



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Freedom of Information Office
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Bethesda, Maryland 20892-2107
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July 15, 2022

Aaron Siri, Esq.
Siri & Glimstad LLP
200 Park Avenue
Seventeenth Floor
New York, NY 10166

Re: NIH FOIA Case No. 54107; *ICAN v. National Institutes of Health*, No. 20-cv-01277

Dear Mr. Siri:

This is a partial response to Freedom of Information Act (FOIA) requests that are the subject of the Complaint filed in *ICAN v. National Institutes of Health*, No. 20-cv-01277. Your FOIA request, dated April 29, 2020, was received by the National Institutes of Health (NIH) on the same day.

You requested the following for the timeframe of November 1, 2019 through the date of the search for:

All emails sent or received by Barney Graham that include the term SARS-CoV, COVID, COVID-19 or coronavirus in any portion of the email, including the body, subject, metadata, sender line, or recipient line of the email, or any attachment to the email.

NIH has processed 303 pages responsive to your request 54107. Attached to this letter are 286 pages; NIH has sent the remaining 17 pages to the Centers for Disease Control and the Army for further review. NIH will provide a further response regarding the consulted material once the consultations are complete.

I have determined to withhold portions of the enclosed pages under FOIA exemptions (b)(3)(A), (b)(4), (b)(5) and (b)(6). The information being withheld is protected from release pursuant to Exemptions 3(A), 4, 5, and 6 of the FOIA, 5 U.S.C. § 552 (b)(3)(A), (b)(4), (b)(5) and (b)(6); and sections 5.31 (c), (d), (e) and (f) of the HHS FOIA Regulations, 45 CFR Part 5. Exemption 3 incorporates nondisclosure provisions that are contained in other federal statutes. In this case, Exemption 3 incorporates 42 USC 262a(h) which prohibits federal agencies from disclosing

certain information regarding select agents and toxins. Exemption 4 protects from disclosure trade secrets and commercial or financial information that is privileged and confidential. Exemption 5 permits the withholding of internal government records which are pre-decisional and contain staff advice, opinion, and recommendations, as well as documents solicited and received by the President or his immediate White House advisers who have broad and significant responsibility for investigating and formulating the advice to be given to the President. Exemption 6 permits the withholding of privacy information, the release of which would constitute a clearly unwarranted invasion of personal privacy.

If you have any questions about this response, please contact AUSA Morrison, of the Department of Justice, at Kristina.Morrison@usdoj.gov.

Sincerely,

for Gorka Garcia-Malene
Freedom of Information Officer, NIH

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 5 Apr 2020 21:14:43 +0000
To: Berzofsky, Jay (NIH/NCI) [E]
Cc: Sui, Yongjun (NIH/NCI) [E]; Olkhanud, Purevdorj (NIH/NCI) [E]; Lagenaur, Laurel (NIH/NCI) [G]; Stein, Judy (NIH/VRC) [C]; Corbett, Kizzmekia (NIH/VRC) [E]; Andrews, Charla (NIH/NIAID) [C]; Alvarado, Gabriela (NIH/VRC) [C]; Bok, Karin (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: Re: COVID-19 study

Hi Jay,

It is possible to construct a [REDACTED] (b) (5). We have done both.

We can share the [REDACTED] (b) (5) I've copied Judy Stein to guide us on best mechanism.

[REDACTED] (b) (5), (b) (6)

Take care,

Barney

Sent from my iPhone

On Apr 2, 2020, at 5:28 PM, Berzofsky, Jay (NIH/NCI) [E] [REDACTED] (b) (6) wrote:

Dear Barney,

I hope you and your family are all well and safe in this pandemic.

I have two questions about possible collaborative help if you can please help us.

1.

2.

[REDACTED] (b) (5)

Also, from a personal point of view, some of us in our lab were wondering about (b) (6)

(b) (6) However, we were just reading about (b) (5), (b) (6)

(b) (5), (b) (6)

(b) (5), (b) (6) Do you have any data on (b) (5), (b) (6)

(b) (5), (b) (6)

Also, do the (b) (6)

Good luck on the vaccine trial. We are all counting on it.

Thanks so much and warmest regards, and please stay safe,

Jay

Jay A. Berzofsky, M.D., Ph.D.

Chief, Vaccine Branch, Center for Cancer Research, National Cancer Institute,

Bldg. 41--Rm D702D (MSC-5062), [41 Medlars Dr., NIH, Bethesda, Maryland 20892-5062](#) USA

Tel: (b) (6) Fax: 240-541-4452 NOTE THE NEW NUMBERS.

E-mail: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 1 Feb 2020 19:47:22 +0000
To: Royal, Thomas (NIH/NIAID) [E]
Cc: Lawrence, Valerie (NIH/VRC) [E]
Subject: RE: CV Needed
Attachments: graham-vrc-cv 2020.docx

CV attached.

BG

From: Royal, Thomas (NIH/NIAID) [E] (b) (6) >
Sent: Tuesday, January 28, 2020 1:04 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E]
(b) (6) >
Cc: Lawrence, Valerie (NIH/VRC) [E] (b) (6) >
Subject: CV Needed

Good afternoon,

Could you please send me a copy of your most recent CV? Thank you

Thomas E. Royal Jr.
Deputy Chief, VAMB, VRC, NIAID
40 Convent Drive, Bethesda, MD 20892
Phone: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 19 Mar 2020 08:13:20 +0000
To: McDermott, Adrian (NIH/VRC) [E]
Subject: Re: COVID Ab assays

Yes. Let's discuss big picture and how VIP gets involved more.

BG

Sent from my iPhone

On Mar 18, 2020, at 11:26 PM, McDermott, Adrian (NIH/VRC) [E]

(b) (6) wrote:

Barney,
Maybe we can chat about the big picture tomorrow? Not sure I am seeing the players or motivations here.
Thanks so much
Adrian

Sent from my iPhone

On Mar 18, 2020, at 6:29 PM, Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:

OK, good to know. I think the agreements for shipping plasmids have already been started.

Barney

From: Georgia Tomaras, Ph.D. (b) (6)
Sent: Wednesday, March 18, 2020 6:28 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6); McDermott, Adrian (NIH/VRC) [E] (b) (6)>
Cc: Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>
Subject: Re: COVID Ab assays

Hi Barney
We are working together. Everything is just moving fast and we are all trying to pivot quickly to support the needs.

Georgia

From: Graham, Barney (NIH/VRC) [E] (b) (6)

Sent: Wednesday, March 18, 2020 6:20 PM

To: Georgia Tomaras, Ph.D.; Mascola, John (NIH/VRC) [E]; McDermott, Adrian (NIH/VRC) [E]

Cc: Corbett, Kizzmekia (NIH/VRC) [E]

Subject: RE: COVID Ab assays

Hi Georgia,

David Montefiori just asked us today about setting up the pseudovirus assays. Are you all still working together or is it separate programs now?

BG

From: Georgia Tomaras, Ph.D. (b) (6) >

Sent: Wednesday, March 18, 2020 5:16 PM

To: Mascola, John (NIH/VRC) [E] (b) (6) Graham, Barney (NIH/VRC) [E]
(b) (6); McDermott, Adrian (NIH/VRC) [E] (b) (6) >

Cc: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >

Subject: Re: COVID Ab assays

John

Yes thanks. Adrian, I will text you to find a time to connect.

Georgia

From: "Mascola, John (NIH/VRC)" (b) (6)

Date: Wednesday, March 18, 2020 at 5:11 PM

To: Georgia Tomaras (b) (6), "Graham, Barney (NIH/VRC)"
(b) (6) >, (b) (6) " < (b) (6) >

Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >

Subject: RE: COVID Ab assays

Hi Georgia,

Great to hear. I'm adding Adrian McDermott who is leading efforts on this end (other than our rudimentary ELISA. . :)

Would you start with discussion with Adrian and then we can all touch base.

Thanks,

John

From: Georgia Tomaras, Ph.D. (b) (6) >

Sent: Wednesday, March 18, 2020 4:46 PM

To: Mascola, John (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E]
(b) (6)

Subject: COVID Ab assays

John and Barney

We have a (b) (4) to work on COVID Ab assays for binding, avidity and function.

Can we touch base to coordinate efforts?

Thanks!

Georgia

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 11 Apr 2020 17:35:25 +0000
To: Pierre GSELL
Subject: Accepted: Webex meeting invitation: [COVID-19] 8th TC Animal Models Expert Group

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 5 Feb 2020 14:50:32 +0000
To: Stein, Judy (NIH/VRC) [C]
Cc: Corbett, Kizzmekia (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Young, Monique (NIH/VRC) [E]
Subject: Re: E-introduction to nCoV (b) (4)

It's on Monique's desk. I will send after lab meeting

BG

Sent from my iPhone

On Feb 5, 2020, at 9:07 AM, Stein, Judy (NIH/VRC) [C] (b) (6) wrote:

Red ink is fine. If you could send this it would be great.

Thanks,

Judy

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Wednesday, February 5, 2020 8:41 AM
To: Stein, Judy (NIH/VRC) [C] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6)
Cc: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Young, Monique (NIH/VRC) [E] (b) (6)>
Subject: RE: E-introduction to nCoV (b) (4)

I signed in red ink, might want to send another copy.

BG

From: Stein, Judy (NIH/VRC) [C] (b) (6)
Sent: Wednesday, February 5, 2020 8:18 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6)>
Cc: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Young, Monique (NIH/VRC) [E] (b) (6)>
<(b) (6)>
Subject: RE: E-introduction to nCoV (b) (4)

Hi everyone,

I confirmed with Amy this morning that we should have CDAs in place with everybody who receives the (b) (4).

Barney – Amy needs your inventor sheet – I think she sent this but I can resend and if you could fill in a sentence about inventive contribution and sign, it would be great.

Thanks

Judy

From: (b) (6) <(b) (6)>
Sent: Wednesday, February 5, 2020 1:43 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); J. Christopher Love (b) (6)>; Kerry Love (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)>; Stein, Judy (NIH/VRC) [C] (b) (6); Gall, Jason (NIH/VRC) [C] (b) (6)>; Peter Dull (b) (6); David Vaughn (b) (6)>
Cc: Peyton Wall <(b) (6)>; Young, Monique (NIH/VRC) [E] (b) (6)>; Lynda, Stuart (b) (6)>
Subject: RE: E-introduction to nCoV (b) (4)

Hi All,

I am following up on Lynda's email to schedule this urgent call. Would the you all be available at any of the following times?

Wednesday, Feb 5th
12:00-3:00 pm PT

Thursday, Feb 6th
9:00 am – 3:00 pm PT

Friday, Feb 7th
9:00 am – 3:00 pm PT

Please let me know as soon as possible and I will go ahead and send out a calendar invite with dial-in details.

Best,
(b) (6)

(b) (6)
Program Assistant

Global Health

Discovery & Translational Sciences

M (b) (6)

E (b) (6)

Bill & Melinda Gates Foundation
PO Box 23350
Seattle, WA, 98102
www.gatesfoundation.org

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)
Date: February 4, 2020 at 5:27:05 PM PST
To: "J. Christopher Love" (b) (6) >
Cc: Lynda Stuart (b) (6) >, Harry Kleanthous
< (b) (6) >, David Vaughn (b) (6), Peter
Dull (b) (6) >, Holger Kanzler (b) (6),
(b) (6) "Morabito, Kaitlyn (NIH/VRC) [E]"
(b) (6) >, "Corbett, Kizzmekia (NIH/VRC) [E]" < (b) (6) >, "Bok,
Karin (NIH/VRC) [E]" < (b) (6) >, "Stein, Judy (NIH/VRC) [C]" (b) (6) >, "Gall,
Jason (NIH/VRC) [C]" (b) (6) >, "Mascola, John (NIH/VRC) [E]" (b) (6)
"Young, Monique (NIH/VRC) [E]" (b) (6) >
Subject: Re: E-introduction to nCoV (b) (4)

I've copied Monique Young here and she can help find a time for a call.

Barney

Sent from my iPhone

On Feb 4, 2020, at 8:04 PM, J. Christopher Love < (b) (6) > wrote:

Hi Barney,

Thanks for your thoughtful response. And please do say hello to Mario—it has been a while since we have had a chance to cross paths. We are still doing work in the single-cell area with Alex Shalek, in addition to our recent work on (b) (4).

I read through the PNAS paper Lynda sent, and it is a fantastic study. Certainly these structures are complex as you point out. They will present interesting manufacturing challenge (b) (4).
(b) (4)

(b) (4)

A phone call as Lynda suggested sounds like a good next step.

Best,
Chris

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Tuesday, February 4, 2020 5:48 PM
To: J. Christopher Love (b) (6)>; Lynda, Stuart (b) (6)
Cc: Harry Kleanthous <(b) (6)>; David Vaughn
(b) (6)>; Peter Dull (b) (6)>; Holger Kanzler
(b) (6) Morabito, Kaitlyn (NIH/VRC) [E]
(b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Bok, Karin
(NIH/VRC) [E] (b) (6)>; Stein, Judy (NIH/VRC) [C] (b) (6)>; Gall, Jason
(NIH/VRC) [C] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: RE: E-introduction to nCoV (b) (4)

Hi Chris,

I've been following your work since I saw you present at a HIPC meeting several years ago. I'm the one who told Mario Roederer about your work.

(b) (4)

Glad to have further discussions if you are interested in pursuing this.

Best wishes,

Barney

From: J. Christopher Love (b) (6)
Sent: Tuesday, February 4, 2020 2:30 PM
To: Lynda, Stuart (b) (6)>; Graham, Barney (NIH/VRC) [E]
(b) (6)>
Cc: Harry Kleanthous (b) (6); David Vaughn
(b) (6)>; Peter Dull (b) (6)>; Holger Kanzler
(b) (6)
Subject: RE: E-introduction to nCoV (b) (4)

Lynda, thanks for the introduction.

Barney, it is great to meet you. Our general interests seem to have been orbiting in similar spaces in the past couple of years so really great to connect.

As Lynda says, (b) (4) (b) (4)



We have some ideas about where we could start pending a conversation.

Best,
Chris

From: Lynda Stuart <(b) (6)>
Sent: Tuesday, February 4, 2020 12:43 PM
To: J. Christopher Love (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)>
Cc: Harry Kleanthous (b) (6)>; David Vaughn

(b) (6)>; Peter Dull (b) (6); Holger Kanzler

(b) (6)>

Subject: E-introduction to nCoV (b) (4)

Dear Barney

I wanted to introduce you to Chris Love from MIT. Chris wears many hats including being the head of the AltHost Consortium – an academic private partnership on novel ways to make proteins faster and cheaper. He leads a group working on (b) (4)

(b) (4)

(b) (4). I have cleared much of my calendar for this week and will make myself available to join a call. I will ask (b) (6) cc'ed here, to help with arranging a time for you to connect ASAP.

Lynda

Chris - I am attaching Barney (b) (4)
(b) (4)

(b) (6) – please can we try to get some time ASAP. Please include myself as required and those on the cc line if possible.

Lynda

Lynda Stuart MD PhD

Deputy Director, Vaccines & Human Immunobiology
Global Health Discovery & Translational Sciences

V

(b) (6)

C

(b) (6);

E

(b) (6)

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[Twitter](#)

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[Impatient Optimists](#)

(b) (6)

Program Assistant
Discovery & Translational Sciences

Global Health

V
E

(b) (6)

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 12 Feb 2020 13:14:18 +0000
To: Mascola, John (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C]
Cc: Gall, Jason (NIH/VRC) [C]; Petrik, Amy (NIH/NIAID) [E]; Bok, Karin (NIH/VRC) [E]
Subject: RE: Wuhan coronavirus vaccine CDA between NIAID and (b) (4)

Agree. Thanks,

BG

From: Mascola, John (NIH/VRC) [E] <(b) (6)>
Sent: Wednesday, February 12, 2020 8:13 AM
To: Stein, Judy (NIH/VRC) [C] (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6)>; Gall, Jason (NIH/VRC) [C] (b) (6)>; Petrik, Amy (NIH/NIAID) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)>
Subject: Re: Wuhan coronavirus vaccine CDA between NIAID and (b) (4)

Please send sequence directly today. (b) (4) asked for this and they could have major public health impact on COVID.

thanks
John

Sent from my iPhone

On Feb 12, 2020, at 07:42, Stein, Judy (NIH/VRC) [C] (b) (6)> wrote:

Kizzy said that the details of the sequence are going to be public today in Biorx ahead of the publication in Science, so we are assuming that we no longer need a CDA. Is this acceptable to everybody?
Thanks,
Judy

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Tuesday, February 11, 2020 9:31 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)
Cc: Stein, Judy (NIH/VRC) [C] (b) (6)>; Gall, Jason (NIH/VRC) [C] (b) (6)>; Petrik, Amy (NIH/NIAID) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)
Subject: Re: Wuhan coronavirus vaccine CDA between NIAID and (b) (4)

That's also my interpretation. I was told that (b) (4)
(b) (4)

Barney

Sent from my iPhone

On Feb 12, 2020, at 2:57 AM, Mascola, John (NIH/VRC) [E] (b) (6) > wrote:

Judy, Barney, Karin,

Interpreting email for (b) (4) – its seems that the company here (b) (4) would seek funding from (b) (4) just needs our sequence.

Is that your interpretation?

If so, we can just send to them – I guess via the EU SLA mechanism.

From: Stein, Judy (NIH/VRC) [C] (b) (6) >
Sent: Tuesday, February 11, 2020 8:23 PM
To: (b) (4) <(b) (6)>; (b) (4)
(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)
(b) (4) (b) (6)>; Petrik, Amy (NIH/NIAID) [E] (b) (6) >
Cc: Mascola, John (NIH/VRC) [E] (b) (6); Gall, Jason (NIH/VRC) [C]
(b) (6); (b) (4) (b) (6) >
Subject: RE: Wuhan coronavirus vaccine CDA between NIAID and (b) (4)

Hi everyone,
I have attached the fully executed CDA for your records.
Thanks very much and please let me know if you have any questions.

Best regards,
Judy

Judy Stein, MBA, MSPH [C]
Strategic Planning and Development
Vaccine Research Center, NIAID, NIH
Tel: +1 (b) (6)

From: (b) (4) (b) (6)
Sent: Tuesday, February 11, 2020 2:26 PM
To: (b) (4) (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6); 'Peter Dull' (b) (6) Stein, Judy (NIH/VRC) [C]
(b) (6)
Cc: Mascola, John (NIH/VRC) [E] (b) (6) Gall, Jason (NIH/VRC) [C]
(b) (6); (b) (4) (b) (6)
Subject: RE: Wuhan coronavirus vaccine
Importance: High

Dear all,

We await your feedback on the CDA signed by us and the technical information required to elaborate a project proposal.

Best wishes,

(b) (4)

Von Samsung-Tablet gesendet

(b) (4)

Dear Barney,

Thank you very much for the insight on Wuhan coronavirus vaccine.

Dear (b) (4)

Thanks for extending your support.

Dear Both,

I would like to (b) (4)
(b) (4).

(b) (4)

Dear (b) (4)

Kindly evaluate the same and submit us a proposal for development of the same, including cost & timelines.

Regards,

(b) (4), (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 7 Apr 2020 19:58:07 +0000
To: Reilly, Deborah (NIH/VRC) [E]
Subject: Accepted: COVID-19 Daily Check-in

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 5 Mar 2020 01:26:37 +0000
To: Ledgerwood, Julie (NIH/NIAID) [E]
Cc: Mascola, John (NIH/VRC) [E]; Koup, Richard (NIH/VRC) [E]; Chen, Grace (NIH/NIAID) [E]; Widge, Alicia (NIH/NIAID) [E]; Gordon, Ingelise (NIH/VRC) [E]; Gaudinski, Martin (NIH/NIAID) [E]
Subject: Re: potential case for us

I would vote for (b) (5)

BG

Sent from my iPhone

On Mar 4, 2020, at 7:52 PM, Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) wrote:

(b) (5), (b) (6)

At this point —Options are (b) (5), (b) (6)
Julie

Julie Ledgerwood, DO
Deputy Director
Chief Medical Officer
Vaccine Research Center
NIAID, NIH

(b) (6)
(b) (6)

On Mar 4, 2020, at 7:50 PM, Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:

(b) (5), (b) (6)

Barney

Sent from my iPhone

On Mar 4, 2020, at 7:34 PM, Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) > wrote:

Hi Barney, John and Rick

An NIH collaborator was referred to us (b) (6) (b) (6) concerned about possible COVID-19. The story is outlined by Alicia below.

Tara Palmore reviewed and (b) (5), (b) (6)

(b) (5), (b) (6)

Want to get your thoughts?
Julie

(b) (5), (b) (6)

Julie Ledgerwood, DO
Deputy Director
Chief Medical Officer
Vaccine Research Center
NIAID, NIH

(b) (6)

(b) (6)

Begin forwarded message:

From: "Widge, Alicia (NIH/NIAID) [E]" <(b) (6)>

Date: March 4, 2020 at 6:05:35 PM EST

To: "Chen, Grace (NIH/NIAID) [E]" (b) (6)

Cc: "Ledgerwood, Julie (NIH/NIAID) [E]" (b) (6), "Gaudinski, Martin (NIH/NIAID) [E]" (b) (6), "Gordon, Ingelise (NIH/VRC) [E]"

(b) (6)>

Subject: Re: potential case for us

Hi Julie,

I just spoke with her. FYI I made it clear we need to figure things out in our end and it's not a done deal that we'll be able to test (b) (6). Here is the scoop:

-Symptoms started (b) (6) with low grade fever (tmax 99.7 today), dry cough, lungs feel like they are "burning", malaise, mild congestion but no rhinorrhea. No sore throat, rash, or V/D.

-No known sick contacts or contacts with COVID 19. Traveled a lot within the US in the past few weeks (not to (b) (6)). No international travel. (b) (6) only notable exposure is (b) (6) was in a car for 4 hours with a woman who was just in Milan (woman was not sick) on (b) (6). (b) (6) is unsure if (b) (6) was already having symptoms when (b) (6) got in the car, thought (b) (6) but now thinks it may have been the beginning of (b) (6) illness.

-Recent flights: (b) (6) (b) (6)

Stayed in hotels.

-In DC visiting (b) (6) who lives here in a group house in (b) (6). (b) (6) feels fine and no one in the house is sick. One roommate when to (b) (6) recently but isn't sick.

(b) (6) was in a hostel in (b) (6) with people from all over (likely several international travelers)

-Stayed with a friend on (b) (6) who had just returned from (b) (6) Friend wasn't sick
-Has (b) (6)

Let me know what you think.

Alicia

From: Chen, Grace (NIH/NIAID) [E] (b) (6) >

Sent: Wednesday, March 4, 2020 4:28:56 PM

To: Widge, Alicia (NIH/NIAID) [E] (b) (6)

Cc: Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) >; Gaudinski, Martin (NIH/NIAID) [E] (b) (6); Gordon, Ingelise (NIH/VRC) [E] (b) (6) >

Subject: Re: potential case for us

Sounds good- thanks Alicia. Happy to have you help as well

On Mar 4, 2020, at 4:28 PM, Widge, Alicia (NIH/NIAID) [E] <(b) (6)> wrote:

I texted Julie as well, but haven't heard back yet. Happy to help in any way, just let me know.

Alicia

From: Chen, Grace (NIH/NIAID) [E] (b) (6) >

Sent: Wednesday, March 4, 2020 4:27 PM

To: Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) >

Cc: Gaudinski, Martin (NIH/NIAID) [E] (b) (6); Widge, Alicia (NIH/NIAID) [E] (b) (6); Gordon, Ingelise (NIH/VRC) [E] <(b) (6)>

Subject: Re: potential case for us

Hi Julie,

I'm happy to reach out to Tara and then this subject to potentially come into (b) (5) Should I give you a call?

Thanks,
Grace

On Mar 4, 2020, at 4:02 PM, Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) > wrote:

Hi All

We received a referral for a "Possible COVID 19 case" in DC among a scientist (non NIH employee).

Can one of you look into (Tara Palmore?) how we might go about this?

The path I could envision:

1. (b) (5) (b) (6) (b) (5)
2. (b) (5)
- 3.

I can give you the patient's contact info if you call or text me.

Thoughts?

Julie

Julie Ledgerwood, D.O.
Deputy Director
& Chief Medical Officer
Vaccine Research Center
NIAID, NIH

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 16 Jan 2020 23:38:44 +0000
To: Beigel, John (NIH) [E]
Cc: Ledgerwood, Julie (NIH/NIAID) [E]; Marston, Hilary (NIH/NIAID) [E]; Cassetti, Cristina (NIH/NIAID) [E]; Bok, Karin (NIH/VRC) [E]; Chen, Grace (NIH/NIAID) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: Re: IND-holding for Wuhan coronavirus vaccine study

Thanks John. The goal here is to try to be ready to start enrollment with an mRNA vaccine from Moderna expressing the stabilized membrane-anchored spike of Wuhan CoV (b) (4)

Would be great if this could be a multi divisional NIAID project.

Best wishes,

Barney

Sent from my iPhone

On Jan 16, 2020, at 3:28 PM, Beigel, John (NIH) [E] (b) (6) > wrote:

Ok. We will discuss with the IDCRC / VTEU leadership on Tuesday. It will be a good trial by fire.

--
John Beigel, M.D.
Associate Director for Clinical Research
Division of Microbiology and Infectious Diseases
National Institute of Allergy and Infectious Diseases (NIAID)
Phone: (b) (6)
email: (b) (6)

From: Julie Ledgerwood (b) (6) >
Date: Thursday, January 16, 2020 at 5:05 PM
To: "Marston, Hilary (NIH/NIAID) [E]" <(b) (6)>, "Cassetti, Cristina (NIH/NIAID) [E]" (b) (6), "Graham, Barney (NIH/VRC) [E]" (b) (6)
Cc: John Beigel (b) (6) >, "Bok, Karin (NIH/VRC) [E]" (b) (6) >, "Chen, Grace (NIH/NIAID) [E]" (b) (6) >
Subject: RE: IND-holding for Wuhan coronavirus vaccine study

Hi all

Great to hear about the IND. As Barney and Hilary know, VRC could possibly initiate a trial fairly quickly but as we discussed here, we are focused on our flu and malaria trials this spring/summer and thus rather than do the trial here, we are also happy to have the DMID mechanism demonstrate a rapid response/initiation elsewhere and would be keen to advise or assist if helpful.

Julie

From: Marston, Hilary (NIH/NIAID) [E] (b) (6) >
Sent: Thursday, January 16, 2020 4:51 PM
To: Cassetti, Cristina (NIH/NIAID) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6) >
Cc: Beigel, John (NIH) [E] (b) (6) >; Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6) >
Subject: RE: IND-holding for Wuhan coronavirus vaccine study

Thanks so much for the prompt follow up. I'm looping in Julie who will be able to comment further. (+Karin as an FYI)

From: Cassetti, Cristina (NIH/NIAID) [E] (b) (6) >
Sent: Thursday, January 16, 2020 1:25 PM
To: Marston, Hilary (NIH/NIAID) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6) >
Cc: Beigel, John (NIH) [E] (b) (6) >
Subject: IND-holding for Wuhan coronavirus vaccine study

Hi Barney and Hilary,

DMID would be happy to hold the IND for the upcoming VRC vaccine study if this helps. I copied John Beigel, our associate director of clinical research. Do you have a sense of the timeline for initiating such trial?

As I mentioned, we also could help with the execution of the clinical trial through our brand new clinical trial network, the Infectious Diseases Clinical Research Consortium (IDCRC). The kickoff meeting for this network is this coming Tuesday. If you are interested to learn about it, feel free to attend the meeting- see attached the agenda and list of investigators attending.

Cheers,
Cristina

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 2 Apr 2020 18:43:18 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Cc: Stein, Judy (NIH/VRC) [C]; Wang, Lingshu (NIH/VRC) [E]; Zhang, Yi (NIH/NIAID) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]; Petrik, Amy (NIH/NIAID) [E]
Subject: Re: (b) (4)

Is it (b) (5), (b) (4)

I thought (b) (5), (b) (4).

BG

Sent from my iPhone

> On Apr 2, 2020, at 2:10 PM, Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)> wrote:
>
> Lingshu,
> Per the thread below: We are still needing to send (b) (5), (b) (4) to Moderna. Dr. Graham would like to get these to them asap. Please leave (b) (5) of each in a place that I can find them for shipping on Monday.
>
> --
> Kizzmekia S. Corbett, PhD
> Senior Research Fellow | Scientific Lead
> Coronavirus Vaccines & Immunopathogenesis (coVip) Team
> Viral Pathogenesis Laboratory | Vaccine Research Center
> National Institutes of Allergy and Infectious Diseases
> National Institutes of Health
>
> Building 40 Room 2608
> 40 Convent Drive
> Bethesda MD 20892
> Laboratory: (b) (6)
> Personal: (b) (6)
> Fax: (301) 480-2771
>
>
> On 4/2/20, 2:07 PM, "Graham, Barney (NIH/VRC) [E]" <(b) (6)> wrote:
>
> Let's do what we need to do to ship by Monday next week.
>
> BG
>
>
>
> Sent from my iPhone
>

>> On Apr 2, 2020, at 2:06 PM, Stein, Judy (NIH/VRC) [C] (b) (6)> wrote:
>>
>> Hi everyone,
>> I just spoke to Amy about this and if you would like to send (b) (4), we can put together a quick amendment to the MTA to include (b) (4). We had initially wanted to wait until the patent is filed, but since this will be awhile and there seems to be an urgent need, we can just try to protect the materials with agreements.
>>
>> Please let me know how you would like to proceed.
>>
>> Thanks,
>> Judy
>>
>> -----Original Message-----
>> From: Sunny Himansu (b) (6)
>> Sent: Wednesday, April 1, 2020 7:05 AM
>> To: Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>
>> Cc: Guillaume Stewart-Jones <(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Stein, Judy (NIH/VRC) [C] (b) (6); Petrik, Amy (NIH/NIAID) [E] (b) (6)>
>> Subject: Re: (b) (4)
>>
>> Hi Kizzy ,
>>
>> I had originally made a request for (b) (4) to be transferred by MTA but that was removed from the agreement by NIH.
>>
>> Judy/Amy - is it possible for Moderna to receive (b) (4) under the MTA? I believe Eliot Green from Moderna may have also reached out (b) (4).
>>
>> I will let Guillaume comment on (b) (4) question.
>>
>> Sunny
>>
>> E&OE
>>
>> Sent from my iPhone
>>
>>>> On Apr 1, 2020, at 6:55 AM, Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)> wrote:
>>>>
>>>> Good morning,
>>>> We are following up with our availability on these (b) (4) however' it is our inclination that with the large amount of work we have to do in the next 2 weeks, that it would be (b) (4). As well, can we have a data-specific answer as to (b) (4).
>>>>
>>>> --
>>>> Kizzmekia S. Corbett, PhD
>>>> Senior Research Fellow | Scientific Lead Coronavirus Vaccines &
>>>> Immunopathogenesis (coVip) Team Viral Pathogenesis Laboratory |
>>>> Vaccine Research Center National Institutes of Allergy and Infectious
>>>> Diseases National Institutes of Health
>>>>
>>>> Building 40 Room 2608
>>>> 40 Convent Drive
>>>> Bethesda MD 20892
>>>> Laboratory: (b) (6)

>>> Personal: (b) (6)
>>> Fax: (301) 480-2771
>>>
>>>
>>>> On 3/28/20, 1:14 PM, "Guillaume Stewart-Jones" <(b) (6)> wrote:
>>>
>>> Hi Kizzy,
>>>
>>> Sunny indicated the MTA has been signed to obtain more of the (b) (4).
>>>
>>> Would it be possible to send (b) (4) to:
>>>
>>> Isabella Renzi
>>> 200 Technology Square
>>> Cambridge, MA 02139
>>> 527-14
>>>
>>> Best regards,
>>>
>>> Guillaume
>>>
>>> -----Original Message-----
>>> From: Sunny Himansu <(b) (6)>
>>> Sent: Tuesday, March 24, 2020 7:12 PM
>>> To: Guillaume Stewart-Jones <(b) (6)>
>>> Subject: (b) (4)
>>>
>>> Hi Guillaume ,
>>>
>>> The MTA with NIH has been signed to get the (b) (4). Please go ahead and connect with Kizzy to get
more (b) (4).
>>>
>>> Sunny
>>>
>>> P Please consider the environment before printing this email
>>>
>>>
>>> Confidentiality notice and disclaimer: The information in this message and any attachments is intended for the
exclusive use of the addressee(s), is confidential and may be privileged or otherwise protected from disclosure. Any
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advised that any use of the information in this message and any attachment is prohibited and may be unlawful, and
you must not copy this message or attachment or disclose the contents to any other person.
>>>
>>>
>>>
>
>

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 28 Jan 2020 16:34:00 +0000
To: Holger Kanzler
Cc: David Vaughn
Subject: Re: New Wuhan coronavirus

I just arrived in Barcelona for the Fighting for Breath Pneumonia summit. I'll be talking about RSV, but likely Wuhan as well. Keith Klugman is here.

I emailed with (b) (4) about (b) (4)

Barney

Sent from my iPhone

On Jan 28, 2020, at 2:55 PM, Holger Kanzler (b) (6) wrote:

Hi Barney,

Many thanks for the note. There is great interest here to learn more about CoV immunogens, your expertise is extremely valuable. Would you be open to a 45 min call this week? David from the foundation 2019-nCoV Product Development Working Group, possibly Lynda would like to join. We would like to learn more to see if we could help the field with key steps to push forward vaccine candidates (design, expression system, scale). Are there a few times that would work for you, we will do our best to accommodate your schedule.

Best,
Holger

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Sunday, January 26, 2020 12:32 PM
To: Holger Kanzler <(b) (6)>
Subject: RE: New Wuhan coronavirus

Hi Holger,

The (b) (4)

Pallesen J, Wang N, Corbett KS, Wrapp D, Kirchdoerfer RN, Turner HL, Cottrell CA, Becker MM, Wang L, Shi W, Kong WP, Andres EL, Kettenbach AN, Denison MR, Chappell JD, Graham BS, Ward AB, McLellan

JS. Immunogenicity and structures of a rationally designed prefusion MERS-CoV spike antigen. Proc Natl Acad Sci U S A. 2017 Aug 29;114(35):E7348-E7357. doi: 10.1073/pnas.1707304114.

We were considering (b) (4) We have (b) (4)
(b) (4)

Barney

From: Holger Kanzler (b) (6) >
Sent: Sunday, January 26, 2020 12:59 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: RE: New Wuhan coronavirus

Hi Barney,

As a follow-up, would you be open to sharing (b) (4)
(b) (4) could (b) (4)
(b) (4) I am pointing out (b) (4)
(b) (4) Also, I am wondering (b) (4)
(b) (4)
(b) (4) Do you have (b) (4)
(b) (4)

Best,
Holger

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Tuesday, January 21, 2020 6:43 PM
To: Holger Kanzler (b) (6) >
Cc: Lynda Stuart (b) (6)
Subject: Re: New Wuhan coronavirus

Hi Holger,

We have already (b) (4). Running the full drill for pathogen X based on the work we have done on MERS spike, much of which is still unpublished.

BG

Sent from my iPhone

On Jan 21, 2020, at 8:29 PM, Holger Kanzler <(b) (6)> wrote:

Dear Barney,

You are likely closely following the evolving findings with the new coronavirus in China and as it appears now also in the US. I was wondering if you have sequences and maybe even designs for improved immunogens available that could be implemented as vaccines, in particular mRNA vaccines, that you could share with mRNA vaccine companies?

Best regards,
Holger

Holger Kanzler PhD

Senior Program Officer, Vaccines & Human Immunobiology
Global Health – Discovery Cross Cutting

V (b) (6)
E (b) (6)

Bill & Melinda Gates Foundation

www.gatesfoundation.org

<image001.png>

[Facebook](#)

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<image003.png>

[Impatient Optimists](#)

Note: For a text version of these three links, use this format:

Join the conversation on [Facebook](#), [Twitter](#),
and our blog: www.impatientoptimists.org

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 9 Mar 2020 15:14:40 +0000
To: Kathleen Neuzil
Subject: FW: (b) (4)
Attachments: (b) (4)
(b) (4)

FYI

BG

From: Roberts, Chris (NIH/NIAID) [E] (b) (6) >
Sent: Friday, March 6, 2020 9:52 PM
To: Beigel, John (NIH) [E] (b) (6); Nayak, Seema (NIH/NIAID) [E]
(b) (6); Lisa A. Jackson (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6); Erbelding, Emily (NIH/NIAID) [E] (b) (6); Lisa A. Jackson
<(b) (6)>
Cc: Buchanan, Wendy (NIH/NIAID) [E] (b) (6); Makhene, Mamodikoe (NIH/NIAID)
[E] (b) (6) >
Subject: Re: (b) (4)

See attached as a first attempt at an informational messaging document. Wordy and too much information, brain no longer functioning, but discusses some talking points that can be tweaked. I've included Barney and Emily, as she is likely to be asked questions by reporters tomorrow. Please edit/delete/add accordingly.

Chris

From: "Beigel, John (NIH) [E]" (b) (6)
Date: Friday, March 6, 2020 at 5:14 PM
To: "Roberts, Chris (NIH/NIAID) [E]" (b) (6); "Nayak, Seema (NIH/NIAID) [E]"
(b) (6); "Lisa A. Jackson" (b) (6) >
Cc: "Buchanan, Wendy (NIH/NIAID) [E]" (b) (6); "Makhene, Mamodikoe
(NIH/NIAID) [E]" <(b) (6)>
Subject: Re: (b) (4)

Chris, we have reporters now asking (b) (4)
(b) (4)

--
John Beigel, M.D.

Associate Director for Clinical Research

Division of Microbiology and Infectious Diseases

National Institute of Allergy and Infectious Diseases (NIAID)

Phone: (b) (6)

email: (b) (6)

From: Chris Roberts (b) (6) >

Date: Sunday, March 1, 2020 at 3:21 PM

To: John Beigel (b) (6), Seema Nayak (b) (6) >, "Lisa A. Jackson" (b) (6) >

Cc: "Buchanan, Wendy (NIH/NIAID) [E]" (b) (6) >, "Makhene, Mamodikoe (NIH/NIAID) [E]" (b) (6) >

Subject: Re: (b) (4)

John,

I fully agree (b) (4)

(b) (4)

Chris

From: "Beigel, John (NIH) [E]" (b) (6)

Date: Sunday, March 1, 2020 at 2:37 PM

To: "Roberts, Chris (NIH/NIAID) [E]" (b) (6) >, "Nayak, Seema (NIH/NIAID) [E]" (b) (6) >, "Lisa A. Jackson" (b) (6) >

Cc: "Buchanan, Wendy (NIH/NIAID) [E]" (b) (6) >, "Makhene, Mamodikoe (NIH/NIAID) [E]" (b) (6) >

Subject: Re: (b) (4)

I would view it slightly differently. I see (b) (4)

(b) (4)

So to me – [REDACTED] (b) (4)

(b) (4)

This is the third email about this topic this weekend, so we may want to write something up to send to the IRB and FDA so everyone understands the situation, our assessment, and the plan (not an amendment, just an information item of sorts).

John

--

John Beigel, M.D.

Associate Director for Clinical Research

Division of Microbiology and Infectious Diseases

National Institute of Allergy and Infectious Diseases (NIAID)

Phone: [REDACTED] (b) (6)

email: [REDACTED] (b) (6) [v](#)

From: Chris Roberts [REDACTED] (b) (6)

Date: Sunday, March 1, 2020 at 1:49 PM

To: John Beigel [REDACTED] (b) (6) >, Seema Nayak [REDACTED] (b) (6) >, "Lisa A. Jackson" [REDACTED] (b) (6) >

Cc: "Buchanan, Wendy (NIH/NIAID) [E]" [REDACTED] (b) (6) "Makhene, Mamodikoe (NIH/NIAID) [E]" [REDACTED] (b) (6) >

Subject: Re: [REDACTED] (b) (4)

I agree and am also [REDACTED] (b) (4)

(b) (4)

Chris

From: "Lisa A. Jackson" [REDACTED] (b) (6) >

Date: Sunday, March 1, 2020 at 11:15 AM

To: "Beigel, John (NIH) [E]" [REDACTED] (b) (6) >, "Roberts, Chris (NIH/NIAID) [E]"

(b) (6)>, "Nayak, Seema (NIH/NIAID) [E]" (b) (6), "Buchanan,
Wendy (NIH/NIAID) [E]" (b) (6)>
Subject: (b) (4)

(b) (4)

Lisa

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From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 24 Feb 2020 13:18:18 +0000
To: Barasch, Kimberly (NIH/NIAID) [C]; Mascola, John (NIH/VRC) [E]; Erbelding, Emily (NIH/NIAID) [E]; Cassetti, Cristina (NIH/NIAID) [E]; Lerner, Andrea (NIH/NIAID) [E]; Eisinger, Robert (NIH/NIAID) [E]; Marston, Hilary (NIH/NIAID) [E]
Cc: Treadwell-Hyde, Roshawn (NIH/NIAID) [C]; Young, Monique (NIH/VRC) [E]; Suhana, Tina (NIH/VRC) [E]; Conrad, Patricia (NIH/NIAID) [E]
Subject: RE: Call with JnJ re: COVID-19 vaccine development

I'm on the phone. Sorry to not be there in person.

Barney

From: Barasch, Kimberly (NIH/NIAID) [C] (b) (6)>
Sent: Thursday, February 20, 2020 12:35 PM
To: Mascola, John (NIH/VRC) [E] (b) (6); Erbelding, Emily (NIH/NIAID) [E] (b) (6)>; Cassetti, Cristina (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Lerner, Andrea (NIH/NIAID) [E] (b) (6); Eisinger, Robert (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)
Cc: Treadwell-Hyde, Roshawn (NIH/NIAID) [C] (b) (6); Young, Monique (NIH/VRC) [E] (b) (6); Suhana, Tina (NIH/VRC) [E] (b) (6); Conrad, Patricia (NIH/NIAID) [E] <(b) (6)>
Subject: Call with JnJ re: COVID-19 vaccine development

Good afternoon,

There is a call with Paul Stoffels and others from JnJ on Monday, February 24th at 8:00am ET. You all are invited to take the call with Dr. Fauci in room 7A18.

Thank you,
Kim

[Kim Barasch \[C\]](#)
Office of the Director
National Institute of Allergy & Infectious Diseases

(b) (6)
(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 26 Dec 2019 22:11:29 +0000
To: Morabito, Kaitlyn (NIH/VRC) [E]
Cc: Stein, Judy (NIH/VRC) [C]
Subject: Re: Discussion with Murray McCutcheon at Abcellera

I think (b) (5), (b) (4) makes sense. Maybe even (b) (5), (b) (4)

BG

Sent from my iPhone

On Dec 26, 2019, at 1:20 PM, Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)> wrote:

Hi Judy,

Jason is involved in (b) (5), (b) (4)
(b) (5), (b) (4)
(b) (5), (b) (4) | don't think we
(b) (5), (b) (4) but will be doing (b) (5), (b) (4). So
I'm not sure (b) (5), (b) (4)

I'm not sure what the solution is, but just providing more background.

Thanks,
Kaitlyn

From: Judy Stein (b) (6)
Date: Thursday, December 26, 2019 at 1:12 PM
To: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) Barney Graham
(b) (6)>
Subject: RE: Discussion with Murray McCutcheon at Abcellera

Hi Kaitlyn,
Murray thought that (b) (5), (b) (4)
(b) (5), (b) (4)

Thanks,
Judy

From: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Sent: Thursday, December 26, 2019 1:09 PM
To: Stein, Judy (NIH/VRC) [C] (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6)
Subject: Re: Discussion with Murray McCutcheon at Abcellera

Judy,

Thank you for the update.

For the (b) (5), (b) (4) work, it occurs to me that the collaboration (and current RCA) also includes Jason McLellan. Jason's group is (b) (5), (b) (4)

(b) (5), (b) (4)

Not sure how this would effect the CRADA.

(b) (5), (b) (4) should be straightforward since (b) (4)

Thanks,
Kaitlyn

From: Judy Stein (b) (6)>
Date: Monday, December 23, 2019 at 1:36 PM
To: Barney Graham (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]"
(b) (6)
Subject: Discussion with Murray McCutcheon at Abcellera

Hi Barney and Kaitlyn,
Murray just called me to talk about CRADAs for (b) (4)
I explained the process to him. Given the specific funding/requirements for each of these disease targets, (b) (5) but I asked him to send me a brief write up of all of the work to be performed under each, and then I can discuss it with Amy and Carol.

Even if (b) (5), once we have a model, it should simplify things for follow on agreements.

Once Murray sends me the drafts, I will make sure that you receive a copy.
He said that he would be sending this after the New Year.

Thanks,
Judy

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 29 Apr 2020 15:54:28 +0000
To: Kathleen Neuzil
Subject: Re: draft protocol concept

Larry [REDACTED] (b) (5)

BG

Sent from my iPhone

On Apr 29, 2020, at 11:22 AM, Neuzil, Kathleen <[REDACTED] (b) (6)> wrote:

Yep. I talked to her yesterday. [REDACTED] (b) (5)

From: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Sent: Wednesday, April 29, 2020 11:21 AM
To: Neuzil, Kathleen [REDACTED] (b) (6) >
Subject: Re: draft protocol concept

Emily [REDACTED] (b) (5)

BG

Sent from my iPhone

On Apr 29, 2020, at 11:07 AM, Neuzil, Kathleen [REDACTED] (b) (6) > wrote:

Right. [REDACTED] (b) (5)

From: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Sent: Wednesday, April 29, 2020 11:04 AM
To: Neuzil, Kathleen [REDACTED] (b) (6) >
Subject: Re: draft protocol concept

Agree. I will [REDACTED] (b) (5) I feel like [REDACTED] (b) (5)

BG

Sent from my iPhone

On Apr 29, 2020, at 11:00 AM, Neuzil, Kathleen (b) (6) > wrote:

Nope. And I'm not sure how the COVID site map was populated.

Although Larry (b) (5)

John M. (b) (5).

Thanks for sharing.

From: Graham, Barney (NIH/VRC) [E] (b) (6)

Sent: Wednesday, April 29, 2020 10:56 AM

To: Neuzil, Kathleen (b) (6)

Subject: Fwd: draft protocol concept

FYI. Have you seen this yet?

BG

Sent from my iPhone

Begin forwarded message:

From: "Corey MD, Larry" (b) (6)

Date: April 29, 2020 at 12:16:16 AM EDT

To: "Mascola, John (NIH/VRC) [E]" (b) (6) >, "Conrad, Patricia (NIH/NIAID) [E]" (b) (6) >, "Fauci, Anthony (NIH/NIAID) [E]" (b) (6) >, "Dieffenbach, Carl (NIH/NIAID) [E]" (b) (6) >, "Erbelding, Emily (NIH/NIAID) [E]" (b) (6) >

Cc: "Graham, Barney (NIH/VRC) [E]" (b) (6) >

Subject: draft protocol concept

Enclosed is the draft protocol for a NIAID supported efficacy trial for a candidate COVID 19 vaccine .

I wouldn't necessarily call it a master protocol but it is a synopsis of what I would term a harmonized protocol concept for the evaluation of several candidate COVID 19 vaccine , It outlines in principle the ideals we set forth in the Science Policy perspective into a draft protocol .Individualized but harmonized protocols that allow for licensure of an individual vaccine but also allow one to utilize common clinical trial networks, laboratories endpoint adjudication processes, centralized laboratories or specimen sharing, common DSMB , and access to endpoint and laboratory data to have an independent group of statisticians do endpoint analysis and hence effect of the virus on civil society.

The concept is to

(b) (4)

(b) (4)

We will

(b) (4)

(b) (4)

(b) (4) we will also use "

(b) (4)

We

will

(b) (4)

(b) (4) .

We feel we can

(b) (4) ;

(b) (4)

I have tried to highlight in bold the key concepts to shorten the document for you . Our statisticians (NIAID cross network) wanted to be thorough and hence the length of the document . I am also including a picture of the current COVID Network map of 48 US sites ; we are in the process of activating then hence they are ready to initiate this study once it meets its safety and immunogenicity targets .

We have

(b) (4)

(b) (4)

If questions please call

Larry Corey

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 14 Feb 2020 23:59:54 +0000
To: Zhang, Yi (NIH/NIAID) [C]
Cc: Corbett, Kizzmekia (NIH/VRC) [E]; Wang, Lingshu (NIH/VRC) [E]; Shi, Wei (NIH/VRC) [E]; Kong, Wing-Pui (NIH/VRC) [E]; Liu, Catherine (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Mascola, John (NIH/VRC) [E]
Subject: Re: (b) (5) results of SARS (b) (5) to 2019_nCoV (b) (5)
Attachments: image001.png

That's great work Yi! Thank you for working so hard to (b) (5) Really exciting to (b) (5). I wonder what would happen (b) (5) Maybe (b) (5)

Barney

Sent from my iPhone

On Feb 14, 2020, at 6:34 PM, Zhang, Yi (NIH/NIAID) [C] <(b) (6)> wrote:

Good afternoon,

(b) (5)

Need to be confirmed (b) (5).

(b) (5)

Let me know if you need more detail information.

Thanks

Yi

Yi Zhang [C] Biologist, LATG
NIH/NIAID/VRC
Virology Core Laboratory
Bldg 40/Rm 4606B
40 Convent Dr
Bethesda, MD 20892
Office: (b) (6)
Email: (b) (6)

From: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Sent: Wednesday, February 12, 2020 5:51 AM
To: Ziwawo, Cynthia (NIH/VRC) [F] (b) (6); Zhang, Yi (NIH/NIAID) [C] (b) (6); Shi, Wei (NIH/VRC) [E] (b) (6); Kong, Wing-Pui (NIH/VRC) [E] (b) (6); Abiona, Olubukola (NIH/VRC) [F] (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)
Subject: SARS-CoV-2 (b) (5) Data

Good morning all,
Cynthia concentrated Yi's stock of (b) (5). Generally, on the (b) (5). As you can see (b) (5) This is not (b) (5) (b) (5), *I am confident* (b) (5) (b) (5)

Ongoing work:

1. (b) (5)
2. (b) (5)
3. (b) (5)
4. (b) (5)
5. (b) (5)
6. (b) (5)

<image001.png>

Also, interim data updates is new to me, so feel free to suggest we only discuss on Mondays at 11am.

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: "Ziwawo, Cynthia (NIH/VRC) [F]" (b) (6)

Date: Tuesday, February 11, 2020 at 12:54 PM

To: Kizzmekia Corbett (b) (6) >

Subject: Concentrated Virus Data

Needs to be analyzed, but here's raw data for your quick viewing.

Cynthia Ziwawo

Post-Baccalaureate IRTA Trainee

NIH Vaccine Research Center

40 Convent Drive, Rm. 2606

Bethesda, MD 20892

(b) (5)

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 18 Mar 2020 12:44:14 +0000
To: Payal Sipahimalani
Cc: Corbett, Kizzmekia (NIH/VRC) [E]; Ester Falconer; Morabito, Kaitlyn (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]; Bok, Karin (NIH/VRC) [E]
Subject: Re: MTA with Lilly and AbCellera

Thanks Payal. Please add Gabriela and Karin to your CC: list. They will also be helping with Project management.

Barney

Sent from my iPhone

On Mar 17, 2020, at 11:51 PM, Payal Sipahimalani (b) (6) > wrote:

Hello Dr. Corbett,

I wanted to say again, on behalf of the whole team here at AbCellera, just how much we appreciate all that you've been doing and continue to do on this project. We know you have a frightfully overflowing plate, and yet manage to keep on top of our many and varied requests, and remain enthusiastic about the science. This is magical, and very much appreciated!

Also, you may have heard already that the MTA between our 3 groups has now been signed. While we're happy to try to facilitate any material transfer between you and Lilly, it's likely most efficient for you all to connect directly. Just so you see it coming, here's a list of reagents flowing from the VRC to Lilly that were in the MTA:

1. (b) (4)
- 2.
- 3.

This week, we'll send (b) (4) to Lilly for their (b) (4) and Ester will connect you directly to the Lilly team. Let us know if we can do anything else to help and decrease the load on your team.

Thank you,
Payal.

--

Payal Sipahimalani, MSc, PMP

Senior Project Manager

AbCellera Biologics Inc.

2215 Yukon Street

Vancouver BC V5Y 0A1

T: (b) (6)

M: (b) (6)

abcellera.com

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 1 Mar 2020 20:02:26 +0000
To: Anderson, Larry J
Subject: RE: [External] RE: 2019 CoV

I could call in about 45 minutes.

BG

From: Anderson, Larry J (b) (6)
Sent: Sunday, March 1, 2020 1:28 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Re: [External] RE: 2019 CoV

Barney,

Got tied up with (b) (6) duties and was not able to call yesterday. Is there another time?
thanks.

lja

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
404-727-8249 (fax)
(b) (6)

From: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Sent: Saturday, February 29, 2020 11:25 AM
To: Anderson, Larry J (b) (6)
Subject: Re: [External] RE: 2019 CoV

Any time after noon. Call my cell at (b) (6)

BG

Sent from my iPhone

On Feb 29, 2020, at 9:14 AM, Anderson, Larry J <(b) (6)> wrote:

Glad to do. What time?

lja

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
404-727-8249 (fax)
(b) (6)

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Friday, February 28, 2020 9:20 AM
To: Anderson, Larry J (b) (6)
Subject: RE: [External] RE: 2019 CoV

Maybe we could talk tomorrow if available. I would like to hear some of your insights on this. My life is a little crazy at the moment.

BG

From: Anderson, Larry J <(b) (6)>
Sent: Friday, February 28, 2020 9:01 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: RE: [External] RE: 2019 CoV

Will talk with Natalie. If by any chance you have some time, would love to discuss COVID-19.
Thanks.

lja

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
404-727-8249 (fax)
(b) (6)

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Friday, February 28, 2020 8:23 AM
To: Anderson, Larry J (b) (6) >
Subject: RE: [External] RE: 2019 CoV

I'm going off-line here Larry. Our staff and the Tech transfer people have been overwhelmed and not keeping up with requests. I recommend walking over to the CDC and speaking to Natalie Thornburg. She has our (b) (4). Maybe she will give you a (b) (4) while we are sorting out the paperwork.

Barney

From: Anderson, Larry J (b) (6)
Sent: Friday, February 28, 2020 8:18 AM
To: Stein, Judy (NIH/VRC) [C] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >; Bok, Karin (NIH/VRC) [E] (b) (6) >
Cc: Graham, Barney (NIH/VRC) [E] (b) (6) >
Subject: RE: [External] RE: 2019 CoV

What are the steps needed to acquire the (b) (4) Either the (b) (4) would be fine.

Thank you.

Ija

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
404-727-8249 (fax)
(b) (6)

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Sunday, February 23, 2020 6:50 PM
To: Anderson, Larry J (b) (6)
Cc: Stein, Judy (NIH/VRC) [C] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E]
(b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Bok, Karin
(NIH/VRC) [E] (b) (6)
Subject: Re: [External] RE: 2019 CoV

Hi Larry,

I've copied people who can help with the SLA. We may only be able to send (b) (4) at this point. There have been dozens of requests and we cannot keep up.

I bet you are glad not to be at the CDC during this one. It's been non-stop.

Best wishes,

Barney

Sent from my iPhone

On Feb 23, 2020, at 2:11 PM, Anderson, Larry J (b) (6) wrote:

Would it be possible to get some of your (b) (4)? Also would you be willing to share the (b) (4) when it is ready? The outbreak seems to be expanding globally, in a concerning, though not surprising fashion.

thanks.

lja

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
404-727-8249 (fax)
(b) (6)

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Tuesday, February 18, 2020 12:52 PM
To: Anderson, Larry J (b) (6)>
Subject: [External] RE: 2019 CoV

Hi Larry,

Yes, we are in the middle of it. We gave (b) (4) to Natalie Thornburg in the diagnostics group at CDC. We are working on (b) (4) as are many other groups. They are not ready for prime time yet. Mark Denison and a few others have (b) (4).

Barney

From: Anderson, Larry J (b) (6)
Sent: Tuesday, February 18, 2020 12:22 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)>
Subject: 2019 CoV

Barney,

Hope you are doing well and not having more back problems.

Question. Since the 2019-nCoV is likely to be a long-term problem, we are considering looking at the

(b) (4)

Are you developing a (b) (4) if so, would it be possible to get.

Thanks.

lja

Larry J. Anderson, MD
Division of Pediatric Infectious Diseases
Emory - Children's Center
2015 Uppergate Drive, Room 530
Atlanta, GA 30322
Tel. (b) (6)
Cell (b) (6)
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(b) (6)

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From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 1 May 2020 14:10:31 +0000
To: Doria-Rose, Nicole (NIH/NIAID) [E]; Corbett, Kizzmekia (NIH/VRC) [E]
Subject: RE: (b) (4) on the (b) (4) Samples

Yes, I think we should take all of our (b) (4)
(b) (4).

BG

From: Doria-Rose, Nicole (NIH/NIAID) [E] (b) (6) >
Sent: Friday, May 1, 2020 10:08 AM
To: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6) >
Subject: Re (b) (4) on the (b) (4) Samples

Hi Barney,
if you like this idea, I will ask Steve to provide Cynthia with aliquots.
For most of the (b) (4)
so there's plenty to go around.
For the smaller aliquots, I would prefer to reserve those for (b) (4) for the time being.
Thanks,
Nicole

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >
Date: Friday, May 1, 2020 at 9:58 AM
To: "Doria-rose, Nicole (NIH/NIAID) [C]" (b) (6)
Cc: "Graham, Barney (NIH/VRC) [E]" (b) (6) >
Subject: (b) (4) on the (b) (4) Samples

Cynthia, one of the postbacs on the COVIP team, is running and (b) (4)
(b) (4)

--
Kizzmekia S. Corbett, PhD
Senior Research Fellow | Scientific Lead
Coronavirus Vaccines & Immunopathogenesis (coVip) Team
Viral Pathogenesis Laboratory | Vaccine Research Center
National Institutes of Allergy and Infectious Diseases
National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 8 Feb 2020 06:50:07 +0000
To: Besteman-3, S.B.
Cc: Bont, L.J.; Ruckwardt, Tracy (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: RE: Manuscript: Recurrent severe RSV bronchiolitis in a boy with CD14 deficiency, a novel immune deficiency.
Attachments: V9_Manuscript CD14_BG.docx

Thank you for sharing your manuscript with us. I've made a few edits, mostly clarifications and sentence rearranging.

I hope they like it.

Barney

From: Besteman-3, S.B. <(b) (6)>
Sent: Wednesday, January 22, 2020 7:58 AM
To: Phung, Emily (NIH/VRC) [F] (b) (6); Amatngalim, G.D. <(b) (6)>; Crabtree, Juliet <(b) (6)>; Rutger Schepp (b) (6); 'Siemonsma, Susanna' (b) (6)>; Haaften, G.W. van (b) (6); Beekman, J.M. <(b) (6)>; Meyaard, L. (b) (6); Bruggen, J. van der (b) (6) 'Guy Berbers' (b) (6); Derksen-Lazet, N.D. (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Ruckwardt, Tracy (NIH/VRC) [E] (b) (6)>; Kurt-Jones, Evelyn (b) (6)>; 'Golenbock, Douglas' (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Bont, L.J. (b) (6)
Subject: Manuscript: Recurrent severe RSV bronchiolitis in a boy with CD14 deficiency, a novel immune deficiency.

Dear co-author,

I'm pleased to send you the manuscript entitled: 'Recurrent severe RSV bronchiolitis in a boy with CD14 deficiency, a novel immune deficiency' for submission to the NEJM. We will submit it as a case report, meaning max 2000 words and 3 figures.

Could you please critically review the manuscript, and provide me with your comments using track changes? Especially pay attention to the results and methods that consider an assay that

was performed by your laboratory. I'll also send some of you an additional email with specific requests. Moreover, carefully check your name, title and affiliation. Also fill in the attached COI declaration.

Please send me your comments **no later than February 3th**. Please send your comments to me only. After revising, I hope to send you the next version in the second week of February. We hope to submit the paper next month. Please let us know when you need more time.

We are looking forward hearing your suggestions.

Kind regards,

Also on behalf of Louis

Sjanna Besteman

De informatie opgenomen in dit bericht kan vertrouwelijk zijn en is uitsluitend bestemd voor de geadresseerde. Indien u dit bericht onterecht ontvangt, wordt u verzocht de inhoud niet te gebruiken en de afzender direct te informeren door het bericht te retourneren. Het Universitair Medisch Centrum Utrecht is een publiekrechtelijke rechtspersoon in de zin van de W.H.W. (Wet Hoger Onderwijs en Wetenschappelijk Onderzoek) en staat geregistreerd bij de Kamer van Koophandel voor Midden-Nederland onder nr. 30244197.

Denk s.v.p aan het milieu voor u deze e-mail afdrukt.

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From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 23 Mar 2020 18:37:20 +0000
To: Daucher, Marybeth (NIH/NIAID) [E]; Hirsch, Marie (NIH/VRC) [E]
Cc: Royal, Thomas (NIH/NIAID) [E]
Subject: RE: (b) (6)

Will the PAC have virtual meetings or do we have to wait several months?

BG

-----Original Message-----

From: Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>
Sent: Monday, March 23, 2020 2:17 PM
To: Hirsch, Marie (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E]
(b) (6)>
Cc: Royal, Thomas (NIH/NIAID) [E] <(b) (6)>
Subject: RE: (b) (6)

Great! Thank you!

-----Original Message-----

From: Hirsch, Marie (NIH/VRC) [E] (b) (6)>
Sent: Monday, March 23, 2020 2:16 PM
To: Daucher, Marybeth (NIH/NIAID) [E] (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6)
Cc: Royal, Thomas (NIH/NIAID) [E] <(b) (6)>
Subject: RE: (b) (6)

Hi Marybeth and Barney,

We don't need to use the direct hire for this position. (b) (6) was already on the cert for the (b) (6). She was selected. She just needs to go through the PAC committee and then she can EOD at the (b) (6) Ken is working on the memo now.

Marie

-----Original Message-----

From: Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>
Sent: Monday, March 23, 2020 1:59 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)>
Cc: Hirsch, Marie (NIH/VRC) [E] (b) (6)
Subject: RE: (b) (6)

Hi Barney - please send a justification for the promotion to Marie today by COB - suggest using COVID-19 response priorities

-----Original Message-----

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Monday, March 23, 2020 1:21 PM
To: Daucher, Marybeth (NIH/NIAID) [E] (b) (6)>; Hirsch, Marie (NIH/VRC) [E]
(b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)>

Subject: (b) (6)

Hi Marybeth,

Could you tell me if there is a way to get (b) (6) through the system during this time.

Barney

Sent from my iPhone

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 26 Mar 2020 18:12:28 +0000
To: Hiatt, Nissa (NIH/VRC) [C]
Cc: Routh, Jennifer (NIH/NIAID) [E]; Oplinger, Anne (NIH/NIAID) [E]
Subject: RE: CNN media inquiry -- vaccine -- spike sequence / time horizon

That would work if possible.

Barney

From: Hiatt, Nissa (NIH/VRC) [C] (b) (6) >
Sent: Thursday, March 26, 2020 1:34 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6) >
Cc: Routh, Jennifer (NIH/NIAID) [E] (b) (6) >; Oplinger, Anne (NIH/NIAID) [E]
(b) (6)
Subject: RE: CNN media inquiry -- vaccine -- spike sequence / time horizon

Thanks for sharing, Barney. If you are still understandably time constrained, perhaps Jen's team could send him the mRNA-1273 summary from previous talking points that they have prepared in lieu of an interview? Would that work for you?

Best,
Nissa

Nissa Hiatt
Communications
Vaccine Research Center, NIAID, NIH
40 Convent Drive, Bldg 40, Room 1100
Bethesda, MD 20892
Cell: (b) (6)
Office: (b) (6)
(b) (6)



From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Thursday, March 26, 2020 1:27 PM
To: Hiatt, Nissa (NIH/VRC) [C] (b) (6) >
Cc: Routh, Jennifer (NIH/NIAID) [E] (b) (6) >; Oplinger, Anne (NIH/NIAID) [E]
(b) (6) >
Subject: Fwd: CNN media inquiry -- vaccine -- spike sequence / time horizon

FYI.

BG

Sent from my iPhone

Begin forwarded message:

From: "Kuznia, Robert" (b) (6)
Date: March 26, 2020 at 1:15:20 PM EDT
To: "Graham, Barney (NIH/VRC) [E]" <(b) (6)>
Subject: CNN media inquiry -- vaccine -- spike sequence / time horizon

Dear Dr. Graham,

My name is Rob Kuznia and I'm a reporter with CNN.

I'm working on a story for CNN.com about the quest to develop a vaccine for SARS-CoV-2, and would love to speak with you about your involvement with the trial of Moderna's vaccine.

I was hoping to ask you to talk about what I understand to be an unprecedented aspect of this vaccine: Rather than using live virus, it is based on a synthesized sequence of RNA. I would like to know a little more about what that means, as well as what the benefits and possible tradeoffs of this approach might be.

I'd also like to discuss the time horizon, in terms of what is a realistic expectation for the public.

Might you be available to chat by phone for a few minutes today or tomorrow? If so it would be much appreciated and immensely helpful. The current plan is publish the piece over the weekend.

Thank you,

Rob



SCIENCE MEETS LIFE



SCIENCE MEETS LIFE

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 16 Mar 2020 23:00:31 +0000
To: Xavier Saelens
Cc: Jason McLellan
Subject: Re: filing and manuscript
Attachments: image001.jpg, CMB_Signature_Banner.jpg

Ok. I think a Jason is going to send me the penultimate draft of the paper tonight.

Barney

Sent from my iPhone

On Mar 16, 2020, at 6:50 PM, Xavier Saelens (b) (6) wrote:

Hi Barney,

Thanks for that update and congratulations with the first in human mRNA vaccine with the stabilized SARS-2 ectodomain mRNA construct!

My phone call was to try to get an update on the manuscript.

We also noticed in the (b) (4)

week or early next week.

All the best,
Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

VIB-UGent Center for Medical Biotechnology

Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium

Tel: (b) (6)

mbc.vib-ugent.be

<CMB_Signature_Banner.jpg>

From: "bgraham" (b) (6) >

To: "Xavier Saelens" (b) (6), "Jason McLellan"

(b) (6)

Sent: Monday, March 16, 2020 7:53:26 PM

Subject: RE: filing and manuscript

Hi Xavier,

Sounds good. We haven't sent you the data yet, but the original (b) (4)
(b) (4)

I think I may have missed a call from you this morning. I've been on calls and meetings virtually all day involving COVID-19. Our (b) (4) started today with the first volunteer immunized in Seattle.

Best wishes,

Barney

From: Xavier Saelens <(b) (6)>

Sent: Monday, March 16, 2020 12:35 PM

To: Graham, Barney (NIH/VRC) [E] (b) (6) >; Jason McLellan

(b) (6)

Subject: filing and manuscript

Hi Jason and Barney,

1. (b) (4)
(b) (4)

2. Can I help with finalizing the manuscript?

Thank you for a response.

Kind regards,
Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

VIB-Ugent Center for Medical Biotechnology

Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium

Tel: (b) (6)

mbc.vib-ugent.be

<image001.jpg>

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 28 Feb 2020 16:04:16 +0000
To: Morabito, Kaitlyn (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C]
Subject: RE: Introduction of (b) (4) for DMID Services?

Yes. For these types of companies they should be referred for licensing.

BG

From: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Sent: Friday, February 28, 2020 11:03 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6); Stein, Judy (NIH/VRC) [C] (b) (6);
Subject: FW: Introduction of (b) (4) for DMID Services?

Company looking for (b) (4). Should we send them to TTIPO for licensing of the (b) (4), and tell them we don't yet have a (b) (4) available for sharing?

From: (b) (6), (b) (4) >
Date: Friday, February 28, 2020 at 10:52 AM
To: "Stemple, Kimberly (NIH/NIAID) [E]" <(b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)
Cc: (b) (6), (b) (6), (b) (4) >, (b) (4), (b) (6), (b) (4) >, "Cassetti, Cristina (NIH/NIAID) [E]" (b) (6)
Subject: Re: Introduction of (b) (4) for DMID Services?

Good Morning Kaitlyn and JoJo

Piers is flying today, so he asked me to follow-up on with you both about what we are looking for.

We are in the process of setting up our platform so that it could be rapidly implemented to understand the (b) (4)

(b) (4)

(b) (4). As Piers mentioned below, (b) (4)

(b) (4)

(b) (4). We were hoping that you knew of (b) (4)

(b) (4) Similarly, (b) (4)

(b) (4)

were hoping (b) (4) We would need (b) (4)
(b) (4)

Thank you in advance for your help with this, and if you need anything from us, please do not hesitate to ask!

(b) (4), (b) (6)

From: (b) (4) (b) (6), (b) (4)
Date: Friday, February 28, 2020 at 8:22 AM
To: (b) (4) (b) (6), (b) (4) >
Subject: FW: Introduction of (b) (4) for DMID Services?

FYI

(b) (4), (b) (6)

From: Cassetti, Cristina (NIH/NIAID) [E] (b) (6)
Sent: Friday, February 28, 2020 4:17 AM
To: (b) (4) (b) (6), (b) (4)
Cc: (b) (4) (b) (6), (b) (4) >; Stemple, Kimberly (NIH/NIAID) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Subject: Re: Introduction of (b) (4) for DMID Services?

Hi Steve,

I have copied my colleagues JoJo Stemple and Kaitlyn Morabito who might be able to help

Best wishes,

Cristina

On Feb 28, 2020, at 2:24 AM, (b) (4) (b) (6) > wrote:

Hello Cristina:

Following some discussions internally, we do in fact have a short term request. Specifically, it seems to us that it would be prudent to set up our assay suite for COVID-19 (b) (4) (b) (4)

Could you please direct us to the right point of contact who might be able to help us with these needs? Thank you very much.

(b) (4)

<image001.jpg>

From: Cassetti, Cristina (NIH/NIAID) [E] (b) (6)
Sent: Monday, February 24, 2020 12:06 PM
To: (b) (4) (b) (6), (b) (4)
Cc: (b) (4) <(b) (6), (b) (4)>
Subject: RE: Introduction of (b) (4) for DMID Services?

Thank you (b) (4) for the introduction!

(b) (4) it's good to meet you via email. I am going to share this information with some of my colleagues involved in (b) (4) If you are planning to apply this technology to specific pathogens and/or are looking for funding I am happy to connect you with the relevant Program Officers in the Division.

Best wishes,

Cristina

Cristina Cassetti, Ph.D.
Deputy Director

Division of Microbiology and Infectious Diseases
National Institute of Allergy and Infectious Diseases, NIH
5601 Fishers Lane, Room 7G51
Rockville, MD 20852
Tel: (b) (6)

(b) (6)

Administrative Assistant:
Ms. Roshawn Treadwell-Hyde

Tel: (b) (6)

(b) (6)

From: (b) (4) (b) (6), (b) (4) >
Sent: Monday, February 24, 2020 11:45 AM
To: Cassetti, Cristina (NIH/NIAID) [E] (b) (6)
Cc: (b) (4) (b) (6), (b) (4)
Subject: Introduction of (b) (4) for DMID Services?

Cristina,

Thanks for hosting the superb EV-D68 meeting last week and for your interest in (b) (4). At the urging of our mutual friend (b) (4), I agreed to help Dr. (b) (4) spin out a company last year to be a CRO service business to make her (b) (4) more broadly available to industry, academia and government labs. As of the start of this year, (b) (4) (b) (4)

Since you're familiar (b) (4) work and (b) (4), let me simply introduce (b) (4) (b) (4) with this email introduction. (b) (4) has recruited (b) (4) (b) (4) (b) (4) (b) (4) is open for business in two areas of high interest to DMID, R&D of vaccines as well as optimization of monoclonal antibody (therapies and prophylactics).

Please find an introductory presentation from the company to share with any and all colleagues, either grant recipients who may want to incorporate such work in their grant projects, as well as importantly the folks at DMID services, as this might be a valuable component of their offering to researchers. Please do follow up directly with (b) (4) you have any additional needs or questions concerning (b) (4)

Thanks again for your help here and best wishes for continued success in all you do! And I look forward to working with you on (b) (4) in the coming year!

Best regards,

(b) (4)

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 21 Apr 2020 18:55:23 +0000
To: Routh, Jennifer (NIH/NIAID) [E]
Cc: Mascola, John (NIH/VRC) [E]; Daucher, Marybeth (NIH/NIAID) [E]; Harris, Christina (NIH/NIAID) [E]; Hiatt, Nissa (NIH/VRC) [C]; Billet, Courtney (NIH/NIAID) [E]; Stover, Kathy (NIH/NIAID) [E]
Subject: Re: media inquiries

That all sounds good to me Jen. Thank you.

The only category you didn't mention that I would be willing to do is like the Immunity documentary where they are trying to teach how viruses make you sick and how vaccines work.

Take care,

Barney

Sent from my iPhone

On Apr 21, 2020, at 2:11 PM, Routh, Jennifer (NIH/NIAID) [E] (b) (6) > wrote:

Thanks, Barney and John. Kathy and I will handle the requests in the long list we sent. We are going to decline nearly all of them except for the NPR 1A request. I will follow up separately about that. Some we will steer to Dr. Fauci, explaining roles (a lot of TV producers view Dr. Corbett as someone who can speak to the range of issues they see Dr. Fauci discussing, but we will note that as a PhD scientist, Dr. Corbett's scope is limited and Dr. Fauci remains our main spokesperson on NIAID research). For requests moving forward, due to the volume of inquiries that have come through and that we anticipate will continue coming, we will adopt some of the strategies we're using to handle the flood of requests for Dr. Fauci. Most media inquiries we've received for VRC fall into these categories:

- **Questions about the overall COVID-19 vaccine enterprise.** (Where do all the trials and research on various candidates stand, when will a vaccine be available, how will we scale up manufacturing, who should receive a vaccine first, how long will a vaccine be protective etc.) For the most part, these should be handled by Dr. Fauci as they are wide-ranging and can go into discussions of larger US policies and approaches beyond VRC's and NIAID's research portfolios. The majority of TV requests that are asking about "COVID-19 vaccine development" are looking for this type of discussion even if they are presented as a discussion of the work on mRNA-1273. Also, due to the sensitivities regarding discussions of timelines and how that information is presented and explained to the public, it is best to have Dr. Fauci remain our key spokesperson on this issue. Drs. Graham, Mascola, Ledgerwood and Erbelding—due to their expertise in the

clinical development of vaccines—will be considered for some requests on the overall topic of vaccine development on a case by case basis and possibly as referred by Dr. Fauci.

- **Profiles.** We are declining profile requests for Dr. Fauci because they are not crucial for the public health response. (You might have seen some big profiles of him—reporters have a lot of already-published content to pull from). So we will be declining profiles for other NIAID scientists working on COVID projects, including VRC scientists, to try and cut down on the volume some. We will let most reporters know that the team is very busy and they can check back with us in a few months or later this year, but we cannot accommodate these requests right now.
- **Questions about mRNA-1273.** We agree with Barney that we're at a stage right now where the work is getting done and we don't need to stick our heads up to talk about the vaccine until we have something to say. The trial is underway. We don't have results yet. We're not looking to shine a spotlight on the lab work underway (b) (5). For these types of non-TV requests that fall squarely within VRC's expertise, the NSWB team will share inquiries with VRC for consideration. VRC will identify the appropriate/available spokesperson, or NSWB will help out in providing information to reporters rather than interviews as needed. We definitely don't need to do every interview. We can re-assess possible TV interviews on mRNA-1273 progress after major announcements, like Phase 1 results.

As per the SOP, VRC leadership will still sign off on all interviews moving forward before NSWB team sends them to HHS for clearance.

Thanks,
Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
NIH/HHS
31 Center Drive Room 7A17C
Bethesda, MD 20892
Direct: (b) (6)
(b) (6)

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From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Monday, April 20, 2020 2:26 PM
To: Mascola, John (NIH/VRC) [E] (b) (6) >; Routh, Jennifer (NIH/NIAID) [E] (b) (6)
Cc: Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)> Harris, Christina (NIH/NIAID) [E] (b) (6) >; Hiatt, Nissa (NIH/VRC) [C] (b) (6) >; Billet, Courtney (NIH/NIAID) [E] (b) (6) >; Stover, Kathy (NIH/NIAID) [E] <(b) (6)>
Subject: RE: media inquiries

Agree. That is certainly a long list of requests. I think we should do no more than 1-2 per week and that you can give us guidance on which venues are the most important for NIAID.

In my previous life I would only allow publicity of a study to occur when we had data published. The only exception was if we needed to recruit volunteers into a study. The idea of real time reporting of science is not compatible with getting the work done.

We will be putting together data for a preclinical paper in May. Hopefully it will be published quickly. Then we can have a press release and have something to talk about.

[REDACTED] (b) (5), (b) (6)
[REDACTED].

Barney

From: Mascola, John (NIH/VRC) [E] <[REDACTED] (b) (6)>
Sent: Monday, April 20, 2020 1:28 PM
To: Routh, Jennifer (NIH/NIAID) [E] [REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Cc: Daucher, Marybeth (NIH/NIAID) [E] <[REDACTED] (b) (6)>; Harris, Christina (NIH/NIAID) [E] [REDACTED] (b) (6); Hiatt, Nissa (NIH/VRC) [C] [REDACTED] (b) (6); Billet, Courtney (NIH/NIAID) [E] [REDACTED] (b) (6)>; Stover, Kathy (NIH/NIAID) [E] [REDACTED] (b) (6)>
Subject: RE: media inquiries

Hi Jen,

Barney is most in touch with Kizzmekia and can relay her preference; i.e., does she want a break from interviews for a while. I am comfortable deferring for a while.

[REDACTED] (b) (5)

If useful to discuss in more detail, happy to find a time.

John

From: Routh, Jennifer (NIH/NIAID) [E] [REDACTED] (b) (6)>
Sent: Monday, April 20, 2020 1:06 PM
To: Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Cc: Daucher, Marybeth (NIH/NIAID) [E] [REDACTED] (b) (6)>; Harris, Christina (NIH/NIAID) [E] [REDACTED] (b) (6)>; Hiatt, Nissa (NIH/VRC) [C] <[REDACTED] (b) (6)> Billet, Courtney

(NIH/NIAID) [E] (b) (6); Stover, Kathy (NIH/NIAID) [E] (b) (6)

Subject: media inquiries

Hi John and Barney,

Attached please find a list of media inquiries that we have received over the past week. Please let us know if there are any requests VRC would like to do and who you would propose as a spokesperson. We will decline the rest. Note that many broadcast requests would still cover these topics even if the deadline in the original ask has passed. We can also consider providing information to some of these inquiries without interviews (like pointing to our recent statement for an update on vaccine progress).

If this is easier to discuss on a call, please let us (Courtney, Kathy and me) know, and we can arrange a meeting.

Thanks,
Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
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31 Center Drive Room 7A17C
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From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 15 Mar 2020 22:37:52 +0000
To: Harris, Christina (NIH/NIAID) [E]
Subject: Accepted: VRC Staffing Plan during COVID-19 Outbreak

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 31 Mar 2020 21:21:12 +0000
To: Bushar, Nicholas (NIH/NIAID) [E]
Subject: Accepted: NIAID Coronavirus SWAT Weekly Meeting

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 22 Jan 2020 02:43:01 +0000
To: Holger Kanzler
Cc: Lynda, Stuart
Subject: Re: New Wuhan coronavirus
Attachments: image001.png, image002.png, image003.png

Hi Holger,

We have already launched (b) (4). Running the full drill for pathogen X based on the work we have done on MERS spike, much of which is still unpublished.

BG

Sent from my iPhone

On Jan 21, 2020, at 8:29 PM, Holger Kanzler <(b) (6)> wrote:

Dear Barney,

You are likely closely following the evolving findings with the new coronavirus in China and as it appears now also in the US. I was wondering if you have sequences and maybe even designs for improved immunogens available that could be implemented as vaccines, in particular mRNA vaccines, that you could share with mRNA vaccine companies?

Best regards,
Holger

Holger Kanzler PhD

Senior Program Officer, Vaccines & Human Immunobiology
Global Health – Discovery Cross Cutting

V (b) (6)
E (b) (6)

Bill & Melinda Gates Foundation

www.gatesfoundation.org

[<image001.png>](#)

[Facebook](#)

[<image002.png>](#)

[Twitter](#)

[<image003.png>](#)

[Impatient Optimists](#)

Note: For a text version of these three links, use this format:
Join the conversation on [Facebook](#), [Twitter](#),
and our blog: www.impatientoptimists.org



From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 2 Feb 2020 18:02:40 +0000
To: Mascola, John (NIH/VRC) [E]
Cc: Routh, Jennifer (NIH/NIAID) [E]; Hiatt, Nissa (NIH/VRC) [C]; Marston, Hilary (NIH/NIAID) [E]; Billet, Courtney (NIH/NIAID) [E]; Stover, Kathy (NIH/NIAID) [E]
Subject: Re: Seeking comment on Indian paper about new Coronavirus

Yes, part of the answer can be the authors retraction.

BG

Sent from my iPhone

On Feb 2, 2020, at 10:39 AM, Mascola, John (NIH/VRC) [E] (b) (6) > wrote:

Also note the following from the author on the BioRxiv comment section:

[Prashant Pradhan](#) • 8 hours ago

This is a preliminary study. Considering the grave situation, it was shared in BioRxiv as soon as possible to have creative discussion on the fast evolution of SARS-like corona viruses. It was not our intention to feed into the conspiracy theories and no such claims are made here. While we appreciate the criticisms and comments provided by scientific colleagues at BioRxiv forum and elsewhere, the story has been differently interpreted and shared by social media and news platforms. We have positively received all criticisms and comments. To avoid further misinterpretation and confusions world-over, we have decided to withdraw the current version of the preprint and will get back with a revised version after reanalysis, addressing the comments and concerns. Thank you to all who contributed in this open-review process.

: Authors of the Manuscript

From: Routh, Jennifer (NIH/NIAID) [E] (b) (6) >
Sent: Sunday, February 2, 2020 10:35 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C]
(b) (6)
Cc: Marston, Hilary (NIH/NIAID) [E] (b) (6) >; Mascola, John (NIH/VRC) [E]
(b) (6); Billet, Courtney (NIH/NIAID) [E] (b) (6) >; Stover, Kathy
(NIH/NIAID) [E] (b) (6) >
Subject: RE: Seeking comment on Indian paper about new Coronavirus

Hi Barney –

We consulted with HHS and ASF. OCGR is going to send a note to the reporter to decline, noting that the paper is not peer-reviewed. Please let us know if you receive similar requests.

Thanks,
Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
NIH/HHS
31 Center Drive Room 7A17C
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From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Saturday, February 1, 2020 2:11 PM
To: Hiatt, Nissa (NIH/VRC) [C] (b) (6)>; Routh, Jennifer (NIH/NIAID) [E] (b) (6)>
Cc: Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: FW: Seeking comment on Indian paper about new Coronavirus

Hi Nissa and Jen,

This is one we don't want to answer without high-level input, but wanted you to know about the rising controversy.

BG

From: Issam AHMED <Issam.AHMED@afp.com>
Sent: Friday, January 31, 2020 5:27 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Seeking comment on Indian paper about new Coronavirus

Dear Dr Graham,

I'm a science journalist with news agency Agence France-Presse writing with a request -- apologies for reaching out on a Friday evening! I was told by a contact you may be willing to give an opinion on this paper that has just gone live <https://www.biorxiv.org/content/10.1101/2020.01.30.927871v1.full.pdf> it suggests the new Coronavirus has four inserts similar to HIV-1 and this is not a coincidence.

Thanks you very much, if you are able.

Issam Ahmed

Issam AHMED

Health, Science and Environment Correspondent

1500 K St. NW - 20005 Washington

Tel: (202) 414-0521



October 6, 2020

Kyrgyzstan cancels election result after night of chaos

Join us on:



From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 11 Apr 2020 17:38:12 +0000
To: Ledgerwood, Julie (NIH/NIAID) [E]
Cc: Mascola, John (NIH/VRC) [E]
Subject: FW: Question about PK/PD and (b) (4)

FYI. This could be a useful email string for collecting (b) (5), (b) (4).

Barney

From: Cohen, Myron S (b) (6)
Sent: Saturday, April 11, 2020 1:12 PM
To: Jaspers, Ilona (b) (6); Boucher, Richard C Jr (b) (6); Cao, Yanguang (b) (6); Kashuba, Angela D (b) (6)>
Cc: (b) (6) Corey MD, Larry (b) (6)>; Barouch, Dan (HMFP - Division of Vaccine Research) (b) (6)>; Eron, Joseph J Jr (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Hagan, Robert (b) (6); Wolfgang, Matthew C (b) (6)
Subject: RE: Question about PK/PD and (b) (4)

Hi. Could we see your draft? That would be great

From: Jaspers, Ilona (b) (6)>
Sent: Saturday, April 11, 2020 12:58 PM
To: Boucher, Richard C Jr (b) (6)>; Cao, Yanguang (b) (6); Cohen, Myron S <(b) (6)> Kashuba, Angela D (b) (6)>
Cc: (b) (6) Corey MD, Larry (b) (6)>; Barouch, Dan (HMFP - Division of Vaccine Research) <(b) (6)>; Eron, Joseph J Jr (b) (6)>; Mascola, John (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Hagan, Robert (b) (6)>; Wolfgang, Matthew C <(b) (6)>
Subject: Re: Question about PK/PD and (b) (4)

We just submitted a paper for review (b) (4)
(b) (4)
(b) (4), but probably could
and are planning on doing so moving forward.

Happy to help if needed

Ilona

Ilona Jaspers, PhD

Professor; Departments of Pediatrics, Microbiology & Immunology, and Env. Sci. & Engineering

Director; Curriculum in Toxicology & Environmental Medicine

Deputy Director; Center for Env. Med. Asthma & Lung Biology

University of North Carolina at Chapel Hill

104 Mason Farm Rd

Phone: (b) (6)

Fax : 919 966 9863

From: Boucher, Richard C Jr (b) (6)

Sent: Saturday, April 11, 2020 12:50 PM

To: Cao, Yanguang (b) (6); Cohen, Myron S (b) (6);
Kashuba, Angela D (b) (6) >

Cc: (b) (6); Corey MD, Larry (b) (6);
(b) (6); Barouch, Dan (HMFP - Division of Vaccine Research)
(b) (6); Eron, Joseph J Jr (b) (6); Mascola, John
(NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6);
Hagan, Robert (b) (6); Wolfgang, Matthew C
(b) (6); Jaspers, Ilona (b) (6) >

Subject: Re: Question about PK/PD and (b) (5)

Folks

You might talk to Ilona Jaspers about (b) (4),-she knows most about this.

Ric

From: Cao, Yanguang <(b) (6)>

Sent: Saturday, April 11, 2020 10:05 AM

To: Cohen, Myron S (b) (6); Kashuba, Angela D <(b) (6)>

Cc: Boucher, Richard C Jr <(b) (6)>
(b) (6); Corey MD, Larry (b) (6);
Barouch, Dan (HMFP - Division of Vaccine Research) (b) (6); Eron, Joseph J Jr
(b) (6); Mascola, John (NIH/VRC) [E] (b) (6); Graham, Barney
(NIH/VRC) [E] (b) (6); Hagan, Robert (b) (6); Wolfgang,
Matthew C (b) (6)

Subject: RE: Question about PK/PD and (b) (5)

Hi Mike

Yes. I am from SOP. Glad to share some info (b) (4)
(b) (4)
(b) (4). To my knowledge, (b) (4)

I hope this helps. If needed, I would like to follow up for further discussion.

Thanks,
Carter

YANGUANG (CARTER) CAO, PH.D.

ASSISTANT PROFESSOR | DIVISION OF PHARMACOTHERAPY AND EXPERIMENTAL THERAPEUTICS,
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

ADJUNCT ASSISTANT PROFESSOR | STATE UNIVERSITY OF NEW YORK AT BUFFALO

(b) (6) | P (b) (6)

UNC ESHELMAN SCHOOL OF PHARMACY

Campus Box 7569

Kerr Hall | 301 Pharmacy Lane

Chapel Hill, NC 27599-7355

Sent from [Mail](#) for Windows 10

From: [Cohen, Myron S](#)

Sent: Saturday, April 11, 2020 9:41 AM

To: [Kashuba, Angela D](#)

Cc: [Boucher, Richard C Jr](#); (b) (6); [Corey MD, Larry](#) (b) (6);
[Barouch, Dan \(HMFP - Division of Vaccine Research\)](#); [Eron, Joseph J Jr](#); [Mascola, John \(NIH/VRC\) \[E\]](#);
[Graham, Barney \(NIH/VRC\) \[E\]](#); [Hagan, Robert](#); [Wolfgang, Matthew C](#); [Cao, Yanguang](#)

Subject: RE: Question about PK/PD and (b) (4)

Thx. He is at SOP?

M

From: Kashuba, Angela D <(b) (6)>

Sent: Saturday, April 11, 2020 9:29 AM

To: Cohen, Myron S <(b) (6)>

Cc: Boucher, Richard C Jr <(b) (6)>; Corey MD,
Larry (b) (6) Barouch, Dan (HMFP - Division of Vaccine
Research) (b) (6); Eron, Joseph J Jr (b) (6); Mascola,
John (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] <(b) (6)>;
Hagan, Robert (b) (6); Wolfgang, Matthew C

(b) (6); Cao, Yanguang <(b) (6)>

Subject: Re: Question about PK/PD and (b) (4)

Hi Mike:

I also copy Carter Cao on this note. He's our expert in (b) (4) pk/pd. He may have some thoughts on sampling and best practices.

All the best

Angela

On Apr 11, 2020, at 9:16 AM, Cohen, Myron S <(b) (6)> wrote:

Thx. Ill get in touch with them as protocols are developed. They have worked in (b) (4) It seems like you and Mike Knowles did a lot with this 20 years ago?

m

From: Boucher, Richard C Jr <(b) (6)>
Sent: Saturday, April 11, 2020 8:14 AM
To: Cohen, Myron S <(b) (6)>
Cc: Kashuba, Angela D <(b) (6)> Corey MD, Larry <(b) (6)>; Barouch,Dan (HMFP - Division of Vaccine Research) <(b) (6)>; Eron, Joseph J Jr <(b) (6)>; Mascola, John (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E] <(b) (6)>; Hagan, Robert <(b) (6)>; Wolfgang, Matthew C <(b) (6)>
Subject: Re: Question about PK/PD and (b) (4)

Mike

You need to talk to Rob Hagan and Matt Wolfgang-copied above. They have a system in place to collect many specimens including (b) (4)
(b) (4)

Ric

From: Cohen, Myron S <(b) (6)>
Sent: Saturday, April 11, 2020 6:07 AM
To: Boucher, Richard C Jr <(b) (6)>
Cc: Kashuba, Angela D <(b) (6)> <(b) (6)>; Corey MD, Larry <(b) (6)> Barouch,Dan (HMFP - Division of Vaccine Research) <(b) (6)>; Eron, Joseph J Jr <(b) (6)> Mascola, John (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E] <(b) (6)>
Subject: Question about PK/PD and (b) (4)

Hi Ric and Angela,

We will soon do (b) (4) Covid studies.

If we want to (b) (4) how would YOU do it? (b) (4)

I doubt we will be able to (b) (4), although I suspect such information might be important.

Please advise.

Thx

M

Myron S. Cohen, MD

Yeargan-Bate Professor of Medicine, Microbiology and Epidemiology

Associate Vice Chancellor for Medical Affairs and Global Health

Director, Institute for Global Health and Infectious Diseases

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

130 Mason Farm Road, Suite 2115, CB 7030 | Chapel Hill, NC 27599-7030

<http://globalhealth.unc.edu> | <https://www.med.unc.edu/infdis>

Assistants: (b) (6) | (b) (6) | (b) (6)
(b) (6) | (b) (6) | (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 5 Feb 2020 16:13:16 +0000
To: Handley, Gray (NIH/NIAID) [E];Feldmann, Heinrich (NIH/NIAID) [E];Schmaljohn, Connie (NIH/NIAID) [E]
Cc: Munster, Vincent (NIH/NIAID) [E];Marston, Hilary (NIH/NIAID) [E];Bok, Karin (NIH/VRC) [E];Stemmy, Erik (NIH/NIAID) [E];Dominique, Joyelle (NIH/NIAID) [E];Adomako, Melissa (NIH/NIAID) [C]
Subject: RE: WHO Global Research and Innovation Forum: Towards a Roadmap for the 2019 Novel Coronavirus - NIAID Participants

My sense is that the WHO meeting will not have a lot of slides being shown from individual groups, but if Vincent shares a couple of summary slides, I could make sure that information is included in the meeting.

Based on todays call it sounds like the first day will be small group breakout sessions and second day will be reporting on the small group discussions.

Barney

From: Handley, Gray (NIH/NIAID) [E] (b) (6)>
Sent: Wednesday, February 5, 2020 10:58 AM
To: Feldmann, Heinrich (NIH/NIAID) [E] (b) (6)>; Schmaljohn, Connie (NIH/NIAID) [E] (b) (6)>
Cc: Munster, Vincent (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6); Stemmy, Erik (NIH/NIAID) [E] (b) (6)>; Dominique, Joyelle (NIH/NIAID) [E] (b) (6)>; Adomako, Melissa (NIH/NIAID) [C] (b) (6)>
Subject: RE: WHO Global Research and Innovation Forum: Towards a Roadmap for the 2019 Novel Coronavirus - NIAID Participants

Heinz, no problem. It is entirely your call; so please continue your important work in Mali.

Connie, do you want to attend or do you feel having Martha listen in will be sufficient? If you want to attend, we can easily let WHO know.

As far as I know, Hilary, Barney, Erik Stemmy and Steve Smith will be attending in person. If Connie chooses not to attend in person, perhaps some of them can fill in for IRF and RML teams.

Gray

From: Feldmann, Heinrich (NIH/NIAID) [E] (b) (6)>
Sent: Wednesday, February 5, 2020 10:12 AM
To: Handley, Gray (NIH/NIAID) [E] (b) (6)

Cc: Munster, Vincent (NIH/NIAID) [E] (b) (6)>

Subject: Re: WHO Global Research and Innovation Forum: Towards a Roadmap for the 2019 Novel Coronavirus - NIAID Participants

Gray,

I am currently in Mali for (b) (5). Sorry for the late response. In order to make the meeting in Geneva I would have to leave here already late evening of February 9. This would really cut short our efforts here. We are also establishing the (b) (5) here at Point G. In addition, we are dealing with a cluster of (b) (5) in Mopti. Thus, I think I will not attend unless you really want me there.

Best wishes, Heinz

Sent from my iPhone

On Feb 5, 2020, at 2:14 PM, Handley, Gray (NIH/NIAID) [E] (b) (6)> wrote:

Vincent, is Heinz planning to attend the WHO meeting? Gray

Sent from my iPhone

On Feb 3, 2020, at 3:35 PM, Munster, Vincent (NIH/NIAID) [E] <(b) (6)> wrote:

Dear Gray,

Although participation with the WHO is very important, I think my participation in critical experiments in the next weeks here at RML is more urgent (and yes, I can still do lab work in high containment □). I'm pretty sure Heinz (although travelling in Africa) or Hillary would be able to cover all what is going on at RML as we are having continuous telecons and updates.

Let me know if you feel differently and I can always reconsider,

Cheers,

Vincent Munster, PhD
Chief, Virus Ecology Section
Laboratory of Virology
Rocky Mountain Laboratories
NIAID/NIH

From: Gray Handley (b) (6)>

Date: Monday, February 3, 2020 at 12:10 PM

To: "Auchincloss, Hugh (NIH/NIAID) [E]" (b) (6)>, "Mascola, John (NIH/VRC) [E]" (b) (6), "Erbelding, Emily (NIH/NIAID) [E]"

(b) (6)>, "Cassetti, Cristina (NIH/NIAID) [E]" <(b) (6)>,
"Holland, Steven (NIH/NIAID) [E]" <(b) (6)>

Cc: "Marston, Hilary (NIH/NIAID) [E]" (b) (6)>, Barney Graham
(b) (6)>, "Smith, Steven T (NIH/NIAID) [E]" (b) (6)>,
"Embry, Alan (NIH/NIAID) [E]" (b) (6)>, "Stemmy, Erik (NIH/NIAID) [E]"
(b) (6)>, Karyl
Barron (b) (6), Heinrich Feldmann (b) (6) "Hensley,
Lisa (NIH/NIAID) [E]" (b) (6)>, "Higgs, Elizabeth (NIH/NIAID) [E]"
(b) (6)>, "Nason, Martha (NIH/NIAID) [E]" (b) (6)>,
"Schmaljohn, Connie (NIH/NIAID) [E]" (b) (6)>, "Beigel, John (NIH) [E]"
< (b) (6)>, "Wolfram, Larry (NIH/NIAID) [E]" (b) (6)>, NIAID
BUGS <BUGS@niaid.nih.gov>

Subject: FW: WHO Global Research and Innovation Forum: Towards a Roadmap for the 2019 Novel Coronavirus - NIAID Participants

Friends,

Following a review of the many invitations received by NIAID scientists to attend the WHO R&D Roadmap meeting on nCoV on February 11-12, 2020 in Geneva, Dr. Fauci recommends that Drs. Graham, Marston, and either Dr. Embry or Dr. Stemmy and either Dr. Feldmann or Dr. Munster, as well as Steve Smith, attend as expert participants and NIAID representatives. We do not yet have a draft agenda.

Please let me know if any of these attendees are unavailable to attend.

Due to the shortage of time, attendees are encouraged to confirm their participation with WHO as soon as possible.

If there is time, a pre-briefing session will be convened to assure broad NIAID input is available to the participants.

Thank you for your understanding and for coping with the incredibly short timeline provided by WHO.

Gray

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 12 Feb 2020 13:19:02 +0000
To: Chiu, Christopher
Cc: Ngwuta, Joan (NIH/VRC) [F]; Chen, Man (NIH/VRC) [E]; Ruckwardt, Tracy (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Ascough, Stephanie C; Dayananda, Pete
Subject: RE: Imperial College/sample/ (b) (4) Discussion

Hi Chris,

Thank you for the update. I've added Tracy Ruckwardt here. She is leading the RSV group and would supervise the assays. She would be able to give you an idea about timing. I look forward to seeing some of your (b) (4) data.

Best wishes,

Barney

From: Chiu, Christopher (b) (6) >
Sent: Wednesday, February 12, 2020 7:27 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Cc: Ngwuta, Joan (NIH/VRC) [F] (b) (6) >; Chen, Man (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>; Ascough, Stephanie C (b) (6); Dayananda, Pete (b) (6) >
Subject: Re: Imperial College/sample (b) (4) Discussion

Hi Barney

I hope you are well and not too overwhelmed with COVID-19! I am writing to follow up on the various elements of the (b) (4) collaboration we have been working on. I am keen to get on and pull together a manuscript as soon as possible, focusing on the recent (b) (4) study we have been doing along with some comparisons with the (b) (4)

(b) (4)
(b) (4), will be discussing their results shortly!

For convenience, I attach the data that your team previously generated using our (b) (4) (b) (4). I now propose a manuscript based around the following:

(b) (4)

The outstanding data would be:

(b) (4)

To enable us to integrate the previous data generated in your lab, I think we would need to run the new (b) (4) i.e. in your lab. Do you think this is feasible? My team would then focus on developing and optimising the (b) (4) and hopefully all the data could come together in the shortest amount of time.

I'd very much appreciate your thoughts and those of the team. We aim to get started on outstanding assays from next week.

Best wishes,
Chris

Christopher Chiu BMBCh MRCP FRCPath PhD
Clinical Senior Lecturer & Honorary Consultant in Infectious Diseases
@ChrisChiuLab | www.imperial.ac.uk/people/c.chiu

Department of Infectious Disease
8th Floor, Commonwealth Building
Imperial College London, Hammersmith Campus
Du Cane Road, London W12 0NN
United Kingdom

Tel: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 19 Mar 2020 08:15:51 +0000
To: Rafel Balada
Subject: Re: [IJMS] Manuscript ID: ijms-751222 - Peer-Review Update Barney S. Graham

Maybe (b) (6)

Sent from my iPhone

> On Mar 19, 2020, at 3:21 AM, Rafel Balada <(b) (6)> wrote:

>

> Dear Dr. Graham,

>

> Thank you very much for your reply. We hope we will be able to call on you to assist with the review process of our journal in the future. Meanwhile, maybe you could recommend other experts in the area to review this manuscript? I'd appreciate your help very much.

>

> Wishing you the very best,

>

> Rafel

>

>> On 3/18/2020 7:00 PM, (b) (6) wrote:

>> Dear Editor,

>>

>> The submission review form has been updated.

>>

>> Manuscript ID: (b) (6)

>> Type of manuscript: Article

>> Title: (b) (6)

>> (b) (6)

>> Authors: (b) (6)

>> Received: (b) (6)

>> E-mails: (b) (6)

>> (b) (6)

>> Submitted to section: Molecular Biophysics,

>> (b) (6)

>>

>>

>>

>>

>> Reviewer: Barney S. Graham (invited on 18 March 2020) updated the peer-review form:

>>

>> Review request acceptance: no (on 18 March 2020)

>> Comments: I don't have enough time

>>

>>

>>

>>

>> (b) (6)

>>

>>

>> Mr. Rafel Balada

>> Assistant Editor

>> E-Mail: (b) (6)
>> Skype: live:. (b) (6)
>>
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> Mr. Rafel Balada
> Assistant Editor
> E-mail: (b) (6)
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> IJMS channel on Twitter (@IJMS_MDPI)
>

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 7 Apr 2020 19:59:17 +0000
To: William Dowling
Subject: Accepted: WHO Consultation on SARS-CoV -2 Viruses, Reagents and immune Assays - Wed 3 PM CET

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 5 Mar 2020 08:03:45 +0000
To: Padma B
Subject: Re: Hi Barney!

Thanks Padma. Hope you and your family are doing well. I think we were at your original lab bench. It's strange to have switched almost entirely to proteins and antibodies. We need to get back to the T cells.

Take care,

Barney

Sent from my iPhone

> On Mar 4, 2020, at 8:58 PM, Padma B [REDACTED] (b) (6) wrote:
>
>
> Hi Barney,
> How are you and the team doing?
> Hope all is well.
> I was very happy to see you on the twitter feed speaking to the President (I think in our VPL lab) regarding COVID-19. Proudly shared with family and friends.
>
> Always feel privileged and honored to have had the opportunity to work with you.
>
> Just wanted to say hi!
> Best wishes
> Padma
>

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 2 Apr 2020 18:44:50 +0000
To: Stein, Judy (NIH/VRC) [C]
Cc: Morabito, Kaitlyn (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]; Petrik, Amy (NIH/NIAID) [E]
Subject: Re: (b) (4)

I think (b) (4). Moderna can make due with (b) (4) for now. We are sending them more.

BG

Sent from my iPhone

> On Apr 2, 2020, at 2:11 PM, Stein, Judy (NIH/VRC) [C] (b) (6) wrote:
>
> Sounds good - we will draft a quick amendment to send to Sunny.
>
> -----Original Message-----
> From: Graham, Barney (NIH/VRC) [E] <(b) (6)>
> Sent: Thursday, April 2, 2020 2:08 PM
> To: Stein, Judy (NIH/VRC) [C] (b) (6)
> Cc: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Alvarado, Gabriela (NIH/VRC) [C] (b) (6); Petrik, Amy (NIH/NIAID) [E] (b) (6)
> Subject: Re: (b) (4)
>
> Let's do what we need to do to ship by Monday next week.
>
> BG
>
>
>
> Sent from my iPhone
>
>> On Apr 2, 2020, at 2:06 PM, Stein, Judy (NIH/VRC) [C] (b) (6) wrote:
>>
>> Hi everyone,
>> I just spoke to Amy about this and if you would like to send (b) (4), we can put together a quick amendment to the MTA to include (b) (4). We had initially wanted to wait until the patent is filed, but since this will be awhile and there seems to be an urgent need, we can just try to protect the materials with agreements.
>>
>> Please let me know how you would like to proceed.
>>
>> Thanks,
>> Judy
>>
>> -----Original Message-----

>> From: Sunny Himansu (b) (6)
>> Sent: Wednesday, April 1, 2020 7:05 AM
>> To: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>
>> Cc: Guillaume Stewart-Jones (b) (6)
>> Graham, Barney (NIH/VRC) [E] (b) (6)>; Morabito, Kaitlyn
>> (NIH/VRC) [E] (b) (6)>; Stein, Judy (NIH/VRC) [C]
>> (b) (6); Petrik, Amy (NIH/NIAID) [E]
>> (b) (6).
>> Subject: Re: (b) (4)
>>
>> Hi Kizzy ,
>>
>> I had originally made a request for (b) (4) to be transferred by MTA but that was removed from the agreement by NIH.
>>
>> Judy/Amy - is it possible for Moderna to receive (b) (4) under the MTA? I believe Eliot Green from Moderna may have also reached out (b) (4)
>>
>> I will let Guillaume comment on (b) (4) question.
>>
>> Sunny
>>
>> E&OE
>>
>> Sent from my iPhone
>>
>>>> On Apr 1, 2020, at 6:55 AM, Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)> wrote:
>>>>
>>>> Good morning,
>>>> We are following up with our availability on these (b) (4) however' it is our inclination that with the large amount of work we have to do in the next 2 weeks, that it would be (b) (4)
>>>> (b) (4). As well, can we have a data-specific answer as to (b) (4)
>>>> (b) (4)
>>>>
>>>> --
>>>> Kizzmekia S. Corbett, PhD
>>>> Senior Research Fellow | Scientific Lead Coronavirus Vaccines &
>>>> Immunopathogenesis (coVip) Team Viral Pathogenesis Laboratory |
>>>> Vaccine Research Center National Institutes of Allergy and Infectious
>>>> Diseases National Institutes of Health
>>>>
>>>> Building 40 Room 2608
>>>> 40 Convent Drive
>>>> Bethesda MD 20892
>>>> Laboratory: (b) (6)
>>>> Personal: (b) (6)
>>>> Fax: (301) 480-2771
>>>>
>>>>
>>>> On 3/28/20, 1:14 PM, "Guillaume Stewart-Jones" (b) (6)> wrote:
>>>>
>>>> Hi Kizzy,
>>>>
>>>> Sunny indicated the MTA has been signed to obtain more of the (b) (4)
>>>>
>>>> Would it be possible to send (b) (4)

>>>
>>> Isabella Renzi
>>> 200 Technology Square
>>> Cambridge, MA 02139
>>> 527-14
>>>
>>> Best regards,
>>>
>>> Guillaume
>>>
>>>
>>> -----Original Message-----
>>> From: Sunny Himansu [REDACTED] (b) (6)
>>> Sent: Tuesday, March 24, 2020 7:12 PM
>>> To: Guillaume Stewart-Jones [REDACTED] (b) (6)>
>>> Subject: Antibodies
>>>
>>> Hi Guillaume ,
>>>
>>> The MTA with NIH has been signed to get the [REDACTED] (b) (4). Please go ahead and connect with Kizzy to get
more [REDACTED] (b) (4).
>>>
>>> Sunny
>>>
>>>
>>> P Please consider the environment before printing this email
>>>
>>>
>>> Confidentiality notice and disclaimer: The information in this message and any attachments is intended for the
exclusive use of the addressee(s), is confidential and may be privileged or otherwise protected from disclosure. Any
review, retransmission, dissemination or other use of, or taking of any action in reliance upon, of any such
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you must not copy this message or attachment or disclose the contents to any other person.
>>>
>>>
>>>

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 22 Mar 2020 14:14:20 +0000
To: Dennis Burton
Subject: Re: short Q

Totally agree. We need to protect the lower airway just like in RSV and flu. Systemic antibodies can accomplish this based on RSV experience and a parenterally delivered vaccine that is designed the right way should work based on influenza.

Probably not a bad thing to have repeated URI for boosting as long as everyone has some level of immunity.

BG

Sent from my iPhone

On Mar 21, 2020, at 6:44 PM, Dennis Burton (b) (6) wrote:

Barney, Sorry to bother you, but you are the guru here. From the Nature commentary below there are concerns that immunity may be short-lived because folks get repeated coronavirus infections. But I wonder-is this not like RSV? We may get upper respiratory tract infections repeatedly because mucosal immunity is short-lived but if we have serum nAbs then we are protected against serious lower respiratory tract infections. Then with systemic nAbs (presuming they are durable), we would be protected against the worst of SARS-CoV-2. Thoughts? Thanks, Dennis

<https://www.nature.com/articles/d41586-020-00798-8#ref-CR3>

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 28 Jan 2020 16:36:12 +0000
To: Stein, Judy (NIH/VRC) [C]
Cc: Mascola, John (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: Re: James Crowe agreement for coronavirus

I think RCAs work better here unless there is significant delay. We had also discussed starting with MTA and converting to RCA.

BG

Sent from my iPhone

On Jan 28, 2020, at 3:07 PM, Stein, Judy (NIH/VRC) [C] (b) (6) wrote:

Hi Barney and John,

Last week it was initially decided that we should use a (b) (4) material MTA for the transfer to Jim Crowe, in part because he was only going to send (b) (4) back. This hMTA was negotiated and Vanderbilt agreed to the terms and signed yesterday.

Over the weekend, there was a shift to using RCAs for all of these agreements. The RCA documents that the work is collaborative, but does not impact contribution to inventorship/ownership – which is solely based on the patent law/USPTO definitions.

NIAID has not yet signed this hMTA so I am happy to go back to Jim and let him know that we are shifting to RCAs to better track all of the use of these (b) (4) samples and materials if you prefer not to proceed with the hMTA.

Can you please let me know.

Thanks,
Judy

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 9 Mar 2020 15:58:55 +0000
To: Cassetti, Cristina (NIH/NIAID) [E]
Cc: Conrad, Patricia (NIH/NIAID) [E]; Marston, Hilary (NIH/NIAID) [E]; Embry, Alan (NIH/NIAID) [E]
Subject: Re: Possible meeting netx Thursday March March 12th

Yes I can be available for GSK call.

Glad to know BIO is postponed.

BG

Sent from my iPhone

On Mar 9, 2020, at 11:56 AM, Cassetti, Cristina (NIH/NIAID) [E] (b) (6) > wrote:

Hi Barney,

The BIO meeting on Thursday has been postponed. Can you be available for a call with GSK after 4 pm on Thursday (presumably while you are at the airport?)

Patty,

I know that Dr. Fauci is completely swamped but can you please check to see if he would be available to meet with Rino Rappuoli and Thomas Breuer, the head of Global Health at GSK on Thursday after 4 pm (maybe 5-6 just after ExCom)? They are in town for a meeting with BARDA. We will include few folks from DMID if we can identify a suitable time.

Thank you,
Cristina

From: Thomas Breuer (b) (6)
Sent: Monday, March 9, 2020 11:34 AM
To: Cassetti, Cristina (NIH/NIAID) [E] (b) (6)
Cc: Fauci, Anthony (NIH/NIAID) [E] (b) (6); Rino Rappuoli <(b) (6)>
Subject: FW: Possible meeting netx Thursday March March 12th

Dear Christina,
We met very recently at the meeting in Lyon.
As explained briefly, I am the CMO for GSK Vaccines but also in charge of Global Health including Corona.

GSK is eager to have an initial discussion with NIAID/NIH and BARDA on our already ongoing contributions with our (b) (4) as well as exploring whether there is overlap in working together on our (b) (4). Rino suggested to have a meeting with Barney and Tony, however understandably, they are very busy.

I currently plan to attend a meeting with BARDA on Thursday and I am still wondering whether I can have a meeting with relevant people at NIAID/NIH on the same day (see emails below). Or do you think it would be better to start with a telecom first once Barney is available?

Can you help?

Best

Thomas

Thomas Breuer, MD, MSc
Senior Vice President
Chief Medical Officer
GSK Vaccines
Avenue Fleming 20
1300 Wavre, Belgium
Mail: (b) (6)
Mobile (b) (6)
Tel: (b) (6) Assist.)

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)>
Date: Monday, 9 March 2020 at 15:47
To: Rino Rappuoli (b) (6)
Cc: "Fauci, Anthony (NIH/NIAID) [E]" (b) (6)>, Thomas Breuer (b) (6)
Subject: Re: Possible meeting netx Thursday March March 12th

EXTERNAL

Hi Rino.

That is a tough day because I'm on a call all morning to deal with the vaccine-enhanced illness issue and then have another meeting downtown before heading to the airport.

I might be able to be on a call while driving at about 1.

Barney

Sent from my iPhone

On Mar 8, 2020, at 2:39 PM, Rino Rappuoli (b) (6) wrote:

Dear Tony and Barney,

next week, on Thursday March 12th we have a meeting with BARDA from 1-2PM. The meeting will be preferably in person but we could move it to skype depending on the evolution of the coronavirus situation. The scope of the meeting is how GSK can best contribute to fight the coronavirus epidemic (our assets are (b) (4)). We wonder whether on the same day we can also schedule a meeting with VRC and Tony separate or combined, to discuss possible strategies and collaborations with NIAID.

To be compatible with the BARDA meeting the meeting(s) at NIH should be either early in the morning (in the interval from 8 to 11 am) or in the afternoon (starting from 4 pm).

Please let me know if one of these proposals is OK with you.

Ciao, Rino

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From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 24 Feb 2020 13:26:07 +0000
To: Xavier Saelens; Jason McLellan
Cc: Tim Van Acker; Hiatt, Nissa (NIH/VRC) [C]; Routh, Jennifer (NIH/NIAID) [E]
Subject: RE: Biocentury

Hi Xavier,

No problem. We have been mentioned enough.

When I am interviewed they usually use 2 throw-away sentences from 30 minutes of education.

Best wishes,

Barney

From: Xavier Saelens (b) (6)
Sent: Monday, February 24, 2020 6:54 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6)>; Jason McLellan (b) (6)>
Cc: Tim Van Acker (b) (6)>
Subject: Biocentury

Dear Barney and Jason,

This is to let you know that VIB insisted to the Biocentury journalist that NIH and University of Texas would be mentioned in their update on COVID-19 developments.

Unfortunately, this did not happen:

<https://www.biocentury.com/article/304490/a-taxonomy-of-mab-programs-against-covid-19>

Kind regards,
Xavier

—
Prof. Dr. Xavier Saelens - Principal Investigator

VIB-UGent Center for Medical Biotechnology
Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium
Tel: + (b) (6)
(b) (6)



SCIENCE MEETS LIFE

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 24 Apr 2020 04:05:13 +0000
To: Buchholz, Ulla (NIH/NIAID)
[E]; [REDACTED] (b) (6)
[REDACTED] Brister,
James (NIH/NLM/NCBI)
[E]; [REDACTED] (b) (6)
[REDACTED]
[REDACTED] Lindstrom, Stephen
(CDC/DDID/NCIRD/[REDACTED] (b) (6)
[REDACTED] Peret, Teresa
(CDC/DDID/NCIRD/DVD); [REDACTED] (b) (6)
;Trovao, Nidia (NIH/FIC)
[F]; [REDACTED] (b) (6)
[REDACTED]
Subject: RE: HRSV nomenclature below the species level - manuscript for pre-submission review
Attachments: HRSV Nomenclature manuscript_BG.docx

Hi Ulla and Vahid,

Thank you for working so hard to finish this. It is well written, and I have just a few edits and questions in the comments.

Will there be some type of template for the metadata submission with standard field codes that make it clear how to report the information?

Best wishes and take care,

Barney

From: Buchholz, Ulla (NIH/NIAID) [E] [REDACTED] (b) (6)>
Sent: Monday, April 13, 2020 11:59 PM
To: [REDACTED] (b) (6);
[REDACTED] (b) (6)
[REDACTED] (b) (6); Brister, James (NIH/NLM/NCBI) [E] [REDACTED] (b) (6);
[REDACTED] (b) (6) Graham, Barney (NIH/VRC)
[E] [REDACTED] (b) (6)
[REDACTED] (b) (6); Lindstrom, Stephen
(CDC/DDID/NCIRD/DVD) [REDACTED] (b) (6)-
[REDACTED] (b) (6); Peret, Teresa (CDC/DDID/NCIRD/DVD) [REDACTED] (b) (6)>;
[REDACTED] (b) (6); Trovao, Nidia (NIH/FIC)
[F] [REDACTED] (b) (6)
[REDACTED] (b) (6); Buchholz, Ulla (NIH/NIAID) [E]

(b) (6)

Subject: HRSV nomenclature below the species level - manuscript for pre-submission review

Dear co-authors and supporters of our HRSV nomenclature proposal,

At long last: attached please find the final version of the HRSV nomenclature manuscript for pre-submission review. This proposal for a universal nomenclature below the species level has grown into a combined proposal, supported by members of the International RSV Society (ISIRV), and by the WHO team involved in the HRSV surveillance program. Our plan is to submit this manuscript to Emerging Infectious Diseases, to be published as an EID Online Report. An alternative option, brought forward by the WHO team: We could submit this to the WHO Bulletin. I believe that both EID and the WHO Bulletin would reach our target readership, with EID possibly being more easily accessible to the HRSV research community - hence my proposal to submit to EID.

It would be great if you could send final comments and feedback by midnight EST on Monday, April 20. Many of us will be very involved in COVID-19 activities. Please send me a brief email by if you would like additional time to review.

- Please verify that your name and affiliation are spelled correctly.
- Please send any funding information for inclusion in the acknowledgement/disclaimer section.
- Please send me a brief "ok" by email if you do not have any comments on this version.

This proposal was initiated by Vahid Salimi. Alfonsina Trento and Mariana Viegas were major contributors. Thomas Williams and Ian Barr joined in as lead contributors from the WHO team, and everyone on the author list was involved in discussions and in the writing: You can see from the (mostly alphabetical) author list that our group of co-authors is spanning the world.

We hope that the nomenclature proposal will be widely acceptable, facilitating molecular epidemiology studies. Thank you so much for your patience and support.

The manuscript is dedicated to Jose Melero, who was a wonderful friend to us all.

Thank you for your contributions to this manuscript!

Kind regards, and stay safe,

Ulla

--

Ursula Buchholz, PhD
Senior Associate Scientist
RNA Viruses Section
Laboratory of Infectious Diseases
NIAID, NIH
Bldg. 50, Rm. 6503
50 South Drive, MSC 8007
Bethesda, MD 20892

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Fax: (301) 480-1268

email: [REDACTED] (b) (6)

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From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 30 Jan 2020 16:18:27 +0000
To: (b) (3) (A), (b) (6)
Cc: Mascola, John (NIH/VRC) [E]
Subject: Re: Corona virus
Attachments: image001.png

We just heard that CDC has it growing in Vero cells. Their intent is to have it at BEI repository in a few more days.

BG

Sent from my iPhone

On Jan 30, 2020, at 5:16 PM, (b) (3) (A), (b) (6) wrote:

This is taking a long time.

Have you heard anything about this becoming a select agent. I assume this will happen sooner than later since it is almost identical to SARS. It will make thing much more difficult to work with since both the virus and its genome are each considered select agents.

(b) (3) (A)

From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Monday, January 27, 2020 9:15 AM
To: (b) (3) (A), (b) (6) Mascola, John (NIH/VRC) [E] (b) (6) >
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Not that I know of. We are also waiting.

BG

From: (b) (3) (A), (b) (6) >

Sent: Monday, January 27, 2020 8:44 AM

To: Graham, Barney (NIH/VRC) [E] (b) (6) >; Mascola, John (NIH/VRC) [E]

(b) (6)

Subject: RE: Corona virus

We are planning to develop (b) (4)

(b) (3) (A)

From: Graham, Barney (NIH/VRC) [E] (b) (6) >

Sent: Friday, January 24, 2020 11:32 AM

To: (b) (3) (A), (b) (6) Mascola, John (NIH/VRC) [E] (b) (6)

Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

It will have to be handled at BL3. The overall plan from CDC is to put it in the BEI repository. If you are approved for SARS, then this should be same process.

(b) (4)

Barney

From: (b) (3) (A), (b) (6) >

Sent: Friday, January 24, 2020 11:21 AM

To: Graham, Barney (NIH/VRC) [E] (b) (6) >; Mascola, John (NIH/VRC) [E]

(b) (6)

Subject: RE: Corona virus

(b) (4) I was wondering how CDC would handle it, would it be classified as a select agent? I am assuming yes, since SARS is one. This would cause issues of getting it approved for use. We have approval for SARS, which should get us over most of the hurdles. Have you asked CDC about this?

From: Graham, Barney (NIH/VRC) [E] (b) (6) >

Sent: Wednesday, January 22, 2020 12:06 PM

To: [REDACTED] (b) (3) (A), (b) (6) >; Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6) >
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

CDC is working to isolate the virus from [REDACTED] (b) (4), (b) (6). In prior reports from Asia, the virus is not easy to grow in cell culture. [REDACTED] (b) (4)

Barney

From: [REDACTED] (b) (3) (A), (b) (6)
Sent: Wednesday, January 22, 2020 11:50 AM
To: Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6) >
Cc: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Subject: RE: Corona virus

[REDACTED] (b) (4)

From: Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6) >
Sent: Wednesday, January 22, 2020 11:45 AM
To: [REDACTED] (b) (3) (A), (b) (6) >
Cc: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

[REDACTED] (b) (3) (A)

We are. Barney is leading the effort; which among other things, may involve mRNA vaccine candidates. Thanks for letting us know – we will stay in touch as this progresses.

Best,
John

From: [REDACTED] (b) (3) (A), (b) (6)
Sent: Wednesday, January 22, 2020 9:21 AM

To: Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6)

Subject: Corona virus

John

Are you getting involved with the new corona virus? We are prepared to help. [REDACTED] (b) (4)

(b) (4)

[REDACTED] (b) (3) (A), (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 31 Dec 2019 16:29:29 +0000
To: Denison, Mark
Cc: Chappell, Jim;Agostini, Maria L;Jennifer Gribble;Baric, Ralph;Timothy Sheahan;Pruijssers, Ardina;Stevens, Laura J;Lu, Xiaotao;Anderson-Daniels, Jordan M
Subject: Re: [EXTERNAL] Fw: PRO/AH/EDR> Undiagnosed pneumonia - China (HU), RFI

We are waiting for sequences. If it's CoV we know what to do.

BG

Sent from my iPhone

> On Dec 31, 2019, at 11:14 AM, Denison, Mark (b) (6)> wrote:

>

> Lots of speculation about outbreak of undiagnosed pneumonia in china

>

> <https://promedmail.org/>

>

> happy new year

>

> Mark

>

> On 12/31/19, 10:08 AM, "Tomas Cihlar" <(b) (6)> wrote:

>

> Hi Fred,

> Thank you, seems it is now widely covered in press with almost 30 cases identified. If they confirm it is a CoV of some sort, we should probably get in touch with WHO. Who would be the best contact - Maria ?

> Thanks again and happy new year to everyone!

> Tomas

>

> Sent from my iPhone

>

> On Dec 31, 2019, at 1:30 PM, Hayden, Frederick G (fgh) (b) (6) wrote:

>

>

>

>

> Warrants monitoring. Happy New Year!

>

> From: promed-edr-bounces@promedmail.org <promed-edr-bounces@promedmail.org> on behalf of promed-edr@promedmail.org <promed-edr@promedmail.org>

> Sent: Monday, December 30, 2019 11:59 PM

> To: promed-post@promedmail.org; promed-edr-post@promedmail.org; promed-ahead-post@promedmail.org

> Subject: PRO/AH/EDR> Undiagnosed pneumonia - China (HU), RFI

>

> RED: UNDIAGNOSED PNEUMONIA - CHINA (HUBEI), REQUEST FOR INFORMATION

> *****

> A ProMED-mail post

>

<<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.promedmail.org&data=02%7C0>

[1%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386626654&data=guQSpXQyxSqHGbc314HkSOpDejdtPJT17V18SWja2Us%3D&reserved=0](https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fwww.promedmail.org%3B%21Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUy2_d04Dg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386626654&data=guQSpXQyxSqHGbc314HkSOpDejdtPJT17V18SWja2Us%3D&reserved=0)<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fwww.promedmail.org%3B%21Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUy2_d04Dg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386626654&data=v2MaMPduV6QJwxg49DmQ%2B1wEtMgewrAnZDgMrb9A07Y%3D&reserved=0>>

- > ProMED-mail is a program of the
- > International Society for Infectious Diseases

>
<<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.isid.org&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386626654&data=QQzkF7cGCjPavZXT6HRPWP6x0XYs6b7CJpyjhNPQAdw%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fwww.isid.org%3B%21Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUzDX7nxTg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386626654&data=yuOiPjPnZqvXBTJM2HW2JC3Q6Hw9P6IfH8zwpZUav4%3D&reserved=0>>>

>
> [1]
> [1]
> Date: 30 Dec 2019
> Source: Finance Sina [machine translation]
> <<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Ffinance.sina.cn%2F2019-12-31%2Fdetail-iinhzakh1074832.d.html%3Ffrom%3Dwap&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=C2dmVE9SeTVI0v4IOJLFegV03NIDegAfKtTA0A%2B911c%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttps%3A%2F%2Ffinance.sina.cn%2F2019-12-31%2Fdetail-iinhzakh1074832.d.html%3Ffrom%3Dwap_%3B%21Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUzQ-Zoh2Q%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=bQJgVxfkchl97%2B6aT7SuUuDdY1T5Mw7cEtrulXeexdE%3D&reserved=0>>

- >
>
> Wuhan unexplained pneumonia has been isolated test results will be
> announced [as soon as available]
> -----
> On the evening of [30 Dec 2019], an "urgent notice on the treatment of
> pneumonia of unknown cause" was issued, which was widely distributed
> on the Internet by the red-headed document of the Medical
> Administration and Medical Administration of Wuhan Municipal Health
> Committee.
>
> On the morning of [31 Dec 2019], China Business News reporter called
> the official hotline of Wuhan Municipal Health and Health Committee
> 12320 and learned that the content of the document is true.
>
> 12320 hotline staff said that what type of pneumonia of unknown cause
> appeared in Wuhan this time remains to be determined.
>
> According to the above documents, according to the urgent notice from
> the superior, some medical institutions in Wuhan have successively
> appeared patients with pneumonia of unknown cause. All medical

> institutions should strengthen the management of outpatient and
> emergency departments, strictly implement the first-in-patient
> responsibility system, and find that patients with unknown cause of
> pneumonia actively adjust the power to treat them on the spot, and
> there should be no refusal to be pushed or pushed.

>

> The document emphasizes that medical institutions need to strengthen
> multidisciplinary professional forces such as respiratory, infectious
> diseases, and intensive medicine in a targeted manner, open green
> channels, make effective connections between outpatient and emergency
> departments, and improve emergency plans for medical treatment.

>

> Another piece of emergency notification, entitled "City Health and
> Health Commission's Report on Reporting the Treatment of Unknown Cause
> of Pneumonia" is also true. According to this document, according to
> the urgent notice from the superior, the South China Seafood Market in
> our city has seen patients with pneumonia of unknown cause one after
> another.

>

> The so-called unexplained pneumonia cases refer to the following 4
> cases of pneumonia that cannot be diagnosed at the same time: fever
> (greater than or equal to 38C); imaging characteristics of pneumonia
> or acute respiratory distress syndrome; reduced or normal white blood
> cells in the early stages of onset The number of lymphocytes was
> reduced. After treatment with antibiotics for 3 to 5 days, the
> condition did not improve significantly.

>

> It is understood that the 1st patient with unexplained pneumonia that
> appeared in Wuhan this time came from Wuhan South China Seafood
> Market.

>

> 12320 hotline staff said that the Wuhan CDC went to the treatment
> hospital to collect patient samples as soon as possible, specifically
> what kind of virus is still waiting for the final test results.
> Patients with unexplained pneumonia have done a good job of isolation
> and treatment, which does not prevent other patients from going to the
> medical institution for medical treatment. Wuhan has the best virus
> research institution in the country, and the virus detection results
> will be released to the public as soon as they are found.

>

> --

> Communicated by:
> ProMED-mail
> <promed@promedmail.org>

>

> *****

> [2]
> Date: 31 Dec 2019
> Source: Sina Finance Mobile
> <https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Ftech.sina.com.cn%2Froll%2F2019-12-31%2Fdoc-iihnzhfz9428799.shtml&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sdata=TZ4DxHb1S9WxI3ysfJDa%2BItYJJDAK1E0C3K00CuezkE%3D&reserved=0&https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_https%3A%2F%2Ftech.sina.com.cn%2Froll%2F2019-12-31%2Fdoc-

iihnzhfz9428799.shtml_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUyeuxnBwQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sdata=kuvos0nTLQxF%2FTSN%2BnRqFVGr0JO2ijMYCHKJKCVjLVw%3D&reserved=0>>

- >
- >
- > Patients with unknown cause of pneumonia in Wuhan have been isolated
- > from multiple hospitals
- > -----
- > Whether or not it is SARS has not yet been clarified, and citizens
- > need not panic.
- >
- > On [31 Dec 2019], various hospitals in Wuhan held an emergency
- > symposium on the topic of the treatment of patients with pneumonia of
- > unknown cause in some medical institutions. The 21st Century Business
- > Herald reporter learned from multiple cross-examinations that these
- > patients have gradually appeared in the South China Seafood Market in
- > Wuhan. At present, the patients have been isolated at the hospital
- > where they saw them. At the scene of the South China Seafood Market,
- > the scene has been isolated and medical staff have confirmed
- > Preventive treatment on site. However, several hospital sources said
- > that at present, the etiology of these patients is not clear, and it
- > cannot be concluded that it is the SARS virus [presently] rumored
- > online. Even if the SARS virus is eventually diagnosed, there is a
- > mature prevention and treatment system in place, and citizens need not
- > panic.
- >
- > On [31 Dec 2019], an official report from Hubei Province said:
- > "Following the report of the Provincial Health and Health Commission,
- > since December [2019], Wuhan has continued to monitor influenza and
- > related diseases, and 27 cases of viral pneumonia have been found, all
- > of which were diagnosed with viral pneumonia / pulmonary infection. Of
- > the 27 cases, 7 were critically ill, and the remaining cases were
- > controllable. Two of them improved and were expected to be discharged
- > soon. The investigation found that most of the cases were operated by
- > South China Seafood City in Jiangnan District, Wuhan. The National
- > Health and Health Commission has decided to send an expert group to
- > our province to guide the epidemic disposal on the morning of [31 Dec
- > 2019]. At present, related virus typing, isolation treatment, public
- > opinion control, and terminal disinfection are underway.
- >
- > On the evening of [30 Dec 2019], an "Urgent Notice on Doing a Good Job
- > in the Treatment of Unknown Cause of Pneumonia" issued by the Wuhan
- > Municipal Health Commission circulated. The document was verified by
- > cross-examination. "We are holding a special meeting on this," said a
- > medical worker at a famous 3rd-level hospital in Wuhan on the morning
- > of [31 Dec 2019], but it was clear that the cause of the patient was
- > not clear. For more detailed information, it is temporarily
- > inconvenient to disclose. At present, Wuhan Health and Health
- > Commission official phone 12320 and official website are busy and
- > unable to log in respectively.
- >
- > Baidu encyclopedia information shows that human diseases caused by
- > SARS virus are mainly respiratory infections (including severe acute
- > respiratory syndrome). The virus is sensitive to temperature and grows
- > well at 33 C, but it is suppressed at 35 C. Because of this

- > characteristic, winter and early spring are the epidemic seasons of
- > the virus disease. SARS virus is one of the main pathogens of the
- > common cold in adults. The infection rate in children is high, mainly
- > upper respiratory tract infection, and it rarely spreads to the lower
- > respiratory tract. In addition, it can cause acute gastroenteritis in
- > infants and newborns. The main symptoms are watery stools, fever, and
- > vomiting. It can be pulled more than 10 times a day. In severe cases,
- > bloody stools can occur. In rare cases, it also causes nervous system
- > syndrome. .
- >
- > The serotype and antigenic variability of SARS virus is unknown. SARS
- > virus can be repeatedly infected, indicating that it has multiple
- > serotypes (at least 4 are known) and antigenic variations, and its
- > immunity is difficult.
- >
- > The SARS virus is mainly excreted through respiratory secretions,
- > transmitted through oral fluids, sneezing, and contact, and
- > transmitted through air droplets. The peak of infection occurs in
- > autumn, winter, and early spring. Sensitive to heat, UV, Lysol water,
- > 0.1% peroxyacetic acid, and 1% keliaolin [?] can kill the virus in a
- > short time. [studies on removal of the SARS-CoV from surfaces
- > demonstrated that the virus was rapidly killed by bleach, ethanol,
- > acetone, and formaldehyde.
- > <<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.cidrap.umn.edu%2Fnews-perspective%2F2003%2F05%2Fsars-virus-can-last-2-days-surfaces-and-feces&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=cBO2HyizJAnxue5bvld7LE1si47zNbD3cFibfLoofFE%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fwww.cidrap.umn.edu%2Fnews-perspective%2F2003%2F05%2Fsars-virus-can-last-2-days-surfaces-and-feces_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUzW_LdSYA%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=RiLAW3vnKwHPajNH3yoJ%2BD2ALfxoMVKz4m804fS1xQc%3D&reserved=0>>.
- > - Mod.MPP]
- >
- > There is specific prevention for SARS virus prevention, that is,
- > targeted preventive measures, that is, prevention through vaccines,
- > but there is no preventive vaccine against SARS. In addition,
- > non-specific preventive measures can be taken, that is, measures to
- > prevent respiratory infections in the spring, such as keeping warm,
- > washing hands, ventilating, avoiding excessive fatigue and contacting
- > patients, and going to less public places.
- >
- > --
- > Communicated by:
- > ProMED-mail
- > <promed@promedmail.org>
- >
- > [Having been involved in moderating the SARS-CoV (Severe acute
- > respiratory syndrome - coronavirus) and the MERS-CoV (Middle Eastern
- > Respiratory Syndrome - coronavirus), the type of social media activity
- > that is now surrounding this event, is very reminiscent of the
- > original "rumors" that accompanied the SARS-CoV outbreak. The
- > exception is the transparency of the local government in responding to
- > this currently undiagnosed outbreak. While this report does not

- > contain the tweets, there have been numerous tweets about this as yet
- > undiagnosed outbreak.
- >
- > Returning to the rumor mill, the discussion of this outbreak (a
- > cluster of 4 or 7 cases) involves an "atypical pneumonia". and now
- > additional information of apparently 27 cases, with 7 severe cases.
- > We do not know if influenza tests were performed, or if tests for the
- > SARS-CoV are underway (but presumably are according to section [2]
- > media report) in addition to other known (or unknown) respiratory
- > viruses. As one of the tweets mentioned, another unusual pneumonia
- > could be associated with infection with the bacteria *Yersinia pestis*
- > (plague) which has been diagnosed in Inner Mongolia in November 2019,
- > but presumably has already been ruled out. the most recent report
- > refers to the outbreak as a "viral pneumonia", suggesting bacterial
- > agents have been ruled out. But has legionellosis been ruled out? or
- > have viral panels been performed?
- >
- > More information on this outbreak including demographics of cases,
- > possible known common contacts, and a clinical description of the
- > illness would be greatly appreciated. And if results of testing are
- > released.
- >
- > According to Wikipedia, Wuhan city is the capital city of Hubei
- > province. It has an estimated population over 11 million inhabitants
- > and is the largest city in central China, and the 7th largest city in
- > all of China. Geographically it is located in the eastern Jiangnan
- > Plain, on the Yangtze river's intersection with the Han river.
- >
- > A map of China showing locations of major cities in China can be found
- > at:
- > <https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.chinadiscovery.com%2Fchina-maps%2Fcity-maps.html&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sd=6n6s0B7fmyMDLxa105fmY0JTNUBVzJ3LRciWNt%2FHHQUk%3D&reserved=0>https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_https%3A%2F%2Fwww.chinadiscovery.com%2Fchina-maps%2Fcity-maps.html_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUzWdTo38g%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sd=5k6h6jeuHWKSsUsOmE9lupnO0wc9NJJ%2FHTUn0JUIIjE%3D&reserved=0>>.
- > The HealthMap/ProMED map of China:
- >
- > <https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhealthmap.org%2Fpromed%2F%2F155&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sd=hi4162ss4p5fu2pcRk0JS72qll1pEyGfE6XqALtsLNA%3D&reserved=0>https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fhealthmap.org%2Fpromed%2F%2F155_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUyDmp-3xA%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&sd=8V4skoQz2d9bPcGfYbMsNbh%2B8VwSk2ZtWB2YfDxWBjk%3D&reserved=0>>.
- >
- > - Mod.MPP]
- >
- > [See Also:

> Plague - China (04): (NM) pneumonic

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191130.6814943&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=ujj8fnEidZW9E%2BnoAYjepMXXjUl9cjvXN1HMiXJeSA%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20191130.6814943_%3B!!Dq7g1lpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyQfDS5Pw%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=68dhHE4QgVIw29iZg9FDIZ4guD4pScQZSZflCUB21OI%3D&reserved=0>

> Plague - China (03): (NM) bubonic

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191128.6802547&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386636647&data=o0lyZUXLkgEOgXegfjF66Plx3meqRxYDZk74isPLqHw%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20191128.6802547_%3B!!Dq7g1lpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUx5ApQkYA%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=gZgmKycDc3nrw4CmfybFUS3BdOofJeJxGN6nMRGGTkg%3D&reserved=0>

> Plague - China (02): (NM) bubonic

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191118.6785027&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=HTV3YfFGZDZD131ERocAZgR5L5OWywwUYtrEsbKczl%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20191118.6785027_%3B!!Dq7g1lpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUzDIUWvsg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=EVl%2FI4Req%2BIehTWmxyMKesN0GfRM4DiggFomSrZiNXo%3D&reserved=0>

> Plague - China: (NM) pneumonic

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191113.6776154&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=fvn9ApksW45QxWjZ6jZmqhsAVV6z7%2FjLaOAHINsnbHM%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20191113.6776154_%3B!!Dq7g1lpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUzuwIZewA%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=JgjNE3KkT%2FZTYb3WPOciHce7l2bwTK25lRegNfUpc8U%3D&reserved=0>

> MERS-CoV (76): Qatar, Saudi Arabia, new vaccine trial, WHO

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20191226.6858986&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=TSkbYIHbUI2CraTGWNGg5hM0AEOQsIsbOn88RTa1k%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20191226.6858986_%3B!!Dq7g1lpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUwyXdh-dg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=frFjYWY0pevj08YRPr8hy%2F%2BLxphwj7yJIBpLVNyTy4%3D&reserved=0>

> MERS-CoV (01): Saudi Arabia (RI)

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20190104.6241859&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=FNSbt9Eke9fy6LGdRIm8ic4yImnOy7qaJn0R9IXGXyM%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20190104.6241859_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyYK34U4g%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=gDUILBNfg5JGN0EETHhEwhXeFCkdHrVvigz1eMolj3k%3D&reserved=0>

> 2018

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> MERS-CoV (52): Saudi Arabia (RI) WHO

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20181228.6226691&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=QV2fqLKGnuzMAMhlOM2Ek0%2Bms4R64TI7StwOFILjkoA%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20181228.6226691_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUwdpslEKg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=x37HB%2F21RtqSF%2FCLpXZ1a3%2BXX2EarrWOBc4mYOT53OQ%3D&reserved=0>

> MERS-CoV (01): Malaysia (ex KSA), Saudi Arabia, UAE (ex Oman)

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20180102.5532148&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=EMM1VCvwlxeN413ZLd8HWm3duMxvNF6OIzBoztobBcA%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20180102.5532148_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUw_85fs6g%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=RPjL8WOD16Djv4yXNKMGGbInRO5Xil1JG5OqwTEulhc%3D&reserved=0>

> 2017

> ----

> MERS-CoV (77): Saudi Arabia, camels, human, epidemiology, assessment

>

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20171222.5520561&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386646641&data=p0qY5IR3qyRi3cCoy9yxKiPQJwp6opLnnWNDjSKoZ%2Bk%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20171222.5520561_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyldlzhUQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=uAeKeIJRR%2F0yeh0i691%2F1X0Pdh5EHAo7jYK6dSxG%2BTE%3D&reserved=0>

> MERS-CoV (01): Saudi Arabia (QS, RI, MD) RFI

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20170105.4744802&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=MABCW22zKXA6x17mqsqGMK2yXgQTZpOGV4y2vIU5M3U%3D&reserved=0><https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F_http%3A%2F%2Fpromedmail.org%2Fpost%2F20170105.4744802_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyb-Yyozg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20161231.4734758&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=cCCYnxu5ETWRPDsR%2BAcwc5ccx5laCuzURVatg04pP%2F4%3D&reserved=0>>

> 2016

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> MERS-CoV (123): Saudi Arabia (MK, AS) new cases

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20161231.4734758&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=SptbNZ3hl6%2F%2BJA1YexM57JXaQjt5PBjnsKlc4vftUXk%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20161231.4734758%3B!!Dq7glIpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyurQCczg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=27XCyp786d%2BCVDHZZD6q9VD5INHugXEXZlrizjI98TzU%3D&reserved=0>>

> MERS-COV (01): Oman, Saudi Arabia

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20160105.3911188&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=8yklQEBqW%2F53EYnQznINurhvWNodqeHYMNGYQ58YXXE%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20160105.3911188%3B!!Dq7glIpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUyFACVVA%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=7pmDuLSzcgSrRjpoFe1m3c387vG%2Bp4N1ff5RtaTz1h0%3D&reserved=0>>

> 2015

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> MERS-COV (167): acute management and long-term survival

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20151231.3904300&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=4EWMKY47QPJWuL578GGSPni2VUB32Nc7hrbfDa%2F940Q%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20151231.3904300%3B!!Dq7glIpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUxs0ptSQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&data=R%2BLCviFo6fWjn%2ByH4EwEqUILXxvGbamiE6fD1yZZ53Y%3D&reserved=0>>

> MERS-CoV (01): Saudi Arabia, new cases, new death

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> 2014

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> MERS-CoV (69): Saudi Arabia, new case, RFI

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[4244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&sdata=OHPeo7yus%2FHLO7w8iKJq5DoVHjJEU4%2Fm1pLZ7gnKlAo%3D&reserved=0<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20141230.306305_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUwR6PLXVw%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&sdata=SHWjZtCEND0JeUnKP3Hp%2FJZbHe45zMj056dbOjqLidc%3D&reserved=0>](https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20141230.306305_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUwR6PLXVw%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386656635&sdata=SHWjZtCEND0JeUnKP3Hp%2FJZbHe45zMj056dbOjqLidc%3D&reserved=0)

> MERS-CoV (01): Bangladesh, KSA, Algeria, UAE, Iran, WHO, RFI

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> MERS-CoV - Eastern Mediterranean (82): anim. res., camel,

> seroepidemiology

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> MERS-CoV - Eastern Mediterranean (01): Saudi Arabia, UAE, Oman, WHO

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> 2013

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> MERS-CoV - Eastern Mediterranean (106): animal reservoir, camel,

> Qatar, OIE

[https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20131231.2145606&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386666634&sdata=z3hmO993QHucoc6Qehcch5iIh503lx%2F0uMNYoFf6pdl%3D&reserved=0<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20131231.2145606_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUw-5PaQrQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386666634&sdata=H3JaSN4g8j9zB5YHq34H5np1HJY3nr8tV0pkfE7s3ew%3D&reserved=0>](https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20131231.2145606&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386666634&sdata=z3hmO993QHucoc6Qehcch5iIh503lx%2F0uMNYoFf6pdl%3D&reserved=0<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20131231.2145606_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUw-5PaQrQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386666634&sdata=H3JaSN4g8j9zB5YHq34H5np1HJY3nr8tV0pkfE7s3ew%3D&reserved=0)

> MERS-CoV - Eastern Mediterranean: Saudi Arabia, new case, RFI

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https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20130518.1721601_%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUwaPn5ZMg%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386666634&sdata=BMqLPRyKZjvbjQrO9ri7wHIDnVBVxuBzN13XPx5Lsw%3D&reserved=0

> Novel coronavirus - Eastern Mediterranean (29): MERS-CoV, ICTV

> nomenclature

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> Novel coronavirus - Eastern Mediterranean: bat reservoir

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> 2012

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> Novel coronavirus - Eastern Mediterranean (06): comments

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> Novel coronavirus - Eastern Mediterranean: WHO, Jordan, conf., RFI

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20121130.1432498&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=AMg3B5K7MHNOMbo03bWxGHD%2FMkh%2BBmEqoXDCePpaxuA%3D&reserved=0>

> Novel coronavirus - Saudi Arabia (18): WHO, new cases, cluster

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> Novel coronavirus - Saudi Arabia: human isolate

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<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20120920.1302733&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=I5G3adK7KchCRA1PC4VoASGleflcNpA2FTf98yzesAM%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F> <http%3A%2F%2Fpromedmail.org%2Fpost%2F20120920.1302733> %3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUx0uQFuuQ%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=1xQcHucH%2BsxBqkQo0%2B7hjQlFM%2FEanTVKogiW2dlcBpM%3D&reserved=0>

> 2003

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> SARS - worldwide (183): etiology

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> SARS - worldwide: cases

<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fpromedmail.org%2Fpost%2F20030323.0722&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=9zzXtM%2FILNhkr2rNf9I5xHrLHeRZVe60zITUWtEGDM0%3D&reserved=0><<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2F> <http%3A%2F%2Fpromedmail.org%2Fpost%2F20030323.0722> %3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOsFiORvIMGpmuHsUy3ewCbew%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=k9EOFG%2FudiasJlCizmJ%2BWVYc3cCxtBxLV62hmAh%2BGc%3D&reserved=0>

> Severe acute respiratory syndrome - worldwide (17)

>

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> Severe Acute Respiratory Syndrome - Worldwide

>

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> Acute respiratory syndrome - Canada (Ontario)

>

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p;data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386676626&sdata=zFr8v7r2%2BPepqxnSs2KF%2BSXlplg13xHDKVMIZ%2F8OsKv4%3D&reserved=0

> Acute respiratory syndrome - East Asia

>

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s5nDPMRxGxRnZ9w%3D&reserved=0

> Acute respiratory syndrome - China (HK), VietNam (03)

>

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data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386686622&sdata=4J1FGCI7qZERK7N3ymMRVXR2YGvhsBIh57E0cw9Ey5s%3D&reserved=0

> Acute respiratory syndrome - China (HK), VietNam

>

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Xmwml9xGlcXYOoOHO%3D&reserved=0

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> Undiagnosed illness - Vietnam (Hanoi): RFI

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&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386686622&sdata=pxmhS5i359sucnQilalOUugyQlWRX5Ada%2F9RNW9205k%3D&reserved=0<<https://nam05.safelinks.protection.outlook.com/?url=https%3A%2F%2Furldefense.com%2Fv3%2Fhttp%3A%2F%2Fpromedmail.org%2Fpost%2F20030311.0595%3B!!Dq7g1IpY!xPOvFXCvELyzVX0KjW1rcezzBrk8K0vcVbEQYRgysOOSFiORvIMGpmuHsUxGBw16lw%24&data=02%7C01%7Cmark.denison%40vumc.org%7Cc0da1cb3ac3c4f4b970208d78e0bbd06%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C637134053386686622&sdata=KYJ0QU23WABodDjKDjYg0pMIG%2F%2FGS4hn7e5czBDiTbU%3D&reserved=0>>

> Pneumonia - China (Guangdong) (07)

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> Pneumonia - China (Guangdong): RFI

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>mpp/dk/mpp/dk

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From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 29 Apr 2020 15:55:21 +0000
To: Kathleen Neuzil
Subject: Re: draft protocol concept

I think John is going to have to dictate that. It's not coming from (b) (5)

Barney

Sent from my iPhone

On Apr 29, 2020, at 11:26 AM, Neuzil, Kathleen <(b) (6)> wrote:

Or she needs to (b) (5) – that is really what is needed.

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Wednesday, April 29, 2020 11:21 AM
To: Neuzil, Kathleen (b) (6)>
Subject: Re: draft protocol concept

Emily (b) (5).

BG

Sent from my iPhone

On Apr 29, 2020, at 11:07 AM, Neuzil, Kathleen <(b) (6)> wrote:

Right. (b) (5)

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Wednesday, April 29, 2020 11:04 AM
To: Neuzil, Kathleen (b) (6)>
Subject: Re: draft protocol concept

Agree. I will (b) (5). I feel like (b) (5)

BG

Sent from my iPhone

On Apr 29, 2020, at 11:00 AM, Neuzil, Kathleen (b) (6) > wrote:

Nope. And I'm not sure how the COVID site map was populated.

Although Larry (b) (5)

..

John M (b) (5).

Thanks for sharing.

From: Graham, Barney (NIH/VRC) [E] (b) (6) >

Sent: Wednesday, April 29, 2020 10:56 AM

To: Neuzil, Kathleen (b) (6)

Subject: Fwd: draft protocol concept

FYI. Have you seen this yet?

BG

Sent from my iPhone

Begin forwarded message:

From: "Corey MD, Larry" (b) (6) >

Date: April 29, 2020 at 12:16:16 AM EDT

To: "Mascola, John (NIH/VRC) [E]" (b) (6) >, "Conrad, Patricia (NIH/NIAID) [E]" (b) (6), "Fauci, Anthony (NIH/NIAID) [E]" (b) (6) >, "Dieffenbach, Carl (NIH/NIAID) [E]" (b) (6), "Erbelding, Emily (NIH/NIAID) [E]" (b) (6)

Cc: "Graham, Barney (NIH/VRC) [E]" (b) (6) >

Subject: draft protocol concept

Enclosed is the draft protocol for a NIAID supported efficacy trial for a candidate COVID 19 vaccine .

I wouldn't necessarily call it a master protocol but it is a synopsis of what I would term a harmonized protocol concept for the evaluation of several candidate COVID 19 vaccine , It outlines in principle the ideals we set forth in the Science Policy perspective into a draft protocol .Individualized but harmonized protocols that allow for licensure of an individual vaccine but also allow one to utilize common clinical trial networks, laboratories endpoint adjudication processes, centralized laboratories or specimen sharing, common DSMB , and access to endpoint and laboratory data to have an independent group of statisticians do endpoint analysis and hence effect of the virus on civil society.

The concept is to

(b) (4)

(b) (4)

We will

(b) (4)

(b) (4)

(b) (4) we will also use "

(b) (4)

We

will

(b) (4)

(b) (4) .

We feel we can

(b) (4) ;

I have tried to highlight in bold the key concepts to shorten the document for you . Our statisticians (NIAID cross network) wanted to be thorough and hence the length of the document . I am also including a picture of the current COVID Network map of 48 US sites ; we are in the process of activating then hence they are ready to initiate this study once it meets its safety and immunogenicity targets .

We have

(b) (4)

(b) (4)

If questions please call

Larry Corey

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 15 Feb 2020 16:10:40 +0000
To: Mascola, John (NIH/VRC) [E]
Subject: Re: Neutralization results of SARS mAbs to 2019_nCoV Pseudovirus
Attachments: image001.png

Thanks John.

BG

Sent from my iPhone

On Feb 15, 2020, at 9:40 AM, Mascola, John (NIH/VRC) [E] (b) (6) wrote:

Hi Yi and all,

Nice work

Remind me of the (b) (5) and also does (b) (5)?

Comments and teaching points: And I've copied Nicole here to help us review data. (b) (5)
(b) (5)

It is often difficult to (b) (5) and here
on slide 1, we can see that (b) (5). To be confident (b) (5)
(b) (5). Here we see
(b) (5) Also, looking at (b) (5)
(b) (5) |
(b) (5)
(b) (5)
(b) (5)

Once we (b) (5)
(b) (5)

But we need to (b) (5)
So Yi – please send (b) (5) We need to routinely review
several parameters

- [REDACTED] (b) (5)
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

Once we have all this, we can better assess the [REDACTED] (b) (5).

Here, we are struggling with [REDACTED] (b) (5)– so some of above will come as be achieve this, but we should have a template for showing the

- [REDACTED] (b) (5)
- [REDACTED]
- [REDACTED]
- [REDACTED]

Please address above and we'll continue to review as we generate more data.
We'll likely get where we want to be.

Thanks,
John

From: Zhang, Yi (NIH/NIAID) [C] [REDACTED] (b) (6)
Sent: Friday, February 14, 2020 6:35 PM
To: Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)>; Wang, Lingshu (NIH/VRC) [E] [REDACTED] (b) (6)>; Shi, Wei (NIH/VRC) [E] [REDACTED] (b) (6)Kong, Wing-Pui (NIH/VRC) [E] [REDACTED] (b) (6)>; Liu, Catherine (NIH/VRC) [C] [REDACTED] (b) (6)>
Cc: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] [REDACTED] (b) (6)>; Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6)
Subject: Neutralization results of SARS mAbs to 2019_nCoV Pseudovirus

Good afternoon,

[REDACTED] (b) (5)

Need to be confirmed [REDACTED] (b) (5).

(b) (5)

Let me know If you need more detail information.

Thanks

Yi

Yi Zhang [C] Biologist, LATG
NIH/NIAID/VRC
Virology Core Laboratory
Bldg 40/Rm 4606B
40 Convent Dr
Bethesda, MD 20892
Office: (b) (6)
Email: (b) (6)

From: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Sent: Wednesday, February 12, 2020 5:51 AM
To: Ziwawo, Cynthia (NIH/VRC) [F] (b) (6); Zhang, Yi (NIH/NIAID) [C] (b) (6); Shi, Wei (NIH/VRC) [E] (b) (6); Kong, Wing-Pui (NIH/VRC) [E] (b) (6); Abiona, Olubukola (NIH/VRC) [F] (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)
Subject: SARS-CoV-2 Pseudovirus Concentration Data

Good morning all,
Cynthia concentrated Yi's stock of (b) (5). Generally, on the (b) (5). As you can see (b) (5) This is not a (b) (5) (b) (5), I am confident (b) (5). (b) (5).

Ongoing work:

1. (b) (5)
2. (b) (5)
3. (b) (5)
4. (b) (5)

5.

(b) (5)

6.

<image001.png>

Also, interim data updates is new to me, so feel free to suggest we only discuss on Mondays at 11am.

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: "Ziwawo, Cynthia (NIH/VRC) [F]" (b) (6)>

Date: Tuesday, February 11, 2020 at 12:54 PM

To: Kizzmekia Corbett <(b) (6)>

Subject: Concentrated Virus Data

Needs to be analyzed, but here's raw data for your quick viewing.

Cynthia Ziwawo

Post-Baccalaureate IRTA Trainee

NIH Vaccine Research Center

40 Convent Drive, Rm. 2606

Bethesda, MD 20892

(b) (5)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 28 Mar 2020 23:45:40 +0000
To: Boritz, Eli (NIH/NIAID) [E]; Mascola, John (NIH/VRC) [E]; Douek, Daniel (NIH/VRC) [E]
Cc: Koup, Richard (NIH/VRC) [E]
Subject: RE: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell Sequencing | medRxiv

I think Julie knows best how to penetrate the system.

BG

From: Boritz, Eli (NIH/NIAID) [E] (b) (6)
Sent: Saturday, March 28, 2020 6:01 PM
To: Mascola, John (NIH/VRC) [E] (b) (6); Douek, Daniel (NIH/VRC) [E]
(b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E]
(b) (6)
Subject: Re: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell Sequencing | medRxiv

As of yesterday afternoon, there were 3 pts in the CC. (b) (5)
(b) (5)

John Misasi and I are both in the ID coverage group, which I hope can be one factor promoting collaboration, though I'm not sure.

From: "Mascola, John (NIH/VRC) [E]" <(b) (6)>
Date: Saturday, March 28, 2020 at 5:42 PM
To: "Douek, Daniel (NIH/VRC) [E]" (b) (6)>
Cc: "Boritz, Eli (NIH/NIAID) [E]" (b) (6)>, "Graham, Barney (NIH/VRC) [E]" (b) (6); "Koup, Richard (NIH/VRC) [E]" (b) (6)>
Subject: RE: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell Sequencing | medRxiv

(b) (5)

From: Douek, Daniel (NIH/VRC) [E] (b) (6)
Sent: Saturday, March 28, 2020 5:40 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)>
Cc: Boritz, Eli (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E]

(b) (6); Koup, Richard (NIH/VRC) [E] (b) (6)

Subject: Re: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell Sequencing | medRxiv

We need the samples!

On Mar 29, 2020, at 12:21 AM, Mascola, John (NIH/VRC) [E] (b) (6) wrote:

I think this can be highly informative (b) (5)
(b) (5)

Regarding the (b) (5)
(b) (5)

Perhaps in setting of (b) (5), one could assess where the virus is?

John

From: Boritz, Eli (NIH/NIAID) [E] (b) (6)

Sent: Saturday, March 28, 2020 5:15 PM

To: Douek, Daniel (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6)>

Cc: Mascola, John (NIH/VRC) [E] (b) (6)>; Koup, Richard (NIH/VRC) [E]
(b) (6)>

Subject: Re: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell Sequencing | medRxiv

Very exciting to consider this issue.

- (b) (5)
-
-

Eli

On 3/28/20, 5:05 PM, "Douek, Daniel (NIH/VRC) [E]" (b) (6) wrote:

Ah, I see.

Well, we could certainly (b) (5). That would be the quickest way.
Whaddya think, Eli?

d

On 3/29/20, 12:02 AM, "Graham, Barney (NIH/VRC) [E]" (b) (6) wrote:

Because the entire (b) (5)
(b) (5)
(b) (5) However, I don't know (b) (5)
(b) (5)
(b) (5)
(b) (5) I guess (b) (5)
(b) (5).

If we (b) (5)
(b) (5)

Barney

Sent from my iPhone

> On Mar 28, 2020, at 4:46 PM, Douek, Daniel (NIH/VRC) [E] <(b) (6)> wrote:

>

> We could (b) (5).

> Then we could (b) (5).

>

> After that one we need (b) (5). That would take some
development but can't see why it's not doable.

>

> Why do you want to know (b) (5)

>

> d

>

> On 3/28/20, 10:36 PM, "Graham, Barney (NIH/VRC) [E]" (b) (6) wrote:

>

> I think about (b) (5)
(b) (5)

> BG
>
>
>
> -----Original Message-----
> From: Boritz, Eli (NIH/NIAID) [E] (b) (6)>
> Sent: Saturday, March 28, 2020 1:02 PM
> To: Douek, Daniel (NIH/VRC) [E] (b) (6)>; Mascola, John (NIH/VRC) [E]
(b) (6)
> Cc: Koup, Richard (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E]
(b) (6)
> Subject: Re: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell
Sequencing | medRxiv
>
> Thank you, John - seems like one from VRC may be enough, but I'd gladly join too if there is
room for a second.
> Eli
>
> On 3/28/20, 12:52 PM, "Douek, Daniel (NIH/VRC) [E]" (b) (6) wrote:
>
> I can certainly be part of it. It might be useful. Either way, we should press on with our plans
irrespective. I really think (b) (5)
(b) (5).
> d
>
> On 3/28/20, 7:48 PM, "Mascola, John (NIH/VRC) [E]" (b) (6) wrote:
>
> Danny, Eli,
>
> Not sure what this interest group will do, but if you are interested to be part of it - let me
know.
>
> -----Original Message-----
> From: Streicher, Howard (NIH/NCI) [E] <(b) (6)>
> Sent: Saturday, March 28, 2020 12:12 PM
> To: Mascola, John (NIH/VRC) [E] (b) (6)
> Cc: Berkower, Ira (FDA/CBER) (b) (6)>
> Subject: FW: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell
Sequencing | medRxiv
>
> Michael Gottesman is setting up an interest group -- you might consider a representative
from VRC to be part of the leadership Attaching a recent pub on single cell profiling and as I recall VRC
had extensive experience in FACS cell profiling as well that might provide perspective on These findings
> And as you know (b) (5)
(b) (5)
> With no scientific guidance whatsoever-- maybe such an interest group could provide that
Thanks Howard
>

> -----Original Message-----

> From: Sharon, Elad (NIH/NCI) [E] <(b) (6)>

> Sent: Friday, March 27, 2020 11:21 PM

> To: Ethan Bier (b) (6); Smelkinson, Margery (NIH/NIAID) [E]

(b) (6)>; Streicher, Howard (NIH/NCI) [E] (b) (6); Chen,

Helen (NIH/NCI) [E] (b) (6)>; Chen, Alice (NIH/NCI) [E] <(b) (6)>; Takebe,

Naoko (NIH/NCI) [E] (b) (6)>; Moscow, Jeffrey (NIH/NCI) [E]

(b) (6)>

> Subject: Immune Cell Profiling of COVID-19 Patients in the Recovery Stage by Single-Cell
Sequencing | medRxiv

>

>

> <https://www.medrxiv.org/content/10.1101/2020.03.23.20039362v1>

>

>

> Sent from my iPhone

>

>

>

>

>

>

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 18 Mar 2020 13:05:03 +0000
To: Jason McLellan; Meagan Phelan; Young, Monique (NIH/VRC) [E]; Gadi Ben-Yehuda
Cc: Olivia Tarantino; Walter Beckwith; Matthew Wright; Valeria Sabate; Sinatra, Christine
Subject: RE: Promotional link to Friday March 20 9am US ET Science Facebook Live on SARS-CoV-2 vaccine
Attachments: GRAHAM - Short bio 2020 V2.docx

If you need a bio, I have attached here.

Barney

From: Jason McLellan (b) (6) >
Sent: Tuesday, March 17, 2020 3:16 PM
To: Meagan Phelan <mphelelan@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6)
Young, Monique (NIH/VRC) [E] (b) (6); Gadi Ben-Yehuda <gbyehuda@aaas.org>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)
Subject: RE: Promotional link to Friday March 20 9am US ET Science Facebook Live on SARS-CoV-2 vaccine

Hi Meagan,

I do have a personal FB account and will use that tomorrow. Attached is a very brief bio

Jason

From: Meagan Phelan <mphelelan@aaas.org>
Sent: Tuesday, March 17, 2020 1:50 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Jason McLellan (b) (6); Young, Monique (NIH/VRC) [E] (b) (6); Gadi Ben-Yehuda <gbyehuda@aaas.org>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6) >
Subject: Promotional link to Friday March 20 9am US ET Science Facebook Live on SARS-CoV-2 vaccine

Thanks so much, Barney and Jason. Below, please find the promotional link to Friday's FBL event, using this text. We would be thankful if you and your affiliated press officers (Monique and Christine) might share this from your institutional / personal accounts to help draw good audiences to this discussion. We will do the same, promoting from Science and AAAS, and from other accounts here at AAAS.

<https://www.facebook.com/ScienceMagazine/videos/631121874133472>

Barney and Jason, may I confirm you each have your own Facebook accounts? If so, logging in to the run-through at 10:30 US ET tomorrow will be quick and easy, at the link our social media director, Gadi, shared in a calendar invite yesterday. That link is also here: <https://app.belive.tv/8727/guest>. **If you do not have a FB account, you could create one for the week and then delete it, if needed.**

Tomorrow at our run-through, Gadi will review technical considerations and I will review how I will introduce the event, how I will introduce you both (I will ask you both: "Is this bio ok?"), questions I may pose as moderator (we will also take questions from the audience), and finally, how we will "wrap" (perhaps with a lightning-round question to you both). I will make sure I understand the scope of questions you are comfortable answering in this space, so as to stay within it.

Monique and Christine: If you have bios for Jason and Barney you might like me to have on hand to use to inform my introduction, please feel free to send them.

And again, thank you to all. See you tomorrow at 10:30 at our run-through.

Meagan Phelan, *Science* Press Package Executive Director
American Association for the Advancement of Science (AAAS)
1200 New York Avenue, NW | Washington, DC 20005
Office Phone: 202-326-6436
Cell Phone: (b) (6)
E-mail: mphelan@aaas.org
Follow me on [Twitter](#)

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Tuesday, March 17, 2020 2:40 PM
To: Meagan Phelan <mphelan@aaas.org>; Jason McLellan (b) (6)>; Young, Monique (NIH/VRC) [E] (b) (6)>; Gadi Ben-Yehuda <gbyehuda@aaas.org>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6) >
Subject: RE: Promotional language: Science Facebook Live on how viral structure informs vaccine design

I think this looks OK.

BG

From: Meagan Phelan <mphelan@aaas.org>
Sent: Tuesday, March 17, 2020 12:29 PM
To: Jason McLellan (b) (6)>; Young, Monique (NIH/VRC) [E] (b) (6)>; Gadi Ben-Yehuda <gbyehuda@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6)>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright

<mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine

(b) (6)

Subject: RE: Promotional language: Science Facebook Live on how viral structure informs vaccine design

Hi Jason, thank you so much for that important correction (now noted in the updated text below). I also suggest text by which we could refer to the trial—great idea. I hope to talk more about it during Friday's FBL.

Barney, does the below text read ok to you, too? If you could let me know ASAP today (or by 5pm ET as a hard deadline), we'll use this in a promotional post we'll finalize so we can begin sharing about/promoting the FBL event first thing tomorrow. We will share the promotional link with you, too. Our colleagues in the Office of Government Relations at AAAS are eager to share the event link with Hill staffers, as one audience.

I also look forward to our 10:30 ET run-through tomorrow. I will bring a few candidate questions I plan to ask as moderator of the FBL. Gadi will talk about technical considerations.

Just weeks after the genome sequence of the recently emerged coronavirus was published online, researchers reported the cryogenic electron microscopy structure of the spike protein the virus uses to gain entry to host cells in a 19 February *Science* paper (<https://science.sciencemag.org/lookup/doi/10.1126/science.abb2507>). The insights from their study are already helping to inform vaccines against SARS-CoV-2. Earlier this week, as one example, the first human Phase I trial of an mRNA vaccine developed leveraging these findings began.

This Friday at 9am US ET, join coauthors of this study Jason McLellan and Barney Graham as they discuss how they visualized the spike protein, as well as how their work to improve understanding of SARS-CoV2 viral structure will inform therapeutics against this virus going forward.

best,

Meagan Phelan, *Science* Press Package Executive Director
American Association for the Advancement of Science (AAAS)
1200 New York Avenue, NW | Washington, DC 20005

Office Phone: 202-326-6436

Cell Phone: (b) (6)

E-mail: mphelelan@aaas.org

Follow me on [Twitter](#)

From: Jason McLellan <(b) (6)>

Sent: Tuesday, March 17, 2020 10:36 AM

To: Meagan Phelan <mphelelan@aaas.org>; Young, Monique (NIH/VRC) [E] (b) (6);

Gadi Ben-Yehuda <gbyehuda@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6)

Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine

(b) (6) >

Subject: RE: Promotional language: Science Facebook Live on how viral structure informs vaccine design

Hi Meagan,

That all sounds good. Regarding the social media post, COVID-19 should be replaced with SARS-CoV-2. COVID-19 is the name of the disease, which is caused by the SARS-CoV-2 virus.

Depending on how Barney feels, you may want to include that the engineered spike protein that was used for structure determination is being tested as a vaccine antigen expressed from mRNA developed by Moderna. The first human in the Phase I trial was injected yesterday: <https://www.nih.gov/news-events/news-releases/nih-clinical-trial-investigational-vaccine-covid-19-begins> or <https://www.bostonglobe.com/2020/03/16/business/first-patient-dosed-with-potential-coronavirus-vaccine-cambridge-biotech/>

Cheers,
Jason

From: Meagan Phelan <mphelel@aaas.org>

Sent: Monday, March 16, 2020 5:28 PM

To: Young, Monique (NIH/VRC) [E] (b) (6); Jason McLellan

(b) (6); Gadi Ben-Yehuda <gbyehuda@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6)

Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine

(b) (6)

Subject: Promotional language: Science Facebook Live on how viral structure informs vaccine design

Thanks so much, Jason and Barney and colleagues. It looks like we'll do our test call Wednesday at 10:30 US ET and our event Friday at 9am US ET, dialing in a little in advance to the latter (Friday's event).

Also, we will want to promote this excellent event in advance from our *Science* social media accounts. I drafted language, below, derived from our press package summary. Please let me know of any edits to it by noon US ET tomorrow, if/as you have them. Otherwise, we will prepare to post soon after, to promote this event! Again, thank you.

++++

Just weeks after the genome sequence of the recently emerged coronavirus – COVID-19 – was published online, researchers reported the cryogenic electron microscopy structure of the spike protein the virus uses to gain entry to host cells, in a 19 February *Science* paper (<https://science.sciencemag.org/lookup/doi/10.1126/science.abb2507>). The insights from their study will inform efforts to design a precision vaccine and antivirals against COVID-19. This Friday at 9am US ET, join coauthors Jason McLellan and Barney Graham as they discuss how they visualized the spike protein, as well as how their work to improve understanding of SARS-CoV2 viral structure will inform therapeutics against this virus.

From: Young, Monique (NIH/VRC) [E] (b) (6) >
Sent: Monday, March 16, 2020 3:51 PM
To: Jason McLellan (b) (6) >; Gadi Ben-Yehuda <gbyehuda@aaas.org>; Meagan Phelan <mphehan@aaas.org>; Graham, Barney (NIH/VRC) [E] <(b) (6)>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Good Afternoon –

I will hold 10:30 am EDT on Wed for the walk through for Dr. Graham's calendar.

Thanks...Monique
(b) (6)

From: Jason McLellan (b) (6) >
Sent: Monday, March 16, 2020 11:41 AM
To: Gadi Ben-Yehuda <gbyehuda@aaas.org>; Young, Monique (NIH/VRC) [E] (b) (6) >; Meagan Phelan <mphehan@aaas.org>; Graham, Barney (NIH/VRC) [E] <(b) (6)>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

That would work for me
Jason

From: Gadi Ben-Yehuda <gbyehuda@aaas.org>
Sent: Monday, March 16, 2020 10:32 AM
To: Young, Monique (NIH/VRC) [E] (b) (6) >; Jason McLellan (b) (6) >; Meagan Phelan <mphehan@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6)
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)
Subject: Re: Possible Science Facebook Live on how viral structure informs vaccine design

Hello, all.

I'm free most of the day. How would 10:30 AM be for everyone? I can send a calendar invite with the link if that works!

Gadi.

From: Young, Monique (NIH/VRC) [E] (b) (6) >
Sent: Sunday, March 15, 2020 6:30 PM
To: Jason McLellan (b) (6) >; Meagan Phelan <mphelelan@aaas.org>; Graham, Barney (NIH/VRC) [E] <bgraham@mail.nih.gov>; Gadi Ben-Yehuda <gbyehuda@aaas.org>
Cc: Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Good Afternoon –

Dr. Graham's schedule is noted for Fri 9:00 am EDT.

Wed could be doable for the walk through, depending on the time.

Thanks...Monique

(b) (6)

From: Jason McLellan (b) (6)
Sent: Sunday, March 15, 2020 1:35 PM
To: Meagan Phelan <mphelelan@aaas.org>; Graham, Barney (NIH/VRC) [E] (b) (6); Gadi Ben-Yehuda <gbyehuda@aaas.org>
Cc: Olivia Tarantino <otarantino@aaas.org>; Young, Monique (NIH/VRC) [E] (b) (6); Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6) >
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

8 am Central is so early, but I can make it work. I'll get some coffee on the way in to lab.

Wednesday is wide open for me, so that would be my preference for the walk through.

Cheers,
Jason

From: Meagan Phelan <mphelelan@aaas.org>
Sent: Saturday, March 14, 2020 9:13 PM
To: Graham, Barney (NIH/VRC) [E] <(b) (6)>; Gadi Ben-Yehuda <gbyehuda@aaas.org>; Jason McLellan (b) (6) >
Cc: Olivia Tarantino <otarantino@aaas.org>; Young, Monique (NIH/VRC) [E] <(b) (6)>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine <(b) (6)>
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Thanks so much, Barney. I hope Friday at 9am US ET may work for Jason also. We will stand by to hear and confirm.

Would you and Jason have a preference for Tuesday vs. Wednesday, for the brief (20-minute) run-through? There, we'd review technical needs, as well as event format. I might run over a few candidate questions I'd pose as moderator, too.

Again, thank you!

Meagan Phelan, Science Press Package Executive Director
American Association for the Advancement of Science (AAAS)
1200 New York Avenue, NW | Washington, DC 20005
Office Phone: 202-326-6436
Cell Phone: (b) (6)
E-mail: mphelan@aaas.org
Follow me on [Twitter](#)

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Saturday, March 14, 2020 6:28 PM
To: Gadi Ben-Yehuda <gbyehuda@aaas.org>; Meagan Phelan <mphelan@aaas.org>; Jason McLellan (b) (6)>
Cc: Olivia Tarantino <otarantino@aaas.org>; Young, Monique (NIH/VRC) [E] <(b) (6)>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)>
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

I think I'll be free to do this at 9AM next Friday morning EDT. If Jason can do this at 8 and Monique Young verifies the time, we can do it then if you are available.

Barney

From: Gadi Ben-Yehuda <gbyehuda@aaas.org>
Sent: Saturday, March 14, 2020 6:03 PM
To: Meagan Phelan <mphelan@aaas.org>; Jason McLellan <(b) (6)> Graham, Barney (NIH/VRC) [E] (b) (6)
Cc: Olivia Tarantino <otarantino@aaas.org>; Young, Monique (NIH/VRC) [E] (b) (6)>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine <(b) (6)>
Subject: Re: Possible Science Facebook Live on how viral structure informs vaccine design

Hello!

The broadcast itself will probably last for around 30 minutes. we recommend that all participants log in 30 minutes prior to ensure that if there are any technical difficulties we can get them sorted out before the broadcast begins.

Additionally, we schedule a technical run-through that lasts between 10 and 20 minutes. we do those at least 24 hours and preferably 48 to 72 hours prior to the broadcast.

if there's a lot of interest in our conversation there may be quite a few relevant questions from the viewers. In that case the broadcast may extend beyond 30 minutes, always with the consent of our participants.

Please let me know if you have any additional questions. I think that this will be a very well attended and interactive broadcast.

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Saturday, March 14, 2020 5:16:16 PM
To: Meagan Phelan <mphehan@aaas.org>; Jason McLellan (b) (6)>
Cc: Olivia Tarantino <otarantino@aaas.org>; Young, Monique (NIH/VRC) [E] (b) (6); Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)>; Gadi Ben-Yehuda <gbyehuda@aaas.org>
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Can you tell me again how long it will take? We can probably find a time next Thursday or Friday. Monique Young is copied here to help.

Barney

From: Meagan Phelan <mphehan@aaas.org>
Sent: Friday, March 13, 2020 10:31 AM
To: Jason McLellan (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine (b) (6)>; Gadi Ben-Yehuda <gbyehuda@aaas.org>
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Dear Jason,

Thanks so much for your reply and confirmation, and also for copying Christine. This is very helpful to keep us moving well now.

Barney,

I know you were still considering this event in your calendar. Perhaps you might let us know, as you can, if in fact this event would fit in your schedule. We could pick up planning from there, if so.

And again, thank you to all in this busy time! It is much appreciated. We believe this event would have great value to public audiences.

best,

Meagan Phelan, Science Press Package Executive Director
American Association for the Advancement of Science (AAAS)
1200 New York Avenue, NW | Washington, DC 20005
Office Phone: 202-326-6436
Cell Phone: (b) (6)
E-mail: mphelan@aaas.org
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From: Jason McLellan (b) (6)
Sent: Friday, March 13, 2020 12:18 AM
To: Meagan Phelan <mphelan@aaas.org>
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>; Sinatra, Christine <(b) (6)>
Subject: RE: Possible Science Facebook Live on how viral structure informs vaccine design

Hi Meagan,

The Altmetrics data looks great! Good to see our paper being widely discussed and shared.

I would love to participate in a Facebook live event provided that Barney is able to participate. I'm sure many of the questions will be better addressed by him.

I have Cc'd Christine Sinatra, director of communications for the UT College of Natural Science. She can work with you to schedule the time and book a studio on campus.

Best regards,
Jason

From: Meagan Phelan <mphelan@aaas.org>
Sent: Thursday, March 12, 2020 7:36 AM
To: Jason McLellan (b) (6)>
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); Olivia Tarantino <otarantino@aaas.org>; Walter Beckwith <wbeckwith@aaas.org>; Matthew Wright <mwright@aaas.org>; Valeria Sabate <vsabate@aaas.org>
Subject: Possible Science Facebook Live on how viral structure informs vaccine design

Dear Dr. McLellan, I hope this note finds you well. Thank you for your help to us last month; it's been wonderful to see all the attention to your paper, much of which is captured on its Altmetrics tab, at the bottom of this page: <https://science.sciencemag.org/content/early/2020/02/19/science.abb2507/tab-article-info>

Separately, my team, the Science Press Package team (some of whom are copied here), has been considering holding one of our popular Facebook Live events—a way to connect the public with recently published experts—on your paper, with a focus on how cutting-edge viral structure information informs

vaccine and antiviral design. I have already reached Dr. Graham, here copied, who expressed interest (if his communications office will confirm). He also recommended I reach you.

Is participating in such an event something you may wish to (and have availability) to do? If so, we'd be delighted for you to participate along with Dr. Graham (we do hope), in an event I would moderate. The event itself would require about an hour and a half, on the slated day (including prep time). A few days prior, we would hold a run-through (where your press officers would be welcome) to address both technical specs and event format – including likely questions you'd receive from the audience, and also how to pivot on questions not in your scope of expertise. We would plan the event as soon as might be feasible for you in the coming two weeks.

Thank you for considering participating in such a discussion, something we hope could help the public better understand how research into virus structure paves the way for the therapies from which they will benefit.

best,

Meagan Phelan, *Science* Press Package Executive Director
American Association for the Advancement of Science (AAAS)
1200 New York Avenue, NW | Washington, DC 20005

Office Phone: 202-326-6436

Cell Phone: (b) (6)

E-mail: mphelan@aaas.org

Follow me on [Twitter](#)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 1 Mar 2020 20:44:49 +0000
To: Robert Chen
Cc: Paul Henri Lambert
Subject: RE: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines

Yes, I can cover spike structure, function, antibody epitopes, and mechanisms of CoV neutralization.

Barney

From: Robert Chen (b) (6)
Sent: Sunday, March 1, 2020 10:26 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6) >
Cc: Paul Henri Lambert (b) (6) >
Subject: Fwd: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines

Hi Barney,

FYI, I'm trying to see if Ralph can still present. In case not, Paul-Henri thought you might be able to cover his assigned topic "Structure and function of CoV spike protein" as well. Would that be possible as a Plan B?

14:20-16:45	145	4	Potential implication of IgG mediated pathology for vaccine design. Should one focus on ACE2-binding epitopes (RBD) to reduce the risk of enhanced antibody-mediated immunopathology?
14:20-14:40 Talk 14:40-14:55 Q&A	20 15	4.1	Structure and function of CoV spike protein <u>Ralph Baric</u> (UNC)
14:55-15:15 Talk 15:15-15:30 Q&A	20 15	4.2	Immunogenicity and neutralizing efficacy of truncated spike antigens <u>Barney Graham</u> (NIH)
15:30-15:50 Talk 15:50-16:05 Q&A	20 15	4.3	Which immunological/inflammatory markers should we monitor during a first Phase 1 trial, including impact of adjuvants? <u>Arnaud Didierlaurent</u> (Geneva Centre of Vaccinology)
16:05-16:45	40	4.4	Drafting guidance on COVID-19 immunological markers; moderator: <u>Corry Dekker</u> (Stanford/BC)

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

----- Forwarded message -----

From: Robert Chen (b) (6) >
Date: Sat, Feb 29, 2020 at 11:38 PM
Subject: Re: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19

vaccines

To: Baric, Ralph S (b) (6)

Yes, depending on how many travelers, we'd potentially be willing to cover their extra lodging and ticket change costs associated with switching their meeting to the PM (so you can attend the consensus meeting in the AM).

Robert (Bob) Chen MD MA

Scientific Director, Brighton Collaboration

Land: (b) (6) Cell: (b) (6)

email: (b) (6)

On Sat, Feb 29, 2020 at 7:20 PM Baric, Ralph S (b) (6) wrote:
Not possible, they fly back in the afternoon. ralph

From: Robert Chen (b) (6)

Sent: Saturday, February 29, 2020 4:48 PM

To: Baric, Ralph S (b) (6)

Subject: Re: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines

Hi Ralph, This is a long shot and I'm only asking because of the COVID-19 Emergency and the urgency of our global consensus meeting. Any chance your visitors be willing to switch to PM? I'm happy to contact them if you like. Bob

On Sat, Feb 29, 2020 at 4:28 PM Baric, Ralph S (b) (6) wrote:
I'm only available in the afternoon est. my morning is taken with a program center meeting with visitors coming from outside.

From: Robert Chen (b) (6) >

Sent: Friday, February 28, 2020 11:48 AM

To: Baric, Ralph S (b) (6) >

Cc: Barney Graham (b) (6); Arnaud Didierlaurent (b) (6) >;

Paul Henri Lambert (b) (6) >; Corry Dekker (b) (6) >; Ángel Honrado

(b) (6) >; Imanol Urcola Lecuona <(b) (6)> Baric, Toni C

(b) (6)

Subject: Re: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines

Hi Ralph,

Yes this is EST (sorry, forgot to change it from EDT; Europe does not change til Mar. 29). Will send out correction shortly. If this is a conflict still, we can swap sequence of speakers. We will use Go To Meeting videoconf platform.

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

On Fri, Feb 28, 2020 at 11:30 AM Baric, Ralph S (b) (6) > wrote:
Robert, Is this EST? Because I have a meeting in the morning that I specifically said was a problem.
Ralph

From: Robert Chen (b) (6) >
Sent: Friday, February 28, 2020 10:12 AM
To: Barney Graham (b) (6) >; Arnaud Didierlaurent <(b) (6)>;
Baric, Ralph S (b) (6) >
Cc: Paul Henri Lambert (b) (6) >; Corry Dekker (b) (6) >; Ángel
Honrado (b) (6) >; Imanol Urcola Lecuona <(b) (6)>; Baric,
Toni C <(b) (6)>
Subject: URGENT: Action Items: CEPI-BC meeting on preventing disease enhancement with COVID-19
vaccines

Dear Ralph, Barney and Arnaud,

Greetings! I'm writing to confirm you as a speaker for this important videoconference (revised draft agenda with time zone annexes attached), Mar. 12-13, 2020, [12:00-17:00 (GMT/London); 08:00-13:00 (EST/DC); 13:00-1800 CET/Geneva].

On Mar. 12, 2020, all of you will be speaking in session 4 (Potential implication of IgG mediated pathology for vaccine design) 14:20-16:45 GMT/10:20-12:45 EST/15:20-17:45 CET). You'll each have 20 minutes Talk + 15 minutes Q&A. Corry Decker will then moderate a session where we'll try to jointly draft guidance on COVID-19 immunological markers.

14:20-16:45	145	4	Potential implication of IgG mediated pathology for vaccine design. Should one focus on ACE2-binding epitopes (RBD) to reduce the risk of enhanced antibody-mediated immunopathology?
14:20-14:40 Talk 14:40-14:55 Q&A	20 15	4.1	Structure and function of CoV spike protein Ralph Baric (UNC)
14:55-15:15 Talk 15:15-15:30 Q&A	20 15	4.2	Immunogenicity and neutralizing efficacy of truncated spike antigens Barney Graham (NIH)
15:30-15:50 Talk 15:50-16:05 Q&A	20 15	4.3	Which immunological/inflammatory markers should we monitor during a first Phase 1 trial, including impact of adjuvants? Arnaud Didierlaurent (Geneva Centre of Vaccinology)
16:05-16:45	40	4.4	Drafting guidance on COVID-19 immunological markers; moderator: Corry Dekker (Stanford/BC)

On Mar. 13, 2020 (14:00-15:30 GMT/10:00-11:30 EDT/15:00-16:30 CET). these draft guidance will be presented and peer reviewed with the web audience

14:00-15:30	90	8	Review draft guidance on COVID-19 immunological markers
14:00-14:10	10	8.1	Summary draft guidance by moderator Corry Dekker (Stanford/BC)
14:10-15:30	80	8.2	Peer review with web audience guided by moderator & videoconference coordinator

Please feel free to email Dr. Dekker and Dr. Lambert (overall planner of agenda) in case you have any questions on this session. Angel/Imanol can organize a conf call if needed.

Action Items:

- 1) Contact me ASAP if your plans to attend have changed. Angel/Imanol will send out a calendar invite to you also.
- 2) Email moderator or other speaker in Session as needed
- 3) Prepare and share (ahead of the meeting by Mar. 10 if possible)
 - a) 1-2 page summary with citations (can include unpublished info) in Endnote that can be easily incorporated into a master summary document, and
 - b) your Powerpoint slides.
- 4) Please suggest up to 5 peer reviewers (for Day 2, assuming only some can make it) to invite with their emails.

Best regards,

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

----- Forwarded message -----

From: **Robert Chen** (b) (6) >
Date: Mon, Feb 24, 2020 at 6:42 PM
Subject: Re: URGENT: Invitation to CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines
To: (b) (6) Perlman, Stanley (b) (6) >,
(b) (6), Arnaud Didierlaurent (b) (6) >
Cc: Jakob Cramer (b) (6) >, Svein Rune Andersen (b) (6),
Melanie Saville (b) (6) >

Dear all,

Thanks for your timely reply to the Doodles. Unfortunately there was no single time suitable for all, so we had to make an executive decision to go with the video-conference on Mar. 12-13, 2020. I know Drs.

Baric and Tseng had indicated that they were unavailable on these dates. Please let me know ASAP if you (or your team) might still be available in some way (e.g., you rescheduling your conflict, alternative presenter from your team or another team that you'd recommend, you taping your talk and someone else from your team presenting),

To maximize the productivity of the meeting, we ask each speaker to: prepare and share (ahead of the meeting by Mar. 10 if possible) a) 1-2 page summary with citations (can include unpublished info) in Endnote that can be easily incorporated into a master summary document, and b) your Powerpoint slides. For Day 2 (Revised agenda attached), we like to invite colleagues in the field who can provide best possible peer review. Please suggest up to 5 with their emails. They can view Day 1 if they wish but won't participate otherwise until Day 2. Other stakeholders (e.g., COVID-19 vaccine developers) will be invited to join on same terms.

Thanks again and please let us know if you have any questions,

Best regards,

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

JAKOB CRAMER
Head of Clinical Development
CEPI

On Fri, Feb 21, 2020 at 11:27 AM Robert Chen <(b) (6)> wrote:
Dear Colleague,

The Coalition for Epidemic Preparedness and Innovation (CEPI) has funded several programs to develop a vaccine against COVID-19 (https://cepi.net/news_cepi/cepi-to-fund-three-programmes-to-develop-vaccines-against-the-novel-coronavirus-ncov-2019/). CEPI has partnered with the Brighton Collaboration (BC) to support the safety assessment of its vaccine candidates (https://cepi.net/news_cepi/cepi-partners-with-brighton-collaboration-to-support-safety-assessment-of-vaccine-candidates-against-emerging-infectious-diseases/)

Some prior coronavirus vaccine candidates vs. SARS and MERS have shown enhanced disease (ED) can occur in immunized animals upon subsequent exposure to live virus. To better understand and hopefully prevent this phenomenon with COVID-19 vaccine candidates, CEPI and BC are organizing an urgent internal scientific consensus meeting (Draft Agenda attached; your suggestions welcome).

Please complete the doodles for each of the Options below by 5PM PDT, Monday Feb. 24, 2020:

Option A: Standard one day face-to-face meeting in a major city TBD (e.g., London, UK; Brussels, Belgium, Geneva, Switzerland). Please arrive by the night before. Your travel expenses will be covered by CEPI.

Option B: aims to cut the challenges, cost, and risk associated with traveling by using an internet conference platform for 5 hours duration on two successive days at the following times on both days:

21:00-02:00+1 (Beijing)
13:00-18:00 GMT (London)
08:00-13:00 EDT (New York)
05:00-10:00 PDT (San Francisco)

We anticipate the meeting outcomes to be presented and published in multiple scientific and policy forums subsequently. We look forward to your reply and your contribution towards a fruitful meeting. We'll follow up with more details as soon as we can. Please let me know if you have any questions.

Best regards,

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

JAKOB CRAMER
Head of Clinical Development
CEPI

--

Robert (Bob) Chen MD MA
Scientific Director, Brighton Collaboration
Land: (b) (6) Cell: (b) (6)
email: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 23 Mar 2020 20:00:43 +0000
To: Ledgerwood, Julie (NIH/NIAID) [E]; McDermott, Adrian (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]
Cc: Mascola, John (NIH/VRC) [E]
Subject: NCI call with Doug Lowy

I didn't give you any warning or context for this call at 4:30. John, you are copied just for FYI. You don't have to be on the call. Sec. Alex Azar asked whether the (b) (5)

(b) (5)
(b) (5) It is also
(b) (5)
(b) (5)

Dr. Lowy called over the weekend and then today asked for a call to discuss whether we would (b) (5)

(b) (5). All we really have to do is (b) (5)
(b) (5). I thought (b) (5)

Talk to you soon if you are able to join at 4:30. He sent the call-in number earlier.

Barney

Barney S. Graham, MD, PhD
Senior Investigator
Deputy Director, Vaccine Research Center
Chief, Viral Pathogenesis Laboratory
National Institute of Allergy and Infectious Diseases, NIH
40 Convent Drive, MSC 3017
Bldg 40, Room 2502
Bethesda, MD 20892-3017
Phone: (b) (6)
URL: <https://www.niaid.nih.gov/research/barney-graham-md-phd>

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From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 26 Mar 2020 21:14:33 +0000
To: Leist, Sarah Rebecca
Cc: Corbett, Kizzmekia (NIH/VRC) [E]; Baric, Ralph; Alexandra Schaefer; Martinez, David Rafael; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: Re: Transferring mice to UNC for (b) (4)
Attachments: image001.jpg, image002.png

I think we probably need to have a call to be entirely aligned on this.

Thanks

Barney

Sent from my iPhone

On Mar 26, 2020, at 4:24 PM, Leist, Sarah Rebecca <(b) (6)> wrote:

Hello everyone,

As the mice are acclimating we just wanted to make sure that we are on the same page concerning the

(b) (4)

This is the information we have so far.

As far as I understood (b) (4). Do we only want (b) (4)
(b) (4)

Thank you,
Sarah

From: "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>
Date: Monday, March 23, 2020 at 6:39 PM
To: "Leist, Sarah Rebecca" (b) (6), "Chiedi, Carmelo (NIH/VRC) [C]"

(b) (6)>, "Baric, Ralph S" (b) (6)>, "Schaefer, Alexandra"
(b) (6)>, "Martinez, David Rafael" (b) (6)>, "Brockett,
Megan R" (b) (6)>
Cc: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6), "Taylor, Alida (NIH/VRC) [E]"
(b) (6) "Scorpio, Diana (NIH/VRC) [E]" (b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

They were (b) (4) I just was thinking (b) (4)
(b) (4) and I understand.

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal (b) (6)

Fax: (301) 480-2771

From: "Leist, Sarah Rebecca" (b) (6)
Date: Monday, March 23, 2020 at 6:38 PM
To: Kizzmekia Corbett (b) (6), "Chiedi, Carmelo (NIH/VRC) [C]"
(b) (6), Ralph Baric (b) (6)>, Alexandra Schaefer
(b) (6)>, "Martinez, David Rafael" (b) (6), "Brockett,
Megan R" (b) (6)
Cc: Kaitlyn Morabito (b) (6)>, "Taylor, Alida (NIH/VRC) [E]"
(b) (6) "Scorpio, Diana (NIH/VRC) [E]" (b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

Hi Kizzy,

Why (b) (4)?

With a little bit more lead time we could have arranged (b) (4)

Unfortunately, one day notice is not enough to organize that.

When (b) (4) Will it (b) (4)

(b) (4)

Thanks,

Sarah

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Date: Monday, March 23, 2020 at 10:49 AM
To: "Leist, Sarah Rebecca" (b) (6), "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6), "Baric, Ralph S" (b) (6), "Schaefer, Alexandra" (b) (6), "Martinez, David Rafael" (b) (6), "Brockett, Megan R" (b) (6)
Cc: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6), "Taylor, Alida (NIH/VRC) [E]" (b) (6), "Scorio, Diana (NIH/VRC) [E]" (b) (6)
Subject: Re: Transferring mice to UNC for (b) (4)

Good morning,
Seems like the animals are on their way to you all. Good luck with the upcoming (b) (4). It is my understanding that (b) (4) correct? (b) (4). This is fine, I am just organizing timelines for assays here.

Cheers to all,

Kizzmekia S. Corbett, PhD
Senior Research Fellow | Scientific Lead
Coronavirus Vaccines & Immunopathogenesis (coVip) Team
Viral Pathogenesis Laboratory | Vaccine Research Center
National Institutes of Allergy and Infectious Diseases
National Institutes of Health

Building 40 Room 2608
40 Convent Drive
Bethesda MD 20892
Laboratory: (b) (6)
Personal: (b) (6)
Fax: (301) 480-2771

From: "Leist, Sarah Rebecca" (b) (6)
Date: Thursday, March 19, 2020 at 12:22 PM
To: "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6), Ralph Baric (b) (6), Alexandra Schaefer <(b) (6)>, "Martinez, David Rafael" <(b) (6)>, "Brockett, Megan R" (b) (6)
Cc: Kizzmekia Corbett (b) (6), Kaitlyn Morabito (b) (6), "Taylor, Alida (NIH/VRC) [E]" (b) (6), "Scorio, Diana (NIH/VRC) [E]" (b) (6)
Subject: Re: Transferring mice to UNC for (b) (4)

Hi Carmelo,
This is wonderful news! Thanks so much for helping with this.

Friday 4/10 delivery should work on our end. As early as possible would be good so that the mice can acclimate in the lab.

Could you please provide the sex, strain and amount information for the mice? Or anyone on this email who has this information.

Thanks,
Sarah

From: "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6) >
Date: Thursday, March 19, 2020 at 12:14 PM
To: "Leist, Sarah Rebecca" <(b) (6)>, "Baric, Ralph S" (b) (6)
"Schaefer, Alexandra" (b) (6) >, "Martinez, David Rafael"
(b) (6), "Brockett, Megan R" (b) (6) >
Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >, "Morabito, Kaitlyn
(NIH/VRC) [E]" (b) (6), "Taylor, Alida (NIH/VRC) [E]"
(b) (6) "Scorpio, Diana (NIH/VRC) [E]" (b) (6) >
Subject: RE: Transferring mice to UNC for (b) (4)

Good Afternoon,
<image001.jpg>

I can accommodate shipping the (b) (4) mice out on Monday March 23rd for a Tuesday March 24th delivery. Assuming World Courier can accommodate the request; I will confirm shipping once I get the job assigned with World Courier.

Note: *I will need the attached Animal Transfer Agreement signed and returned to me via email, by 10am Friday March 20th before being able to ship the mice.*

I cannot accommodate shipping the (b) (4) mice out on Wednesday April 8 for a Thursday April 9th delivery since Dr. Corbett stated that the mice would be ready to ship after April 8th. I could accommodate shipping these mice on Thursday April 9th with a Friday April 10th delivery. Please let me know this works, or if we should push the delivery to the week of April 13th?

Carmelo

Carmelo Chiedi, CMAR, RLATG
Project Manager – VRC
Translational Research Program
Building 40/Room 1610
Office: (b) (6)
Cell: (b) (6)

From: Leist, Sarah Rebecca (b) (6) >

Sent: Thursday, March 19, 2020 11:43 AM

To: Chiedi, Carmelo (NIH/VRC) [C] (b) (6) >; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >; Baric, Ralph (b) (6) >; Alexandra Schaefer (b) (6) >; Martinez, David Rafael (b) (6) >

Subject: Re: Transferring mice to UNC for (b) (4)

Hi Carmelo,

In order to complete the import request on UNC side I'll need the following information:

<image002.png>

In addition, I'll also need the sex, amount and stain information for the mice.

We'd be happy to receive the groups of mice on the following dates:



Please let me know if you have any additional questions!

Thanks,
Sarah

From: "Chiedi, Carmelo (NIH/VRC) [C]" <(b) (6)>

Date: Wednesday, March 18, 2020 at 3:29 PM

To: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) "Leist, Sarah Rebecca" (b) (6) >, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >, "Baric, Ralph S" (b) (6) >, "Schaefer, Alexandra" (b) (6) >, "Martinez, David Rafael" (b) (6) >

Subject: RE: Transferring mice to UNC for (b) (4)

Please let me know the target date(s) you wish to get each group of mice transferred and I will do my best to accommodate.

Carmelo Chiedi, CMAR, RLATG
Project Manager – Alpha Omega Bioservices, Inc.
National Institutes of Health - Vaccine Research Center
Translational Research Program
Building 40/Room 1610
40 Convent Drive
Bethesda, MD 20892
Office: (b) (6)
Cell: (b) (6)
Fax: (301) 594-8455

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From: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Sent: Wednesday, March 18, 2020 3:05 PM
To: Leist, Sarah Rebecca <(b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>; Baric, Ralph (b) (6)>; Alexandra Schaefer (b) (6)>; Martinez, David Rafael (b) (6)>
Cc: Chiedi, Carmelo (NIH/VRC) [C] (b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

(b) (4)

Highlight is the date of (b) (4) preference. Ready to ship dates noted.

Sent from the mobile device of:
Kizzmekia S. Corbett, PhD
Senior Research Fellow
coVip Scientific Lead
VRC | NIAID | NIH
(b) (6)

From: "Leist, Sarah Rebecca" (b) (6)
Date: Wednesday, March 18, 2020 at 1:37:17 PM
To: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>, "Baric, Ralph" <(b) (6)> "Alexandra Schaefer" (b) (6)>, "Martinez, David Rafael" (b) (6)
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6)
Subject: Re: Transferring mice to UNC for (b) (4)

Hi Kizzy,

We'll share the results – of course!

Concerning the transfer of the mice – will they all come at once or will you need to ship them in batches?

Thanks,
Sarah

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Date: Tuesday, March 17, 2020 at 10:07 AM
To: "Leist, Sarah Rebecca" (b) (6) >, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >, "Baric, Ralph S" <(b) (6)>, "Schaefer, Alexandra" (b) (6) >, "Martinez, David Rafael" (b) (6) >
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" <(b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

Okay we will move forward with documentation but please share the (b) (4) results as soon as you have them.

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: "Leist, Sarah Rebecca" (b) (6) >
Date: Tuesday, March 17, 2020 at 10:06 AM
To: Kizzmekia Corbett <(b) (6)>, Kaitlyn Morabito (b) (6), Ralph Baric (b) (6), Alexandra Schaefer <(b) (6)>, "Martinez, David Rafael" (b) (6) >
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" <(b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

(b) (4)

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Date: Tuesday, March 17, 2020 at 10:03 AM
To: "Leist, Sarah Rebecca" (b) (6); "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6); "Baric, Ralph S" (b) (6); "Schaefer, Alexandra" (b) (6); "Martinez, David Rafael" (b) (6)
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" <(b) (6)>
Subject: Re: Transferring mice to UNC for (b) (4)

What is your acclimation timing? How long do they need to be there before you (b) (6)

Sent from the mobile device of:
Kizzmekia S. Corbett, PhD
Senior Research Fellow
coVip Scientific Lead
VRC | NIAID | NIH
(b) (6)

From: "Leist, Sarah Rebecca" (b) (6)
Date: Tuesday, March 17, 2020 at 10:01:23 AM
To: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6); "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6); "Ruckwardt, Tracy (NIH/VRC) [E]" <(b) (6)>; "Baric, Ralph" (b) (6); "Alexandra Schaefer" (b) (6); "Martinez, David Rafael" (b) (6)
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6)
Subject: Re: Transferring mice to UNC for (b) (4)

Hi Kizzy,
We are happy to receive the mice as soon as possible – I'm working to get all the information that you'll need together as soon as possible.
Thanks,
Sarah

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Date: Monday, March 16, 2020 at 4:42 PM
To: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6); "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6); "Baric, Ralph S" (b) (6); "Leist, Sarah Rebecca" (b) (6); "Schaefer, Alexandra" (b) (6); "Martinez, David Rafael" (b) (6)
Cc: "Chiedi, Carmelo (NIH/VRC) [C]" (b) (6)
Subject: Re: Transferring mice to UNC for (b) (4)

Hi Baric, et. al, Given the **prospective earliest** (b) (4) **dates below:** Could you please comment on the target transfer date that is convenient for you?

(b) (4)

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: Kizzmekia Corbett (b) (6) >

Date: Sunday, March 15, 2020 at 2:05 PM

To: Kizzmekia Corbett <(b) (6)>, Kaitlyn Morabito

(b) (6), "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6),

Ralph Baric (b) (6) >, Alexandra

Schaefer (b) (6) >

Cc: "Chiedi, Carmelo (NIH/VRC) [C]" <(b) (6)>

Subject: Transferring mice to UNC for (b) (4)

Hi Baric lab,

Per my last email, we can begin to transfer mice to you for (b) (4) as soon as you like. (Giving then time to acclimate). Cc'ed here is Carmelo Chiedi who can assist in any documentation we need from our side.

Sent from the mobile device of:

Kizzmekia S. Corbett, PhD

Senior Research Fellow

coVip Scientific Lead

VRC | NIAID | NIH

(b) (6)

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)

Date: Friday, March 13, 2020 at 11:18:20 AM

To: "Graham, Barney (NIH/VRC) [E]" (b) (6) >, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >, "Ruckwardt, Tracy (NIH/VRC) [E]" <(b) (6) >, "Bok, Karin (NIH/VRC) [E]" (b) (6) >, " (b) (6) >, "Bennett Hamilton" (b) (6) >, "Guillaume Stewart-Jones" (b) (6) >, "Baric, Ralph" (b) (6) >, "Alexandra Schaefer" (b) (6) >, "Baric, Toni C" (b) (6) >

Subject: Action Items Re: VRC/Moderna/UNC SARS-CoV-2 Mouse Model Discussion

Good morning all,

I am just summarizing yesterday's call with key action items, per institution:

VRC

- (b) (4)
-
-

UNC

- (b) (4)
-

Moderna

(b) (4)

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: (b) (6)

When: 3:30 PM - 4:30 PM March 12, 2020

Subject: VRC/Moderna/UNC SARS-CoV-2 Mouse Model Discussion

Location: 40/3rd Floor Conference Room

****CONFIRMATION****

Title of Meeting: VRC/Moderna/UNC SARS-CoV-2 Mouse Model Discussion

Principal Meeting Organizer: Kaitlyn Morabito

Goal of Meeting: To discuss testing of the SARS-CoV-2 mRNA vaccine in mouse challenge models.

Date: Thur Mar 12th 2020

Time: 3:30 pm

Allotted Time: 1 Hour

Location: 40/3rd Floor Conference Room (Goto Meeting)

VRC Participants: Barney Graham, Kaitlyn Morabito, Kizzmekia Corbett, Tracy Ruckwardt, and Karin Bok

Moderna Participants: Sunny Himansu, Andrea Carfi, Hamilton Bennett, and Guillaume Stewart-Jones

UNC Participants: Ralph Baric, Sarah Leist, Alexandra Schaefer, and David Martinez

Agenda:

1. Introductions
2. Data
3. Next steps

Thanks...Monique

(b) (6)

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Sending Institution: *	Vaccine Research Center
Sending Investigator: *	Kizzmekia Corbett
Sending Contact or Vet: *	Diana Scorpio
Sending Contact or Vet's Email: *	(b) (6)
Sending Telephone/Fax: *	(b) (6)
Sending Transport Coordinator: *	Carmelo Chiedi
Sending Transport Coordinator Email: *	(b) (6)
Party responsible for paying shipping charges: *	Sending Institute

Sending Institution: *	<input type="text"/>
Sending Investigator: *	<input type="text"/>
Sending Contact or Vet: *	<input type="text"/>
Sending Contact or Vet's Email: *	<input type="text"/>
Sending Telephone/Fax: *	<input type="text"/>
Sending Transport Coordinator: *	<input type="text"/>
Sending Transport Coordinator Email: *	<input type="text"/>
Party responsible for paying shipping charges: *	<input type="radio"/> Requesting UNC Lab <input type="radio"/> Shipping Institution

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 17 Mar 2020 00:02:40 +0000
To: Mascola, John (NIH/VRC) [E]
Subject: Re: Translate Bio mRNA and a vaccine for Covid-19

Thanks

BG

Sent from my iPhone

On Mar 16, 2020, at 7:48 PM, Mascola, John (NIH/VRC) [E] (b) (6) wrote:

I'll respond.

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Monday, March 16, 2020 6:55 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: Fwd: Translate Bio mRNA and a vaccine for Covid-19

Do you want to take this one or should I? Or maybe we can send it to Jason.

If I answered it would be along the lines that (b) (5)

(b) (5)
(b) (5)

BG

Sent from my iPhone

Begin forwarded message:

From: "Collins, Francis (NIH/OD) [E]" (b) (6)>
Date: March 16, 2020 at 6:15:21 PM EDT
To: Richard Wooster <(b) (6)>
Cc: Ronald Renaud (b) (6), "Mascola, John (NIH/VRC) [E]"
(b) (6) "Graham, Barney (NIH/VRC) [E]" (b) (6)
"Marston, Hilary (NIH/NIAID) [E]" (b) (6)>
Subject: RE: Translate Bio mRNA and a vaccine for Covid-19

Hi Richard,

I'm cc'ing Drs. John Mascola and Barney Graham of the Vaccine Research Center, as I think they would be in the best position to discuss this mRNA technology with you.

Best, Francis

From: Richard Wooster (b) (6) >
Sent: Monday, March 16, 2020 11:43 AM
To: Collins, Francis (NIH/OD) [E] (b) (6)
Cc: Ronald Renaud (b) (6)
Subject: Translate Bio mRNA and a vaccine for Covid-19

Dear Dr Collins

Our paths crossed a few years ago in the breast cancer and genome fields. I was first author on the mapping and cloning of BRCA2 with Mike Stratton, worked with John Sulston at the Sanger Institute and joined Barbara Weber at GSK. I am now Chief Scientific Officer at Translate Bio

At Translate Bio we are discovering and developing mRNA based medicines. You may recall our presentation at the North American Cystic Fibrosis Conference last year where interim data from our inhaled CFTR mRNA Phase 1/2 was presented. We are actively working on (b) (4)
(b) (4) More importantly, for the world we find ourselves in today, we have a partnership with (b) (4). In addition to this, we believe we are in the unique position of (b) (4)
(b) (4)
(b) (4)

We truly want to play our part in tackling the corona virus pandemic and would welcome a call with you, or others as you deem appropriate, to see how we can help.

Best wishes

Richard Wooster

Chief Scientific Officer

Translate Bio

29 Hartwell Avenue | Lexington, MA 02421

 (b) (6) |  (b) (6)

(b) (6) | www.translate.bio

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From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 28 Feb 2020 16:14:34 +0000
To: Marston, Hilary (NIH/NIAID) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Cc: Bushar, Nicholas (NIH/NIAID) [E]
Subject: RE: NIAID Coronavirus SWAT Weekly Meeting

We have a Gates meeting this afternoon, but I think the SWAT call is probably more important. We can have someone either me or Kizzy or Kaitlyn or Karin join the call for a few minutes.

BG

From: Marston, Hilary (NIH/NIAID) [E] (b) (6)>
Sent: Friday, February 28, 2020 11:12 AM
To: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Cc: Bushar, Nicholas (NIH/NIAID) [E] (b) (6); Graham, Barney (NIH/VRC) [E]
(b) (6)>
Subject: Re: NIAID Coronavirus SWAT Weekly Meeting

You can't send anyone? I know what the other meeting is - you have to be able to send someone out for ten minutes

On Feb 28, 2020, at 11:11 AM, Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)> wrote:

Hi Nick and Hilary,

Just letting you know that the VRC has a conflicting meeting at this time, and will not be on the call.

Thanks,
Kaitlyn

From: "Bushar, Nicholas (NIH/NIAID) [E]" (b) (6)
Date: Friday, February 28, 2020 at 10:58 AM
To: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>, "Chapman, Latanya (NIH/VRC) [C]" (b) (6)
Subject: NIAID Coronavirus SWAT Weekly Meeting

Please find the agenda for today's meeting attached.

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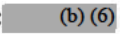
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From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 21 Apr 2020 19:02:52 +0000
To: Fauci, Anthony (NIH/NIAID) [E]
Subject: Re: SCMP: Coronavirus's ability to mutate has been vastly underestimated, and mutations affect deadliness of strains, Chinese study finds
Attachments: image001.jpg, image002.jpg, image004.jpg

It sounds like this was done only in 11 patients so I would consider it anecdotal. Would be interesting to see in more people and to see sequences from beginning and end of infection.

No doubt the virus is changing but likely being selected by transmission efficiency rather than virulence. It won't spread unless there is upper airway infection and shedding and the person is well enough to expose other people (or in hospital or nursing home). Generally viruses become less virulent as they evolve and start trying to evade immunity.

I don't think it will change anything like influenza.

Barney

Sent from my iPhone

On Apr 21, 2020, at 1:57 PM, Fauci, Anthony (NIH/NIAID) [E] (b) (6) > wrote:

Not peer reviewed, but what do you think?

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: (b) (6)
FAX: (301) 496-4409
E-mail: (b) (6)

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From: Folkers, Greg (NIH/NIAID) [E] (b) (6)
Sent: Monday, April 20, 2020 1:53 PM

Subject: SCMP: Coronavirus's ability to mutate has been vastly underestimated, and mutations affect deadliness of strains, Chinese study finds

[China / Science](#)

Coronavirus's ability to mutate has been vastly underestimated, and mutations affect deadliness of strains, Chinese study finds

- The most aggressive strains of Sars-CoV-2 could generate 270 times as much viral load as the least potent type
- New York may have a deadlier strain imported from Europe, compared to less deadly viruses elsewhere in the United States

[<image001.jpg>](#)

[Stephen Chen](#) in Beijing

Published: 10:41pm, 20 Apr, 2020

Updated: 1:33am, 21 Apr, 2020

[<image002.jpg>](#)

A team led by Professor Li Lanjuan has studied how the novel coronavirus mutates and possible implications for the pandemic. Photo: EPA-EFE

A new study by one of China's top scientists has found the ability of [the new coronavirus](#) to mutate has been vastly underestimated and different strains may account for different impacts of the disease in various parts of the world.

Professor Li Lanjuan and her colleagues from Zhejiang University found within a small pool of patients many mutations not previously reported. These mutations included changes so rare that scientists had never considered they might occur.

They also confirmed for the first time with laboratory evidence that [certain mutations could create strains deadlier](#) than others.

"Sars-CoV-2 has acquired mutations capable of substantially changing its pathogenicity," Li and her collaborators wrote in a non-peer reviewed paper released on preprint service medRxiv.org on Sunday. Li's study provided the first hard evidence that mutation could affect how severely the virus caused disease or damage in its host.

Li took an unusual approach to investigate the virus mutation. She analysed the viral strains isolated from 11 randomly chosen Covid-19 patients from Hangzhou in the eastern province of Zhejiang, and then tested how efficiently they could infect and kill cells.

The deadliest mutations in the Zhejiang patients had also been found in most patients across Europe, while the milder strains were the predominant varieties found in parts of the United States, such as Washington state, according to their paper.

A separate study had found that New York strains had been imported from Europe. The death rate in New York was similar to that in many European countries, if not worse.

But the weaker mutation did not mean a lower risk for everybody, according to Li's study. In Zhejiang, two patients in their 30s and 50s who contracted the weaker strain became severely ill. Although both survived in the end, the elder patient needed treatment in an intensive care unit.

This finding could shed light on differences in regional mortality. The pandemic's infection and death rates vary from one country to another, and many explanations have been proposed.

Genetic scientists had noticed that the dominant strains in different geographic regions were inherently different. Some researchers suspected the varying mortality rates could, in part, be caused by mutations but they had no direct proof.

The issue was further complicated because survival rates depended on many factors, such as age, underlying health conditions or even blood type.

In hospitals, Covid-19 has been treated as one disease and patients have received the same treatment regardless of the strain they have. Li and her colleagues suggested that defining mutations in a region might determine actions to fight the virus.

"Drug and vaccine development, while urgent, need to take the impact of these accumulating mutations ... into account to avoid potential pitfalls," they said.

Li was the [first scientist to propose the Wuhan lockdown](#), according to state media reports. The government followed her advice and in late January, the city of more than 11 million residents was shut down overnight.

The sample size in this most recent study was remarkably small. Other studies tracking the virus mutation usually involved hundreds, or even thousands, of strains.

Li's team detected more than 30 mutations. Among them 19 mutations – or about 60 per cent – were new.

They found some of these mutations could lead to functional changes in the virus' spike protein, a unique structure over the viral envelope enabling the coronavirus to bind with human cells. Computer simulation predicted that these mutations would increase its infectivity.

To verify the theory, Li and colleagues infected cells with strains carrying different mutations. The most aggressive strains could generate 270 times as much viral load as the weakest type. These strains also killed the cells the fastest.

It was an unexpected result from fewer than a dozen patients, "indicating that the true diversity of the viral strains is still largely underappreciated," Li wrote in the paper.

<image004.jpg>

Professor Li Lanjuan is a leading Chinese epidemiologist. Photo: Xinhua

The mutations were genes different from the earliest strain isolated in Wuhan, where the virus was first detected in late December last year.

The coronavirus changes at an average speed of about one mutation per month. By Monday, more than 10,000 strains had been sequenced by scientists around the globe, containing more than 4,300 mutations, according to the China National Centre for Bioinformation.

Most of these samples, though, were sequenced by a standard approach that could generate a result quickly. The genes were read just once, for instance, and there was room for mistakes.

Li's team used a more sophisticated method known as ultra-deep sequencing. Each building block of the virus genome was read more than 100 times, allowing the researchers to see changes that could have been overlooked by the conventional approach.

The researchers also found three consecutive changes – known as tri-nucleotide mutations – in a 60-year-old patient, which was a rare event. Usually the genes mutated at one site at a time. This patient

spent more than 50 days in hospital, much longer than other Covid-19 patients, and even his faeces were infectious with living viral strains.

"Investigating the functional impact of this tri-nucleotide mutation would be highly interesting," Li and colleagues said in the paper.

Professor Zhang Xuegong, head of the bioinformatics division at the National Laboratory for Information Science and Technology at Tsinghua University, said ultra-deep sequencing could be an effective strategy to track the virus' mutation.

"It can produce some useful information," he said.

But this approach could be much more time consuming and costly. It was unlikely to be applied to all samples.

"Our understanding of the virus remains quite shallow," Zhang said. Questions such as where the virus came from, why it could kill some healthy young people while generating no detectable symptoms in many others still left scientists scratching their heads.

"If there is a discovery that overturns the prevailing perception, don't be surprised."

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From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 15 Mar 2020 22:50:24 +0000
To: Mascola, John (NIH/VRC) [E]; Harris, Christina (NIH/NIAID) [E]; Daucher, Marybeth (NIH/NIAID) [E]
Cc: Ledgerwood, Julie (NIH/NIAID) [E]; Koup, Richard (NIH/VRC) [E]
Subject: RE: 3rd Supplemental deadline today - Coronavirus funding

I see [REDACTED] (b) (5)
[REDACTED] (b) (5)

[REDACTED] (b) (5).

I don't see [REDACTED] (b) (5)
[REDACTED] (b) (5) We should [REDACTED] (b) (5)
[REDACTED] (b) (5)
[REDACTED] (b) (5).

Barney

From: Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6)
Sent: Sunday, March 15, 2020 5:24 PM
To: Harris, Christina (NIH/NIAID) [E] [REDACTED] (b) (6); Daucher, Marybeth (NIH/NIAID) [E]
<[REDACTED] (b) (6)>
Cc: Ledgerwood, Julie (NIH/NIAID) [E] [REDACTED] (b) (6); Koup, Richard (NIH/VRC) [E]
[REDACTED] (b) (6); Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>
Subject: Fwd: 3rd Supplemental deadline today - Coronavirus funding

Marybeth,
Does the document here contain what we have asked for?

Thanks
John

Sent from my iPhone

Begin forwarded message:

From: "Johnson, Martin S. (NIH/NIAID) [E]" [REDACTED] (b) (6)>
Date: March 15, 2020 at 17:17:50 EDT
To: "Marston, Hilary (NIH/NIAID) [E]" [REDACTED] (b) (6)>, "Erbelding, Emily (NIH/NIAID) [E]"
[REDACTED] (b) (6)>, "Cassetti, Cristina (NIH/NIAID) [E]" [REDACTED] (b) (6), "Embry, Alan
(NIH/NIAID) [E]" [REDACTED] (b) (6), "Lane, Cliff (NIH/NIAID) [E]" [REDACTED] (b) (6),
"Rotrosen, Daniel (NIH/NIAID) [E]" [REDACTED] (b) (6), "Mascola, John (NIH/VRC) [E]"
[REDACTED] (b) (6)>, "Holland, Steven (NIH/NIAID) [E]" [REDACTED] (b) (6)

Cc: "Haskins, Melinda (NIH/NIAID) [E]" (b) (6)>, "Harper, Jill (NIH/NIAID) [E]" (b) (6)>, "Auchincloss, Hugh (NIH/NIAID) [E]" (b) (6)
Subject: RE: 3rd Supplemental deadline today - Coronavirus funding

Hilary,

Thaouhst.

Emily

Would this (b) (5)

(b) (5)

Others, any other \$ thought s?

THANKs

From: Erbelding, Emily (NIH/NIAID) [E] (b) (6)
Sent: Sunday, March 15, 2020 4:45 PM
To: Johnson, Martin S. (NIH/NIAID) [E] (b) (6)>
Cc: Haskins, Melinda (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6) Harper, Jill (NIH/NIAID) [E] (b) (6)>; Auchincloss, Hugh (NIH/NIAID) [E] (b) (6)>
Subject: Re: 3rd Supplemental deadline today - Coronavirus funding

This look like things are covered to me given what we have discussed

On Mar 15, 2020, at 3:55 PM, Johnson, Martin S. (NIH/NIAID) [E] (b) (6)> wrote:

From: "Haskins, Melinda (NIH/NIAID) [E]" (b) (6)
Date: Sunday, March 15, 2020 at 3:08:41 PM
To: "Auchincloss, Hugh (NIH/NIAID) [E]" (b) (6)>, "Lane, Cliff (NIH/NIAID) [E]" (b) (6)>, "Marston, Hilary (NIH/NIAID) [E]" (b) (6)>, "Harper, Jill (NIH/NIAID) [E]" (b) (6)>, "Johnson, Martin S. (NIH/NIAID) [E]" (b) (6)>, "Mascola, John (NIH/VRC) [E]" (b) (6)
Cc: "Selgrade, Sara (NIH/NIAID) [E]" (b) (6) "Crawford, Chase (NIH/NIAID) [E]"

(b) (6), "Conrad, Patricia (NIH/NIAID) [E]" (b) (6) >
Subject: Fwd: 3rd Supplemental deadline today - Coronavirus funding

Sent from my iPhone

Begin forwarded message:

From: "Mitchell, Michelle (NIH/OD) [E]" (b) (6) >
Date: March 15, 2020 at 3:05:09 PM EDT
To: "Haskins, Melinda (NIH/NIAID) [E]" (b) (6) >
Cc: "Selgrade, Sara (NIH/NIAID) [E]" (b) (6), "LaMontagne, Karen (NIH/OD) [E]" (b) (6), "Higgins, Lauren (NIH/OD) [E]" (b) (6) >
Subject: 3rd Supplemental deadline today - Coronavirus funding

Hi Melinda,

Laura cc'd you on her request and called me to follow up. I'm working on this and will get back to Laura soon. (b) (5). Below is the NIAID information that was shared with Jen last week (from Dr. Collins/Fauci discussions). Please let me know if anything needs to be updated.

Thanks.

MM

(b) (5)

NIH/NIAID has been asked to further accelerate and broaden its response effort to COVID-19 given the recent acceleration of transmission in the United States and emergence of important scientific questions that should be answered. (b) (5)

(b) (5)

From: "Mitchell, Michelle (NIH/OD) [E]" (b) (6)
Date: March 15, 2020 at 2:46:04 PM EDT
To: "Friedel, Laura (Appropriations)" (b) (6)
Cc: "Haskins, Melinda (NIH/NIAID) [E]" (b) (6)
Subject: Re: Coronavirus funding

Thanks Laura. I'm on it!

MM

On Mar 15, 2020, at 2:43 PM, (b) (6) (Appropriations) (b) (6) wrote:

Hi,

It looks like we'll be doing supplemental #3. Does NIH or NIAID, in particular, need additional funds? We need to have 4 corners agreement on this by tomorrow morning, so if you can get me something in the next few hours, that'd be wonderful. Don't let funding amount be an obstacle.

Thanks!

(b) (6)
Majority Clerk
Committee on Appropriations
Subcommittee on Labor, HHS, and Education
136 Dirksen Senate Office Building
Washington DC 20510

(b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 8 Feb 2020 16:20:15 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: Re: Research update

Btw. I did some editing of the slides and conclusion in the version I sent to Dr. Alshukairi.

BG

Sent from my iPhone

On Feb 8, 2020, at 7:56 AM, Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) wrote:

Good morning Jason & Happy Manuscript Prep Day,
I'm forwarding this email from Lingshu, who has used (b) (4)
(b) (4) Please, when you have a minute, let us know if your group is
interested in (b) (4).

We understand you are busy, & could also give it a shot in house or with other collaborators.

Cheers,

Sent from the mobile device of:

Kizzmekia S. Corbett, PhD

Senior Research Fellow

coVip Scientific Lead

NIH | NIAID | VRC

(b) (6)

From: "Wang, Lingshu (NIH/VRC) [E]" (b) (6)
Date: Friday, February 7, 2020 at 2:36:29 PM
To: "Graham, Barney (NIH/VRC) [E]" (b) (6)
Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>
Subject: Re: Research update

Hi Barney,

Please see the data from a (b) (4)
(b) (4)

Do you want to share this data? Or If you think we should wait for data from other two donors I will arrange a time to do that in next 2 months.

Thanks,
lingshu

From: "Graham, Barney (NIH/VRC) [E]" (b) (6) >
Date: Friday, February 7, 2020 at 2:20 PM
To: "Wang, Lingshu (NIH/VRC) [E]" (b) (6)
Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Subject: FW: Research update

Reminder, now that you are back.

Barney

From: Abeer Alshukairi (b) (6)
Sent: Wednesday, February 5, 2020 10:32 PM
To: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Subject: Research update

Dear Professor Barney.
I hope all is well with you.
I need to submit the research progress of our collaborative (b) (4) project to our IRB within one week.
What is the update about our work?
I understand that you are extremely busy with several research projects regarding the new coronavirus.
What do you think is the expected time to complete our collaborative project?
Thank you for your care.
I wish you all the best in your research of the novel coronavirus.
Regards.
Abeer

<(b) (4)>

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 22 Jan 2020 02:46:44 +0000
To: Mascola, John (NIH/VRC) [E]
Subject: Re: Wuhan sample

The main person I know at CDC is Sue Gerber who is head of diagnostics. We've promised her spike protein. I would be glad to speak with her in the morning.

Barney

Sent from my iPhone

On Jan 21, 2020, at 8:10 PM, Mascola, John (NIH/VRC) [E] (b) (6) wrote:

I just talked to Tony and he mentioned that CDC folks on recent call know you (Nancy M) and Tony suggest we directly contact CDC to start.

On HHS call today with NSC – Tony and Rick Bright highlighted that NIH should have access to samples. Tony can call Bob, but he thought it best if we first contact our counterpart at CDC. Do you know who to contact?

From: Graham, Barney (NIH/VRC) [E] (b) (6)>
Sent: Tuesday, January 21, 2020 8:08 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: Re: Wuhan sample

My understanding is that the CDC has the respiratory sample, but the patient is in Seattle. We could either bring the patient here, they could ship cells, or we could send them probes. I'm sure that (b) (4) (b) (4) etc will also be looking for samples.

I wonder if we could work through (b) (5).

BG

Sent from my iPhone

On Jan 21, 2020, at 7:57 PM, Mascola, John (NIH/VRC) [E] (b) (6) wrote:

Would be great to get sample - Do you have contact at CDC to discuss?

I know (b) (5), but better to go through (b) (5) and let (b) (5)
(b) (5)

From: Fauci, Anthony (NIH/NIAID) [E] (b) (6)
Sent: Tuesday, January 21, 2020 7:47 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: RE: Wuhan sample

You and Barney should (b) (5) let me know and I will speak with Bob. I will also (b) (5) that (b) (5)
(b) (5) just to give him a heads-up.

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: (b) (6)
FAX: (301) 496-4409
E-mail: (b) (6)

The information in this e-mail and any of its attachments is confidential and may contain sensitive information. It should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage devices. The National Institute of Allergy and Infectious Diseases (NIAID) shall not accept liability for any statements made that are the sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From: Mascola, John (NIH/VRC) [E] (b) (6)>
Sent: Tuesday, January 21, 2020 7:43 PM
To: Fauci, Anthony (NIH/NIAID) [E] <(b) (6)>
Cc: Graham, Barney (NIH/VRC) [E] (b) (6)>
Subject: RE: Wuhan sample

Agree. Do you want me an Barney to initiate or do you want to (b) (5)

From: Fauci, Anthony (NIH/NIAID) [E] <(b) (6)>
Sent: Tuesday, January 21, 2020 7:32 PM
To: Mascola, John (NIH/VRC) [E] (b) (6)
Subject: RE: Wuhan sample

We should talk with the CDC about getting samples (b) (5)

Anthony S. Fauci, MD
Director
National Institute of Allergy and Infectious Diseases
Building 31, Room 7A-03
31 Center Drive, MSC 2520
National Institutes of Health
Bethesda, MD 20892-2520
Phone: (b) (6)
FAX: (301) 496-4409
E-mail (b) (6)

The information in this e-mail and any of its attachments is confidential and may contain sensitive information. It should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage devices. The National Institute of Allergy and Infectious Diseases (NIAID) shall not accept liability for any statements made that are the sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From: Mascola, John (NIH/VRC) [E] (b) (6)>
Sent: Tuesday, January 21, 2020 2:44 PM
To: Fauci, Anthony (NIH/NIAID) [E] (b) (6)>
Cc: Conrad, Patricia (NIH/NIAID) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Wuhan sample

<https://www.nytimes.com/2020/01/21/health/cdc-coronavirus.html>

Tony,

As we discussed, mAb isolation is best done directly from a Wuhan virus infected patient – so if available in US, we are ready.

We can make stabilized spike protein as antigen probe and do rapid antibody isolation. And we can work with DARPA funded groups to do the same – best available high throughput antibody isolation methods.

John

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 24 Jan 2020 15:21:31 +0000
To: Morabito, Kaitlyn (NIH/VRC) [E]; Hiatt, Nissa (NIH/VRC) [C]; Corbett, Kizzmekia (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]
Subject: RE: Wuhan CoV response

Definitely worth testing. Just in my experience with respiratory viruses in general, (b) (5)
.

BG

From: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >
Sent: Friday, January 24, 2020 10:05 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C]
(b) (6) Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >; Bok, Karin (NIH/VRC) [E] (b) (6) >
Subject: Re: Wuhan CoV response

Sounds like there's a (b) (5) I think that
(b) (5):.

From: Barney Graham (b) (6) >
Date: Friday, January 24, 2020 at 10:02 AM
To: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) "Hiatt, Nissa (NIH/VRC) [C]"
(b) (6), Kizzmekia Corbett (b) (6) >, Karin Bok
Subject: RE: Wuhan CoV response

But (b) (5):.

BG

From: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Sent: Friday, January 24, 2020 9:58 AM
To: Hiatt, Nissa (NIH/VRC) [C] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E]
(b) (6) Graham, Barney (NIH/VRC) [E] (b) (6) >; Bok, Karin (NIH/VRC) [E] (b) (6) >
Subject: Re: Wuhan CoV response

(b) (5) could potentially be used for both.

From: "Hiatt, Nissa (NIH/VRC) [C]" (b) (6)
Date: Friday, January 24, 2020 at 9:57 AM
To: Kizzmekia Corbett (b) (6), "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6), Barney Graham (b) (6), Karin Bok (b) (6)
Subject: RE: Wuhan CoV response

Hi y'all,

A question from Jen on the NIAID news team that I hope you can help with:

One question I have after reading this (as a non-scientific reader), is this something that is being pursued
(b) (5)

Best,
Nissa

Nissa Hiatt
Communications
Vaccine Research Center, NIAID, NIH
40 Convent Drive, Bldg 40, Room 1100
Bethesda, MD 20892
(b) (6)



From: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Sent: Friday, January 24, 2020 9:34 AM
To: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)
Cc: Prince, Tasheema (NIH/VRC) [C] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6); Daucher, Marybeth (NIH/NIAID) [E] (b) (6)
Subject: Re: Wuhan CoV response

We could just make the sentence short and sweet...

AbCellera has partnered with researchers at the [Vaccine Research Center](#), at the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health and other leading researchers in the field, who will test antibody candidates for therapeutic potency against the 2019-nCoV.

Which is true. If (b) (5) we will (b) (5)
etc.

--

Kizzmekia S. Corbett, PhD

Senior Research Fellow

National Institutes of Health

National Institutes of Allergy and Infectious Diseases

Vaccine Research Center

Viral Pathogenesis Laboratory

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: Kaitlyn Morabito (b) (6) >

Date: Friday, January 24, 2020 at 8:29 AM

To: "Hiatt, Nissa (NIH/VRC) [C]" (b) (6) >, Barney Graham

(b) (6) >, "Bok, Karin (NIH/VRC) [E]" (b) (6) >, Kizzmekia Corbett

(b) (6) >, "Mascola, John (NIH/VRC) [E]" (b) (6) >

Cc: "Prince, Tasheema (NIH/VRC) [C]" (b) (6) >, "Harris, Christina
(NIH/NIAID) [E]" (b) (6) >, "Daucher, Marybeth (NIH/NIAID) [E]"

(b) (6) >

Subject: Re: Wuhan CoV response

Hi Nissa,

I'm concerned that the language makes it sound like (b) (5)
(b) (5). I've highlighted the area that I'm concerned about. I'm not sure
how best to edit it.

We currently have an (b) (5).

Thanks,

Kaitlyn

From: "Hiatt, Nissa (NIH/VRC) [C]" (b) (6) >

Date: Thursday, January 23, 2020 at 8:13 PM

To: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >, Barney Graham

(b) (6) >, Karin Bok (b) (6) >, Kizzmekia Corbett

(b) (6) >, John Mascola (b) (6) >

Cc: "Prince, Tasheema (NIH/VRC) [C]" (b) (6) >, "Harris, Christina

(NIH/NIAID) [E]" (b) (6)>, Marybeth Daucher (b) (6)>

Subject: Fwd: Wuhan CoV response

Hi Kaitlyn,

If your group is alright with the language included in the VRC version of the attached release, we can move it forward with VRC leadership and the NIAID news team.

Are there any additional details about the collaboration that reviewers should be aware of?

Best,
Nissa

Sent from my iPhone

Begin forwarded message:

From: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)

Date: January 23, 2020 at 5:46:59 PM EST

To: Payal Sipahimalani (b) (6), "Graham, Barney (NIH/VRC) [E]" (b) (6)

Cc: Ester Falconer (b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>, Alexandra Weirich (b) (6)>, "Hiatt, Nissa (NIH/VRC) [C]" (b) (6)>, "Prince, Tasheema (NIH/VRC) [C]" (b) (6)>, "Bok, Karin (NIH/VRC) [E]" <(b) (6)>

Subject: Re: Wuhan CoV response

Hi Payal,

I'm including the VRC communications team who can help us with the process needed for a press release.

Best,
Kaitlyn

From: Payal Sipahimalani (b) (6)>

Date: Thursday, January 23, 2020 at 5:45 PM

To: Barney Graham <(b) (6)>

Cc: Ester Falconer (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>, Kizzmekia Corbett (b) (6)>, Alexandra Weirich <(b) (6)>

Subject: Re: Wuhan CoV response

Hello again Barney,

In an effort to expedite the review of a press release, I have attached 2 versions of the document. Our preference, if you are amenable and we're able to get approval by Friday, is to use the version that

acknowledges the VRC specifically (2020-01-22 Wuhan coronavirus PR_VRC.docx). The other document is the one that we'd submit to DARPA tomorrow, in the absence of VRC approval.

We'll stand by for any comments, concerns or questions, and hope to hear from you soon.

Thank you,
Payal.

On Thu, Jan 23, 2020 at 12:21 PM Payal Sipahimalani [REDACTED] (b) (6) wrote:
Hello Barney,

We've been fielding a few questions about whether and how AbCellera is responding to the Wuhan nCoV outbreak and would like to issue a press release, in the next day or two, to address this.

We'd like to acknowledge the VRC in this, but are cognisant of the review and oversight required before any public announcements. My questions to you are first, would you like to be included in any press release we issue? And second, if we were able to get a draft to you before the close of business today, would we be able to get it through all the appropriate reviewers at the VRC/NIH by tomorrow (Friday)?

Thank you,
Payal.

On Tue, Jan 21, 2020 at 3:47 PM Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6) wrote:
Thanks. We look forward to working on the project together.

Barney

Sent from my iPhone

On Jan 21, 2020, at 3:34 PM, Payal Sipahimalani [REDACTED] (b) (6) wrote:

Hello all,

After a brief conversation with Amy Jenkins and others at DARPA, we are going ahead with the Wuhan antibody discovery campaign. Here's a summary of our call and next steps:

- The first US case, in Washington state, was just announced by the CDC

- [REDACTED] (b) (4)
- [REDACTED]
- [REDACTED]

(b) (4)

- As discussed this morning, **Kizzmekia** will (b) (4)
- **VRC** will ship (b) (4)
- **AbCellera** team will (b) (4)

We'll start to draft a more detailed study plan, and I'm sure we'll be in close contact over the next few weeks, but we understand that Amy will be at the VRC on Friday so wanted to let you know that she's been apprised of all of this, in case that facilitates your discussion with her.

Thank you, and good luck to us all!
Payal.

--

Payal Sipahimalani, MSc, PMP
Senior Project Manager
AbCellera Biologics Inc.

2215 Yukon Street
Vancouver BC V5Y 0A1

T: (b) (6)
M: (b) (6)

abcellera.com

--

Payal Sipahimalani, MSc, PMP
Senior Project Manager
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Vancouver BC V5Y 0A1

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--

Payal Sipahimalani, MSc, PMP
Senior Project Manager
AbCellera Biologics Inc.

2215 Yukon Street
Vancouver BC V5Y 0A1

T: (b) (6)
M: (b) (6)
abcellera.com

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 25 Mar 2020 01:07:08 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: FW: COVID-19 platform for serology test, vaccine evaluation, therapeutic development / WebEx on

Does this look worth exploring? Seems like (b) (4)

BG

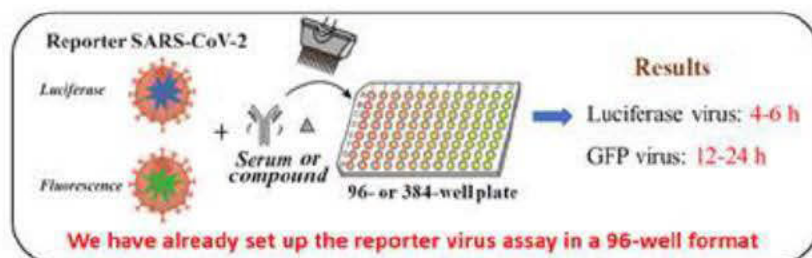
From: Shi, Pei yong (b) (6)
Sent: Tuesday, March 24, 2020 5:30 PM
To: Kovacs, Gerald (OS/ASPR/BARDA) (CTR) (b) (6)>; Schiltz, Helen (NIH/NIAID) [E] (b) (6)>; Boston, Donna (OS/ASPR/BARDA) <(b) (6)>; Donabedian, Armen (OS/ASPR/BARDA) <(b) (6)>; Embree, James (OS/ASPR/BARDA) (b) (6)>; Embry, Alan (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Cassetti, Cristina (NIH/NIAID) [E] <(b) (6)>; Boston, Donna (OS/ASPR/BARDA) (b) (6)>; Tegeris, John (OS/ASPR/BARDA) (CTR) (b) (6)>; Huynh, Chuong (OS/ASPR/BARDA) (b) (6)>; Balsamo, Ralph (OS/ASPR/BARDA) (b) (6)>
Subject: RE: COVID-19 platform for serology test, vaccine evaluation, therapeutic development / WebEx on

Dear all,

Thank you all for following up with me on (b) (4)

Please see today's announcement from Q2 Solutions (belongs to Quest) about our serology test:

<https://www.businesswire.com/news/home/20200324005381/en/Q2-Solutions-IQVIA-Quest-Diagnostics-Joint-Venture>



Please (b) (4)

One extreme idea is to [REDACTED] (b) (4)
[REDACTED]
[REDACTED]
[REDACTED].

Hope all well with you and your families.

Best, Pei-Yong

Pei-Yong Shi, Ph.D.
I.H. Kempner Professor of Human Genetics
Vice Chair for Innovation and Commercialization
Department of Biochemistry & Molecular Biology
University of Texas Medical Branch
Galveston, Texas 77555
Phone: [REDACTED] (b) (6)
Email: [REDACTED] (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 20 Apr 2020 20:12:17 +0000
To: Jason McLellan
Subject: RE: Article for Nature

Thanks Jason. You are right, (b) (4)

Barney

From: Jason McLellan (b) (6)
Sent: Monday, April 20, 2020 4:09 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: RE: Article for Nature

Attached is our slide on (b) (4).

Good luck with the (b) (4)
Jason

From: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Sent: Monday, April 20, 2020 3:07 PM
To: Jason McLellan (b) (6) >
Subject: RE: Article for Nature

Thanks Jason,

I'll answer accordingly.

I've seen the (b) (4) as we speak.

Barney

From: Jason McLellan (b) (6) >
Sent: Monday, April 20, 2020 4:04 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6) >
Subject: RE: Article for Nature

Hi Barney,

That looks good to me. I just sent Megan several answers to questions she had about the cloning and sequence availability. Should hopefully be a nice and accurate story about the race to get the structure.

I hope you're doing well. We have made a bunch of progress on the AbCellera/Lilly mAbs. I think they are going to share our data with you sometime this week. (b) (4)

Best regards,
Jason

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Monday, April 20, 2020 2:58 PM
To: Jason McLellan (b) (6)
Subject: FW: Article for Nature

Hi Jason,

I got this followup call from a person writing an article for Nature about spike story. You can see the followup question she is asking. I'm planning to send her this if OK with you.

"We were collecting protein from SEC columns for the first time on 1/30 and 1/31. On the 31st there was an initial structure with 4.7 angstrom resolution, then 3.5 angstroms by 2/1 and 3.2 angstroms by 2/3."

From: Megan Scudellari <megan@scudellari.com>
Sent: Monday, April 20, 2020 12:59 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Re: Article for Nature

Hi Barney,

Thanks again for chatting with me for the *Nature* feature story. I'm wrapping up a draft now, and have one quick follow-up question for you: What date (specifically, if you can check) did you receive the spike structure from Jason?

Thanks! I will be in touch later this week with some fact-checking. Hope all is well.

Best,
Megan

On Thu, Apr 9, 2020 at 2:42 PM Graham, Barney (NIH/VRC) [E] (b) (6) wrote:
(b) (6)

Barney

Sent from my iPhone

On Apr 9, 2020, at 2:37 PM, Megan Scudellari <megan@scudellari.com> wrote:

Hi Barney,

No worries. Yes, today at 5:30 ET works. At what number can I reach you then?

Looking forward to it,
Megan

On Apr 9, 2020, at 2:05 PM, Graham, Barney (NIH/VRC) [E] (b) (6)> wrote:

Sorry for my delayed response. I would be glad to speak with you if I haven't missed the deadline. I have a brief opening at 5:30 today.

Barney

Sent from my iPhone

On Apr 7, 2020, at 9:05 AM, Megan Scudellari <megan@scudellari.com> wrote:

Dear Dr. Graham,

Hello, this is Megan Scudellari, a reporter with *Nature*. I spoke with Jason McLellan at UT yesterday and he suggested I speak with you as well. How are you?

We are planning a feature news story on the rush to obtain structures of SARS-CoV-2 proteins and then use that information in drug/vaccine discovery. The story will focus on the rapid timeline of these discoveries and intensive teamwork among various scientific groups.

I hoped you might be available to chat with me about the *Science* publication of the virus' spike protein structure that you and Jason collaborated on, and your work to translate that into a vaccine.

If so, is there a good day and time this week that I could give you a call to chat? I will only take about 30 minutes of your time.

Thank you! I look forward to hearing from you.

Best,
Megan

--

Megan R. Scudellari
Science Reporter
Boston, MA
phone: (b) (6)
email: megan@scudellari.com
web: <http://megan.scudellari.com>

--
Megan R. Scudellari
Science Reporter
Boston, MA
phone: (b) (6)
email: megan@scudellari.com
web: <http://megan.scudellari.com>

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 6 Apr 2020 12:49:41 +0000
To: Scranton, Kavitha (ELS-CMA)
Cc: (b) (6)
Subject: Re: Immunity - Invitation to write a short Primer

Thanks Kavitha. I'm hoping this will be more fully launched by end of May early June which should open up some time.

Barney

Sent from my iPhone

On Apr 6, 2020, at 8:32 AM, Scranton, Kavitha (ELS-CMA) <kscranton@cell.com> wrote:

Thanks so much for getting back to me, and I totally understand. I hope that things go well with the trial. If you're interested in writing something in the future, or if you have a paper you think may be a good fit for us, I'm always happy to talk.

Stay safe, and best wishes,
Kavitha

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)
Date: Saturday, April 4, 2020 at 5:11 PM
To: "Scranton, Kavitha (ELS-CMA)" <kscranton@cell.com>, (b) (6)
(b) (6)>
Subject: RE: Immunity - Invitation to write a short Primer

Hi Kavitha,

Thank for reaching out. I've discussed with Jason and he has a large teaching and research obligation load, and the next few weeks are critical for the ongoing trial. I don't think we will be able to help with this. Maybe Bill Schief at Scripps could help.

Best wishes,

Barney

From: Scranton, Kavitha (ELS-CMA) <kscranton@cell.com>

Sent: Friday, April 3, 2020 11:18 AM

To: Graham, Barney (NIH/VRC) [E] (b) (6)

Subject: Immunity - Invitation to write a short Primer

Dear Barney and Jason,

I hope that you, your families, and colleagues are safe and well. I am getting in touch to see if you are interested in working with us on a short "Primer" related to the SARS-CoV-2 and COVID-19 outbreak. More details are below.

With the SARS-CoV-2 outbreak, immunology and virology have come to the forefront within the scientific community and among the larger public. At *Immunity*, we have been discussing how we could contribute during this crisis, and we felt that it might be useful to publish a set of short "Primers" that would discuss key, basic immunological concepts that are relevant when thinking/talking about COVID-19. For example, we're thinking of topics such as "Understanding Herd Immunity", "Principles of Vaccine Design", "What Happens During Respiratory Virus Infections", "What is a Cytokine Storm", etc. The goal of these Primers is for the content to be relevant to those with immunology/virology backgrounds, but also accessible to scientists beyond the biological sciences, and perhaps even to the lay person.

We were hoping that you might be interested in writing one of these primers. We were thinking of something along the lines of "Principles of Vaccine Design", which would focus broadly on the concept of vaccines, what they are, what they do, etc., with a section specifically on what we know about SARS-CoV-2 and COVID-19. I'm happy to discuss the topic in more detail with you if you're interested, and to get your thoughts on the scope. We feel that your expertise and perspective would be very valuable to the community.

In terms of format, Primers are short articles intended to provide an overview of an immunological concept or process to a broad scientific audience. They should be about 2500-3000 words max, with 1-2 figures (we can provide illustrator help with this). Given the introductory and educational nature of Primers, these should be accompanied by a recommended reading list (up to 10-15 cited items), as opposed to references in the traditional sense. As you can see, this is not intended to be a deep dive into the topic, but more of an overview to provide some background for people to better understand the main concepts. Given the urgency of getting this information out, we're thinking of a timeline of ~2 weeks to write the piece.

I know that you are both very busy, so I will understand if you can't help us with this. Please let me know what you think and if you'd like to discuss further. Due to the short timeline, I would appreciate it if you could get back to us quickly on whether or not you are interested. I look forward to hearing from you.

Best wishes,

Kavitha

Kavitha Scranton, Ph.D. | Senior Scientific Editor, *Immunity* | 50 Hampshire Street, 5th Floor, Cambridge, MA 02139, USA | Tel: (b) (6) | Email: kscranton@cell.com | Website: www.cell.com/immunity | Twitter: [@ImmunityCP](https://twitter.com/ImmunityCP) [@KavithaSci](https://twitter.com/KavithaSci)

Page appears blank in original

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 2 Feb 2020 19:31:50 +0000
To: (b) (4)
Cc: Charles; Petrik, Amy (NIH/NIAID) [E]; Mascola, John (NIH/VRC) [E]; Gall, Jason (NIH/VRC) [C]; Stein, Judy (NIH/VRC) [C]
Subject: Re: Collaboration on developing coronavirus vaccines

Thanks (b) (4)

We are glad to help in your efforts to make a vaccine, and can make arrangements with CDA in place to (b) (4)

I think (b) (4) as was suggested earlier would be a good approach worth trying.

Barney

Sent from my iPhone

On Feb 2, 2020, at 1:39 PM, (b) (4) <(b) (6)> wrote:

Hope you had a productive meeting in Barcelona and are now safely back home.

I arrived Taiwan last night and met with (b) (4) to further update him about the issues we discussed by phone last week. Following our call, I located the 2017 article you mentioned (*Immunogenicity and structures of a rationally designed prefusion MERS-CoV spike antigen*) and shared it with (b) (4) prior to my arrival. I also contacted Amy Petrik in the Technology Transfer and Intellectual Property Office to alert her that (b) (4) is interested fast-tracking a licensing agreement to further evaluate and commercialize (b) (4). (b) (4) is already working on the license application and we plan to send to Amy in the next day or two. I wanted to give you a heads up on this progress and let you know we will likely need some further discussions with you and Amy this week to finalize the application and clarify any issues our technical staff have on protocols and procedures. Our aim is to (b) (4).

As I mentioned, (b) (4)
(b) (4)

Thanks very much for your assistance, and I'll be in touch with further updates soon. Meanwhile, if you have any questions or concerns, please don't hesitate to contact me.

(b) (4)

From: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Sent: Tuesday, January 28, 2020 2:51 AM
To: (b) (4) (b) (6)>
Cc: Whitehead, Steve (NIH/NIAID) [E] (b) (6)>
Subject: Re: Coronavirus

I can speak later today. I'll be in Spain 6 hours ahead. If you give me a time and a number I will plan to call and share my thoughts.

Best wishes,

Barney

Sent from my iPhone

On Jan 27, 2020, at 5:40 PM, (b) (4) (b) (6)> wrote:

Dear Dr. Graham:

As Steve may have explained, (b) (4)
(b) (4) We are
potentially interested in collaborating with NIAID's VRC on (b) (4),
and have the capacity for (b) (4). I am traveling to Taiwan on
Friday this week, and if possible, would like to speak with someone at NIH about this before I depart.
Any assistance you can provide to put me in contact with the appropriate person(s) would be most
appreciated.

(b) (4), (b) (6)

From: Whitehead, Steve (NIH/NIAID) [E] (b) (6)>

Sent: Monday, January 27, 2020 11:21 AM

To: (b) (4) <(b) (6)>

Cc: Graham, Barney (NIH/VRC) [E] (b) (6)>

Subject: Coronavirus

Hi Mike,

Barney Graham at the NIAID VRC is the correct POC for vaccine development by that Center and is copied on this email. When I spoke to him, he thought it might be more appropriate to put you in contact with the group at DMID who generally works with outside groups, so I expect that he may send you that direction. I am glad to try and get the ball rolling for (b) (4) and appreciate you contacting me.

Best regards,

--Steve Whitehead

Laboratory of Viral Diseases
NIAID, NIH, DHHS
Bldg 33, Room 3W10A
33 North Drive
Bethesda, MD 20892

Tel: (b) (6)

Mobile: (b) (6)

Fax: 301-480-4873

email: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 12 Apr 2020 00:27:08 +0000
To: Jo Kirman
Subject: RE: SARS-CoV-2 vaccines questions from NZ

Hi Jo,

Good to know where you are. This pandemic has definitely affected all of us, everywhere.

We have selected an mRNA approach because of its speed and induction of CD8 T cells in addition to antibody. It would take [REDACTED] (b) (4)

Protein-based vaccines are being pursued by a lot of companies [REDACTED] (b) (4)

[REDACTED] These would likely be [REDACTED] (b) (4)
[REDACTED]. Alternatively, you could [REDACTED] (b) (4)

Best wishes and take care,

Barney

-----Original Message-----

From: Jo Kirman [REDACTED] (b) (6)>
Sent: Saturday, April 11, 2020 2:56 PM
To: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E]
[REDACTED] (b) (6)>
Subject: SARS-CoV-2 vaccines questions from NZ

Hi Barney

I'm not sure if you remember me - 20 years ago I was a post doc with Bob Seder at the VRC and now I'm based at the University of Otago in Dunedin, New Zealand where I have remained working on TB vaccines and also a small amount of RSV research.

In NZ, thanks largely to our geographical isolation and fast lockdown we have the potential to be able to eliminate SARS-CoV-2 from our country of just under 5 million people. We will then have a predominantly naive population- but would need to continue with strict travel restrictions (effectively closed borders) until a vaccine or therapy becomes available.

In NZ our current infrastructure allows us to manufacture protein vaccines to GMP. For that reason and that we can't run our own trials here (since we have far too few cases) - my feeling is [REDACTED] (b) (4)
[REDACTED] (b) (4) We're unlikely to get [REDACTED] (b) (4)

Would this be a reasonable strategy in your view?

Alternatively- [REDACTED] (b) (4)
[REDACTED]?

Any thoughts/ideas would be greatly appreciated- and thinking of you all in the US.

Best regards
Jo Kirman

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 5 Feb 2020 17:12:28 +0000
To: Memoli, Matthew (NIH/NIAID) [E]
Cc: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: Re: Coronavirus

Hi Matt,

Thank you for your interest. That sounds like a good project and we have made a commitment to coronaviruses over the last 7 years.

This type of project would need to go through our Strategic Planning process. Would also depend on part whether there will really be additional funding and space available for longer term CoV projects. Those things are becoming more likely with this latest crisis.

Would be good to make a 1 page summary of the proposal to document the plan and the goals.

Barney

Sent from my iPhone

On Feb 5, 2020, at 10:10 AM, Memoli, Matthew (NIH/NIAID) [E] [REDACTED] (b) (6)> wrote:

Hi Barney,

Had a nice call with Kizzmekia this morning regarding coronaviruses. We discussed the possibility of setting up a coronavirus [REDACTED] (b) (5) do think it is worth pursuing and seeing where it could go. Attached is a brief draft proposal I wrote up after our discussion that we can kick around and consider sending in if money is going to become available. As I told Kizzy if we were to move forward with this I would see it as a full collaboration between us and her/VRC as I think it would make sense for us to develop this and plan what questions to ask together. Using the flu model development as a guide I think it would be very straightforward to do this, but would require a solid investment in terms of both money and possibly some personnel to get off the ground.

Matt

--

Matthew J. Memoli, M.D., M.S.
Director, LID Clinical Studies Unit
Laboratory of Infectious Diseases
National Institute of Allergy and Infectious Diseases
National Institutes of Health
MSC 3203 33 North Dr
Bethesda, MD 20892-3203
UNITED STATES

Email: [REDACTED] (b) (6)

Phone: [REDACTED] (b) (6)

Pager: [REDACTED] (b) (6)

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<Betacoronavirus [REDACTED] (b) (5) Proposal LID CSUVRRC.docx>

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 19 Mar 2020 08:44:11 +0000
To: Hao Wu
Cc: Jon Cohen; Hiatt, Nissa (NIH/VRC) [C]
Subject: RE: Few questions

I can ask them, but everyone is pretty intense and focused at the moment as we try to push through phase 1 and prepare for phase 2. We can't afford to lose any days in the transition.

Barney

From: Hao Wu [REDACTED] (b) (6)
Sent: Wednesday, March 18, 2020 3:26 PM
To: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>
Cc: Jon Cohen <jcohen@aaas.org>; Hiatt, Nissa (NIH/VRC) [C] [REDACTED] (b) (6)
Subject: Re: Few questions

Thanks Barney for your kind note. Yes, let's touch base again when things calm down.

In the meantime, do you think you could introduce us to the Moderna team? Would love to track the progress of their vaccine development, as it happens, for the film.

Best,
Hao

On Wed, Mar 18, 2020 at 9:46 AM Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)> wrote:
Dear Hao,

I think you saw the response on filming on the NIH campus during this chaotic time. I'm hopeful this will settle down by June or July, but we don't know yet. I'm glad to help when the time comes. It's important for the public to understand how this works. It could reduce vaccine hesitancy in general.

Barney

From: Hao Wu [REDACTED] (b) (6)>
Sent: Wednesday, March 18, 2020 9:36 AM
To: Jon Cohen <jcohen@aaas.org>
Cc: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)
Subject: Re: Few questions

Thanks Jon for the intro.

Dear Dr. Graham,

I'm working with a top US streaming network for a feature documentary on the global response to the COVID-19 pandemic. As an ex-scientist myself (my first degree was in molecular biology), I would love to feature prominently the work of the science community to combat this virus, especially the development of a vaccine. Jon has graciously agreed to advise and help me with this project. I'd greatly appreciate your suggestion on whom to contact to seek permission to film.

Best regards,
Hao

Director/Producer
[People's Republic of Desire](#)
[All in My Family](#)

On Wed, Mar 18, 2020 at 9:23 AM Jon Cohen <jcohen@aaas.org> wrote:
Hi Barney,

I'm wondering whether we can set up a time to talk. I'm finally getting around to the vaccine story. Crazy times.

I'm ccing Hao Wu, a documentary film maker I'm helping, who is interested in possibly shooting you and VRC. Can you put him in touch with the right permission to seek permission?

Hope you and yours are well.

All the best,

Jon

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 7 Apr 2020 21:00:05 +0000
To: Clare Cutland
Cc: Shabir Madhi
Subject: Re: Covid

Ok. Will do.

Barney

Sent from my iPhone

On Apr 7, 2020, at 4:53 PM, Clare Cutland (b) (6) wrote:

Dear Barney

Please could we have an hour of your time on Thursday morning, 9th April from 07h00-08h00?

I will forward you a Zoom meeting invitation shortly.

Regards, Clare

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Monday, April 6, 2020 10:48 PM
To: Shabir Madhi (b) (6); Clare Cutland (b) (6)
Subject: RE: Covid

If it's 7AM my time, most days should be OK. Whenever you can get the largest audience.

BG

From: Shabir Madhi <(b) (6)>
Sent: Monday, April 6, 2020 4:39 PM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Clare Cutland <(b) (6)>
Subject: Re: Covid

Dear Barney, thanks for getting back. I managed to join the Advac meeting, but would still be great to have you present to SA scientist. Clare will arrange logistics.. are there any specific dates that you prefer? Regards shabir

Sent from my iPhone. Kindly excuse the brevity of messaging and any typos!

On 06 Apr 2020, at 22:33, Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:

Hi Shabir,

I would be glad to give a Zoom lecture to your group in South Africa. Let me know a time that works. Starting something at 7AM my time could work well because most days are very booked up.

Strange times, but having Zoom has made it more workable. If this had happened in 2003 with the first SARS, we would be lost.

Best wishes and take care,

Barney

From: Shabir Madhi (b) (6) >
Sent: Thursday, April 2, 2020 8:28 AM
To: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Subject: Covid

Hi Barney- realise that you very likely to be super busy, however, was wondering whether could impose for you to do a Zoom call for ALIVE with regard to SARS-COV-2 vaccine development. This will extend beyond the MSC students and will include other scientist in SA. anytime that suites you will work. Unfortunately I forgot to register for todays ADVAC alumni call
PS! Great seeing you on Al-Jazera with AF and DT!

RGds

shabir

<image002.jpg>

Shabir A. Madhi

[Professor of Vaccinology: University of Witwatersrand]
[Director: MRC Respiratory and Meningeal Pathogens Research Unit]
[DST/NRF South African Research Chair: Vaccine Preventable Diseases]
Co-director African Leadership in Vaccinology Expertise (ALIVE)
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Diepkloof, Soweto|Gauteng, South Africa|Webpage: www.rmpru.com
|E-mail: (b) (6)| Tel: (b) (6)| Switchboard:

PA: (b) (6)

E-mail: (b) (6)

(b) (6) Fax: 086 683 0362

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Thursday, 19 March 2020 00:18
To: GIERSSING, Birgitte; Sinead Delany-Moretlwe; Bernard Fritzell; Shabir Madhi; Karron, Ruth; Klaus Cichutek; G Kang; Marian Wentworth; Papania, Mark (CDC/DDPHSIS/CGH/GID); Yshao; Jerome Kim;

Peter Smith; Claudio Lanata; (b) (6); Alejandro Cravioto

Cc: Kaslow, David; SPARROW, Erin Grace; VEKEMANS, Johan; Hasso-Agopsowicz, Mateusz; FRIEDE, Martin Howell; GRIFFIN, Geraldine Margaret

Subject: RE: Information on the 2020 PDVAC meeting

Thanks Gitte,

I think 2 hours a month or 4-6 hours every 2—3 months by videoteleconference could work well.

Barney

From: GIERSSING, Birgitte (b) (6)

Sent: Wednesday, March 18, 2020 5:15 PM

To: Graham, Barney (NIH/VRC) [E] (b) (6); Sinead Delany-Moretlwe

(b) (6); Bernard Fritzell (b) (6); (SPmig) Shabir Madhi

(b) (6); Karron, Ruth (b) (6); Klaus Cichutek (b) (6); G

Kang (b) (6); Marian Wentworth (b) (6); Papania, Mark

(CDC/DDPHSIS/CGH/GID) <(b) (6)>; Yshao (b) (6) Jerome Kim

(b) (6); Peter Smith <(b) (6)>; Claudio Lanata (b) (6);

(b) (6); Alejandro Cravioto <(b) (6)>

Cc: Kaslow, David (b) (6); SPARROW, Erin Grace (b) (6); VEKEMANS, Johan

(b) (6); Hasso-Agopsowicz, Mateusz (b) (6); FRIEDE, Martin

Howell (b) (6); GRIFFIN, Geraldine Margaret (b) (6)

Subject: Information on the 2020 PDVAC meeting

Dear PDVAC,

Thank you for your input on the PDVAC meeting agenda last month. Since then, the situation for everyone has changed dramatically, and as you'd expect, we will be deferring the June F2F meeting. But - there are a number of important topics that we'd planned to discuss and we'd like to propose an alternative format to engage with you over the near term.

We are proposing to convene 2-3 hour virtual mini-PDVAC sessions on dedicated topics, every 4-6 weeks. To accommodate the various time zones that you are all operating over, it seems that between 2-5pm Geneva suits most people best (see below), but I apologise to those of you who'll be awake either very early or very late!

The list of proposed meeting topics below with tentative dates is based on alignment with Martin, Kate and David. We're planning to structure each Zoom call with presentations from subject matter experts, as we would in the F2F format. We hope to include approximately 10 invited observers (including industry) for the open discussion. Each meeting would then conclude with at least 30 mins closed session to address specific questions and develop recommendations. We'd like to solicit your (light touch) input as we plan these sessions.

Could you let me know if you think this is a reasonable way to proceed? Our aim is to maintain presence and momentum for PDVAC through this challenging period, whilst prioritizing flexibility to all of you. The first meeting will likely be at the end of April.

If you're happy to proceed, Erin Sparrow, on cc here is part of the new Vaccine Platforms & Prioritization Team within the Vaccine Product and Delivery Research – PDR - Unit (formerly IVR), and will reach out to you to schedule some placeholders for these meetings. We will also investigate the feasibility of identifying a 2 day block later in the year for a F2F meeting, but we acknowledge that there are many meetings that are being rescheduled for this time.

In follow up to the questions that you had related to how PDVAC and the R&D Blueprint interact and overlap, I did have a discussion with them and the summary of this is also pasted below.

Please don't hesitate to reach out with questions or concerns.

Very best,

Gitte

Proposed list of topics and tentative dates:

- Review of existing PPCs, discussion of any required updates – April
- RSV, monoclonals (new MAb PPCs) – May
- TB – June
- ETEC (Etvax) results, burden and new PPC – July
- HIV - Sept
- CHIM – Oct
- GC - Nov

Alignment of timezones for PDVAC meetings:

<image004.png>

Outcome of the meeting with R&D Blueprint:

- The R&D Blueprint covers vaccines, therapeutics and diagnostics. They have their own Scientific Advisory Group (SAG) and Global Co-ordination Meetings (GCM) to provide strategic oversight and communicate about activities related to Blueprint activities.
- The SAG reports to the STAG HI (Hazardous Infections), not SAGE.
- David Kaslow sits on the GCM but there is no overlap with the SAG and PDVAC.
- The R&D Blueprint is a member of the CEPI board, and there is close collaboration between the two.
- The list of priority vaccines is updated based on input from the SAG. TPPs and Roadmaps are developed for priority vaccines by the Blueprint team. They do not prioritize manufacturing or delivery platforms.
- Platform types that can move fastest into Phase I tend to be prioritized for funding, but there is not much focus on longer term bottlenecks - such as access issues.
- There was some concern that PDVAC was proposing to prioritise manufacturing platforms (it is not at this time). We are proposing to collaborate on product development, regulatory, acceptability aspects for novel manufacturing platforms that are common to both the PDVAC and Blueprint portfolios.

- We agreed it's important to communicate about the work that each are doing to ensure we don't duplicate or contradict. The Blueprint now has its own website and will be circulating a regular newsletter. PDVAC will inform the R&D Blueprint with respect to any consultations that might be synergistic.

Birgitte Giersing, PhD

Acting Team Lead Vaccine Platforms & Prioritization

Vaccine Product and Delivery Research (PDR)

Dept of Immunization, Vaccines and Biologicals (IVB) | World Health Organization (WHO)

(o) (b) (6) (m) (b) (6) (e) (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 2 Apr 2020 18:57:34 +0000
To: McDermott, Adrian (NIH/VRC) [E]
Subject: Re: Question: spike protein production needed?

(b) (5)

BG

Sent from my iPhone

On Apr 2, 2020, at 2:51 PM, McDermott, Adrian (NIH/VRC) [E] <(b) (6)> wrote:

I will send the data from a few days ago to the group later after my chat with LID on the same topic.....
My concern is (b) (5)
...

From: Barney Graham (b) (6)
Date: Thursday, April 2, 2020 at 2:41 PM
To: "McDermott, Adrian (NIH/VRC) [E]" (b) (6)
Subject: Re: Question: spike protein production needed?

OK. Thanks. Good to know. Maybe we can go over that data at some point for my education. Not this week.

BG

Sent from my iPhone

On Apr 2, 2020, at 2:11 PM, McDermott, Adrian (NIH/VRC) [E] (b) (6)> wrote:

We had [REDACTED] (b) (5)
[REDACTED] (b) (5). For research purposes [REDACTED] (b) (5) We also [REDACTED] (b) (5)
[REDACTED] (b) (5) So if you were to consider [REDACTED] (b) (5)
[REDACTED] (b) (5). I was involved in this 30 years ago [REDACTED] (b) (5)
[REDACTED] (b) (5) unless you have [REDACTED] (b) (5).

For the [REDACTED] (b) (5) Thought it could be [REDACTED] (b) (5)
[REDACTED].

We will know better [REDACTED] (b) (5) They
are forging ahead and we will be there soon.

I also know that Florian "published" his data but again not good enough to tell folks they are protected.
This is why [REDACTED] (b) (5) I guess.

Thanks
Adrian

Sent from my iPhone

On Apr 2, 2020, at 1:59 PM, Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

You do t think [REDACTED] (b) (5)
[REDACTED]

BG

Sent from my iPhone

On Apr 2, 2020, at 1:44 PM, McDermott, Adrian (NIH/VRC) [E] [REDACTED] (b) (6)> wrote:

Karen wanted to [REDACTED] (b) (5)– it seems
that it will take [REDACTED] (b) (5)

From: Barney Graham [REDACTED] (b) (6)>

Date: Thursday, April 2, 2020 at 1:34 PM

To: "McDermott, Adrian (NIH/VRC) [E]" [REDACTED] (b) (6), Karen Makar
[REDACTED] (b) (6)

Cc: David Vaughn [REDACTED] (b) (6), "Embry, Alan (NIH/NIAID) [E]"

(b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6),
"Gall, Jason (NIH/VRC) [C]" (b) (6), Nick Jackson (b) (6),
William Dowling (b) (6)>, "Carlton, Kevin (NIH/VRC) [E]"
(b) (6)

Subject: RE: Question: spike protein production needed?

We have given our plasmid to many groups. Both BMGF and DMID have described plans to scale up production. Our (b) (4)
(b) (4) If that is needed, we need to have more clarity on the request.

Barney

From: McDermott, Adrian (NIH/VRC) [E] (b) (6)>
Sent: Thursday, April 2, 2020 1:10 PM
To: Karen Makar (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6); David Vaughn
<(b) (6)>; Embry, Alan (NIH/NIAID) [E] (b) (6); Corbett,
Kizzmekia (NIH/VRC) [E] (b) (6); Nick Jackson (b) (6)>; William
Dowling (b) (6)>
Subject: Re: Question: spike protein production needed?

Karen,

Based on our and developing data from commercial, plus important data from NIH groups, (b) (4)
(b) (4)
(b) (4)

Thanks Karen for highlighting these issues.

Adrian

On Apr 2, 2020, at 12:55 PM, Karen Makar <(b) (6)> wrote:

Hi Barney and friends,

We heard quite strongly in the past week that the scientific and medical community is in dire need of

(b) (4)

Have you been involved with these discussions? They seem to span multiple NIH agencies (NIA, NHLBI, NCI, NIAID). My understanding is the need is in weeks, not months.

Our (b) (4)

. Do you, Alan, Adrian or anyone else know if this is actively being addressed by the USG? If yes, what is the time frame for this be available from a central source? Kizzmekia mentioned a (b) (4)

but I don't know the details.

Please advise,

Karen

Karen Makar, Ph.D.

Senior Program Officer & GH-VAP Manager
Discovery & Translational Sciences

V + (b) (6)

C + (b) (6)

E (b) (6)

Bill & Melinda Gates Foundation

www.gatesfoundation.org

Global Health-Vaccine Accelerator Platforms

www.ghvap.org

From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 28 Jan 2020 16:48:39 +0000
To: Xavier Saelens
Cc: Stein, Judy (NIH/VRC) [C]; Jason McLellan; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: Re: Brief Skype Coronavirus
Attachments: CMB_Signature_Banner.jpg

Hi Xavier,

We are (b) (4) this week. The (b) (4) should be done on Friday. Depending on (b) (4) we should be able to (b) (4) soon after that.

Barney

Sent from my iPhone

On Jan 28, 2020, at 5:15 PM, Xavier Saelens (b) (6) > wrote:

Dear Barney,

Could you please give an estimate of the likely availability of the Wuhan (b) (4)

We may have some (b) (4) by the end of next week (b) (4) we will (b) (4) We will keep you and Jason posted on the results.

Judy,
Could you please prepare an MTA for VIB?

Kind regards,
Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

VIB-UGent Center for Medical Biotechnology
Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium
Tel: (b) (6)
mbc.vib-ugent.be

<CMB_Signature_Banner.jpg>

From: "bgraham" <(b) (6)>
To: "Xavier Saelens" (b) (6)>
Cc: "Jason McLellan" (b) (6), "Bert Schepens" (b) (6)>, "Daniel P. Wrapp" (b) (6), "Kizzmekia Corbett, (NIH/VRC) [E]" (b) (6)>, "Kaitlyn Morabito, (NIH/VRC) [E]" (b) (6), "Karin Bok, (NIH/VRC) [E]" (b) (6), "Judy Stein, (NIH/VRC) [C]" (b) (6)
Sent: Monday, January 13, 2020 11:13:57 PM
Subject: Re: Brief Skype Coronavirus

Hi Xavier,
We have ordered a (b) (4)
(b) (4).
We've also ordered (b) (4)
(b) (4). We can send as soon as they are ready
and can start the MTA now so it will be ready in time to ship.
Barney

Sent from my iPhone

On Jan 13, 2020, at 5:08 PM, Xavier Saelens <(b) (6)> wrote:

Hi Barney,
It would indeed be most helpful and efficient if we would exchange (b) (4)
(b) (4). Our plan is to (b) (4)
(b) (4). If such a construct is already being ordered
at NIH, we put our plan on hold and wait for (b) (4) to be shipped from your lab.
Please confirm that also a (b) (4) will be available from your lab
in the near future.
It would be great to obtain (b) (4) as soon as this
becomes available.
Best regards,
Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

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Tel: (b) (6)
mbc.vib-ugent.be

<CMB_Signature_Banner.jpg>

From: "bgraham" <(b) (6)>
To: "Xavier Saelens" (b) (6)>
Cc: "Jason McLellan" (b) (6)>, "Bert Schepens"
(b) (6), "Daniel P. Wrapp"
(b) (6), "Kizzmekia Corbett, (NIH/VRC) [E]"
(b) (6), "Morabito, Kaitlyn (NIH/VRC) [E]"
(b) (6)>, "Karin Bok, (NIH/VRC) [E]" (b) (6)>

Sent: Monday, January 13, 2020 6:13:18 PM

Subject: Re: Brief Skype Coronavirus

Hi Xavier,

We don't necessarily need a call. We will be making the (b) (4)
and are glad to send to you. Of course you are also free to make whatever you want.
We are willing to share whatever reagents we produce, so just let us know what you
prefer.

Best wishes,

Barney

Sent from my iPhone

On Jan 13, 2020, at 12:01 PM, Xavier Saelens (b) (6)> wrote:

Hi Jason,
Thanks a lot for that clear advice!
All the best,
Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

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Tel: (b) (6)

mbc.vib-ugent.be

<CMB_Signature_Banner.jpg>

From: "Jason McLellan" (b) (6)
To: "Xavier Saelens" (b) (6), "bgraham"
(b) (6)>
Cc: "Bert Schepens" (b) (6)>, "Daniel P. Wrapp"
(b) (6)>

Sent: Monday, January 13, 2020 5:54:03 PM

Subject: RE: Brief Skype Coronavirus

Hi Xavier,

We just normally use Genscript for synthesis, and they have an excellent codon-optimization program that takes many things into account. If you send them the amino acid sequence, they will create an optimal nucleotide sequence. The only other thing to consider is to make sure there is a (b) (4) (b) (4), but perhaps not.

Best regards,
Jason

From: Xavier Saelens (b) (6)
Sent: Monday, January 13, 2020 10:11 AM
To: bgraham (b) (6)
Cc: Bert Schepens (b) (6) Jason McLellan (b) (6) >
Subject: Re: Brief Skype Coronavirus

Dear Barney,

Are you still available today at 1 pm? Not sure if we need a Skype for now and maybe better cancel it.

We will make an (b) (4) and look for (b) (4)
(b) (4) Looking at (b) (4)
(b) (4) is also planned. (b) (4)
(b) (4)

Jason,

We plan to just (b) (4). Is there something else that we need to take into account for the sequence design?

Best regards,
Xavier

-
Prof. Dr. Xavier Saelens - Principal Investigator

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Tel: (b) (6)
mbc.vib-ugent.be
<image001.jpg>

From: "Jason McLellan" (b) (6) >
To: "Xavier Saelens" (b) (6) >, "bgraham" (b) (6)
Cc: "Bert Schepens" (b) (6)
Sent: Monday, January 13, 2020 4:11:42 PM
Subject: RE: Brief Skype Coronavirus

I have a scheduling conflict at that time, but you two can go ahead and Skype and then fill me in later. In addition to (b) (4) as well.

-Jason

From: Xavier Saelens <(b) (6)>
Sent: Monday, January 13, 2020 5:58 AM
To: bgraham (b) (6)
Cc: Jason McLellan <(b) (6)>; Bert Schepens (b) (6) >
Subject: Re: Brief Skype Coronavirus

Hi Barney,

1 pm (7pm here) is fine with me. Tomorrow early morning does not work for me, maybe for Bert.

Best regards,

Xavier

Prof. Dr. Xavier Saelens - Principal Investigator

VIB-UGent Center for Medical Biotechnology
Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium
Tel: +32 (0)9 33 13 620
(b) (6)
<image001.jpg>

From: "bgraham" (b) (6)
To: "Xavier Saelens" (b) (6)
Cc: "Jason McLellan" (b) (6), "Bert Schepens" (b) (6)
<(b) (6)>
Sent: Monday, January 13, 2020 12:17:07 PM
Subject: Re: Brief Skype Coronavirus

Hi Xavier,

We will be making the Wuhan spike protein as quickly as possible and make it available for your additional analysis. I could potentially get on a call around 1pm my time today or early tomorrow morning.

Best wishes,

Barney

Sent from my iPhone

On Jan 13, 2020, at 5:30 AM, Xavier Saelens (b) (6) > wrote:

Dear Jason and Barney,

A sequence of the Wuhan CoV is now out. Bert has looked into that sequence and the (b) (4) It seems that (b) (4)

Would you have some time later today (Jan 13) or tomorrow at 17.00h (NIH time 11.00h, Tex time 10.00h) for a brief Skype to discuss the possible options for prioritizing experiments that may or may not be included in the draft manuscript that Daniel and Dorien have been working on?

Thanks and kind regards,
Xavier

-

Prof. Dr. Xavier Saelens - Principal Investigator

VIB-UGent Center for Medical Biotechnology

Technologiepark-Zwijnaarde 71 - 9052 Gent - Belgium

Tel: (b) (6)

mbc.vib-ugent.be

<CMB_Signature_Banner.jpg>

This message is from an external sender. [Learn more about why this matters.](#)

This message is from an external sender. [Learn more about why this matters.](#)

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 9 Mar 2020 16:33:18 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: FW: Emerging Microbes & Infections - Invitation to Review Manuscript ID TEMI-2020-0235

From Singapore.

I'm going to decline.

BG

-----Original Message-----

From: Emerging Microbes and Infections [REDACTED] (b) (6)>
Sent: Monday, March 9, 2020 12:27 AM
To: Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>
Subject: Emerging Microbes & Infections - Invitation to Review Manuscript ID [REDACTED] (b) (6)

09-Mar-2020

Dear Dr Barney S. Graham:

The above manuscript, entitled [REDACTED] (b) (6)
[REDACTED] has been submitted to Emerging Microbes & Infections.

I would be grateful if you would kindly agree to act as a reviewer for this paper. The abstract appears at the end of this letter.

Please let me know as soon as possible if you will be able to accept my invitation to review. To do this please either click the appropriate link below to automatically register your reply with our online manuscript submission and review system, or e-mail me with your reply.

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

Agreed: [REDACTED] (b) (6)

Declined: [REDACTED] (b) (6)

Unavailable: [REDACTED] (b) (6)

Should you accept my invitation to review this manuscript, you will be sent an email with a direct link to the scoresheet, which will be made available to you. You will then have access to the manuscript and reviewer instructions in your Reviewer Center.

If you are unable to review the manuscript, click on the "decline" option to register your response. This will direct you to a screen where you will be given the opportunity to provide details of any alternative reviewers.

I realise that our expert reviewers greatly contribute to the high standards of the Journal, and I thank you for your present and/or future participation.

Sincerely,

Professor Shan Lu
Emerging Microbes & Infections

MANUSCRIPT DETAILS

TITLE: [REDACTED] (b) (6)

AUTHORS: [REDACTED] (b) (6)

ABSTRACT: [REDACTED] (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 24 Apr 2020 11:39:11 +0000
To: Douek, Daniel (NIH/VRC) [E]
Subject: RE: Bravo!
Attachments: COVID IG 22Apr2020 - reduced.pptx

Thanks Danny,

Slides attached. The MERS mRNA data are not published, and the measles and mumps F structures are not published.

BG

From: Douek, Daniel (NIH/VRC) [E] <(b) (6)>
Sent: Friday, April 24, 2020 6:50 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Bravo!

Barney

Just watched your talk you gave on weds to NIH. Absolutely brilliant. Loved how you set it in the context of all your previous work.

I have to give a talk to ID physicians in Tel Aviv in 2 weeks (now by Zoom). I was originally invited to talk about HIV, but they emailed me yesterday and asked if I could give a talk on COVID. Would you be able to share the slides of your talk with me? Of course I will give you full credit and acknowledgement.

Thanks!

d

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 30 Jan 2020 16:35:01 +0000
To: (b) (3) (A)
Cc: Mascola, John (NIH/VRC) [E]
Subject: Re: Corona virus

Not sure. I guess that would be CDC call.

BG

Sent from my iPhone

On Jan 30, 2020, at 5:29 PM, (b) (3) (A), (b) (6) > wrote:

Any thoughts of select agent status?

From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Thursday, January 30, 2020 11:18 AM
To: (b) (3) (A), (b) (6)
Cc: Mascola, John (NIH/VRC) [E] (b) (6)
Subject: Re: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

We just heard that CDC has it growing in Vero cells. Their intent is to have it at BEI repository in a few more days.

BG

Sent from my iPhone

On Jan 30, 2020, at 5:16 PM, (b) (3) (A), (b) (6) > wrote:

This is taking a long time.

Have you heard anything about this becoming a select agent. I assume this will happen sooner than later since it is almost identical to SARS. It will make thing much more difficult to work with since both the virus and its genome are each considered select agents.

(b) (3) (A)

From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Monday, January 27, 2020 9:15 AM
To: (b) (3) (A), (b) (6) >; Mascola, John (NIH/VRC) [E] <(b) (6)>
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Not that I know of. We are also waiting.

BG

From: (b) (3) (A), (b) (6) >
Sent: Monday, January 27, 2020 8:44 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6) >
Subject: RE: Corona virus

We are planning to develop (b) (4)

Mark

From: Graham, Barney (NIH/VRC) [E] (b) (6)
Sent: Friday, January 24, 2020 11:32 AM
To: (b) (3) (A), (b) (6) Mascola, John (NIH/VRC) [E] (b) (6) >
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

It will have to be handled at BL3. The overall plan from CDC is to put it in the BEI repository. If you are approved for SARS, then this should be same process.

(b) (4)

Barney

From: (b) (3) (A), (b) (6) >

Sent: Friday, January 24, 2020 11:21 AM

To: Graham, Barney (NIH/VRC) [E] <(b) (6)>; Mascola, John (NIH/VRC) [E]
(b) (6)

Subject: RE: Corona virus

(b) (4) I was wondering how CDC would handle it, would it be classified as a select agent? I am assuming yes, since SARS is one. This would cause issues of getting it approved for use. We have approval for SARS, which should get us over most of the hurdles. Have you asked CDC about this?

From: Graham, Barney (NIH/VRC) [E] <(b) (6)>

Sent: Wednesday, January 22, 2020 12:06 PM

To: (b) (3) (A), (b) (6) >; Mascola, John (NIH/VRC) [E] (b) (6)

Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

CDC is working to isolate the virus from (b) (6), (b) (4). In prior reports from Asia, the virus is not easy to grow in cell culture. (b) (4)

Barney

From: (b) (3) (A), (b) (6) >

Sent: Wednesday, January 22, 2020 11:50 AM

To: Mascola, John (NIH/VRC) [E] (b) (6) >

Cc: Graham, Barney (NIH/VRC) [E] (b) (6)

Subject: RE: Corona virus

(b) (4)

From: Mascola, John (NIH/VRC) [E] (b) (6)>
Sent: Wednesday, January 22, 2020 11:45 AM
To: (b) (3) (A), (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: RE: Corona virus

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

(b) (3) (A)

We are. Barney is leading the effort; which among other things, may involve mRNA vaccine candidates. Thanks for letting us know – we will stay in touch as this progresses.

Best,
John

From: (b) (3) (A), (b) (6)
Sent: Wednesday, January 22, 2020 9:21 AM
To: Mascola, John (NIH/VRC) [E] (b) (6)>
Subject: Corona virus

John

Are you getting involved with the new corona virus? We are prepared to help. (b) (4)

(b) (4)

(b) (3) (A), (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 2 Jan 2020 17:37:57 +0000
To: Gall, Jason (NIH/VRC) [C]
Subject: FW: Referring a (b) (6) colleague
Attachments: (b) (6)_Oct 2019.pdf

FYI. This is the person I mentioned.

I was also thinking Hilary Marston could help in this position.

BG

From: (b) (6)
Sent: Monday, November 25, 2019 11:49 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6) >
Cc: (b) (6)
Subject: Referring a (b) (6) colleague

Dear Barney:

I am writing to share the resume of (b) (6) a colleague from (b) (6) (b) (6) would like to assess professional opportunities at the NIH and I have advised her that you would be able to provide a unique perspective.

With best wishes,

(b) (6)



From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 29 Apr 2020 15:56:59 +0000
To: Hiatt, Nissa (NIH/VRC) [C]
Cc: Mascola, John (NIH/VRC) [E];Koup, Richard (NIH/VRC) [E];Ledgerwood, Julie (NIH/NIAID) [E];Daucher, Marybeth (NIH/NIAID) [E];Harris, Christina (NIH/NIAID) [E];Prince, Tasheema (NIH/VRC) [C]
Subject: Re: NIH's ORWH Would Like to Feature You in a Scientist Spotlight
Attachments: image002.png, image003.png

This is internal to NIH and about gender issues in science as much as it is about coronavirus. I think it's fine.

Barney

Sent from my iPhone

On Apr 29, 2020, at 11:25 AM, Hiatt, Nissa (NIH/VRC) [C] (b) (6) wrote:

Hi VRC leadership,

Kizzmekia shared an interview request from the NIH ORWH. They would like to highlight her in a feature article in the Summer 2020 issue of Women's Health in Focus (<https://orwh.od.nih.gov/about/newsroom/orwh-newsletter>). Would you like the opportunity to be declined or accepted at this time? They publish quarterly if it would be better to do the interview at a later time.

Thank you for your consideration,
Nissa

Nissa Hiatt
Communications
Vaccine Research Center, NIAID, NIH
40 Convent Drive, Bldg 40, Room 1100
Bethesda, MD 20892
Cell: (b) (6)
Office: (b) (6)
(b) (6)

<image002.png>

From: Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)
Sent: Wednesday, April 29, 2020 7:44 AM
To: Hiatt, Nissa (NIH/VRC) [C] (b) (6)
Cc: Graham, Barney (NIH/VRC) [E] (b) (6) >
Subject: Fwd: NIH's ORWH Would Like to Feature You in a Scientist Spotlight

Do I have permission to do this NIH-level "interview"?

Sent from the mobile device of:
Kizzmekia S. Corbett, PhD
Senior Research Fellow
coVip Scientific Lead
VRC | NIAID | NIH
(b) (6)

From: "Eric Sarlin" <(b) (6)>
Date: Monday, April 13, 2020 at 11:21:03 AM
To: "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>
Cc: "Goon, Caroline (NIH/OD) [C]" (b) (6) >, "Eric Sarlin" <(b) (6)>
Subject: RE: NIH's ORWH Would Like to Feature You in a Scientist Spotlight

Dr. Corbett:

I'm just following up on last week's email. I'm sure this is a busy time for you.

Will you be able to help us with the short "Scientist Spotlight" article described below?

Thank you for your time and attention.

Best,

Eric

From: Eric Sarlin
Sent: Monday, April 6, 2020 11:26 AM
To: (b) (6)
Cc: Goon, Caroline (NIH/OD) [C] (b) (6)
Subject: NIH's ORWH Would Like to Feature You in a Scientist Spotlight

Dear Dr. Corbett:

I am a Science Writer with NIH's Office of Research on Women's Health (ORWH), and we would like to run a Scientist Spotlight article on you in the Summer 2020 issue of Women's Health in Focus (<https://orwh.od.nih.gov/about/newsroom/orwh-newsletter>).

I was hoping to enlist your aid in providing some short answers (perhaps 3-5 sentences each) to a few career-oriented questions aimed at inspiring students and young, aspiring scientists. You may respond to the questions below in writing, or we can arrange a time for a phone interview. I will provide you with a copy of the finished article to approve prior to publication.

Ideally, I would like to receive materials from you and/or conduct the phone interview by 4/20/2020.

We look forward to featuring you and your accomplishments in *Women's Health in Focus*. Thank you for your attention.

Questions:

- Please provide us with a short professional biography (4-6 sentences describing your educational and professional background, current position, and current research interests)?
- What are your roles and responsibilities within your lab in response to COVID-19? To the extent that you are able, what are some major updates or progress that your lab has made in the development of a vaccine?
- What has this experience taught you about the importance of leadership and teamwork?
- Do you have a mentor(s) or scientific role model(s) that you would like to acknowledge? What impact has this person(s) had on your life?
- To date, what is one achievement of yours (or the team you are on) that you feel will make the greatest impact in other people's lives?
- Can you tell us about a hard lesson you had to learn in your life (thus far), and how did you grow from it?
- What do you think are the most important traits for an aspiring woman scientist to cultivate as she looks toward her future? Why did you choose these traits to talk about?
- What has 2020 taught you thus far in terms of personal and professional development that you would like to share with the rising generation of future women scientists?

Also:

--Could you please send a recent high-resolution photograph of yourself with permission to use it? We would like a high-resolution photo. Usually, files that are 300 dpi or 500 KB to 1 MB or greater in size are ideal. (Note that most cell phones take photos of sufficient resolution and that most websites do NOT post photos of sufficient resolution.)

--Could you please put me in touch with your office's or university's communications or PR office so that I can discuss promotion of this article with them?

Thank you very much. I look forward to hearing from you.

Best regards,

Eric Sarlin
Senior Science Writer
Managing Editor, *Women's Health in Focus* at NIH

SEI, Inc./ORWH

(b) (6)

<image003.png>



From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 9 Apr 2020 16:22:33 +0000
To: Mascola, John (NIH/VRC) [E]; Koup, Richard (NIH/VRC) [E]; Adrian McDermott; Corbett, Kizzmekia (NIH/VRC) [E]; Ruckwardt, Tracy (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]
Subject: Fwd: Useful snippet of date

Useful to know that (b) (5)

BG

Sent from my iPhone

Begin forwarded message:

From: "Munster, Vincent (NIH/NIAID) [E]" <(b) (6)>
Date: April 9, 2020 at 11:10:43 AM EDT
To: "Marston, Hilary (NIH/NIAID) [E]" (b) (6)>, NIAID Coronavirus Response SWAT 2020 <NIAIDCoronavirusResponseSWAT2020@mail.nih.gov>
Cc: "Matson, Jeremiah (NIH/NIAID) [F]" (b) (6)>
Subject: Useful snippet of date

(b) (5)

Specifically if people start getting questions from serology pov. Date generated by Jeremiah Matson, MD/PhD student in my lab.

Vincent Munster, PhD
Chief, Virus Ecology Section
Laboratory of Virology
Rocky Mountain Laboratories
NIAID/NIH

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 15 Feb 2020 16:14:32 +0000
To: Brown, Jeremy
Subject: Re: chapter invitation

Thank you for this invitation. I'm afraid we are too busy this year to commit to working on this chapter. The new coronavirus has taken a lot of time for our group.

Best wishes,

Barney

Sent from my iPhone

On Jan 30, 2020, at 10:48 AM, Brown, Jeremy (b) (6) wrote:

Re: Respiratory syncytial virus, Encyclopedia of Respiratory Medicine, 2nd Edition

Dear Dr Graham,

I am editing a section on pulmonary infections for the 2nd edition of the Respiratory Encyclopaedia for whom the chief editor was the late-lamented Geoff Laurent previously, and is now Prof Sam Janes, Head of UCL Respiratory University College London. I would like to invite you to author a chapter on 'Respiratory syncytial virus', an important subject that is often not given the prominence it deserves in respiratory textbooks given that it causes a considerable amount of adult as well as paediatric infections. I do hope you are able to accept - co-authors are absolutely fine. Each article is up to 7000 words and we encourage suitable figures / tables to enhance the information delivered.

Best wishes

Jerry

Prof Jeremy Brown
Professor of Respiratory Infection / Honorary Consultant
UCL Respiratory / UCLH
Tel. (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 20 Mar 2020 14:07:02 +0000
To: Marston, Hilary (NIH/NIAID) [E]
Subject: Accepted: NIAID COVID-19 Division Directors Sync

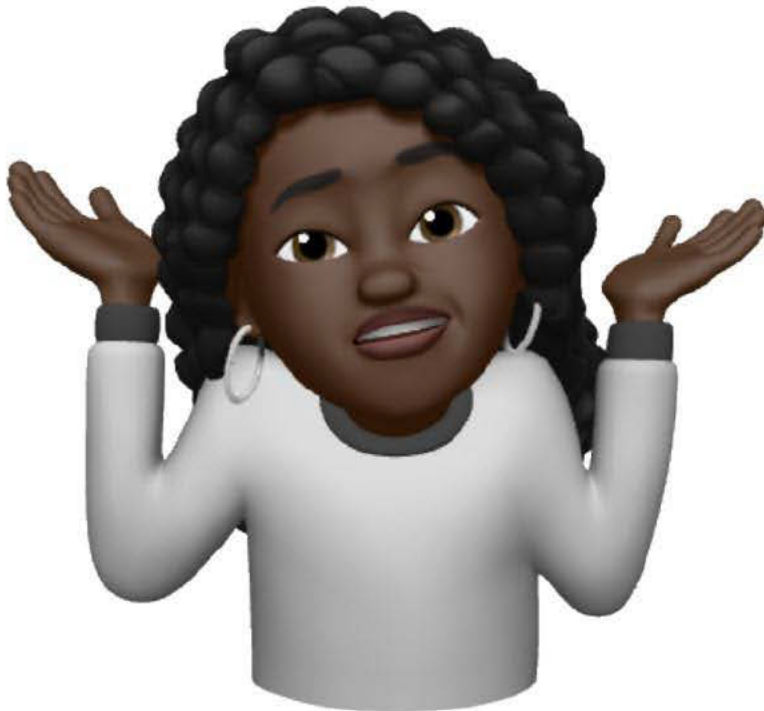
From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 29 Mar 2020 14:04:07 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: RE (b) (5) SARS-CoV-2 (b) (5)

(b) (5)

Barney

From: Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>
Sent: Sunday, March 29, 2020 4:42 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Fwd: (b) (5) SARS-CoV-2 (b) (6)

I don't plan on (b) (5)



Sent from the mobile device of:
Kizzmekia S. Corbett, PhD
Senior Research Fellow
coVip Scientific Lead
VRC | NIAID | NIH

(919) 218-9101

From: "Lin, Bob (NIH/VRC) [C]" (b) (6) >

Date: Saturday, March 28, 2020 at 5:40:23 PM

To: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >, "Flach, Britta (NIH/VRC) [C]" (b) (6) >

Subject: (b) (5) SARS-CoV-2 (b) (6)

Hi Kizzmekia and Kaitlyn,

Are there more of the (b) (5) We will need more to complete assay qualification and all time times for the trial. If not from the same batch, others would be fine as we can bridge them.

Thank you,

Thank you,

Bob C. Lin

Automated Testing Manager

Contractor, Medical Science & Computing, Inc.

VIP (Formally VITL), Vaccine Research Center, NIAID/NIH

9 West Watkins Mill Road Suite 165A

Gaithersburg, MD 20878

Phone: (b) (6)

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 18 Mar 2020 13:12:33 +0000
To: Morabito, Kaitlyn (NIH/VRC) [E]
Cc: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: RE: 20-0003 Clinical Ops Meeting Minutes 16 Mar 2020 - DRAFT

Thanks Kaitlyn,

(b) (5), (b) (4)

Barney

From: Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>
Sent: Wednesday, March 18, 2020 9:02 AM
To: Lisa A. Jackson (b) (6); Ashley Miller (b) (6); Arega, Janice (NIH/NIAID) [E] (b) (6); Barbara A. Carste (b) (6); Beigel, John (NIH) [E] (b) (6)>; Hoang, Binh (NIH/NIAID) [E] (b) (6); Cassandra Karcs (b) (6)>; Andrews, Charla (NIH/NIAID) [C] (b) (6)>; corona (b) (6)>; Harrington, Crystal (NIH/NIAID) [E] (b) (6)>; Sindall, Elisa (NIH/NIAID) [E] (b) (6)>; Elsafty, Mohamed (NIH/NIAID) [C] (b) (6)>; Evan Anderson (b) (6)>; Kenny, Frank (NIH/NIAID) [E] (b) (6); Chun, Guinevere (NIH/NIAID) [E] (b) (6)>; Gill, Ranjodh (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Bennett Hamilton (b) (6)>; Hill, Heather (b) (6); Jim Albert (b) (6); Kathleen Neuzil (b) (6); Khan, Ahsen (NIH/NIAID) [C] (b) (6); Knudsen, Tena (NIH/NIAID) [E] (b) (6); Koo, Hyung (NIH/NIAID) [E] (b) (6)>; Ledgerwood, Julie (NIH/NIAID) [E] (b) (6)>; Lee, Marina (NIH/NIAID) [E] (b) (6)>; Linda McNeil (b) (6)>; Makhene, Mamodikoe (NIH/NIAID) [E] (b) (6); Mat Makowski (b) (6); Maya Dunstan <(b) (6)>; Nayak, Seema (NIH/NIAID) [E] (b) (6); Rouphael, Nadine (b) (6)>; Ormanoski, Kathy (NIH/NIAID) [E] (b) (6); Pikaart-Tautges, Rhonda (NIH/NIAID) [E] <(b) (6)>; Rhea Coler (b) (6)>; Roberts, Chris (NIH/NIAID) [E] (b) (6); Kim, Sonnie (NIH/NIAID) [E] (b) (6); Veronica Faughnan (b) (6); Buchanan, Wendy (NIH/NIAID) [E] (b) (6)
Subject: Re: 20-0003 Clinical Ops Meeting Minutes 16 Mar 2020 - DRAFT

Hi All,

Please see the attached summary of (b) (4)

Please let me know if there are any questions.

Best,
Kaitlyn

From: "Lisa A. Jackson" <(b) (6)>

Date: Tuesday, March 17, 2020 at 3:35 PM

To: Ashley Miller (b) (6)>, "Arega, Janice (NIH/NIAID) [E]"

(b) (6) "Barbara A. Carste" (b) (6)>, "Beigel, John (NIH) [E]" (b) (6), "Hoang, Binh (NIH/NIAID) [E]" (b) (6)>, Cassandra Karcs (b) (6), "Andrews, Charla (NIH/NIAID) [C]" <(b) (6)>, corona (b) (6)>, "Harrington, Crystal (NIH/NIAID) [E]"

(b) (6)>, "Sindall, Elisa (NIH/NIAID) [E]" (b) (6)>, "Elsafy, Mohamed (NIH/NIAID) [C]" (b) (6)>, Evan Anderson

(b) (6)>, "Kenny, Frank (NIH/NIAID) [E]" (b) (6), "Chun, Guinevere (NIH/NIAID) [E]" (b) (6)>, "Gill, Ranjodh (NIH/NIAID) [E]"

(b) (6)>, Barney Graham (b) (6), Bennett Hamilton

(b) (6), "Hill, Heather" (b) (6), Jim Albert

(b) (6) Kathleen Neuzil (b) (6)>, "Khan, Ahsen (NIH/NIAID) [C]" (b) (6)>, "Knudsen, Tena (NIH/NIAID) [E]"

(b) (6)>, "Koo, Hyung (NIH/NIAID) [E]" (b) (6)>, Julie

Ledgerwood (b) (6)>, "Lee, Marina (NIH/NIAID) [E]" (b) (6)>, Linda McNeil <(b) (6)>, "Makhene, Mamodikoe (NIH/NIAID) [E]"

(b) (6)>, Mat Makowski <(b) (6)>, Maya Dunstan

(b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" <(b) (6)>

"Nayak, Seema (NIH/NIAID) [E]" (b) (6)>, "Rouphael, Nadine"

(b) (6)>, "Ormanoski, Kathy (NIH/NIAID) [E]" (b) (6)>, "Pikaart-Tautges, Rhonda (NIH/NIAID) [E]" (b) (6)>, Rhea Coler

(b) (6), "Roberts, Chris (NIH/NIAID) [E]" (b) (6)>, "Kim, Sonnie (NIH/NIAID) [E]" (b) (6)>, Veronica Faughnan

(b) (6)>, "Buchanan, Wendy (NIH/NIAID) [E]" (b) (6)

Subject: RE: 20-0003 Clinical Ops Meeting Minutes 16 Mar 2020 - DRAFT

Hello. Some comments attached.
Lisa

From: Ashley Miller (b) (6)

Sent: Tuesday, March 17, 2020 9:00 AM

To: Arega, Janice (NIH/NIAID) [E] (b) (6)>; Ashley Miller (b) (6)>; Barbara Carste (b) (6)>; Beigel, John (NIH) [E] (b) (6); Hoang, Binh (NIH/NIAID) [E] (b) (6)>; Cassandra Karcs (b) (6); (b) (6) corona (b) (6)>; Harrington, Crystal (NIH/NIAID) [E] (b) (6)>; Elisa Sindall (b) (6)>; Elsafy, Mohamed (NIH/NIAID) [C] (b) (6)>; Anderson, Evan (b) (6); (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)>; Hamilton Bennett (b) (6)>; Hill, Heather (b) (6)>; Jim Albert (b) (6)>; Kathleen Neuzil (b) (6); Khan, Ahsen (NIH/NIAID) [C] (b) (6); Koo, Hyung (NIH/NIAID) [E] (b) (6)>; Ledgerwood, Julie (NIH/NIAID) [E] (b) (6)>; Lee, Marina (NIH/NIAID) [E] (b) (6)>; Linda McNeil (b) (6)>; Lisa A. Jackson (b) (6)>; Makhene, Mamodikoe (NIH/NIAID) [E] (b) (6)>; Mat Makowski (b) (6)>; Maya Dunstan (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>; Nayak, Seema (NIH/NIAID) [E] < (b) (6)>; Roupheal, Nadine (b) (6)>; Ormanoski, Kathy (NIH/NIAID) [E] (b) (6)>; Pikaart-Tautges, Rhonda (NIH/NIAID) [E] (b) (6)>; Rhea Coler (b) (6)>; Roberts, Chris (NIH/NIAID) [E] (b) (6)>; Kim, Sonnie (NIH/NIAID) [E] (b) (6)>; Veronica Faughnan (b) (6) Buchanan, Wendy (NIH/NIAID) [E] (b) (6)>
Subject: 20-0003 Clinical Ops Meeting Minutes 16 Mar 2020 - DRAFT

Caution: This email came from outside Kaiser Permanente. Do not open attachments or click on links if you do not recognize the sender.

Dear all,

Please find attached draft meeting minutes from the March 16 Clinical Operations call. Kindly review and return any comments/edits to me by **noon on Friday, March 20**. Then the minutes will be finalized and circulated to the team.

Many thanks,
Ashley

Ashley Miller, MA | Research Associate

359 Blackwell Street, Suite 200 | Durham, NC 27701

O: (b) (6) | F: 919.405.1421 | (b) (6) | www.fhi360.org | FHI360

[Facebook](#)

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From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 1 Mar 2020 20:57:10 +0000
To: Bok, Karin (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Hiatt, Nissa (NIH/VRC) [C]; VRC_CoV
Cc: Prince, Tasheema (NIH/VRC) [C]; Harris, Christina (NIH/NIAID) [E]
Subject: RE: Review: Written Q&A Review by 3/2 on NIAID SARS-CoV-2 Ab work

Agree. I'm not sure we should say (b) (5)
(b) (5).

For the (b) (5) question I would say something like, (b) (5)
."

Barney

From: Bok, Karin (NIH/VRC) [E] (b) (6)
Sent: Saturday, February 29, 2020 12:29 PM
To: Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C] (b) (6); Graham, Barney (NIH/VRC) [E] <bgraham@mail.nih.gov>; VRC_CoV <VRC_CoV@mail.nih.gov>
Cc: Prince, Tasheema (NIH/VRC) [C] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)
Subject: Re: Review: Written Q&A Review by 3/2 on NIAID SARS-CoV-2 Ab work

Nissa,

I agree, we are giving way too many details on these answers. A generic answer saying we are addressing these issues should be enough.

Do we know where this reporter is from? It is helpful for context to know where the questions are coming from.

I personally vote for keeping reviewing these answers, even if it seems cumbersome. The context of the question/answers is key, and sometimes it is hard to just use the same answers all the time.

Thanks,

Karin.

Karin Bok, MS, PhD
Senior Advisor, Vaccine Development
Office of the Director, Vaccine Research Center
National Institute of Allergy and Infectious Diseases
National Institutes of Health
phone: (b) (6) | mobile: (b) (6) | email: (b) (6)
<https://www.niaid.nih.gov/about/vrc>

From: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >
Date: Friday, February 28, 2020 at 11:04 AM
To: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >, "Hiatt, Nissa (NIH/VRC) [C]" (b) (6), "Graham, Barney (NIH/VRC) [E]" (b) (6), VRC_CoV <VRC_CoV@mail.nih.gov>
Cc: "Prince, Tasheema (NIH/VRC) [C]" <(b) (6)>, "Harris, Christina (NIH/NIAID) [E]" (b) (6)
Subject: Re: Review: Written Q&A Review by 3/2 on NIAID SARS-CoV-2 Ab work

I don't think we should address the (b) (5) other than to possibly say that it is something we are addressing.

From: Kizzmekia Corbett (b) (6) >
Date: Friday, February 28, 2020 at 11:03 AM
To: "Hiatt, Nissa (NIH/VRC) [C]" (b) (6) >, Barney Graham (b) (6), VRC_CoV <VRC_CoV@mail.nih.gov>
Cc: "Prince, Tasheema (NIH/VRC) [C]" <(b) (6)>, "Harris, Christina (NIH/NIAID) [E]" (b) (6) >
Subject: Re: Review: Written Q&A Review by 3/2 on NIAID SARS-CoV-2 Ab work

Agree to the second question being left unanswered for the lay public, but the yellow could be used.

(b) (5)

For internal knowledge and more specific speaking points (Dr. Graham and I yell this from mountain tops, haha): (b) (5)

(b) (5)

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center

National Institutes of Allergy and Infectious Diseases

National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: "Hiatt, Nissa (NIH/VRC) [C]" (b) (6) >

Date: Friday, February 28, 2020 at 10:30 AM

To: Barney Graham (b) (6) >, VRC_CoV <VRC_CoV@mail.nih.gov>

Cc: "Prince, Tasheema (NIH/VRC) [C]" (b) (6), "Harris, Christina (NIH/NIAID) [E]" <(b) (6)>

Subject: Review: Written Q&A Review by 3/2 on NIAID SARS-CoV-2 Ab work

Hi Barney and team,

We've had another written reporter Q&A about SARS-CoV-2 antibody work with a deadline of COB Monday 3/2. My notes are below in red.

If OCGR continues to use the same cleared language to answer these questions on behalf of NIAID, would you still like to review them individually or can I move them along if the cleared language is used? The information is attributed to NIAID generally rather than you or another scientist.

- What antibody-related research on COVID-19 is NIAID pursuing?

- **Proposed answer:** NIAID is pursuing (b) (5)
(b) (5) NIAID scientists are working to identify
(b) (5)
(b) (5)

- In the development of the experimental mRNA vaccine against the virus that causes COVID-19, did NIAID take precautions against antibody-dependent enhancement?

- **Proposed answer:** [VRC—Can Dr. Corbett or Dr. Graham provide guidance on this?] (b) (5)
(b) (5)

Best,
Nissa

Nissa Hiatt

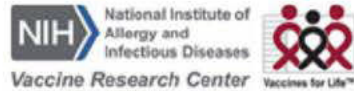
Communications

Vaccine Research Center, NIAID, NIH
40 Convent Drive, Bldg. 40, Room 1107
Bethesda, MD 20892

office: (b) (6)

mobile: (b) (6)

(b) (6)



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From: (b) (6)
Sent: Fri, 1 May 2020 11:16:23 -0400
To: Nason, Martha (NIH/NIAID) [E]
Subject: Re: More stats for COVID

Ok. That's embarrassing. Now you know I'm hopelessly behind on email. I'll try to call you later today.

BG

Sent from my iPhone

> On May 1, 2020, at 11:01 AM, Nason, Martha (NIH/NIAID) [E] (b) (6) wrote:

>

> Here's my message from yesterday:

>

>

>

>

> On 4/30/20, 9:30 AM, "Nason, Martha (NIH/NIAID) [E]" (b) (6) wrote:

>

> Hi Barney, I'm happy to help, and have just wrapped up (or at least gotten into less-intense-maintenance-mode) a couple larger projects, so my schedule is now more flexible than it had been the past few weeks. When can we talk?

> Martha

>

>

>

> On 4/30/20, 9:26 AM, "Graham, Barney (NIH/VRC) [E]" (b) (6) wrote:

>

> Hi Martha. We obviously have a lot going on and should have contacted you sooner. We need ongoing statistical support for planning new preclinical experiments and papers.

>

> Are you available or can you find us someone else. We would want you to be on the line in at least 2 meetings a week.

>

> Take care,

>

> Barney

>

>

>

>

> Sent from my iPhone

From: Graham, Barney (NIH/VRC) [E]
Sent: Thu, 26 Mar 2020 21:15:42 +0000
To: Daucher, Marybeth (NIH/NIAID) [E]
Subject: Re: SARS-Cov-2 T cell responses
Attachments: image002.png

I'll try calling tomorrow.

Barney

Sent from my iPhone

On Mar 26, 2020, at 3:49 PM, Daucher, Marybeth (NIH/NIAID) [E] (b) (6) >
wrote:

Barney – I'm happy to discuss this with you on the phone. I feel confident (b) (5), (b) (6)

(b) (5), (b) (6)
(b) (5), (b) (6)
(b) (5), (b) (6)

I'm available tomorrow if you have time.

From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Thursday, March 26, 2020 10:24 AM
To: Daucher, Marybeth (NIH/NIAID) [E] (b) (6) >
Subject: Fwd: SARS-Cov-2 (b) (5)

FYI. I have mentioned this to John several days ago but the (b) (5), (b) (6)
(b) (5), (b) (6). If you have any advice here, please let me know.

Barney

Sent from my iPhone

Begin forwarded message:

From: "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)
Date: March 26, 2020 at 9:58:48 AM EDT

To: "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>"Graham, Barney (NIH/VRC) [E]"
(b) (6)
Cc: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)
Subject: Re: SARS-Cov-2 (b) (5)

Thank you. Kizzmekia. and I have (b) (5), (b) (6)
(b) (5), (b) (6)

From: "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >
Date: Wednesday, March 25, 2020 at 10:35 PM
To: "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6) >, "Graham, Barney (NIH/VRC) [E]" (b) (6)
Cc: "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) >
Subject: Re: SARS-Cov-2 (b) (5)

I similarly (b) (5), (b) (6). Frankly, it seems that (b) (5), (b) (6)
(b) (5) I know for one, (b) (5), (b) (6)

I want to remind everyone (b) (5), (b) (6)

For example, (b) (5), (b) (6)
(b) (5), (b) (6)

(b) (5), (b) (6)
(b) (5), (b) (6), (b) (6)

Have a great night.

--
Kizzmekia S. Corbett, PhD
Senior Research Fellow | Scientific Lead
Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center
National Institutes of Allergy and Infectious Diseases
National Institutes of Health

Building 40 Room 2608

40 Convent Drive

Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

From: "Ruckwardt, Tracy (NIH/VRC) [E]" <(b) (6)>

Date: Wednesday, March 25, 2020 at 4:24 PM

To: Barney Graham (b) (6)>

Cc: Kizzmekia Corbett (b) (6)>, Kaitlyn Morabito

(b) (6)>

Subject: Re: SARS-Cov-2 (b) (5)

I am not fond of (b) (5), (b) (6)

(b) (5), (b) (6) In particular, (b) (5), (b) (6)

(b) (5), (b) (6)

My concern is that (b) (5)

(b) (5)

(b) (5) what point could we potentially (b) (5)

(b) (5) This is something you and Kaitlyn would be more

aware of than me, (b) (5).

Thanks,

Tracy

From: "Graham, Barney (NIH/VRC) [E]" <b (b) (6)>

Date: Wednesday, March 25, 2020 at 2:29 PM

To: "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)>

Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Morabito, Kaitlyn

(NIH/VRC) [E]" (b) (6)

Subject: Re: SARS-Cov-2 (b) (5)

If you want to (b) (5)

Barney

Sent from my iPhone

On Mar 25, 2020, at 1:38 PM, Ruckwardt, Tracy (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

Hi Barney,

I think the T [REDACTED] (b) (5) I don't think we
need to [REDACTED] (b) (5)

[REDACTED]

Tracy

From: "McDermott, Adrian (NIH/VRC) [E]" [REDACTED] (b) (6)

Date: Wednesday, March 25, 2020 at 12:35 PM

To: "Ruckwardt, Tracy (NIH/VRC) [E]" [REDACTED] (b) (6), "Swanson, Phillip (NIH/VRC) [C]" [REDACTED] (b) (6) "Roederer, Mario (NIH/VRC) [E]" [REDACTED] (b) (6)>

Cc: "Seder, Robert (NIH/VRC) [E]" [REDACTED] (b) (6)>

Subject: Re: SARS-Cov-2 [REDACTED] (b) (5)

Hello Tracey,

I have a suggestion [REDACTED] (b) (5) (b) (5)

[REDACTED]

We should [REDACTED] (b) (5)

[REDACTED].

Maybe we could [REDACTED] (b) (5)

[REDACTED]

Thanks

Adrian

From: "Roederer, Mario (NIH/VRC) [E]" (b) (6)>

Date: Wednesday, March 25, 2020 at 8:57 AM

To: "Swanson, Phillip (NIH/VRC) [C]" (b) (6)

Subject: Re: SARS-Cov-2 (b) (5)

We should (b) (5). No predictions.

mr

Mario Roederer, Ph.D.

Senior Investigator, [ImmunoTechnology Section](#)

Vaccine Research Center, NIAID, NIH

40 Convent Dr., Room 5509

Bethesda, MD 20892-3015

Phone: (b) (6)

FAX: 301 480-2788

On Mar 24, 2020, at 6:16 PM, Swanson, Phillip (NIH/VRC) [C] <(b) (6)> wrote:

Hi Mario,

Could really use your input here. (b) (5)
(b) (5)

Alternatively, (b) (5)
(b) (5)

What do you think?

phil

From: "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)
Date: Tuesday, March 24, 2020 at 11:36 AM
To: "Graham, Barney (NIH/VRC) [E]" (b) (6), "Roederer, Mario (NIH/VRC) [E]" (b) (6), "Koup, Richard (NIH/VRC) [E]" (b) (6)
Cc: "McDermott, Adrian (NIH/VRC) [E]" (b) (6), "Swanson, Phillip (NIH/VRC) [C]" (b) (6), "Dipiazza, Anthony (NIH/VRC) [F]" (b) (6), "Foulds, Kathryn (NIH/VRC) [E]" (b) (6), "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6), "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)
Subject: SARS-Cov-2 (b) (5)

Hi All,

I'm writing so we can all get on the same page regarding VRC-performed SARS-CoV-2 (b) (5). I'll start with our original plan and what has been done so far, then we can work on a plan we are all happy with going forward.

(b) (5)
(b) (5) To that end, I had planned (b) (5)-
(b) (5)
(b) (5) I worked with (b) (5)
(b) (5)
My plan was to (b) (5)
(b) (5)
I think it is probably worth re-evaluating whether (b) (5)
(b) (5) I see many pros and cons to this, but am very happy to see that (b) (5)
There are other options beyond (b) (5)
(b) (5). Phil and I were just discussing the pros and cons of different approaches on the phone this morning, and I would be interested in how others weigh in on the subject. So with that, I will open it up for discussion.....

Thank you,
Tracy



From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 17 Mar 2020 00:06:06 +0000
To: Mascola, John (NIH/VRC) [E]
Cc: Koup, Richard (NIH/VRC) [E]; Ledgerwood, Julie (NIH/NIAID) [E]; Chen, Grace (NIH/NIAID) [E]; (b) (6)
Subject: Re: Testing

Agree. Let me know if I can help advocate.

BG

Sent from my iPhone

> On Mar 16, 2020, at 8:00 PM, Mascola, John (NIH/VRC) [E] (b) (6) > wrote:
>
(b) (6) - I
think OMS could be persuaded to test.
>
> John
>
>
> -----Original Message-----
> From: Koup, Richard (NIH/VRC) [E] (b) (6) >
> Sent: Monday, March 16, 2020 6:47 PM
> To: Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) >; Chen, Grace (NIH/NIAID) [E]
(b) (6); Mascola, John (NIH/VRC) [E] (b) (6) >; Graham, Barney (NIH/VRC)
[E] (b) (6)
> Cc: (b) (6) >
> Subject: Re: Testing
>
> Julie and Grace.
>
> (b) (6) is still coughing, temp is slowly rising (100.6) (b) (6) feels like crap. Not worried about needing to go to
hospital (b) (6) breathing is OK. Mostly worried that (b) (6) has not been tested and whether we should assume (b) (6)s
positive and alert others at VRC.
>
> I had hoped (b) (6) would have been called in for testing by now.
>
> Rick
>
> Sent from my iPhone
>
>> On Mar 16, 2020, at 10:25 AM, Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) > wrote:
>>
>> Hi (b) (6)
>>
>> How are you?
>>
>> Have you heard back from OMS?
>>

>> Julie
>>
>> -----Original Message-----
>> From: (b) (6) (b) (6)>
>> Sent: Sunday, March 15, 2020 3:02 PM
>> To: Ledgerwood, Julie (NIH/NIAID) [E] (b) (6)>
>> Cc: Chen, Grace (NIH/NIAID) [E] <(b) (6)>; Koup, Richard (NIH/VRC) [E]
>> <(b) (6)>
>> Subject: Re: Testing
>>
>> Sorry just read the tenses more carefully in your response.
>>
>> I'm more than happy to be tested but don't want to suck up bandwidth if they are overwhelmed with sick patients or staff testing.
>>
>> Sent from my iPhone
>>
>>>> On Mar 15, 2020, at 2:02 PM, Ledgerwood, Julie (NIH/NIAID) [E] (b) (6)> wrote:
>>>>
>>>> Thank you (b) (6)
>>>>
>>>> Please let me know what OMS says. (I think you mean OMS rather than OPM).
>>>>
>>>> Would be good to know for sure. You ok if I also reach out to Dr Balin in OMS and request that you be tested?
>>>>
>>>> Keep us posted.
>>>> Julie
>>>>
>>>> -----Original Message-----
>>>> From: (b) (6); (b) (6)>
>>>> Sent: Sunday, March 15, 2020 11:23 AM
>>>> To: Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Chen, Grace (NIH/NIAID) [E]
>>>> <grace.chen@nih.gov>
>>>> Cc: Koup, Richard (NIH/VRC) [E] (b) (6)>
>>>> Subject: Testing
>>>>
>>>> Hi
>>>>
>>>> Friday after going to bed I developed a dry cough that has persisted. Slight tightness across upper chest. Maybe mildly febrile but when we tried purchasing a better thermometer CVS was out. Slight sniffles came and went but cough persists.
>>>>
>>>> I emailed OPM asking if I should arrange for COVID-19 testing based o recommendations.
>>>>
>>>> Could be Allergies or cold? Could be COVID but I hope not. I'll let you know what OPM recommends. But on the bright side (b) (5)
>>>>
>>>> Ive split time (b) (6) but not in any large meetings. I can go through my calendar and recollections for more face to face contact.
>>>>
>>>> I don't feel all that bad and just am online as usual. I'll continue to work from home, continue monitoring temp and let you know what OPM recommends.
>>>>
>>>> (b) (6)
>>>>

>>>

>>> Sent from my iPhone

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 6 Mar 2020 18:37:16 +0000
To: Austin, Sarah (NIH/NIAID) [E]
Cc: Young, Monique (NIH/VRC) [E]
Subject: RE: Scheduling follow-up: PI/Program Head meeting

I've been asked to present to this group on the 12th and feel like this is important. Any chance for the 19th?

BG

From: Austin, Sarah (NIH/NIAID) [E] (b) (6)>
Sent: Thursday, March 5, 2020 4:08 PM
To: Graham, Barney (NIH/VRC) [E] <(b) (6)>
Cc: Young, Monique (NIH/VRC) [E] (b) (6)>
Subject: Scheduling follow-up: PI/Program Head meeting

Hi Barney – I am looking at March 12 for the PI/Program Head meeting we discussed at Management Meeting this afternoon, but noticed you have a possible overlapping conflict. Your calendar indicates a save the date for a CEPI-BC meeting on preventing diseases enhancement with COVID-19 patients. I assume you plan to participate in that videoconference?

Thanks,
Sarah

Sarah Austin, M.S.
*VRC Training Coordinator and
Special Assistant to the Director*
Office of the Scientific Director
Vaccine Research Center
NIAID/NIH
40 Convent Drive
Building 40, Room 4504
Bethesda, MD 20892
(b) (6)

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From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 21 Apr 2020 19:32:20 +0000
To: Roberts, Jacqueline (NIH/OD) [E]
Subject: Accepted: Webex meeting invitation: COVID-19 SIG Lecture Series - Barney
Graham

From: Graham, Barney (NIH/VRC) [E]
Sent: Sun, 15 Mar 2020 23:57:13 +0000
To: Mascola, John (NIH/VRC) [E]
Cc: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: Re: A human monoclonal 1 antibody blocking SARS-CoV-2 infection | bioRxiv

I think (b) (5) according to Davide. Not sure about the (b) (5).

(b) (5)

BG

Sent from my iPhone

> On Mar 15, 2020, at 7:34 PM, Mascola, John (NIH/VRC) [E] <(b) (6)> wrote:

>

> You've likely seen this. What do you think?

> John

>

> -----Original Message-----

> From: Douek, Daniel (NIH/VRC) [E] <(b) (6)>

> Sent: Saturday, March 14, 2020 6:39 PM

> To: Mascola, John (NIH/VRC) [E] (b) (6); Sullivan, Nancy (NIH/VRC) [E]

(b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Seder, Robert (NIH/VRC) [E]

(b) (6); McDermott, Adrian (NIH/VRC) [E] (b) (6); Koup, Richard

(NIH/VRC) [E] (b) (6); Kwong, Peter (NIH/VRC) [E] (b) (6); Roederer, Mario

(NIH/VRC) [E] (b) (6); Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Boritz,

Eli (NIH/NIAID) [E] (b) (6)

> Subject: A human monoclonal 1 antibody blocking SARS-CoV-2 infection | bioRxiv

>

>

> <https://www.biorxiv.org/content/10.1101/2020.03.11.987958v1>

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 8 Feb 2020 16:47:49 +0000
To: Corbett, Kizzmekia (NIH/VRC) [E]
Subject: Fwd: Invitation to The Ohio State University

Would be a good idea to send this group some (b) (4).

BG

Sent from my iPhone

Begin forwarded message:

From: "Boyaka, Prosper" (b) (6) >
Date: February 8, 2020 at 11:35:33 AM EST
To: "Graham, Barney (NIH/VRC) [E]" (b) (6) >
Cc: "Li, Jianrong" (b) (6) >
Subject: Re: Invitation to The Ohio State University

Dear Barney,

It is unfortunate that you cannot visit OSU in April. But I would like to extend an open invitation for a later date as your schedule permits.

Regarding the (b) (4)

(b) (4). We work with him (b) (4)

(b) (4)

(b) (4) I mentioned your interest (b) (4)

he will be (b) (4)

I have added below (b) (4) we are looking

forward to hearing more from you.

Best regards.

Prosper

(b) (4)

From: Graham, Barney (NIH/VRC) [E] (b) (6) >
Sent: Friday, February 7, 2020 6:46 PM
To: Boyaka, Prosper (b) (6)
Subject: Re: Invitation to The Ohio State University

Hi Prosper. Thank you for this invitation. Unfortunately I have a prior obligation at that time. However, I'm glad you contacted me because I wondered if there were investigators at OSU who

have (b) (4) We could (b) (4)

Best wishes,
Barney

Sent from my iPhone

On Feb 7, 2020, at 4:01 PM, Boyaka, Prosper (b) (6) wrote:

Dear Dr. Graham,

You certainly do not remember me. I was a postdoc at UAB with Jerry McGhee and I use to come to Vanderbilt for the meetings of the PPG grant led by Peter Wright.

I moved to OSU in 2006 and I am now the co-director of the Host Defense and Microbial Biology (HDMB) program at the Infection Disease Institute (IDI). One of the goal of the program is to facilitate interactions between investigators involved in vaccine research and advocate for vaccine research/development.

We wanted to take advantage of the unfortunate coronavirus outbreak to assess the current status of vaccine research at OSU and are planning a one day mini workshop where we would like to invite you as an external speaker. Your experience and perspective would be extremely valuable to our members and to the scientific community at OSU and I really hope that you will positively consider this invitation.

The leadership of the University requested the mini workshop to take place before May and thus, we it has been tentatively scheduled for April 15, 2020, with the option of move the even on April 16.

I am looking forward to hearing back from you and I apologize in advance for the limited options and the short notice.

Best regards,

Prosper

<Outlook-qmazkhxo.png>

Prosper N. Boyaka, Ph.D.

Professor of Immunology

Departments of Veterinary Biosciences, and Microbial Infection and Immunity

HDMB program co-director: OSU, Infection Diseases Institute

The Ohio State University

VMAB Room 354

1900 Coffey Road

Columbus, OH 43210-1093

Telephone: (b) (6)

Fax: (614)292-6473

Email: (b) (6)

<https://idi.osu.edu/our-work/host-defense-and-microbial-biology>

<http://vet.osu.edu/ProsperBoyaka>

http://scholar.google.com/citations?hl=en&user=NtaMxysAAAAJ&view_op=list_works

From: Graham, Barney (NIH/VRC) [E]
Sent: Wed, 22 Jan 2020 02:51:33 +0000
To: Stephane Bancel
Cc: Andrea Carfi;Stephen Hoge;Hamilton Bennett;Mascola, John (NIH/VRC) [E];Juan Andres;Tal Zaks
Subject: Re: CoV

Ok. Thanks for confirming.

Barney

Sent from my iPhone

On Jan 21, 2020, at 9:45 PM, Stephane Bancel <(b) (6)> wrote:

Thanks Barney.

We were just contacted by the media

We issued the following response earlier tonight:

"Moderna's mRNA vaccine technology could serve as a rapid and flexible platform that may be useful in responding to newly emerging viral threats, such as the novel coronavirus. While we have not previously tested this rapid response capability, Moderna confirms that we are working with NIH/NIAID/VRC on a potential vaccine response to the current public health emergency. Moderna is committed to addressing infectious diseases and improving global public health"

We are all looking forward to working closely with NIH. Hamilton is the lead on our side as you know to coordinate this.

Stephen, Juan, Tal and I will stay close to the team. Let us know how we can help.

Cheers

Stephane

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)

Date: Wednesday, January 22, 2020 at 3:38 AM

To: Stephane Bancel (b) (6)

Cc: Andrea Carfi (b) (6) Stephen Hoge

(b) (6), Hamilton Bennett (b) (6)

"Mascola, John (NIH/VRC) [E]" (b) (6) >

Subject: Re: CoV

Thanks Stephane. (b) (4) We will continue (b) (4)

(b) (4) We acknowledge that (b) (4)

(b) (4)

On another note, CNN has asked to visit NIH tomorrow and is planning to interview Dr. Fauci and come to our lab. We can talk generically about our approach To this new virus or could mention Moderna. Do you have a preference?

Barney

Sent from my iPhone

On Jan 21, 2020, at 8:53 PM, Stephane Bancel <(b) (6)> wrote:

Andrea and Barney.

I just heard from a Chinese former colleague of mine who is in Beijing that the chinese government announced today that the virus has mutated.

I have no idea If this is accurate or not. But wanted to pass just in case it was true and you were not aware.

Cheers. Stephane

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From: Graham, Barney (NIH/VRC) [E]
Sent: Tue, 25 Feb 2020 22:37:02 +0000
To: Kathryn Westendorf; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Cc: Ester Falconer; Payal Sipahimalani
Subject: RE: [REDACTED] (b) (4)

Great! Thanks.

BG

From: Kathryn Westendorf [REDACTED] (b) (6)
Sent: Tuesday, February 25, 2020 5:33 PM
To: Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] [REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>
Cc: Ester Falconer [REDACTED] (b) (6); Payal Sipahimalani [REDACTED] (b) (6)
Subject: [REDACTED] (b) (5)

I am happy to report that [REDACTED] (b) (4)
[REDACTED] .

We can't wait to start screening so we can see some hits, please send us all the best of luck when we kick off screening this weekend!

Kathryn

From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 9 Mar 2020 22:56:55 +0000
To: Ángel Honrado
Cc: Robert Chen; Robert Chen; Imanol Urcola Lecuona
Subject: RE: [REMINDER] CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines

It's likely that I will be working on these up to the time of the presentation. Will I have a presenter view and be able to point at the images on the slides projected from my computer? That would be ideal.

Barney

From: Ángel Honrado (b) (6)
Sent: Monday, March 9, 2020 6:50 PM
Cc: Robert Chen (b) (6); Robert Chen (b) (6); Imanol Urcola Lecuona (b) (6)
Subject: [REMINDER] CEPI-BC meeting on preventing disease enhancement with COVID-19 vaccines
Importance: High

Dear Colleague,

I contact you because you are presenter in the CEPI and BC internal scientific consensus meeting on enhanced disease (ED) related to COVID-19, taking place through videoconference on March 12-13, 2020

This email is a kind reminder for you to **send your presentations by email by Wednesday morning, March 11th** so we have time enough for compiling, editing and assembling the master slide set ahead of the meeting.

Please let me know if you will not be able to meet the deadline.

Thank you very much for your contribution and collaboration

Best regards

ÁNGEL HONRADO
SPEAC Project Manager

(b) (6)



SPEAC, a CEPI project

From: Graham, Barney (NIH/VRC) [E]
Sent: Fri, 24 Jan 2020 15:51:58 +0000
To: William Dowling
Subject: Accepted: WHO Consultation regarding the Wuhan coronavirus

From: Graham, Barney (NIH/VRC) [E]
Sent: Sat, 14 Mar 2020 13:04:36 +0000
To: Beigel, John (NIH) [E]; Roberts, Chris (NIH/NIAID) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]
Subject: RE: IMPT: mRNA-1273 Communication and trial questions and talking points

Maybe, but we will also try to supplement with (b) (4), (b) (5) We may be able to (b) (4), (b) (5)
(b) (4), (b) (5)

Barney

From: Beigel, John (NIH) [E] (b) (6)>
Sent: Saturday, March 14, 2020 9:02 AM
To: Graham, Barney (NIH/VRC) [E] <(b) (6)>; Roberts, Chris (NIH/NIAID) [E] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Subject: Re: IMPT: mRNA-1273 Communication and trial questions and talking points

Thanks Barney. It seems to me the timeline for the (b) (4), (b) (5)
(b) (4), (b) (5) In your opinion, could we (b) (4), (b) (5)
(b) (4), (b) (5)

--
John Beigel, M.D.
Associate Director for Clinical Research
Division of Microbiology and Infectious Diseases
National Institute of Allergy and Infectious Diseases (NIAID)
Phone: (b) (6)
email: (b) (6)

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)
Date: Saturday, March 14, 2020 at 8:52 AM
To: John Beigel (b) (6)>, Chris Roberts (b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>
Subject: RE: IMPT: mRNA-1273 Communication and trial questions and talking points

Hi John,

(b) (5), (b) (4).

1. (b) (5), (b) (4) If the (b) (5), (b) (4) it would (b) (5), (b) (4) (b) (5), (b) (4) IF we have (b) (5), (b) (4) it would (b) (5), (b) (4) (b) (5), (b) (4).
2. We will (b) (5), (b) (4) We want to (b) (5), (b) (4)
3. We could also (b) (5), (b) (4) (b) (5), (b) (4) This would require (b) (5), (b) (4)

Barney

From: Beigel, John (NIH) [E] (b) (6)>
Sent: Saturday, March 14, 2020 8:43 AM
To: Graham, Barney (NIH/VRC) [E] (b) (6); Roberts, Chris (NIH/NIAID) [E] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)
Subject: Re: IMPT: mRNA-1273 Communication and trial questions and talking points

VRC team,

There is one statement that I would like clarity on. The statement reads " (b) (5), (b) (4)

(b) (5), (b) (4)
(b) (5), (b) (4)
(b) (5), (b) (4)
(b) (5), (b) (4)

Thanks
John

--
John Beigel, M.D.
Associate Director for Clinical Research
Division of Microbiology and Infectious Diseases
National Institute of Allergy and Infectious Diseases (NIAID)
Phone: (b) (6)
email: (b) (6)

From: "Graham, Barney (NIH/VRC) [E]" (b) (6)
Date: Saturday, March 14, 2020 at 7:57 AM
To: "Routh, Jennifer (NIH/NIAID) [E]" (b) (6)>, Chris Roberts (b) (6)>, Kathleen Neuzil (b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>, "Schuster, Claire (NIH/NIAID) [E]" (b) (6)>,"

Hilary Marston (b) (6)>, John Beigel (b) (6)>, "Makhene, Mamodikoe (NIH/NIAID) [E]" (b) (6)>, "Pikaart-Tautges, Rhonda (NIH/NIAID) [E]" (b) (6)>, "Lisa A. Jackson" (b) (6)>, "Abbey, Lillian (NIH/NIAID) [E]" (b) (6)>, "Bok, Karin (NIH/VRC) [E]" (b) (6)>, Kathleen Neuzil (b) (6)>
Cc: "Stover, Kathy (NIH/NIAID) [E]" (b) (6)
Subject: RE: IMPT: mRNA-1273 Communication and trial questions and talking points

Thanks Jen. This was very well done.

Attached are my edits and comments. Feel free to simplify what I added.

Barney

From: Routh, Jennifer (NIH/NIAID) [E] (b) (6)
Sent: Friday, March 13, 2020 11:14 PM
To: Roberts, Chris (NIH/NIAID) [E] (b) (6)>; Kathleen Neuzil (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>; Schuster, Claire (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Beigel, John (NIH) [E] (b) (6)>; Makhene, Mamodikoe (NIH/NIAID) [E] (b) (6)>; Pikaart-Tautges, Rhonda (NIH/NIAID) [E] (b) (6)>; Lisa A. Jackson (b) (6)>; Abbey, Lillian (NIH/NIAID) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)>; Kathleen Neuzil (b) (6)
Cc: Stover, Kathy (NIH/NIAID) [E] (b) (6)>
Subject: RE: IMPT: mRNA-1273 Communication and trial questions and talking points

All –

Attached is an updated talking points document based on our discussion and your feedback. Please let me know if anything still looks off or incorrect. Thanks again for your help.

To reiterate again – this document should not be shared with media. It is meant to help with interview prep and guide responses to reporters.

-Jen

Jennifer Routh [E]
News and Science Writing Branch
Office of Communications and Government Relations
National Institute of Allergy and Infectious Diseases (NIAID)
NIH/HHS
31 Center Drive Room 7A17C
Bethesda, MD 20892

Direct: (b) (6)
(b) (6)

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From: Roberts, Chris (NIH/NIAID) [E] (b) (6)
Sent: Friday, March 13, 2020 12:13 PM
To: Kathleen Neuzil <(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>; Routh, Jennifer (NIH/NIAID) [E] (b) (6)>; Schuster, Claire (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] <(b) (6)>; Beigel, John (NIH) [E] <(b) (6)>; Makhene, Mamodikoe (NIH/NIAID) [E] <(b) (6)>; Pikaart-Tautges, Rhonda (NIH/NIAID) [E] (b) (6)>; Lisa A. Jackson (b) (6)>; Abbey, Lillian (NIH/NIAID) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)>; Kathleen Neuzil (b) (6)>

Subject: IMPT: mRNA-1273 Communication and trial questions and talking points

Hi All,

Just a reminder to send Jenn Routh your comments/edits on the talking points and vaccine safety webpage by 2 pm today if at all possible. Remember, these are internal documents only.

Thanks

Chris

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From: Graham, Barney (NIH/VRC) [E]
Sent: Mon, 20 Apr 2020 20:21:02 +0000
To: Ché Landon; Scott Kennedy
Cc: Hiatt, Nissa (NIH/VRC) [C]; Routh, Jennifer (NIH/NIAID) [E]
Subject: RE: Dr. Graham / Scott H. Kennedy Call IMMUNITY

Thank you for your email. I like the intent of your project and I'm glad groups like you are taking advantage of the current situation to do some science education.

I'm going to put you in touch with our communications group. You can imagine how many requests are coming in and we have to save time for work.

Best wishes and take care,

Barney

From: Ché Landon <che@blackvalleyfilms.com>
Sent: Monday, April 20, 2020 3:07 PM
To: Scott Kennedy <scott@blackvalleyfilms.com>
Cc: Graham, Barney (NIH/VRC) [E] (b) (6)
Subject: Re: Dr. Graham / Scott H. Kennedy Call IMMUNITY

Hi Barney,

This is Ché Landon, Director of Development at BVF. I second the congratulations and gratitude. Let me know if it would be easier to schedule this call with the help of one of your assistants, I'm happy to coordinate through them if that helps take something off your plate.

All my best,

Ché

Ché Landon
Black Valley Films
che@blackvalleyfilms.com

On Fri, Apr 17, 2020 at 3:47 PM Scott Kennedy <scott@blackvalleyfilms.com> wrote:
Hi Barney,

First and foremost, thank you and your team for your tireless work, you've generated one of our most valuable resources - hope. I also wanted to congratulate you on the headway you and Moderna have made on launching your Covid 19 RNA vaccine trial.

I've been working on a documentary entitled [IMMUNITY](#) about the disconcerting rise of Vaccine Hesitancy and the detrimental ramifications of misinformation for over a year now with Dr. Peter Hotez and Dr. Paul Offit, both of whom speak extremely highly of you. We've also shot with Dr. Fauci and Dr. Nancy Messonnier, who were gracious with their time and expertise.

In light of the current pandemic, our project is more pertinent than ever and it's tantamount that we create media that provides respect for scientific truth, highlights the healing and humanitarian spirit that propels so much of medical advancement and dispels myths that fracture efforts to act communally and responsibly on behalf of the greater global good.

We'd love to set up a quick call to discuss resources, potential involvement and how we can support you now and beyond this pivotal moment in Vaccine History. I've included a one page with project information below, and also cc'd our Director of Development, Ché Landon, who will be happy to coordinate.

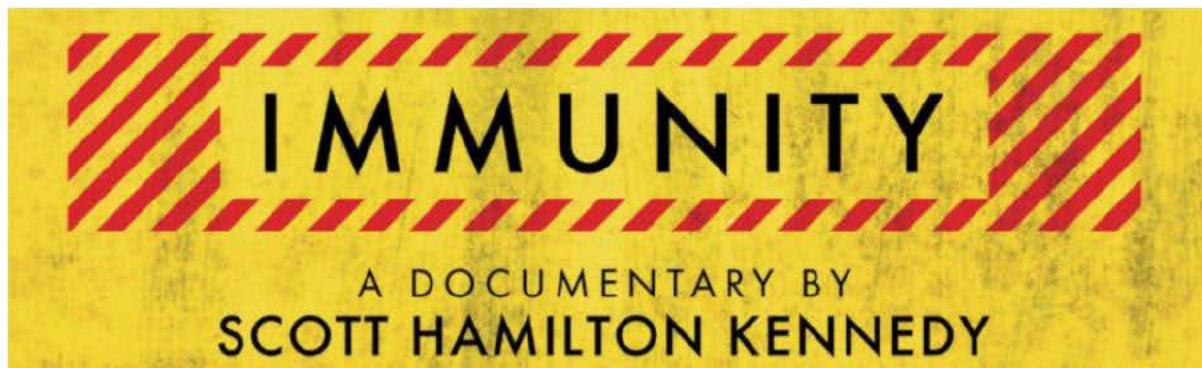
Looking forward to connecting soon about [IMMUNITY](#) and thank you again for your unfathomable dedication.

Best,

Scott

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Black Valley Films is the production company behind the Academy Award Nominated film, *The Garden*, Hulu's *Food Evolution*, Showtime's *Fame High*, Spirit Award Nominee *OT: our town*, and now *Immunity*.





Filmmaker Scott H. Kennedy, Dr. Anthony Fauci, Dr. Peter Hotez. November 2019.

Support for the importance of IMMUNITY

"Now more than ever we need to convince the public that there is so much at stake regarding the importance of vaccines, the dangers of outbreaks, and how to determine the truth. Documentaries are a wonderful way to do that, and Scott has proven with FOOD EVOLUTION that he is devoted to getting the science right!"



Dr. Paul Offit

PROFESSOR OF PEDIATRICS, DIVISION OF
INFECTIOUS DISEASES, THE CHILDREN'S
HOSPITAL OF PHILADELPHIA

"Scott's brilliant documentary FOOD EVOLUTION confirmed his special talent for communicating sound science in a compelling fashion. In Immunity he will vanquish misconceptions about vaccination with equal dispatch. The need is great. In locales across the country, vaccination refusal and hesitance have led to measles outbreaks. This timely project will save lives."



Kathleen Hall Jamieson, Ph.D.

DIRECTOR, ANNENBERG PUBLIC POLICY CENTER

Immunity's audience just went GLOBAL.

Before Covid-19, the Academy Award Nominated team at Black Valley Films saw the importance and necessity of telling the story of record-breaking global outbreaks, and how much Vaccine Hesitancy and Anti-Vaxxers have influenced not only those rising outbreaks, but how they've corroded many aspects of a long-trusted social contract to protect our communities. And with that, [IMMUNITY](#), was born.

With the emergence of Covid 19 we find ourselves at an unrivaled advantage as filmmakers--having *already* cultivated relationships with top public health experts including the Head of the NIAID, [Dr. Tony Fauci](#), vaccine experts [Dr. Peter Hotez](#) and [Dr. Paul Offit](#), as well as [Dr. Nancy Messonnier](#) and her colleagues at the CDC.

[Black Valley Films](#) has been invited to a coveted seat at the table to capture history as it rapidly unfolds on the frontlines.

We need to ramp up production to track the answers to [IMMUNITY'S](#) most pressing questions: What will win: **Science or disease? Truth or misinformation? The best of human nature or the worst of it?**

[IMMUNITY](#) will highlight avenues of hope, dismantle obstacles to truth, and celebrate all those at the forefront of this pandemic as they courageously blaze the trail to collective recovery.

Black Valley Films needs to hit our [\\$3 million](#) goal to bring this essential piece of investigative journalism to full fruition. We have two key ways to support: A tax deductible contribution through our 501-(c)(3) sponsor, or as an Investor (including return on investment with interest, and pari passu backed participation with other investors).

[Make a Tax Deductible CONTRIBUTION](#)

Connect about INVESTOR
options

[Watch IMMUNITY Teaser](#)

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Black Valley Films is the production company behind the Academy Award Nominated film, *The Garden*, Hulu's *Food Evolution*, Showtime's *Fame High*, Spirit Award Nominee *OT: our town*, and now *Immunity*.

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