



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health  
Freedom of Information Office  
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via Email: [foia@sirillp.com](mailto:foia@sirillp.com)

October 15, 2021

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 305 pages responsive to your request 54107. Attached to this letter are 290 pages; NIH has sent the remaining 15 pages to the Department of Health and Human Services and the White House for further review. NIH will provide a further response regarding the consulted material once the consultations are complete. Also attached are 23 pages of returned consults from the September 2021 production to request 53963.

I have determined to withhold portions of the enclosed pages under FOIA exemptions (b)(4), (b)(5) and (b)(6). The information being withheld is protected from release pursuant to Exemptions 3, 4, 5, and 6 of the FOIA, 5 U.S.C. § 552 (b)(4), (b)(5) and (b)(6); and sections 5.31 (d), (e) and (f) of the HHS FOIA Regulations, 45 CFR Part 5. 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](mailto:Kristina.Morrison@usdoj.gov).

Sincerely,

*for* Gorka Garcia-Malene  
Freedom of Information Officer, NIH



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 11:55:24 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Young, Monique (NIH/VRC) [E]  
**Subject:** Re: Invitation to give plenary scientific talk at 2020 Annual Biomedical Research Conference for Minority Students (ABRCMS)  
**Attachments:** image001.jpg

Looks like a good opportunity.

Barney

Sent from my iPhone

On Apr 17, 2020, at 7:42 AM, Corbett, Kizzmekia (NIH/VRC) [E]  
(b) (6) wrote:

**Thanks for the invitation.** I am a student of ABRCMS myself and even won a presentation award there in 2005. It would be my pleasure to speak; however, this must be approved by my supervisor, cc'ed, and all travel should go through Monique Young, also cc'ed.

Have a beautiful FRIDAY.

--

**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

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**From:** "Hulede, Irene" <IHULEDE@asmusa.org>  
**Date:** Thursday, April 16, 2020 at 5:40 PM  
**To:** Kizzmekia Corbett (b) (6) >

**Cc:** 'Earnestine Baker' (b) (6) >, "Hulede, Irene" <IHULEDE@asmusa.org>  
**Subject:** Invitation to give plenary scientific talk at 2020 Annual Biomedical Research Conference for Minority Students (ABRCMS)

April 15, 2020,

Dear Dr. Kizzmekia Corbett:

I hope this email finds you well. My name is Irene Hulede and I serve as project lead for the Annual Biomedical Research Conference for Minority Students (ABRCMS) as well as senior manager for several American Society for Microbiology programs. You were highly recommended by Ms. Earnestine Baker, a good friend and supporter of ABRCMS and Dr. Avery August, chairperson of ABRCMS. In checking our records, I also saw that you attended ABRCMS in 2005 and I hope you enjoyed your experience when you participated.

On behalf of the ABRCMS Steering and Planning Committee, I would like to invite you to give a plenary scientific presentation on either **Thursday, November 12 from 9:15 a.m.-10:00 a.m. or Friday, November 13 from 1:30 p.m. – 2:15 p.m. focusing on your area of research specifically the work you are doing on COVID-19 and your personal story.** Your presentation will be 35 minutes with 10 minutes for question and answer period. The conference activities will be held at the Henry B. Gonzalez Convention Center in San Antonio, TX from November 11-14, 2020.

The conference is sponsored by the National Institute of General Medical Sciences and the American Society for Microbiology. ABRCMS is managed by the American Society for Microbiology. For more information, visit the conference website at [www.abrcms.org](http://www.abrcms.org).

ABRCMS is currently the largest, professional conference for biomedical science, behavioral science and STEM students attracting over 5,250 individuals, including 2,875 undergraduate and postbac students, 520 graduate students/postdocs and 1860 faculty, administrators and graduate program exhibitors. Students come from over 350 U.S. colleges and universities. All are pursuing advanced training in the biomedical sciences and STEM, and many have conducted independent research. Attendees represent a very diverse ethnic background, African American (49%), Hispanic/Latino (25%), Native American (4%), Asian American (4%) Pacific Islander/Alaskan Native (1%), Caucasian (17%).

During the four-day conference, over 2,400 students participate in poster and oral presentations in twelve sub disciplines in STEM. The ABRCMS exhibitors program, comprised of over 900 representatives from graduate programs at US colleges and universities, government agencies, foundations, and professional scientific societies share information about graduate school, summer internship/research opportunities, funding sources, and professional networks.

**ABRCMS is the recipient of the 2019 AIMBE Excellence in STEM Education Award presented by the American Institute for Medical and Biological Engineering. ABRCMS was recognized for contributing to the advancement of underrepresented minorities in science, technology, engineering and mathematics, diversifying the biomedical sciences and biomedical engineering workforce, and providing URM students with early exposure to the profession.**

ABRCMS will provide you with an honorarium as a small token of our appreciation and cover all of your travel expenses. I can be reached at [ihulede@asmusa.org](mailto:ihulede@asmusa.org) or 202-942-9295 to answer any questions you may have about the conference.

Thank you for your continued support as we invest in the future of our students. I hope your schedule will permit you to join us in San Antonio.

Sincerely,

Irene Hulede  
Project Lead, ABRCMS  
Senior Manager, Education  
American Society for Microbiology

**Irene V. Hulede** | Senior Manager, Education  
American Society for Microbiology  
1752 N Street, NW | Washington, DC 20036  
202.942.9295 direct | 202.737.3600 main | 202.942.9329 fax

[<image001.jpg>](#)

Visit <http://www.asm.org> to apply for fellowship programs and professional skills courses in the microbial sciences.

Visit <http://www.abrcms.org> to learn about the Annual Biomedical Research Conference for Minority Students (ABRCMS)

Visit <http://www.asmcue.org> to learn about ASM Conference for Undergraduate Educators (ASMCUE)

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AMERICAN  
SOCIETY FOR  
NIH-000102  
MICROBIOLOGY





**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 18:00:16 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E];Scorpio, Diana (NIH/VRC) [E]  
**Cc:** Todd, John-Paul (NIH/VRC) [E]  
**Subject:** RE: 15C321

(b) (5)

but it should be noted and tracked.

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Monday, April 13, 2020 1:58 PM  
**To:** Scorpio, Diana (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6)>  
**Cc:** Todd, John-Paul (NIH/VRC) [E] (b) (6)  
**Subject:** Re: 15C321

(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

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**From:** "Scorpio, Diana (NIH/VRC) [E]" (b) (6)  
**Date:** Monday, April 13, 2020 at 1:30 PM  
**To:** Kizzmekia Corbett (b) (6), Barney Graham (b) (6)>  
**Cc:** John-Paul Todd (b) (6)>  
**Subject:** FW: 15C321

Hi there!

(b) (5)

Whatever you decide I will let them know.

Thanks

Diana

---

**From:** "Atchley, Bethany (NIH/OD/ORS) [C]" (b) (6) >  
**Date:** Monday, April 13, 2020 at 1:21 PM  
**To:** "Todd, John-Paul (NIH/VRC) [E]" (b) (6) >, "Scorpio, Diana (NIH/VRC) [E]" (b) (6) >  
**Cc:** "Arsuaga Zorrilla, Carmen (NIH/OD/ORS) [E]" (b) (6) >, "Brent, Julie (NIH/OD/ORS) [C]" (b) (6), "Wilson, Quentin (NIH/OD/ORS) [E]" (b) (6)  
**Subject:** 15C321

Hello,

(b) (5)

Diana Scorpio

V/r,

Dr. Atchley

Bethany S Atchley, DVM, DACLAM  
Charles River Laboratories  
Facility Veterinarian, NIHAC  
NIH Division of Veterinary Resources  
Office: (b) (6)  
Fax: 301-480-0644  
Email: (b) (6)  
<http://www.ors.od.nih.gov/sr/dvr>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 13:11:14 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]  
**Subject:** RE: (b) (5) figures for BMGF

Could you answer my other questions?

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, April 17, 2020 9:06 AM  
**To:** Hutchinson, Geoffrey (NIH/VRC) [F] (b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: (b) (5) figures for BMGF

Thanks Geoffrey, My slide edits are attached.

--

**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  
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Personal: (b) (6)  
Fax: (301) 480-2771

---

**From:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6)>  
**Date:** Thursday, April 16, 2020 at 11:56 PM  
**To:** Kizzmekia Corbett (b) (6)>  
**Subject:** (b) (5) figures for BMGF

Okay,

Here are the figures I've put together for Dr. Graham.

(b) (5)

(b) (5)





**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 18:40:54 +0000  
**To:** Daniel P. Wrapp; dorien devlieger; Corbett, Kizzmekia (NIH/VRC) [E]; Gretel M. Torres; Bert Schepens; Xavier Saelens; Nico Callewaert; Jason McLellan  
**Subject:** RE: CoV VHH manuscript for resubmission  
**Attachments:** CoV VHH Text v10\_cleanXS\_BG.docx

With attachment.

BG

---

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Monday, April 13, 2020 2:38 PM  
**To:** Daniel P. Wrapp (b) (6); dorien devlieger (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Gretel M. Torres (b) (6); Bert Schepens (b) (6); Xavier Saelens (b) (6); Nico Callewaert (b) (6); Jason McLellan (b) (6)  
**Subject:** RE: CoV VHH manuscript for resubmission

I made 4-5 minor edits on top of Xaviers.

Best wishes,

Barney

---

**From:** Daniel P. Wrapp (b) (6)  
**Sent:** Friday, April 10, 2020 2:02 PM  
**To:** dorien devlieger <(b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Gretel M. Torres (b) (6); Bert Schepens (b) (6); Xavier Saelens (b) (6); Nico Callewaert (b) (6); Jason McLellan (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** CoV VHH manuscript for resubmission

Hello all,

I've attached the updated CoV VHH manuscript, figures and the Response to Reviewers document here. I think that we're nearly ready for resubmission so it would be great if you could review the updated documents and send me any comments you might have over the weekend while I try to prepare the STAR methods and additional files that Cell requires.

Best regards,

Daniel

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 22:10:02 +0000  
**To:** Loomis, Rebecca (NIH/VRC) [E]; Ruckwardt, Tracy (NIH/VRC) [E]  
**Subject:** RE: Meeting today at 1pm

In terms of working in lab. We are at about 10% work force unless you account for 2 shifts then maybe 15-20%. As long as the CoV work is not being delayed, we can work in other projects little by little, especially for (b) (5) activities.

Barney

---

**From:** Loomis, Rebecca (NIH/VRC) [E] (b) (6)>  
**Sent:** Tuesday, April 14, 2020 5:56 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>; Ruckwardt, Tracy (NIH/VRC) [E]  
(b) (6)  
**Subject:** Re: Meeting today at 1pm

Barney,

Items from last meeting;

1. (b) (5)  
(b) (5) Everything else will have to wait based on CSIRO limiting staff on-site and focusing all their resources on COVID-19 related work.
2. (b) (5)
3. Submitted reference letter for (b) (6). Thank you for sending an example – it really helped me to tailor the letter and address key elements.
4. Brandon and I discussed (b) (5)  
(b) (5)
5. Submitted and will present (b) (5) this week at ACUC meeting.
6. Working on (b) (5)  
(b) (5)
7. I have outlined all manuscripts – (b) (5). I am working on finalizing the figures for the (b) (5) manuscript and will have that done by end of this

week for you to review. I will start working on manuscript text at the end of this week/next week.

8. Olu, Cynthia and I talked with CDC about [REDACTED] (b) (5)

9. I also talked with Olu afterwards about some of the issues she is having with [REDACTED] (b) (5)

Thank you,  
Rebecca

---

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

**Date:** Tuesday, April 14, 2020 at 1:21 PM

**To:** "Loomis, Rebecca (NIH/VRC) [E]" [REDACTED] (b) (6) >

**Subject:** Re: Meeting today at 1pm

I have calls that go through 7:30 the next 2 days. Good to have the paper coming out and will be good to see the others. Why the delay on [REDACTED] (b) (5)

Getting [REDACTED] (b) (5) would be important sooner rather than later if possible.

I trust you are keeping Tracy fully in the loop on all your activities. I need her to know what you are doing.

Take care,

Barney

Sent from my iPhone

On Apr 14, 2020, at 1:01 PM, Loomis, Rebecca (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

Hi Barney,

I am running late today – [REDACTED] (b) (6) (rescheduled many times) and we are just getting settled at home.

I would like to touch base – can we schedule a call for later today or sometime this week? I can send you an update on my activities beforehand.

Thank you,  
Rebecca

---

**From:** "Loomis, Rebecca (NIH/VRC) [E]" (b) (6)  
**Date:** Tuesday, March 31, 2020 at 1:07 PM  
**To:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Subject:** Re: Meeting today at 1pm

Thank you. I appreciate it.

R.

---

**From:** "Graham, Barney (NIH/VRC) [E]" (b) (6)  
**Date:** Tuesday, March 31, 2020 at 1:06 PM  
**To:** "Loomis, Rebecca (NIH/VRC) [E]" (b) (6)  
**Subject:** RE: Meeting today at 1pm

Here is a quad review letter I wrote for (b) (6) a couple of years ago.

Barney

---

**From:** Loomis, Rebecca (NIH/VRC) [E] (b) (6)  
**Sent:** Tuesday, March 31, 2020 12:26 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Meeting today at 1pm  
**Importance:** High

Hi Barney,

I am scheduled to have a meeting with you today at 1pm – which I am happy to keep if you have the time.

If not, would you be willing to send me a reference letter or two to use as templates? (b) (6)  
(b) (6) It is due TODAY. I don't have a lot of experience writing letters and want to use the right language, format, etc.

Other items;

1. I talked with (b) (5)  
(b) (5)  
(b) (5)
2. The results from the (b) (5) We have a call this afternoon to go over what was collected, how it is stored and things to be completed at a later date.
3. I will follow up with (b) (5)  
(b) (5)
4. I am working on the 3-year renewal for the (b) (5)
5. I will start on the (b) (5)  
(b) (5)

6. Working on manuscripts in the following order;

- a. [REDACTED] (b) (5)
- b. [REDACTED]
- c. [REDACTED]

7. I talked with [REDACTED] (b) (5)

8. Will have a teleconference soon (this week or next) with Olu, Cynthia, Kizzmekia and CDC about

[REDACTED] (b) (5)

9. Lastly, organizing my data files, general upkeep and reading literature.

Thank you and I hope you and family are staying safe,  
Rebecca

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 22:20:30 +0000  
**To:** Kolls, Jay K  
**Subject:** RE: [REDACTED] (b) (4)

Yes, I have back-to-back zoom calls all day long. On another one now.

BG

---

**From:** Kolls, Jay K [REDACTED] (b) (6) >  
**Sent:** Tuesday, April 14, 2020 6:13 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** Re: [REDACTED] (b) (4)

Thx Barney. Sorry - I've been inundated with zoom calls. Thx this is very helpful. Best. Jay

Jay K. Kolls, MD  
Professor of Medicine and Pediatrics  
John W Deming Endowed Chair in Internal Medicine  
Director, Center for Translational Research in Infection and Inflammation  
Tulane School of Medicine  
JBJ 375  
[333 S. Liberty St](#)  
[New Orleans, LA 70112](#)  
Ph. [REDACTED] (b) (6)

On Apr 14, 2020, at 4:54 PM, Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6) > wrote:

External Sender. Be aware of links, attachments and requests.

Hi Jay. I've tried to call a couple of time and it goes straight to voice mail. [REDACTED] (b) (4)

[REDACTED] (b) (4)

Best wishes and take care,

Barney



Sent from my iPhone

On Apr 12, 2020, at 3:22 PM, Kolls, Jay K [REDACTED] (b) (6) > wrote:

Great. Whenever you have time. Best. Jay

Jay K. Kolls, MD  
Professor of Medicine and Pediatrics  
John W Deming Endowed Chair in Internal Medicine  
Director, Center for Translational Research in Infection and Inflammation  
Tulane School of Medicine  
JBJ 375  
[333 S. Liberty St](#)  
[New Orleans, LA 70112](#)  
Ph. [REDACTED] (b) (6)

On Apr 12, 2020, at 11:27 AM, Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

External Sender. Be aware of links, attachments and requests.

Hi Jay,

Sorry, not keeping up with email during the week.

I will try to call tomorrow or next day. Also, glad to send the [REDACTED] (b) (4)

Barney

---

**From:** Kolls, Jay K [REDACTED] (b) (6) >  
**Sent:** Wednesday, April 8, 2020 12:38 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** [REDACTED] (b) (4)

Hi Barney,

I hope you are well!



We have engineered an [REDACTED] (b) (4)

Would you have time for a quick call to discuss this? My mobile is [REDACTED] (b) (6).

Best

Jay

Jay K. Kolls, MD  
Professor of Medicine and Pediatrics  
John W Deming Endowed Chair in Internal Medicine  
Director, Center for Translational Research in Infection and Inflammation Tulane School of  
Medicine  
JBJ 375  
333 S. Liberty St  
New Orleans, LA 70112

[REDACTED] (b) (6)  
<https://medicine.tulane.edu/centers-institutes/tulane-center-translational-research-infection-inflammation>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 22:45:24 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]; Bok, Karin (NIH/VRC) [E]; Andrews, Charla (NIH/NIAID) [C]  
**Subject:** Fwd: SARS-CoV2 expression

FYI. Has this been sent yet?

BG

Sent from my iPhone

Begin forwarded message:

**From:** "Petrovich, Robert (NIH/NIEHS) [E]" <(b) (6)>  
**Date:** April 14, 2020 at 6:42:08 PM EDT  
**To:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Subject:** FW: SARS-CoV2 expression

Hi Barry,

When was the (b) (5) shipped, as I do not have it. All I have are the electronic files for the protocol you send last time. I will check again with the warehouse, but it would be helpful to know when you sent it and what address you sent it to.

Bob

---

**From:** Garantziotis, Stavros (NIH/NIEHS) [E] <(b) (6)>  
**Sent:** Tuesday, April 14, 2020 5:39 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Stein, Judy (NIH/VRC) [C] (b) (6); Hall, Janet (NIH/NIEHS) [E] (b) (6); Petrovich, Robert (NIH/NIEHS) [E] (b) (6)  
**Subject:** Re: SARS-CoV2 expression

Indeed! We wanted to make sure he has the correct (b) (5), (b) (4) and also ask you for the (b) (5), (b) (4) so we can get working on orders and troubleshooting

Best regards

Stavros

Sent from my iPhone

On Apr 14, 2020, at 5:31 PM, Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

Just FYI. We have already sent the [REDACTED] (b) (5), (b) (4) and protocols for [REDACTED] (b) (5), (b) (4) to Robert Petrovich at NIEHS. It may be he has already started making [REDACTED] (b) (5), (b) (4)

Best wishes,

Barney

Sent from my iPhone

On Apr 14, 2020, at 5:22 PM, Garantziotis, Stavros (NIH/NIEHS) [E] [REDACTED] (b) (6)> wrote:

Many thanks! For reference. I am the medical director of the NIEHS clinical research unit in North Carolina. I am ccing my clinical director, Jan Hall. She has participated in this discussion from the beginning  
Best regards

Stavros

Sent from my iPhone

On Apr 14, 2020, at 5:20 PM, Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)> wrote:

Good evening,  
Sure. We are opening sharing [REDACTED] (b) (5), (b) (4) with NIH internally. I believe there is a verbal agreement needed and for that, Judy Stein is cc'ed here.

--

**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

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**From:** "Garantziotis, Stavros (NIH/NIEHS) [E]" <(b) (6)>  
**Date:** Tuesday, April 14, 2020 at 5:18 PM  
**To:** Kizzmekia Corbett <(b) (6)>  
**Subject:** Fwd: SARS-CoV2 expression

Dear Kizzmekia!

This is Stavros Garantziotis at the NIEHS. We are very interested in bringing your (b) (5), (b) (4) to our clinical research unit. We discussed with Kaitlyn Sadtler and she referred me to you (see below). Could you please share the protocol? Co-authorship in resulting papers is implied.

Best regards  
Stavros

Sent from my iPhone

Begin forwarded message:

**From:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" <(b) (6)>  
**Date:** April 14, 2020 at 5:14:13 PM EDT  
**To:** "Garantziotis, Stavros (NIH/NIEHS) [E]" <(b) (6)>  
**Subject:** Re: SARS-CoV2 expression

This flag didn't pop up as a reminder. You can email Kizzmekia Corbett for the (b) (5), (b) (4), (b) (5) I will reach out to see if ok to share but you can check directly with her as well.

Kaitlyn Sadtler, Ph.D.  
Earl Stadtman Investigator  
Chief, Section for Immuno-Engineering  
National Institute of Biomedical Imaging and Bioengineering  
National Institutes of Health  
50 South Drive, Room 4318  
Bethesda, MD 20892  
Cell: (b) (6)  
Office: (b) (6) Fax: (301) 480-5302

[<image001.png>](#)  
30 Under 30 ||  
[<image002.png>](#)

Fellow

go.ted.com/kaitlynsadtler

[<image003.png>](#)

[<image004.png>](#)

---

**From:** "Garantziotis, Stavros (NIH/NIEHS) [E]" (b) (6) >  
**Date:** Monday, April 13, 2020 at 6:57 PM  
**To:** "Petrovich, Robert (NIH/NIEHS) [E]" (b) (6) >, "Sadtler, Kaitlyn (NIH/NIBIB) [E]" (b) (6) >  
**Subject:** Re: SARS-CoV2 expression

Hi Kaitlyn  
Can you please provide this info and your (b) (5)?  
Many thanks  
Stavros

---

**From:** "Petrovich, Robert (NIH/NIEHS) [E]" (b) (6) >  
**Date:** Friday, April 10, 2020 at 11:31 AM  
**To:** "Garantziotis, Stavros (NIH/NIEHS) [E]" (b) (6) >, "Sadtler, Kaitlyn (NIH/NIBIB) [E]" (b) (6) >  
**Subject:** RE: SARS-CoV2 expression

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

Bob

---

**From:** Garantziotis, Stavros (NIH/NIEHS) [E] <(b) (6)>  
**Sent:** Friday, April 10, 2020 10:27 AM  
**To:** Sadtler, Kaitlyn (NIH/NIBIB) [E] <(b) (6)>  
**Cc:** Petrovich, Robert (NIH/NIEHS) [E] <(b) (6)>  
**Subject:** RE: SARS-CoV2 expression

Many thanks for the response!  
Bob, could you please comment on the (b) (5)? Something you can procure or already have?

Kaitlyn, whenever you can share the (b) (5), (b) (4) that we can start the process of adopting here, that would be greatly appreciated!

Best regards  
Stavros

---

**From:** Sadtler, Kaitlyn (NIH/NIBIB) [E] (b) (6) >  
**Sent:** Thursday, April 09, 2020 1:02 PM  
**To:** Garantziotis, Stavros (NIH/NIEHS) [E] <(b) (6)>  
**Subject:** Re: SARS-CoV2 expression

We are using (b) (5), (b) (4)  
(b) (5), (b) (4) Will have to check to see if  
they made theirs in house but that was what it sounded like.

And yes, sorry things have gotten a bit crazy! Currently trying to widdle down my inbox

Cheers,

Kaitlyn

**Kaitlyn Sadtler, Ph.D.**  
Earl Stadtman Investigator  
Chief, Section for Immuno-Engineering  
National Institute of Biomedical Imaging and Bioengineering  
National Institutes of Health  
50 South Drive, Room 4318  
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Cell: (b) (6)  
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[<image005.png>](#)

30 Under 30 ||

[<image006.png>](#)

Fellow

[go.ted.com/kaitlynsadtler](https://go.ted.com/kaitlynsadtler)

[<image007.png>](#)

[<image008.png>](#)



---

**From:** "Garantziotis, Stavros (NIH/NIEHS) [E]" <(b) (6)>  
**Date:** Thursday, April 9, 2020 at 11:29 AM  
**To:** "Petrovich, Robert (NIH/NIEHS) [E]" <(b) (6)>, "Sadler, Kaitlyn (NIH/NIBIB) [E]" <(b) (6)>  
**Subject:** RE: SARS-CoV2 expression

Hi Kaitlyn

I assume you got really busy after the press release, but just want to strike the iron while it is hot...would you have a chance to comment on Bob's email? Are the (b) (5), (b) (4) he is using the ones that you are using as well?

Best regards and many thanks

Stavros

---

**From:** Petrovich, Robert (NIH/NIEHS) [E] <(b) (6)>  
**Sent:** Wednesday, April 08, 2020 3:06 PM  
**To:** Garantziotis, Stavros (NIH/NIEHS) [E] <(b) (6)> Sadler, Kaitlyn (NIH/NIBIB) [E] <(b) (6)>  
**Cc:** Hall, Janet (NIH/NIEHS) [E] <(b) (6)>; Zeldin, Darryl (NIH/NIEHS) [E] <(b) (6)>  
**Subject:** RE: SARS-CoV2 expression

Hi Stavros,

I have (b) (5), (b) (4) (came today). I have this from Barney Graham ( Judy Stein, John Mascola, Kizzmekia Corbett, Kaitlyn Morabito, Gabriela Alvarado, Karin Bok, and Charla Andrews -NIH/VRC and NIH/NIAID). They are sending their (b) (5), (b) (4), but they sent their (b) (5), (b) (4) as well. I am also getting in (b) (5), (b) (4)

(b) (5), (b) (4) Just let me know exactly what (b) (5), (b) (4) you want and we will get it for you.

Bob

---

**From:** Garantziotis, Stavros (NIH/NIEHS) [E] <(b) (6)>  
**Sent:** Wednesday, April 8, 2020 1:05 PM  
**To:** Sadler, Kaitlyn (NIH/NIBIB) [E] <(b) (6)>; Petrovich, Robert (NIH/NIEHS) [E] <(b) (6)>  
**Cc:** Hall, Janet (NIH/NIEHS) [E] <(b) (6)>; Zeldin, Darryl (NIH/NIEHS) [E] <(b) (6)>  
**Subject:** SARS-CoV2 expression

Hi Bob

We are in the process of working on a (b) (5), (b) (4)

Please let me know if there is a question that I can help clarify

Many thanks!

Stavros

Stavros Garantziotis, MD  
Medical Director, Clinical Research Unit  
National Institute of Environmental Health Sciences  
Research Triangle Park, NC 27709  
Telephone (b) (6)  
eFax (301)480 3011, conv. Fax(919) 541 9854

Adjunct Associate Professor of Medicine  
Duke University Medical Center



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 18:55:30 +0000  
**To:** Daniel Lucey; Beigel, John (NIH) [E]  
**Subject:** RE: CME forms for NIAID Grand Rounds  
**Attachments:** 2019-2020 SpeakerObjectivesform \_ COVID-19.docx

Hi Dan and John,

I started the form requested with our names (please check), a proposed title (feel free to change), and one objective for my part. Last one to finish can send back to Sue Spisso.

Take care,

Barney

---

**From:** Spisso, Suzanne (NIH/NIAID) [E] (b) (6)  
**Sent:** Monday, April 13, 2020 7:48 AM  
**To:** Daniel Lucey (b) (6); Graham, Barney (NIH/VRC) [E] <(b) (6)>; Beigel, John (NIH) [E] <(b) (6)>  
**Cc:** Spisso, Suzanne (NIH/NIAID) [E] <(b) (6)>; Nguyen, Trang (NIH/NIAID) [E] (b) (6)>  
**Subject:** CME forms for NIAID Grand Rounds

Drs. Lucey, Graham and Beigel,

Attached are the CME forms for the 5/1/2020 NIAID Grand Rounds. We will need all of the forms listed below returned to us by **Tuesday, 4/21/2020**.

For the speaker title/objective form, we only need one form that will be a combined lecture title and objectives. Please coordinate your title and objectives.

1. Current CV (except Dr. Lucey who has provided a copy already)
2. PESGCE agreement form
3. CME Disclosure form
4. Speakers title/objective form (one total for the entire lecture).

If you have any questions, please do not hesitate to reach out to myself or Trang Nguyen.

Thank you.

Sue

Suzanne Spisso RN, MS  
Nurse Consultant

Intramural Clinical Management & Operations Branch (ICMOB)

Division of Clinical Research, NIAID, NIH

10 Center Drive, Rm. 5-5543

Bethesda, MD 20892

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(b) (6)

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 19:13:24 +0000  
**To:** Xulin Chen (Via FrontiersIn)  
**Subject:** Re: Xulin Chen via Frontiers: Invitation to Review a Manuscript

No. Too busy with COVID-19

BG

Sent from my iPhone

> On Apr 13, 2020, at 2:08 PM, Xulin Chen (Via FrontiersIn) <noreply@frontiersin.org> wrote:

>

> Dear Dr Barney S Graham,

>

> I am writing to ask whether you would be able to review the manuscript (b) (6)

submitted for consideration in Frontiers in Immunology, section Viral Immunology.

>

> Please read below for details concerning the submission and inform us of your interest using the hyperlinks enclosed. In agreeing to review this manuscript, we trust that its subject matter falls within your area of expertise and that you are available to review the paper within 15 days.

> Before accepting this invitation, verify whether you have any potential conflicts of interest with the authors, including past collaborations or shared affiliation (see policy at <https://www.frontiersin.org/about/review-system#EditorialPolicies>).

>

> Please note that should you participate in the review process and endorse publication of the paper, you are agreeing to the disclosure of your name on the published article. You may read below for more information.

> It is also important that you familiarize yourself with the Frontiers Collaborative Review Guidelines, accessible at [http://www.frontiersin.org/Journal/ReviewGuidelines.aspx?s=1837&name=viral\\_immunology](http://www.frontiersin.org/Journal/ReviewGuidelines.aspx?s=1837&name=viral_immunology). Briefly, the Frontiers review mandate is to evaluate the manuscript based on objective criteria, including the validity and rigor of the work.

>

> Open and rapid access to the latest scientific results are paramount in these unprecedented times of the COVID-19 pandemic. As we all work with our communities to mitigate its impact, we are continuing Frontiers publishing services and our support to researchers in disseminating their work. If you would like to accept this assignment but would require more time to submit your report, please accept this invitation and send us a note by replying to this email.

>

> To ACCEPT this review invitation, please click on the link below. If you are not registered with Frontiers yet, you will be first asked to register.

(b) (6)

>

> To DECLINE this review invitation, preventing further reminders, please click on the link below:

(b) (6)

>

> Thank you for considering to review this manuscript.

>

> With best regards,

>

> Xulin Chen

> Associate Editor,

> [www.frontiersin.org](http://www.frontiersin.org)

>

> -----MANUSCRIPT DETAILS-----

> Journal: Frontiers in Immunology, section Viral Immunology

> Article type: Opinion

> Manuscript title: [REDACTED] (b) (6)

> Manuscript ID: [REDACTED] (b) (6)

> Authors: [REDACTED] (b) (6)

> Submitted on: [REDACTED] (b) (6)

> Edited by: Xulin Chen

>

>

> Research Topic: [REDACTED] (b) (6)

[REDACTED]

>

> \*\*\*\*\*

(b) (6)

> -----

> Frontiers Review Guidelines

>

> The Frontiers peer-review is a collaborative process with a focus on objective criteria, efficiency and transparency. A review questionnaire is provided in the online review forum to assist you in reviewing the manuscript.

> Reviewers identities are revealed at the end of the review process and you will be acknowledged for your work and contribution on the publication. Please note that you will remain anonymous throughout the entire review process. If irresolvable conflicts arise you may choose to withdraw from the review process and in such case you will remain anonymous. However, if the paper gets accepted for publication and no conflicts arose that led to your withdrawal, your contribution will be acknowledged on the publication.

>

> The Frontiers review process has unique features, including an interactive review stage, and a focus on objective criteria. To ensure an efficient review process please familiarize yourself with the Frontiers review guidelines:

> [http://www.frontiersin.org/Journal/ReviewGuidelines.aspx?s=1837&name=viral\\_immunology](http://www.frontiersin.org/Journal/ReviewGuidelines.aspx?s=1837&name=viral_immunology)

>

> Reviewers are obliged to keep all manuscript files confidential and to delete all records after completing the review process. The review reports are also confidential and may only be shared with the authors and the handling editor of the manuscript in the review forum. Posting of the review report publicly is prohibited.

>

> <https://www.frontiersin.org/register>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 03:36:54 +0000  
**To:** Sereti, Irini (NIH/NIAID) [E]  
**Cc:** Lionakis, Michail (NIH/NIAID) [E]  
**Subject:** RE: COVID SIG

(b) (5)

---

**From:** Sereti, Irini (NIH/NIAID) [E] (b) (6)  
**Sent:** Tuesday, April 14, 2020 11:24 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Lionakis, Michail (NIH/NIAID) [E] (b) (6)  
**Subject:** Re: COVID SIG

Of course remotely, we are so grateful!!!!!!  
No worries about tomorrow, we can send you the slides😊  
Would you be able to send us a tentative title perhaps?  
Thank you so much

---

**From:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Date:** Tuesday, April 14, 2020 at 11:21 PM  
**To:** "Sereti, Irini (NIH/NIAID) [E]" (b) (6) >  
**Cc:** "Lionakis, Michail (NIH/NIAID) [E]" (b) (6)  
**Subject:** RE: COVID SIG

Hi Irini,

I should be able to help with this as long as I can do it remotely. I can move the other things around.

Unfortunately, I'm going to miss Hilary's opening talk tomorrow because of a conflict.

Take care,

Barney



---

**From:** Sereti, Irini (NIH/NIAID) [E] (b) (6)>  
**Sent:** Tuesday, April 14, 2020 11:07 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Cc:** Lionakis, Michail (NIH/NIAID) [E] (b) (6)>  
**Subject:** COVID SIG

Dear Barney,

I hope you are well during these crazy days...

Mihalis and I are trying to organize the new COVID lecture series of the brand new SIG and Dr

Gottesman would like to have a seminar planned for Wed April 22<sup>nd</sup> at 3PM so he can announce it tomorrow when he introduces Hilary's talk.

He suggested we approached you to see if you would be willing to present perhaps even with Dr Corbett presenting a part of the seminar on the clinical vaccine trial efforts of the VRC.

We would really appreciate it and we apologize for the lateness of the request.

Best,

Irini

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 14:21:00 +0000  
**To:** Neil King  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]  
**Subject:** (b) (4)  
**Attachments:** (b) (4).pptx

Hi Neil,

Here are a few slides that can be used at the Gates meeting. Thanks to Geoff and Kizzmekia for getting these together at last minute. Although it will help with getting the paper started. 😊

(b) (5)

These should be considered preliminary data from ongoing experiments and not final data to put in a report.

I can get on the line for part of your meeting if you tell me when.

Take care,

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  
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URL: <https://www.niaid.nih.gov/research/barney-graham-md-phd>

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 20:44:18 +0000  
**To:** Lindsay, David (NIH/NCI) [C]  
**Subject:** RE: Journal Club / Coronavirus -- DAVID LINDSAY ask

You could start with the papers we have published on spike. The most important ones are:

1. Kirchdoerfer RN, Cottrell CA, Wang N, Pallesen J, Yassine HM, Turner HL, Corbett KS, Graham BS, McLellan JS, Ward AB. Pre-fusion structure of a human coronavirus spike protein. *Nature*. 2016 Mar 3;531(7592):118-21. doi: 10.1038/nature17200.
2. 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. Epub 2017 Aug 14.
3. Wang L, Shi W, Chappell JD, et al. Importance of Neutralizing Monoclonal Antibodies Targeting Multiple Antigenic Sites on the Middle East Respiratory Syndrome Coronavirus Spike Glycoprotein To Avoid Neutralization Escape. *J Virol*. 2018;92(10):e02002-17. Published 2018 Apr 27. doi:10.1128/JVI.02002-17
4. Wrapp D, Wang N, Corbett KS, Goldsmith JA, Hsieh CL, Abiona O, Graham BS, McLellan JS. Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation. *Science*. 2020 Mar 13;367(6483):1260-1263. doi: 10.1126/science.abb2507.

---

**From:** Lindsay, David (NIH/NCI) [C] (b) (6) >  
**Sent:** Monday, April 13, 2020 4:35 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** RE: Journal Club / Coronavirus -- DAVID LINDSAY ask

I found a book, by Advances in Virus Research, titled "Coronaviruses" (Edited by John Ziebuhr) 2016 ; there are a couple useful chapters (ch2/ spike protein; ch8 /molecular basis of coronavirus virulence and vacc.dev.) with references to specific papers I think could be worth reading.

Sui et al. 2014 (*J. Virology*, 88) "Effects of human anti-spike protein RBD antibodies on SARS CoV neutralization escape and fitness"

Zhang et al. 2016 (*Cell. Mol Immunol* 13) "ID of an ideal adjuvant for RBD-based subunit vaccines against MERS CoV"

I may just go with these... unless you have any suggestion.

**David A. Lindsay. Ph.D. (contractor)**  
Director, Vaccine Clinical Materials Program

**Frederick National Laboratory for Cancer Research**



Leidos Biomedical Research, Inc.  
7116 Geoffrey Way  
Frederick, Maryland 21704  
Ph: (b) (6)  
M: (b) (6)  
(b) (6)

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**From:** Lindsay, David (NIH/NCI) [C]  
**Sent:** Monday, April 13, 2020 2:10 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** Journal Club / Coronavirus -- DAVID LINDSAY ask

Hi Barney,

Good Monday afternoon.

We are re-starting journal club this month at VCMP, and I am volunteering to lead a discussion on a paper related to Coronavirus. Do you have one or two papers off the top of your head you might recommend? Ideally papers are <5 years for publication date, but not necessary.

In parallel, I am conducting a literature search.

Thank you,

**David A. Lindsay. Ph.D. (contractor)**  
Director, Vaccine Clinical Materials Program

**Frederick National Laboratory for Cancer Research**  
Leidos Biomedical Research, Inc.  
7116 Geoffrey Way  
Frederick, Maryland 21704  
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(b) (6)

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 17:30:09 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Ruckwardt, Tracy (NIH/VRC) [E]  
**Cc:** Morabito, Kaitlyn (NIH/VRC) [E]; Phung, Emily (NIH/VRC) [F]  
**Subject:** RE: (b) (5) Graphs

Thanks for looking into this.

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Saturday, April 18, 2020 1:27 PM  
**To:** Ruckwardt, Tracy (NIH/VRC) [E] (b) (6) Graham, Barney (NIH/VRC) [E]  
(b) (6)  
**Cc:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >; Phung, Emily (NIH/VRC) [F]  
(b) (6) >  
**Subject:** Re: (b) (5) Graphs

I agree that this is a great idea, Tracy. (b) (5)

(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  
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---

**From:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6) >  
**Date:** Friday, April 17, 2020 at 8:38 PM  
**To:** Barney Graham (b) (6) >, Kizzmekia Corbett <(b) (6)>  
**Cc:** Kaitlyn Morabito (b) (6), "Phung, Emily (NIH/VRC) [F]"

(b) (6)  
**Subject:** Re (b) (5) Graphs

(b) (5)  
(b) (5) so I'm not sure what to make of that.

---

**From:** "Graham, Barney (NIH/VRC) [E]" (b) (6) >  
**Date:** Friday, April 17, 2020 at 6:11 PM  
**To:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)  
**Cc:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6) >, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) "Phung, Emily (NIH/VRC) [F]" (b) (6)  
**Subject:** FW: (b) (5) Graphs

(b) (5)  
(b) (5) Is there a way to check and be sure. This just doesn't seem right.

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Sent:** Friday, April 17, 2020 8:52 AM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >; Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** FW: (b) (5) Graphs

--  
**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:** "Phung, Emily (NIH/VRC) [F]" <(b) (6)>  
**Date:** Tuesday, April 14, 2020 at 12:55 PM  
**To:** Kizzmekia Corbett <(b) (6)>  
**Cc:** "Chang, Lauren (NIH/VRC) [F]" <(b) (6)>, "Abiona, Olubukola (NIH/VRC) [F]" <(b) (6)>  
**Subject:** (b) (5) Graphs

Hi Kizzmekia,

Attached is the PRISM file with the new graphs. The formatted graphs are highlighted in red (also attached below).

These can be accessed in /CoVip Team Sharing/Curated Prisms/Lauren and Emily  
Analyses/20200412\_2019-nCoV mRNA (b) (5)  
pzfx

Please let me know if you want me to change anything!

Thank you,  
Emily

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 20:46:27 +0000  
**To:** (b) (6); Wang, Lingshu (NIH/VRC) [E]  
**Cc:** 이주연 (b) (6)  
**Subject:** RE: letter from KNIH

Thank you for letting us know Hansaem.

Barney

**From:** (b) (6) >  
**Sent:** Wednesday, April 8, 2020 10:33 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >; Wang, Lingshu (NIH/VRC) [E]  
(b) (6)  
**Cc:** "이주연" (b) (6)  
**Subject:** letter from KNIH

Dear Barney and Lingshu

In the last two months, most of the countries are facing and fighting for the COVID-19 outbreak. In particular, the number of new cases in the U.S is increasing rapidly. I understand you are in the very most intense period of works on research about COVID-19 control.

Nevertheless, we would like to draw your attention to (b) (4)

A Korean patent covering the (b) (4) issued sometime in 2017.  
I believe this was possible because (b) (4)

KNIH also wanted to let you know that we were able to develop (b) (4)  
(b) (4) using a different protocol.

Let us know if you have any comments or questions.

Sincerely,

Hansaem

HanSaem Lee

Staff Scientist, Division of Emerging Infectious Diseases & Vector Research

Korea National Institute of Health, Republic of Korea

Phone: (b) (6)

Fax: (b) (6)

Email: (b) (6)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 14:22:58 +0000  
**To:** Spisso, Suzanne (NIH/NIAID) [E]  
**Cc:** Nguyen, Trang (NIH/NIAID) [E]  
**Subject:** RE: CME forms for NIAID Grand Rounds  
**Attachments:** graham-vrc-cv 2020.docx, 2019-2020\_DisclosureForm\_GRAHAM.docx, PESGCEAgreement2019\_GRAHAM.pdf

Hi Sue,

Here are the documents you requested.

Barney

---

**From:** Spisso, Suzanne (NIH/NIAID) [E] (b) (6)>  
**Sent:** Monday, April 13, 2020 7:48 AM  
**To:** Daniel Lucey (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)  
Beigel, John (NIH) [E] (b) (6)>  
**Cc:** Spisso, Suzanne (NIH/NIAID) [E] (b) (6)>; Nguyen, Trang (NIH/NIAID) [E]  
(b) (6)  
**Subject:** CME forms for NIAID Grand Rounds

Drs. Lucey, Graham and Beigel,

Attached are the CME forms for the 5/1/2020 NIAID Grand Rounds. We will need all of the forms listed below returned to us by **Tuesday, 4/21/2020**.

For the speaker title/objective form, we only need one form that will be a combined lecture title and objectives. Please coordinate your title and objectives.

1. Current CV (except Dr. Lucey who has provided a copy already)
2. PESGCE agreement form
3. CME Disclosure form
4. Speakers title/objective form (one total for the entire lecture).

If you have any questions, please do not hesitate to reach out to myself or Trang Nguyen.

Thank you.

Sue

Suzanne Spisso RN, MS  
Nurse Consultant  
Intramural Clinical Management & Operations Branch (ICMOB)

Division of Clinical Research, NIAID, NIH  
10 Center Drive, Rm. 5-5543  
Bethesda, MD 20892

Office: (b) (6) | Mobile: (b) (6) | Fax: 301-480-5560 | Pager: (b) (6) | Email:  
(b) (6)

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 21:37:17 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: [REDACTED] (b) (4)

I agree. I spoke to John after the call and will review with you later.

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Sent:** Monday, April 13, 2020 5:25 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** Re: [REDACTED] (b) (4)

For the record,  
I was unclear on if [REDACTED] (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: [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** Kizzmekia Corbett [REDACTED] (b) (6)>  
**Date:** Monday, April 6, 2020 at 1:56 PM  
**To:** Barney Graham [REDACTED] (b) (6)>  
**Subject:** FW: [REDACTED] (b) (4)

[REDACTED] (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:** Ester Falconer (b) (6)

**Date:** Monday, April 6, 2020 at 1:53 PM

**To:** Kizzmekia Corbett (b) (6) >, Payal Sipahimalani

(b) (6) >

**Subject:** (b) (4)

Hi Kizzmekia,

We're compiling the (b) (4) in an email to reach you and the rest of the teams shortly.

(b) (4)

Thanks kindly,

Ester

--

Ester Falconer, PhD

Head of Research & Development

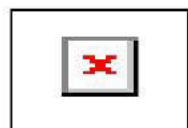
AbCellera Biologics Inc.

2215 Yukon Street

Vancouver BC V5Y 0A1

T: (b) (6)

[abcellera.com](http://abcellera.com)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 17:35:12 +0000  
**To:** Daucher, Marybeth (NIH/NIAID) [E]  
**Subject:** Re: Managing media requests for Dr. Corbett  
**Attachments:** image002.png

Either way. (b) (6)

Sent from my iPhone

On Apr 18, 2020, at 1:34 PM, Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)> wrote:

Do you want me to add you to the call right now?

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Saturday, April 18, 2020 1:32 PM  
**To:** Billet, Courtney (NIH/NIAID) [E] (b) (6)>; Daucher, Marybeth (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6); Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)>  
**Subject:** RE: Managing media requests for Dr. Corbett

Is there a call-in number?

BG

---

**From:** Billet, Courtney (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Saturday, April 18, 2020 12:39 PM  
**To:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6)>; Mascola, John (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E] <(b) (6)>; Koup, Richard (NIH/VRC) [E] <(b) (6)>; Ledgerwood, Julie (NIH/NIAID) [E] (b) (6)>; Harris, Christina (NIH/NIAID) [E] (b) (6)  
**Subject:** RE: Managing media requests for Dr. Corbett

yes

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Saturday, April 18, 2020 12:35 PM  
**To:** Billet, Courtney (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6)>; Mascola, John (NIH/VRC) [E]

(b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6) Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) Harris, Christina (NIH/NIAID) [E] (b) (6)>  
**Subject:** Re: Managing media requests for Dr. Corbett

Thanks-are you available at 1:30? We will call you

---

**From:** "Billet, Courtney (NIH/NIAID) [E]" (b) (6)>  
**Date:** Saturday, April 18, 2020 at 12:13:57 PM  
**To:** "Daucher, Marybeth (NIH/NIAID) [E]" (b) (6)>  
**Cc:** "Harper, Jill (NIH/NIAID) [E]" <(b) (6)>, "Mascola, John (NIH/VRC) [E]" (b) (6)>, "Graham, Barney (NIH/VRC) [E]" (b) (6)>, "Koup, Richard (NIH/VRC) [E]" (b) (6)>, "Ledgerwood, Julie (NIH/NIAID) [E]" (b) (6)>, "Harris, Christina (NIH/NIAID) [E]" <(b) (6)>  
**Subject:** RE: Managing media requests for Dr. Corbett

Happy to talk any time today Marybeth. I'm at (b) (6)

For anyone who hasn't seen the piece: <https://www.foxnews.com/politics/coronavirus-researcher-pandemic-genocide-blacks-nih>  
Twitter commentary as of right now:  
[https://twitter.com/search?q=kizzzyphd&src=typeahead\\_click&f=live](https://twitter.com/search?q=kizzzyphd&src=typeahead_click&f=live)

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6)  
**Sent:** Saturday, April 18, 2020 11:27 AM  
**To:** Billet, Courtney (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6) Mascola, John (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6); Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)>  
**Subject:** Managing media requests for Dr. Corbett

Dear Courtney,

Thank for the heads up on the Fox News piece with Tucker Carlson and Kizzmekia. (b) (5)

(b) (5)  
(b) (5)  
(b) (5)  
(b) (5)

I'm available today for a phone call if needed.

Best,  
MB



**Marybeth Daucher, Ph.D.**

Associate Director of Management and Operations

Vaccine Research Center, NIAID, NIH

40 Convent Drive, Bldg 40, Room 1120

Bethesda, MD 20892

O: (b) (6) C: (b) (6)

(b) (6)

Assistant: Debbie Reilly

(b) (6)

(b) (6)

<image002.png>

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 13 Apr 2020 21:45:12 +0000  
**To:** Erling Rud  
**Subject:** RE: Pre-Fusion modified sequence

We published the structure of the SARS-CoV-2 spike protein, and most groups reference that structure. We have confidence in our antigen because we know the structure and have mapped neutralizing epitopes on analogous structures from other betacoronaviruses.

Barney

---

**From:** Erling Rud <[REDACTED] (b) (6)>  
**Sent:** Monday, April 13, 2020 5:09 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** Re: Pre-Fusion modified sequence

Thanks for your explanation! Have you been able to compare your Spike sequence and atomic level structure optimization with those used in other SARS-CoV-2 vaccine candidates? After spending 25 years in Health Canada, Safety concerns come naturally to my queries.

I wish you the best in this pursuit for all of our sakes!

Cheers

Erling

Get [Outlook for iOS](#)

---

**From:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Sent:** Monday, April 13, 2020 4:53 PM  
**To:** Erling Rud  
**Subject:** RE: Pre-Fusion modified sequence

[External Email]

The main strategy we used was to produce a highly characterized antigen based on the atomic level structure, so the antibodies induced would will have the highest possible functional activity.

We also think that since this is a virus with respiratory epithelium tropism that ADE is less likely because that is something that typically happens with viruses that have primary tropism for macrophages.

Barney

---

**From:** Erling Rud [REDACTED] (b) (6) >  
**Sent:** Thursday, April 2, 2020 9:49 AM  
**To:** Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Subject:** Pre-Fusion modified sequence

Dear Barney,

Best wishes from Canada! I am wondering about how you modified the Pre-Fusion Spike protein sequence for the mRNA vaccine candidate in an attempt to avoid ADE? I have been involved in vaccine R&D from a Biotech/Pharmaceutical, Government and Academic sector (UK, Canada and USA) since 1989 and have been concerned about the 1966 RSV issue (as you have). We had the same concerns about epitope specific regions that may enhance infection in the HIV envelope that concerned us when generating soluble trimers.

I recently retired from Health Canada in September, but continue to teach at Carleton University.

Cheers

Erling

\*\*\*\*\*

Erling Rud, PhD.  
Adjunct Professor and Scientist-In-Residence  
Carleton University  
Department of Health Sciences  
3311 Health Sciences Building  
1125 Colonel By Drive  
Ottawa, Ontario, Canada  
K1S 5B6

Tel: [REDACTED] (b) (6)  
Email: [REDACTED] (b) (6)

ORCID <http://orcid.org/0000-0001-8615-0277>

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 14:54:06 +0000  
**To:** Ruckwardt, Tracy (NIH/VRC) [E]  
**Subject:** RE: (b) (5) Graphs

I think it's (b) (5), (b) (6)

BG

---

**From:** Ruckwardt, Tracy (NIH/VRC) [E] (b) (6)>  
**Sent:** Friday, April 17, 2020 10:45 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: (b) (5) Graphs

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

---

**From:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Date:** Friday, April 17, 2020 at 10:26 AM  
**To:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)  
**Subject:** RE: (b) (5) Graphs

OK. Thanks. (b) (5)  
(b) (5)

I will think of a way to present this so you will have a clear purpose, and can discuss with you ahead of time to define how that would work.

Barney

---

**From:** Ruckwardt, Tracy (NIH/VRC) [E] (b) (6) >  
**Sent:** Friday, April 17, 2020 10:15 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Re: (b) (5) Graphs

Hi Barney,

No, I haven't been asked to be involved in any of this, (b) (5)  
(b) (5)  
(b) (5) don't know anything about what reagents they are using.

Tracy

---

**From:** "Graham, Barney (NIH/VRC) [E]" (b) (6)  
**Date:** Friday, April 17, 2020 at 9:31 AM  
**To:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6) >  
**Subject:** FW: (b) (5) Graphs

FYI. I need to keep you on these emails, (b) (6). Do you know about these reagents?

BG

---

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Friday, April 17, 2020 9:30 AM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >; Morabito, Kaitlyn (NIH/VRC) [E]  
(b) (6) >  
**Subject:** RE: (b) (5) Graphs

(b) (5)

Barney



---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Friday, April 17, 2020 8:52 AM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6) >  
**Subject:** FW: (b) (5) Graphs

--

**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:** "Phung, Emily (NIH/VRC) [F]" (b) (6) >  
**Date:** Tuesday, April 14, 2020 at 12:55 PM  
**To:** Kizzmekia Corbett (b) (6) >  
**Cc:** "Chang, Lauren (NIH/VRC) [F]" (b) (6) >, "Abiona, Olubukola (NIH/VRC) [F]"  
(b) (6) >  
**Subject:** (b) (5) Graphs

Hi Kizzmekia,

Attached is the PRISM file with the new graphs. The formatted graphs are highlighted in red (also attached below).

These can be accessed in /CoVip Team Sharing/Curated Prisms/Lauren and Emily  
Analyses/20200412\_2019-nCoV mRNA (b) (5)  
(b) (5)

Please let me know if you want me to change anything!

Thank you,

Emily

(b) (5)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 18:10:21 +0000  
**To:** Gemma Alderton  
**Cc:** awynn@aaas.org  
**Subject:** RE: Preparing a Perspective for Science ID abb8923  
**Attachments:** Risk-benefit for COVID-19 Science 2020 \_final with references.pdf

Here is the referenced perspective. I wasn't able to switch it with the unreferenced version on the web site. Do you have to provide a permission for that?

Best wishes,

Barney

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

From: Gemma Alderton <galderton@science-int.co.uk>  
Sent: Friday, April 17, 2020 8:14 AM  
To: Graham, Barney (NIH/VRC) [E] (b) (6) >  
Cc: awynn@aaas.org  
Subject: RE: Preparing a Perspective for Science ID abb8923

Great, thank you.

Best wishes,  
Gemma

Gemma K. Alderton, PhD  
Senior Editor, Science

AAAS Science International, Inc.  
E: galderton@science-int.co.uk  
[www.sciencemag.org](http://www.sciencemag.org)  
[cts.sciencemag.org](http://cts.sciencemag.org)

Follow me on Twitter: @AldertonBiol

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

From: Graham, Barney (NIH/VRC) [E] (b) (6)  
Sent: 17 April 2020 12:11  
To: Gemma Alderton <galderton@science-int.co.uk>  
Cc: awynn@aaas.org  
Subject: RE: Preparing a Perspective for Science ID abb8923

OK. Glad to add references.

Barney

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

From: Gemma Alderton <galderton@science-int.co.uk>

Sent: Friday, April 17, 2020 2:18 AM  
To: Graham, Barney (NIH/VRC) [E] (b) (6) >  
Cc: awynn@aaas.org  
Subject: RE: Preparing a Perspective for Science ID abb8923

Dear Barney,

Many thanks for your Perspective - this is great. I'm afraid that I do need you to add references please, a maximum of 15. I know this means picking references out of many, but I cannot proceed with your submission without them. Did you want to add a figure? You do not have to, but it might be helpful to explain some of the concepts in your piece. If you could send me a referenced version, I will get this to expedited review.

Thanks and best wishes,  
Gemma

Gemma K. Alderton, PhD  
Senior Editor, Science

AAAS Science International, Inc.  
E: [galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)  
[www.sciencemag.org](http://www.sciencemag.org)  
[cts.sciencemag.org](http://cts.sciencemag.org)

Follow me on Twitter: @AldertonBiol

-----Original Message-----  
From: Graham, Barney (NIH/VRC) [E] (b) (6) >  
Sent: 16 April 2020 22:52  
To: Gemma Alderton <[galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)>  
Cc: awynn@aaas.org  
Subject: RE: Preparing a Perspective for Science ID abb8923

Dear Dr. Alderton,

I have attached the perspective here and I will also go into the web site and submit later tonight.

This short perspective could have had dozens of references, but I have added none. Let me know if you would like me to add references, but it would be hard to add one without all the rest.

Thank you for the opportunity to publish by perspectives.

Best wishes and take care,

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

From: Gemma Alderton <[galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)>

Sent: Tuesday, April 14, 2020 9:25 AM

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

Cc: [awynn@aaas.org](mailto:awynn@aaas.org)

Subject: RE: Preparing a Perspective for Science ID abb8923

Great, thank you!

Gemma K. Alderton, PhD  
Senior Editor, Science

AAAS Science International, Inc.  
E: [galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)  
[www.sciencemag.org](http://www.sciencemag.org)  
[cts.sciencemag.org](http://cts.sciencemag.org)

Follow me on Twitter: @AldertonBiol

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

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

Sent: 14 April 2020 14:23

To: Gemma Alderton <[galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)>

Cc: [awynn@aaas.org](mailto:awynn@aaas.org)

Subject: Re: Preparing a Perspective for Science ID abb8923

I should be able to send tomorrow.

Barney

Sent from my iPhone

> On Apr 14, 2020, at 7:42 AM, Gemma Alderton <[galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)> wrote:

>

> Dear Barney,

>

> I hope all is well with you. I just want to check that you are going to be able to submit your Perspective tomorrow? Please let me know how you are getting on and if you need more time.

>

> Best wishes,

> Gemma

>

>

> Gemma K. Alderton, PhD  
> Senior Editor, Science  
>  
> AAAS Science International, Inc.  
> E: [galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)  
> [www.sciencemag.org](http://www.sciencemag.org)  
> [cts.sciencemag.org](http://cts.sciencemag.org)  
>  
> Follow me on Twitter: @AldertonBiol  
>  
> -----Original Message-----  
> From: Anita Wynn <[science\\_editors@aaas.org](mailto:science_editors@aaas.org)>  
> Sent: 25 March 2020 12:26  
> To: (b) (6)  
> Cc: [awynn@aaas.org](mailto:awynn@aaas.org); Gemma Alderton <[galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)>  
> Subject: Preparing a Perspective for Science ID abb8923  
>  
> 25-Mar-2020  
>  
> Dear Dr. Graham,  
>  
> Manuscript number: abb8923  
>  
> Thank you for agreeing to write a Perspective for Science on SARS-CoV-2 vaccine development.  
>  
> Your paper is due at Science by 15-Apr-2020. If for some reason you find that you will not be able to meet this deadline, please let us know as soon as possible.  
>  
> When you are ready to submit your paper, please log in to your account at our Manuscript Submission and Information Portal <https://cts.sciencemag.org>. This solicited manuscript will appear on your task list. You can access the manuscript record by clicking on the Action button to the right of the paper in your task list. Navigate between tabs to complete your manuscript record and upload documents.  
>  
> I look forward to receiving your manuscript. Please let me know if I can be of assistance.  
>  
> Sincerely,  
>  
> Gemma Alderton, Ph.D.  
> Senior Editor  
> [galderton@science-int.co.uk](mailto:galderton@science-int.co.uk)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 17:20:29 +0000  
**To:** Andrea Carfi; Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Darin Edwards  
**Subject:** RE: updates request for IND  
**Attachments:** (b) (4)

Hi Andrea,

These are now in my hands. I'm trying to find time to review between meetings. Will get them out before 3:30. (b) (4) are attached here again as an Excel spreadsheet

BG

---

**From:** Andrea Carfi (b) (6)  
**Sent:** Friday, April 17, 2020 1:09 PM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Darin Edwards (b) (6)  
**Subject:** RE: updates request for IND

Hi Kizzy,  
I know you are working hard on this, but I was wondering if we were going to be able to send the data below today. We are working on finalizing the IND submission and it would be helpful to know what to expect.  
Thanks!  
Andrea

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Wednesday, April 15, 2020 2:13 PM  
**To:** Andrea Carfi <(b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Darin Edwards (b) (6)  
**Subject:** Re: updates request for IND

Good afternoon Andrea, We are going to send you all files by the C.O.B. Everyone is working on these data analyses.

--

**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

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Laboratory: (b) (6)

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Fax: (301) 480-2771

---

**From:** Andrea Carfi (b) (6) >

**Date:** Wednesday, April 15, 2020 at 1:06 PM

**To:** Barney Graham (b) (6) >

**Cc:** Kizzmekia Corbett (b) (6) >, Darin Edwards

(b) (6)

**Subject:** updates request for IND

Hi Barney and Kizzy,

We are trying to collect all the missing bits of information for our IND submission (ie by Friday for submission early next week). When you have the chance can you give us an update on:

(b) (4)

Would also be possible to have the prism files for the mice studies?

Thanks,  
Andrea

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 00:40:08 +0000  
**To:** Daniel Lucey  
**Cc:** Beigel, John (NIH) [E]  
**Subject:** Re: 2nd objective added on CME forms for May 1st NIAID Grand Rounds

Thanks Dan. Looking forward to seeing you again. It's been a while.

BG

Sent from my iPhone

On Apr 13, 2020, at 7:41 PM, Daniel Lucey <(b) (6)> wrote:

Hi Barney and John,

Looking forward to joining you on May 1st for NIAID Grand rounds. I will speak for only 12-14 minutes.

Here is the title and objectives form. I agree with Barney's title for our presentation, and added my objective.

Over to you John!

Dan

On Mon, Apr 13, 2020 at 2:55 PM Graham, Barney (NIH/VRC) [E] (b) (6) wrote:

Hi Dan and John,

I started the form requested with our names (please check), a proposed title (feel free to change), and one objective for my part. Last one to finish can send back to Sue Spisso.

Take care,

Barney

---

**From:** Spisso, Suzanne (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Monday, April 13, 2020 7:48 AM  
**To:** Daniel Lucey <(b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6); Beigel, John (NIH) [E] (b) (6)>  
**Cc:** Spisso, Suzanne (NIH/NIAID) [E] (b) (6); Nguyen, Trang (NIH/NIAID)  
[E] (b) (6)>  
**Subject:** CME forms for NIAID Grand Rounds

Drs. Lucey, Graham and Beigel,

Attached are the CME forms for the 5/1/2020 NIAID Grand Rounds. We will need all of the forms listed below returned to us by **Tuesday, 4/21/2020**.

For the speaker title/objective form, we only need one form that will be a combined lecture title and objectives. Please coordinate your title and objectives.

1. Current CV (except Dr. Lucey who has provided a copy already)
2. PESGCE agreement form
3. CME Disclosure form
4. Speakers title/objective form (one total for the entire lecture).

If you have any questions, please do not hesitate to reach out to myself or Trang Nguyen.

Thank you.

Suc

Suzanne Spisso RN, MS

Nurse Consultant

Intramural Clinical Management & Operations Branch (ICMOB)

Division of Clinical Research, NIAID, NIH

10 Center Drive, Rm. 5-5543

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Office: (b) (6) I Mobile: (b) (6) I Fax: 301-480-5560 I Pager: (b) (6) I Email:  
(b) (6)

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<DL 2019-2020 SpeakerObjectivesform \_ COVID-19.docx>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 15:10:48 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Fabozzi, Giulia (NIH/VRC) [C]  
**Subject:** Re: Covid19 interest group

The COVID interest group is different from the Virology interest group. Should be two different listservs.

Barney

Sent from my iPhone

> On Apr 15, 2020, at 11:07 AM, Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) wrote:  
>  
> If Dr. Graham was invited, no need for me. I see Hilary Marston is giving one today too. So maybe high level is best.  
>  
> --  
> 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 4/15/20, 11:07 AM, "Graham, Barney (NIH/VRC) [E]" <(b) (6)> wrote:  
>  
> Should be fine. The COVID interest group just asked me to give a talk on May 1st. I'm not sure what the overlap would be with VIG.  
>  
> Barney  
>  
>  
>  
>  
> Sent from my iPhone  
>  
>> On Apr 15, 2020, at 10:54 AM, Fabozzi, Giulia (NIH/VRC) [C] (b) (6) wrote:  
>>  
>>  
>> Hi Barney,



>>

>> Hope you are doing well as we wish you from our heart.

>>

>> What do you think if we propose a lecture (sponsored by Virology Interest Group at NIH - so it's ground based) for Kizzi?

>>

>> I wrote to Kizzi and she suggested to touch base with you.

>>

>> Giulia

>

>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 18:26:23 +0000  
**To:** Daucher, Marybeth (NIH/NIAID) [E]; Mascola, John (NIH/VRC) [E]  
**Cc:** Ledgerwood, Julie (NIH/NIAID) [E]; Billet, Courtney (NIH/NIAID) [E]; Harper, Jill (NIH/NIAID) [E]; Koup, Richard (NIH/VRC) [E]; Harris, Christina (NIH/NIAID) [E]  
**Subject:** RE: Managing media requests for Dr. Corbett

5 or 5:30. We have a call at 6.

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6) >  
**Sent:** Saturday, April 18, 2020 2:21 PM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6) >; Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Ledgerwood, Julie (NIH/NIAID) [E] (b) (6) >; Billet, Courtney (NIH/NIAID) [E] (b) (6); Harper, Jill (NIH/NIAID) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6) >; Harris, Christina (NIH/NIAID) [E] (b) (6) >  
**Subject:** RE: Managing media requests for Dr. Corbett

Fine with me. What time?

---

**From:** Mascola, John (NIH/VRC) [E] <(b) (6)>  
**Sent:** Saturday, April 18, 2020 2:20 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Billet, Courtney (NIH/NIAID) [E] (b) (6) >; Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>; Harper, Jill (NIH/NIAID) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)  
**Subject:** Re: Managing media requests for Dr. Corbett

Agree that a call is preferable to multiple emails

Sent from my iPhone

On Apr 18, 2020, at 14:02, Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:

After the 6pm Lilly call or before?

BG

Sent from my iPhone

On Apr 18, 2020, at 1:53 PM, Ledgerwood, Julie (NIH/NIAID) [E] <(b) (6)> wrote:

I suggest we have an "end of day zoom" call this afternoon to check in.

Sent from my iPad

On Apr 18, 2020, at 1:32 PM, Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:

Is there a call-in number?

BG

---

**From:** Billet, Courtney (NIH/NIAID) [E] (b) (6)>  
**Sent:** Saturday, April 18, 2020 12:39 PM  
**To:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6); Ledgerwood, Julie (NIH/NIAID) [E] (b) (6); Harris, Christina (NIH/NIAID) [E] (b) (6)>  
**Subject:** RE: Managing media requests for Dr. Corbett

yes

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6)  
**Sent:** Saturday, April 18, 2020 12:35 PM  
**To:** Billet, Courtney (NIH/NIAID) [E] (b) (6)  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6)>; Ledgerwood, Julie (NIH/NIAID) [E] <(b) (6)>; Harris, Christina (NIH/NIAID) [E] (b) (6)  
**Subject:** Re: Managing media requests for Dr. Corbett

Thanks-are you available at 1:30? We will call you

---

**From:** "Billet, Courtney (NIH/NIAID) [E]" (b) (6)  
**Date:** Saturday, April 18, 2020 at 12:13:57 PM  
**To:** "Daucher, Marybeth (NIH/NIAID) [E]" (b) (6)>  
**Cc:** "Harper, Jill (NIH/NIAID) [E]" (b) (6), "Mascola, John (NIH/VRC) [E]" (b) (6)>, "Graham, Barney (NIH/VRC) [E]" (b) (6), "Koup, Richard (NIH/VRC) [E]" (b) (6), "Ledgerwood, Julie (NIH/NIAID) [E]" (b) (6)>, "Harris, Christina (NIH/NIAID) [E]" (b) (6)>  
**Subject:** RE: Managing media requests for Dr. Corbett

Happy to talk any time today Marybeth. I'm at (b) (6).

For anyone who hasn't seen the piece: <https://www.foxnews.com/politics/coronavirus-researcher-pandemic-genocide-blacks-nih>

Twitter commentary as of right now:

[https://twitter.com/search?q=kizzlyphd&src=typeahead\\_click&f=live](https://twitter.com/search?q=kizzlyphd&src=typeahead_click&f=live)

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] (b) (6) >  
**Sent:** Saturday, April 18, 2020 11:27 AM  
**To:** Billet, Courtney (NIH/NIAID) [E] (b) (6)  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Mascola, John (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Koup, Richard (NIH/VRC) [E] (b) (6); Ledgerwood, Julie (NIH/NIAID) [E] <(b) (6)>; Harris, Christina (NIH/NIAID) [E] (b) (6) >  
**Subject:** Managing media requests for Dr. Corbett

Dear Courtney,

Thank for the heads up on the Fox News piece with Tucker Carlson and Kizzmekia. (b) (5)

I'm available today for a phone call if needed.

Best,

MB

**Marybeth Daucher, Ph.D.**

Associate Director of Management and Operations

Vaccine Research Center, NIAID, NIH

40 Convent Drive, Bldg 40, Room 1120

Bethesda, MD 20892

O: (b) (6) C: (b) (6)

(b) (6)

Assistant: Debbie Reilly

(b) (6)

(b) (6)

<image001.png>

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 17:37:16 +0000  
**To:** Pierson, Theodore (NIH/NIAID) [E]  
**Subject:** Re: CHM Form piece: SARS-CoV-2 vaccine development

Hi Ted. I might be able to look at this tomorrow. It's unbelievable how busy a person can be without leaving their house.

Will try to call later. I need a break from CoV.

BG

Sent from my iPhone

On Apr 14, 2020, at 5:09 PM, Pierson, Theodore (NIH/NIAID) [E] (b) (6) wrote:

Hi Barney,

Hope this note finds you well during busy times. As mentioned when we spoke last, Mike Diamond and I were asked to comment on the state of SARS-CoV-2 vaccines. Attached is a complete draft of a short "Forum" piece composed for Cell Host and Microbe. We wrote about the unusual challenges of vaccine development during a pandemic and the important role information about prototype pathogens have accelerating progress under these circumstances.

It is due at the end of the week and we will edit and polish a bit more (working on the figure now). Before submission, I wanted to share to give you the opportunity to comment (if time permits). It is certainly not my intention for any of my words or ideas to make your job or Tony's more difficult- it is remarkable how complicated this science has become by other issues.

Three options:

1. If too busy- absolutely no worries!
2. Take a quick peak to identify any red flags for Mike and I to think about.
3. Make some edits- we are happy to include you as an author here.

Cheers,

T

<2020.Diamond.CHM.COVID.v10.comments.docx>



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 00:44:56 +0000  
**To:** Mascola, John (NIH/VRC) [E]  
**Cc:** Bok, Karin (NIH/VRC) [E]; Ledgerwood, Julie (NIH/NIAID) [E]; Koup, Richard (NIH/VRC) [E]  
**Subject:** Re: NIAID request to discuss [REDACTED] (b) (4)

I was on the phone with Mike Levine and Mary Marovich and a few other HPTN people today to talk in general about what was evolving with mAbs and vaccines and some of the major issues that the networks should be aware of.

Barney

Sent from my iPhone

On Apr 13, 2020, at 8:18 PM, Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6) > wrote:

Just FYI. Mary starting to see how each [REDACTED] (b) (4)

---

**From:** Marovich, Mary (NIH/NIAID) [E] <[REDACTED] (b) (6)>  
**Sent:** Monday, April 13, 2020 7:48 PM  
**To:** George Yancopoulos [REDACTED] (b) (6) >  
**Cc:** Lampley, Rebecca (NIH/NIAID) [C] <[REDACTED] (b) (6)>; Embry, Alan (NIH/NIAID) [E] <[REDACTED] (b) (6)>; Erbelding, Emily (NIH/NIAID) [E] [REDACTED] (b) (6); Leonard Schleifer [REDACTED] (b) (6)>; Tong, Tina (NIH/NIAID) [E] <[REDACTED] (b) (6)>; Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6); Cohen, Myron [REDACTED] (b) (6)>; Leah Lipsich [REDACTED] (b) (6)>; Christina Wells [REDACTED] (b) (6)>; Christos Kyrtasous [REDACTED] (b) (6); David Weinreich [REDACTED] (b) (6); Sumathi Sivapalasingam [REDACTED] (b) (6); Neil Stahl [REDACTED] (b) (6) >  
**Subject:** RE: NIAID request to discuss [REDACTED] (b) (4)

Dear George,  
Thank you for your thoughtful response - and appreciate this information upfront.  
We will work with Leah and Christina to get this call scheduled asap.  
Looking forward to discuss acceleration efforts.  
Best,  
Mary

---

**From:** George Yancopoulos (b) (6)  
**Sent:** Monday, April 13, 2020 5:49 PM  
**To:** Marovich, Mary (NIH/NIAID) [E] (b) (6)>  
**Cc:** Lampley, Rebecca (NIH/NIAID) [C] (b) (6)>; Embry, Alan (NIH/NIAID) [E] (b) (6)>; Erbelding, Emily (NIH/NIAID) [E] (b) (6); Leonard Schleifer (b) (6); Tong, Tina (NIH/NIAID) [E] (b) (6)>; Mascola, John (NIH/VRC) [E] (b) (6)>; Cohen, Myron (b) (6); Leah Lipsich (b) (6)>; Christina Wells (b) (6)>; Christos Kyratsous (b) (6)>; David Weinreich (b) (6); Sumathi Sivapalasingam (b) (6)>; Neil Stahl (b) (6)>  
**Subject:** Re: NIAID request to discuss (b) (4)

Dear Mary:

(b) (4)

Please work with Leah Lipsich and my assistant Christina Wells to schedule a call as soon as possible – I offer anytime after 3pm EST tomorrow, Wednesday or Thursday – I hope one of those time slots works for you.

Best  
George

---

**From:** "Marovich, Mary (NIH/NIAID) [E]" (b) (6)  
**Date:** Sunday, April 12, 2020 at 10:25 PM  
**To:** George Yancopoulos (b) (6) >  
**Cc:** "Lampley, Rebecca (NIH/NIAID) [C]" (b) (6) >, "Embry, Alan (NIH/NIAID) [E]" (b) (6) >, "Erbelding, Emily (NIH/NIAID) [E]" (b) (6) >, Leonard Schleifer (b) (6) >, "Tong, Tina (NIH/NIAID) [E]" (b) (6) >, "Mascola, John (NIH/VRC) [E]" (b) (6) >, "Cohen, Myron" (b) (6) >  
**Subject:** <External> (b) (4)

**EXTERNAL MESSAGE**

---

Dear Dr. Yancopoulos,

Reaching out to request a call to discuss NIAID's ability to (b) (4)  
(b) (4)

Tina Tong (POC) cc'd above can reach out with a ZOOM link. If this works for you, please provide a point of contact so we can find a time at your earliest convenience.

Thank you,

Mary

Mary A Marovich, MD, FACP, DTMH  
Director, Vaccine Research Program  
Division of AIDS/NIAID/NIH  
5601 Fishers Lane, Rm 9D21  
Bethesda, MD 20852  
Tel: (b) (6)  
\*Mobile: (b) (6) (preferred)  
Email: (b) (6)

\*\*\*\*\*

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 18:28:44 +0000  
**To:** Marston, Hilary (NIH/NIAID) [E]; Bok, Karin (NIH/VRC) [E]; Mascola, John (NIH/VRC) [E]; Ledgerwood, Julie (NIH/NIAID) [E]  
**Subject:** Benefit:risk commentary  
**Attachments:** Risk-benefit for COVID-19 Science 2020 \_final with references.pdf

Now with references. The rationale for rapidly advancing.

BG

\*\*\*\*\*

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  
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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:** Fri, 17 Apr 2020 17:41:48 +0000  
**To:** Hiatt, Nissa (NIH/VRC) [C]  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E]; Prince, Tasheema (NIH/VRC) [C]  
**Subject:** Re: Interview request  
**Attachments:** image001.png, image002.jpg

(b) (5)

BG

Sent from my iPhone

On Apr 17, 2020, at 12:56 PM, Hiatt, Nissa (NIH/VRC) [C] <(b) (6)> wrote:

Hi Barney and Kizzmekia,

If you are inclined to reply, I recommend working with Jen and her team to decide if and how to respond to Peter's question. He already published his piece from your recent interview.

Please let us know if we can provide any support or facilitate with the NSWB group.

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)

<image001.png>

**From:** Loftus, Peter <peter.loftus@wsj.com>

**Sent:** Friday, April 17, 2020 12:48 PM

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

**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C]

(b) (6)

**Subject:** Re: Interview request

Hello all, Thanks for the time you've taken to answer all my questions.

I was wondering, for planning purposes, what will be the way in which the preliminary results of the first study of the NIAID/Moderna vaccine will be released? Any sense of timing for that, now that some of the first enrollees have gotten their 2nd doses?

Pete

On Thu, Apr 2, 2020 at 7:44 AM Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) wrote:  
Testing on mice started on Feb. 4<sup>th</sup>, meaning that's when we vaccinated the first mouse. So we got readings on the initial immune responses on the 18<sup>TH</sup>. (not 25<sup>th</sup>).

--

**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

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Fax: (301) 480-2771

---

**From:** Barney Graham <(b) (6)>

**Date:** Thursday, April 2, 2020 at 7:36 AM

**To:** "Loftus, Peter" <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>

**Cc:** Kizzmekia Corbett <(b) (6)>, "Hiatt, Nissa (NIH/VRC) [C]"

(b) (6)

**Subject:** Re: Interview request

Hi Peter,

The 12-18 month timeline is still our best hope.

I'm not sure I understand the second comment about Feb 25, but maybe Dr. Corbett does.

Take care,



Barney

Sent from my iPhone

On Apr 1, 2020, at 5:06 PM, Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)> wrote:

Thank you both for answers to the follow up questions. I think we are close to wrapping up our story.

I just wanted to triple-check that the best-case scenario -- assuming all the things you cite here go smoothly -- is 12-18 months for the vaccine to become available? Meaning, early next year at best?

And just to triple check on the mouse testing - you said results Feb. 25, and do you remember when that testing started?

On Sat, Mar 28, 2020 at 6:06 PM Graham, Barney (NIH/VRC) [E] (b) (6) wrote:  
Hi Peter,

Sorry for not getting back to this. I gave a few answers below.

Can you give me a sense of the main factors that could lead to things taking longer?

RESPONSE: 1) There has never been a licensed human coronavirus vaccine before, 2) there has never been a licensed mRNA vaccine before, 3) most vaccine development efforts are measured in decades, not in months, so this would be unprecedented timeline, 4) The vaccine may not work as well as we want and may take some revision, 5) the animal models to test the vaccine may not work as well as we want and will take time to improve, 6) if too many people become infected who are critical for the research, manufacturing, and clinical trial work there could be delays. This could include delays in shipping because flights are canceled or in any number of services we usually take for granted

Or, a related question: how challenging is it to develop a vaccine against an emerging infectious disease, and why might it take some time despite the urgent and quick response so far?

RESPONSE: Making a vaccine in response to a new emerging disease in time to influence the immediate course of the epidemic has never been done, but our hope is that new technologies and pre-existing knowledge will make this possible.

Barney

**From:** Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>  
**Sent:** Wednesday, March 25, 2020 4:42 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: Interview request

Thanks so much to both of you for taking time to speak on a Saturday, and amid all that you are working on.

I have follow-up questions that I am hoping you can answer:

-Dr. Corbett, you mentioned that around Jan. 1, you set up alerts on your phone for news about the virus in Wuhan. Can you elaborate on why - as in, what was it about the situation at that time that caught your interest (or concerned you) and motivated you to set up alerts? And to clarify, did you mean setting up something like a Google news alert, or is there some sort of alert system for NIH or scientists generally?

-Dr. Graham, at the end of our call you mentioned that a 12-18 month time frame is a hope-for outcome and assumes many things would have to go smoothly.

Can you give me a sense of the main factors that could lead to things taking longer? Or, a related question: how challenging is it to develop a vaccine against an emerging infectious disease, and why might it take some time despite the urgent and quick response so far?

Thanks!

On Sat, Mar 21, 2020 at 2:33 PM Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:  
(b) (6)

Barney

**From:** Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>  
**Sent:** Saturday, March 21, 2020 2:32 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: Interview request

Hi what number should I call?

On Sat, Mar 21, 2020 at 11:34 AM Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:  
Ok. Let's try for 2:30. If you call me I will add Dr. Corbett.

Barney

Sent from my iPhone

On Mar 21, 2020, at 11:19 AM, Peter Loftus <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)> wrote:

Thanks, I'm free from 12:30 to 1:30 and then after about 2:15.

Peter Loftus  
The Wall Street Journal  
[Peter.Loftus@wsj.com](mailto:Peter.Loftus@wsj.com)

(b) (6)

On Mar 21, 2020, at 11:10 AM, Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:

Would it be possible to schedule this today? Monday will be difficult. If you could propose a time this afternoon we will try to be available.

Barney Graham

\*\*\*\*\*

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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Sent from my iPhone

--

Peter Loftus  
REPORTER

**Error! Filename not specified.**

M: (b) (6) O: +1 215 881 7127  
E: [peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)  
Twitter: @Lofus

**Error! Filename not specified.**

--

Peter Loftus  
REPORTER

**Error! Filename not specified.**

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Twitter: @Lofus

**Error! Filename not specified.**

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Peter Loftus  
REPORTER

**Error! Filename not specified.**

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Twitter: @Lofus

**Error! Filename not specified.**

--

Peter Loftus  
REPORTER

[<image002.jpg>](#)

M: (b) (6) O: +1 215 881 7127  
E: [peter.loftus@wsi.com](mailto:peter.loftus@wsi.com)  
Twitter: @Lofus

[<image002.jpg>](#)



NIH

National Institutes of Health  
Allergy and  
Infectious Diseases

NIH-000187





**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 10:58:04 +0000  
**To:** Carlton, Kevin (NIH/VRC) [E]  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** Re: Do you think we should have a VRC mAb Email Group?

This looks about right. My only suggestion is to consider adding Nicole Doria-Rose. John depends on her to do quality reviews on the data coming from the 4th (and 5th) floor. Gabriela should also Have a choice on this.

Barney

Sent from my iPhone

On Apr 13, 2020, at 8:55 PM, Carlton, Kevin (NIH/VRC) [E] <(b) (6)> wrote:

I can put the ticket in if you give me feedback on the list of email recipients below. This is based off of the AbCellera invitees (minus John who we can add when needed and Judy Stein).

Email Owner Gabriela Alvarado

Recipients;  
Barney Graham  
Kizzmekia Corbett  
Kaitlyn Morabito  
Lingshu Wang  
Olubukola Abiona  
Wing-Pui Kong  
Karin Bok  
Kevin Carlton

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Monday, April 13, 2020 8:30 PM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Cc:** Carlton, Kevin (NIH/VRC) [E] (b) (6)  
**Subject:** Re: Do you think we should have a VRC mAb Email Group?

Yes. I mentioned that a few days ago that we need some organizational strategies for mAbs similar to vaccines but different. I want Gabby to be more involved and proactive on that.

BG

Sent from my iPhone

On Apr 13, 2020, at 8:26 PM, Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6) wrote:

--

**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: [REDACTED] (b) (6)

Personal: [REDACTED] (b) (6)

Fax: (301) 480-2771

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 17:22:08 +0000  
**To:** Hiatt, Nissa (NIH/VRC) [C]  
**Cc:** Routh, Jennifer (NIH/NIAID) [E]; Oplinger, Anne (NIH/NIAID) [E]  
**Subject:** Fwd: Sharing Best Practices for COVID-19 Crisis

Any advice on this yet?

BG

Sent from my iPhone

Begin forwarded message:

**From:** Roman Giverts <[rgiverts@vumedi.com](mailto:rgiverts@vumedi.com)>  
**Date:** April 15, 2020 at 12:25:26 PM EDT  
**To:** "Graham, Barney (NIH/VRC) [E]" (b) (6)  
**Subject:** Re: Sharing Best Practices for COVID-19 Crisis

Hi Dr. Graham,

I am following up, as I'm sure you're getting inundated during this time. VuMedi is seeing an exponential growth in content requests related to COVID-19 over the last few days. Dr. Lin from Stanford did a video on the [Basic Biology of COVID-19](#) that generated 50K views in a few days. We're trying to develop additional helpful content for our physicians across the world. Would you or your colleagues be interested in recording a 10 minute video?

Kind regards,

Roman Giverts  
CEO & Founder

On 09 Apr 2020, at 17:32, Roman Giverts <[rgiverts@vumedi.com](mailto:rgiverts@vumedi.com)> wrote:  
Dear Dr. Graham,

My name is Roman Giverts. I'm the founder of VuMedi, a website that is like YouTube for Physicians with over 300,000 registered doctors.

We know there's an incredible amount of change and uncertainty happening at every hospital around the country. At VuMedi, we've had a number of requests from our physician users asking for information on everything from new hospital protocols and best practices to the actual treatment of COVID-19 patients. We're wondering if you would be open to recording a short video over a webconference regarding the understanding of COVID-19 virus and the basic

science for developing a vaccine? It would only take 10-15 minutes.

Kind regards,

Roman Giverts  
CEO & Founder

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 18:30:56 +0000  
**To:** Stein, Judy (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]  
**Cc:** Hiatt, Nissa (NIH/VRC) [C]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Help with FOIA Request

OK. Thanks because [REDACTED] (b) (5).

BG

---

**From:** Stein, Judy (NIH/VRC) [C] [REDACTED] (b) (6)>  
**Sent:** Saturday, April 18, 2020 11:25 AM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E]  
[REDACTED] (b) (6)>  
**Cc:** Hiatt, Nissa (NIH/VRC) [C] [REDACTED] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E]  
[REDACTED] (b) (6)>  
**Subject:** RE: Help with FOIA Request

Hi Barney,

[REDACTED] (b) (5)

The FOIA request received by Nissa was for the names of all people who worked on the mRNA SARS CoV 2, and we confirmed with both TTIPD and the FOIA office that the VRC should provide this information. This list is not restricted to inventorship.

I hope this helps.

Thanks

Judy

---

**From:** Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Sent:** Friday, April 17, 2020 6:34 PM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Cc:** Hiatt, Nissa (NIH/VRC) [C] <[REDACTED] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E]  
[REDACTED] (b) (6)>; Stein, Judy (NIH/VRC) [C] <[REDACTED] (b) (6)>  
**Subject:** Re: Help with FOIA Request

[REDACTED] (b) (5)

Nissa, could you clarify for Judy exactly what the FOIA refers to? We have filed several patents recently.

Barney

Sent from my iPhone

On Apr 17, 2020, at 3:32 PM, Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) wrote:

Hi Nissa,

(b) (5)

Thanks,  
Kaitlyn

---

**From:** "Hiatt, Nissa (NIH/VRC) [C]" (b) (6)

**Date:** Friday, April 17, 2020 at 3:18 PM

**To:** Kizzmekia Corbett (b) (6) >, Kaitlyn Morabito  
(b) (6) >

**Subject:** RE: Help with FOIA Request

Hi Kaitlyn and Kizzmekia,

This is the same request as before. Could one of you confirm that the names are correct for VRC staff to fulfill the request?

John Mascola  
Barney Graham  
Kizzmekia Corbett  
Kaitlyn Morabito  
Cynthia Ziwawo  
Geoffrey Hutchinson  
Olubukola Abiona

Thank you for your help,  
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)

<image001.png>

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**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>  
**Sent:** Friday, April 17, 2020 12:08 PM  
**To:** Hiatt, Nissa (NIH/VRC) [C] (b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Help with FOIA Request

Is this the same request as before??? Because Kevin replied and you have names.

--

**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, April 17, 2020 at 11:57 AM  
**To:** Kaitlyn Morabito (b) (6)>, Kizzmekia Corbett (b) (6)  
**Subject:** Help with FOIA Request

Hi Kaitlyn and Kizzmekia,

The VRC needs to ID the VRC staff members who worked on the development of mRNA-1273 to fulfill a FOIA request. Could you send me a list of the appropriate names?

Thanks in advance for your help!  
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:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 9 Jan 2020 14:20:55 +0000  
**To:** Skip Virgin  
**Cc:** Mascola, John (NIH/VRC) [E]; George Scangos; Bolyn Hubby  
**Subject:** Re: [EXTERNAL] RE: Wuhan

Hi Skip.

We are waiting for sequence data and are developing a plan for how to respond. This time around we know a lot more about what to do for coronaviruses.

BG

Sent from my iPhone

On Jan 8, 2020, at 9:48 PM, Skip Virgin (b) (6) > wrote:

John  
Saw the reports that it is a coronavirus but no 'official' word or data  
Skip

Herbert W. 'Skip' Virgin M.D., Ph.D.  
Executive Vice President, Research  
Chief Scientific Officer  
Vir Biotechnology  
499 Illinois Avenue  
San Francisco CA 94158  
he/him/his

---

**From:** Mascola, John (NIH/VRC) [E] <(b) (6)>  
**Sent:** Sunday, January 5, 2020 1:17 PM  
**To:** Skip Virgin (b) (6); George Scangos (b) (6); Bolyn Hubby (b) (6) >  
**Cc:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** [EXTERNAL] RE: Wuhan

Hi Skip,

Appreciate the note. Barney and I are tracking and when we know more about etiological agent – we'll think through options – and keep your generous offer in mind.

(b) (4)

Best,  
John

---

**From:** Skip Virgin (b) (6).>  
**Sent:** Sunday, January 5, 2020 10:01 AM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6).>; George Scangos (b) (6).>; Bolyn  
Hubby (b) (6)  
**Subject:** Wuhan

John,  
As you know (b) (4).  
If we can be of any help with Wuhan we are at your disposal.  
Skip

Herbert W. 'Skip' Virgin M.D., Ph.D.  
Executive Vice President, Research  
Chief Scientific Officer  
Vir Biotechnology  
499 Illinois Avenue  
San Francisco CA 94158  
he/him/his

**From:** (b) (6)  
**Sent:** Fri, 17 Apr 2020 13:45:58 -0400  
**To:** Deye, Greg (NIH/NIAID) [E]  
**Cc:** Stein, Judy (NIH/VRC) [C]; Petrik, Amy (NIH/NIAID) [E]; Gall, Jason (NIH/VRC) [C]  
**Subject:** Re: 4 things

Thank you for reaching out Dr. Deye. The sequence for the stabilized spike is available to academic labs and available for nonexclusive licensing by commercial groups. (b) (5), (b) (4)

Best wishes,

Barney

Sent from my iPhone

On Apr 17, 2020, at 12:52 PM, Deye, Greg (NIH/NIAID) [E] (b) (6) wrote:

Hello Dr. Graham,

(b) (4)

My understanding is that you provided and optimized spike sequence to Moderna. Is that sequence available to others as well? It would be great to save him a couple of steps if possible. I understand how busy you must be. If you need additional information from him or want to have additional conversation I'd be happy to facilitate it.

Thanks,  
Greg

Gregory Deye M.D.  
CAPT USPHS Commissioned Corps  
Medical Officer  
Parasitology Branch  
DMID/NIAID/NIH  
(b) (6)

---

**From:** "Bucala, Richard" [REDACTED] (b) (6)  
**Date:** Friday, April 17, 2020 at 11:28 AM  
**To:** "Deye, Greg (NIH/NIAID) [E]" [REDACTED] (b) (6)  
**Subject:** 4 things

Hi Gregg,  
Thanks for the wide-ranging conversation.

1. Global, ACR supported registry of rheum pts in COVI-19 era (out of Melbourne AU)

<https://rheum-covid.org>

2. [REDACTED] (b) (4)

3. A pathogenic model for COVID-19 (I made this for myself personally, just this morning - please critique heavily).

4. Please send me NIAID info/contact for sequence of SARS-CoV-2 Spike protein receptor binding domain for expression sub-cloning.

Please call or contact me with any COVID-19 questions. I and my colleagues are at your disposal.

With kindest regards,

Rick

Richard Bucala, MD PhD  
Chief, Rheumatology, Allergy & Immunology  
Rheumatologist-in-Chief, Yale New Haven Health  
Waldemar von Zedtwitz Professor of Medicine, Pathology, and Epidemiology & Public Health  
Program in Human Translational Immunology  
Yale University

Editor-in-Chief,  
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The Anlyan Center, S521  
PO Box 208031  
300 Cedar Street  
New Haven, CT 06520-8031

[REDACTED] (b) (6)

Executive Assistant

[REDACTED] (b) (6)



T (b) (6) F 203 785 7053  
(b) (6)

(b) (4).docx>  
<COVID-19 Pathogenic Model DRAFT1.pdf>  
<PastedGraphic-1.tiff>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 22 Jan 2020 17:44:25 +0000  
**To:** Kibunja, Julia (OS/OGA)  
**Subject:** Accepted: Follow-up Meeting - WHO-USG Teleconference on Wuhan  
Coronavirus Cooperation

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 17:26:22 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** Re: Covid-19 (b) (4), (b) (5)

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

BG

Sent from my iPhone

On Apr 15, 2020, at 1:20 PM, Corbett, Kizzmekia (NIH/VRC) [E]  
(b) (6) wrote:

(b) (6), (b) (5), (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:** Barney Graham (b) (6) >  
**Date:** Wednesday, April 15, 2020 at 1:17 PM  
**To:** Kizzmekia Corbett (b) (6) >  
**Subject:** Re: Covid-19 (b) (4), (b) (5)

Kizzy.

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

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

Barney

Sent from my iPhone

On Apr 15, 2020, at 12:47 PM, Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
wrote:

Geoffrey please take care of this immediately. And, please set up the deposits for other (b) (5), (b) (4)  
that are important for the VRC-wide efforts.

--

**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

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Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

---

**From:** "Chen, Xuejun (NIH/VRC) [E]" (b) (6)

**Date:** Wednesday, April 15, 2020 at 12:46 PM

**To:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6), Kizzmekia Corbett  
<(b) (6)>  
**Cc:** Wing-Pui Kong (b) (6), Barney Graham (b) (6), "Lusso, Paolo (NIH/NIAID) [E]" (b) (6)>  
**Subject:** FW: Covid-19 (b) (5), (b) (4)

Hi Geoff and Kizz,

Could you please deposit your (b) (5), (b) (4)

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

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

(b) (5), (b) (4) (brief description with key points is fine)?

Thanks,

XJ

---

Chen, Xuejun (NIH/VRC) [E]  
Staff Scientist/Lab Manager  
Virology Laboratory and Core  
VRC/NIAID/NIH  
40 Convent Dr., Rm4610, Bldg40,  
Bethesda, MD 20892  
Tel: (b) (6)

---

**From:** "Chen, Xuejun (NIH/VRC) [E]" (b) (6)  
**Date:** Sunday, April 12, 2020 at 12:45 AM  
**To:** John Mascola (b) (6), "Lusso, Paolo (NIH/NIAID) [E]"  
(b) (6), "Chen, Xuejun (NIH/VRC) [E]" (b) (6), "Wei, Chih-Jen  
/US" (b) (6)>  
**Cc:** "Graham, Barney (NIH/VRC) [E]" (b) (6)  
**Subject:** Re: Covid-19

Hi John and Paola,

The (b) (5), (b) (4), but I will coordinate to have  
them and (b) (5), (b) (4) protocol transferred to Paola.

Thanks

XJ

---

**From:** "Mascola, John (NIH/VRC) [E]" <(b) (6)>  
**Date:** Friday, April 10, 2020 at 19:16:12  
**To:** "Lusso, Paolo (NIH/NIAID) [E]" <(b) (6)>, "Chen, Xuejun (NIH/VRC) [E]"  
(b) (6), "Wei, Chih-Jen /US" (b) (6)

**Cc:** "Graham, Barney (NIH/VRC) [E]" <[REDACTED] (b) (6)>  
**Subject:** RE: Covid-19

Hello Paolo,

Sure, [REDACTED] (b) (5), (b) (4) Our virology group can provide.

XJ – can you please arrange for Paolo's lab to get [REDACTED] (b) (5), (b) (4) and any SOP on how we [REDACTED] (b) (5), (b) (4)

Thanks,  
John

---

**From:** Lusso, Paolo (NIH/NIAID) [E] [REDACTED] (b) (6)  
**Sent:** Wednesday, April 8, 2020 10:29 PM  
**To:** Mascola, John (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Subject:** Covid-19

Dear John:

I hope you are well and safe during this crazy period. We are planning to set up some experiments on Covid-19 and I was wondering if you have, or know who could provide, [REDACTED] (b) (5), (b) (4)  
[REDACTED] I greatly appreciate your help, as always.

All the best,

Paolo

-----  
Paolo Lusso, M.D., Ph.D.  
Chief, Section of Viral Pathogenesis  
Laboratory of Immunoregulation  
Bldg. 10, Rm. 6A11  
NIAID, NIH  
Bethesda, MD 20892

Phone: [REDACTED] (b) (6) (personal)  
[REDACTED] (b) (6) (lab)  
Fax: (301) 480-5291  
E-mail: [REDACTED] (b) (6)

-----  
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---

**From:** "Mascola, John (NIH/VRC) [E]" <[REDACTED]> (b) (6)>  
**Date:** Wednesday, February 26, 2020 at 9:40 PM  
**To:** "Lusso, Paolo (NIH/NIAID) [E]" <[REDACTED]> (b) (6)  
**Cc:** "Pegu, Amarendra (NIH/VRC) [F]" <[REDACTED]> (b) (6)>  
**Subject:** RE: Measuring [REDACTED] (b) (5), (b) (4)

Hi Paolo,

Yes, we can test it [REDACTED] (b) (5), (b) (4) I'm not sure of the exact timing but Amar is [REDACTED] (b) (5), (b) (4) and we can try to fit it in the next set of experiments.  
Amar can be POC and can let you know [REDACTED] (b) (5), (b) (4)  
[REDACTED]

At a later time, always happy to hear more about what you are doing and see interesting data!

Best,  
John

---

**From:** Lusso, Paolo (NIH/NIAID) [E] <[REDACTED]> (b) (6)>  
**Sent:** Wednesday, February 26, 2020 5:57 PM  
**To:** Mascola, John (NIH/VRC) [E] <[REDACTED]> (b) (6)  
**Subject:** Measuring [REDACTED] (b) (5), (b) (4)

Dear John:

I hope you are doing fine. I am writing to ask if you could help us [REDACTED] (b) (5), (b) (4)  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] I am happy to  
provide you with additional details at any time. Thank you in advance for your help.

All the best,

Paolo

-----  
Paolo Lusso, M.D., Ph.D.  
Chief, Section of Viral Pathogenesis  
Laboratory of Immunoregulation  
Bldg. 10, Rm. 6A11  
NIAID, NIH  
Bethesda, MD 20892

Phone: (b) (6) (personal)  
(b) (6) (lab)  
Fax: (301) 480-5291  
E-mail: (b) (6)  
-----

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**From:** "Mascola, John (NIH/VRC) [E]" (b) (6) >  
**Date:** Monday, January 27, 2020 at 12:26 PM  
**To:** "Lusso, Paolo (NIH/NIAID) [E]" (b) (6) >  
**Cc:** "Pegu, Amarendra (NIH/VRC) [F]" <(b) (6)>  
**Subject:** RE: Advice on (b) (5), (b) (4)

Hi Paolo

Amar in our lab is working on several new (b) (5), (b) (4)

We have the standard (b) (5), (b) (4) (I believe its available – Amar can confirm)

And we are working on (b) (5), (b) (4), but need to be titrated which will take a few months. One more we are currently making (b) (5), (b) (4)

Amar – can you respond with list of options for (b) (5), (b) (4) those with avail stock and those forthcoming.

Thanks,  
John

---

**From:** Lusso, Paolo (NIH/NIAID) [E] (b) (6)>  
**Sent:** Monday, January 27, 2020 12:05 PM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6)>  
**Subject:** Advice on (b) (5), (b) (4)

Dear John:

I hope you had a good start of 2020. We are planning for a (b) (5), (b) (4) but we would like to consider (b) (5), (b) (4) and I want to ask for your advice before making a decision. (b) (5), (b) (4) Please let me know your suggestions or who I could contact to get more insights. Thanks!

All the best,

Paolo

-----  
Paolo Lusso, M.D., Ph.D.  
Chief, Section of Viral Pathogenesis  
Laboratory of Immunoregulation  
Bldg. 10, Rm. 6A11  
NIAID, NIH  
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Phone: (b) (6) (personal)  
(b) (6) (lab)  
Fax: (301) 480-5291  
E-mail: (b) (6)

-----  
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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 18 Apr 2020 19:09:15 +0000  
**To:** Hutchinson, Geoffrey (NIH/VRC) [F]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Request for Conflicts Check: (b) (4), (b) (5)

BG

---

**From:** Hutchinson, Geoffrey (NIH/VRC) [F] <(b) (6)>  
**Sent:** Saturday, April 18, 2020 3:03 PM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: Request for Conflicts Check: (b) (4), (b) (5)

I will probably need help with this. (b) (4), (b) (5)

Geoff

---

**From:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>  
**Date:** Saturday, April 18, 2020 at 2:43 PM  
**To:** "Hutchinson, Geoffrey (NIH/VRC) [F]" <(b) (6)>  
**Cc:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Subject:** Re: Request for Conflicts Check: (b) (4), (b) (5)

Geoff, let me know if you need help here.

--

**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:** Neil King (b) (6) >  
**Date:** Friday, April 17, 2020 at 5:00 PM  
**To:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >  
**Cc:** "Harper, David" (b) (6) >, Barney Graham (b) (6) >, Daniel Ellis (b) (6) >, Kizzmekia Corbett <(b) (6)>, George T Ueda (b) (6) >, "Kanekiyo, Masaru (NIH/VRC) [E]" (b) (6) >, Monique Young (b) (6) >, "Petrik, Amy (NIH/NIAID) [E]" (b) (6) >, "Robyn Adams" (b) (6) >, "[docket@uw.edu](mailto:docket@uw.edu)" <[docket@uw.edu](mailto:docket@uw.edu)>  
**Subject:** Re: Request for Conflicts Check: (b) (4), (b) (5),  
(b) (6)

Hi Dave,

Given the (b) (4), (b) (5)  
(b) (6) I probably won't get to that until sometime this weekend.

Geoff, unless I am mistaken, we still have a fair amount of work to do (b) (4), (b) (5) before it's ready.

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

Thanks all,  
Neil

On Fri, Apr 17, 2020 at 12:31 PM Hutchinson, Geoffrey (NIH/VRC) [F] (b) (6) wrote:  
(b) (4), (b) (5). The  
deadline is today, correct?

Geoff

---

**From:** "Harper, David" (b) (6) >  
**Date:** Wednesday, April 15, 2020 at 7:23 PM  
**To:** "Graham, Barney (NIH/VRC) [E]" (b) (6)



**Cc:** Neil King (b) (6)>, Daniel Ellis (b) (6), "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6), George T Ueda <(b) (6)>, "Kanekiyo, Masaru (NIH/VRC) [E]" (b) (6), "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6), "Young, Monique (NIH/VRC) [E]" (b) (6)>, "Petrik, Amy (NIH/NIAID) [E]" (b) (6)>, "Robyn Adams (b) (6)>, "docket@uw.edu" <docket@uw.edu>

**Subject:** RE: Request for Conflicts Check: (b) (4), (b) (5)

Thanks Barney—this is what I tried to do in the draft. I am looking for input on whether I have done it correctly.

Take care,  
Dave

David Harper Ph.D.  
McDonnell Boehnen Hulbert & Berghoff LLP  
300 S. Wacker Dr. Suite 3100  
Chicago, IL 60606  
Telephone (312) 913-2106  
Facsimile (312) 913-0002

LinkedIn Profile <http://www.linkedin.com/in/davidsharper>

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**From:** Graham, Barney (NIH/VRC) [E] [mailto:(b) (6)]  
**Sent:** Wednesday, April 15, 2020 4:10 PM  
**To:** Harper, David  
**Cc:** Neil King; Daniel Ellis; Corbett, Kizzmekia (NIH/VRC) [E]; George T Ueda; Kanekiyo, Masaru (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]; Young, Monique (NIH/VRC) [E]; Petrik, Amy (NIH/NIAID) [E]; Robyn Adams (b) (6) [docket@uw.edu](mailto:docket@uw.edu)  
**Subject:** Re: Request for Conflicts Check: (b) (4), (b) (5)

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

Barney

Sent from my iPhone

On Apr 15, 2020, at 4:22 PM, Harper, David <(b) (6)> wrote:



All,

Please let me know if there will be any further input [REDACTED] (b) (4), (b) (5)

Geoffrey posed the question: [REDACTED] (b) (4), (b) (5)

In response, [REDACTED] (b) (4), (b) (5)

Thanks,  
Dave

David Harper Ph.D.  
McDonnell Boehnen Hulbert & Berghoff LLP  
300 S. Wacker Dr. Suite 3100  
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**From:** Harper, David

**Sent:** Friday, April 10, 2020 6:10 PM

**To:** 'Neil King'; Daniel Ellis

**Cc:** [REDACTED] (b) (6) George T Ueda; Graham, Barney (NIH/VRC) [E]; Kanekiyo, Masaru (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]; Young, Monique (NIH/VRC) [E]; Petrik, Amy (NIH/NIAID) [E]; Robyn Adams [REDACTED] (b) (6); [docket@uw.edu](mailto:docket@uw.edu)

**Subject:** RE: RE: Request for Conflicts Check: [REDACTED] (b) (4), (b) (5)

Thanks Neil—I will defer [REDACTED] (b) (4), (b) (5)

Take care,  
Dave

David Harper Ph.D.  
McDonnell Boehnen Hulbert & Berghoff LLP  
300 S. Wacker Dr. Suite 3100  
Chicago, IL 60606  
Telephone (312) 913-2106  
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LinkedIn Profile <http://www.linkedin.com/in/davidsharper>

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**From:** Neil King [mailto: (b) (6)]

**Sent:** Thursday, April 09, 2020 3:38 PM

**To:** Daniel Ellis

**Cc:** Harper, David; (b) (6); George T Ueda; Graham, Barney (NIH/VRC) [E]; Kanekiyo, Masaru (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]; Young, Monique (NIH/VRC) [E]; Petrik, Amy (NIH/NIAID) [E]; Robyn Adams (b) (6); [docket@uw.edu](mailto:docket@uw.edu)

**Subject:** Re: RE: Request for Conflicts Check: (b) (4), (b) (5)

Hi Dave (and all),

I reviewed (b) (4), (b) (5). I have responded to some of your questions in the comments in the attached document. I only have one major question: (b) (4), (b) (5)

The other thing I will say is that the (b) (4), (b) (5)

Thanks,  
Neil

On Wed, Apr 8, 2020 at 3:16 PM Daniel Ellis (b) (6) wrote:  
Hi all,

Please find an updated sheet attached with (b) (4), (b) (5)

Thanks, please let me know if you have any questions,  
Dan

On Sat, Apr 4, 2020 at 12:46 PM Daniel Ellis [REDACTED] (b) (6) wrote:  
Hi Dave,

I was hoping to send this all by the end of yesterday but ran out of time. Please find attached a list of

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

Thanks,  
Dan

On Thu, Apr 2, 2020 at 3:11 PM Harper, David <[harper@mbhb.com](mailto:harper@mbhb.com)> wrote:

Now attached is the updated [REDACTED]

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

David Harper Ph.D.  
McDonnell Boehnen Hulbert & Berghoff LLP  
300 S. Wacker Dr. Suite 3100  
Chicago, IL 60606  
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**From:** Harper, David

**Sent:** Thursday, April 02, 2020 4:43 PM

**To:** (b) (6); Neil King (b) (6); Daniel Ellis; George T Ueda; Graham, Barney (NIH/VRC) [E]; Kanekiyo, Masaru (NIH/VRC) [E]; Hutchinson, Geoffrey (NIH/VRC) [F]; Young, Monique (NIH/VRC) [E]

**Cc:** Petrik, Amy (NIH/NIAID) [E]; Robyn Adams (b) (6) '[docket@uw.edu](mailto:docket@uw.edu)'

**Subject:** RE: RE: Request for Conflicts Check: (b) (4), (b) (5)

All,

Attached please find (b) (4), (b) (5)

Please review and provide comments at your earliest convenience. In response, please also (b) (4), (b) (5) that we discussed on Tuesday.

Let me know of any questions.

Take care,  
Dave

David Harper Ph.D.  
McDonnell Boehnen Hulbert & Berghoff LLP  
300 S. Wacker Dr. Suite 3100  
Chicago, IL 60606  
Telephone (b) (5)  
Facsimile (312) 913-0002

LinkedIn Profile <http://www.linkedin.com/in/davidsharper>

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--

Dan Ellis  
Graduate Student, King Lab  
Institute for Protein Design  
University of Washington

--

Dan Ellis  
Graduate Student, King Lab  
Institute for Protein Design  
University of Washington

(b) (4)

**From:** (b) (6)  
**Sent:** Thu, 9 Jan 2020 09:34:44 -0500  
**To:** Xavier Saelens  
**Cc:** Jason McLellan; Bert Schepens; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** Re: Coronavirus

Hi Xavier,

We are working to get sequences. (b) (4)

Best wishes,

Barney

Sent from my iPhone

On Jan 9, 2020, at 7:18 AM, Xavier Saelens (b) (6) wrote:

Dear Barney and Jason,

The cause of the pneumonia outbreak in Wuhan seems to be related to a new coronavirus.

(b) (4)

Do you already have access to sequences of the coronavirus that may have been the cause of the Wuhan pneumonia outbreak?

Best 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](http://mbc.vib-ugent.be)



<CMB\_Signature\_Banner.jpg>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 17:50:27 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** Re: IgA in Human Trial?

I did it in mice for RSV back in the 1990s. (b) (5)

I will eventually remember the name of the company trying to do this and went out of business.

BG

Sent from my iPhone

On Apr 17, 2020, at 12:07 PM, Corbett, Kizzmekia (NIH/VRC) [E]  
(b) (6) wrote:

Can you send that reference you spoke to Nancy about?

--

**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:** Wed, 22 Jan 2020 19:17:27 +0000  
**To:** Routh, Jennifer (NIH/NIAID) [E]; Hiatt, Nissa (NIH/VRC) [C]  
**Cc:** Prince, Tasheema (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** FW: Wuhan coronavirus

Hi Jen/Nissa,

FYI.

BG

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

From: Jon Cohen <jcohen@aaas.org>  
Sent: Wednesday, January 22, 2020 1:12 PM  
To: Graham, Barney (NIH/VRC) [E] (b) (6)  
Cc: Fauci, Anthony (NIH/NIAID) [E] (b) (6)  
Subject: Re: Wuhan coronavirus

Hi Barney and Tony,

I'm working on a story about potential drugs and vaccines against coronaviruses. There's a WHO press conference about the PHEIC at 2pm East Coast. Could we speak after 4pm East Coast? I'm interested in speaking with each of you separately if possible.

Thanks,

Jon

> On Jan 10, 2020, at 2:15 PM, Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:

>

> Hi Jon,

>

> We have requested sequences and NIAID is working through WHO and diplomatic channels to obtain virus and more information. People are working on this from both ends.

>

> Best wishes,

>

> Barney

>

>

>

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

> From: Jon Cohen <jcohen@aaas.org>

> Sent: Friday, January 10, 2020 4:33 PM

> To: Graham, Barney (NIH/VRC) [E] <(b) (6)>; Fauci, Anthony (NIH/NIAID) [E] (b) (6)>

> Subject: Wuhan coronavirus

>

> Hi Barney and Tony,

>  
> Has the NIH requested the Wuhan coronavirus sequence from China?  
>  
> If so, when, and what has been the response?  
>  
> Thanks,  
>  
> Jon

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 14:02:11 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E];Phung, Emily (NIH/VRC) [F];Abiona, Olubukola (NIH/VRC) [F];Chang, Lauren (NIH/VRC) [F]  
**Subject:** RE: Data Package Re: (b) (5)

Need to clarify the dotted lines which (b) (5)

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Sent:** Tuesday, April 14, 2020 8:32 AM  
**To:** Phung, Emily (NIH/VRC) [F] (b) (6); Graham, Barney (NIH/VRC) [E]  
(b) (6) Abiona, Olubukola (NIH/VRC) [F] (b) (6); Chang, Lauren (NIH/VRC) [F] <(b) (6)>  
**Subject:** Data Package Re: (b) (5)

Thanks for your hard work, tight error bars, and speedy data guys. I am attaching the data package, similar to how we transfer things to external collaborators, just for your review.

Just a reminder to you all, you DO NOT have to over-exhaust yourselves to send data in the middle of the night if it is not conducive to your schedule and lifestyle.

--

**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:** "Phung, Emily (NIH/VRC) [F]" <(b) (6)>  
**Date:** Tuesday, April 14, 2020 at 2:09 AM  
**To:** Barney Graham (b) (6), Kizzmekia Corbett (b) (6)

"Abiona, Olubukola (NIH/VRC) [F]" <(b) (6)>, "Chang, Lauren (NIH/VRC) [F]"  
(b) (6)

**Subject:** (b) (5)

Hi Everyone,

Lauren and I completed the analysis for the (b) (5) Please find attached the following:

(b) (5)



Please let me know if you have any questions.

Thank you!  
Emily Phung

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 17:59:05 +0000  
**To:** Neil King  
**Subject:** Re: call in to BMGF Joint Steering Committee meeting Friday?

Let me try again tonight. I was exhausted last night. Meant to call. I'll be finished ~7:30 tonight.

BG

Sent from my iPhone

On Apr 15, 2020, at 1:40 PM, Neil King [REDACTED] (b) (6) wrote:

Hi Barney,

I'd be happy to try again today if you have a chance. It would be really great to catch up. We have been forced to move ahead with [REDACTED] (b) (4)  
[REDACTED] Things are moving quite rapidly, and it's been making me a little sad that we haven't been able to involve you and your group.

Thanks,  
Neil

On Tue, Apr 14, 2020 at 2:56 PM Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6) wrote:  
I'll try calling this evening after teleconferences end.

BG

Sent from my iPhone

> On Apr 14, 2020, at 1:40 PM, Neil King [REDACTED] (b) (6) wrote:

>

>

> Hi Barney,

>

> It's been a while since we spoke -- I hope you are doing well and hanging in there amidst all the craziness!

>

> I'm writing to ask whether you might be available this Friday during any portion of 12-2pm

Eastern, and if so, whether you would be willing to call in to our quarterly meeting with BMGF (the same meeting you've called in to a couple times before). This would be Lynda, Chris K, Harry, and maybe Holger Kanzler. Basically the entire meeting will be on (b) (4)

[REDACTED]  
[REDACTED] I

think we'd all also love to hear from you generally and be able to get your thoughts on vaccine development.

>

> I know it's short notice -- my apologies for that! Let me know if there's any chance it might work out.

>

> Also, it would be great to just catch up generally, just you and me. Lance and I spoke with Manon Cox yesterday... it was a very interesting conversation. (b) (4)

[REDACTED]  
[REDACTED]

>

> Finally, the (b) (4) paper is coming along really nicely... we're aiming to have a complete draft manuscript by the end of the week, and I think we'll get there. And we're starting to write the NA manuscript as well!

>

> Hope you are well,

> and talk to you soon,

> Neil

>

>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 19 Apr 2020 16:08:24 +0000  
**To:** Cynthia Turner-Graham  
**Subject:** Fwd: "The End of October"  
**Attachments:** The End of October Watermarked Final Pass.pdf, ATT00001.htm

Here is the pandemic novel.

Love,

BP

Sent from my iPhone

Begin forwarded message:

**From:** Lawrence Wright (b) (6)  
**Date:** April 6, 2020 at 5:34:56 PM EDT  
**To:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Subject:** "The End of October"

Dear Barney,

Ordinarily at this time I'd send you an actual book, but the warehouse is overwhelmed, as is everyone, so I'm sending out a complementary pdf. One day we'll figure out how to sign such a thing. I hope I'll be able to deliver a real copy one day in person.

Your help with this was invaluable. I'll never forget your generosity.

I hope you enjoy it in good health.

Larry

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 18:24:27 +0000  
**To:** Hiatt, Nissa (NIH/VRC) [C]  
**Cc:** Routh, Jennifer (NIH/NIAID) [E]; Oplinger, Anne (NIH/NIAID) [E]  
**Subject:** FW: Potential SPAM:Hello from the NSTMF

FYI.

BG

**From:** Ryan Lasker <ryan@nationalmedals.org>  
**Sent:** Friday, April 17, 2020 1:55 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Potential SPAM:Hello from the NSTMF

Dear Dr. Graham,

I hope you and your family are healthy and staying well. My name is Ryan Lasker, and I am a program manager at the National Science & Technology Medals Foundation. We're dedicated to providing inspiring experiences to STEM students in college and high school. I'm reaching out because we thought you'd be a perfect fit for a virtual program we're launching amid the COVID-19 pandemic.

The program will feature STEM experts covering topics both related and unrelated to the COVID-19 pandemic. Taking no more than an hour of your time, we'd love the opportunity to interview you for a pre-recorded video featuring you and the important work you're doing. Then, we'd like to have you participate in a 20-minute live watch party with a group of students, where they'll be able to chat with you and ask questions of you.

If you're interested, it would be great to set up a quick call to give you some more information about the program.

Let me know if you have any questions, and I look forward to hearing from you!

Best,  
Ryan

--

Ryan Lasker, CPA  
He/Him/His | [What is this?](#)  
Program and Finance Manager  
National Science & Technology Medals Foundation

(202) 455-8375

[nationalmedals.org](http://nationalmedals.org) | [lab.nationalmedals.org](http://lab.nationalmedals.org)

The National Science & Technology Medals Foundation, a District of Columbia non-profit corporation, is not affiliated with the United States Government.



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 22 Jan 2020 20:27:26 +0000  
**To:** Alison Farrell  
**Cc:** Marston, Hilary (NIH/NIAID) [E]; Routh, Jennifer (NIH/NIAID) [E]  
**Subject:** RE: Nature Medicine query

Hi Alison,

I remember our meeting. Thank you for your inquiry. We have learned a lot since MERS. We have maintained a consortium of academic and industry collaborators and have been actively working on beta-coronaviruses since 2014. Much of the work is still unpublished.

We now have structures for more than a dozen spike proteins; stabilizing mutations that work across all beta-coronaviruses; large panels of mAbs and a map of neutralizing epitopes; and have developed many assays/models/etc. Based on our work delivering the stabilized spike trimer as a soluble protein, displayed on a self-assembling nanoparticle, or as mRNA we have established antigen designs that should be effective immunogens. We have had a long-standing collaboration with Moderna to deliver the stabilized spike trimer as mRNA, and as stated in their press release today, they have started GMP production for a small phase I pilot study based on a sequence we gave them nine days ago.

The response has been organized between NIAID divisions, between U.S. government agencies, and coordinated with WHO. Most of the key coronavirus experts that I know are involved. Each time we have done this for Chikungunya, MERS, Ebola, Zika, and now Wuhan the response has been better coordinated and more effective.

CEPI was established for this purpose and many organizations have been thinking about more specifically about how to respond to pathogen X. I've copied Hilary Marston because she has been involved in coordinating these efforts for NIAID.

Best wishes,

Barney

---

**From:** Alison Farrell <a.farrell@us.nature.com>  
**Sent:** Wednesday, January 22, 2020 2:37 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Nature Medicine query

Dear Dr. Graham,

I am an editor at the biomedical research journal *Nature Medicine* and we met a few years ago when I visited the VRC. We are writing our February editorial on the new coronavirus outbreak and I was wondering if there is a concerted and collaborative effort among vaccine developers to work on a vaccine against 2019-nCoV? If so, is there thought to be a preferred vaccine platform, based on your experience with MERS-CoV vaccines, and is the VRC working on a 2019-nCoV vaccine? We are interested to discuss in the editorial the scientific effort and collaboration thus far, even though we know it's very early days yet. Specifically I was interested to learn if there are efforts to best optimize use of expertise and resources in terms of vaccine development against the new coronavirus.

Thanks for considering these questions, and I'd be happy to talk directly if that should be more straightforward.

With best wishes,  
Alison

Alison Farrell, Ph.D.  
Senior Editor  
*Nature Medicine*  
[a.farrell@us.nature.com](mailto:a.farrell@us.nature.com)  
<https://www.nature.com/nm/>

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 19:55:15 +0000  
**To:** Sullivan, Nancy (NIH/VRC) [E]  
**Subject:** Re: Coronavirus Lab Efforts

Sorry about that. Not sure about other labs but we have 2 third year IRTAs working on CoV. I'm even thinking annotating CoV literature could be helpful.

BG

Sent from my iPhone

On Apr 15, 2020, at 2:40 PM, Sullivan, Nancy (NIH/VRC) [E] (b) (6) > wrote:

Hi Barney,  
You may have opened a Pandora's Box :-). Do you know if IRTAs are being allowed back in the lab?  
Nancy

Begin forwarded message:

**From:** "Constante, Stephan (NIH/VRC) [F]" <(b) (6)>  
**Date:** April 15, 2020 at 2:36:33 PM EDT  
**To:** "Sullivan, Nancy (NIH/VRC) [E]" (b) (6) v>  
**Subject:** Coronavirus Lab Efforts

Hi Nancy,

At today's VRC All Hands Meeting I was considering what Barney Graham was saying in regards to how people in the lab can help out with coronavirus efforts. Thus far I have been teleworking, analyzing data, and learning new programs such as R programming but I was wondering if I could help out with some of the current coronavirus efforts. Currently, Yuliya and John have been working on making (b) (5)

(b) (5) I was wondering if it would be possible if I could assist them in advancing the work and potentially coming into the VRC seldomly.

Stephan Constante

Stephan Constante  
IRTA Post-Baccalaureate  
Vaccine Research Center, NIAID, NIH  
Bethesda, MD 20892

Phone: (b) (6)

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 25 Jan 2020 20:00:29 +0000  
**To:** Hiatt, Nissa (NIH/VRC) [C];Routh, Jennifer (NIH/NIAID) [E]  
**Cc:** Prince, Tasheema (NIH/VRC) [C];Morabito, Kaitlyn (NIH/VRC) [E];Bok, Karin (NIH/VRC) [E]  
**Subject:** FW: INTERVIEW: Regarding Wuhan coronavirus

FYI. Can I assume since Dr. Fauci referred him to me that it is OK to talk?

BG

**From:** Sheikh, Knvul <knvul.sheikh@nytimes.com>  
**Sent:** Saturday, January 25, 2020 2:57 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** INTERVIEW: Regarding Wuhan coronavirus

Dear Dr. Graham,

My name is Knvul Sheikh and I'm a science reporter at The New York Times. I'm interested in understanding the human backstory of how U.S. scientists got involved in ID'ing the new coronavirus out of Wuhan and/or developing a test to diagnose the virus. I just got off a call with Dr. Anthony Fauci and he recommended I speak with you about the process.

Please let me know if you might have time to speak over the phone later this tomorrow. I'm on a tight deadline, trying to get some context for a story by Monday morning, Jan. 27.

Thanks and best regards,  
Knvul

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 9 Jan 2020 16:12:00 +0000  
**To:** Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** RE: Sorry if you were looking for me.

OK. No problem. Just wanted to make sure you were aware of what was happening.

BG

---

**From:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >  
**Sent:** Thursday, January 9, 2020 11:10 AM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** Sorry if you were looking for me.

Hi Barney,

I mentioned yesterday after lab meeting that I would be teleworking today with (b) (6). I will be in tomorrow and Monique moved my data meeting to 9:30 tomorrow. We can touch base about how you want to manage the coronavirus project.

Kaitlyn



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 18:31:15 +0000  
**To:** Bok, Karin (NIH/VRC) [E]  
**Subject:** NIAID COVID-19 Full Weekly Update 4.13.20\_KB  
**Attachments:** NIAID COVID-19 Full Weekly Update 4.13.20\_KB.docx

A few edits. Thanks,

BG

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 9 Jan 2020 17:00:48 +0000  
**To:** Bryant, Paula (NIH/NIAID) [E]  
**Cc:** Marston, Hilary (NIH/NIAID) [E]; Casseti, Cristina (NIH/NIAID) [E]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: New Coronavirus in China

OK. In that case you could mention that [REDACTED] (b) (5)

[REDACTED]  
[REDACTED]  
[REDACTED]

Barney

---

**From:** Bryant, Paula (NIH/NIAID) [E] <[REDACTED] (b) (6)>  
**Sent:** Thursday, January 9, 2020 11:50 AM  
**To:** Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Cc:** Marston, Hilary (NIH/NIAID) [E] [REDACTED] (b) (6)>; Casseti, Cristina (NIH/NIAID) [E]  
[REDACTED] (b) (6)  
**Subject:** RE: New Coronavirus in China

Hi Barney,

[REDACTED] (b) (5)

-paula

Paula Bryant, Ph.D.  
Director, Office of Biodefense, Research Resources, and Translational Research  
Associate Director of Biodefense and Emerging Infectious Diseases Product Development  
DMID/NIAID/NIH/DHHS  
Room 8G61  
5601 Fishers Lane  
Rockville, MD 20852  
Tel: (b) (6)  
cell: (b) (6)

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Thursday, January 9, 2020 11:05 AM  
**To:** Bryant, Paula (NIH/NIAID) [E] (b) (6); Bloom, Marshall (NIH/NIAID) [E] (b) (6)>  
**Cc:** Cassetti, Cristina (NIH/NIAID) [E] (b) (6)>; Challberg, Mark (NIH/NIAID) [E] (b) (6); Patterson, Jean (NIH/NIAID) [E] (b) (6); Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Erbelding, Emily (NIH/NIAID) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>; Bok, Karin (NIH/VRC) [E] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>  
**Subject:** RE: New Coronavirus in China

Thanks Paula,

(b) (5)  
.

Barney

---

**From:** Bryant, Paula (NIH/NIAID) [E] (b) (6)>  
**Sent:** Thursday, January 9, 2020 10:26 AM  
**To:** Bloom, Marshall (NIH/NIAID) [E] <(b) (6)>  
**Cc:** Cassetti, Cristina (NIH/NIAID) [E] (b) (6)>; Challberg, Mark (NIH/NIAID) [E] (b) (6)>; Patterson, Jean (NIH/NIAID) [E] <(b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6); Erbelding, Emily (NIH/NIAID) [E] (b) (6)  
**Subject:** RE: New Coronavirus in China

Awesome....thanks marshall!

Paula Bryant, Ph.D.  
Director, Office of Biodefense, Research Resources, and Translational Research  
Associate Director of Biodefense and Emerging Infectious Diseases Product Development  
DMID/NIAID/NIH/DHHS  
Room 8G61

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Tel: (b) (6)  
cell: (b) (6)

---

**From:** Bloom, Marshall (NIH/NIAID) [E] (b) (6)  
**Sent:** Thursday, January 9, 2020 10:23 AM  
**To:** Bryant, Paula (NIH/NIAID) [E] <(b) (6)>  
**Cc:** Casseti, Cristina (NIH/NIAID) [E] (b) (6)>; Challberg, Mark (NIH/NIAID) [E] (b) (6)>; Patterson, Jean (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>; Erbelding, Emily (NIH/NIAID) [E] <(b) (6)>; Bloom, Marshall (NIH/NIAID) [E] (b) (6)>  
**Subject:** Re: New Coronavirus in China

Paula,  
I suggest that you contact (b) (5)  
(b) (5)  
Marshall

Sent from my iPhone

On Jan 9, 2020, at 8:13 AM, Bryant, Paula (NIH/NIAID) [E] <(b) (6)> wrote:

Hi,

(b) (5)

Let me know if you have anything I could share.....again, this is informal, high level.

Thanks,  
Paula

Paula Bryant, Ph.D.  
Director, Office of Biodefense, Research Resources, and Translational Research

Associate Director of Biodefense and Emerging Infectious Diseases Product Development  
DMID/NIAID/NIH/DHHS

Room 8G61

5601 Fishers Lane

Rockville, MD 20852

Tel: (b) (6)

cell: (b) (6)

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 18:59:54 +0000  
**To:** Gottesman, Michael (NIH/OD) [E]  
**Subject:** RE: April 22 COVID-19 lecture

Thanks Michael. I would be glad for Dr. Corbett to join me. Webex should work for us.

Barney

---

**From:** Gottesman, Michael (NIH/OD) [E] (b) (6)  
**Sent:** Friday, April 17, 2020 2:57 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** April 22 COVID-19 lecture

Dear Barney,

First, let me thank you for agreeing to give the second COVID-19 lecture next Wednesday, April 22, at 3 PM. Our videocasting team will be in touch about the audiovisual issues; likely you will be on via a WEBEX connection to our videocast system at the NIH. This worked generally well for Hilary Marston, with about 7000 viewers in real time, and close to 3000 so far looking at the archived version. As you may have heard, there were many people who couldn't get the videocast because the demand was so high. We're working on this and hopefully things will run smoothly next week.

Another reason why I am writing is to ask if it would be possible for Kizzmekia Corbett to share the podium with you? She has gotten some nice attention lately for her work, and I wondered if she could have 10-15 minutes of your allotted time to talk about her contributions. This would be a great way to acknowledge her hard work on this project, and to give her more visibility as her career advances. I don't know if she is available, but you would make a fabulous duo.

Thanks, again for doing this. We are all looking forward to your talk.

Michael



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 22 Jan 2020 22:42:05 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** FW: ACE2 receptor usage 2019-NCoV  
**Attachments:** Letko\_Munster\_2019-nCoV receptor[2].pdf

FYI.

BG

---

**From:** Munster, Vincent (NIH/NIAID) [E] (b) (6)  
**Sent:** Wednesday, January 22, 2020 3:53 PM  
**To:** Marston, Hilary (NIH/NIAID) [E] (b) (6); NIAID Coronavirus Response SWAT 2020 <NIAIDCoronavirusResponseSWAT2020@mail.nih.gov>  
**Subject:** ACE2 receptor usage 2019-NCoV

First data from my lab confirming ACE2 as the receptor for 2019-NCoV,

Paper submitted today: BioXRV (hopefully online in 1 – 2 days) and Nature.

No direct public health implications, but supports more SARS-like scenario (or NL63) rather than MERS-CoV.

Cheers,

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

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 14:27:39 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Follow-up on VRC [REDACTED] (b) (4)  
Action Items

I would put [REDACTED] (b) (4), (b) (5) over panels A and B and [REDACTED] (b) (4), (b) (5)" over panel C.

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Sent:** Tuesday, April 14, 2020 10:25 AM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** Re: Follow-up on VRC [REDACTED] (b) (4) Action Items

I'm still trying to master the art of drawing leadership eyes to important things. Constructive criticism is fine here.

--

**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  
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40 Convent Drive  
Bethesda MD 20892  
Laboratory: [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** Barney Graham [REDACTED] (b) (6)  
**Date:** Tuesday, April 14, 2020 at 10:23 AM  
**To:** Kizzmekia Corbett [REDACTED] (b) (6)>  
**Subject:** RE: Follow-up on VRC [REDACTED] (b) (4) Action Items

OK. Got it, [REDACTED] (b) (4), (b) (5)

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Tuesday, April 14, 2020 10:20 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: Follow-up on VRC (b) (4) Action Items

The (b) (5), (b) (4) figure 2 (a-b).

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
Viral Pathogenesis Laboratory | Vaccine Research Center  
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---

**From:** Barney Graham (b) (6) >  
**Date:** Tuesday, April 14, 2020 at 10:18 AM  
**To:** Kizzmekia Corbett <(b) (6)>  
**Subject:** RE: Follow-up on VRC (b) (4) Action Items

Thanks Kizzy,

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

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Tuesday, April 14, 2020 10:11 AM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6); Ester Falconer  
(b) (6) >; Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Payal Sipahimalani <(b) (6)>  
**Subject:** Re: Follow-up on VRC (b) (4) Action Items

Good morning everyone,  
I am replying **in line**, below.

--

**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  
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Building 40 Room 2608  
40 Convent Drive  
Bethesda MD 20892  
Laboratory: (b) (6)  
Personal: (b) (6)  
Fax: (301) 480-2771

---

**From:** "Mascola, John (NIH/VRC) [E]" (b) (6)  
**Date:** Tuesday, April 14, 2020 at 8:55 AM  
**To:** Kizzmekia Corbett (b) (6), Ester Falconer  
(b) (6) >, Barney Graham (b) (6) >  
**Cc:** Payal Sipahimalani (b) (6) >  
**Subject:** RE: Follow-up on VRC (b) (4) Action Items

Thanks Kizzmekia - My suggestion to the joint group would be that a slide deck would include these kinds of information to keep us all on same page as to prior decisions, latest data, thus allowing us to more readily discuss next steps. It would also be helpful to have written slides of timeline goals from AbCellera and Lilly. – **Thanks. I will keep a running slide deck with all-inclusive decision trees to come.**

For neutralization with anti-RBD and NTD. Do you have an example of data from (b) (4)  
(b) (4) This would help me understand and provide some suggestions on most efficient way to do the combination work.

**I have attached the graphs for your information. These are pared down to what was to be included into publication. I will need to make a slide show showing (b) (4)**  
(b) (4)

In this regard:

(b) (4)

Best,  
John

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Monday, April 13, 2020 10:44 PM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6); Ester Falconer  
(b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Payal Sipahimalani (b) (6)  
**Subject:** Re: Follow-up on VRC (b) (4), Action Items

Hi Dr. Mascola,  
My replies are **in line** below.

--

**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:** "Mascola, John (NIH/VRC) [E]" (b) (6)>  
**Date:** Monday, April 13, 2020 at 10:15 PM  
**To:** Kizzmekia Corbett (b) (6) Ester Falconer  
(b) (6)>, Barney Graham (b) (6)  
**Cc:** Payal Sipahimalani (b) (6)

**Subject:** RE: Follow-up on VRC [REDACTED] (b) (4) Action  
Items

Kizzmekia, Ester, Barney,

Afew questions about key elements of down selection – much of which you likely discussed and I missed..

(b) (4)





Let me know if you have any addition questions/comments.

Thanks,  
John

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Monday, April 13, 2020 8:51 PM  
**To:** Payal Sipahimalani (b) (6) >; Ester Falconer (b) (6)  
**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6) >; Mascola, John (NIH/VRC) [E] (b) (6)  
**Subject:** Follow-up on VRC (b) (4), Action Items

Hi Payal and Ester,  
Attached you will find a summary of today's discussion, and the mAb testing to occur on Wednesday, April 15, 2020.

**Action Items:**

(b) (4)



Address for shipments:

Lingshu Wang

40 Convent Drive, Room 4608B

Bethesda, MD 20892

(b) (6) • (b) (6) • Work

Let me know if you have any questions.

--

**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:** Sun, 19 Apr 2020 19:28:43 +0000  
**To:** Embry, Alan (NIH/NIAID) [E]  
**Cc:** Cassetti, Cristina (NIH/NIAID) [E]  
**Subject:** RE: article

A little knowledge can be dangerous for causing irrational fears, and too much knowledge can be paralyzing by imagining too many plausible outcomes.

We need to stay in the middle somewhere and keep moving.

BG

---

**From:** Embry, Alan (NIH/NIAID) [E] (b) (6) >  
**Sent:** Sunday, April 19, 2020 3:25 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Cassetti, Cristina (NIH/NIAID) [E] (b) (6)  
**Subject:** RE: article

No need to read the entire article. (b) (5)

[REDACTED]

[REDACTED]

Thanks,  
Alan

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Sunday, April 19, 2020 3:17 PM  
**To:** Embry, Alan (NIH/NIAID) [E] (b) (6)  
**Cc:** Cassetti, Cristina (NIH/NIAID) [E] (b) (6) >  
**Subject:** Re: article

Thanks Alan. That is a long article. I didn't take time to read all the way through.

I have finally submitted an invited perspective to Science on the benefits and risks of rapid vaccine development. It is a only ~1100 words, but I (b) (5)

[REDACTED]

BG

Sent from my iPhone

On Apr 19, 2020, at 11:09 AM, Embry, Alan (NIH/NIAID) [E] <(b) (6)> wrote:

Hi Barney,

I'm guessing you already saw this article, but sharing just in case given the statement below (<https://www.nytimes.com/2020/04/18/health/coronavirus-america-future.html?smid=tw-nytimes&smtyp=cur>):

(b) (5)

Alan

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:01:24 +0000  
**To:** Edwards, Kathryn;Perlman, Stanley;Denison, Mark  
**Cc:** Dianne Miller  
**Subject:** RE: Coronavirus Vaccine Chapter

Thanks Kathy. I don't think I ever go back to you, but hopefully within 6 months like will be a little more like normal.

Barney

---

**From:** Edwards, Kathryn [REDACTED] (b) (6)  
**Sent:** Friday, April 17, 2020 2:35 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>; Perlman, Stanley [REDACTED] (b) (6)  
[REDACTED] >; Denison, Mark [REDACTED] (b) (6)>  
**Cc:** Dianne Miller <[REDACTED] (b) (6)>  
**Subject:** Coronavirus Vaccine Chapter

Barney, Stan, and Mark:

[REDACTED] (b) (4)



Yours sincerely,

Kathryn M. Edwards M.D.

Sarah H. Sell and Cornelius Vanderbilt Chair

Professor of Pediatrics

Division of Pediatric Infectious Diseases

D-7227 Medical Center North

Nashville, TN 37232

Telephone (b) (6) 

(b) (6)

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 20:19:23 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: [REDACTED] (b) (6)

No, I have not idea who this is, [REDACTED] (b) (5), (b) (6)

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED]> (b) (6)  
**Sent:** Wednesday, April 15, 2020 4:17 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)  
**Subject:** Re: [REDACTED] (b) (6)

I know him personally. Do you know him?

--

**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: [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** Barney Graham [REDACTED] (b) (6)  
**Date:** Wednesday, April 15, 2020 at 4:15 PM  
**To:** Kizzmekia Corbett [REDACTED] (b) (6)  
**Subject:** RE: Leads for great positions in biotech and virology

[REDACTED] (b) (6)  
[REDACTED]

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Sent:** Wednesday, April 15, 2020 4:07 PM  
**To:** Graham, Barney (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Subject:** FW: [REDACTED] (b) (6)

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

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
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Bethesda MD 20892  
Laboratory: [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** "[viet@inceptionfunds.com](mailto:viet@inceptionfunds.com)" <[viet@inceptionfunds.com](mailto:viet@inceptionfunds.com)>  
**Date:** Wednesday, April 15, 2020 at 2:35 PM  
**To:** Kizzmekia Corbett [REDACTED] (b) (6)  
**Subject:** [REDACTED] (b) (6)

Hello Kizzy!

Hope your day is great and coffee strong!

[REDACTED] (b) (6)

[REDACTED] (b) (6)



I earned my wine I think lol. Of course as Christians, pray for the wisdom and discernment to find where God would like to put you! He will direct you accordingly to those Faithful as us! Blessings and talk soon!

Respectfully,

Viet Ly, General Partner  
5400 Carillon Point Road Building 5000, 4th floor  
Kirkland, WA 98033  
[www.inceptionfunds.com](http://www.inceptionfunds.com)  
e: [viet@inceptionfunds.com](mailto:viet@inceptionfunds.com)  
o: 855-22-FUNDS

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:05:28 +0000  
**To:** Marston, Hilary (NIH/NIAID) [E]; Bok, Karin (NIH/VRC) [E]  
**Subject:** RE: Guillain Barre in COVID

(b) (5)

BG

---

**From:** Marston, Hilary (NIH/NIAID) [E] (b) (6)  
**Sent:** Friday, April 17, 2020 3:03 PM  
**To:** Bok, Karin (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E]  
(b) (6)>  
**Subject:** Re: Guillain Barre in COVID

(b) (5)

---

**From:** Karin Bok (b) (6)  
**Date:** Friday, April 17, 2020 at 2:54 PM  
**To:** Hilary Marston (b) (6), "Graham, Barney (NIH/VRC) [E]"  
(b) (6)  
**Subject:** Re: Guillain Barre in COVID

(b) (5)

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:** "Marston, Hilary (NIH/NIAID) [E]" [REDACTED] (b) (6)

**Date:** Friday, April 17, 2020 at 2:47 PM

**To:** "Graham, Barney (NIH/VRC) [E]" <[REDACTED] (b) (6)>

**Cc:** Karin Bok [REDACTED] (b) (6)>

**Subject:** FW: Guillain Barre in COVID

[REDACTED] (b) (5)

---

**From:** "Koroshetz, Walter (NIH/NINDS) [E]" [REDACTED] (b) (6)>

**Date:** Friday, April 17, 2020 at 1:01 PM

**To:** Hilary Marston [REDACTED] (b) (6)

**Cc:** Anthony Fauci [REDACTED] (b) (6)>, "Nath, Avindra (NIH/NINDS) [E]"

[REDACTED] (b) (6)>

**Subject:** Guillain Barre in COVID

Dear Hilary,

FYI-- Expect everyone saw this in NEJM, not totally unexpected that Guillain Barre would come in wave of viral infections.

Some observations— [REDACTED] (b) (5)  
[REDACTED] (b) (5)

Walter

Walter J. Koroshetz, M.D.

Director, National Institute of Neurological Disorders and Stroke



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 10 Jan 2020 16:31:19 +0000  
**To:** Mascola, John (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Bok, Karin (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** Fwd: Wuhan inquiry from NIH

FYI.

BG

Sent from my iPhone

Begin forwarded message:

**From:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Date:** January 10, 2020 at 11:30:14 AM EST  
**To:** (b) (6)  
**Subject:** Wuhan inquiry from NIH

Dear Dr. Gao,

I am writing to ask you for information about the Wuhan coronavirus. I am deputy director of the NIAID Vaccine Research Center on the NIH campus in Bethesda. We share many mutual interests and I have followed your work closely over the last few years. I was hoping to see you next week at the bunyavirus workshop but found out that you would not be able to attend. I'm sure this is likely because of your obligations related to the Wuhan outbreak.

Since The MERS CoV outbreak we have learned a lot about CoV spike structure and stabilization and antigenic sites associated with neutralization. I know that your lab is highly capable of characterizing the new virus, but we would be very willing and interested to help with this. Since this virus is likely to not be confined to China alone, we also feel some obligation to initiate our local processes for pandemic preparedness. While this may or may not be necessary, and hopefully the outbreak will not expand, I'm hoping that you would be willing to share sequences with our group at NIAID, especially for spike. We would very much enjoy collaborating with you on this new pathogen.

Best wishes,

Barney

\*\*\*\*\*

Barney S. Graham, MD, PhD

Senior Investigator  
Deputy Director, Vaccine Research Center  
Chief, Viral Pathogenesis Laboratory  
Vaccine Research Center, NIAID, 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:** Wed, 15 Apr 2020 20:28:15 +0000  
**To:** Sybil Tasker  
**Subject:** RE: [REDACTED] (b) (4)  
background?

I would go to either [REDACTED] (b) (4)

Barney

---

**From:** Sybil Tasker <[REDACTED] (b) (6)>  
**Sent:** Wednesday, April 15, 2020 4:14 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Subject:** [REDACTED] (b) (4)

Dear Barney—

I hope you are doing well— [REDACTED] (b) (6) I enjoyed your recent webcast  
Coronavirus vaccine talk.

Terry Loding [REDACTED] (b) (4)  
[REDACTED] (b) (4)

Thanks

Kind regards,

Sybil

Sybil Tasker, MD, MPH, FIDSA  
[REDACTED] (b) (6)

Begin forwarded message:

**From:** Terry Loding <[REDACTED] (b) (6)>  
**Subject:** RE: Follow-Up - Research Consultant

**Date:** April 15, 2020 at 9:28:37 AM EDT  
**To:** Sybil Tasker (b) (6)

Hi Sybil,

Thanks for this! If you could make the intro to Barney Graham, that would be great.

I really appreciate the assistance.

I hope all is well with you.

---

**From:** Sybil Tasker (b) (6) >  
**Sent:** Tuesday, April 14, 2020 3:24 PM  
**To:** Terry Loding (b) (6) >  
**Subject:** Re: Follow-Up - Research Consultant

(b) (4)

On Apr 14, 2020, at 1:11 PM, Terry Loding <(b) (6)> wrote:

Hi Sybil,

Apologies for the brief intro to program over LinkedIn.

(b) (4)

(b) (4).

Best regards,

Terry Loding

Senior Vice President, Corporate Strategy & Alliances

e-mail: (b) (6).

Phone: (b) (6)

<image003.png>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 19 Apr 2020 19:55:13 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Control mRNA for IBC Registration

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

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>  
**Sent:** Sunday, April 19, 2020 9:56 AM  
**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Control mRNA for IBC Registration

I am not sure I understand point number 1.

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
Viral Pathogenesis Laboratory | Vaccine Research Center  
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Personal: (b) (6)  
Fax: (301) 480-2771

---

**From:** Darin Edwards (b) (6)>  
**Date:** Tuesday, April 14, 2020 at 2:34 PM  
**To:** Kizzmekia Corbett (b) (6)>, Andrea Carfi  
(b) (6), Christy Shaw <(b) (6)>  
**Cc:** Barney Graham (b) (6)>  
**Subject:** RE: Control mRNA for IBC Registration

Hi Kizzy,

(b) (4)

Thanks, and I hope everyone is healthy and safe down there.

Darin

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Monday, April 13, 2020 12:55 PM  
**To:** Darin Edwards (b) (6); Andrea Carfi (b) (6)  
**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Re: Control mRNA for IBC Registration

(b) (4)

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
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---

**From:** Darin Edwards (b) (6) >  
**Date:** Monday, April 13, 2020 at 12:51 PM



**To:** Kizzmekia Corbett (b) (6)>, Andrea Carfi

(b) (6)>

**Cc:** Barney Graham (b) (6)>

**Subject:** RE: Control mRNA for IBC Registration

Correct, (b) (4)

(b) (4)

Darin

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>

**Sent:** Monday, April 13, 2020 12:48 PM

**To:** Darin Edwards <(b) (6)>; Andrea Carfi (b) (6)

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

**Subject:** Re: Control mRNA for IBC Registration

Thanks for letting us know. I want to be clear. (b) (4)

(b) (4)

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow | Scientific Lead**

**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**

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Personal: (b) (6)

Fax: (301) 480-2771

---

**From:** Darin Edwards <(b) (6)>

**Date:** Monday, April 13, 2020 at 12:13 PM

**To:** "Fisher, Brian (NIH/VRC) [E]" (b) (6)>, Kizzmekia Corbett

(b) (6)>, Andrea Carfi (b) (6)>

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

(b) (6)>, "Bao, Hana (NIH/VRC) [E]" (b) (6)>

**Subject:** RE: Control mRNA for IBC Registration

Hi Brian and Kizzy,

I just received the COA for the (b) (4) that we are sending today. (b) (4)  
(b) (4)

Is this recommendation and path forward acceptable? And sorry for complicating the planning of these studies.

**Darin Edwards**

Associate Director, Infectious Disease | Moderna

mobile (b) (6) | (b) (6)

[modernatx.com](http://modernatx.com)

**moderna**



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---

**From:** Fisher, Brian (NIH/VRC) [E] (b) (6)

**Sent:** Monday, April 13, 2020 11:58 AM

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

**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6)>; Bao, Hana (NIH/VRC) [E] (b) (6); Darin Edwards  
(b) (6)

**Subject:** RE: Control mRNA for IBC Registration

Hi All,

An amendment, [REDACTED] (b) (4)  
[REDACTED] has been submitted for approval.

Thanks

B.

---

**From:** Darin Edwards <[REDACTED] (b) (6)>  
**Sent:** Sunday, April 12, 2020 10:06 AM  
**To:** Fisher, Brian (NIH/VRC) [E] [REDACTED] (b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E]  
[REDACTED] (b) (6)>  
**Cc:** Seder, Robert (NIH/VRC) [E] <[REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E]  
[REDACTED] (b) (6)>  
**Subject:** RE: Control mRNA for IBC Registration

Hi Brian,

Apologies for the delayed response, we continue to wait to get the certificate of analysis for this [REDACTED] (b) (4)  
[REDACTED] Despite that I'm attaching information on this control material that may allow you to move forward with the IBC amendment.

I'll forward the certificate of analysis when I get it, likely tomorrow.

Thanks,

Darin

---

**From:** Fisher, Brian (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Sent:** Friday, April 10, 2020 2:26 PM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)>; Darin Edwards  
[REDACTED] (b) (6) Sunny Himansu [REDACTED] (b) (6)>; Isabella Renzi  
[REDACTED] (b) (6)>  
**Cc:** Seder, Robert (NIH/VRC) [E] [REDACTED] (b) (6)>; Graham, Barney (NIH/VRC) [E]  
[REDACTED] (b) (6)>  
**Subject:** Re: Control mRNA for IBC Registration

Hi Darin,

Please send me the sequence of this mRNA and all associated relevant information, that's of course not protected IP. We will need as much info as possible for IBC amendment.

\*Kizzy, will this require ACUC/ amended ASP involvement?

Thanks

B.

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Sent:** Friday, April 10, 2020 1:52:53 PM  
**To:** Darin Edwards (b) (6)>; Sunny Himansu (b) (6); Fisher, Brian (NIH/VRC) [E] (b) (6); Isabella Renzi (b) (6)>  
**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Control mRNA for IBC Registration

This works for me. Thanks!

--  
**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
Viral Pathogenesis Laboratory | Vaccine Research Center  
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---

**From:** Darin Edwards (b) (6)>  
**Date:** Friday, April 10, 2020 at 12:59 PM  
**To:** Kizzmekia Corbett (b) (6)>, Sunny Himansu (b) (6)>, "Fisher, Brian (NIH/VRC) [E]" (b) (6)>, Isabella Renzi (b) (6)>  
**Cc:** "Seder, Robert (NIH/VRC) [E]" (b) (6)>, Barney Graham (b) (6)>  
**Subject:** RE: Control mRNA for IBC Registration

Hi Kizzy,

(b) (4)

Does this material sound suitable?

Thanks,

Darin

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, April 10, 2020 8:43 AM  
**To:** Darin Edwards (b) (6); Sunny Himansu (b) (6); Fisher, Brian (NIH/VRC) [E] (b) (6); Isabella Renzi (b) (6)  
**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: Control mRNA for IBC Registration

For my view, (b) (4)  
We will work with what you find.

--  
**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
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---

**From:** Darin Edwards (b) (6)  
**Date:** Friday, April 10, 2020 at 8:41 AM  
**To:** Kizzmekia Corbett (b) (6), Sunny Himansu (b) (6), "Fisher, Brian (NIH/VRC) [E]" (b) (6), Isabella Renzi <(b) (6)>  
**Cc:** "Seder, Robert (NIH/VRC) [E]" (b) (6), Barney Graham (b) (6)  
**Subject:** RE: Control mRNA for IBC Registration

Hi Kizzy,

We are evaluating what's available and we'll get back to you soon. (b) (4)

Darin



---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Friday, April 10, 2020 8:36 AM  
**To:** Sunny Himansu (b) (6); Fisher, Brian (NIH/VRC) [E]  
(b) (6); Darin Edwards (b) (6); Isabella Renzi  
(b) (6) >  
**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E]  
(b) (6) >  
**Subject:** Re: Control mRNA for IBC Registration

Thanks Sunny,  
Darin, (b) (4) is the best option from the VRC's  
stance.

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
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Personal: (b) (6)  
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---

**From:** Sunny Himansu <(b) (6)>  
**Date:** Friday, April 10, 2020 at 8:34 AM  
**To:** "Fisher, Brian (NIH/VRC) [E]" (b) (6); Darin Edwards  
<(b) (6)>, Kizzmekia Corbett (b) (6); Isabella  
Renzi (b) (6) >  
**Cc:** "Seder, Robert (NIH/VRC) [E]" (b) (6); Barney Graham  
(b) (6) >  
**Subject:** RE: Control mRNA for IBC Registration

All,

We are trying to identify a control that we currently have in stock. (b) (4)  
(b) (4) I will leave it to Darin to make the final decision from our  
end.

Sunny

---

**From:** Fisher, Brian (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, April 10, 2020 8:29 AM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Sunny Himansu (b) (6)>  
**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6)>; Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Control mRNA for IBC Registration

(b) (4) would be best cause we are already registered for it.

B.

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, April 10, 2020 8:20:06 AM  
**To:** Sunny Himansu (b) (6)>  
**Cc:** Seder, Robert (NIH/VRC) [E] (b) (6)>; Fisher, Brian (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Control mRNA for IBC Registration

(b) (4)

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow | Scientific Lead**

**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**

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Bethesda MD 20892

Laboratory: (b) (6)

Personal: (b) (6)

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---

**From:** Kizzmekia Corbett <(b) (6)>  
**Date:** Friday, April 10, 2020 at 7:57 AM  
**To:** Sunny Himansu (b) (6)>  
**Cc:** "Seder, Robert (NIH/VRC) [E]" (b) (6), "Fisher, Brian (NIH/VRC) [E]"



(b) (6)>, Barney Graham (b) (6)>

**Subject:** Control mRNA for IBC Registration

Good morning Sunny,

We need to have the control mRNA that you are sending (b) (4) registered in. Can you work with Brian Fisher, cc'ed here, to get him the information that he needs.

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow | Scientific Lead**

**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**

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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

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:06:13 +0000  
**To:** Hiatt, Nissa (NIH/VRC) [C]  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E]; Prince, Tasheema (NIH/VRC) [C]  
**Subject:** RE: Interview request

That would be fine.

BG

---

**From:** Hiatt, Nissa (NIH/VRC) [C] (b) (6)>  
**Sent:** Friday, April 17, 2020 2:26 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)>; Prince, Tasheema (NIH/VRC) [C]  
(b) (6)>  
**Subject:** RE: Interview request

Hi Barney,

If you would like, I can send Peter's question to Jen and her team so they can work with DMID on a reply.

He may have pinged them as well but I will forward it to them if you want.

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:** Friday, April 17, 2020 1:42 PM  
**To:** Hiatt, Nissa (NIH/VRC) [C] (b) (6)

**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Prince, Tasheema (NIH/VRC) [C]  
(b) (6)

**Subject:** Re: Interview request

(b) (5)

BG

Sent from my iPhone

On Apr 17, 2020, at 12:56 PM, Hiatt, Nissa (NIH/VRC) [C] (b) (6) wrote:

Hi Barney and Kizzmekia,

If you are inclined to reply, I recommend working with Jen and her team to decide if and how to respond to Peter's question. He already published his piece from your recent interview.

Please let us know if we can provide any support or facilitate with the NSWB group.

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)

<image001.png>

**From:** Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>

**Sent:** Friday, April 17, 2020 12:48 PM

**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)

**Cc:** Graham, Barney (NIH/VRC) [E] (b) (6); Hiatt, Nissa (NIH/VRC) [C]  
(b) (6)>

**Subject:** Re: Interview request

Hello all, Thanks for the time you've taken to answer all my questions.

I was wondering, for planning purposes, what will be the way in which the preliminary results of the first study of the NIAID/Moderna vaccine will be released? Any sense of timing for that, now that some of the first enrollees have gotten their 2nd doses?

Pete

On Thu, Apr 2, 2020 at 7:44 AM Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) wrote:  
Testing on mice started on Feb. 4<sup>th</sup>, meaning that's when we vaccinated the first mouse. So we got readings on the initial immune responses on the 18<sup>TH</sup>. (not 25<sup>th</sup>).

--

**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:** Barney Graham <(b) (6)>

**Date:** Thursday, April 2, 2020 at 7:36 AM

**To:** "Loftus, Peter" <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>

**Cc:** Kizzmekia Corbett <(b) (6)>, "Hiatt, Nissa (NIH/VRC) [C]"  
(b) (6)>

**Subject:** Re: Interview request

Hi Peter,

The 12-18 month timeline is still our best hope.

I'm not sure I understand the second comment about Feb 25, but maybe Dr. Corbett does.

Take care,

Barney



Sent from my iPhone

On Apr 1, 2020, at 5:06 PM, Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)> wrote:

Thank you both for answers to the follow up questions. I think we are close to wrapping up our story.

I just wanted to triple-check that the best-case scenario -- assuming all the things you cite here go smoothly -- is 12-18 months for the vaccine to become available? Meaning, early next year at best?

And just to triple check on the mouse testing - you said results Feb. 25, and do you remember when that testing started?

On Sat, Mar 28, 2020 at 6:06 PM Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:  
Hi Peter,

Sorry for not getting back to this. I gave a few answers below.

Can you give me a sense of the main factors that could lead to things taking longer?

RESPONSE: 1) There has never been a licensed human coronavirus vaccine before, 2) there has never been a licensed mRNA vaccine before, 3) most vaccine development efforts are measured in decades, not in months, so this would be unprecedented timeline, 4) The vaccine may not work as well as we want and may take some revision, 5) the animal models to test the vaccine may not work as well as we want and will take time to improve, 6) if too many people become infected who are critical for the research, manufacturing, and clinical trial work there could be delays. This could include delays in shipping because flights are canceled or in any number of services we usually take for granted

Or, a related question: how challenging is it to develop a vaccine against an emerging infectious disease, and why might it take some time despite the urgent and quick response so far?

RESPONSE: Making a vaccine in response to a new emerging disease in time to influence the immediate course of the epidemic has never been done, but our hope is that new technologies and pre-existing knowledge will make this possible.

Barney

**From:** Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>

**Sent:** Wednesday, March 25, 2020 4:42 PM

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

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

**Subject:** Re: Interview request

Thanks so much to both of you for taking time to speak on a Saturday, and amid all that you are working on.

I have follow-up questions that I am hoping you can answer:

-Dr. Corbett, you mentioned that around Jan. 1, you set up alerts on your phone for news about the virus in Wuhan. Can you elaborate on why - as in, what was it about the situation at that time that caught your interest (or concerned you) and motivated you to set up alerts? And to clarify, did you mean setting up something like a Google news alert, or is there some sort of alert system for NIH or scientists generally?

-Dr. Graham, at the end of our call you mentioned that a 12-18 month time frame is a hope-for outcome and assumes many things would have to go smoothly.

Can you give me a sense of the main factors that could lead to things taking longer? Or, a related question: how challenging is it to develop a vaccine against an emerging infectious disease, and why might it take some time despite the urgent and quick response so far?

Thanks!

On Sat, Mar 21, 2020 at 2:33 PM Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:  
(b) (6)

Barney

**From:** Loftus, Peter <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)>

**Sent:** Saturday, March 21, 2020 2:32 PM

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

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

**Subject:** Re: Interview request

Hi what number should I call?

On Sat, Mar 21, 2020 at 11:34 AM Graham, Barney (NIH/VRC) [E] <(b) (6)> wrote:  
Ok. Let's try for 2:30. If you call me I will add Dr. Corbett.

Barney

Sent from my iPhone

On Mar 21, 2020, at 11:19 AM, Peter Loftus <[peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)> wrote:

Thanks, I'm free from 12:30 to 1:30 and then after about 2:15.

Peter Loftus  
The Wall Street Journal  
[Peter.Loftus@wsj.com](mailto:Peter.Loftus@wsj.com)

+ (b) (6)

On Mar 21, 2020, at 11:10 AM, Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:

Would it be possible to schedule this today? Monday will be difficult. If you could propose a time this afternoon we will try to be available.

Barney Graham

\*\*\*\*\*

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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Sent from my iPhone

--

Peter Loftus  
REPORTER

**Error! Filename not specified.**

M: (b) (6) O: +1 215 881 7127  
E: [peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)  
Twitter: @Lofus



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--

Peter Loftus

REPORTER

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Twitter: @Loftus

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--

Peter Loftus

REPORTER

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Twitter: @Loftus

**Error! Filename not specified.**

--

Peter Loftus

REPORTER

**<image002.jpg>**

M: (b) (6) O: +1 215 881 7127

E: [peter.loftus@wsj.com](mailto:peter.loftus@wsj.com)

Twitter: @Loftus

<image002.jpg>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 14:41:32 +0000  
**To:** Stein, Judy (NIH/VRC) [C]  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E]; Alvarado, Gabriela (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]  
**Subject:** FW: (b) (4)

FYI. Judy, can you answer the question about (b) (4)

Kizzy, I'm not sure if we have (b) (4) but you can clarify.

Barney

---

**From:** Raghavan Varadarajan (b) (6)  
**Sent:** Tuesday, April 14, 2020 1:04 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Stein, Judy (NIH/VRC) [C] (b) (6)  
**Subject:** (b) (4),

Dear Barney

(b) (4)

Best  
Raghavan

Raghavan Varadarajan  
Molecular Biophysics Unit  
Indian Institute of Science  
Bengaluru 560012  
India

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 20:28:47 +0000  
**To:** Tong, Tina (NIH/NIAID) [E]  
**Subject:** Accepted: NIAID and Abcellera/Lilly COVID Development Meeting

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 19 Apr 2020 19:57:58 +0000  
**To:** Pierre GSELL  
**Subject:** Accepted: Webex meeting invitation: [COVID-19] 9th Animal Models TC

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:32:23 +0000  
**To:** Bushar, Nicholas (NIH/NIAID) [E]  
**Subject:** Tentative: NIAID Coronavirus SWAT Weekly Meeting



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 10 Jan 2020 17:07:55 +0000  
**To:** Mascola, John (NIH/VRC) [E]  
**Cc:** Marston, Hilary (NIH/NIAID) [E]; Bok, Karin (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** Fwd: Wuhan inquiry from NIH

FYI. Still holding.

BG

Sent from my iPhone

Begin forwarded message:

**From:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Date:** January 10, 2020 at 12:04:20 PM EST  
**To:** George GAO <(b) (6)>  
**Subject:** Re: Wuhan inquiry from NIH

Thanks George. I know your life is crazy busy right now so I appreciate your rapid reply.  
Best wishes,  
Barney

Sent from my iPhone

On Jan 10, 2020, at 11:53 AM, George GAO <(b) (6)> wrote:

Dear Dr Barney  
Many thanks for your email.  
I am working on the matter to push for seq sharing.  
Bedt wishes  
George

发自我的iPhone

在 2020年1月11日, 00:30, Graham, Barney (NIH/VRC) [E] <(b) (6)>  
写道:

Dear Dr. Gao,

I am writing to ask you for information about the Wuhan coronavirus. I am deputy director of the NIAID Vaccine Research Center on the NIH campus in Bethesda. We share many mutual interests and I have followed your work closely over the last few years. I was hoping to see you next week at the bunyavirus workshop but found out that you would not be able to attend. I'm sure this is likely because of your obligations related to the Wuhan outbreak.

Since The MERS CoV outbreak we have learned a lot about CoV spike structure and stabilization and antigenic sites associated with neutralization. I know that your lab is highly capable of characterizing the new virus, but we would be very willing and interested to help with this. Since this virus is likely to not be confined to China alone, we also feel some obligation to initiate our local processes for pandemic preparedness. While this may or may not be necessary, and hopefully the outbreak will not expand, I'm hoping that you would be willing to share sequences with our group at NIAID, especially for spike. We would very much enjoy collaborating with you on this new pathogen.

Best wishes,

Barney

\*\*\*\*\*

Barney S. Graham, MD, PhD  
Senior Investigator  
Deputy Director, Vaccine Research Center  
Chief, Viral Pathogenesis Laboratory  
Vaccine Research Center, NIAID, NIH  
40 Convent Drive, MSC 3017  
Bldg 40, Room 2502  
[Bethesda, MD 20892-3017](https://www.niaid.nih.gov/research/barney-graham-md-phd)  
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:** Wed, 15 Apr 2020 20:29:47 +0000  
**To:** Misasi, John (NIH/VRC) [E]  
**Subject:** Accepted: Covid mAb isolation meeting #3

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 25 Jan 2020 20:24:03 +0000  
**To:** Daucher, Marybeth (NIH/NIAID) [E]  
**Subject:** re: Coronavirus Outbreak spending to date

Sorry, hit wrong button. I agree with your answer, but a lot is being ordered and done.

BG

---

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Saturday, January 25, 2020 3:22 PM  
**To:** Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>  
**Subject:** RE: Coronavirus Outbreak spending to date

---

**From:** Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Friday, January 24, 2020 4:19 PM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>; Bok, Karin (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)>; Ledgerwood, Julie (NIH/NIAID) [E] <(b) (6)>; Harris, Christina (NIH/NIAID) [E] <(b) (6)>  
**Subject:** FW: Coronavirus Outbreak spending to date  
**Importance:** High

Dear Team,  
My response to Martin below would be no- please confirm

---

**From:** Johnson, Martin S. (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Friday, January 24, 2020 4:16 PM  
**To:** Erbeling, Emily (NIH/NIAID) [E] <(b) (6)>; Cassetti, Cristina (NIH/NIAID) [E] <(b) (6)>; Mascola, John (NIH/VRC) [E] <(b) (6)>; Daucher, Marybeth (NIH/NIAID) [E] <(b) (6)>; Holland, Steven (NIH/NIAID) [E] <(b) (6)>; Blaney, Joe (NIH/NIAID) [C] <(b) (6)>; Marston, Hilary (NIH/NIAID) [E] <(b) (6)>; Lane, Cliff (NIH/NIAID) [E] <(b) (6)>; McNay, Laura (NIH/NIAID) [E] <(b) (6)>  
**Cc:** Crum, Wayne (NIH/NIAID) [E] <(b) (6)>; Harper, Jill (NIH/NIAID) [E] <(b) (6)>; McGowan, John J. (NIH/NIAID) [E] <(b) (6)>

**Subject:** FW: Coronavirus Outbreak spending to date  
**Importance:** High

All,

(b) (5)

Thanks

---

**From:** Shapiro, Neil (NIH/OD) [E] <(b) (6)>  
**Sent:** Friday, January 24, 2020 3:40 PM  
**To:** Johnson, Martin S. (NIH/NIAID) [E] (b) (6)>; Shaya, Cecile (NIH/OD) [E] (b) (6)>; Crum, Wayne (NIH/NIAID) [E] <(b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Bushar, Nicholas (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Myers, Jesse (NIH/OD) [E] (b) (6)>  
**Subject:** RE: Coronavirus Outbreak spending

(b) (5)

Neil

---

**From:** Shapiro, Neil (NIH/OD) [E]  
**Sent:** Friday, January 24, 2020 3:36 PM  
**To:** Johnson, Martin S. (NIH/NIAID) [E] <(b) (6)>; Shaya, Cecile (NIH/OD) [E] (b) (6); Crum, Wayne (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6); Bushar, Nicholas (NIH/NIAID) [E] (b) (6)>  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Myers, Jesse (NIH/OD) [E] (b) (6)  
**Subject:** RE: Coronavirus Outbreak spending

Martin, we are trying to clarify this request. (b) (5)

(b) (5)

---

**From:** Johnson, Martin S. (NIH/NIAID) [E] (b) (6)>  
**Sent:** Friday, January 24, 2020 3:13 PM  
**To:** Shaya, Cecile (NIH/OD) [E] <(b) (6)>; Crum, Wayne (NIH/NIAID) [E] (b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)>; Bushar, Nicholas (NIH/NIAID) [E] (b) (6)>



**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Shapiro, Neil (NIH/OD) [E] (b) (6); Myers, Jesse (NIH/OD) [E] (b) (6)

**Subject:** RE: Coronavirus Outbreak spending

Cecile,

I'll double check with NIAID Leadership, (b) (5)

Martin

---

**From:** Shaya, Cecile (NIH/OD) [E] (b) (6)

**Sent:** Friday, January 24, 2020 9:59 AM

**To:** Johnson, Martin S. (NIH/NIAID) [E] (b) (6); Shaya, Cecile (NIH/OD) [E] (b) (6); Crum, Wayne (NIH/NIAID) [E] (b) (6); Marston, Hilary (NIH/NIAID) [E] (b) (6); Bushar, Nicholas (NIH/NIAID) [E] (b) (6)

**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Shapiro, Neil (NIH/OD) [E] (b) (6); Myers, Jesse (NIH/OD) [E] (b) (6)

**Subject:** Re: Coronavirus Outbreak spending

Hello Martin - The Department would like to have the information by the end of today. Please provide any information you have on coronavirus. If it needs additional information, we can follow up later.

Thanks,  
Cecile

---

**From:** "Johnson, Martin S. (NIH/NIAID) [E]" (b) (6)

**Date:** Thursday, January 23, 2020 at 6:57:39 PM

**To:** "Shaya, Cecile (NIH/OD) [E]" (b) (6), "Crum, Wayne (NIH/NIAID) [E]" (b) (6), "Marston, Hilary (NIH/NIAID) [E]" (b) (6), "Bushar, Nicholas (NIH/NIAID) [E]" (b) (6)

**Cc:** "Harper, Jill (NIH/NIAID) [E]" (b) (6), "Shapiro, Neil (NIH/OD) [E]" (b) (6), "Myers, Jesse (NIH/OD) [E]" (b) (6)

**Subject:** RE: Coronavirus Outbreak spending

Cecile,

Is there anything more specific about this request ?

I would request additional time .

Thanks

---

**From:** Shaya, Cecile (NIH/OD) [E] (b) (6) >  
**Sent:** Thursday, January 23, 2020 6:42 PM  
**To:** Johnson, Martin S. (NIH/NIAID) [E] <(b) (6)>; Crum, Wayne (NIH/NIAID) [E]  
(b) (6) >  
**Cc:** Harper, Jill (NIH/NIAID) [E] (b) (6); Shapiro, Neil (NIH/OD) [E]  
(b) (6); Myers, Jesse (NIH/OD) [E] (b) (6)  
**Subject:** Coronavirus Outbreak spending  
**Importance:** High

Hello Martin and Wayne - OMB is requesting spending information on the coronavirus outbreak. Could you please provide by 3 pm tomorrow. If you need more time, please let us know.

Sorry for the rush request.  
Cecile



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:32:34 +0000  
**To:** Auchincloss, Hugh (NIH/NIAID) [E]  
**Subject:** Tentative: NIAID COVID-19 Division Directors Sync

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 10 Jan 2020 17:49:30 +0000  
**To:** Fauci, Anthony (NIH/NIAID) [E]  
**Cc:** Mascola, John (NIH/VRC) [E]; Marston, Hilary (NIH/NIAID) [E]  
**Subject:** FW: Wuhan inquiry from NIH

Hi Tony,

FYI. This is the response from George Gao. He is head of China CDC and a basic virologist.

Barney

---

**From:** George GAO <(b) (6)>  
**Sent:** Friday, January 10, 2020 11:53 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: Wuhan inquiry from NIH

Dear Dr Barney  
Many thanks for your email.  
I am working on the matter to push for seq sharing.  
Best wishes  
George

发自我的iPhone

在 2020年1月11日, 00:30, Graham, Barney (NIH/VRC) [E] (b) (6) 写道 :

Dear Dr. Gao,

I am writing to ask you for information about the Wuhan coronavirus. I am deputy director of the NIAID Vaccine Research Center on the NIH campus in Bethesda. We share many mutual interests and I have followed your work closely over the last few years. I was hoping to see you next week at the bunyavirus workshop but found out that you would not be able to attend. I'm sure this is likely because of your obligations related to the Wuhan outbreak.

Since The MERS CoV outbreak we have learned a lot about CoV spike structure and stabilization and antigenic sites associated with neutralization. I know that your lab is highly capable of characterizing the new virus, but we would be very willing and interested to help with this. Since this virus is likely to not be confined to China alone, we also feel some obligation to initiate our local processes for pandemic preparedness. While this may or may not be necessary, and hopefully the outbreak will not expand, I'm hoping that you would be willing to share sequences with our group at NIAID, especially for spike. We would very much enjoy collaborating with you on this new pathogen.

Best wishes,

Barney

\*\*\*\*\*

Barney S. Graham, MD, PhD  
Senior Investigator  
Deputy Director, Vaccine Research Center  
Chief, Viral Pathogenesis Laboratory  
Vaccine Research Center, NIAID, NIH  
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[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:** Sun, 19 Apr 2020 20:00:55 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: (b) (5) Graphs

(b) (5)

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Sunday, April 19, 2020 8:33 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: (b) (5) Graphs

(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:** Barney Graham <(b) (6)>  
**Date:** Saturday, April 18, 2020 at 1:31 PM  
**To:** Kizzmekia Corbett (b) (6), "Ruckwardt, Tracy (NIH/VRC) [E]"

(b) (6) >

**Cc:** Kaitlyn Morabito <(b) (6)>, "Phung, Emily (NIH/VRC) [F]"

(b) (6)

**Subject:** RE: (b) (5) Graphs

(b) (5)

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)

**Sent:** Saturday, April 18, 2020 1:27 PM

**To:** Ruckwardt, Tracy (NIH/VRC) [E] (b) (6) Graham, Barney (NIH/VRC) [E]

(b) (6) >

**Cc:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >; Phung, Emily (NIH/VRC) [F]

(b) (6) >

**Subject:** Re: (b) (5) Graphs

**I agree that this is a great idea, Tracy.** (b) (5)

(b) (5)

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow | Scientific Lead**

**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**

Viral Pathogenesis Laboratory | Vaccine Research Center

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40 Convent Drive

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Laboratory: (b) (6)

Personal: (b) (6)

Fax: (301) 480-2771

---

**From:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6) >

**Date:** Friday, April 17, 2020 at 8:38 PM

**To:** Barney Graham <(b) (6)>, Kizzmekia Corbett <(b) (6)>  
**Cc:** Kaitlyn Morabito <(b) (6)>, "Phung, Emily (NIH/VRC) [F]"  
(b) (6)  
**Subject:** Re: (b) (5) Graphs

Is it possible that (b) (5)  
(b) (5)  
(b) (5), so I'm not sure what to make of that.

---

**From:** "Graham, Barney (NIH/VRC) [E]" (b) (6)>  
**Date:** Friday, April 17, 2020 at 6:11 PM  
**To:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)  
**Cc:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>, "Phung, Emily (NIH/VRC) [F]" (b) (6)>  
**Subject:** FW: (b) (5) Graphs

Do you think there is any chance (b) (5)  
(b) (5)  
(b) (5) This just doesn't seem right.

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Sent:** Friday, April 17, 2020 8:52 AM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6)>  
**Subject:** FW: (b) (5) Graphs

--

**Kizzmekia S. Corbett, PhD**  
**Senior Research Fellow | Scientific Lead**  
**Coronavirus Vaccines & Immunopathogenesis (coVip) Team**  
Viral Pathogenesis Laboratory | Vaccine Research Center  
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---

**From:** "Phung, Emily (NIH/VRC) [F]" (b) (6) >

**Date:** Tuesday, April 14, 2020 at 12:55 PM

**To:** Kizzmekia Corbett (b) (6)

**Cc:** "Chang, Lauren (NIH/VRC) [F]" (b) (6) >, "Abiona, Olubukola (NIH/VRC) [F]" (b) (6)

**Subject:** (b) (5) Graphs

Hi Kizzmekia,

Attached is the PRISM file with the new graphs. The formatted graphs are highlighted in red (also attached below).


These can be accessed in /CoVip Team Sharing/Curated Prisms/Lauren and Emily  
Analyses/20200412\_2019-nCoV mRNA (b) (5)

Please let me know if you want me to change anything!

Thank you,  
Emily



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



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 15:11:34 +0000  
**To:** William Dowling  
**Subject:** Accepted: [REDACTED] (b) (5)  
[REDACTED] Wed 3:30 PM CET

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sat, 25 Jan 2020 21:49:22 +0000  
**To:** Sheikh, Knvul  
**Subject:** RE: INTERVIEW: Regarding Wuhan coronavirus

I could talk now if you are available. It would be easier for me than tomorrow.

My cell is (b) (6)

Best wishes,

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  
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**From:** Sheikh, Knvul <knvul.sheikh@nytimes.com>  
**Sent:** Saturday, January 25, 2020 2:57 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** INTERVIEW: Regarding Wuhan coronavirus

Dear Dr. Graham,

My name is Knvul Sheikh and I'm a science reporter at The New York Times. I'm interested in understanding the human backstory of how U.S. scientists got involved in ID'ing the new coronavirus out of Wuhan and/or developing a test to diagnose the virus. I just got off a call with Dr. Anthony Fauci and he recommended I speak with you about the process.

Please let me know if you might have time to speak over the phone later this tomorrow. I'm on a tight deadline, trying to get some context for a story by Monday morning, Jan. 27.

Thanks and best regards,  
Knvul

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 22 Jan 2020 23:25:23 +0000  
**To:** Bok, Karin (NIH/VRC) [E]  
**Subject:** FW: (b) (4) follow-up

FYI. They had wrong email for you.

BG

---

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wednesday, January 22, 2020 6:23 PM  
**To:** Kallewaard-LeLay, Nicole (b) (6)  
**Cc:** Price, Jessica (b) (6) Morabito, Kaitlyn (NIH/VRC) [E]  
(b) (6); Kanekiyo, Masaru (NIH/VRC) [E] <(b) (6)>  
**Subject:** RE: (b) (4) follow-up

Thank you on both counts. (b) (4)  
(b) (4)

We are very busy with the new Wuhan CoV, but don't have many reagents yet. We might have protein by next week, so by Feb 4<sup>th</sup> we might know whether we already have cross-reactive mAbs and a better idea of timeline for when Wuhan samples would be available for screening.

Best wishes,

Barney

---

**From:** Kallewaard-LeLay, Nicole (b) (6)  
**Sent:** Wednesday, January 22, 2020 6:12 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Price, Jessica (b) (6) >  
**Subject:** (b) (4) follow-up

Hi Barney and Karen- Hope all is well with you. I wanted to follow-up with you about (b) (4)  
(b) (4)

(b) (4) Looking forward to talking more at the upcoming meeting

On a separate note, I was thinking you and your lab are probably quite busy working with this new coronavirus trying to find cross-reactive mAbs and vaccine constructs. The CEO of AZ and his senior leadership team are keen to support ongoing efforts if we can be of service, especially in light of the past collaboration with the Ebola mAb. I'm sure things are moving very quickly, but thought it might be a good opportunity to at least touch on this topic at the F2F meeting if not before.

Thanks  
Nicole

Nicole Kallewaard-LeLay  
Associate Director  
Astrazeneca  
One MedImmune Way  
Gaithersburg, MD 20878

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

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 5 Mar 2020 20:19:14 +0000  
**To:** Chris Twitty  
**Cc:** Sandra Aung; Stein, Judy (NIH/VRC) [C]; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]  
**Subject:** RE: COVID-19

Hi Judy,

(b) (4)

Thanks,

Barney

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

From: Chris Twitty <(b) (6)>  
Sent: Thursday, March 5, 2020 1:56 PM  
To: Graham, Barney (NIH/VRC) [E] (b) (6)  
Cc: Sandra Aung (b) (6)  
Subject: Re: COVID-19

Hi Barney,

(b) (4)

Thank you kindly. To echo what Sandra said, we would love to have you over next time you are in San Diego.

Best,

Chris

On 3/5/20, 12:14 AM, "Graham, Barney (NIH/VRC) [E]" <(b) (6)> wrote:

Hi Dennis,

(b) (4)

Best wishes,

Barney



Sent from my iPhone

This message, together with any attachments, may contain confidential or privileged information. If you think you may have received this message in error, please advise the sender and then delete this message and any attachments immediately. Thank you.

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 8 Mar 2020 07:07:44 +0000  
**To:** Sung-Han Kim, MD.  
**Subject:** RE: clinical trial for COVID-19

Hi Sung-Han,

(b) (4)

Best wishes,

Barney

---

**From:** Sung-Han Kim, MD. <(b) (6)>  
**Sent:** Sunday, March 8, 2020 1:30 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** RE: clinical trial for COVID-19

Hi Barney,

I think that you are very busy to prepare the vaccine for SARS-CoV-2. Since mid-January, I have been continuously making all efforts to prevent nosocomial transmission of COVID-19 in our hospital.

Fortunately, there have been no COVID-19-related cases in our hospital. (b) (4)

(b) (4)

I heard from Dr. Oh that NIH leads remdesivir clinical trial and two hospitals in South Korea were designated for this trial. Dr. Oh said to me that it is difficult to include another hospital in South Korea. Do you have any information for this NIH-sponsored remdesivir clinical trial? (b) (4)

Best regards,

Sung-Han Kim, MD, PhD.  
Professor  
Department of Infectious Diseases  
Chief  
Office for Infection Control  
Asan Medical Center  
University of Ulsan College of Medicine  
388-1 Pungnap-dong, Songpa-gu  
Seoul, 138-736, South Korea

TEL: (b) (6) FAX: 82-2-3010-6970

e-mail: (b) (6)

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Sent:** Saturday, September 1, 2018 11:10 PM  
**To:** Sung-Han Kim MD - AMC (b) (6)  
**Cc:** Young, Monique (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Korea visit in September 2018

OK. See you on Tuesday. I'm sure we can find some times to meet once I'm there.

Barney

---

**From:** Sung-Han Kim MD - AMC (b) (6) >  
**Sent:** Sunday, August 26, 2018 8:41 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Young, Monique (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Korea visit in September 2018

Thank you for inviting me to the Thursday dinner. I think that Rick and you have many things to talk with Jerome Kim. It is better that I will not join your gathering because I do not want to be a distraction. I am so sorry that I cannot change my Friday night schedule. I could invite you to another meeting in Korea in near future. I am looking forward to seeing you in Seoul next Tuesday.

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Sunday, August 26, 2018 8:15 PM  
**To:** Sung-Han Kim MD - AMC (b) (6) >  
**Cc:** Young, Monique (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: Korea visit in September 2018

OK. Sorry about that. Maybe you can join me and Rick and Jerome Kim on the 6th.

Barney

Sent from my iPhone

On Aug 26, 2018, at 5:16 AM, Sung-Han Kim MD – AMC  
(b) (6) wrote:

Hi Barney,

Unfortunately, I will be out of town between 7th Sept and 8th Sept. Let's talk about it further in Seoul.

Sung-Han

2018. 8. 24. 오전 6:14, Graham, Barney (NIH/VRC) [E] <(b) (6)>  
작성:

Hi Sung-Han,

I think the evening of the 7<sup>th</sup> would work best for me.

Barney

---

**From:** Sung-Han Kim MD - AMC (b) (6) >  
**Sent:** Thursday, August 23, 2018 5:20 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Young, Monique (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Korea visit in September 2018

The previous mail has one typo-error.

If your schedule in the evening of Sept 6 is okay, could I dinner with you?

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Sent:** Wednesday, August 22, 2018 6:55 AM  
**To:** Sung-Han Kim MD - AMC (b) (6)>  
**Cc:** Young, Monique (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Korea visit in September 2018

Hi Sung-Han,

I am coming to Korea arriving Sept 4<sup>th</sup> on a United flight at 14:50 PM. I will then be in Osong for the KNIH meeting.

Sept 5 – 13:00 – “Structure-guided vaccine design for respiratory viruses and pandemic preparedness”

Sept 5 – 16:40 – “Development of universal influenza vaccines”

Sept 6 – 17:30 – meeting ends

I’m returning to Seoul either evening of the 6<sup>th</sup> or morning of the 7<sup>th</sup> to give a talk at IVI on the 7<sup>th</sup> (Structure-based Vaccine Design for Respiratory Viruses) then leaving on the 8<sup>th</sup> on an Asiana flight at 16:10 PM.

Would be nice to see you.

Best wishes,

Barney

---

**From:** Sung-Han Kim MD - AMC (b) (6)>  
**Sent:** Saturday, August 18, 2018 10:38 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)>  
**Subject:** RE: Korea visit in September 2018

Hi Barney,

Recently, I heard from Korea NIH that you will arrive at Seoul on 4 Sept 2018 and leave Seoul on 8 Sept 2018, and the travel agency is now arranging your schedule. I am bound to the other schedules on 5 Sept, 7 Sept, and 8 Sept. Can I know your detailed schedule for this visit to Seoul? I am looking forward to seeing you in Seoul.

Best regards,

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Monday, April 24, 2017 12:32 PM  
**To:** Sung-Han Kim MD - AMC (b) (6) >  
**Cc:** Modjarrad, Kayvon (NIH/VRC) [E] <(b) (6)>  
**Subject:** RE: MERS-CoV pseudovirus assay

Hi Sung-Han,

Thanks for sharing this. (b) (4)  
(b) (4)



I hope you and your family are well and (b) (6)



Best wishes,

Barney

---

**From:** Sung-Han Kim MD - AMC [(b) (6)]  
**Sent:** Friday, April 21, 2017 4:37 AM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Cc:** Modjarrad, Kayvon (NIH/VRC) [E] <(b) (6)>  
**Subject:** RE: (b) (4)

Hi Barney,



A few weeks ago, I sent the e-mail on my study of (b) (4) I have not yet received your reply, so I am sending this mail again.

(b) (4)

(b) (4) I hope that I will see you again in Seoul or in Bethesda. Thanks.

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Wednesday, April 13, 2016 9:13 AM  
**To:** 'Sung-Han Kim, MD, PhD.'  
**Cc:** Modjarrad, Kayvon (NIH/VRC) [E]  
**Subject:** RE: MERS-CoV EM picture

Congratulations Sung-Han. It's a great contribution.

Barney

---

**From:** Sung-Han Kim, MD, PhD. (b) (6)  
**Sent:** Tuesday, April 12, 2016 7:54 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Cc:** Modjarrad, Kayvon (NIH/VRC) [E] (b) (6)>  
**Subject:** RE: MERS-CoV EM picture

Hi Barney,

I heard from Sang-gu that everything goes well with you. Yesterday, I received the acceptance letter from CID for the study on the extensive environmental contamination of MERS-CoV. I attached the final version of the manuscript. Thank you for your keen comments on our study. Your opinion made sure the confidence of our study and drove the positive results.

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Sunday, September 13, 2015 5:04 AM



**To:** Sung-Han Kim, MD, PhD.  
**Subject:** RE: MERS-CoV EM picture

Hi Sung-Han,

Interesting data.

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

Barney

---

**From:** Sung-Han Kim, MD, PhD. [REDACTED] (b) (6)  
**Sent:** Saturday, September 12, 2015 12:41 AM  
**To:** Graham, Barney (NIH/VRC) [E] <[REDACTED]> (b) (6)  
**Subject:** RE: MERS-CoV EM picture

Hi Barney,

I met Kayvon in [REDACTED] (b) (6)

Beside this, I have one question for my recent study.

(b) (4)

(b) (4)

Sung-Han

---

**From:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, July 31, 2015 6:46 AM  
**To:** Wang, Lingshu (NIH/VRC) [E]; Kong, Wing-Pui (NIH/VRC) [E]; Ko, Sung-Youl (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/OD) [E]; 'Sung-Han Kim, MD, PhD.'  
**Subject:** RE: pseudovirus assay

Thanks Lingshu,

Probably Tuesday and Friday would be the best days to observe. Would just need to know approximate timing.

BG

---

**From:** Wang, Lingshu (NIH/VRC) [E]  
**Sent:** Thursday, July 30, 2015 5:38 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>; Kong, Wing-Pui (NIH/VRC) [E] (b) (6); Ko, Sung-Youl (NIH/VRC) [E] (b) (6)>; Corbett, Kizzmekia (NIH/OD) [E] (b) (6); 'Sung-Han Kim, MD, PhD.' (b) (6)>  
**Subject:** RE: (b) (4)

Hi Barney,

(b) (4) Please just let us know what day he wants to come.

Thanks,  
lingshu

---

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thursday, July 30, 2015 5:21 PM  
**To:** Wang, Lingshu (NIH/VRC) [E] (b) (6); Kong, Wing-Pui (NIH/VRC) [E] (b) (6)>; Ko, Sung-Youl (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/OD) [E] (b) (6)>; 'Sung-Han Kim, MD, PhD.' (b) (6)>  
**Subject:** (b) (4)

Hi Lingshu/Wing,

Dr. Sung-Han Kim visited today from Seoul. He worked in the VPL for 2 years and went back to Seoul in 2013. He has an interest in MERS CoV and saw one of the patients during the recent outbreak. If possible (b) (4)

If so, please give a time that he could visit. (b) (4)

Thanks,

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  
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URL: [VRC.nih.gov](http://VRC.nih.gov)

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 6 Apr 2020 20:14:29 +0000  
**To:** Carlton, Kevin (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Vaccinated Samples Review POCs

OK. (b) (5).

Barney

---

**From:** Carlton, Kevin (NIH/VRC) [E] (b) (6)  
**Sent:** Monday, April 6, 2020 4:09 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Vaccinated Samples Review POCs

Hi Barney,

(b) (5)

Kevin

---

**From:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Sent:** Monday, April 6, 2020 3:32 PM  
**To:** Carlton, Kevin (NIH/VRC) [E] <(b) (6)>; Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Vaccinated Samples Review POCs

(b) (5)

BG

---

**From:** Carlton, Kevin (NIH/VRC) [E] (b) (6)>  
**Sent:** Monday, April 6, 2020 3:24 PM  
**To:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** RE: Vaccinated Samples Review POCs

Hi Barney,

(b) (5)

Kevin

---

**From:** Morabito, Kaitlyn (NIH/VRC) [E] (b) (6) >  
**Sent:** Monday, April 6, 2020 9:03 AM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >; Carlton, Kevin (NIH/VRC) [E] (b) (6) >; Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Re: Vaccinated Samples Review POCs

Hi Kevin,

(b) (5)

Kaitlyn

---

**From:** Kizzmekia Corbett (b) (6) >  
**Date:** Friday, April 3, 2020 at 4:38 PM  
**To:** "Carlton, Kevin (NIH/VRC) [E]" (b) (6) >, Barney Graham (b) (6), "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)  
**Subject:** Re: Vaccinated Samples Review POCs

(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: (301) 761-7610  
Personal: (b) (6)  
Fax: (301) 480-2771

---

**From:** Kevin Carlton (b) (6)

**Date:** Friday, April 3, 2020 at 4:30 PM

**To:** Barney Graham (b) (6), Kaitlyn Morabito <(b) (6)>, Kizzmekia Corbett <(b) (6)>

**Subject:** Vaccinated Samples Review POCs

Barney/Kaitlyn/Kizzmekia,

(b) (5)

Kevin

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:32:37 +0000  
**To:** Auchincloss, Hugh (NIH/NIAID) [E]  
**Subject:** Tentative: NIAID COVID-19 Division Directors Sync



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 10 Jan 2020 22:08:56 +0000  
**To:** Marston, Hilary (NIH/NIAID) [E]  
**Subject:** Accepted: Wuhan Coronavirus Response Small group

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 19 Apr 2020 20:01:53 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: [REDACTED] (b) (5)

If you can get it on Tuesday we probably can't do better than that.

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)  
**Sent:** Sunday, April 19, 2020 4:00 PM  
**To:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6) >  
**Subject:** Re: [REDACTED] (b) (5)

Go ahead! I don't believe I'm a member or said list serv. I'll also order some for delivery Tuesday.

Sent from the mobile device of:  
Kizzmekia S. Corbett, PhD  
Senior Research Fellow  
coVip Scientific Lead  
VRC | NIAID | NIH  
[REDACTED] (b) (6)

---

**From:** "Graham, Barney (NIH/VRC) [E]" [REDACTED] (b) (6)  
**Date:** Sunday, April 19, 2020 at 3:34:16 PM  
**To:** "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" [REDACTED] (b) (6) >, "Dipiazza, Anthony (NIH/VRC) [F]" [REDACTED] (b) (6) >, "Corbett, Kizzmekia (NIH/VRC) [E]" [REDACTED] (b) (6) >  
**Cc:** "Ruckwardt, Tracy (NIH/VRC) [E]" [REDACTED] (b) (6), "Kanekiyo, Masaru (NIH/VRC) [E]" [REDACTED] (b) (6), "Abiona, Olubukola (NIH/VRC) [F]" [REDACTED] (b) (6) >  
**Subject:** RE: [REDACTED] (b) (5)

We could ask on the Immunology listserv.

Barney

---

**From:** Boyoglu-Barnum, Seyhan (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Sent:** Sunday, April 19, 2020 3:30 PM  
**To:** Dipiazza, Anthony (NIH/VRC) [F] [REDACTED] (b) (6) >; Corbett, Kizzmekia (NIH/VRC) [E]

(b) (6)>; Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Cc:** Ruckwardt, Tracy (NIH/VRC) [E] <(b) (6)>; Kanekiyo, Masaru (NIH/VRC) [E]  
(b) (6)>; Abiona, Olubukola (NIH/VRC) [F] (b) (6)  
**Subject:** Re: (b) (5)

Kizzy,  
I have (b) (5). Sorry.  
Thank you.  
Seyhan

---

**From:** Dipiazza, Anthony (NIH/VRC) [F] (b) (6)>  
**Sent:** Sunday, April 19, 2020 8:47 AM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>; Graham, Barney (NIH/VRC) [E]  
(b) (6)>  
**Cc:** Ruckwardt, Tracy (NIH/VRC) [E] (b) (6)>; Boyoglu-Barnum, Seyhan (NIH/VRC) [E]  
(b) (6)>; Kanekiyo, Masaru (NIH/VRC) [E] (b) (6)>;  
Abiona, Olubukola (NIH/VRC) [F] (b) (6)>  
**Subject:** Re: (b) (5)

(b) (5)

After looking on Jackson Immuno, I too realized (b) (5)

(b) (5)

Tony

---

**From:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>  
**Date:** Sunday, April 19, 2020 at 12:33 PM  
**To:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Cc:** "Ruckwardt, Tracy (NIH/VRC) [E]" (b) (6)>, "Boyoglu-Barnum, Seyhan  
(NIH/VRC) [E]" (b) (6), "Kanekiyo, Masaru (NIH/VRC) [E]"  
(b) (6)>, "Abiona, Olubukola (NIH/VRC) [F]" (b) (6)>,  
"Dipiazza, Anthony (NIH/VRC) [F]" <(b) (6)>  
**Subject:** (b) (5)

Hi all,  
Do we have any (b) (5) available in the lab, that you know of?

--

**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: (301) 761-7610  
Personal: (b) (6)  
Fax: (301) 480-2771

---

**From:** Barney Graham (b) (6) >  
**Date:** Sunday, April 19, 2020 at 12:31 PM  
**To:** Darin Edwards <(b) (6)>  
**Cc:** Kizzmekia Corbett (b) (6) >, Andrea Carfi  
(b) (6) >  
**Subject:** Re: (b) (5)

Thanks Darin. (b) (4)

BG

Sent from my iPhone

On Apr 19, 2020, at 11:05 AM, Darin Edwards (b) (6) wrote:

Hi Barney,

(b) (4)

Thanks, and again I apologize.

**Darin Edwards**

Associate Director, Infectious Disease | Moderna

mobile (b) (6) | (b) (6)

[modernatx.com](mailto:modernatx.com)

[<image011.jpg>](#)

[<image012.jpg>](#)

[<image013.jpg>](#)

[<image014.jpg>](#)

[<image015.jpg>](#)

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(b) (4) test 04Oct2019.pptx>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 15:12:50 +0000  
**To:** Michael Overduin  
**Subject:** RE: International COVID-19 Conference: invitation to speak

Tomorrow is difficult. I have back-to-back and overlapping meetings from 8am to 7pm.

Barney

**From:** Michael Overduin (b) (6) >  
**Sent:** Monday, April 13, 2020 6:14 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Re: International COVID-19 Conference: invitation to speak

Hi Barney

We have another COVID conference by zoom on Apr 15.

Do let me know if you'd like to present a ~10 minute talk from your desk.

Thanks  
Michael

On Mon, Apr 13, 2020 at 2:48 PM Graham, Barney (NIH/VRC) [E] (b) (6) > wrote:  
Dr. Overduin,

I'm sorry, but I am so far behind on email that I did not notice this until well after your meeting. Hope it went well.

Take care,

Barney

**From:** Michael Overduin (b) (6) >  
**Sent:** Thursday, April 2, 2020 5:21 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** International COVID-19 Conference: invitation to speak

Dear Barney Graham,

I am writing to ask if you could make a statement at the International COVID-19 Conference, which is being held by Zoom on April 8.

We are including the following sessions, you would be welcome to speak at any time from your desk.

EPIDEMIOLOGY AND SURVEILLANCE  
MEDICAL DEVICES  
THERAPEUTICS  
DIAGNOSTICS  
PUBLIC HEALTH  
MANUFACTURING & DISTRIBUTION

There are further details at [www.discoverylab.ca](http://www.discoverylab.ca).

Thank you for your consideration and for your leadership, we are gathering hundreds of academic scientists, clinicians, startups, biotechs and pharma to work together with government and funding agencies, your input would make a tremendous difference.

Best wishes,

Michael

--

Michael Overduin  
Department of Biochemistry  
Faculty of Medicine & Dentistry  
University of Alberta  
333 Medical Sciences Building  
Edmonton, Canada T6G 2H7  
p: (b) (6)  
f: 780 492 0886  
e: (b) (6)

*Networks:*

[CureCancer](#): engaging the public in cancer research  
[DiscoveryLab](#): COVID-19 webcons to support people making a difference  
[Geopowr](#): empowering citizens to diversify energy  
[NANUC](#): National High Field Nuclear Magnetic Resonance Centre  
[NMRCAN](#): Canadian NMR community for spectrometer access  
[Science Capital](#) events to link entrepreneurial scientists and capital  
[TMIC](#): metabolomics [meetings](#), data collection, analytical services

--

Michael Overduin  
Department of Biochemistry  
Faculty of Medicine & Dentistry  
University of Alberta  
333 Medical Sciences Building  
Edmonton, Canada T6G 2H7  
p: (b) (6)  
f: 780 492 0886



e: [REDACTED] (b) (6)

*Networks:*

[CureCancer](#): engaging the public in cancer research

[DiscoveryLab](#): **COVID-19** webcons to support people making a difference

[Geopowr](#): empowering citizens to diversify energy

[NANUC](#): National High Field Nuclear Magnetic Resonance Centre

[NMRCAN](#): Canadian NMR community for spectrometer access

[Science Capital](#) events to link entrepreneurial scientists and capital

[TMIC](#): metabolomics [meetings](#), data collection, analytical services

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 11 Mar 2020 12:01:00 +0000  
**To:** William Dowling

**Subject:** Accepted: [REDACTED] (b) (5)  
[REDACTED] - Wed 1 PM CET

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 18 Mar 2020 15:46:16 +0000  
**To:** Watts, Norman (NIH/NIAMS) [E]  
**Cc:** Wingfield, Paul (NIH/NIAMS) [E]; Embry, Alan (NIH/NIAID) [E]; Stemmy, Erik (NIH/NIAID) [E]  
**Subject:** RE: Covid 19 antiviral activity testing

Thank you, I think the best avenue for antivirals is through DMID and I have copied the people here who will forward that request.

Best wishes,

Barney

---

**From:** Watts, Norman (NIH/NIAMS) [E] (b) (6) >  
**Sent:** Wednesday, March 18, 2020 11:31 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Cc:** Wingfield, Paul (NIH/NIAMS) [E] (b) (6) >  
**Subject:** Covid 19 antiviral activity testing

Dear Dr. Graham,

(b) (5)

(b) (5) Can you make any recommendations?

Norman Watts

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 5 Mar 2020 20:22:02 +0000  
**To:** Oplinger, Anne (NIH/NIAID) [E]; Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** NIAID COGCORE; NIAID Media Inquiries; Harris, Christina (NIH/NIAID) [E]; Hiatt, Nissa (NIH/VRC) [C]  
**Subject:** RE: Add'l Follow up Qs: Novel Coronavirus (Week of Mar 1)

Hi Anne,

Can I just answer by email?

BG

---

**From:** Oplinger, Anne (NIH/NIAID) [E] (b) (6) >  
**Sent:** Thursday, March 5, 2020 1:51 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >; Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Cc:** NIAID COGCORE <COGCORE@mail.nih.gov>; NIAID Media Inquiries <mediainquiries@niaid.nih.gov>; Harris, Christina (NIH/NIAID) [E] (b) (6) >; Hiatt, Nissa (NIH/VRC) [C] (b) (6) >  
**Subject:** Add'l Follow up Qs: Novel Coronavirus (Week of Mar 1)

Reporter: Eric Boodyman

Organization: STAT

Phone #(s): (b) (6) [eric.boodyman@globe.com](mailto:eric.boodyman@globe.com)

Subject: Coronavirus, animal model used in testing Moderna candidate vaccine

Deadline: not specified (I told him very unlikely before Monday)

Hi all,

Eric Boodyman is back with some follow up questions regarding mouse models for studying COVID-19 virus. Could take answers by phone or email. Please let me know if VRC has an SME willing to do this. His questions are:

- 1) My understanding is that wild type mice are not susceptible to Covid-19 virus. What has been modified in the mice that will be used in the next in vivo step to make them susceptible to the virus?
- 2) Do those mice exist already and to what extent do we know how susceptible they are to the virus and what sorts of disease they show?
- 3) When will those optimized challenge models be ready?
- 4) Will there be efficacy results from testing mRNA-1273 in optimized challenge models before clinical testing begins in April, as Dr. Fauci has stated it will?

Eric's piece on animal models from today: <https://www.statnews.com/2020/03/05/coronavirus-labs-scramble-to-find-right-animals-for-covid-19-studies/>

*Anne A. Oplinger*

Office of Communications

National Institute of Allergy and Infectious Diseases

National Institutes of Health

Bldg 31, Rm. 7A17D

Media Line: (301) 402-1663

General Line: (301) 594-3961

(b) (6)

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 6 Apr 2020 20:17:20 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: combo assays

(b) (5)

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Sent:** Monday, April 6, 2020 4:14 PM  
**To:** Graham, Barney (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: combo assays

(b) (5)

Sent from the mobile device of:

Kizzmekia S. Corbett, PhD

Senior Research Fellow

coVip Scientific Lead

VRC | NIAID | NIH

(b) (6)

---

**From:** "Graham, Barney (NIH/VRC) [E]" <(b) (6)>  
**Date:** Monday, April 6, 2020 at 3:44:10 PM  
**To:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>  
**Subject:** RE: combo assays

(b) (5)

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Monday, April 6, 2020 1:57 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** FW: combo assays

(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:** Ester Falconer (b) (6)  
**Date:** Monday, April 6, 2020 at 1:53 PM  
**To:** Kizzmekia Corbett (b) (6) >, Payal Sipahimalani  
(b) (6) >  
**Subject:** combo assays

Hi Kizzmekia,

We're compiling the (b) (4) in an email to reach you and the rest of the teams shortly.

(b) (4)

Thanks kindly,

Ester

--

Ester Falconer, PhD



Head of Research & Development

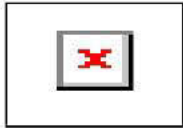
AbCellera Biologics Inc.

2215 Yukon Street

Vancouver BC V5Y 0A1

T: (b) (6)

[abcellera.com](http://abcellera.com)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Mon, 10 Feb 2020 13:34:05 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** Re: One Health Newscast - Late breakers are now open! Call for abstracts on 2019 N-COV

(b) (5)

BG

Sent from my iPhone

On Feb 10, 2020, at 8:29 AM, Corbett, Kizzmekia (NIH/VRC) [E]

(b) (6) wrote:

(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:** Barney Graham (b) (6)

**Date:** Monday, February 10, 2020 at 8:23 AM

**To:** Kizzmekia Corbett (b) (6)

**Subject:** Fwd: One Health Newscast - Late breakers are now open! Call for abstracts on 2019 N-COV

This is what I was referring to. (b) (5)

BG

Sent from my iPhone

Begin forwarded message:

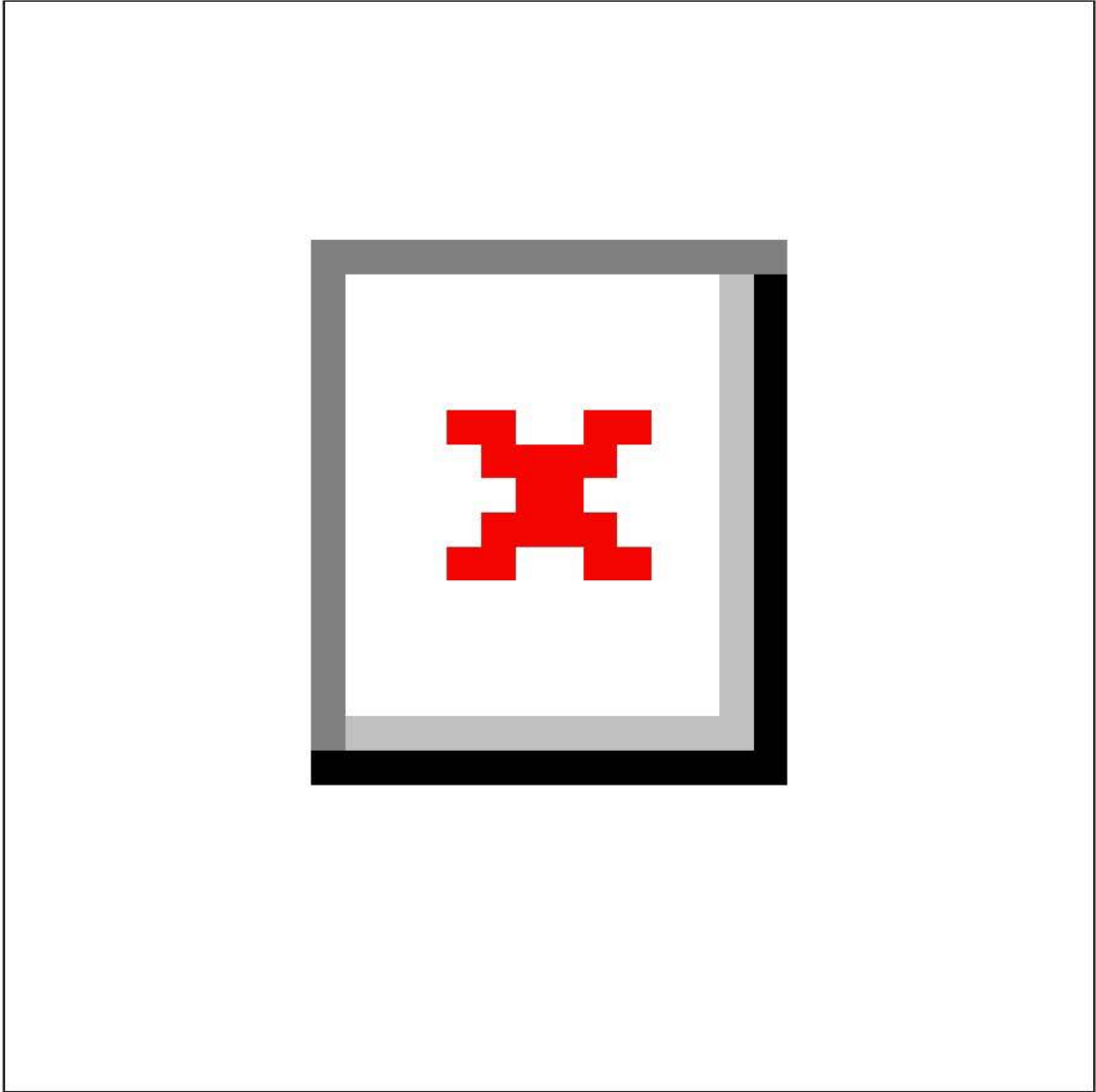
**From:** Ab Osterhaus - One Health Platform <ab.osterhaus@onehealthplatform.org>

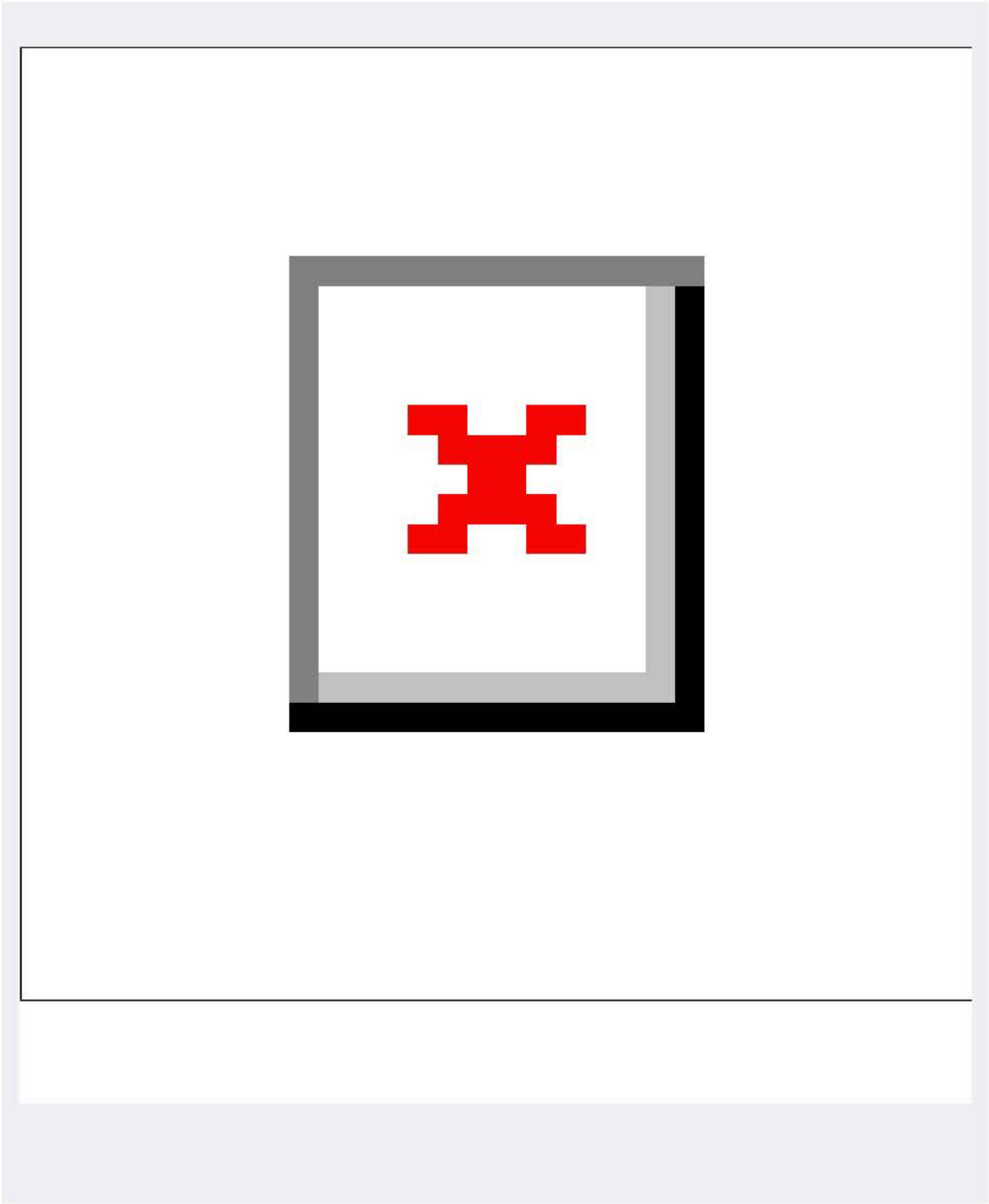
**Date:** February 10, 2020 at 2:14:45 AM EST

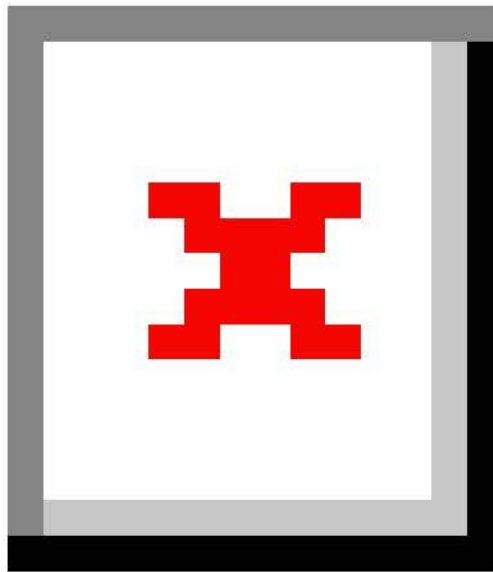
**To:** "Graham, Barney (NIH/VRC) [E]" (b) (6)

**Subject: One Health Newscast - Late breakers are now open! Call for abstracts on 2019 N-COV**

**Reply-To:** Ab Osterhaus - One Health Platform <ab.osterhaus@onehealthplatform.org>







**Submit your late-breaking abstract to  
the 6th World One Health Congress!**

The 6th World One Health Congress is the largest One Health event of the year, where

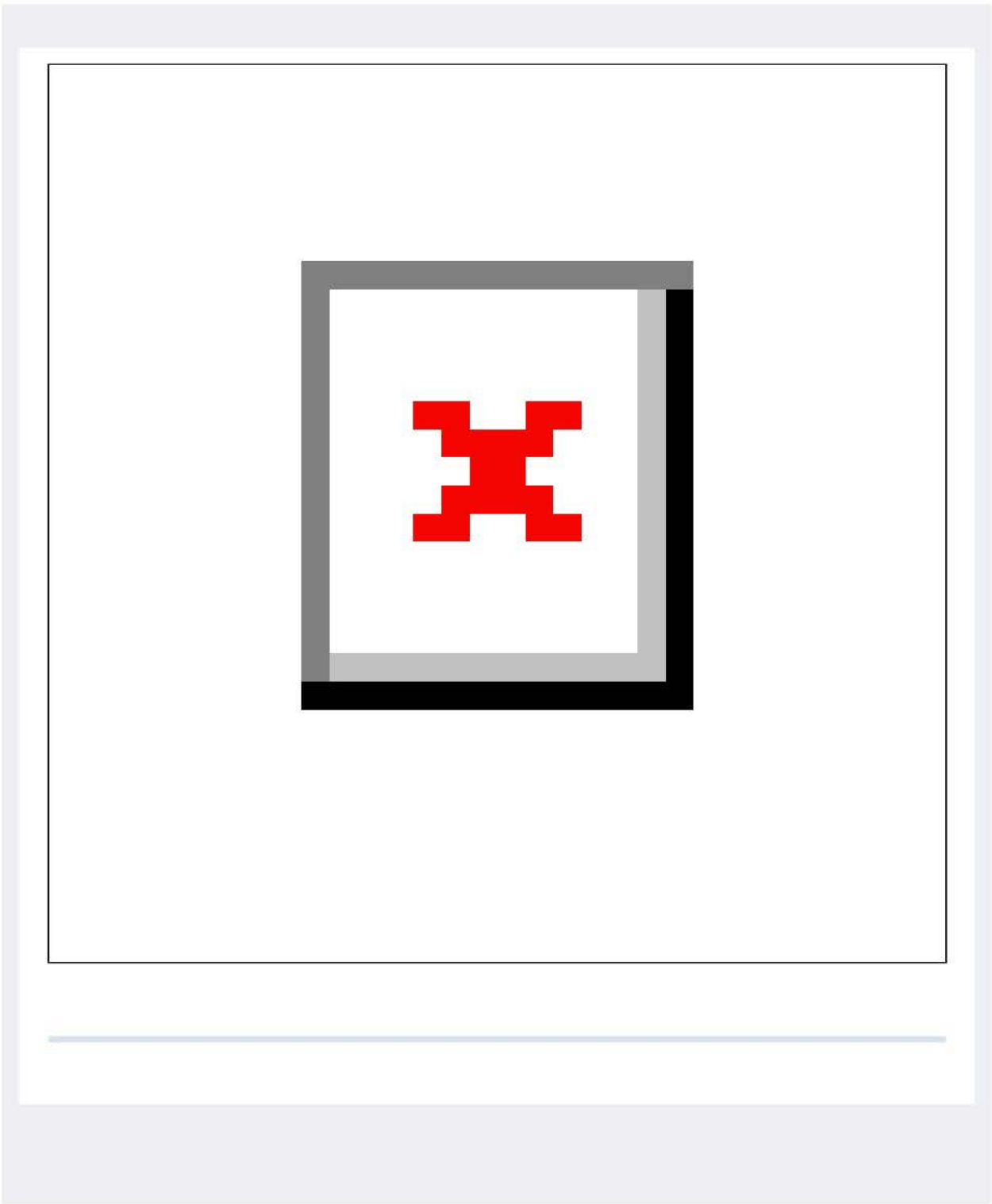
experts and researchers from around the world present their latest scientific research.

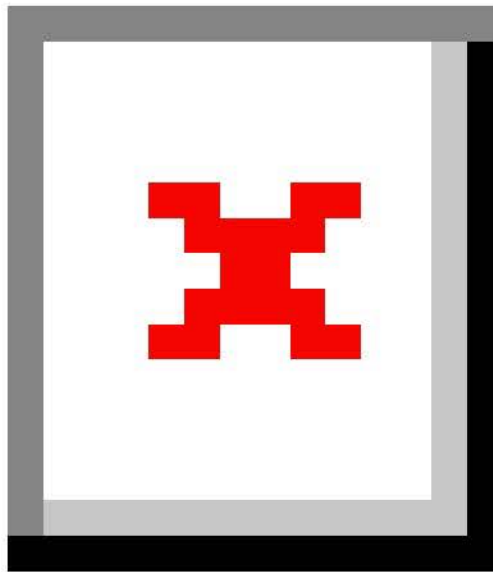
The late-breaker category is exclusively devoted to novel and outstanding scientific discoveries, and aims at selecting abstracts with unique, high impact, ground breaking, innovative and newsworthy scientific data.

*Thursday June 18, 2020 10:45 - 12:15*

**[Click to see the list of relevant abstract topics](#)**







**Submit your abstracts on the  
2019 n-CoV outbreak!**

As we're confronted daily with news stories about the 2019 n-CoV outbreak,

the seventh coronavirus known to infect humans, the 6th World One Health Congress could not come at a more significant time. With more cases being reported every day the race is on to contain the outbreak and scientists are at the heart of the effort.

The 6th World One Health Congress offers a unique and valuable opportunity to bring together scientific experts of all the relevant disciplines, to share and discuss their findings. The Congress organizers have therefore added a **separate session on the 2019 n-CoV to the programme.**

The WOHC2020 2019 n-CoV special session is specifically calling for abstracts with an emphasis on

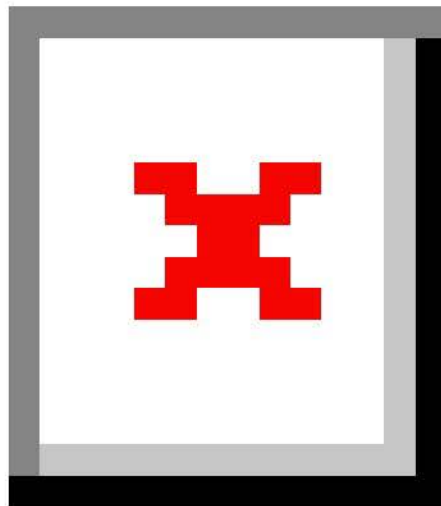
- Pathogenesis and clinical manifestations
- Virology and epidemiology
- Intervention strategies (diagnostics, vaccines, antivirals, antibodies and biological response modifiers)
- Clinical and outbreak management

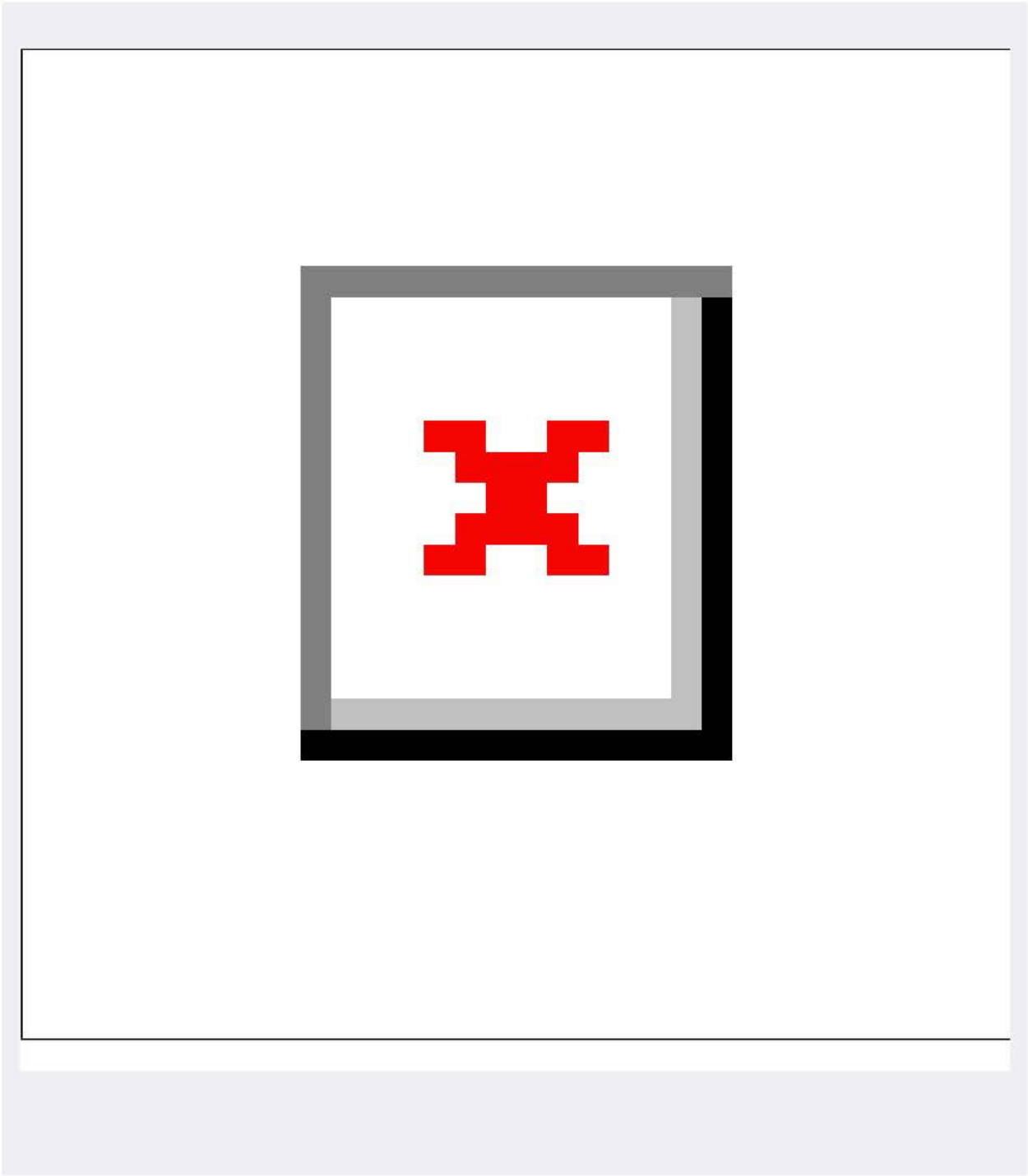
*Thursday June 18, 2020 13:00 - 14:30*

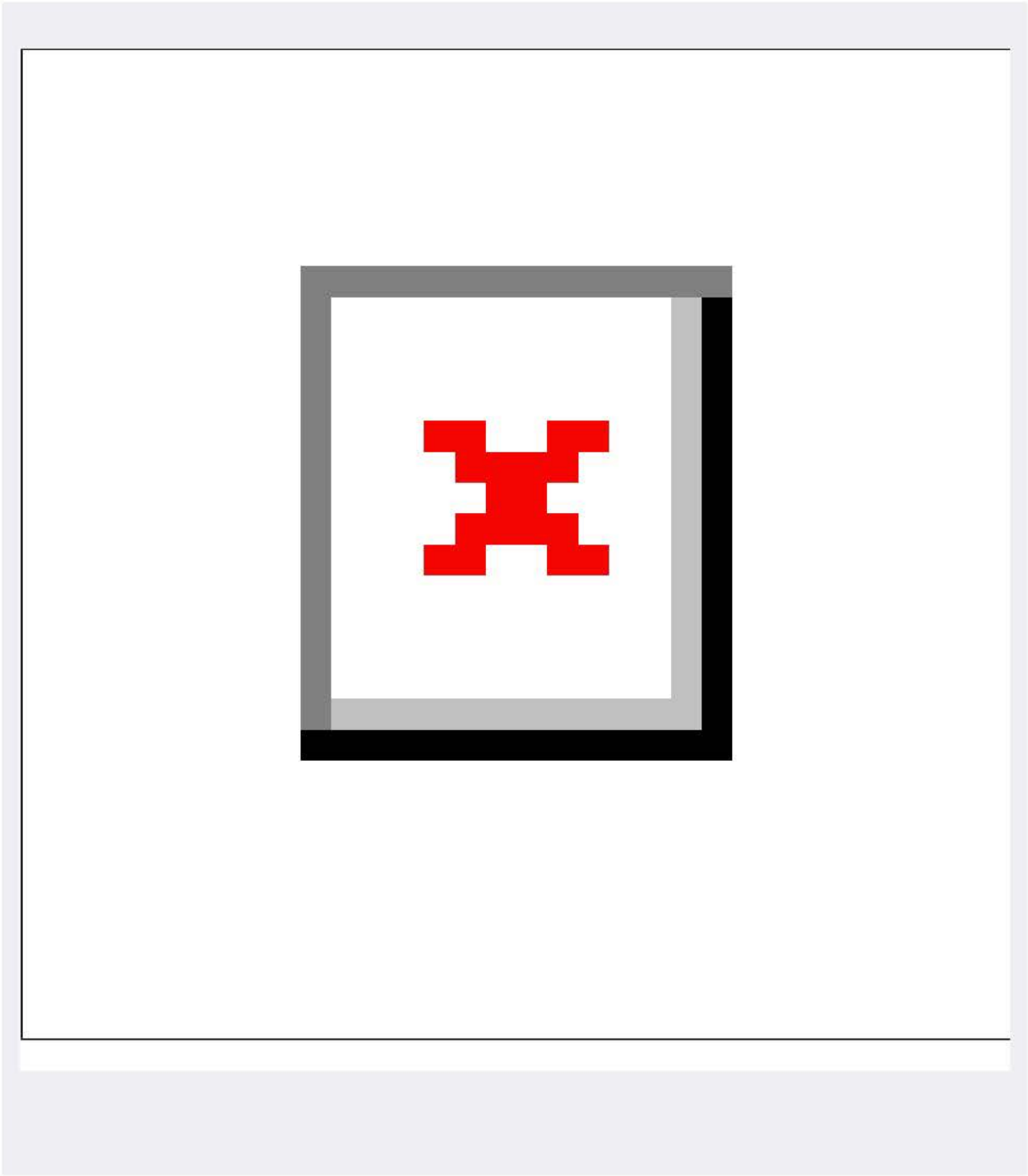
**[Submit your late breaker/2019 n-CoV abstract](#)**

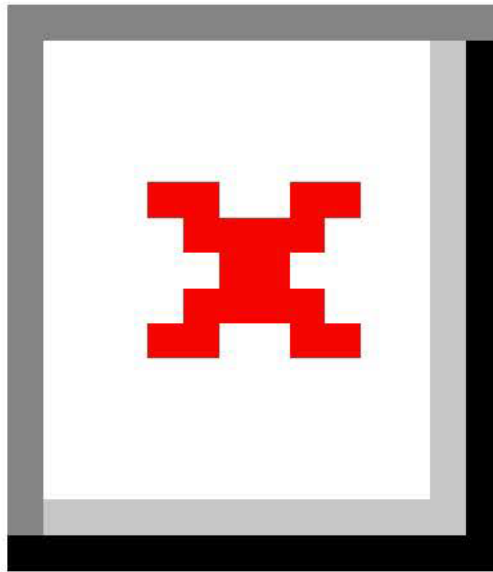
**ONLY A LIMITED NUMBER OF LATE-BREAKING ABSTRACTS CAN**

BE ACCEPTED TO THE MEETING. Deadline May 1, 2020







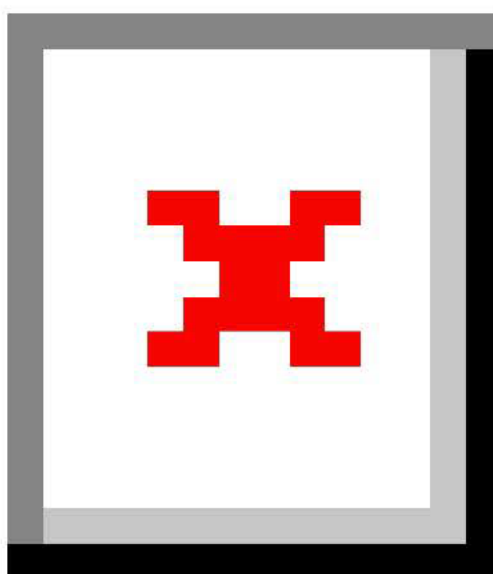


**The Animal Health Investment Europe Innovation Showcase  
Finalists 2020 have been announced.**

Read more about the companies behind the industry's latest innovations

here: <https://go.kisacoresearch.com/1/678123/2020-01-15/2647x> #AHInvestEurope





**The One Health EJP is hosting their 2nd Annual Scientific Meeting (ASM) on the 27th-29th May 2020, in Prague, Czech**

## Republic.

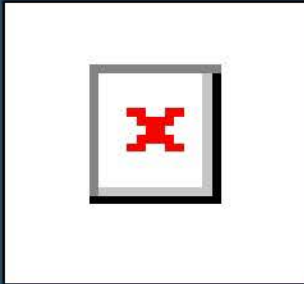
The One Health EJP is a landmark partnership between 36 partner institutes and the Med-Vet-Net Association, focussing on One Health research in the domains of Foodborne Zoonoses, Antimicrobial Resistance and Emerging Threats.

The [registration](#) and [abstract submission](#) are open now! The early bird registration and abstract submission deadline is the 15th February 2020. For more information visit the [ASM website](#).

The Annual Scientific Meeting Satellite Workshop will be held on the 26th May 2020.

For more information visit the [One Health EJP website](#). This year's theme is: Integrated Approaches to Zoonoses: a systems thinking primer.





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regarding this email to  
[c.smeys@onehealthplatform.org](mailto:c.smeys@onehealthplatform.org)

**Our mailing address is:**

One Health Platform Foundation  
Overheet 48  
Berlare 9290  
Belgium

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 17 Apr 2020 19:32:39 +0000  
**To:** Auchincloss, Hugh (NIH/NIAID) [E]  
**Subject:** Tentative: NIAID COVID-19 Division Directors Sync

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 10 Apr 2020 13:25:54 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** RE: Priorities for Other Animal Experiments

(b) (5)

Barney

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Friday, April 10, 2020 9:24 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** Re: Priorities for Other Animal Experiments

(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:** Barney Graham (b) (6)  
**Date:** Friday, April 10, 2020 at 9:23 AM  
**To:** Kizzmekia Corbett (b) (6) >  
**Subject:** RE: Priorities for Other Animal Experiments

(b) (5)

I will rank later this morning.

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6) >  
**Sent:** Friday, April 10, 2020 9:20 AM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6) >  
**Subject:** Priorities for Other Animal Experiments

**Can you rank these...**

(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:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 13 Feb 2020 14:28:05 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Subject:** FW: Sequence for 2019 nCoV (b) (4)

Hi Kizzy,

Could you have a call at 10am.

I bought internet on the plane so we can be in touch.

Barney

---

**From:** Michael Piontek (b) (6)  
**Sent:** Thursday, February 13, 2020 7:07 AM  
**To:** Stein, Judy (NIH/VRC) [C] (b) (6); Umesh Shaligram (b) (6); Graham, Barney (NIH/VRC) [E] <(b) (6)>; 'Peter Dull' (b) (6); 'Umesh Shaligram' (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6); Bok, Karin (NIH/VRC) [E] (b) (6)>  
**Subject:** AW: Sequence for 2019 nCoV (b) (4)

Dear Judy,

thanks a lot for providing the (b) (4).

Is it possible to discuss with someone from the team about (b) (4) We can be available today afternoon or tomorrow.

Best regards,

Michael

We will attend:



Please visit us at booth 97.

.....  
Dr. Michael Piontek  
Managing Director

ARTES Biotechnology GmbH  
Elisabeth-Selbert-Str. 9  
40764 Langenfeld

Germany

Email: [REDACTED] (b) (6)  
Phone [REDACTED]  
Mobile [REDACTED]  
[www.artes-biotechnology.com](http://www.artes-biotechnology.com)

Amtsgericht Düsseldorf HRB 58067  
Geschäftsführer: Dr. Michael Piontek  
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**Von:** Stein, Judy (NIH/VRC) [C] [REDACTED] (b) (6)  
**Gesendet:** Mittwoch, 12. Februar 2020 21:15  
**An:** Michael Piontek; Umesh Shaligram; Graham, Barney (NIH/VRC) [E]; 'Peter Dull'; 'Umesh Shaligram'; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]  
**Betreff:** FW: Sequence for 2019 nCoV [REDACTED] (b) (4)

Hi everybody,  
Barney mentioned that you would probably be interested in the sequence for [REDACTED] (b) (4)  
[REDACTED] (b) (4)

Please let us know if you have any questions.  
Thanks very much.  
Judy

[REDACTED] (b) (6)

[REDACTED] (b) (4)



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Fri, 13 Mar 2020 14:37:12 +0000  
**To:** Fisher, Brian (NIH/VRC) [E]  
**Cc:** Geoffrey Hutchinson; Corbett, Kizzmekia (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** Fwd: Scheduling request for B cell sorting  
**Attachments:** image001.jpg, ATT00001.htm, 20200309\_Sort Registration Form.xlsx, ATT00002.htm

FYI. Brian could you please send Steve the HPRD document.

Barney

Sent from my iPhone

Begin forwarded message:

**From:** "Perfetto, Steve (NIH/VRC) [E]" (b) (6) >  
**Date:** March 13, 2020 at 10:31:50 AM EDT  
**To:** "Graham, Barney (NIH/VRC) [E]" (b) (6) >  
**Cc:** "Roederer, Mario (NIH/VRC) [E]" (b) (6) >, "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >, "Ambrozak, David (NIH/VRC) [E]" (b) (6) >, "Nguyen, Richard (NIH/VRC) [E]" (b) (6) >  
**Subject:** FW: Scheduling request for B cell sorting

Barney,

I need to confirm the HPRD number (RD-03-VIII-08) on the request to do a sort for Geoffrey Hutchinson before Tuesday next week (see attached). As you may know, Geoff is requesting a cell sort using B cells (b) (5)

Can you please send me a PDF of the HPRD and/or other supporting documents approved by the NIH IBC. (b) (5)

*Thanks*  
*SP*



NIH-000368

National Institute of  
Allergy and  
Infectious Diseases

*Dale and Betty Bumpers  
Vaccine Research Center*

Stephen P. Perfetto, MS.,MT. (ASCP)

Chief, Core Flow Cytometry Facility

Vaccine Research Center,

NIH Building 40

40 Convent Dr., Room 5507

Bethesda, MD 20892-3015

email: (b) (6)

Phone: (b) (6)

Cell: (b) (6)

---

**From:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >

**Date:** Tuesday, March 10, 2020 at 1:50 PM

**To:** David Ambrozak (b) (6), "Perfetto, Steve (NIH/VRC) [E]"  
(b) (6).

**Subject:** Re: Scheduling request for B cell sorting

Hi Steve,

I'm submitting a registration to sort B cells (b) (5)  
.

Thanks,

Geoff

---

**From:** "Ambrozak, David (NIH/VRC) [E]" <(b) (6)>  
**Date:** Tuesday, March 10, 2020 at 7:26 AM  
**To:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6)  
**Cc:** "Perfetto, Steve (NIH/VRC) [E]" (b) (6)  
**Subject:** Re: Scheduling request for B cell sorting

Don't worry about the last few questions about sort training and using sorters. Those are mainly for individuals who are wanting to do there own sorting. If you could try and get an HPRD# for this study (Barney should have one) and then send the form to Steve Perfetto he will take it from there.

David

---

**From:** "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6)  
**Date:** Monday, March 9, 2020 at 3:18 PM  
**To:** "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" (b) (6),  
(b) (6) "Wang, Lingshu (NIH/VRC) [E]" (b) (6),  
"Ambrozak, David (NIH/VRC) [E]" (b) (6) >  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >  
**Subject:** Re: Scheduling request for B cell sorting

I've some information in, but since I won't be doing the sorting or operating the flow, would it make more sense for someone else to fill in some of this information?

Geoff

---

**From:** "Ambrozak, David (NIH/VRC) [E]" (b) (6) >  
**Date:** Monday, March 9, 2020 at 8:04 AM  
**To:** "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" (b) (6)  
(b) (6) "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >, "Wang,



Lingshu (NIH/VRC) [E]" (b) (6) >  
**Subject:** Re: Scheduling request for B cell sorting

Good morning,

I'm sending you this sort registration form which will need to be filled out (as best as you can) and then emailed to Steve Perfetto. It is mainly to get the HPRD# for the project and he will do a risk assessment to determine the precautions we will take while sorting your samples. You should only have to do this once to get things started. If you have any specific questions please ask Steve.

Thanks,

David

David Ambrozak, MS.,MT. (ASCP)  
Vaccine Research Center, NIH  
Building 40  
40 Convent Dr., Room 3614B  
Bethesda, MD 20892-3015

Phone: (b) (6)

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**From:** "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" (b) (6)

**Date:** Thursday, March 5, 2020 at 3:47 PM

**To:** "Ambrozak, David (NIH/VRC) [E]" (b) (6) >, "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >

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

Lingshu (NIH/VRC) [E]" (b) (6)

**Subject:** RE: Scheduling request for B cell sorting

Thank you.

Seyhan

---

**From:** Ambrozak, David (NIH/VRC) [E] <(b) (6)>

**Sent:** Thursday, March 5, 2020 3:35 PM

**To:** Boyoglu-Barnum, Seyhan (NIH/VRC) [E] (b) (6)>;

Hutchinson, Geoffrey (NIH/VRC) [F] (b) (6)

**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Wang, Lingshu (NIH/VRC) [E] (b) (6)

**Subject:** Re: Scheduling request for B cell sorting

I'll book it

David Ambrozak, MS.,MT. (ASCP)

Vaccine Research Center, NIH

Building 40

40 Convent Dr., Room 3614B

Bethesda, MD 20892-3015

Phone: (b) (6)

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---

**From:** "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" (b) (6)

(b) (6) >

**Date:** Thursday, March 5, 2020 at 3:00 PM

**To:** "Ambrozak, David (NIH/VRC) [E]" (b) (6), "Hutchinson, Geoffrey (NIH/VRC) [F]" (b) (6) >

**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Wang, Lingshu (NIH/VRC) [E]" <(b) (6)>  
**Subject:** RE: Scheduling request for B cell sorting

That will be fine. We can be ready around 11am? Will that work for you David?

Thank you.  
Seyhan

---

**From:** Ambrozak, David (NIH/VRC) [E] <(b) (6)>  
**Sent:** Thursday, March 5, 2020 2:46 PM  
**To:** Hutchinson, Geoffrey (NIH/VRC) [F] <(b) (6)>  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>; Wang, Lingshu (NIH/VRC) [E] <(b) (6)> Boyoglu-Barnum, Seyhan (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: Scheduling request for B cell sorting

I have (or might have) jury duty that day. How about the next day (17<sup>th</sup>)?? What time do you think you could have cells processed and ready to sort?

---

**From:** "Hutchinson, Geoffrey (NIH/VRC) [F]" <(b) (6)>  
**Date:** Thursday, March 5, 2020 at 2:42 PM  
**To:** "Ambrozak, David (NIH/VRC) [E]" <(b) (6)>  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Wang, Lingshu (NIH/VRC) [E]" <(b) (6)>, "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" <(b) (6)>  
**Subject:** Re: Scheduling request for B cell sorting

Is the following Monday (16<sup>th</sup>) available? (b) (5)  
(b) (5)

Thanks,  
Geoff

---

**From:** "Ambrozak, David (NIH/VRC) [E]" <(b) (6)>  
**Date:** Thursday, March 5, 2020 at 2:38 PM  
**To:** "Hutchinson, Geoffrey (NIH/VRC) [F]" <(b) (6)>  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Wang, Lingshu (NIH/VRC) [E]" <(b) (6)>, "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" <(b) (6)>  
**Subject:** Re: Scheduling request for B cell sorting

No problem at all...How about this Monday at 1 PM or this coming Thursday (anytime). I don't mind when we start sorting but the earlier in the day the better for me. If you need more dates just let me know what works for you and I'll check the schedule.

David

---

**From:** "Hutchinson, Geoffrey (NIH/VRC) [F]" <(b) (6)>  
**Date:** Thursday, March 5, 2020 at 11:22 AM  
**To:** "Ambrozak, David (NIH/VRC) [E]" <(b) (6)>  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Wang, Lingshu (NIH/VRC) [E]" <(b) (6)>, "Boyoglu-Barnum, Seyhan (NIH/VRC) [E]" <(b) (6)>  
**Subject:** Scheduling request for B cell sorting

Hi David,

(b) (5)  
(b) (5) Do you have  
time in the next couple of weeks to help with this?

Thanks,

Geoff



**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Thu, 6 Feb 2020 21:50:23 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Hiatt, Nissa (NIH/VRC) [C]; VRC\_CoV  
**Subject:** RE: ACTION by COB TODAY (2/6): Review draft response to Sen. Markey letter on universal coronavirus vaccines/2019-nCoV

I think you should [REDACTED] (b) (5)  
[REDACTED].

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)  
**Sent:** Thursday, February 6, 2020 3:01 PM  
**To:** Hiatt, Nissa (NIH/VRC) [C] [REDACTED] (b) (6); VRC\_CoV <VRC\_CoV@mail.nih.gov>  
**Subject:** Re: ACTION by COB TODAY (2/6): Review draft response to Sen. Markey letter on universal coronavirus vaccines/2019-nCoV

Hi Nissa, et. al.  
Attached is my one sentence addition.

.

--

**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 [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** "Hiatt, Nissa (NIH/VRC) [C]" [REDACTED] (b) (6)>  
**Date:** Thursday, February 6, 2020 at 1:57 PM  
**To:** VRC\_CoV <[VRC\\_CoV@mail.nih.gov](mailto:VRC_CoV@mail.nih.gov)>



**Subject:** FW: ACTION by COB TODAY (2/6): Review draft response to Sen. Markey letter on universal coronavirus vaccines/2019-nCoV

Hi Everyone,

We received a draft response to another letter from Sen. Markey on Feb. 3 letter about universal coronavirus vaccines and 2019-nCoV. They would like us to review the response that they drafted and

(b) (5).

Karin, Chase left a note for you in the text.

They are asking for **deadline of COB, today, Feb. 6**. If we need more time, I can talk to Chase.

Best,

Nissa

**Nissa Hiatt**

Communications

Vaccine Research Center, NIAID, NIH

40 Convent Drive, Bldg 40, Room 1107

Bethesda, MD 20892

(b) (6)

(b) (6)

---

**From:** Crawford, Chase (NIH/NIAID) [E] (b) (6)

**Sent:** Thursday, February 6, 2020 1:45 PM

**To:** NIAID BUGS <[BUGS@niaid.nih.gov](mailto:BUGS@niaid.nih.gov)>; NIAID DIR-OCGR <[NIAIDDIR-OCGR@mail.nih.gov](mailto:NIAIDDIR-OCGR@mail.nih.gov)>; NIAID VRC-OPA <[NIAIDVRC-OPA@niaid.nih.gov](mailto:NIAIDVRC-OPA@niaid.nih.gov)>

**Cc:** Marston, Hilary (NIH/NIAID) [E] (b) (6); Billet, Courtney (NIH/NIAID) [E]

(b) (6); NIAID OCGR Leg <[NIAIDOCGRLeg@mail.nih.gov](mailto:NIAIDOCGRLeg@mail.nih.gov)>

**Subject:** ACTION by COB TODAY (2/6): Review draft response to Sen. Markey letter on universal coronavirus vaccines/2019-nCoV

Good Afternoon,

We have received the attached letter on universal coronavirus vaccines and 2019-nCoV from Senator Edward Markey (PDF document).

Using previously cleared materials on 2019-nCoV, we have worked with Dr. Hilary Marston to develop the attached proposed responses (Word document). **VRC please note that there is a request for information on universal coronavirus vaccine efforts on page 2 of the attached Word document.**

**ACTION:**

**By COB today (2/6), please review the attached draft response and provide any edits in track changes.**

Please let us know if you have any questions.

Thanks,



Chase

**Chase Crawford, D.V.M., M.S.**

Public Health Analyst

Legislative Affairs and Correspondence Management Branch

Office of Communications and Government Relations

NIAID/NIH/DHHS

Bldg. 31, Room 7A17, MSC 2520

Bethesda, MD 20892-2520

(b) (6) [v](#)

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 8 Apr 2020 17:52:05 +0000  
**To:** Andrea Carfi; Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** RE: Few questions

We are trying to give you a document with timelines by end of day.

BG

---

**From:** Andrea Carfi [REDACTED] (b) (6)  
**Sent:** Wednesday, April 8, 2020 1:50 PM  
**To:** Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED] (b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Subject:** Re: Few questions

Hi Kizzy and Barney,  
I hope is all well. Can you give me some sense of timelines [REDACTED] (b) (4)  
[REDACTED]  
Thank you,  
Andrea

On Apr 5, 2020, at 2:29 AM, Corbett, Kizzmekia (NIH/VRC) [E] <[REDACTED] (b) (6)> wrote:

Andrea, [REDACTED] (b) (4)  
[REDACTED]

Thank you.

Sent from the mobile device of:  
Kizzmekia S. Corbett, PhD  
Senior Research Fellow  
coVip Scientific Lead  
VRC | NIAID | NIH  
[REDACTED] (b) (6)

---

**From:** "Andrea Carfi" [REDACTED] (b) (6)>  
**Date:** Friday, April 3, 2020 at 6:42:39 AM  
**To:** "Corbett, Kizzmekia (NIH/VRC) [E]" [REDACTED] (b) (6)>

Cc: "Graham, Barney (NIH/VRC) [E]" (b) (6) "Abiona, Olubukola (NIH/VRC) [F]" (b) (6)>, "Chang, Lauren (NIH/VRC) [F]" (b) (6)>, "Wang, Lingshu (NIH/VRC) [E]" (b) (6)>, "Zhang, Yi (NIH/NIAID) [C]" (b) (6)>

**Subject:** Re: Few questions

Hi Kizzy,

We have a meeting today to discuss (b) (4)

(b) (4)

Best,  
Andrea

> On Apr 2, 2020, at 7:38 PM, Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)> wrote:

>

> Hi Andrea,

> Please see my replies below:

>

> --

> 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, 5:58 PM, "Andrea Carfi" (b) (6) wrote:

>

> Hi Kizzy,

> Just to help me to put things in perspective ones wondering when (and if) we could expect:

(b) (4)

> Thank you,  
> Andrea

>  
>  
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>

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 19 Apr 2020 20:11:17 +0000  
**To:** Embry, Alan (NIH/NIAID) [E]; Stemmy, Erik (NIH/NIAID) [E]  
**Cc:** (b) (6)  
**Subject:** FW: Avigan for US use re SARS-CoV-2?  
**Attachments:** AVIGAN(Favipiravir) Overview\_11MAR2020.pdf, Clinical Trial In Wu Han-March 20.pdf, Guidance for COVID-19 treatment\_Fabipiravir\_Eng V4.pdf, Package Insert\_7th Version\_English.pdf

Thank you for sharing. I am forwarding your email to people in the Division of Microbiology and Infectious Diseases who are more involved in antiviral evaluation.

Best wishes,

Barney

---

**From:** Anat Naschitz (b) (6)  
**Sent:** Sunday, April 19, 2020 3:54 PM  
**To:** Graham, Barney (NIH/VRC) [E] (b) (6)  
**Subject:** (b) (4)

Hello

We haven't met, but I have reached out to you recently via mutual friends regarding a SARS-Cov-2 vaccine I am looking at

In a different context - the below came via someone I trust, and is fairly self-explanatory – (b) (4)

Could this be of interest to the US, and if so what is the best path forward?

Thanks in advance

Anat

---

**Anat Naschitz**  
Managing Director

OrbiMed Advisors LLC  
Israeli Mobile: (b) (6)  
U.S. Mobile: + (b) (6)  
Office direct: (b) (6)  
E-mail: (b) (6)

---

**From:** Aaron Gershenberg <(b) (6)>  
**Date:** Sunday, April 19, 2020 at 9:54 PM  
**To:** Jonathan Silverstein <(b) (6)>, Anat Naschitz  
(b) (6)  
**Subject:** Confidential and Urgent - Response requested: Avigan

Jonathan and Anat, I hope this message finds you and your families healthy and safe. This is time sensitive and appreciate any feedback you can give. Anat, I understand AVIGAN is being used in Israel.

(b) (6)

(b) (4)

Long story short, any advice or suggestions are most appreciated. Please see below and attached.

Most appreciated, Aaron

SVB Confidential

---

**From:** KATO KOKO (b) (6)>  
**Sent:** Saturday, April 18, 2020 11:24 AM  
**To:** Aaron Gershenberg (b) (6)>  
**Subject:** Avigan

External Sender: This email originated from outside of the organization.

Hi Aaron,

This is the confidential information. So I am writing to you because I want to save lives of American people and timing is now and you have to tell me whether you can talk to somebody who can talk closely with President Trum. I am talking to our Prime Minister today and also Fuji Film executive in charge of Avigan. I am now in close consultation with (b) (6) Minister of Health and Welfare.

Avigan is developed by Fuji Film and approved by Ministry of Health and Welfare as contingency medicine for Influenza A.

Therefore we have a reserve of Avigan for (b) (4) People as contingency medicine for Japanese national who are infected with Influenza A (budget of approximately 140 million USD).

Also, government has tight control of usage of Avigan since it was renowned for side effect to produce malformed child with pregnancy lady.

Since the number of patients are growing, Japanese government started to use Avigan for Covid infected patients clinical testing.

Today Infectious disease council was held in Japan and according to NHK broadcast, Professor Doi, Fujita Medical University, Infectious Disease specialist reported the result of Avigan dosage to Covid Patients. There are 300 patients which took Avigan and out of 300, 90 percent of minor and middle symptom improved and 60 % of serious patient which requires recipirotory machine improved after 2 weeks.

China have conducted clinical testing of Avigan for Covid patients and proven to be quite effective. The data on a Chinese clinical study conducted in Jan/Feb, 2020 are as follow:  
<https://www.sciencedirect.com/science/article/pii/S2095809920300631?via%3Dihub>

(b) (4)



(b) (4)

(b) (4) Please give me a call.

Koko

P.S. One more paper on a Chinese clinical study is attached.  
The following are our materials on this drug.

1. Package Insert\_7th Version\_English.pdf (latest version)

2. Guidance for COVID-19 treatment\_Fabipiravir\_Eng V4.pdf
3. AVIGAN(Favipiravir) Overview\_11MAR2020.pdf

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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Tue, 14 Apr 2020 15:15:56 +0000  
**To:** Handley, Gray (NIH/NIAID) [E]; Mascola, John (NIH/VRC) [E]; Holland, Steven (NIH/NIAID) [E]; Erbelding, Emily (NIH/NIAID) [E]  
**Cc:** Dominique, Joyelle (NIH/NIAID) [E]; Marston, Hilary (NIH/NIAID) [E]  
**Subject:** RE: (b) (4) vaccine development for COVID-19

Thanks Gray,

(b) (5).

BG

---

**From:** Handley, Gray (NIH/NIAID) [E] <(b) (6)>  
**Sent:** Monday, April 13, 2020 6:00 PM  
**To:** Mascola, John (NIH/VRC) [E] (b) (6); Graham, Barney (NIH/VRC) [E] (b) (6); Holland, Steven (NIH/NIAID) [E] (b) (6); Erbelding, Emily (NIH/NIAID) [E] (b) (6)  
**Cc:** Dominique, Joyelle (NIH/NIAID) [E] <(b) (6)>; Marston, Hilary (NIH/NIAID) [E] (b) (6)  
**Subject:** FW: (b) (4) vaccine development for COVID-19

This inquiry from a vaccine manufacturer in Taiwan is seeking opportunity to work on vaccine development and manufacturing. (b) (5)

(b) (5)

Thanks.

Gray

---

**From:** steve\_chiou (b) (6)  
**Sent:** Friday, April 10, 2020 1:17 AM  
**To:** Elvander, Erika (OS/OGA) <(b) (6)>  
**Cc:** peterfei\_pan <(b) (6)>  
**Subject:** (b) (4) vaccine development for COVID-19

Dear Director Elvander,

I got your contact from Mr. Brent Christensen, Director of the American Institute in Taiwan.

(b) (4)

Thank you very much for your attention, and we look forward to hearing from you.  
Kind regards,

Steve Chiou Ph.D. (邱進益)

Vice President

Qualified Person

Adimmune Corporation (國光生物科技股份有限公司)

No.3, Sec.1, Tanxing Rd., Tanzi Dist.,

Taichung City 42743, Taiwan

TEL: (b) (6)

FAX: 886-4-25382105

<https://protect2.fireeye.com/url?k=f78de722-abd8ee31-f78dd61d-0cc47adb5650-490f8c5f950aa289&u=http://www.adimmune.com.tw/>

E-mail: (b) (6)

**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Wed, 15 Apr 2020 20:58:38 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]; Sadtler, Kaitlyn (NIH/NIBIB) [E]; Andrews, Charla (NIH/NIAID) [C]  
**Subject:** RE: [REDACTED] (b) (5), (b) (4)

[REDACTED] (b) (5), (b) (4)

BG

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Sent:** Wednesday, April 15, 2020 4:31 PM  
**To:** Sadtler, Kaitlyn (NIH/NIBIB) [E] [REDACTED] (b) (6)>; Andrews, Charla (NIH/NIAID) [C]  
[REDACTED] (b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] [REDACTED] (b) (6)>  
**Subject:** Re: [REDACTED] (b) (5), (b) (4)

Thanks Kaitlyn for providing the document.

[REDACTED] (b) (5), (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: [REDACTED] (b) (6)  
Personal: [REDACTED] (b) (6)  
Fax: (301) 480-2771

---

**From:** Kaitlyn Sadtler <[REDACTED] (b) (6)>  
**Date:** Wednesday, April 15, 2020 at 4:26 PM

**To:** "Andrews, Charla (NIH/NIAID) [C]" (b) (6) >  
**Cc:** Barney Graham (b) (6) >, Kizzmekia Corbett <(b) (6)>  
**Subject:** Re: (b) (5), (b) (4)

Hi Charla,

I am attaching our COVID19 Research Exemption proposal that lists Kizzy as a collaborator for your reference.

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

Please let me know if you need any further information. Happy to provide. (Thanks for the quick response!)

Cheers,

Kaitlyn

**Kaitlyn Sadtler, Ph.D.**  
Earl Stadtman Investigator  
Chief, Section for Immuno-Engineering  
National Institute of Biomedical Imaging and Bioengineering  
National Institutes of Health  
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---

**From:** "Andrews, Charla (NIH/NIAID) [C]" (b) (6) >  
**Date:** Wednesday, April 15, 2020 at 4:18 PM  
**To:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" <(b) (6)>  
**Cc:** "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6) >  
**Subject:** RE: (b) (5), (b) (4)

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

Thanks CA

---

**From:** Sadtler, Kaitlyn (NIH/NIBIB) [E] <(b) (6)>  
**Sent:** Wednesday, April 15, 2020 4:05 PM  
**To:** Andrews, Charla (NIH/NIAID) [C] <(b) (6)>  
**Cc:** Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Subject:** Re: (b) (5), (b) (4)

Hi Charla,

I just wanted to check in on this and see if I was on the wait list for (b) (5), (b) (4). We are collaborating with Kizzy on this project.

**Kaitlyn Sadtler, Ph.D.**  
Earl Stadtman Investigator  
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---

**From:** "Andrews, Charla (NIH/NIAID) [C]" <(b) (6)>  
**Date:** Friday, April 10, 2020 at 3:35 PM  
**To:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" <(b) (6)>



**Cc:** "Graham, Barney (NIH/VRC) [E]" (b) (6)>, "Memoli, Matthew (NIH/NIAID) [E]" (b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)>

**Subject:** RE: (b) (5), (b) (4)

Hi Kaitlyn, we will direct the information (b) (5), (b) (4)

We will keep you posted.

Best CA

---

**From:** Sadtler, Kaitlyn (NIH/NIBIB) [E] (b) (6)>  
**Sent:** Friday, April 10, 2020 12:41 PM  
**To:** Andrews, Charla (NIH/NIAID) [C] <(b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] <(b) (6)>; Memoli, Matthew (NIH/NIAID) [E] (b) (6); Corbett, Kizzmekia (NIH/VRC) [E] (b) (6); Morabito, Kaitlyn (NIH/VRC) [E] (b) (6)>  
**Subject:** Re: (b) (5), (b) (4)

See below. (b) (5), (b) (4)

Thank you very much and I appreciate your help.

**Kaitlyn Sadtler, Ph.D.**

Earl Stadtman Investigator

Chief, Section for Immuno-Engineering

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---

**From:** "Andrews, Charla (NIH/NIAID) [C]" (b) (6)

**Date:** Friday, April 10, 2020 at 12:28 PM

**To:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" (b) (6)>

**Cc:** "Graham, Barney (NIH/VRC) [E]" (b) (6)>, "Memoli, Matthew (NIH/NIAID) [E]" (b) (6)>, "Corbett, Kizzmekia (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6)  
**Subject:** RE: (b) (5), (b) (4)

Dear Dr. Sadtler, (b) (5), (b) (4)

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

If anything is not applicable just note as N/A such please. Thanks Charla

---

**From:** Morabito, Kaitlyn (NIH/VRC) [E] <(b) (6)>  
**Sent:** Friday, April 10, 2020 10:47 AM  
**To:** Sadtler, Kaitlyn (NIH/NIBIB) [E] <(b) (6)>; Corbett, Kizzmekia (NIH/VRC) [E] <(b) (6)>  
**Cc:** Graham, Barney (NIH/VRC) [E] <(b) (6)>; Memoli, Matthew (NIH/NIAID) [E] <(b) (6)>; Andrews, Charla (NIH/NIAID) [C] <(b) (6)>  
**Subject:** Re: (b) (5), (b) (4)

Hi Kaitlyn,

I'm including Charla Andrews (b) (5), (b) (4)

Thanks,  
Kaitlyn

---

**From:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" <(b) (6)>  
**Date:** Friday, April 10, 2020 at 9:59 AM  
**To:** Kizzmekia Corbett <(b) (6)>  
**Cc:** Barney Graham <(b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" <(b) (6)>, "Memoli, Matthew (NIH/NIAID) [E]" <(b) (6)>  
**Subject:** Re: (b) (4), (b) (5)

Kizzy,

Thanks so much. I am happy to pop by the VRC,

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

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

Cheers,

Kaitlyn

**Kaitlyn Sadtler, Ph.D.**

Earl Stadtman Investigator

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---

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

**Date:** Thursday, April 9, 2020 at 2:26 PM

**To:** "Sadtler, Kaitlyn (NIH/NIBIB) [E]" (b) (6)>

**Cc:** "Graham, Barney (NIH/VRC) [E]" (b) (6)>, "Morabito, Kaitlyn (NIH/VRC) [E]" (b) (6) "Memoli, Matthew (NIH/NIAID) [E]"

(b) (6)>

**Subject:** Re: (b) (5), (b) (4)

Hey Kaitlyn (not out Kaitlyn),

Our Kaitlyn will check on this. Kaitlyn see below...

--

**Kizzmekia S. Corbett, PhD**

Senior Research Fellow | Scientific Lead

Coronavirus Vaccines & Immunopathogenesis (coVip) Team

Viral Pathogenesis Laboratory | Vaccine Research Center  
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---

**From:** Kaitlyn Sadtler <(b) (6)>  
**Date:** Wednesday, April 8, 2020 at 7:00 PM  
**To:** Kizzmekia Corbett (b) (6)>  
**Cc:** Barney Graham (b) (6)>, Kaitlyn Morabito (b) (6)>, "Memoli, Matthew (NIH/NIAID) [E]" <(b) (6)>  
**Subject:** (b) (5), (b) (4)

Hi Kizzy,

I wanted to loop back around to (b) (5), (b) (4)  
(b) (5), (b) (4)



Cheers,

Kaitlyn

**Kaitlyn Sadtler, Ph.D.**  
Earl Stadtman Investigator  
Chief, Section for Immuno-Engineering  
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**From:** Graham, Barney (NIH/VRC) [E]  
**Sent:** Sun, 26 Jan 2020 00:29:41 +0000  
**To:** Corbett, Kizzmekia (NIH/VRC) [E]  
**Cc:** Morabito, Kaitlyn (NIH/VRC) [E]  
**Subject:** Re: [REDACTED] (b) (5)

[REDACTED] (b) (5)

BG

Sent from my iPhone

On Jan 25, 2020, at 7:03 PM, Corbett, Kizzmekia (NIH/VRC) [E] [REDACTED] (b) (6) >  
wrote:

... [REDACTED] (b) (5) Lol

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow**

National Institutes of Health

National Institutes of Allergy and Infectious Diseases

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Laboratory: [REDACTED] (b) (6)

Personal: [REDACTED] (b) (6)

Fax: (301) 480-2771

---

**From:** "Munster, Vincent (NIH/NIAID) [E]" [REDACTED] (b) (6) >  
**Date:** Friday, January 24, 2020 at 7:25 AM  
**To:** Kizzmekia Corbett [REDACTED] (b) (6) >  
**Cc:** Barney Graham [REDACTED] (b) (6) >  
**Subject:** Re: First Wuhan Coronavirus Patient Identified in the United States



Hey Barney and Kizzmekia,

(b) (5)

Cheers,

Vincent

On Jan 23, 2020, at 19:33, Corbett, Kizzmekia (NIH/VRC) [E] <kizzmekia.corbett@nih.gov> wrote:

Thanks Ralph & Vincent. Good luck!!! If Boyd's on the virus cloning, I'm very confident.

Have a good night.

Sent from the mobile device of:

Kizzmekia S. Corbett, PhD

Senior Research Fellow

NIH | NIAID | VRC

(b) (6)

---

**From:** "Baric, Ralph S" (b) (6) >

**Date:** Thursday, January 23, 2020 at 9:14:30 PM

**To:** "Corbett, Kizzmekia (NIH/VRC) [E]" <(b) (6)>, "Munster, Vincent (NIH/NIAID) [E]" (b) (6) >

**Subject:** RE: First Wuhan Coronavirus Patient Identified in the United States

(b) (4)

(b) (4)

---

**From:** Corbett, Kizzmekia (NIH/VRC) [E] (b) (6)  
**Sent:** Thursday, January 23, 2020 9:02 PM  
**To:** Munster, Vincent (NIH/NIAID) [E] (b) (6)>  
**Cc:** Baric, Ralph S (b) (6)>  
**Subject:** Re: First Wuhan Coronavirus Patient Identified in the United States

Hi Vincent,

Following up on your comment below, has Ralph

(b) (4)

(b) (4)

(b) (4) Ralph, you are cc'ed here because I'm gossiping about you

and you can also answer this.

Cheers,  
Kizzy

--

**Kizzmekia S. Corbett, PhD**

**Senior Research Fellow**

National Institutes of Health

National Institutes of Allergy and Infectious Diseases

Vaccine Research Center

Viral Pathogenesis Laboratory

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Personal: (b) (6)

Fax: (301) 480-2771

---

**From:** "Munster, Vincent (NIH/NIAID) [E]" (b) (6)>  
**Date:** Tuesday, January 21, 2020 at 3:46 PM  
**To:** "Marston, Hilary (NIH/NIAID) [E]" (b) (6)>, NIAID Coronavirus Response SWAT 2020 <[NIAIDCoronavirusResponseSWAT2020@mail.nih.gov](mailto:NIAIDCoronavirusResponseSWAT2020@mail.nih.gov)>  
**Subject:** Re: First Wuhan Coronavirus Patient Identified in the United States

Quick update:

Talked to Ralph, (b) (4)

(b) (4)

(b) (4)

Barnev: we should probably sit down and make a vaccine action plan. talked briefly with Ralph about (b) (4)

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

---

**From:** "Marston, Hilary (NIH/NIAID) [E]" (b) (6) >  
**Date:** Tuesday, January 21, 2020 at 11:40 AM  
**To:** NIAID Coronavirus Response SWAT 2020  
<[NIAIDCoronavirusResponseSWAT2020@mail.nih.gov](mailto:NIAIDCoronavirusResponseSWAT2020@mail.nih.gov)>  
**Subject:** FW: NYT: First Wuhan Coronavirus Patient Identified in the United States

---

**From:** Folkers, Greg (NIH/NIAID) [E] (b) (6) >  
**Sent:** Tuesday, January 21, 2020 1:38 PM  
**Subject:** NYT: First Wuhan Coronavirus Patient Identified in the United States

## First Wuhan Coronavirus Patient Identified in the United States

A person in Washington State is infected with a new respiratory virus. The outbreak began at a market in China and now has spread to at least four other countries.

<image001.jpg>

The outbreak, which has infected nearly 300 people in mainland China, began in a seafood and poultry market in Wuhan, central China. Credit...EPA, via Shutterstock

<[image002.png](#)>

By [Roni Caryn Rabin](#)

- • A person in Washington State is infected with the Wuhan coronavirus, the first confirmed case in the United States of a mysterious respiratory infection that has killed at least six people and sickened hundreds more in Asia.

The patient, who was hospitalized with pneumonia last week, recently had traveled to Wuhan, China, where the outbreak appears to have originated, federal officials have found.

Investigators tested samples from the patient for the presence of the virus; positive results were received over the weekend. Officials declined to identify the patient, who was said to be quite ill. News of the first case in the United States comes amid growing evidence that the virus spreads from person to person, although it is not clear how easily.

The outbreak, which began in a seafood and poultry market in Wuhan, a city of 11 million, is spreading: Patients have been identified in Beijing, Shanghai and Shenzhen, as well as Taiwan, Japan, Thailand and South Korea.

On Tuesday, Chinese authorities confirmed that six people have died of the infection in Wuhan. Nearly 300 cases have been reported to date in China. Many of the patients lived in or traveled to Wuhan. The World Health Organization will meet tomorrow to decide whether to declare the outbreak an international public health emergency. But information about the new virus is still thin, and it's not clear whether or how many Americans are at risk.

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"There are still more questions that we don't know the answers to than things we do know," said Dr. William Schaffner, a professor of preventive medicine and infectious diseases at Vanderbilt University Medical Center in Nashville.

"For example, what is the source? We don't know exactly. The location likely was the live animal market, but we don't know the particular animal."

The more pressing and urgent question, he said: "How frequent is human to human transmission?" In one instance a patient appears to have infected 14 health care workers in a medical facility, but that individual may have been a "super-spreader," he said. "Could people with mild infections transmit this virus from person to person? That all remains still under investigation."

On Monday, Vanderbilt University Medical Center in Nashville changed its electronic prompts so that any patients coming in to its hospital, emergency room or clinics with a fever or respiratory symptoms will be asked whether they have been to China recently or have had contact with anyone who has recently traveled to China.

Hospitals around the country are likely taking similar steps, Dr. Schaffner said, in an effort to quickly identify infected patients and place them in isolation so they can be cared for safely by hospital workers, and so specimens can be collected for testing.

Dr. Schaffner cautioned anyone traveling to China to avoid visiting live animal markets and to keep a distance from all live animals, including domesticated farm animals. Travelers to China should practice [lots of good hand hygiene](#), he added, and do their best to avoid anyone who is coughing or sneezing.

The Wuhan Coronavirus Outbreak

[The Test a Deadly Coronavirus Outbreak Poses to China's Leadership](#)  
[Jan. 21, 2020](#)

[China Confirms New Coronavirus Spreads From Humans to Humans](#)  
[Jan. 20, 2020](#)

- [Deadly Mystery Virus Reported in 2 New Chinese Cities and South Korea](#)  
[Jan. 18, 2020](#)

- [Three U.S. Airports to Check Passengers for a Deadly Chinese Coronavirus](#)  
[Jan. 17, 2020](#)

- [Japan and Thailand Confirm New Cases of Chinese Coronavirus](#)

[Jan. 15, 2020](#)

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