among bats but are poorly adapted to non-bat species. Nat Microbiol. 2019 12;4(12):2298-2309. PubMed PMID: 31527796. *This publication was a cross-Center publication with SJCEIRS.*

14. Cardenas-Garcia S, Ferreri L, Wan Z, Carnaccini S, Geiger G, Obadan AO, Hofacre CL, Rajao D, Perez DR. Maternally-Derived Antibodies Protect against Challenge with Highly Pathogenic Avian Influenza Virus of the H7N3 Subtype. Vaccines (Basel). 2019 Oct 30;7(4) PubMed PMID: 31671571; PubMed Central PMCID: PMC6963706.

15. Chang J, Anderson TK, Zeller MA, Gauger PC, Vincent AL. octoFLU: Automated Classification for the Evolutionary Origin of Influenza A Virus Gene Sequences Detected in U.S. Swine. Microbiol Resour Announc. 2019 Aug 08;8(32) PubMed PMID: 31395641; PubMed Central PMCID: PMC6687928.

16. Carnaccini S, Santos JJS, Obadan AO, Pantin-Jackwood MJ, Suarez DL, Rajão DS, Perez DR. Age-dependent pathogenesis of clade 2.3.4.4A H5N2 HPAIV in experimentally infected Broad Breasted White turkeys. Vet. Microbiol.. 2019 Apr;231:183-190. PubMed PMID: 30955808; PubMed Central PMCID: PMC6540981.

17. Choi A, Bouzya B, Cortés Franco KD, Stadlbauer D, Rajabhathor A, Rouxel RN, Mainil R, Van der Wielen M, Palese P, García-Sastre A, Innis BL, Krammer F, Schotsaert M, Mallett CP, Nachbagauer R. Chimeric Hemagglutinin-Based Influenza Virus Vaccines Induce Protective Stalk-Specific Humoral Immunity and Cellular Responses in Mice. Immunohorizons. 2019 04 01;3(4):133-148. PubMed PMID: 31032479; PubMed Central PMCID: PMC6485968.

18. Choi A, Christopoulou I, Saelens X, García-Sastre A, Schotsaert M. TIV Vaccination Modulates Host Responses to Influenza Virus Infection that Correlate with Protection against Bacterial

Superinfection. Vaccines (Basel). 2019 Sep 12;7(3) PubMed PMID: 31547409; PubMed Central PMCID: PMC6789870.

19. Chromikova V, Tan J, Aslam S, Rajabhathor A, Bermudez-Gonzalez M, Ayllon J, Simon V, García-Sastre A, Salaun B, Nachbagauer R, Krammer F. Activity of human serum antibodies in an influenza virus hemagglutinin stalk-based ADCC reporter assay correlates with activity in a CD107a degranulation assay. Vaccine. 2020 Feb 18;38(8):1953-1961. PubMed PMID: 31959425; PubMed Central PMCID: PMC7117648.

20. DiPiazza AT, Fan S, Rattan A, DeDiego ML, Chaves F, Neumann G, Kawaoka Y, Sant AJ. A Novel Vaccine Strategy to Overcome Poor Immunogenicity of Avian Influenza Vaccines through Mobilization of Memory CD4 T Cells Established by Seasonal Influenza. J. Immunol.. 2019 Sep 15;203(6):1502-1508. PubMed PMID: 31399519; PubMed Central PMCID: PMC6737897.
This publication was a cross-Center collaboration with NYICE.

21. Dhar N, Kwatra G, Nunes MC, Cutland C, Izu A, Nachbagauer R, Krammer F, Madhi SA. Hemagglutinin-stalk antibody responses following trivalent inactivated influenza vaccine immunization of pregnant women and association with protection from influenza virus illness. Clin. Infect. Dis.. 2019 Sep 27; PubMed PMID: 31565750.

22. Esparza M, Mor A, Niederstrasser H, White K, White A, Zhang K, Gao S, Wang J, Liang J, Sho S, Sakthivel R, Sathe AA, Xing C, Muñoz-Moreno R, Shay JW, García-Sastre A, Ready J, Posner B, Fontoura BMA. Chemical intervention of influenza virus mRNA nuclear export. PLoS Pathog.. 2020 Apr;16(4):e1008407. PubMed PMID: 32240278; PubMed Central PMCID: PMC7117665.

23. Furusawa Y, Yamada S, da Silva Lopes TJ, Dutta J, Khan Z, Kriti D, van Bakel H, Kawaoka Y. Influenza Virus Polymerase Mutation Stabilizes a Foreign Gene Inserted into the Virus Genome by Enhancing the Transcription/Replication Efficiency of the Modified Segment. mBio. 2019 10 01;10(5) PubMed PMID: 31575766; PubMed Central PMCID: PMC6775454.

24. Feng H, Nakajima N, Wu L, Yamashita M, Lopes TJS, Tsuji M, Hasegawa H, Watanabe T, Kawaoka Y. A Glycolipid Adjuvant, 7DW8-5, Enhances the Protective Immune Response to the Current Split Influenza Vaccine in Mice. Front Microbiol. 2019;10:2157. PubMed PMID: 31620111; PubMed Central PMCID: PMC6759631.

25. Feng H, Yamashita M, Wu L, Jose da Silva Lopes T, Watanabe T, Kawaoka Y. Food Additives as Novel Influenza Vaccine Adjuvants. Vaccines (Basel). 2019 Sep 24;7(4) PubMed PMID: 31554190; PubMed Central PMCID: PMC6963695.

26. Ferreri LM, Ortiz L, Geiger G, Barriga GP, Poulson R, Gonzalez-Reiche AS, Crum JA, Stallknecht D, Moran D, Cordon-Rosales C, Rajao D, Perez DR. Improved detection of influenza A virus from blue-winged teals by sequencing directly from swab material. Ecol Evol. 2019 Jun;9(11):6534-6546. PubMed PMID: 31236242; PubMed Central PMCID: PMC6580304.
This publication was a cross-Center publication with SJCEIRS.

27. Gao J, Couzens L, Burke DF, Wan H, Wilson P, Memoli MJ, Xu X, Harvey R, Wrammert J, Ahmed R, Taubenberger JK, Smith DJ, Fouchier RAM, Eichelberger MC. Antigenic Drift of the Influenza A(H1N1)pdm09 Virus Neuraminidase Results in Reduced Effectiveness of A/California/7/2009 (H1N1pdm09)-Specific Antibodies. mBio. 2019 04 09;10(2) PubMed PMID: 30967460; PubMed Central PMCID: PMC6456748.

28. Gultyaev AP, Richard M, Spronken MI, Olsthoorn RCL, Fouchier RAM. Conserved structural RNA domains in regions coding for cleavage site motifs in hemagglutinin genes of influenza viruses. Virus Evol. 2019 Jul;5(2):vez034. PubMed PMID: 31456885; PubMed Central PMCID: PMC6704317.

29. Imai M, Yamashita M, Sakai-Tagawa Y, Iwatsuki-Horimoto K, Kiso M, Murakami J, Yasuhara A, Takada K, Ito M, Nakajima N, Takahashi K, Lopes TJS, Dutta J, Khan Z, Kriti D, van Bakel H, Tokita A, Hagiwara H, Izumida N, Kuroki H, Nishino T, Wada N, Koga M, Adachi E, Jubishi D, Hasegawa H, Kawaoka Y. Influenza A variants with reduced susceptibility to baloxavir isolated from Japanese patients are fit and transmit through respiratory droplets. Nat Microbiol. 2020 01;5(1):27-33. PubMed PMID: 31768027.

30. Islam S, Zhou F, Lartey S, Mohn KGI, Krammer F, Cox RJ, Brokstad KA. Functional immune response to influenza H1N1 in children and adults after live attenuated influenza virus vaccination. Scand. J. Immunol.. 2019 Oct;90(4):e12801. PubMed PMID: 31269273; PubMed Central PMCID: PMC6746580.

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Citations Referencing the Previous CRIP Contract Number: HHSN266200700010C

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No publications were identified under the IAA number AAI14006 for this reporting period.

Citations Without Reference to a CEIRS Contract Number

1. Zhang L, Shi H, Chen H, Gong A, Liu Y, Song L, Xu X, You T, Fan X, Wang D, Cheng F, Zhu H. Dedifferentiation process driven by radiotherapy-induced HMGB1/TLR2/YAP/HIF-1α signaling enhances pancreatic cancer stemness. Cell Death Dis. 2019 Sep 26;10(10):724. PubMed PMID: 31558702; PubMed Central PMCID: PMC6763460.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Fwd: Wellcome Trust grant submission
Date: Tuesday, April 28, 2020 11:15:33 AM
Attachments: UNS112128-5.pdf

All, attached our submission to the WT, and our email sending it to them at the 5pm deadline.

We ended up having to submit like this to them, rather than through their web portal as the web portal found that we had two missing fields in [redacted], at least one place of education and one place of employment. We knew that information, but the system would not let us enter it, only [redacted] As it was already 1am [redacted] and only after we pressed submit close to the deadline, that the system alerted us to the two missing fields, and after a call with [redacted] we decided that even if we woke [redacted], we'd not be able to get his data in by the deadline. It was fully my responsibility that this was done as close to the deadline as it was, and many thanks [redacted] for all your work on this. We will follow up with WT from here.

Many thanks all for this rushed submission. Your quick response is very much appreciated. And next time, not so rushed!

[redacted]

---------- Forwarded message ---------
From: [redacted]
Date: Tue, Apr 28, 2020 at 5:00 PM
Subject: Wellcome Trust grant submission
To: <grantenquiries@wellcome.ac.uk>

Please find attached our Wellcome Trust preliminary application. We are having trouble submitting online.

Best wishes

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: Wellcome Trust collaborative award preliminary application
Date: Tuesday, April 28, 2020 7:51:53 AM

Thanks [redacted], for your very quick responses!

[redacted]

On Tue, Apr 28, 2020 at 1:49 PM [redacted] > wrote:

> I did click the link!
>
> [redacted]
>
> ---
>
> **From:** [redacted]
> **Sent:** Tuesday, April 28, 2020 9:48 PM
> **To:** [redacted] >
> **Cc:** [redacted]
> **Subject:** RE: Wellcome Trust collaborative award preliminary application
>
> Dear All,
>
> We have a SARS-CoV-2 call coming up at the top of the hour with [redacted] presenting today – so, he may not respond. I just read through it real quick and added a couple of comments (please feel free to ignore them if they don't make any sense).
>
> Thanks,
>
> [redacted]

From: [redacted] >
Sent: Tuesday, April 28, 2020 6:55 AM
To: [redacted]
Cc: [redacted]
Subject: Wellcome Trust collaborative award preliminary application

[redacted]

Attached a Word document a two page preliminary application to the Wellcome Trust Collaborative Award scheme. We'd mentioned this scheme as an alternate funding source when we were talking about alternate funding a couple of months ago, and [redacted], this is the scheme for which [redacted] has collected your CVs and other info over the last few days.

If you have any suggestions or comments on the two-page scientific proposal attached, if you could get them to us by about 4pm UK time today that would be great, it has to be submitted at 5pm UK time today.

Please use track changes so we can see any changes. If you are comfortable with google docs, you can make the changes (in suggestion mode please) or add comments directly in our master document here [redacted]

[redacted] the only thing we'll need you to do is to click on a link in an email you'll get in the next hour agreeing to be a co-applicant.

[redacted] thanks for sending the CV info you've already sent. [redacted] have extracted from that most of what is needed, and will enter everything they can into the WT system on your behalf. [redacted] has drafted some "supporting academic history" that WT require, please check that or provide something different if you prefer.

The rest of this email is not needed to read now, it is some background info on the WT and whether this is the right approach to them or not.

Wellcome primarily funds in the UK, and developing world collaborators with UK groups. Thus not our type of collaboration. Nevertheless there is one award they do, the "collaborative award" which we're putting in the 2-pager preliminary application today.

Getting past the preliminary stage of the award we are applying for now has not been hard for us in the past, I think the bar is fairly low, but might be higher given COVID. Being granted an award however seems difficult We were the [redacted] one of these collaborative awards about [redacted] passed the preliminary stage, wrote a full proposal, but did not get the award. We were a co-applicant on another, on [redacted] that that was funded only after a third attempt. We've also looked at all of the looking at how many of these are funded each year, (and even fewer with US based collaborators).

I'm planning to speak with Jeremy Farrar, the director of the WT, about our best approach. Perhaps a partnership with HHS is possible. Or perhaps he'll suggest backing off from going after one of these collaborative awards and for us in [redacted] to just apply for their much easier to get UK-centric awards just to our group in [redacted]. If he indicates the latter, we might have to go that route as our funding runs out in [redacted] when CERIS runs out, and a smaller local WT award would provide stop gap until the HHS money flows again. Also, this WT Collaborative award is substantially less than our HHS awards, it would only partially fund our current efforts.

Given the COVID situation however, I don't expect to get to talk with him for long or more than once. So I figure it is best to see what HHS have to say in the coming days before that call with Jeremy. In the meantime, we want to submit this preliminary application on for the WT Collaborative Award so we are eligible for this scheme with you as partners in case he indicates it should be our approach.

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Termination of our Coronavirus work by NIH last Friday.
Date: Tuesday, April 28, 2020 7:42:55 AM

[redacted]

We would very much appreciate it if you would still be willing to join these meetings. Your expertise is greatly appreciated.

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, April 28, 2020 8:38 AM
To: [redacted]
Cc: [redacted]

[redacted]

Subject: Termination of our Coronavirus work by NIH last Friday.
Importance: High

Dear All,

Just so we don't get waylaid by this – I want to let you all know that NIH (not NIAID) wrote to us last week to abruptly terminate our R01, 'for convenience'.

There is a Politico story about this here:
https://www.politico.com/news/2020/04/27/trump-cuts-research-bat-human-virus-china-213076

And we have put out a statement here:
https://www.ecohealthalliance.org/2020/04/regarding-nih-termination-of-coronavirus-research-funding

My plan is to continue this work, unfunded for now, and to attend these meetings if you will all have me.

Cheers,

Peter

Peter Daszak
President

[redacted]

[redacted]

[redacted]

From: [redacted]

Sent: Monday, April 27, 2020 3:49 PM

To: [redacted]

Cc: [redacted]

[redacted]

Subject: COVID-19 Weekly Investigator Call April 28th

Hi Everyone,

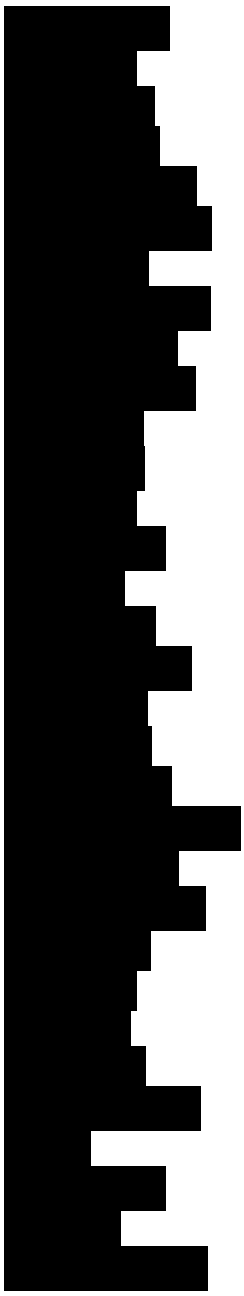
On this week's call we'll have highlights from [redacted] from CDC and [redacted] Please see below for last week's attendees. As usual, if you just dialed in via phone the system recorded you as Caller X, so please let me and [redacted] know if your name should be added.

Please also let us know if you would like to present on May 12th or 19th.

[redacted]

Attendees 4/21

[redacted]



From: fboyle@illinois.edu
To: vinu arumugham; [redacted]; paulina.firozi@washpost.com; Molly.Stellino@azrepublic.com; [redacted] menserin@aaas.org; [redacted]; [redacted]; [redacted] dmjackso@usatoday.com; khjelmgaard@usatoday.com
Subject: RE: Sloppy Wuhan lab created SARS-CoV-2
Date: Saturday, April 25, 2020 9:09:32 PM

This is China's Fort Detrick. Of course it is a biological weapon. Fab.

Francis A. Boyle
Law Building
504 E. Pennsylvania Ave.
Champaign IL 61820 USA
217-333-7954 (phone)
217-244-1478 (fax)
(personal comments only)

From: vinu arumugham [mailto:vaccine.safety@aol.com]
Sent: Saturday, April 25, 2020 8:57 PM
To: Boyle, Francis A <fboyle@illinois.edu>; [redacted]; paulina.firozi@washpost.com; Molly.Stellino@azrepublic.com; [redacted]; menserin@aaas.org; [redacted] dmjackso@usatoday.com; khjelmgaard@usatoday.com
Subject: Sloppy Wuhan lab created SARS-CoV-2

Root cause of COVID-19? Biotechnology's dirty secret: Contamination. Bioinformatics evidence demonstrates that SARS-CoV-2 was created in a laboratory, unlikely to be a bioweapon but most likely a result of sloppy experiments

https://doi.org/10.5281/zenodo.3766462

From: [redacted]
To: [redacted]

Subject: Fwd: I"m sorry to say i won"t be able to attend
Date: Friday, April 24, 2020 9:52:33 AM

---------- Forwarded message ---------
From: [redacted]
Date: Fri, Apr 24, 2020 at 1:46 PM
Subject: I'm sorry to say i won't be able to attend
To: [redacted]

Just figure out a way to make vaccines! ☺

[redacted]

[redacted]

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: more FW: RE: Rick Bright
Date: Thursday, April 23, 2020 4:04:12 AM
Attachments: image001.png
image002.png
image003.png

Very interesting.

2020/04/23 15:46 [redacted]:

thanks[redacted]

On Thu, Apr 23, 2020 at 7:28 AM [redacted] wrote:

> Jeremy Diamond tweeted Rick's written comment (email):
>
> https://twitter.com/JDiamond1/status/1253056646802214912
>
> Yours sincerely,
>
> [redacted]
>
> <image001.png>
>
> [redacted]
> <image002.png>
>
> <image003.png>

Van: [redacted]>
Datum: donderdag 23 april 2020 om 00:12
Aan: [redacted]
CC: [redacted]
Onderwerp: Re: more FW: RE: Rick Bright

wow

good for him for making it public!

On Wed, Apr 22, 2020 at 11:05 PM [redacted]> wrote:

> More on Rick.

From: [redacted]>
Sent: Wednesday, April 22, 2020 4:41 PM
To: [redacted]
Subject: RE: Rick Bright

With no further comments.

https://www.cnn.com/2020/04/22/politics/rick-bright-barda-trump-coronavirus/index.html

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Virtual BARDA Site-Visit
Date: Wednesday, April 22, 2020 10:06:10 AM
Attachments: image001.png
image002.png
image003.png

[redacted]

I am flexible this afternoon/evening, except for a call at 6 pm Central (but that's probably too late for you anyway). If [redacted] should be included, we'd have to do it tomorrow (early morning US, noon/early afternoon Europe, evening in Japan).

Shall we have a call today at 8:30 NL time (without [redacted]), and follow up with him tomorrow, if needed?

Best,

[redacted]

From: [redacted]
Sent: Wednesday, April 22, 2020 9:59 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Virtual BARDA Site-Visit

[redacted]
Do you have time for a quick chat tonight about the slides? I could do any time after 8:30 pm NL time.
[redacted]

Yours sincerely,

[redacted]

Van: [redacted]
Datum: zondag 19 april 2020 om 00:01
Aan: [redacted]
Onderwerp: RE: Virtual BARDA Site-Visit

[redacted]

Attached please find a few summary slides for the pandemic and seasonal projects that you could use for your summary presentations … but that's up to you, of course.
Please let me know if you have any questions about the slides.
Please also let me know if you'd like me to prepare other slides.

Thanks,

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: Draft agenda for BARDA virtual meeting
Date: Wednesday, April 22, 2020 2:40:56 AM
Attachments: image001.png
image002.png
image003.png

Not easy, ideally we'd like them to have some time to discuss our future plans, but in a month, it is very unlikely that the storm will have passed. It is maybe better to have the meeting now, and if necessary another one when things have gone a bit more to normal?
Cheers
[redacted]

From: [redacted]
Date: Wednesday, 22 April 2020 at 09:02
To: [redacted]
Cc: [redacted]
Subject: Re: Draft agenda for BARDA virtual meeting

Either way is fine by me. We have just been told our live does not return to normal for the next month.
[redacted]

Yours sincerely,

[redacted]

Van: [redacted]
Datum: woensdag 22 april 2020 om 07:17
Aan: [redacted]
CC: [redacted]
Onderwerp: Re: Draft agenda for BARDA virtual meeting

Our other option is to suggest we delay by one month. Please let us know your thoughts.

[redacted]

On Tue, Apr 21, 2020 at 10:44 PM [redacted] wrote:

> Dear all,
>
> Please find below our proposed agenda. Please let us know your thoughts?
>
> 08:30-08:40 Introductions
> 08:40-09:40 H5 presentation [redacted] for everyone)
> 09:40-10:00 H5 discussion
> 10:00-10:05 Break
> 10:05-11:05 Seasonal presentation [redacted] for everyone)
> 11:25-11:45 Seasonal discussion
> 11:45-12:00 General discussion
>
> Some additional information to think about based on a call I had with [redacted] today:
>
> BARDA also requested a time reduction so we have reduced to 3.5 hours from 4.5. BARDA request stemming from a significant number of covid related meetings and some people having to likely come off the call early. Do you think 3.5 hours is short enough?
>
> [redacted] also thinks it's unlikely [redacted] will be present because he's on CDC's rotation for covid at present .
>
> Also that [redacted] will be out from 10-11 am (re any immunology discussions).
>
> Another key point is that BARDA are not allowed to review any non covid ie. Flu, proposals currently. This is effective until the covid pandemic "goes away". I believe [redacted] tends to discuss this issue during the last part of the call.
>
> Many thanks
>
> [redacted]

From: [redacted]
To: [redacted]
Subject: RE: Virtual BARDA Site-Visit
Date: Saturday, April 18, 2020 5:01:02 PM
Attachments: [redacted] - Seasonal - Summary - 04-18-20.pptx
- Pandemic - Summary - 04-17-20.pptx

[redacted]

Attached please find a few summary slides for the pandemic and seasonal projects that you could use for your summary presentations … but that's up to you, of course.
Please let me know if you have any questions about the slides.
Please also let me know if you'd like me to prepare other slides.

Thanks,

[redacted]

From: [redacted]
To: [redacted]
Subject: RE: Virtual site visit
Date: Monday, April 6, 2020 3:19:00 PM

Dear All,

I think it is very difficult to get people to focus on anything at this point with a normal mindset. However, the major goal of this call should be future funding. To that end, we should calculate back what we want to present. In other words, let's list the areas for which we need funding for the next 5 years, present the data/interpretation on those topics, and identify what needs to be done.

At the end of the above presentations, [redacted] could briefly summarize the presentations and lead the discussion on future funding. We should leave one hour for the discussion on future funding.

Since we know how these discussions go (i.e., a lot of questions), our presentations should be high level (while avoiding the details) and we should make sure we finish this part in 3.5 hours including a break.

I believe I am saying the same thing as [redacted]. But, let's start by identifying the topics for which we want funding and making an agenda for the call.

Best,
[redacted]

From: [redacted]>
Sent: Monday, April 6, 2020 11:52 PM
To: [redacted]
Subject: RE: Virtual site visit

Dear All,

I am wondering if we should focus more on conceptual issues, and go light on experimental data.
This would also raise the question if there should be multiple presentations from multiple

people (which can be a bit confusing and/or disjointed at times), or if we should have a small number of main presentations to which several people contribute slides.
I am flexible and open to suggestions – but with unpredictable schedules and ~ 2 weeks left, we may want to start thinking about this.

Thanks,

[redacted]

From: [redacted]
Sent: Monday, April 6, 2020 9:35 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Virtual site visit

We have 4.5h, [redacted] said this would be adjusted based on the agenda.

For sure BARDA will want to hear about H5 status.

We should also make sure our agenda is in there too, which is primarily about the next funding. So what we plan to do next on the pandemic vaccine front. And status and future on the seasonal front too. So, showing our status for H3 will be important, the stuff we are doing to show this as titers, as well as maps, is directly related to that. I think we should probably go light on the B side, just saying there is background work on this, rather than a detailed explanation--you and [redacted] suggested that for the last site visit and I think it makes sense, do you agree?

Also [redacted] and being hooked up with [redacted] on that, and what can be done next. To that end, I emailed [redacted] for a meeting on this topic on March 11. Got an enthusiastic reply, but no action. Figured he got sucked into the CoV vortex, which he confirmed today, and he will try to find time to call.

What do you think?

[redacted]

On Mon, Apr 6, 2020 at 11:29 AM [redacted] wrote:

> Dear All,
>
> For the virtual site visit, shall we all prepare presentations at usual?

Or has BARDA indicated that we should focus on one topic (I guess that would be H5), and touch on other topics only briefly? I believe we have only half a day.

Thanks,

[redacted]

From: [redacted]
Sent: Monday, April 6, 2020 12:45 AM
To: [redacted]
Subject: No BARDA/NIH partners call today

No BARDA/NIH partners call today. We'll schedule one closer to the BARDA/NIH virtual site visit.

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Antigenic maps for the BARDA meeting
Date: Saturday, March 28, 2020 4:42:29 PM

Hi [redacted] and All,

I looked at the data again; here are two high-level observations:

- [redacted] The antigenic changes are small, but you may remember that they were also small with the [redacted] mutants. With the [redacted] mutants, greater antigenic changes were detected for the [redacted].
- Across the viruses tested ([redacted] most of the antigenically advanced mutants seem to possess changes at [redacted] (I did not perform statistical analyses … I just moused-over the mutants …). Is this something we should think about more (Additional testing? Publication?) – just some food for thought.

Thanks,

[redacted]

From: [redacted]
Sent: Friday, March 27, 2020 5:55 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Antigenic maps for the BARDA meeting

Hi everyone,

Please see links to two webpages we'll be discussing in the call. If you have any trouble accessing them please let me know.

[redacted]

Best,
[redacted]

On 26 Mar 2020, at 09:53, [redacted] wrote:

Hi [redacted]

Yes we will present current map status. Also, to communicate our plans re the H3 map, we will give a brief overview of the investigations we are deep into, and that I wrote about, re judging if mutants escape a cluster--we will keep that high-level and leave detail and discussion for when you have more time.

We'd also like to discuss the H5 rough vaccine sera I also wrote about, and how this will be very helpful, likely essential, for coming to a CVV decision.

[redacted]

On Wed, Mar 25, 2020 at 1:11 PM [redacted] > wrote:

> [redacted] thanks, I received it.
>
> [redacted] earlier emails suggested that you have updates on the H1, H3, and B maps [redacted] perhaps as well?). Could you present your updates on Friday?
>
> Thanks a lot,

[redacted]

From: [redacted]
Sent: Wednesday, March 25, 2020 6:56 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Antigenic maps for the BARDA meeting

Dear all,

You should now have received a webex invite for this meeting on Friday 27th at 6 am CT / 7 am ET / 11 am UK / 12 pm NL / 8 pm Japan.

If it has not come through for any reason please let me know.

Thanks

[redacted]

On 25 Mar 2020, at 09:37, [redacted] > wrote:

Should also be fine for me

[redacted]

From: [redacted] >
Date: Wednesday, 25 March 2020 at 08:45
To: [redacted]
Cc [redacted]
Subject: Re: Antigenic maps for the BARDA meeting

Yes, that would work for me.

Yours sincerely,

[redacted]

<image001.png>

[redacted]

<image002.png> <image003.png>

Van: [redacted]
Datum: woensdag 25 maart 2020 om 02:40
Aan: [redacted]

<[redacted]>
Onderwerp: FW: Antigenic maps for the BARDA meeting

Dear All,

Are we (still) planning to have a call on Friday (3/27) to discuss the latest H5 data (as needed), and recent updates on the H1, H3, and B virus maps in preparation for the BARDA meeting in April?
A possible time would be 6 am CT / 7 am ET / 11 am UK / 12 pm NL / 8 pm Japan.
[redacted] you were not cc'd on the previous email – linking you in now.

Thanks,

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: A phone call to discuss future collaboration
Date: Thursday, March 12, 2020 7:22:44 AM

Noted thanks [redacted]

[redacted]

-------- Original message --------
From: [redacted]>
Date: Thu, 12 Mar 2020, 12:20
To: [redacted]
[redacted]>
Cc: [redacted]
[redacted]
Subject: RE: A phone call to discuss future collaboration

[redacted] et al.

I am at a conf call of Expert Meeting on Novel Coronavirus Disease Control in [redacted]

I will join as soon as possible.

[redacted]

From: [redacted]

Sent: Thursday, March 12, 2020 9:10 PM
To: [redacted]
Cc: [redacted]
Subject: Fwd: A phone call to discuss future collaboration

[redacted] seems positive, see below. If you have any particular thoughts prior to me talking to him, please let me know.

[redacted]

---------- Forwarded message ---------
From: [redacted]
Date: Wed, Mar 11, 2020 at 7:37 PM
Subject: RE: A phone call to discuss future collaboration
To: [redacted]

Yes I think would be excellent. Friday?

From: [redacted]>
Sent: Wednesday, March 11, 2020 2:54 PM
To: [redacted]
Subject: A phone call to discuss future collaboration

[redacted]

Would you be up for a phone call to discuss moving forward together on a bunch of seasonal flu stuff? It seems like it could be great.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Fwd: Call re funding?
Date: Thursday, March 12, 2020 7:07:58 AM

I sent the below to [redacted] yesterday, so they know the [redacted] even though I think it is best to not discuss it on the call today until I've spoken with [redacted] and we agree how to present it best.

I'm having a call with [redacted] tomorrow.

[redacted]

---------- Forwarded message ---------
From: [redacted]
Date: Wed, Mar 11, 2020 at 6:45 PM
Subject: Re: Call re funding?
To: [redacted]
Cc: [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

The funding for this seasonal work seems to have fallen between the cracks at NIH. Their CIVICs were targeted at universal vaccines. The CEIRR call had line items in it that appeared to be directly informed by our work on seasonal influenza, but the funding pot was not large enough for us going in with [redacted] to support both their efforts and ours. As you know [redacted] and us have previously gone in with [redacted]. We went in with them again this time, but without any money for this work. Do you see any possibility to fund our seasonal influenza work through BARDA again? The results are so good, it seems really worthwhile to continue on this path. But how.

[redacted]

On Wed, Mar 4, 2020 at 7:29 PM [redacted] wrote:

> [redacted]
>
> Please accept my apologies on such a tardy response. I was waiting to see if there was to be any light shed on the priority of our influenza programs. I was expecting to address your flu projects through the BAA. I'll contact you as soon as I understand how a pending BAA status change will affect our collaboration and then we can arrange for a call early next week.
>
> [redacted]
>
> **From:** [redacted]>
> **Sent:** Friday, February 14, 2020 1:34 PM
> **To:** [redacted]>
> **Subject:** Call re funding?

[redacted] I know you're probably very busy with the nCoV outbreak, but I was wondering if we could have a quick chat about the continuation of our work and funding possibilities within the US as we're facing a funding bottleneck within the CEIRS network.

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: [redacted] F2F meeting on April 24, 2020
Date: Wednesday, March 11, 2020 6:02:44 PM

Dear All,

Would it make sense to postpone the meeting until about June for a longer discussion and selection of the final vaccine candidate(s)?
Depending on the coronavirus spread, a meeting later in the year could take place in DC or be held via videoconferencing.

Best,

[redacted]

From: [redacted]
Sent: Wednesday, March 11, 2020 1:19 PM
To: [redacted]
Cc: [redacted]
Subject: Fwd: [redacted] F2F meeting on April 24, 2020

---------- Forwarded message ---------
From: [redacted]>
Date: Wed, Mar 11, 2020 at 6:00 PM
Subject: [redacted] F2F meeting on April 24, 2020
To: [redacted]
Cc: [redacted]>

Hi,

We still plan to have a call tomorrow.

Just be aware that we are encouraged to strongly consider virtual options or postponing/cancelling any meetings over the next 30 days. The F2F meeting is scheduled for April 24, 2020 which is beyond the next 30 days, however when considering the law of exponential growth, it is becoming more likely we will move this meeting virtually. Any thoughts? We will talk tomorrow.

Also for your information:
EZ-BAA update March 9, 2020: BARDA has expanded its EZ-BAA to spur the development of a portfolio of medical countermeasures to address the novel coronavirus outbreak.
https://beta.sam.gov/opp/b4f7923443a448218d369209723141c5/view

Latest BARDA Broad Agency Announcement (BAA) is amendment 14 posted on March 9, 2020.
https://beta.sam.gov/opp/1b46a4169fcb4902b9c4fcbb5bf981f7/view

Regards,

[redacted]

[redacted]

From: [redacted]
To: [redacted]
Subject: Coronavirus DPCC submissions
Date: Tuesday, March 10, 2020 1:21:47 PM

Hi all,

The DPCC would like to start preparing for Coronavirus sequence and reagent submissions. We'd like to have some general idea of what people are doing/planning to do so they can look at the templates and determine if they need to be adapted. If you can let [redacted] and I know your general plans (sample types, humans/experimental samples) that would be helpful so we can help facilitate quick submissions.

thanks,

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: Reagent deposited and available, from CRIP
Date: Friday, March 6, 2020 4:14:07 PM

Hi Everyone,

Yes - congratulations! Thank you so much for your continued hard work and responsiveness in these urgent situations.

Best wishes,
[redacted]

From: [redacted]
Sent: Friday, March 6, 2020 11:50 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Reagent deposited and available, from CRIP

Thank you [redacted] Amazing to see this completed so quickly, and I know it's already being sought by a number of groups. We're going to be drafting something to be distributed via NIAID communications about SARS-CoV2 reagents to send to the community shortly, now that there are multiple reagents available.

You all are doing amazing work. We really appreciate it.

[redacted]

From: [redacted]>
Sent: Friday, March 6, 2020 11:37 AM
To: [redacted]
Cc: [redacted]
Subject: Reagent deposited and available, from CRIP

Dear [redacted]

I copy to you first CEIRS reagent deposited for distribution in BEI related to SARS-CoV-2. You may want to let the rest of the scientific community know this product is available for their research.

It might be interesting if you can call BEI to change the citation to include CEIRS acknowledgment.

Thanks [redacted]!

[redacted]

From: [redacted]
To: Degrace, Marciela (NIH/NIAID) [E]
Cc: [redacted]
Subject: New paper from CRIP
Date: Tuesday, March 3, 2020 6:58:21 PM
Attachments: Accepted, Sci Rep.pdf

Just accepted in Sci Rep

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: RE: FW: Influenza: H7N9 Virus Draft Chapter
Date: Thursday, February 20, 2020 7:13:19 AM

Dear [redacted]

Thank you very much for your help!

Best wishes,

[redacted]

> -----原始邮件-----
> 发件人: "[redacted]
> 发送时间: 2020-02-19 02:37:09 (星期三)
> 收件人: [redacted]>
> 抄送: [redacted]
> 主题: RE: FW: Influenza: H7N9 Virus Draft Chapter
>
> Hi [redacted]
>
> I am glad to hear that everybody is well.
> Thanks a lot for the revised version - it looks good.
>
> [redacted] would you please process the chapter for publication - thanks.
>
> All the best,
>
> [redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FW: Research Project 2
Date: Sunday, February 16, 2020 7:40:00 AM
Attachments: pages 124-136 Section 4A.4 Res Proj 2 2-15-2020 - GN.docx

---

[redacted]

Please see attached. Just a few minor changes.

Thank you for your hard work!

[redacted]

From: [redacted]>
Sent: Sunday, February 16, 2020 1:21 PM
To: [redacted]
Cc: [redacted]>
Subject: Research Project 2

Hi,

I basically did not change anything here, it looks good. In any case, have a look to see whether you find something you want to change

[redacted]

From: [redacted]
To:
Cc:
Subject: RE: Your H3N2 viruses
Date: Thursday, February 13, 2020 3:16:00 PM

Thanks, [redacted]

I got those viruses from you while ago.
Best,

[redacted]

From: [redacted]
Sent: Friday, February 14, 2020 6:15 AM
To: [redacted]>
Cc: [redacted]
Subject: Re: Your H3N2 viruses

Hi [redacted]
Not a problem of course. Do you have these already? Otherwise I need to check.
[redacted]

Van: [redacted]
Datum: donderdag 13 februari 2020 om 21:35
Aan: [redacted]
CC: [redacted]>
Onderwerp: Your H3N2 viruses

Dear [redacted]

As part of the NIH CIVIC program (https://www.nih.gov/news-events/news-releases/nih-forms-new-collaborative-influenza-vaccine-research-network), the NIH wants to have a list of reference viruses for serological studies. I suggested that we should use your H3N2 viruses that have never been grown in eggs. For H3N2, the virus panel should include the pandemic virus, historical viruses, and a recent virus. A recent virus is not an issue, but for historical viruses including the pandemic virus, your viruses are the only ones that I know of that have not been passaged in eggs. Therefore, I want to suggest that the following viruses be

included in the panel:

[redacted]

So, my question for you is: Are you okay with sharing these viruses with the NIH CIVIC program?

Please let me know.

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]

Subject: Re: Priority order for [redacted] viruses: HI titrations
Date: Thursday, February 13, 2020 6:53:38 AM
Attachments: 200212_HI_titer_plots.pdf

Dear all,

Please find attached preliminary data from additional titrations we performed. We titrated the [redacted] strains from [redacted] against the sera in our [redacted] The sera are labeled on the x axis.

With kind regards,

[redacted]

From: [redacted]
Date: Thursday, 13 February 2020 at 12:46
To: [redacted] >
Cc: [redacted]
Subject: Re: Priority order for [redacted] viruses: HI titrations

Thanks everyone. We're about to send out a webex invite for a call 30 minutes before the BARDA call today.

[redacted]

On Tue, Feb 11, 2020 at 11:26 PM [redacted] > wrote:

> I can talk before and after the BARDA call.
> [redacted]
>
> ---
>
> **From:** [redacted] >
> **Sent:** Wednesday, February 12, 2020 8:12 AM
> **To:** [redacted]
> **Subject:** RE: Priority order for [redacted] viruses: HI titrations

I can talk before the BARDA call as well.

Thanks,

[redacted]

From: [redacted].nl>
Sent: Tuesday, February 11, 2020 10:53 AM
To: [redacted]>
Cc: [redacted]
Subject: Re: Priority order for [redacted] viruses: HI titrations

I can start 30 min before the call, but I have another meeting after the BARDA call.

From: [redacted]>
Date: Tuesday, 11 February 2020 at 17:52
To: "[redacted]>
Cc: [redacted]
Subject: Re: Priority order for [redacted] viruses: HI titrations

I can stay on the phone after the BARDA call or start half an hour before the BARDA call.
[redacted]

Van: [redacted]>
Datum: dinsdag 11 februari 2020 om 17:49
Aan: "[redacted]
CC: [redacted]
Onderwerp: Re: Priority order for [redacted] viruses: HI titrations

Many thanks [redacted] Also for the clear text explanation and very helpfully marked and laid out excel sheets.

In addition to what you say, the #8 mutant sera (but not [redacted] #8 mutant sera), does "reach a little further into the WT portion of the map, or at least has some low titers against a few strains the other sera do not see.

interesting indeed, as you point out, that the [redacted] sera react higher than [redacted] sear to the [redacted] virus that has [redacted] even if we don't see the pattern of general increased immunogenicity that was seen for the [redacted] candidate, this could be a reason to go with a [redacted] virus as maybe the reason for this result is that antibodies targeting the RBS do better when [redacted] matched.

seems to me our path of try other mutations that might confer [redacted] binding in different way in [redacted] and some of the [redacted] mutants is still a good thing to do.

For me would be good to have a call to discuss these results and our path forward. Could it work for others to do this by staying on the WebEx after the BARDA call on Thursday. Or to have a call before the BARDA call on Thursday?

[redacted]

On Tue, Feb 11, 2020 at 11:43 AM [redacted] wrote:

> Dear all
> Please find attached the results of an HI that was done to test the [redacted] wt, [redacted], priority candidate #8 [redacted]) and priority candidate #8 [redacted]
>
> 1. We received the HA and NA (N8) plasmids from [redacted] rescued the viruses and raised post-infection sera. Please not that we grew the boost in eggs also for candidate #8 [redacted] in which we saw by Sanger sequencing a double population at position [redacted] (we tried to grow the boost twice and had the same results).
> 2. In the attached file, there are two tabs, one showing the titration of the sera against 57 strains in the map, the second showing the titrations of the viruses to our post-boost sera from our last vaccination exp.
> 3. The sera raised against the [redacted] are very similar (both in terms of height and breadth) to the one raised against the [redacted] wt virus. This is different than what we have seen before, but we have done little work on post-infection sera. The sera raised against the mutant #8 [redacted] are less reactive than the sera raised against mutant #8. Again, this could be due to the fact that this virus might replicate less well in ferrets (although the homologous titers are high, but we know that viruses with [redacted] in general have high titers)? Also to note, the sera raised against the mutant #8 are not very different than the sera raised against the [redacted] wt or [redacted] They also have similar titers against the [redacted] wt virus than the other sera. The only big differences are the titers against the mutant #8 virus.
> 4. Looking at the virus level: introduction of the [redacted] in [redacted] and in the mutant #8 raises the reactivity of the virus against the sera from the vaccination study but also against the newly made sera. This is consistent with what we have seen here at [redacted]. Interestingly, the [redacted] wt virus has low titers against the [redacted] vaccine post-vaccination sera (from <10 to 40), and the [redacted] has higher titers (60-480). The mutant #8 does not have titers against the [redacted] vaccine post-vaccination sera and the mutant #8 [redacted] only reacts to one of the sera with a titer of 80. The [redacted] virus [redacted] reacts well (yet with different magnitudes) to the sera raised against the [redacted] wt, [redacted] and mutant #8, but not well to the sera raised against mutant #8 [redacted]

Happy to discuss over the phone should it be necessary.
Cheers
[redacted]

From: [redacted]
Date: Friday, 31 January 2020 at 18:01
To: [redacted]
Cc: [redacted]
Subject: Re: Priority order for [redacted] viruses: HI titrations

Thanks [redacted]

[redacted]

On Fri, Jan 31, 2020 at 4:17 PM [redacted] > wrote:

> There are 16 viruses in common between the [redacted] and the [redacted]
> [redacted]

[redacted]

Link to a pc of the combined maps (without [redacted] egg-adapted,
rbs-adapted sera or antigens)
[redacted]

[redacted]

On 2020-01-31 08:51, [redacted] wrote:
> Thanks [redacted] for your post call notes. I agree re you sending your
> minimal map (plus [redacted] strains and sera. Some other suggestions:
>
> - I have not looked to see if [redacted] is included in that set, but
> would be good to send it, along with say 3 additional 2344 viruses.
> This is because resolving the relative position of [redacted] is
> especially important for our vaccine study design.
>
> - Similarly would be good to include sera from the infection and
> different vaccine formulations of the [redacted] virus (I think you were
> including these anyhow).
>
> - Include the WT viruses that are already in common between the [redacted]
> and [redacted] This is to help resolve any differences between
> those strains between the two [redacted] and so there are not having to be
> two of those strains in the merged [redacted] it can be avoided. I've
> copied [redacted] the list of those common strains.
>
> [redacted], In addition to the viruses you suggest to send to [redacted]
> would be good also to send:
>
> - your four, I think four, 2.3.4.4 viruses, the the two [redacted]
> and two others. This for the same reason I wrote to [redacted] above.
>
> - The strains in common between the [redacted] and [redacted] (as also
> suggested for [redacted]
>
> - And also a selection of your other reference WT viruses and sera.
> You have done lots of valuable and repeated titrations of those and
> ideally we have a robust integration of the two [redacted] not just of the
> advanced [redacted] area.
>
> - Please also include the 7.1 and 7.2 viruses and sera for
> coordination.
>
> [redacted]
>
> On Fri, Jan 31, 2020 at 12:49 AM [redacted]

> [redacted] > wrote:
>
>> Hi [redacted]
>>
>> Thanks for the sequence and other information!
>>
>> At this point, the eight high-priority candidates may be the best
>> viruses to send your way.
>>
>> With additional HI data and the (re)creation of mutants with [redacted] NA
>> and the HA-[redacted] mutations, some of these viruses could be sent as
>> well.
>>
>> Thanks,
>>
>> [redacted]
>>
>> From: [redacted] >
>> Sent: Wednesday, January 29, 2020 10:07 AM
>> To: [redacted]
>> Subject: Re: Priority order for [redacted]
>> viruses: HI titrations
>>
>> Dear all
>>
>> A quick follow up email on some of the points that we have discussed
>> today:
>>
>> * [redacted], please find attached the sequence of our [redacted] HA, [redacted] (it might be that you [redacted] virus already
>> has a A[redacted], there are basically two different [redacted]
>> viruses, one with a [redacted]
>> * [redacted] please find here two links to [redacted] website
>> explaining the generation of the [redacted] (about 20 strains) and
>> what we call the “less [redacted] (55-60 strains). In both cases, we
>> have compared the [redacted] to the full [redacted] and, they were representative
>> of the full [redacted]. [redacted], you will not be able to look at the
>> webpage I think, if I you want I can walk you through them another
>> time [redacted], I remember that [redacted] presented that data one time
>> during a [redacted] meeting that you attended via Webex, at the time
>> that we were discussing exchanging strains and sera for [redacted]
>> comparison).

>>
>>
> [redacted]
>>
>>
>>
> [redacted]
>>
>>
>> * My suggestion is to send the strains and sera from the [redacted]
>> [redacted] When we do so, we can also send the [redacted]
[redacted]. We could share our two post-vaccination sera raised
>> with [redacted] whole inactivated. We also have our six
>> recent post-vaccination sera raised with [redacted] split
>> inactivated vaccine. However, we have very limited amount of these
>> (they were taken a week before challenge from a draw of about 5ml of
>> blood). We are also gonna titrate the post challenge sera. Should
>> these be similar to the pre-challenge sera, we will be able to share
>> them easily. We should have the data soon.
>> * Next week, we will bleed the ferrets for sera production
>> [redacted] candidate#8 and candidate #8 [redacted] Please
>> remember as I mentioned today that we were not able to have a
>> “clean” boost for the candidate#8 [redacted] in eggs (sorry, I did
>> not realize that [redacted] made their boost in cells for these [redacted]
>> viruses), there was a double peek at position [redacted] We
>> will titrate these sera against at least the less [redacted] and the
>> [redacted] (we are titrating our vaccine sera too). Moreover,
>> we will titrate the corresponding viruses against sera of the [redacted]
>> and against our latest vaccine sera. From these titrations, we will
>> have a preliminary view as to whether candidate#8 with and without
>> [redacted] can cross react with the [redacted] vaccine sera and whether
>> the [redacted] candidate can react with post infection sera against
>> candidate #8 (with and without [redacted].
>> * Just some additional information about the cross-reactivity of
>> [redacted] and the [redacted] Titers of [redacted] virus against
>> [redacted] post-vaccination sera (whole inactivated) are between 40-160
>> and against [redacted] post-vaccination sera (split inactivated) are
>> between <10 and 40. Titers against pre-boost whole inactivated sera
>> are between <10 and 20. We do not have data about the pre-boost of
>> the split inactivated sera. The [redacted] virus reacts with
>> titers around 1280 to post boost whole inactivated [redacted] sera and with
>> titers between 320-640 to pre-boost whole inactivated [redacted] We do not
>> have a split inactivated [redacted] vaccine.
>>
>> All the best

>>
>> [redacted]
>>
>> From: [redacted]>
>> Date: Saturday, 25 January 2020 at 22:59
>> To: '[redacted]
[redacted]>
>> Subject: RE: Priority order for [redacted]
>> viruses: HI titrations
>>
>> Dear All,
>>
>> Attached please find our estimated timelines for the further
>> characterization of the current vaccine candidates, and for the
>> generation and characterization of additional vaccine candidates. I
>> realize that the attached information is not easy to digest –
>> please let me know if you would like to set up another call to
>> discuss this further.
>>
>> In a nutshell,
>>
>> - the current 8 high-priority candidates (group 2 in the
>> 'Timelines for BARDA' file) will be tested in Feb with
>> additional sera.
>>
>> - the current 8 high-priority candidates will be
>> re-generated with [redacted] NA, and with [redacted] mutations
>> (group 3). The resulting viruses will be egg-passaged, tested in HA
>> assays, and tested for virus yield and temperature stability. These
>> data should be available by the end of May.
>>
>> - the viruses already re-generated with [redacted] NA (group 4) will
>> be tested in HI assays in Feb.
>>
>> - the further development of (novel) candidates (groups 5,
>> 6, 7) will take too long. Theoretically, we could combine some tasks
>> (groups 5-7), but this would create too much work in parallel to
>> group 3. Hence, groups 5, 6, 7, and 5-7 are shown in gray.
>>
>> As for the HI assay in Feb (see 'H5 HI Table'), we are planning
>> to test
>>
>> - the reference viruses and sera (shown in red font),
>>

>> - the 8 high-priority candidates and sera (shown in red
>> font),
>>
>> - the viruses that have been created with [redacted] NA already
>> (shown in blue font),
>>
>> - sera to some of the [redacted] HA-[redacted] variants (shown in gold
>> font). We are still debating whether these sera should be included
>> since the viruses mutate in eggs.
>>
>> If you have any changes or additions for the HI assay, please let us
>> know by Thursday so that we can plan accordingly.
>>
>> Thanks,
>>
>> [redacted]
>>
>> From: [redacted]
>> Sent: Sunday, January 19, 2020 8:36 PM
>> To: [redacted]
>> Subject: FW: Priority order for [redacted]
>> viruses: HI titrations
>>
>> Dear All,
>>
>> Please let us know which sera we should use to further characterize
>> the eight high-priority candidates.
>>
>> Obvious candidates are the homologous sera and sera to some of the
>> reference viruses. If there are other sera that should be included,
>> please let us know as soon as possible so that we can start
>> preparing for the HI assays.
>>
>> Thanks,
>>
>> [redacted]
>>
>> From: [redacted]
>> Sent: Friday, January 17, 2020 7:25 PM
>> To: [redacted]
>> Cc: [redacted]

>> [redacted]
>> Subject: FW: Priority order for [redacted]
>> viruses: HI titrations
>>
>> I noticed that [redacted] has not been copied on these mails –
>> Sorry, [redacted].
>>
>> [redacted]
>>
>> From: [redacted]
>> Sent: Friday, January 17, 2020 7:13 PM
>> To: [redacted]
>> Cc: [redacted]
>> Subject: RE: Priority order for [redacted]
>> viruses: HI titrations
>>
>> Dear All,
>>
>> Attached please find the following:
>>
>> - The slides presented earlier today
>>
>> - The Excel file with the HI raw data (I added explanations
>> on the first tab; please let me know if it's not clear)
>>
>> - The [redacted] which we received right after
>> our call. They are interesting (please see the comments on the third
>> slide).
>>
>> - Below, I added some numbers in red font (I'll work with
>> our group to calculate timelines)
>>
>> - One topic that we didn't discuss today: The switch to [redacted]
>> NA (at which point would we switch to [redacted] NA? How much retesting are
>> we going to do for viruses with [redacted] NA?) – This will affect the
>> timelines.
>>
>> Best,
>>
>> [redacted]
>>
>> From: [redacted]>

>> Sent: Friday, January 17, 2020 12:22 PM
>> To: [redacted]
>> Cc: [redacted]
>> Subject: Priority order for [redacted]
>> viruses: HI titrations
>>
>> Are there other categories of viruses and sera than the below for
>> which it would be idea to have HI titers? Or some of the below
>> which are not necessary?
>>
>> Some of these titrations will already have been done. And of course
>> we might not need want or have time to do them all. But figured
>> would be good to get an ideal set at least listed.
>>
>> · HI titrations of interest for these viruses and sera
>>
>> * The reference wildtypes – we've tested ~35 (but probably
>> wouldn't have to include them all)
>> * The 8 N8 high-priority candidates
>> * The N8 [redacted] viruses (before and after serial egg passage) –
>> 24 + 24 = 48 viruses (for some or all of the mutants before
>> egg-passage, we should also have the homologous sera)
>> * The viruses for which N8 has been replaced by [redacted] (with and
>> without [redacted]) – 6 viruses
>> * [redacted] candidate(s) (wasn't a [redacted] virus, or viruses
>> already sent to [redacted] Note, imo we should not delay the HI above
>> waiting for this virus) – I'll have to double-check
>>
>> [redacted] would you circulate your slides from today please, and also
>> the excel you were showing at the end please.
>>
>> [redacted]

From: [redacted]
To: [redacted]
Subject: RE: CRIT
Date: Friday, February 7, 2020 11:54:49 AM

Yes, of course! CRIPT is "very [redacted]".
[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, February 4, 2020 5:34 PM
To: [redacted]
Subject: Re: CRIT

Hi everyone,

Apologies the name is "**Center for Research on Influenza Pathogenesis and Transmission (CRIPT)**".

So please, answer by Thursday, Feb 6:
"**YES**" if you **agree** with **CRIPT** (Center for Research on Influenza Pathogenesis and Transmission), and
"**NO**" if you **disagree**.

Thank you.

Kind regards,

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, February 4, 2020 5:25:07 PM
To: [redacted]
Subject: CRIT

Hi everyone,

Today we got an idea about the name of our research center (thanks [redacted]!). We would like to change the name of "**Center for Research on Influenza Pathogenesis (CRIP)**" to "**Center for Research on Influenza Transmission (CRIT)**". We think CRIT is more appropriated for the new CEIRR as we are not just working on pathogenesis, but on transmission as well.

Please, answer by Thursday, Jan 6:
"**YES**" if you **agree** with CRIT (Center for Research on Influenza Transmission), and
"**NO**" if you **disagree**.

Thank you!

Kind regards,

[redacted]

From: [redacted])
To: [redacted]
Cc: [redacted]
Subject: RE: Reviews in Medical Virology - Decision on Manuscript ID RMV-2019-070.R1 [email ref: DL-RW-1-a]
Date: Wednesday, February 5, 2020 5:27:14 PM

Well done [redacted] and team!
Thanks for the terrific effort.

[redacted]

-----Original Message-----
From: [redacted]
Sent: Thursday, 6 February 2020 2:12 AM
To: [redacted]
Cc: [redacted]
Subject: FW: Reviews in Medical Virology - Decision on Manuscript ID RMV-2019-070.R1 [email ref: DL-RW-1-a]

Dear colleagues,

The manuscript is now accepted.
I will tailor the manuscript accordingly. Thank you very much for your participation and dedication in the risk assessment with TIPRA!

Sincerely,
[redacted]

-----Original Message-----
From: Kevin Flores <onbehalfof@manuscriptcentral.com>
Sent: Wednesday, February 5, 2020 2:25 PM
To: [redacted]
Subject: Manuscript Accepted - Please submit final updates to RMV-2019-070.R1 [email ref: ENR-AW-1-c]

05-Feb-2020

Dear [redacted]

Manuscript id: RMV-2019-070.R1
Manuscript title: Pandemic potential of highly pathogenic avian influenza clade 2.3.4.4 A(H5) viruses

Although your manuscript has been accepted for publication it is now being returned to your author center for you to review and make any final adjustments or corrections prior to production and publication.

Any special instructions will be listed below:

- Please provide the clean copy of your main paper(without comments and tracked changes).

- Conflict of interest declaration should be presented in the main text of the manuscript.

Thank you.

The simplest way to access the paper and go directly to step 1 in the First Look submission process is to use the link below:

https://mc.manuscriptcentral.com/rmv?URL_MASK=7c297be0d9d74c6f832e8b8d4164aab1

Alternatively, you may access the paper by logging into your ScholarOne Manuscripts Author Center and clicking on the “Manuscripts Accepted for First Look” queue. In order to update the submission, click on the “submit updated manuscript” link in the “Actions” column and follow the steps as you would during a manuscript submission process.

On the File Upload screen please upload the FINAL versions of all the files, including print quality image files. For information about image quality requirements, please refer to the guidelines at:
http://exchanges.wiley.com/authors/digital-artwork_335.html

Instructions for uploading replacement files:
1. On the 'File Upload' step, click on the drop down list under 'Actions' for the file you wish to replace. Select 'Upload New Version'
2. Click 'Select File' and browse to locate the replacement final version 3. Select whether the new file is a minor or major version (we suggest minor version) 4. Add any comments concerning the replacement (e.g. 'high res image')
5. Click 'Upload New Version'
6. Click 'Submit' when all the files have been uploaded and you will receive an automated email to say that submission is successful.

Please submit your updates within the next 7 days to ensure there are no unnecessary delays in production.

Sincerely,
Reviews in Medical Virology Editorial Office

-----Original Message-----
From: Paul Griffiths <onbehalfof@manuscriptcentral.com>
Sent: Wednesday, February 5, 2020 10:24 AM
To: [redacted]
Cc: p.griffiths@ucl.ac.uk
Subject: Reviews in Medical Virology - Decision on Manuscript ID RMV-2019-070.R1 [email ref: DL-RW-1-a]

05-Feb-2020

Dear [redacted]

Re RMV-2019-070.R1: "Pandemic potential of highly pathogenic avian influenza clade 2.3.4.4 A(H5) viruses"

Many thanks for your revised manuscript, which I have sent straight on to the publishers.

In recognition of all the hard work which you have put into preparing your review, you are entitled to one year’s free electronic subscription to the journal, which will commence the year following publication of your article. By copy of this letter, I will ask the publishers to activate this for you.

Your article cannot be published until you have signed the appropriate license agreement. Within the next few days you will receive an email from Wiley’s Author Services system which will ask you to log in and will present you with the appropriate licence for completion.

With best wishes,

Yours sincerely,

Paul Griffiths
Editor

P.S – You can help ensure your research is seen by featuring your article with a Cover Image. This is an optional service you can use to help increase exposure and showcase your research. If your image is accepted, the cost for front cover placement is $1480. For more information, including artwork guidelines and submission details, please visit our Journal Cover Image page.

P.P.S. You can help your research get the attention it deserves! Check out Wiley's Promotion Guide for best-practice recommendations for promoting your work at www.wileyauthors.com/maximize.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: BARDA & coronavirus
Date: Friday, January 31, 2020 3:21:05 AM

Hi [redacted]

At present we believe our site visit will still go ahead, we have not been advised differently by BARDA.

I also imagine there will be some discussion on the impacts of the coronavirus within our main BARDA call.

I will of course let you know if I receive any significant updates from [redacted] in the meantime.

[redacted]

[redacted]

On 29 Jan 2020, at 22:06, [redacted] wrote:

Does this mean our April visit will be cancelled too?
[redacted]

Van: "[redacted]
Datum: woensdag 29 januari 2020 om 20:22
Aan: [redacted]
CC: [redacted]
Onderwerp: BARDA & coronavirus

Dear all,

I got a call from [redacted] this afternoon relating to the coronavirus and potential impacts upon our project. Some points from the call as follows (some more pertinent

to [redacted] but included for reference):

1. BARDA staff are being switched to coronavirus related matters as a priority.

2. Therefore if we have any urgent matters for BARDA we need to get them over ASAP. If you have any please let myself and [redacted] know.

3. This may further delay the [redacted] study data. In particular leadership are unlikely to be able to really review into the [redacted] study. A likely outcome is that BARDA give us their take and then we further peer review the data in our own time, but perhaps not before the site meeting. In short [redacted] study remains a somewhat unknown quantity at present.

4. [redacted] asked that if we have any knowledge, involvement or anything related to coronavirus, could we share it in the spirit of collaboration. I believe BARDA are reaching out to all their scientific partners in this manner. [redacted] do not have anything, but <u>if you could confirm for your labs that would be helpful thanks.</u>

5. [redacted] has been assigned to coronavirus analytics, there is a very small chance BARDA may ask for some help with these analytics - to what extent and in what capacity remains unknown at present.

6. In general, all BARDA staff will be less available than usual. I have indicated to [redacted] that of there is anything project related he wishes to push towards us we will be happy to help lighten their workload wherever possible.

7. I also updated [redacted] again that we are actively pursuing the budget and timelines for CVV production, with intention to get proposal to BARDA at earliest possible opportunity.

Many thanks

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: BARDA & coronavirus
Date: Wednesday, January 29, 2020 1:48:00 PM

Dear [redacted],

Here is what my labs in [redacted] are going to do on 2019-nCoV:

1. Examine the pathogenesis of 2019-nCoV in different animals including [redacted]

2. Establish a point-of-care rapid diagnostic kit; there are 26 companies in [redacted] who make these kits for influenza. I collaborated with one of them on an H7 detection kit and will do the same for this virus

3. Develop an [redacted] vaccine with a [redacted] company

4. Study host responses in patients infected with 2019-nCoV

[redacted]

From: [redacted]>
Sent: Thursday, January 30, 2020 4:22 AM
To: [redacted]
Subject: BARDA & coronavirus

Dear all,

I got a call from [redacted] this afternoon relating to the coronavirus and potential impacts upon our project. Some points from the call as follows (some more pertinent to [redacted] but included for reference):

1. BARDA staff are being switched to coronavirus related matters as a priority.

2. Therefore if we have any urgent matters for BARDA we need to get them over ASAP. If you have any please let myself and [redacted] know.

3. This may further delay the [redacted] study data. In particular leadership are unlikely to be able to really review into the HPB study. A likely outcome is that BARDA give us their take and then we further peer review the data in our own time, but perhaps not before the site meeting. In short [redacted] study remains a somewhat unknown quantity at present.

4. [redacted] asked that if we have any knowledge, involvement or anything related to coronavirus, could we share it in the spirit of collaboration. I believe BARDA are reaching out to all their scientific partners in this manner. [redacted] do not have anything, but <u>if you could confirm for your labs that would be helpful thanks.</u>

5. [redacted] has been assigned to coronavirus analytics, there is a very small chance BARDA may ask for some help with these analytics - to what extent and in what capacity remains unknown at present.

6. In general, all BARDA staff will be less available than usual. I have indicated to [redacted] that of there is anything project related he wishes to push towards us we will be happy to help lighten their workload wherever possible.

7. I also updated [redacted] again that we are actively pursuing the budget and timelines for CVV production, with intention to get proposal to BARDA at earliest possible opportunity.

Many thanks

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: FYI: Reviews in Medical Virology - Decision on Manuscript ID RMV-2019-070 [email ref: DL-SW-2-a]
Date: Monday, January 20, 2020 11:24:51 AM
Attachments: [redacted]-tracked.docx

Dear colleagues,

It is a pleasure to inform you that we finally received a message from the editor of Reviews in Medical Virology. We will revise the manuscript accordingly and forward it to you. Thank you very much for your patience.

Sincerely,
[redacted]

-----Original Message-----
From: Paul Griffiths <onbehalfof@manuscriptcentral.com>
Sent: Sunday, January 19, 2020 7:15 PM
To: [redacted]
Subject: Reviews in Medical Virology - Decision on Manuscript ID RMV-2019-070 [email ref: DL-SW-2-a]

19-Jan-2020

Dear [redacted]

Re RMV-2019-070: "Pandemic potential of highly pathogenic avian influenza clade 2.3.4.4 A(H5) viruses"

Thank for your review article, which I would like to publish once the following points, plus those of the peer reviewer (at the foot of this letter), have been addressed:

1. Minor grammatical changes have been made directly on the manuscript. Their aim is to improve understanding for the non-specialist reader. Please ensure that no scientific errors have been introduced.

2. A list of abbreviations is needed.

I hope you can make all these changes without too much difficulty, and look forward to receiving the modified version.

There are two ways to submit your revised manuscript. You may use the link below to submit your revision online with no need to enter log in details:

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

[redacted]

Alternatively log into [redacted] and enter your Author Center. You can use the revision link or you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision. Please DO NOT upload your revised manuscripts as a new submission.

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes

to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, please provide a point by point listing of the comments made by each reviewer, showing how you have responded by changing the manuscript or have rejected the comments if you think they are inappropriate. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

If you would like help with English language editing, or other article preparation support, Wiley Editing Services offers expert help with English Language Editing, as well as translation, manuscript formatting, and figure formatting at www.wileyauthors.com/eeo/preparation. You can also check out our resources for Preparing Your Article for general guidance about writing and preparing your manuscript at www.wileyauthors.com/eeo/prepresources.

Because we are trying to facilitate timely publication of manuscripts submitted to Reviews in Medical Virology, your revised manuscript should be uploaded as soon as possible. If it is not possible for you to submit your revision in a reasonable amount of time, we may have to consider your paper as a new submission. If you feel that you will be unable to submit your revision within the time allowed please contact me to discuss the possibility of extending the revision time.

Yours sincerely

Paul Griffiths
Editor

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
[redacted]

Major Comments:
1) [redacted]

Minor Comments:
1) [redacted].
2) [redacted]

3) [redacted]

4) [redacted]

5) [redacted]”

6) [redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: underdog revision submitted at the deadline
Date: Friday, January 17, 2020 6:09:41 PM
Attachments: image001.png
PPATHOGENS-D-19-01711_R1 1-17-20.pdf

Happy New Year. Thank you for your help throughout this, at times, painful process.
Attached is the final version. Fingers crossed.
Best,

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: CVV generation
Date: Thursday, January 16, 2020 11:07:00 PM

Dear [redacted],

I am writing to see if you could help us with a project.

[redacted] are working under BARDA support to establish new vaccination strategies. In this project, we will need to make H5 vaccine strains under GMP conditions. Would it be possible to make them in your facility? Would you be able to test their pathogenicity in ferrets? I understand that ferret testing of candidate vaccines is required under WHO guidelines.

Best,

[redacted]

[redacted]

From: [redacted]
To: [redacted]
Subject: RE: First draft project [redacted]
Date: Wednesday, January 15, 2020 5:38:36 AM

Dear All,

As [redacted] stated, [redacted] accomplishments are described in 'our' RP on host factors.
[redacted], you could just refer to our RP.
[redacted] should consolidate this for investigators who are on several projects.

Thanks,

[redacted]

From: [redacted]
Sent: Wednesday, January 15, 2020 5:34 AM
To: [redacted]
Cc: [redacted]
Subject: Re: First draft project [redacted]

Good morning everybody,

As I see a section on accomplishments on [redacted] proposal and also one in [redacted]. Since at least in my case it will list repetitive information, I wonder if [redacted] would like to consolidate those into a single section somewhere else in the proposal. I think it should be a section at the beginning of the main proposal.

From [redacted] proposal, the list of accomplishments from my lab "As part of the current CRIP contract, the [redacted] lab (co)authored (with investigators within and outside the CEIRS network) >50 peer-reviewed publications, 41 funded by CEIRS and helped consolidate avian and swine influenza surveillance groups in Argentina and Guatemala (28131371; 28325625; 30482896; 28405632; 27860313, 31236242. The [redacted] lab (i) has made significant contributions to the understanding of molecular signatures that modulate receptor recognition and antigenicity of H9 and swine-origin H3 influenza viruses (30567980; 30405591; 25986634; 27384658; 30355680); (ii) developed an innovative transfection-based inoculation method to study reassortment of H9 viruses in ferrets (24131710) and showed the potential of in vivo reverse genetics as an alternative vaccine approach (24942589); (iii) was the first to show the airborne potential of H7 influenza viruses in the ferret model prior to the emergence of the zoonotic H7N9 viruses in Asia (24696487); (iv) demonstrated the ability of the influenza A viral polymerase complex to interact with RIG I from many different species (24942585); and (v) has developed novel, potentially, universal vaccine approaches for influenza A and B viruses and was the first lab to demonstrate the potential of genome rearrangement as a vaccine approach and as a tool to evaluate antivirals (28381580; 30135124; 24833536).

[redacted]

On Jan 15, 2020, at 2:46 AM, [redacted] wrote:

OK, [redacted]
[redacted]

From: [redacted]
Sent: Wednesday, January 15, 2020 4:28 PM
To: [redacted]
Cc: [redacted]
Subject: Re: First draft project [redacted]

Hi [redacted]
Yes it was received and your comments and those of [redacted] have been implemented (attached). I don't think there is space for additional display items, as we already reach the limit but I will see again when we are done.
Please remember that I still expect from you and [redacted] a few sentences on your most important previous accomplishments in CRIP. 2 or 3 sentences should be enough in section C.
Thanks
[redacted]

PS [redacted] you indicated that the structuring of objectives/aims should be different, but this is what we did 7 years ago, and how [redacted] instructed me to do it again…..

Van: [redacted]>
Datum: woensdag 15 januari 2020 om 03:03
Aan: [redacted] nl>

CC: [redacted]

Onderwerp: Re: First draft project [redacted]

Could you guys let me know if you saw the e-mail below? (I have removed the attachments here, just in case it was a cause for trouble).
Bests!
[redacted]

[redacted]

> On Jan 13, 2020, at 4:39 PM, [redacted] wrote:
>
> Hi All,
>
> Minor changes, mostly addressing [redacted] comments. Please also find attached a slide that shows preliminary results of our [redacted] system. I think it could complement very well what you are doing. In the slide, you find a virus that is transmissible in ferrets, we are generating data on a non transmissible but it will take some time.
>
> [redacted] Proposal V1yk_gn_dp.docx>
> <20191031[redacted]igures-1.pptx>

From: [redacted]
To: [redacted]
Cc: [redacted] Ewen
Subject: Re: Priority order for [redacted] viruses
Date: Tuesday, January 14, 2020 9:46:01 AM

Thanks [redacted] for your quick reply.

When [redacted] did not reply, I went back and realized I'd mistakenly not sent the email to her. She can do Friday also. So let's make it 5am US / 11am UK / 12 NL / 20:00 Japan please, this Friday. We'll send a webex.

[redacted] also replied: "And we have indeed infected ferrets last week with [redacted] and [redacted]

[redacted]

On Mon, Jan 13, 2020 at 8:07 PM [redacted] > wrote:

> I have another meeting Thursday at 2. The Friday timeslot is OK.
> [redacted]
>
> ---
>
> **Van:** [redacted]
> **Datum:** maandag 13 januari 2020 om 20:47
> **Aan:** [redacted]
> **CC:** [redacted]
> **Onderwerp:** RE: Priority order for [redacted] viruses
>
> Dear All,
>
> With [redacted] on Thu/Fri, we could talk as follows:
>
> - Thu: 6:30 US / 12:30 UK / 13:30 NL / 21:30 Japan
> - Fri: Between 5:00-7:00 US / 11:00-13:00 UK / 12:00-14:00 NL / 20:00-22:00 Japan
>
> Best,

[redacted]

From: [redacted]>
Sent: Tuesday, January 14, 2020 2:39 AM
To: [redacted]
Cc: [redacted]
Subject: Re: Priority order for [redacted] viruses

If you could also give what times are possible on Thursday this week too please, that would be good, in case we are ready by then, as [redacted] is on vacation on Friday.

Similarly [redacted], what times can work for you on Thursday and Friday this week?

I expect we might need 45 to 60 minutes for the call.

[redacted]

On Mon, Jan 13, 2020 at 5:36 PM [redacted] wrote:

> [redacted]
>
> cc [redacted]
>
> [redacted] and I talked on Friday re coming up with a priority order for testing their H5 viruses with an [redacted] neuraminidase.

[redacted]i is pulling together the data they have for the N8 parents. [redacted] are doing some antigenic map checking and marking strains in the [redacted]

We expect to be ready by Thursday or Friday for a call to discuss. Would you be available to join a call on Friday, and if so what times?

Also, do I remember correctly that you were going to try infecting ferrets with [redacted] to see if it is immunogenicity enhanced in your hands?

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: First draft project [redacted]
Date: Monday, January 13, 2020 3:04:00 PM
Attachments: [redacted] Proposal V1yk_gn.docx

Dear All,

Attached please find a few minor edits/comments (added to the document [redacted] sent earlier).
If I understand [redacted] correctly, we don't need a reference list.
Throughout, there are sections that could be condensed (I pointed out a few, but there are others).

Overall, it reads very well!

Thanks,

[redacted]

From: [redacted]
Sent: Monday, January 13, 2020 10:12 AM
To: [redacted]
Cc: [redacted]
Subject: RE: First draft project [redacted]

[redacted]

Thank you for putting this together.
Please see attached my comments; they are all minor.
To make it short, we could reduce the size of some of the figures.

Best,
[redacted]

From: [redacted]>
Sent: Monday, January 13, 2020 9:44 PM

To: [redacted]

Cc: [redacted]

Subject: First draft project [redacted]

Hi [redacted],

Thank you very much for your input so far. We have pulled things together in a first draft proposal, attached. I hope we treated your pieces of text satisfactory. Please do not hesitate to correct us if we did not. This is a good time to go through the proposal and make corrections (with track changes). Although we will also continue to make improvements, time is short so we have to work in parallel. As a minimum, please check if we inserted your aims (section A) and proposed work (section D) correctly. In addition, we now need your input in sections C and E. [redacted] needs to check if we filled out schedule F correctly, and [redacted] needs to provide this info as well.

Please note that we are now at 12 pages, 2 pages over the limit that [redacted] gave us. So feel free to go through the text and make suggestions to shorten it. And whatever you add: be brief!

Apologies if we forgot to insert information that was important to you. If you feel strongly about it, now is the time to add it back!

Please provide us with feedback in the next few days. Any suggestions are welcome…

Cheers

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: An extra couple of topics for our monthly call on Thursday
Date: Monday, January 13, 2020 11:02:53 AM

---

yes a shame

[redacted]

On Mon, Jan 13, 2020 at 4:09 PM [redacted] > wrote:

> Thanks, [redacted]
>
> [redacted]
>
> ---
>
> **From:** [redacted]
> **Sent:** Tuesday, January 14, 2020 1:08 AM
> **To:** [redacted]
> **Cc:** [redacted]
> **Subject:** Re: An extra couple of topics for our monthly call on Thursday
>
> Ah, yes. Still a shame. Lobbying work for you (or [redacted] to be done….
> [redacted]
>
> ---
>
> **Van:** [redacted]
> **Datum:** maandag 13 januari 2020 om 17:02
> **Aan:** [redacted]
> **CC:** [redacted]
> **Onderwerp:** RE: An extra couple of topics for our monthly call on Thursday
>
> [redacted]

My understand is that we can continue to use the high yield PR8 backbone for preclinical work. For the CVV generation that has to be done under GMP/GLP conditions, [redacted] have to use “their” PR8 backbones, which I think are not identical.

Best,

[redacted]

From: [redacted]
Sent: Tuesday, January 14, 2020 12:23 AM
To: [redacted]>
Cc: [redacted]
Subject: Re: An extra couple of topics for our monthly call on Thursday

Ugh. We need to remake the CVVs with another PR8 backbone? Which one?
[redacted]

Van: [redacted]
Datum: maandag 13 januari 2020 om 15:52
Aan: [redacted]
CC: [redacted]
Onderwerp: RE: An extra couple of topics for our monthly call on Thursday

Hi,

Following our discussion on the monthly teleconference on Jan 9, 2020 and follow-up discussion with leadership.

> 1. Whether we should, as per our previous discussions, go ahead with an [redacted] neuraminidase. You had

> previously concurred with us that this would be valuable primarily because of all recent zoonoses

> being [redacted] and because no clinical study with [redacted] has yet been performed to our knowledge. Your risk

> assessment we think had determined [redacted] A decision on this soon will allow us to

> work up our [redacted] viruses with [redacted] for use in ferret challenge pre-clinical work,

> stability testing, and CVV generation.

An [redacted] acceptable within the context of this contract as previously discussed (Aug 14, 2019 email) and from a programmatic perspective. We will rely on your expertise on whether to pursue the [redacted] work given the risk.

From our understanding [redacted] will be exactly the same for all CVV – what is the status/timeline for [redacted] and [redacted] viruses with [redacted]

Remember to submit a contracting officer authorization request for the CVV generation work given the remaining time and budget on the contract. Please prioritize the CVV. Note, the [redacted] work reference here will not bridge over to the heterologous prime boost study [redacted]

> 2. Discussion on CVV generation. In particular:

- whether you would also like ferret safety testing done on the CVVs: Yes
- whether we should subcontract for an egg or cell based CVV: Egg

- whether we should be doing our genetic stability testing via passage in eggs or cells: Refer to the guidance
- whether we can use the high-yield PR8 backbone developed in [redacted] NO
- is using a recombinant HA vaccine still on the table? Yes, but at this point it is a difficult implementation path

Let us know if you have any further questions.

Regards,

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

https://www.medicalcountermeasures.gov/

From: [redacted]
Sent: Tuesday, January 7, 2020 10:18 AM
To: [redacted]
Cc: [redacted]
Subject: Re: An extra couple of topics for our monthly call on Thursday

Thanks [redacted]

[redacted]

On Tue, Jan 7, 2020 at 2:38 PM [redacted] wrote:

> Hi,
>
> Ok. We should leave the last 10-15 minutes for this discussion.
>
> Wendell: please join us in [redacted] at 9:45am DC time Thursday, Jan 9, 2020.
>
> Regards,
>
> [redacted]
>
> [redacted]
>
> [redacted]
>
> [redacted]
>
> Email: [redacted]
>
> [redacted]
>
> **From:** [redacted]
> **Sent:** Monday, January 6, 2020 4:47 PM
> **To:** [redacted]
> **Cc:** [redacted]

Subject: An extra couple of topics for our monthly call on Thursday

Dear [redacted]

In addition to our normal reporting during our monthly call with you this Thursday. We would find it useful to have a discussion on the following please.

1. Whether we should, as per our previous discussions, go ahead with an [redacted] neuraminidase. You had previously concurred with us that this would be valuable primarily because of all recent zoonoses being [redacted] and because no clinical study with [redacted] has yet been performed to our knowledge. Your risk assessment we think had determined [redacted] A decision on this soon will allow us to work up our [redacted] viruses with [redacted] for use in ferret challenge pre-clinical work, stability testing, and CVV generation.

2. Discussion on CVV generation. In particular:
   - whether you would also like ferret safety testing done on the CVVs
   - whether we should subcontract for an egg or cell based CVV
   - whether we should be doing our genetic stability testing via passage in eggs or cells
   - whether we can use the high-yield PR8 backbone developed in [redacted]
   - is using a recombinant HA vaccine still on the table?

Best regards
[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
[redacted] First draft project Fouchier
Date: Monday, January 13, 2020 10:10:00 AM
Attachments: [redacted] Proposal V1yk.docx

[redacted]

Thank you for putting this together.
Please see attached my comments; they are all minor.
To make it short, we could reduce the size of some of the figures.

Best,
[redacted]

From: [redacted]
Sent: Monday, January 13, 2020 9:44 PM
To: [redacted]
[redacted]>
Cc: [redacted]
[redacted]
[redacted]
Subject: First draft project [redacted]

Hi [redacted]
Thank you very much for your input so far. We have pulled things together in a first draft proposal, attached. I hope we treated your pieces of text satisfactory. Please do not hesitate to correct us if we did not. This is a good time to go through the proposal and make corrections (with track changes). Although we will also continue to make improvements, time is short so we have to work in parallel. As a minimum, please check if we inserted your aims (section A) and proposed work (section D) correctly. In addition, we now need your input in sections C and E. [redacted] needs to check if we filled out schedule F correctly, and [redacted] needs to provide this info as well.
Please note that we are now at 12 pages, 2 pages over the limit that [redacted] gave us. So feel free to go through the text and make suggestions to shorten it. And whatever you add: be brief!
Apologies if we forgot to insert information that was important to you. If you feel strongly about it, now is the time to add it back!
Please provide us with feedback in the next few days. Any suggestions are welcome…
Cheers
[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: Re: November monthly reports
Date: Tuesday, January 7, 2020 3:44:48 PM

CEIRS Concept: Biology of Human Influenza in Respiratory Droplets
November 2019:

- We responded to questions from the [redacted] IRB and await approval and confirmation that work can be done before proceeding with finalizing remaining work plans.
- [redacted] probing antigen arrays

[redacted]

On Tue, Jan 7, 2020 at 9:35 AM [redacted] du> wrote:

> Dear all,
>
> Please send your November monthly reports.
>
> thank you,
> [redacted]
> ---
> [redacted]
>
> [redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: RE: CRIP Project Molecular determinants of viral emergence, virulence, evolution and transmission
Date: Tuesday, January 7, 2020 6:01:48 AM

Dear [redacted] team,

Thanks a lot for the draft. We will integrate our research into your proposal.
We will have it ready by the end of Jan 12th.

All the best,

[redacted]

From: [redacted]
Sent: Tuesday, January 7, 2020 5:40 AM
To: [redacted]
Cc: [redacted]
Subject: CRIP Project Molecular determinants of viral emergence, virulence, evolution and transmission

Dear [redacted]

Sorry for the delay in communication during my holidays.

Based on your inputs so far, and internal discussions, we have come to a proposal for a set of Objectives and Specific aims for our part of the research proposal, as indicated below and in the attached doc. [redacted] Please all have a quick look and let me know if you prefer alterations.

[redacted] wants us to stick to the old format of the research proposal (attached, with new section A, and sections B-G in gray text from the previous proposal). Now that we have a draft of section A (Objectives and aims) (0.5 page) I suggest we move on with section D (Preliminary results, approach, and methods, organized per Objective and Aim), asking for your detailed input by Sunday night, January 12. That would allow us all to look at each other's aims, propose collaborations/interactions where it fits and collectively write the other sections B (Background and Significance, 1.5 page), C (Summary from previous accomplishments in CRIP, <0.5 page), E (Interactions with other projects, <0.5 page), F (Schedule, <0.5 page) and G (References, 1 page). In section D, we have roughly 5.5 to 6 pages. This means we only have 1.5 pages per Objective, or 2-3 aims per page. We thus need to be VERY brief about preliminary data, approach and methods, including potential nice display (prelim data) items. Let me know if you have problems with this proposal and the timelines. Of course, feel free to start providing input for sections B, C, E, F, G as well if that is easier for you. But it would be

nice to have the aims worked out in a week, to than have another week for finalization. Agreed?

Kind regards,
[redacted]

Proposed new section A (also already edited in the attached doc):
Project 4: [redacted]

A. Objectives (Specific Aims)

[redacted]

From: [redacted]
To: [redacted]
Cc: [redacted]

Subject: Re: H5 CVVs
Date: Monday, January 6, 2020 6:55:12 AM

Forgot to also ask how it would be for you to use a PR8 background supplied by [redacted] lab, their high-yield one.

I'm also copying [redacted], I had meant to do that initially. (All, my original email to [redacted] is below)

[redacted]

On Mon, Jan 6, 2020 at 12:44 PM [redacted] wrote:

> Hi [redacted]
>
> Many thanks again for our discussion last month re H5 CVVs, it was very helpful.
>
> As we'll likely want two or three made, and given the time constraints from BARDAs end and that you explained, we are looking to have them made in two or three different labs.
>
> Would you be interested to make one or two of them for the project we have with BARDA? If so, would you prove a budged and approx time scale please. I'm copying [redacted], who are our admin folk here so they are in the loop.
>
> With best wishes
> [redacted]