From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 21 Feb 2020 07:02:20 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Re: Invitation for Dr. Kizzmekia Corbett to speak at Pfizer BCN seminar series

I think it's OK. May be reasonable to wait until summer or fall when things have settled down a bit.

BG

Sent from my iPhone

On Feb 20, 2020, at 9:23 PM, Corbett, Kizzmekia (NIH/VRC) [E] (b)(6) wrote:

Should I accept this and send it forward for ethics?

--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) (b)(6)

From: Barney Graham <</th>(b)(6)Date: Thursday, February 20, 2020 at 10:47 AMTo: Kizzmekia Corbett(b)(6)

Subject: Fwd: Invitation for Dr. Kizzmekia Corbett to speak at Pfizer BCN seminar series

FYI.

BG

Sent from my iPhone

Begin forwarded message:

 From: "Harris, James"
 (b)(6)

 Date: February 20, 2020 at 10:34:53 AM EST

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

 Subject: Invitation for Dr. Kizzmekia Corbett to speak at Pfizer BCN seminar series

Good morning Dr Graham,

I have attached the formal invite to this email. Thank you in advance!

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 18 Mar 2020 14:23:32 +0000
То:	Harris, Christina (NIH/NIAID) [E]
Subject:	Accepted: COVID-19 Daily Check-in

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 27 Mar 2020 12:56:49 +0000
To:	Corbett, Kizzmekia (NIH/VRC) [E]
Cc:	Morabito, Kaitlyn (NIH/VRC) [E]
Subject:	Hamster model that I mentioned
Attachments:	Hamster model SARS-2.pdf

This is what I saw on the WHO call a few days ago. It is probably the best

(b) (5)

Barney

Barney S. Graham, MD, PhD Senior Investigator Deputy Director, Vaccine Research Center Chief, Viral Pathogenesis Laboratory National Institute of Allergy and Infectious Diseases, NIH 40 Convent Drive, MSC 3017 Bldg 40, Room 2502 Bethesda, MD 20892-3017 Phone: (b)(6) URL: https://www.niaid.nih.gov/research/barney-graham-md-phd

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From: Sent: To: Cc: Gabriela (NIH/VRC) [C]; Subject:		:14 +0000 [C] H/VRC) [E];Mor	rabito, Kaitlyn (NIH/VRC) IH/VRC) [C]	[E];Alvarado,
Hi Kelly,				
We would have some o	ptions with	(Ե) ⁽⁴⁾ if you are interested	0
Maybe we could discus	s briefly when we mee	t on the 👘 🕩	⁽⁴⁾ program.	
Barney				
From: Stein, Judy (NIH/ Sent: Friday, April 24, 2 To: Graham, Barney (NI	020 2:45 PM	(b)(6) (b)(6)		
Cc: Corbett, Kizzmekia ((NIH/VRC) [E]		(b)(6) Morabito, Kaitlyn	
	(b)(6) Alvarado, Gabrie	ela (NIH/VRC) [C]	(b)(6) Bok, Karin
(NIH/VRC) [E]	(b)(6)			
Subject: FW: COVID que	estion			
Hi Kelly,				
	am referring your ques	tion to Barney a	and copying the COVID te	am for a
response.				
Thanks,				
Judy				
From: Warfield, Kelly Sent: Friday, April 24, 2 To: Stein, Judy (NIH/VR Subject: COVID questio	C) [C]	(b)(6)		
Hi Judy,				
I had a question from m candidates. Can you te		ether VRC is dev	veloping any of their owr (b) (4)	COVID vaccine
Thanks! Kelly				

This e-mail communication (including any attachments) contains information from Emergent BioSolutions or its affiliates that is confidential and may be privileged. The information contained herein is intended only for the use of the addressee(s) named above. If you are not the intended recipient (or the agent responsible to deliver it to the intended recipient), you are hereby notified that any dissemination, distribution, use, or copying of this communication is strictly prohibited. If you have received this e-mail in error, please immediately reply to sender, delete the message and destroy all copies of it. If you have questions, please email (b)(6) Thank you.

From:	Graham, Barney (NIH/VRC) [E]		
Sent:	Mon, 2 Mar 2020 17:26:07 +0000		
То:	Jason M	cLellan	
Subject:	RE:	(b) (4) Request of antibody from	(b) (4)

If you can manage it, I think you made the right decision, and it will be two quick papers for one of your students.

BG

From: Jason McLellan (b)(6)	
Sent: Monday, March 2, 2020 12:16 PM	
To: Graham, Barney (NIH/VRC) [E] (b)(6)	
Subject:(b) (4)Request of antibody from(b) (4)	
You're welcome, Barney. I was about to decline, but realized we already had a	(b) (5) [.]
(b) (5). Could be a good way to finally get those	
published.	
Jason	
From: Graham, Barney (NIH/VRC) [E] < (b)(6)	
Sent: Monday, March 2, 2020 4:24 AM	
To: Jason McLellan (b)(6)	
Subject: Re: (b) (4) Request of antibody from (b) (4)	
Thanks Jason.	
BG	
Sent from my iPhone	
On Mar 2, 2020, at 12:41 AM, Jason McLellan (b)(6) wrote:	
Hi John,	
We're up for working on this.	(b) (5)
	(b) (5)
	(b) (5)
(b) (5)	

Best regards, Jason (b)(6) From: Mascola, John (NIH/VRC) [E] Sent: Sunday, March 1, 2020 5:18 PM (b)(6) Graham, Barney (NIH/VRC) [E] To: Jason McLellan (b)(6) (b) (4) Request of antibody from (b) (4) Subject: RE Jason, (b) (4) I have been thinking more about these (b) (4) I'd like to get (b) (4) (b) (4) (b) (4) (b) (4) (b) (4) What are your thoughts here? Thanks, John From: Jason McLellan (b)(6) Sent: Friday, February 21, 2020 3:49 PM To: Mascola, John (NIH/VRC) [E] (b)(6) Mukhamedova, Maryam (NIH/NIAID) [F] (b)(6) Graham, Barney (NIH/VRC) [E] (b)(6) (b)(6) Morabito, Kaitlyn (NIH/VRC) [E] Cc: Ruckwardt, Tracy (NIH/VRC) [E] (b)(6) Subject: RE: (b) (4) Request of antibody from (b) (4)

(b) (5)

Oh, it was busy! But the interview requests are beginning to subside, and now it's Barney and Kizzie's turn to take the baton and lead the vaccine development efforts.

Cheers, Jason

From: Mascola, John (Sent: Friday, February		(b)(6)	
To: Jason McLellan		1ukhamedova, Maryam	
	(b)(6) Graham, Barney		(NIT/NIAD) [1] (b)(6)
Cc: Ruckwardt, Tracy			itlyn (NIH/VRC) [E]
ce. nuckwarat, macy	(b)(6)		
Subject: RE:	(b) (4) Request of antibody from	(b) (4)	
Thanks Jason. Certainly must have b	een busy few weeks! We appre	ciate the collaboration. ⁽⁴⁾	(b) (4)
Best,			
John			
From: Jason McLellan Sent: Friday, February To: Mukhamedova, N			මාණ Mascola, John
(NIH/VRC) [E]	(b)(6) Graham, Bar	ney (NIH/VRC) [E]	(b)(6)
Cc: Ruckwardt, Tracy	(NIH/VRC) [E]	(b)(6) Morabito, Ka	itlyn (NIH/VRC) [E]
Subject: RE:	(b) (4) Request of antibody from	(b) (4)	
Hi Maryam,			
That sounds great. We	e can		(b) (4) then we should be
	(b) (4)		
Best regards,			
Jason			
From: Mukhamedova	, Maryam (NIH/NIAID) [F]		(b) (4)
Sent: Friday, February			
To: Jason McLellan		lascola, John (NIH/VRC)	
	(b)(6) Graham, Barney (NIH/VRC		(b)(6)
Cc: Ruckwardt, Tracy	(NIH/VRC) [E] (b)(6)	رەرەن Morabito, Ka	itlyn (NIH/VRC) [E]
Subject: Re:	(b) (4) Request of antibody from	(b) (4)	

(b) (4)

Hi Jason,

Yes, of course. May	I start with the		(b) (4)
	(b) (4) I can send you	(b) (4) next Tuesday (0)2/25).
I have			(b) (4);. In about
three weeks,	(b) (4)	s that fine?	
		a - an da baarda da bada y	
Thanks!			
Maryam			
From: Jason McLe	llan	(b)(6)	
Date: Friday, Febr	uary 21, 2020 at 2:25 PM		
To: "Mukhamedov	/a, Maryam (NIH/NIAID) [I	F]"	(b)(6) "Mascola,
John (NIH/VRC) [E]]" (b))(6) "Graham, Barney	(NIH/VRC) [E]"
	(b)(6)		
	racy (NIH/VRC) [E]"	(b)(6	"Morabito, Kaitlyn (NIH/VRC)
[E]"	(b)(6)	2000 - 2007 - 7	
Subject: RE:	(b) (4) Request of antib	ody from (b) (4)	
Hi Maryam, Apologies for the de things.	elayed response, it's been qu	lite a week and I'm only	now getting caught up on
	(b) (4), and I expect we will b	be able to	(b) (4)
(b) (4) Should time permit, we	can then	(b) (4)
Would you be able t	to send		(b) (4)
Best regards, Jason			
	va, Maryam (NIH/NIAID) [F]	<	(b)(6)
	uary 17, 2020 3:21 PM	N/6 Maccole John /NUU	
To: Jason McLellan	(চ)(চ) Graham, Barney (NIH	b)(6) Mascola, John (NIH	(b)(6)
Cc : Ruckwardt, Trac			ito, Kaitlyn (NIH/VRC) [E]
Subject: Re:	(b) (4) Request of antibody	from (b) (4)	

Hi Jason,

		(b) (4) [.] The pa	per will	(b) (4)
				(b) (4
We would like				(b) (4)
(b) (4) as well as	(b) (4)			
I am attaching		(b) (4) we would like		(b) (4)
(b) (4)				
Would this be possible?				
would this be possible?				
Thanks,				
Maryam				
From: "Mascola, John (N	IIH/VRC) [E]"	(b)(6)		
Date: Friday, February 1		1		
To: "Graham, Barney (N	IH/VRC) [E]"	(b)(6)		
Cc: Jason McLellan	(b)(6) // December	(b)(6) "Mukhamedova, Ma	ryam (NIH/I	NIAID) [F]"
	(b)(6) "Morabito, Kai	vardt, Tracy (NIH/VRC) [E]"	_	(b)(6)
Subject: Re:	(b) (4) of antib			(-)(-)
22.0				
Great. Perhaps Tracy and	d Maryam can make	e priority list with info on	(b) (4)	(b) (4) (
-			(b) (4)	
Best				
John				
Sent from my iPhone				
On Feb 14, 2020, at 10:0)5, Graham, Barney	(NIH/VRC) [E]	(b)(6)	wrote:
	· · · · · ·	(,		
and the hope is to	(b) (4)			(b) (4)
Barney				

Sent from my iPhone

On Feb 14, 2020, at 9:54 AM, Jason McLellan (b)(6) wrote: Thanks John and Maryam, (b) (4). It would be helpful to know (b) (4) I agree that a (b) (4). We can (b) (4) (b) (4), which can be (b) (4) (b) (4), but we can attempt (b) (4) Regardless, we are interested and are happy to contribute to this study (and Maryam's thesis). Cheers, Jason From: Mascola, John (NIH/VRC) [E] (b)(6) Sent: Friday, February 14, 2020 7:55 AM To: Mukhamedova, Maryam (NIH/NIAID) [F] (b)(6) Jason McLellan (b)(6) Graham, Barney (NIH/VRC) [E] (b)(6) Ruckwardt, (b)(6) Morabito, Kaitlyn (NIH/VRC) [E] Tracy (NIH/VRC) [E] (b)(6) (b) (4) Request of antibody from (b) (4) Subject: RE: Hi Maryam, We want to take a systematic approach here. Please make a short PP slide deck of your project and current data - borrowing from draft Figs. Then, (b) (4) These could be (b) (4) (b) (4) (b) (4). You'll want to Also list the (b) (4). The question becomes (b) (4) (b) (4) Do we want to (b) (4) (b) (4)

We want to decide soon - so we can craft you thesis and paper.

Best,

John

From: Mukhamedova,	(b)(6)	
Sent: Thursday, Februa	ary 13, 2020 4:41 PM	
To:	(b)(6) Mascola, John (NIH/VRC) [E]	(b)(6) Graham,
Barney (NIH/VRC) [E]	(b)(6) Ruckwardt, Tracy (NII	1/VRC) [E]
	(b)(6) Morabito, Kaitlyn (NIH/VRC) [E]	(b)(6)
Subject: (b) (4	^(b) Request of antibody from ^{(b) (4)}	

Hi Jason,

I hope you are well and understand you must be very busy with SARS-CoV-2 work.

We have	(b) (4)
(b) (4) We have	(b) (4)
	(b) (4)

May I (b) (4) for my paper?

Thank you very much.

Sincerely, Maryam

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 9 Feb 2020 19:37:35 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Fwd: Manuscript v3
Attachments:	image001.png, ATT00001.htm, image001.png, ATT00002.htm, image001.png,
ATT00003.htm, im	age001.png, ATT00004.htm, WuCoV main_text_v4_clean-JSM_BG.docx,
ATT00005.htm	

I think it is this one, but Daniel said he would make version 4.

BG

Sent from my iPhone

Begin forwarded message:

From: "Graham, Barn	ey (NIH/V	RC) [E]" <	(b)(6).		(b)(6).
Date: February 8, 202	0 at 8:23:00	OPM EST			
To: Jason McLellan			(b)(6)		(b)(6)
		(b)(6)		(b)(6)	(b)(6)
	(b)(6)				(b)(6) "Daniel P. Wrapp"
< (b)(6)		(b)(6)			
Subject: RE: Re: Ma	nuscrint v	3			

Subject: RE: Re: Manuscript v3

Here are a few more edits and comments, especially around the (b) (4) discussion and the last paragraph, but also in a few other places.

Also supplementary figure 5 could use a color coding chart. It is not easy to go back and forth between Figure 1 and Fig S5 to interpret.

Looking good. I can probably make one more pass through tomorrow evening.

Barney

From: Jason McLellan	(b)(6)		
Sent: Saturday, February 8, 2020 4:59 PM			
То:		(b)(6)	
			(b)(6)
(b)(6)			
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)		
Subject: Re: Re: Manuscript v3			
Ok, thanks.			
- sent from my phone			
From: Daniel P. Wrapp	(b)(6)		
Sent: Saturday, February 8, 2020 10:58:00 PM			
To: Jason McLellan		(b)(6)	
		(b)(6)	
	(b)(6)		
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)		
Subject: Re: Re: Manuscript v3			

Missed your three Figure legend comments from v3-JSM2. I'll incorporate the appropriate edits into v5.

Daniel

From: Jason McLellan <		(b)(6)	
Sent: Saturday, February 8	3, 2020 2:54 PM		
To: Daniel P. Wrapp <		(b)(6)	(b)(6)
<	(b)(6)	(b)(6) <	(b)(6)
(b)(6) < <u>ch</u>	(b)(6)	
Cc: Graham, Barney (NIH/	VRC) [E] <	(b)(6)	
Subject: RE: Re: Manuscrip	ot v3		

Hi Everyone,

Attached are my edits/comments, this time with tracked changes. Mostly minor stuff and edits to improve clarity/accuracy.

Daniel, did you get a chance to go through the figure legends and make corrections? It seemed like some of my comments from the previous iteration weren't addressed or responded to.

Ok, I'm off to bed, and will head to the airport in 5 hours. Try to get me one more version within the next 8-12 hours if possible.

We're on track for a Monday submission!

Cheers, Jason

From: Daniel P. Wrapp	(b)(6)	
Sent: Saturday, February 8, 2020 2:12 PM		
To: Jason McLellan		(b)(6)
		(b)(6)
	(b)(6)	
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Subject: Re: Re: Manuscript v3		

Hello all,

I've incorporated edits from Nianshuang, Barney and myself into a new version of the manuscript, which is attached here as v4. I've attached the clean version, but if anybody wants to go back and see the tracked changes, that version is also available on the drive.

Daniel

From: Jason McLellan	(b)(6)		
Sent: Saturday, February 8, 2020 1:02 PM			
To:		(b)(6) Daniel P.	. Wrapp
		(b)(6)	
			(b)(6)
(b)(6)			
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)		
Subject: RE: Re: Manuscript v3			
Subject: RE: Re: Manuscript v3 Thanks Nianshuang for the many good citati	ons and pointing out	the recent Nature p	aper where they
demonstrate nCoV can use ACE2. Looks like still novel for us.	they didn't determine	e the binding affinity	y though, so that i

Thanks also for the		(b) (4). Seems a bit complicated, so we can		
reword our sentence to make it	(b) (4)			
From: Nianshuang <	(b)(6)			
Sent: Saturday, February 8, 2020 1:10 PM				
To: Daniel P. Wrapp		(b)(6) Jason McLellan		
		(b)(6)		
			(b)(6)	
(b)(6)				
Cc: Graham, Barney (NIH/VRC) [E]		(b)(6)		
Subject: RE: Re: Manuscript v3				

I read through the main text. I added and changed some citations, mostly in the introduction. I also made two major edits about (b) (4).

Nianshuang

Nianshuang Wang, Ph.D. Research Fellow, McLellan Lab Department of Molecular Biosciences The University of Texas at Austin 4.320 Norman Hackerman Building 100 E 24th St., Austin, TX 78712 Tel (b)(6)

From: (b)(6) Sent: Saturday, February 8, 2020 12:54 PM To: Cc: (b)(6) Subject: Re: Manuscript v3

(b)(6)

New figures are on the drive as v3. I'm going to turn my attention back to the text, but let me know if there's anything else you want tweaked.

DWrapp

From: Jason McLellan <		(b)(6)		
Sent: Saturday, February 8 2020 10:40 To: Daniel P. Wrapp <) AM			(b)(6)
		(b)(6)		
			(b)(6)	
	(b)(6)			
Cc: Graham, Barney (NIH/VRC) [E] < Subject: RE: Manuscript v3			(b)(6)	

Updated figures look good. About half require no additional changes. Attached are my edits/comments.

Daniel, let me know if you have any questions.

Keep up the good work!

Jason

From: Daniel P. Wrapp <	(b)(6)	
Sent: Saturday, Februarv 8. 2020 6:09 PM	4.V6)	
To: Jason McLellan	(b)(6)	
	(b)(6)	
	(b)(6)	
(b)(6)		
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Subject: Re: Manuscript v3		

All figure edits have been made and the powerpoint has been updated (including the new SARS RBD + ACE2 SPR which is the new SFig 7). It is now "WuCoV S Figures v2" in the same directory. I'll start going through the text now and then I'll take a stab at the movies.

DWrapp

From: Daniel P. Wrapp	(b)(6)	
Sent: Saturday, February 8. 2020 7:32 AM To: Jason McLellan		(b)(6)
(b)(6)		(b)(6)
(b)(6)		
Cc: Graham, Barney (NIH/VRC) [E] · Subject: Re: Manuscript v3	(b)(6)	

Also, I have some movie editing software that came free with my Mac, I'll trim those videos down and put the new versions in the same directory on the drive.

From: Daniel P. Wrapp	(b)(6)
Sent: Saturday, February 8, 2020 7:27 AM	
To: Jason McLellan	(b)(6)
	(b)(6)
	(b)(6)
(b)(6)	
Cc: Graham, Barney (NIH/VRC) [E] < Subject: Re: Manuscript v3	(b)(6)

Thanks very much Jason, I'll get to work. I'm going to be in lab all day so if anything comes up, please feel free to Whatsapp or email me.

Daniel

From: Jason McLella	(b)(6)		
Sent: Saturday, February 8, 2020 2:42 AM			10
To: Daniel P. Wrapp <		(6)	(6)
	(b)(6)		
		(b)(6)	
(b)(6)			
Cc: Graham, Barney (NIH/VRC) [E] Subject: RE: Manuscript v3	(b)(6)		

Attached are my edits/comments on the figures. Many are just labeling, but some will take more time. Please let me know if you have any questions.

Also, has anyone trimmed the two videos I made showing the beginning and ends need to be cropped off because the spike is just sitting there.

(b) (6) but try to get me an updated version of the text and figures by 10 PM (b) (6) time if possible (3 pm Central). I could return comments by midnight (5 pm your time), and then maybe you could get me another version 7 hours after that so that I can work on it while flying home.

Thanks, good luck, and keep polishing!

Jason

From: Daniel P. Wrapp <<u>Daniel.P.Wrapp.GR@dartmouth.edu</u>> Sent: Friday, February 7, 2020 1:27 PM To: Jason McLellan <<u>jmclellan@austin.utexas.edu</u>>; <u>jory@utexas.edu</u> <<u>jory@utmail.utexas.edu</u>>; <u>chinglin.hsieh@utexas.edu</u> <<u>chinglin.hsieh@utmail.utexas.edu</u>>; <u>nianshuang.wang@utexas.edu</u> <<u>nianshuang.wang@utmail.utexas.edu</u>>; Subject: Manuscript v3

Hey everybody,

Thank you all for your comments on the initial draft! I've made some changes and tried to incorporate your edits/comments so there's a new version of the manuscript (attached here) and a new version of the figures that I would love to get some eyes on:

When you make your next round of edits, please add your initials to the end of the updated document name or just email me the new version directly.

(b) (4)

Cheers,

DWrapp

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Thu, 19 Mar 2020 14:15:21 +0000	
То:	Morabito, Kaitlyn (NIH/VRC) [E]	
Cc:	Corbett, Kizzmekia (NIH/VRC) [E]	
Subject:	Re: CONFIDENTIAL	(b) (4)
Attachments:	image001.png, image002.png, image003.jpg, in	nage004.jpg, image005.jpg,
image006.jpg, imag	e007.jpg, image008.jpg	

I think we each (b) (5), (b) (4) Barney	(চ) (5) This will pr	obably	ড) ⁽⁵⁾ This will	(b) (5), (b) (4) (b) (5)
Sent from my iP	hone			
On Mar 19, 2020 wrote:	0, at 8:04 AM, Morabito, 1	Kaitlyn (NIH/VRC	C) [E]	(b)(6).
Hi Barney,				
In this case, I feel		(b) (4), (b) (5)	was	(b) (4), (b) (5)
Just FYI-				(b) (4). (b) (5)
			(b) (4), (b) (5)	
Thanks, Kaitlyn				
From: Judy Steir Date: Wednesda	ი ნარ ay, March 18, 2020 at 5:3!	5 PM		
To: Barney Grah		(b)(6) John Mascol	and the second se	(b)(6)
"Morabito, Kaitl	yn (NIH/VRC) [E]"		(b)(6) Kizzmekia Corbo	
	(b)(6) Jason Gall		(b)(6) Karin Bok	(b)(6)
Same in an and a second second	(NIH/NIAID) [E]"	(b)(6)		
Subject: FW: CO	NFIDENTIAL:		(b) (4)	

Hi everyone,

I am forwarding		(b) (4), (b) (5)
	^{(b) (4), (b) (5)} I can then	(b) (4), (b) (5)
(b) (4), (b) and then perhaps we car (b) (4), (b) (5)		(b) (4), (b) (5)
Thanks, Judy		
From: Debra Milasincic Sent: Tuesday, March 17, 2020 5:03		
To: Petrik, Amy (NIH/NIAID) [E]	(b)(6) Stein, Judy (NIH/VRC) [C]	(b)(6)
Cc: James Fontenot	(ხ)(6) Shaun Ryan (ხ) (4)	(b)(6)
Subject: CONFIDENTIAL: Hi Amy and Judy –		(b) (4)
Thanks for the productive call today.	(b) (4).	(0)(4)
Here are the links to our	(b) (4) .	
	(b) (4)	
Lastly, here is the link to the		(b) (4)
		(b) (4)
(b) (4)		
		(b) (4)
	(b) (4)	
Feb 19, 2020		
<image001.png></image001.png>		

Looking forward to reconvening when you've had a chance to review the materials on your end. Please let us know when you are ready for further discussion.

Best Regards,

Debra

Debra Milasincic

SVP, Intellectual Property | Moderna Therapeutics

	(b)(6) <u>r</u>	modernatx.com	
office	(b)(6) mobile	(b)(6) fax	(b)(6)
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Please consider the environment before printing this email

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(b) (4)

moderna

f
B
in
You

From:Graham, Barney (NIH/VRC) [E]Sent:Mon, 16 Mar 2020 12:48:29 +0000To:William DowlingSubject:Accepted: WHO Consultation on SARS-CoV -2 Reagents, Cross reactivity andimmune Assays - Wed 2PM CET

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 27 Apr 2020 22:14:22 +0000
То:	Mascola, John (NIH/VRC) [E];Austin, Sarah (NIH/NIAID) [E]
Cc:	Koup, Richard (NIH/VRC) [E];Ledgerwood, Julie (NIH/NIAID) [E]
Subject:	RE: Dr. Fauci's Remarks for June Council
Attachments:	COVID-19 for John.pptx

Here are my slightly curated slides from last weeks talk. You can tell almost the whole story from the timeline slide.

May be some public animal data by June 1.

BG

From: Mascola, John (NIH/VRC) [E]	(b)(6)	
Sent: Monday, April 27, 2020 3:57 PM		
To: Austin, Sarah (NIH/NIAID) [E]	(b)(6)	
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)	(b)(6)
(চ)র্চে Ledgerwood, Julie (N	NIH/NIAID) [E]	(b)(6)
Subject: FW: Dr. Fauci's Remarks for June Co	ouncil	

Hi Sarah,

Lets start planning for council. Of course - I'll talk about VRC COVID work.

These are usually brief talks – 15 min. And I'll likely need to tape the talk in mid May, so lets get started.

I would focus mostly on vaccine development efforts, Spike structure, early mRNA work. Will only show public data, so will coordinate with Barney on that.

Barney and Julie – if you have some generic slides you have used, feel free to send.

Thanks, John

From: Awwad, David (NIH/NIAID) [C](b)(6)Sent: Monday, April 27, 2020 9:58 AMTo: Mascola, John (NIH/VRC) [E](b)(6)Subject: FW: Dr. Fauci's Remarks for June Council

FYI

From: Folkers, Greg (NIH/NIAID) [E] <	(b)(6)
Sent: Monday, April 27, 2020 9:56 AM To: Doepel, Laurie (NIH/NIAID) [E]	ው)) Alperin, David (NIH/NIAID) [E]
(b)(6)	
Cc: Warren, Macie (NIH/NIAID) [E] < (b)(6) Awwad, David (NIH/NIAID)	(b)(6) Calder, Thomas (NIH/NIAID) [E] D) [C] < (b)(6) Conrad, Patricia
(NIH/NIAID) [E] (b)(6)	b
Subject: RE: Dr. Fauci's Remarks for June Council	
David,	
We will pre-tape Dr Fauci's talk and get the file t	o u the day before
I think John Mascola plans to do the same thing	
Thanks	
Greg	
From: Doepel, Laurie (NIH/NIAID) [E] <	(b)(6)
Sent: Monday, April 27, 2020 9:27 AM	
To: Alperin, David (NIH/NIAID) [E] <	(b)(6) Folkers, Greg (NIH/NIAID) [E]
Cc: Warren, Macie (NIH/NIAID) [E]	(b)(6) Calder, Thomas (NIH/NIAID) [E]
< (b)(6) Subject: PEL Dr. Foundils Remarks for June Council	
Subject: RE: Dr. Fauci's Remarks for June Council	
Hi David,	
Greg is OD point person on June Council, so loop	ning him in to answer your question
	ang min in to allower your question.
Thanks,	
Laurie	
Laurie	
From: Alperin, David (NIH/NIAID) [E] <	(b)(6)
Sent: Monday, April 27, 2020 9:19 AM	(b)(6) Deemol Leurie (NULL/NILAID) [5]
To: Calder, Thomas (NIH/NIAID) [E]	රා(ර) Doepel, Laurie (NIH/NIAID) [E]
Cc: Alperin, David (NIH/NIAID) [E]	(b)(6) Warren, Macie (NIH/NIAID) [E]
< (b)(6) Subject: Dr. Fauci's Remarks for June Council	
Subject. Dr. Fauer's Kemarks for June Council	
Hi Thomas and Laurie	

Hi Thomas and Laurie,

I heard as part of our Council planning that Dr. Fauci will record his remarks for the upcoming June 1, 2020 meeting. The only other time I can recall something similar was during a snowstorm and Dr. Fauci recorded his remarks afterwards and we added them to the Videocast record. I am reaching out to discuss how to coordinate this.

How does Dr. Fauci want to handle it this time, pre-record or post-record? What needs to be done?

Thanks

David Alperin Director / SREA Administrator Office of Committee Management NIAID Service Center National Institute of Allergy and Infectious Diseases National Institutes of Health 5601 Fishers Lane Room 4G30 Rockville, MD 20892-7922 (b)(6) NUMBER DURING TELEWORK: (b)(6) FAX: (b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 27 Apr 2020 17:11:12 +0000
То:	Moore, Ian (NIH/NIAID) [E];Corbett, Kizzmekia (NIH/VRC) [E];Leist, Sarah
Rebecca	
Cc:	Nagata, Bianca (NIH/NIAID) [F];Mahnaz Minai
Subject:	RE: (b) (4) Samples (b) (4)

Thanks lan,

Looks good. We will plan to				
	(b) (4)			
Also wondered about	(b) (4)			
Barney				
From: Moore, Ian (NIH/NIAID) [E]	(b)(6)		
Sent: Monday, April 27, 2020 12:51 PM				
To: Graham, Barney (NIH/VRC) [E] <		(b)(6)	Corbett, Kizzmekia (NIH/VRC) [E]	
(b)(6) Leist, Sara	ah Rebecca		(b)(6)	
Cc: Nagata, Bianca (NIH/NIAID) [F]		(b)(6)	Mahnaz Minai	(b)(6)

Cc: Nagata, Bianca (NIH/NIAID) [F] Subject: RE: (b) (4) Samples (b) (4) ...

Hi Barney,

In reference to your list of priorities please see my responses below:





lan

Ian N. Moore, DVM, PhD, Dipl., ACVP National Institutes of Health *Veterinary Pathologist* Chief, Infectious Disease Pathogenesis Section (IDPS) NIAID/DIR/CMB Lab/office: (b)(6) 12735 Twinbrook Parkway, Rockville, MD 20852-1770 (b)(6)

From: Graham, Barney (NIH/VRC) [E]	(b)(6)
Sent: Monday, April 27, 2020 9:17 AM	
To: Moore, Ian (NIH/NIAID) [E]	(b)(6) Corbett, Kizzmekia (NIH/VRC) [E]
(b)(6)	
Subject: RE: (b) (4) Samples (b) (4)	

Hi lan,

Thank you again for helping with this. We haven't spent much time discussing what are the key things to look for. I'm sure you have a system for (b) (4), but I'm going to list the things I would most like to see in order of priority.

(b) (5)

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

From: Moore, I	an (NIH/NIAID) [E]		(b)(6)	
Sent: Monday,	April 27, 2020 7:57	AM		
To: Corbett, Kiz	zmekia (NIH/VRC)	[E]		(b)(6)
Cc: Graham, Ba	rney (NIH/VRC) [E]		(b)(6)	
Subject: Re:	(b) (4) Samples	(b) (4)		

Good Morning,

We have a courier that circulates campus twice a day. Once you receive the samples, email us (please direct communication to Bianca Nagata [cc'd]) and we will put you on the schedule and get the samples over to us. Thank you for Keeping us informed on the status of the samples. In order to prevent any delays in collecting the samples from your lab, our courier "End" has access to many of the campus's NIAID buildings but, I am not sure about VRC. This may require an additional layer of communication to have someone meet him with the package in the lobby area of your building. We can get those details in place as soon as you contact us with the samples in your possession. **@Bianca: Will you communicate with Dr. Corbett regarding the forthcoming shipment request?** Have a great day and please contact us if you have any other questions or requests.

lan

Ian N. Moore, DVM, PhD, DACVP National Institutes of Health Veterinary Pathologist Chief, Infectious Disease Pathogenesis Section (IDPS) NIAID/DIR/CMB Lab: (b)(6) Office: (b)(6) 12735 Twinbrook Parkway Rm: 2W-01 Rockville, MD 20852-1770 On Apr 27, 2020, at 5:03 AM, Corbett, Kizzmekia (NIH/VRC) [E] wrote:

Good morning Dr. Moore, We are set to receive the (b) (4) this Tuesday or Wednesday? How should we sent them to you? Courier? Pick-up?

(b)(6)

Thanks.

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) (b)(6)

From: "Leist, Sarah Rebecca"	(b)(6)		
Date: Friday, April 24, 2020 at 8:31 PM			
To: Kizzmekia Corbett <	(b)(6) Barney Graham		(b)(6)
"Alvarado, Gabriela (NIH/VRC) [C]" <	(b)(6)		
Cc: Ralph Baric (b)	⁽⁶⁾ Alexandra Schaefer <	(b)(6)	
"Dinnon, Kenneth Harold III"	(b)(6) "Martinez, David Rafael"	1	
(b)(6)			

Subject: Re: Update on SARS-CoV-2 mRNA study

Hi Kizzy,

We are ready to ship the	(b) (4) – we are planning to send them out Monday/Tuesday.
Should I use your phone numbe	r as contact – if not please provide the correct number.
Also, are you or are we paying for	or the shipment – if you pay we'll need the Fedex number.

Best,

Sarah

From: "Corbett, Kizzmekia (NIH/VRC) [E]"		(b)(6)		
Date: Friday, April 24, 2020 at 10:53 AM				
To: "Graham, Barney (NIH/VRC) [E]"	(b)(6)	"Leist, Sarah Rebecca"		
(b)(6) "Alvarado, Gabrie	a (NIH/VRC) [C]" <	(b)(6)		
Cc: "Baric, Ralph S" (b)(6) "Schaefer, Alexand	ira"		
^{(b)(6)} "Dinnon, Ken	neth Harold III"	(b)(б)		
"Martinez, David Rafael"	(b)(6)			
Subject: Re: Update on SARS-CoV-2 mRNA	study			
Opps, be me. <mark>4pm!</mark> 				
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) (b)(6)

From: Barney Graham	(b)(6)	
Date: Friday, April 24,	2020 at 10:53 AM	
To: "Leist, Sarah Rebec	ca" (b)(6)	
Cc: Kizzmekia Corbett	ه)(ه)(ه) (b)(ه) (b)(ه) (b)(ه) (b)(ه) (b)(ه)	(b)(6)
Alexandra Schaefer	(b)(6) "Dinnon, Kenneth Harold III"	
	(b)(6) "Martinez, David Rafael"	(b)(6)
Subject: Re: Update on	SARS-CoV-2 mRNA study	

Thanks Sarah. Sounds great. I have 4 pm free on May 1st.

Barney

Sent from my iPhone

On Apr 24, 2020, at 10:45 AM, Leist, Sara	ah Rebecca (b)(6) wrote:
Hello everyone,	
We are making good progress with both	(b) (4)
(b) (4) Is there a possibility to ha	ave a zoom call end of next week to discuss the results of
these experiments? Friday would be best.	
Thanks,	
Sarah	
From: "Corbett, Kizzmekia (NIH/VRC) [E]	(b)(6)
Date: Tuesday, April 21, 2020 at 8:26 PM	
To: "Leist, Sarah Rebecca"	(b)(6) "Graham, Barney (NIH/VRC) [E]"
(b)(6) "Baric, Ralph	
Cc: "Schaefer, Alexandra"	(b)(6) "Dinnon, Kenneth Harold III"
(b)(6) "Martinez, D	David Rafael" < (b)(6)
Subject: Re: Update on SARS-CoV-2 mRN	IA study

The spreadsheet document and the transfer document match. can you call my phone?.

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead Coronavirus Vaccines & Immunopathogenesis (coVip) Team Viral Pathogenesis Laboratory | Vaccine Research Center National Institutes of Allergy and Infectious Diseases National Institutes of Health

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

From: "Leist, Sarah Rebecca" < Date: Tuesday, April 21, 2020 at 8:20 PM (b)(6)

To: Kizzmekia Corbett		(b)(6) Barney Graham	(b)(6)
Ralph Baric	(b)(6)		
Cc: Alexandra Schaefer		(b)(6) "Dinnon, Kenneth H	larold III"
	⁽⁶⁾ "Martinez, David F		(b)(6)
Subject: Re: Update on SA	ARS-CoV-2 mRNA stu	dy	
Hi Kizzy,			(b) (4)
Additionally, could you plea	se		(b) (4)
T L			
Thanks, Sarah			
Salali			
From: "Corbett, Kizzmekia		(b)(6)	
Date: Monday, April 20, 2		(-/(-)	
To: "Leist, Sarah Rebecca'		(b)(6) "Graham, Barney (NI	H/VRC) [E]"
(b)(6		(b)(6)	.,, [_]
Cc: "Schaefer, Alexandra"		(b)(6) "Dinnon, Kennet	h Harold III"
(b)	6 "Martinez, David F	Rafael" <	(b)(6)
Subject: Re: Update on SA	ARS-CoV-2 mRNA stu	dy	
See my replies <mark>in line</mark> :			
Kizzmekia S. Corbett, PhD Senior Research Fellow So	iontific Load		
Coronavirus Vaccines & Imi		Vin) Team	
Viral Pathogenesis Laborato			
National Institutes of Allergy			
National Institutes of Health			
Building 40 Room 2608			
40 Convent Drive			
Bethesda MD 20892			
Laboratory: (b)(6)			
Personal: (b)(6)			
Fax: (301) (b)(6)			

From: "Leist, Sarah Rebe	ecca" <	(b)(6)		
Date: Monday, April 20,	2020 at 5:21 PM			
To: Kizzmekia Corbett		(b)(6)	Barney Graham <	(b)(6)
Ralph Baric <	(b)(6)			
Cc: Alexandra Schaefer		(b)(6) "	Dinnon, Kenneth Harold III"	
< (b)(6) "Martinez, Dav	id Rafael"	(b)(6)	
Subject: Re: Update on S	SARS-CoV-2 mRNA	study		

Hello everyone,

	(b) (4)
	(b) (4
Thanks and have a great day!	
Sarah	

From: "Corbett, Kizzmekia (NIH/VRC) [E]"			(b)(6)	
Date: Sunday, April	19, 202	0 at 8:42 AM		
To: "Leist, Sarah Re	becca"		(b)(6) "Gra	aham, Barney (NIH/VRC) [E]"
<	(b)(6)	"Baric, Ralph S"		(b)(6)
Cc: "Schaefer, Alexa	andra"		(b)(6)	"Dinnon, Kenneth Harold III"
<	(b)(6	"Martinez, David	Rafael" <	(b)(6)
Subject: Re: Update	e on SAF	S-CoV-2 mRNA st	udy	

Thanks for the data Sarah,

I sent the table for	(b) (4) that arrived to you last week, but I am including it here again. Please see
tab 2. We agree that	(b) (4) and thus should not be
taken.	

--

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 R	oom 2608
40 Convent D	rive
Bethesda MD	20892
Laboratory:	(b)(6)
Personal:	(b)(6)
Fax: (301)	(b)(6)

From: "Leist, Sarah Rebecca"	(b)(6)		
Date: Saturday, April 18, 2020) at 6:51 PM		
To: Barney Graham	(b)(6) Ralph	Baric	(b)(6)
Cc: Kizzmekia Corbett	(b)(6)	Alexandra Schaefer	
(b)(6) ¹¹	Dinnon, Kenneth Harol	d III"	(b)(6)
"Martinez, David Rafael"	(b)(б	0	
Subject: FW: Update on SARS-	-CoV-2 mRNA study	_	

Hello everyone,

Please find attached an up to date version of the mRNA study data including graphs (and stats) on all data we have until now. I apologize for the delay.

I was hoping to be a	ble to include t	ne (b) (4)	have not arrived yet. However, we
processed the	(b) (4) out of	(b) (4)	beginning of next week.
I've also processed	the	(b) (4) out and will work on shipp	oing them to VRC beginning of next
week.			

(b) (4)

Please let me know if you have any additional requests or comments.

Thanks everyone,

Sarah

From: "Leist, Sarah Rebecca"	(b)(6)		
Date: Tuesday, April 7, 2020 at 8:2	23 PM		
To: "Corbett, Kizzmekia (NIH/VRC)	[E]" <	(b)(6) "Graham, Ba	rney
(NIH/VRC) [E]" <	(b)(6) "Baric, Ralph	S" (b)(6)	
Cc: "Schaefer, Alexandra"	(b)(6) ¹	Dinnon, Kenneth Harold III	'n
(b)(6) "Mart	inez, David Rafael"	(b) (6)	
Subject: Update on SARS-CoV-2 m	RNA study		
Hello everyone,			
Please find attached the up to date su (b) (4)	ummary of the data we'	ve collected so far	(b) (4)
Today we did the	(b) (4) and will h	ave results by Thursday. I will	
another email		(b) (4) later this week	
Unfortunately, we will not be able to			
Unfortunately, we will not be able to not come in yet – we are hoping they		(b) (4) this week because the	(b) (4) have
		(b) (4) this week because the	(b) (4) have
not come in yet – we are hoping they	will arrive next week.	(৬) (4) this week because the	(b) (4) have (b) (4)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 6 Feb 2020 16:08:45 +0000
To:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	FW: nCoV 2019 Structure Manuscript Draft
Attachments:	WuCoV S Figures.pptx, WuCoV main_text_v1.docx

From: Jason McLellan(b)(6)Sent: Thursday, February 6, 2020 6:05 AMTo: Graham, Barney (NIH/VRC) [E](b)(6)Subject: nCoV 2019 Structure Manuscript Draft

Hi Barney,

Attached please find	(b) (4)
	(b) (4)

Let us know what you think about the authorship and order.	(b) (4)
	(b) (4)

Would you mind contacting Priscilla at Science and see if she is interested in a manuscript reporting the (b) (4)? We could probably submit on Friday (tomorrow) if needed, although if you think the manuscript needs a bit more polish then we could aim for Monday. Generally not too much of a difference between Friday afternoon and Monday morning submissions, although these are non-general times.

Hope you like it!

Cheers, Jason

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 1 Mar 2020 01:00:58 +0000
То:	Kizzmekia Corbett
Subject:	RE: Church Slides
Attachments:	03.01.20_Mt. Calvary Baptist Church_KC_BG v3.pptx

I liked this enough to spend a little more time on it. Make sure it is doing what you want with animation.

BG

From: Kizzmekia Corbett(b)(6)Sent: Saturday, February 29, 2020 1:30 PMTo: Graham, Barney (NIH/VRC) [E]Subject: Church Slides

Here you go Dr. Graham. Play the animation. :-)

Kizzmekia S. Corbett, PhD (b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 12 Feb 2020 21:21:44 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Re: (b) (4)

(b) (5)

(b) (5)

BG

Sent from my iPhone

On Feb 12, 2020, at 10:06 PM, Corbett, Kizzmekia (NIH/VRC) [E] (b)(6) wrote:

(b) (4), (b) (5) I think you

should reply in full to Niel's email with the list. I am still not the best with wrapping my head around IP at the VRC.

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) (b)(6)

From: Barney Graham <(b)(6)Date: Wednesday, February 12, 2020 at 4:03 PMTo: Kizzmekia Corbett(b)(6)Cc: "Hutchinson, Geoffrey (NIH/VRC) [F]"Subject: Re:(b) (4)	(b)(6)
Your list is my list. You are closer to it than me.	
BG	
Sent from my iPhone	
On Feb 12, 2020, at 6:46 PM, Corbett, Kizzmekia (NIH/VRC	(b)(6) wrote:
Likely most appropriate for you to answer, Dr. Graham.	
My list: (b) (5)	
Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" [F]" (b)(6) "Daniel Ellis"	Խ)6) (Խ)6) "Hutchinson, Geoffrey (NIH/VRC) (Խ)6) (Խ) (4) Meeting Discussion
Okay, we will file an ROI to get that process kicked off.	
Kizzy (or whoever is appropriate), could you please send m	e a list of co-inventors from the VRC?
Thanks, Neil	
On Wed, Feb 12, 2020 at 8:55 AM Graham, Barney (NIH/VI I think we are in agreement that Univ Wash car reasons.	RC) [E] (b)(6) wrote: (b) (4), (b) (5) and for the same

BG

Sent from my iPhone

On Feb 12, 2020, at 2:26 PM, Neil King	(b)(6) wrote:	
Sounds good Kizzy, thanks for sending this out!		
Barney, let us know what you'd like to do about IP.		(b) (4), (b) (5)
Either w	vay works for me.	
Neil		
On Wed, Feb 12, 2020 at 2:02 AM Corbett, Kizzmek wrote:	ia (NIH/VRC) [E]	(b)(6)

Good morning all,

As always, thanks for a productive meeting. It's exciting to see things moving forward, particularly with the exciting. data with the (b) (4), (b) (5). As mentioned in the meeting, our main objective right now is to get the paper out and IP addressed. Thus the following action items are mostly ours (no pressure, I guess.)

VRC

Discuss with Niel and Dr. Graham on IP (Lead: Kizzmekia)
Discuss with Dr. Graham about Gates follow-up (Lead: Kizzmekia)
Submit (b) (4), (b) (5) outline to group. (Lead: Geoffrey and Kizzmekia)
(b) (4), (b) (5). (Lead: Geoffrey)
(b) (4), (b) (5) (Lead: Geoffrey)

U Washington

• Collaborate with VRC on new (b) (4), (b) (5), when needed. (Lead: Dan)

Kizzmekia S. Corbett, PhD

Senior Research Fellow

National Institutes of Health National Institutes of Allergy and Infectious Diseases Vaccine Research Center Viral Pathogenesis Laboratory

Building 40 Room 2608

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

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 31 Mar 2020 00:46:30 +0000
To:	Pierson, Theodore (NIH/NIAID) [E]
Subject:	RE: Catch up

Let's try this week. Call me and I will get off an endless conference call.

BG

From: Pierson, Theodore (NIH/NIAID) [E]		(b)(6)
Sent: Wednesday, March 25, 2020 9:59 PM		
To: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Subject: Catch up		

Hi Barney...

I hope all is well with you. It would be fun to catch up- I'm interested to hear more about both the (b) (4) projects. Working from home now... writing a lot and doing too much admin. But will make progress on all these old things that have been dragging me down. Everyone in my extended family healthy so far.... Blessed for that. I'm sure you are very busy and there is no rush... but let's connect when you have some time. Cheers,

TCP

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 26 Feb 2020 19:22:38 +0000
То:	Folkers, Greg (NIH/NIAID) [E];Mascola, John (NIH/VRC) [E]
Cc:	Ledgerwood, Julie (NIH/NIAID) [E];Sitar, Sandra (NIH/VRC) [C];Morabito, Kaitlyn
(NIH/VRC) [E]	
Subject:	RE: Barney, John tick-tock slide for Tony COVID-2019
Attachments:	24Feb2020_SARS CoV Timeline_for Greg.pptx

Hi Greg,

This is a timeline we've been working on. Tony may not want all those milestones, so feel free to modify and let us know if you have any questions.

Barney

From: Folkers, Greg (NIH/NIAID) [E] <	(b)(6)
Sent: Tuesday, February 25, 2020 10:	:09 AM
To: Graham, Barney (NIH/VRC) [E] <	(b)(6) Mascola, John (NIH/VRC) [E]
(b)(6)	
Cc: Ledgerwood, Julie (NIH/NIAID) [E]	(b)(6) Sitar, Sandra (NIH/VRC) [C]
(b)(6) Morabito, Kai	itlyn (NIH/VRC) [E] < (b)(6)
Subject: RE: Barney, John tick-tock sli	ide for Tony COVID-2019
Thanks – will be sure T knows of	(b) (4)
From: Graham, Barney (NIH/VRC) [E]	< (b)(6)
Sent: Tuesday, February 25, 2020 10:	:03 AM
To: Mascola, John (NIH/VRC) [E]	(b)(6)
Cc: Folkers, Greg (NIH/NIAID) [E]	(b)(6) Ledgerwood, Julie (NIH/NIAID) [E]
(b)(6) Sitar, Sand	dra (NIH/VRC) [C] (b)(6) Morabito, Kaitlyr
(NIH/VRC) [E]	(b)(6)
Subject: Re: Barney, John tick-tock sli	ide for Tony COVID-2019
Also, the trial has evolved to be	(b) (4) than what Tony was told initially.

BG

Sent from my iPhone

On Feb 25, 2020, at 9:58 AM, Mascola, John (NIH/VRC) [E] (b)(6) wrote:

And if we start in March, Tony can say that we beat the WSJ projection !

From: Folkers, Greg (NIH/NIAID) [E]	(b)(6)
Sent: Tuesday, February 25, 2020 9:32 AM	
To: Graham, Barney (NIH/VRC) [E]	(b)(6) Ledgerwood, Julie (NIH/NIAID) [E]
(b)(6)	
Cc: Mascola, John (NIH/VRC) [E]	(b)(6) Sitar, Sandra (NIH/VRC) [C]
(b)(6) Morabito, Kaitlyn (NIH/VRC)	[E] (b)(6)
Subject: RE: Barney, John tick-tock slide for Tony CO	VID-2019
Thanks, very much	
We are starting to make some storytelling slides	s eg
<image001.jpg></image001.jpg>	
<image003.jpg></image003.jpg>	
<image004.jpg></image004.jpg>	
Question:	

Did WSJ get this one right yesterday?

<image005.jpg>

From: Graham, Barney (NIH/VRC	(E)	(b)(6)	
Sent: Tuesday, February 25, 2020	0 9:24 AM		
To: Ledgerwood, Julie (NIH/NIAI	D) [E]	(b)(6)	
Cc: Folkers, Greg (NIH/NIAID) [E]		(b)(6) Mascola,	John (NIH/VRC) [E]
(b)(6) Sitar,	Sandra (NIH/VRC) [C] <	(b)(6) Morabito, Kaitlyn
(NIH/VRC) [E]	(b)(6)		
Subject: Re: Barney, John tick-to	ck slide for Tony	COVID-2019	

Kaitlyn and I are editing the timeline and will ask Julie and team to review before sending.

BG

Sent from my iPhone

On Feb 25, 2020, at 9:01 AM, Ledgerwood, Julie (NIH/NIAID) [E] (b)(6) wrote:

Hi Greg

Just checking to be sure you have what you need for this. Sandra can assist with gathering needed info or slide prep if helpful. Best, Julie

From: Folkers, Greg (NIH/NIAID) [E] <	(b)(6)
Sent: Sunday, February 23, 2020 8:15 PM	
To: Graham, Barney (NIH/VRC) [E] (b)(6)	ው)ው Mascola, John (NIH/VRC) [E]
Cc: Ledgerwood, Julie (NIH/NIAID) [E]	(b)(6)
Subject: RE: Barney, John tick-tock slide for Ton	y COVID-2019

Barney, thanks Will be sure to underscore the collaborative/ecumenical nature of this

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

Subject: Re: Barney, John tick-tock slide for Tony COVID-2019

Hi Greg. We have the outline of a slide and have been thinking about how to show this. Will work with Kaitlyn. Notably, VRC did not do this one by ourselves. Many groups were involved which required a lot of coordination.

Barney

Sent from my iPhone

On Feb 23, 2020, at 5:29 PM, Mascola, John (NIH/VRC) [E] (b)(6) wrote:

Barney has been tracking this – so will let him respond. Julie also copied. Of note, (b) (4), (b) (5) NIAID. Currently, I don't know of a slide – but we could ask our clinical group to make one – as we have before.

Best, John

From: Folkers, Greg (NIH/NIAID) [E]	(b)(6)	
Sent: Sunday, February 23, 2020 5:18 PM		
To: Graham, Barney (NIH/VRC) [E] (ხ)(6)	(b)(6) Mascola, John (NIH/VRC) [E]	
Cc: Folkers, Greg (NIH/NIAID) [E]	(b)(6)	
Subject: Barney, John tick-tock slide for Tony CO	OVID-2019	

Barney, John

We want to make a timeline slide showing how fast we (you) have moved on COVID-2019

Do you have a timeline (text or slide) that I could use to flesh out/improve on what I have below

- 12-31-2019 WHO alerted of cluster of pneumonia cases in Wuhan, China
- 1-9-2020 WHO announces that outbreak in Wuhan caused by a novel coronavirus (now called SARS-CoV-2)
- 1-10-2020 Chinese release first genome of SARS-CoV-2
- 1-28-2020 VRC: (b) (4) designed and samples produced
- 2-10-2020 VRC: (b) (4); manuscript submitted to Science
- 2-17-2020 VRC: Manuscript accepted by *Science*
- 2-19-2020 VRC: Paper published online by Science
- 2-21-2020 VRC: (b)(6) submitted

Thanks as ever for your help

Disclaimer: Any third-party material in this email has been shared for internal use under fair use provisions of U.S. copyright law, without further verification of its accuracy/veracity. It does not necessarily represent my views nor those of NIAID, NIH, HHS, or the U.S. government.

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 9 Apr 2020 19:25:14 +0000
То:	Daucher, Marybeth (NIH/NIAID) [E];Harris, Christina (NIH/NIAID) [E]
Subject:	Fwd: Coronavirus research NIAAA

This is a new one. (b) (5), (b) (6). Might be worth briefly discussing on tonight's call.

BG

Sent from my iPhone

Begin forwarded message:

From: Raja Kittappa < (b)(6). Date: April 9, 2020 at 1:56:27 PM EDT To: "Graham, Barney (NIH/VRC) [E]" (b)(6). Subject: Coronavirus research NIAAA

7

Dear Dr Graham,

I read your recent paper in Science concerning the structure of the SARS-2 spike protein with great interest. (b) (6). (b) (4)

(b)(6)

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

The NIAAA is very excited to move forward with this work. Unfortunately, the NIAAA, like most of NIH, is technically closed for Intramural research. The Scientific Director and Clinical Director at NIAAA want us to find a lab at NIAID to act as an official "collaborator." The lab does not actually have to work with us (although I would prefer that). We need someone at NIAID to say that our work could potentially be useful to allow us to re-open the lab at NIAAA.

Can you steer us in the right direction? Is there a formal application process at NIAID that we should engage?

I would be grateful for any advice that you have, Dr Graham.

Thank you!

Dr Raj Kittappa

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 12 Mar 2020 18:25:03 +0000
То:	Grant, Nicole (NIH/OD) [E]
Subject:	Accepted: discussion of COVID-19 IRB and PI/Sponsor responsibilities

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Thu, 30 Apr 2020 04:35:23 +0000	
To:	Cornelia L. Dekker	
Cc:	Robert Chen;Steve Black	
Subject:	RE: Comments	
Attachments:	Consensus Report Summary Clean 042520_BG.docx	

Here are some additional tracked edits and a few comments.

BG

From: Cornelia L. Dekker <	(b)(6)	
Sent: Wednesday, April 29, 2020 12	:23 PM	
To: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Cc: Robert Chen	(b)(6) Steve Black <	(b)(6)
Subject: Comments		

Dear Barney, please send me your comments to the manuscript for the enhanced disease meeting held now 7 weeks ago. All other authors have submitted them already.

Thank you, Corry

From:Graham, Barney (NIH/VRC) [E]Sent:Thu, 5 Mar 2020 14:53:57 +0000To:PrCc:Plumbaum, InaSubject:RE: On-going vaccine projects against SARS-CoV-2

Hi Klaus,

I can tell you most about what we are doing.

Our prior work on MERS, HKU1, SARS and other CoV including spike structures, stabilizing mutations, mAb panels, epitope mapping, and mechanisms of neutralization allowed us to make a rapid selection of vaccine construct and immediate GMP production with Moderna. (b) (4)

(b) (4) We got a safe-to proceed from FDA on March 2 and the study is opening in a single site in Seattle with the first injection probably on March 11. This will be the first vaccine trial started.

A Remdesivir treatment study has been started on the subjects that came back from the cruise ship being cared for in Nebraska.

Those are the only ones I know of for sure.

Best wishes,

Barney

From: Pr(b)(6)Sent: Thursday, March 5, 2020 7:46 AMTo: Graham, Barney (NIH/VRC) [E](b)(6)Cc: Plumbaum, Ina(b)(6)Subject: On-going vaccine projects against SARS-CoV-2

Dear Barney,

I hope you're doing well.

(b) (4)

р

(b) (4)

I am writing to you as our government is eager to learn about all on-going preventive vaccine projects against SARS-CoV-2. I guess, on-going clinical trials and known projects in concrete preparation of a first clinical trial would be of interest, in the US and world-wide.

I looked into clinicaltrials.gov and found:

2 Not yet recruiting New	Safety and Immunogenicity Study of 2019-nCov Vaccine (mRNA- 1273) to Treat Novel Coronavirus	Corona Virus Infection	Biological: mRNA-1273	Kaiser Permanente Washington Health Research Institute - Vaccines and Infectious Diseases Seattle, Washington, United States
6 ^{Recruitin} g New	Immunity and Safety of Covid-19 Synthetic Minigene Vaccine	Pathogen Infection Covid-19 Infection	Biological: Injection and infusion of LV- SMENP-DC vaccine and antigen-specific CTLs	Shenzhen Geno-immune Medical Institute Shenzhen, Guangdong, China

The Shenzen vaccine seems more like an immunotherapeutic than a preventive vaccine.

In addition, I have the CEPI projects: DNA/Innovio Molecular clamp/University of Queensland RNA/Moderna and NIAID

Here, in academic circles, projects are ongoing on immunogenicity in animals of vectored SARS-CoV-2 vaccines based on MVA and Measles vaccine strains.

In terms of antibody therapeutics, clinicaltrials.gov lists:

RecruitinAnti-SARS-CoV-2 InactivatedgConvalescent Plasma in theNewTreatment of COVID-19		Coronavirus	Shanghai Public Health Clinical Center Shanghai, Shanghai, China
Not yetRecombinant HumanNot yetAngiotensin-convertingrecruitingEnzyme 2 (rhACE2) as aNewTreatment for PatientsWith COVID-19	COVID- 19	Drug: Recombinant human angiotensin- converting enzyme 2 (rhACE2)	GCP Office of The First Affiliated Hospital of Guangzhou Medical University Guangzhou, Guangdong, China

Not yet recruiting NewA Pilot Clinical Study on Inhalation of Mesenchymal Stem Cells Exosomes Treating Severe Novel Coronavirus PneumoniaCoronavirus	Biological: MSCs- derived exosomes
Recruitin Hypertension Patients With and Without ACEI 2019- Hospi g Treatment When Suffered With 2019-nCoV nCoV Medic	First Affiliated ital of Chongqing cal University igqing, China
Not yet recruiting NewImmunoregulatory Therapy for 2019- 12019 nCoV, PD- Drug: Thymos treatme	sin+standard ent standard
Enrolling byWashed Microbiota Transplantation for invitation Patients With 2019- NewOther: washed microbiota 	al Center for ve Diseases, The d Affiliated al of Nanjing Il University g, Jiangsu, China
Not yetTreatment of Acute Severe 2019-nCoV recruiting2019-nCoV Immunoglobulin of Cured PatientsDrug: Immunoglobulin of Cured patientsMage H MageNewImmunoglobulin From Cured Patients2019-nCoV Immunoglobulin of Cured PatientsDrug: MageMage Mage	Department of Cardiology, Union Hospital, Tongji Medical College, Huazhong Jniversity of Science and Fechnology Wuhan, Hubei, China

What else is going on or in planning with preventive vaccines and protein or antibody therapeutics? What is your e thinking, when could a larger clinical trial of phase 2/3 start in the US?

Any additional information would be appreciated.

Mit freundlichen Grüßen With best regards

Klaus Cichutek

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 11 Mar 2020 02:02:08 +0000
То:	Handley, Gray (NIH/NIAID) [E]
Cc:	Gall, Jason (NIH/VRC) [C];Ledgerwood, Julie (NIH/NIAID) [E];Marston, Hilary
(NIH/NIAID) [E];Mascol	a, John (NIH/VRC) [E];VRC_CoV
Subject:	Re: nCoV structure paper

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

BG

Sent from my iPhone

On Mar 9, 2020, at 10:44 PM, Handley, Gray (NIH/NIAID) [E]	(b)(6).
wrote:	

Any further developments on this front? Thanks. Gray

From: Gall, Jason (NIH/VRC) [C]	(b)(6)
Sent: Thursday, February 13, 2020 8:39 AM	
To: Mascola, John (NIH/VRC) [E]	юю Graham, Barney (NIH/VRC) [E]
(b)(6) Ledgerwood, Julie (1	NIH/NIAID) [E] (b)(6) VRC_CoV
< (b)(6)	
Cc: Marston, Hilary (NIH/NIAID) [E]	(b)(6) Handley, Gray (NIH/NIAID) [E]
(b)(6)	
Subject: RE: Re: nCoV structure paper	
Barney, I agree too, under these circumstances. Hopefu something also.	ully they will be equally forthcoming and we can learn
I agree too, under these circumstances. Hopefu something also.	ully they will be equally forthcoming and we can learn
I agree too, under these circumstances. Hopefu	ully they will be equally forthcoming and we can learn (b)(6)
I agree too, under these circumstances. Hopefu something also. Jason From: Mascola, John (NIH/VRC) [E]	
I agree too, under these circumstances. Hopefu something also. Jason	
I agree too, under these circumstances. Hopefu something also. Jason From: Mascola, John (NIH/VRC) [E] Sent: Thursday, February 13, 2020 7:54 AM	(ხ)რე ნარე Gall, Jason (NIH/VRC) [C]
I agree too, under these circumstances. Hopefu something also. Jason From: Mascola, John (NIH/VRC) [E] Sent: Thursday, February 13, 2020 7:54 AM To: Graham, Barney (NIH/VRC) [E] <	(ხ)რე ნარე Gall, Jason (NIH/VRC) [C]
I agree too, under these circumstances. Hopefu something also. Jason From: Mascola, John (NIH/VRC) [E] Sent: Thursday, February 13, 2020 7:54 AM To: Graham, Barney (NIH/VRC) [E] < < (b)(6) Ledgerwood, Julie (NIH/	(ხ)რე ნარე Gall, Jason (NIH/VRC) [C]
I agree too, under these circumstances. Hopefu something also. Jason From: Mascola, John (NIH/VRC) [E] Sent: Thursday, February 13, 2020 7:54 AM To: Graham, Barney (NIH/VRC) [E] < < (b)(6) Ledgerwood, Julie (NIH/ (b)(6)	სარ ნარ Gall, Jason (NIH/VRC) [C] /NIAID) [E] სარ VRC_CoV

Barney,

This seems reasonable to me.

John

From: "Graham, Barney (NIH/VRC) [E]"	(b)(6)
Date: Thursday, February 13, 2020 at 01:52:39	
To: "Mascola, John (NIH/VRC) [E]"	(b)(6) "Gall, Jason (NIH/VRC) [C]"
(b)(6) "Ledgerwood, Julie (NIH/NIAI	D) [E]" (b)(6) "VRC_CoV"
(b)(6)	
Cc: "Marston, Hilary (NIH/NIAID) [E]"	ക്ര "Handley, Gray (NIH/NIAID) [E]"
(b)(6)	
Subject: FW: Re: nCoV structure paper	
FYI. Under the circumstances I am inclined to	(b) (4), (b) (5)
The order the circumstances rain inclined to	(b) (4), (b) (5)
(b) (4), (b) (5) Any objections?	
Barney	
From: 戴连攀 (b)(6)	
Sent: Wednesday, February 12, 2020 10:38 PM	
To: George GAO (b)(6)	
Cc: Graham, Barney (NIH/VRC) [E] <	(b)(6) yanjh (b)(6) 王奇慧
(b)(6)	
Subject: Re: Re: nCoV structure paper	
Dear Prof.Graham	
	(b) (·

all the best

Lianpan Dai, Ph.D

Associate professor Beijing Institutes of Life Science, Chinese Academy of Sciences

原始 邮件			
发件人:"George GAO"	(b)(6)		
发送时间:2020-02-13 01	.:59:14 (星期四)		
收件人: "Graham, Barne	y (NIH/VRC) [E]"	(b)(6)	
抄送 : "戴连攀"	(b)(6) yanjh <	(b)(6) "王奇慧"	(b)(6)
主题: Re: nCoV structure	paper		
Dear Barney (my∣?)			
Sounds great			
I copied this email to my	colleagues who have		(b) (4)
(b) (4)			
Best George			
George			
发自我的iPhone			
在 2020年2月12日,22:	39, Graham, Barney (NIH	1/VRC) [E]	6)(6) 写道:
Dr. Gao,			
Having heard your intere	st in		(b) (4) (b) (4)
			(b) (4)

Please let me know if you would like additional information. I don't want to flood your inbox unless you are interested.

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 Bethesda, MD 20892-3017 Phone: (b)(6) URL: https://www.niaid.nih.gov/

(b)(6)

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From: Graham, Barney (NIH/VRC) [E]Sent: Tuesday, February 11, 2020 9:28 PMTo: George GAO(b)(6)Cc: Jason Mclellan(b)(6)Subject: Fwd: nCoV structure paper

Hi George,

I was in the WHO meeting today when you were on the line. Hope you are holding up OK as you deal with the crisis. As I promised earlier, I will try to keep you updated on our progress.

(b) (4)
(b) (4)
(b) (4)
(b) (4)

Best wishes,

Barney

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 25 Mar 2020 13:04:07 +0000
To:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Fwd: Preparing a Perspective for Science ID abb8923

(b) (5)

This is where we can (b) (5)

The

Barney

Sent from my iPhone

Begin forwarded message:

From: Anita Wynn <science_editors@aaas.org> Date: March 25, 2020 at 8:26:24 AM EDT To: "Graham, Barney (NIH/VRC) [E]" < (b)(6) Cc: "awynn@aaas.org" <awynn@aaas.org>, "galderton@science-int.co.uk" <galderton@science-int.co.uk> Subject: Preparing a Perspective for Science ID abb8923 Reply-To: awynn@aaas.org

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

From: Sent: To: Cc: (NIH/VRC) [E];Gall, Jason Monique (NIH/VRC) [E]		0:53 +0000 [.] Kanzler;Ugur Sahin;Lynda, S	Stuart;Mascola, John ein, Judy (NIH/VRC) [C];Young,
Subject:	Re: Introduction		
Got it. Thanks.			
DC			
BG			
Sent from my iPhone			
Sent from my if none			
On Feb 3, 2020, at 3:0	98 PM, Holger Kissel	<	(b)(6) wrote:
Dear Barney,			
I have just sent out an ir	nvite for 3:45 PM FST/	9.45 CET with the dial in info	rmation conied below:
r nave just sent out an n		.45 CET WITH THE diaminino	mation copied below.
(ხ)(6) US/Car (ხ)(6) German	nada Toll Free		
)(6)		
A00033 0000. (9)			
Best wishes,			
best wisnes,			
Holger			
Von: Sahin, Prof. Dr. Ug	ur (h)(6)	
Gesendet: Montag, 3. F	201		
An: Graham, Barney (NI		(b)(6)	
Cc: Holger Kanzler		(b)(6) Ugur Sahin	(b)(б)
Lynda, Stuart		(b)(6) Holger Kissel	(b)(6)
Mascola, John (NIH/VRC		(b)(6) Gall, Jason (NIH/VF	
Morabito, Kaitlyn (NIH/	VRC) [E] Young, Monique (NIH/	(b)(6) Stein, Judy (በ	(b)(6)
Betreff: AW: Introductio			
beach. Aw. ma baden	211		
Thanks, Barney. 3:45pm	1 i.e. in 40min is fine fo	or me. Holger Kissel will set	-up a TC. Best regards, Ugur

Von: Graham, Barney (NIH/VRC) [E] [mailto(b)(6)Gesendet: Montag, 3. Februar 2020 20:58

An: Sahin, Prof. Dr. Ugur Cc: Holger Kanzler; Ugur Sahin; Lynda, Stuart; Holger Kissel; Mascola, John (NIH/VRC) [E]; Gall, Jason (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C]; Young, Monique (NIH/VRC) [E] Betreff: Re: Introduction

I could speak briefly at 3:45 pm EST today. That is about 45 minutes from now. If that does not work we can look for a time tomorrow. I've copied Monique Young who can help with scheduling if we can't talk today.

Barney

Sent from my iPhone

(b)(6) wrote: On Feb 3, 2020, at 10:30 AM, Sahin, Prof. Dr. Ugur

Dear Graham,

Many thanks for your willingness to support.	(b) (4)
many manas for your winneness to subbort.	(b) (4)

(b) (4) (b) (4) it would be great if we could have a 15min phone call today, ideally after 8:30pm German time (i.e. 2:30 or later Bethesda time). Please, let me know if this work for you. We would be happy to set up a TC.

Best regards,

Ugur

Von: Graham, Barney (NIH/VRC) [E] [mailto (b)(6) Gesendet: Montag, 3. Februar 2020 13:37 An: Sahin, Prof. Dr. Ugur Cc: Holger Kanzler; Ugur Sahin; Lynda, Stuart; Holger Kissel; Mascola, John (NIH/VRC) [E]; Gall, Jason (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C] Betreff: Re: Introduction

Dear Prof. Ugur,

Thank you for your interest in our

(b) (4). If we can help by providing (b) (4)

Let us know if you would like to arrange a call to discuss for which we would probably want to complete a CDA.

Best wishes,

Barney

Sent from my iPhone

On Feb 2, 2020, at 12:22 PM, Sahin, Prof. Dr. Ugur (b)(6) wrote:

Dear Holger,

many thanks for connecting.

Dear Barney,

I have read your excellent studies related to	(b) (4)
and would greatly appreciate to learn more and get your	(b) (4)
(b) (4)	

Best regards,

Ugur

Von: Holger Kanzler [mailto: (b)(6) Gesendet: Sonntag, 2. Februar 2020 17:53 An: Graham, Barney (NIH/VRC) [E]; Ugur Sahin; Sahin, Prof. Dr. Ugur Cc: Lynda Stuart; Holger Kissel Betreff: Introduction

Dear Barney, Ugur,

I wanted to take a moment to introduce you to each other regarding 2019-nCoV.

Ugur, Barney is Deputy Director, Vaccine Research Center, Chief, Viral Pathogenesis Laboratory and Translational Science Core, and there is nobody who knows more about structural basis of antibody-based virus neutralization than him.

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

Barney, Ugur is CEO of BioNTech, a cutting edge mRNA company with a tremendous technology pipeline and partner of the foundation in TB and HIV. https://biontech.de/our-dna/leadership

(b) (4)

Best, Holger Holger Kanzler PhD Senior Program Officer, Vaccines & Human Immunobiology Global Health – Discovery Cross Cutting V (b)(6) E (b)(6) Bill & Melinda Gates Foundation www.gatesfoundation.org <image001.png> Facebook <image002.png> Twitter

<image003.png> Impatient Optimists Note: For a text version of these three links, use this format: Join the conversation on Facebook, Twitter,

and our blog: www.impatientoptimists.org

From:	Graham, Barney (NIH/VRC) [E]		
Sent:	Mon, 6 Apr 2020 17:26:41 +0000		
To:	Skip Virgin;Phil Pang;Ann Arvin		
Subject:	RE: (b) (4)		

Not yet, but would be interested in what you have for SARS-1

BG

From: Skip Virgin	(b)(6)		
Sent: Monday, April 6,	, 2020 1:13 PM		
To: Graham, Barney (N (b)(6)	NIH/VRC) [E]	ശ്രര് Phil Pang	ശ്ര Ann Arvin
Subject:	(b) (4)		
Barney			

(b) (4)

Hope all is well with you!!!

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:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 8 Apr 2020 15:58:59 +0000
То:	Seder, Robert (NIH/VRC) [E];Corbett, Kizzmekia (NIH/VRC) [E];Ruckwardt, Tracy
(NIH/VRC) [E]	
Cc:	Roederer, Mario (NIH/VRC) [E];Sullivan, Nancy (NIH/VRC) [E];Alvarado, Gabriela
(NIH/VRC) [C];Morabito	, Kaitlyn (NIH/VRC) [E]
Subject:	RE: Current (b) (5) Studies- Possible changes

Agree with everything else.

BG

From: Seder, Rob	ert (NIH/VRC) [E] <	(b)(6)	
Sent: Wednesday	/, April 8, 2020 7:42 AM		
To: Corbett, Kizzr	mekia (NIH/VRC) [E] <	(b)(6) Graha	m, Barney (NIH/VRC) [E]
<	(b)(6) Ruckwardt, Tracy (NIH/V	RC) [E]	(b)(6)
Cc: Roederer, Ma	rio (NIH/VRC) [E]	(b)(6) Sullivan, Nancy	(NIH/VRC) [E]
	(b)(6) Alvarado, Gabriela (NIH/VRC) [C]	ശ്രത്ര Morabito, Kaitlyn
(NIH/VRC) [E]	(b)(6)		
Subject: Current	(b) Studies- Possible changes		

Dear All,

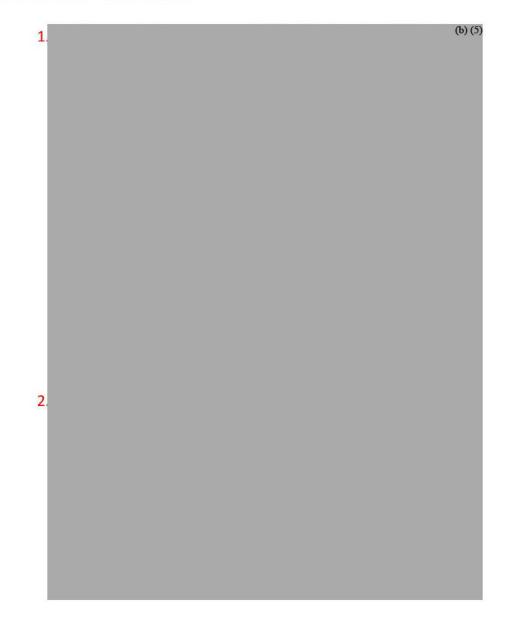
-

Here are the plans for the current ^{(b) (5)} studies.

(6)) (5)
(1	b) (5)

(b) (5)

Here is the rationale for the following change:



(b) (5)

(b) (5)



Happy to have a brief call to finalize this.

Bob

Robert A. Seder, M.D. Chief, Cellular Immunology Section Vaccine Research Center, NIAID, NIH 40 Convent Drive Bethesda, Maryland 20892 Office phone: (b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 3 Apr 2020 20:47:50 +0000
То:	Young, Monique (NIH/VRC) [E]
Subject:	RE: CoV mAb isolation Meeting

I'll do whatever John does. There will be other people from our team on the call.

BG

From: Young, Monique (NIH/VRC) [E](b)(6)Sent: Friday, April 3, 2020 2:30 PMTo: Graham, Barney (NIH/VRC) [E] <</td>Subject: RE: CoV mAb isolation Meeting

Hi Dr. Graham –

Are you planning to join this call today at 5:00 pm?

Debbie is asking so that she can push the daily COVID-19 check-in back to 6:00 pm today if needed.

Please advise.

Thanks...Monique

-----Original Appointment-----

From: Misasi, John (NIH/VRC) [E] (b)(6)

Sent: Thursday, April 2, 2020 6:15 PM

To: Misasi, John (NIH/VRC) [E]; Wang, Lingshu (NIH/VRC) [E]; Cale, Evan (NIH/NIAID) [E]; Ruckwardt, Tracy (NIH/VRC) [E]; Doria-Rose, Nicole (NIH/NIAID) [E]; Mascola, John (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Ledgerwood, Julie (NIH/NIAID) [E]; Chen, Grace (NIH/NIAID) [E]; McDermott, Adrian (NIH/VRC) [E]; Shi, Wei (NIH/VRC) [E]; Sullivan, Nancy (NIH/VRC) [E]; Graham, Barney (NIH/VRC) [E]; Douek, Daniel (NIH/VRC) [E] Cc: Morabito, Kaitlyn (NIH/VRC) [E]; Kizzmekia Corbett; Ransier, Amy (NIH/VRC) [E]; Schramm, Chaim (NIH/VRC) [E]; Boswell, Kristin (NIH/VRC) [E]; Swanson, Phillip (NIH/VRC) [C] Subject: CoV mAb isolation Meeting When: Friday, April 3, 2020 5:00 PM-6:00 PM (UTC-05:00) Eastern Time (US & Canada). Where: Zoom (Link to follow)

Agenda

- 1. Review of plan for current Seattle patient sample (Evan, John) (10 min)
- 2. Review of probe status (Tracy) (10 min)

3. Discussion of how best to choose samples for next mAb isolation (group) (10 min)

4. Discussion of methodologies to use in next mAb isolation (group) (10 min)

Time: Apr 3, 2020 05:00 PM Eastern Time (US and Canada)

Join Zoom Meeting
(b)(6)
Meeting ID: (b)(6)
One tap mobile
(b)(6) JS (Chicago)
US (New York)
Dial by your location (b)(6) Chicago) New York) Houston) San Jose) (b)(6)
Meeting ID: ^{(b)(6)}
Find your local number: (b)(6)

Join by SIP

(b)(6)

Agenda is to discuss items in email below and generate the requested timeline:

From: "Mascola, J	ohn (NIH/VRC) [E]"	(b)(6)		
Date: Thursday, A	pril 2, 2020 at 14:11				
To: "Cale, Evan (N	IH/NIAID) [E]"	(b)(6) John	Misasi		(b)(6)
Cc: "Doria-Rose, N	licole (NIH/NIAID) [E]"	<	(b)(б) "R	luckwardt, Tr	acy
(NIH/VRC) [E]"	(^{(b)(6)} "Corbett, Kizzm	ekia (NIH/V	RC) [E]"	
	(b)(6) "Wang, L	ingshu (NIH/VRC) [E]"		(b)(6)
"Ledgerwood, Juli	e (NIH/NIAID) [E]"	(^{b)(6)} "Chen, (Grace (NIH/N	IAID) [E]"
<	(b)(6) "Graham, Barne	ey (NIH/VRC) [E]"		(b)(6)	'Shi, Wei
(NIH/VRC) [E]"	(b)(б) "М	AcDermott, Adrian (NIH/VRC) [E]"	
	(b)(6)				
The state of the s	A STATE OF A				

Subject: CoV mAb isolation

Evan, John, Lingshu,

				(b) (5)
			(b) (5)	
	96. 104 -	 		

Nicole can assist with tracking (b) (5)

Clearly, (b) (5) are key, and you can get update on that.

I'd like to know if we could start next week. Can you get back to us with timeline. Please add any I've forgotten to include – I will step back, just want to get this started.

Thanks, John From:Graham, Barney (NIH/VRC) [E]Sent:Mon, 23 Mar 2020 02:27:23 +0000To:Mascola, John (NIH/VRC) [E]Cc:Corbett, Kizzmekia (NIH/VRC) [E];Bok, Karin (NIH/VRC) [E];Alvarado, Gabriela(NIH/VRC) [C];Morabito, Kaitlyn (NIH/VRC) [E];Ledgerwood, Julie (NIH/NIAID) [E]Subject:Fwd: Documents from the CEPI/SPEAC consensus meeting on assessing the riskof enhanced disease following COVID-19 vaccinesFINAL2 summary considerations ED with COVID-19 vac-March 20 2020.pdf,Attachments:FINAL2 summary considerations ED with COVID-19 vac-March 20 2020.pdf,

FYI. This comes from the two day conference call I was on last week. I did not have time to edit the document that had a one day turn around and have not read it carefully yet myself. I'm a little

(b) (5)

Not sure who else they sent it to.

(b) (5)

Barney

Sent from my iPhone

Begin forwarded message:

From: Steve Black <	(b)(6)	
Date: March 22, 2020 at 8:55:	32 PM EDT	
To: "Fauci, Anthony (NIH/NL	AID) [E]"	(b)(6) "Eisinger, Robert
(NIH/NIAID) [E]" <	(b)(6)	
Cc: "Graham, Barney (NIH/V)	RC) [E]"	(b)(6) Robert Chen
(b)(6)	, , , ,	

Subject: Documents from the CEPI/SPEAC consensus meeting on assessing the risk of enhanced disease following COVID-19 vaccines

Dear Drs. Fauci and Eisinger,

As promised I am attaching two documents from the meeting a week ago that was sponsored by CEPI to advise their vaccine developers on how to assess the risk of enhanced disease following receipt of COVID-19 vaccines preclinically and in clinical trials. Attached here is the consensus statement from the meeting which has now been reviewed and approved by EMA and the FDA. I am also attaching a list of references that we have put together on this topic.

In the near future, you will be receiving an email with links to video tapes of all of the sessions of the meeting as well as slide sets from the presenters.

Please let me know if you have any questions.

steve

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 13 Apr 2020 01:01:11 +0000
То:	Stephens, David S
Subject:	Accepted: COVID-19 ELISA Zoom Meeting

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 24 Feb 2020 20:21:11 +0000
То:	Morabito, Kaitlyn (NIH/VRC) [E];Bok, Karin (NIH/VRC) [E];Kanekiyo, Masaru
(NIH/VRC) [E]; Alvarado,	Gabriela (NIH/VRC) [C];Ruckwardt, Tracy (NIH/VRC) [E];Corbett, Kizzmekia
(NIH/VRC) [E]	
Subject:	RE: BMGF:VRC touchbase next week

(b) (5)

Barney

From: Morabito, Kaitlyn (NIH/VRC) [E]	(b)(6)	
Sent: Monday, February 24, 2020 1:44 Pl	Μ	
To: Bok, Karin (NIH/VRC) [E]	(b)(6) Kanekiyo, Masaru (NIH/VRC) [E]	
(b)(6) Alvarado, (Gabriela (NIH/VRC) [C]	(b)(6)
Ruckwardt, Tracy (NIH/VRC) [E]	(b)(6) Corbett, Kizzmekia (NIH	/VRC) [E]
(b)(6)		
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Subject: Re: BMGF:VRC touchbase next v	veek	

(b) (5)

From: Karin Bok	(b)(6)		
Date: Monday, February 24	4, 2020 at 1:1	4 PM	
To: "Kanekiyo, Masaru (NII	H/VRC) [E]"	(b))(6) "Alvarado, Gabriela
(NIH/VRC) [C]"		(b)(6) Tracy Ruckwardt <	(b)(6)
"Morabito, Kaitlyn (NIH/VF	RC) [E]"	(b)(6) K	izzmekia Corbett
(I	o)(6)		
Cc: Barney Graham		(b)(6)	
Cable at FMA DMACE MOCK		and a la	

Subject: FW: BMGF:VRC touchbase next week

HI,

Proposed Agenda and list of participants. Note that both BMGF and MRI will be present. Tracy-seems they are proposing a $^{(b)}$ (4) talk from their side if there is time.

I will include all of you in the meeting, let me know if we need anybody else. Barney-who do you propose presents at this meeting?

Thanks!

Karin.

Karin Bok, MS, PhD Senior Advisor, Vaccine Development Office of the Director, Vaccine Research Center National Institute of Allergy and Infectious Diseases National Institutes of Health phone: (b)(6) mobile: (b)(6) | email: (b)(6) https://www.niaid.nih.gov/about/vrc

From: Harry Kleanthous			(b)(6)
Date: Monday, February 24, 2	020 at 12:57 PM		
To: "Graham, Barney (NIH/VR	C) [E]" <	(b)(6)	"Mascola, John (NIH/VRC) [E]"
ര്യ) പ്ര	nda, Stuart"		(b)(6)
Cc: Karin Bok <	(b)(6) "Gall, Jason (NIH/V	RC) [C]"	(b)(6)
"Ledgerwood, Julie (NIH/NIAI	D) [E]"	(b)(6)	Sarah Austin
(b)(6) "Su	hana, Tina (NIH/VRC) [E]"		(b)(6)
Subject: RE: BMGF:VRC touch	base next week		

Hi Barney

Here is a draft agenda for the meeting following discussions with Karin last Friday.

Let me know if you think it covers the topics you anticipate or would like to suggest changes. We should also just check we've invited all relevant parties.

Looking forward to catching up Warmest regards Harry

From: Graham, Barne	y (NIH/VRC) [E]	(b)(6)
Sent: Saturday, Febru	ary 22, 2020 12:41 PM	
To: Mascola, John (NI	H/VRC) [E]	(ந)ஞ் Lynda Stuart
	(b)(6)	
Cc: Harry Kleanthous		(b)(6) Bok, Karin (NIH/VRC) [E]
(b)(6	Gall, Jason (NIH/VRC) [C]	(b)(6) Ledgerwood, Julie (NIH/NIAID) [E]
	(b)(6) Austin, Sarah (NIH/NIAI	D) [E] (b)(6) Suhana, Tina
(NIH/VRC) [E]	(b)(6)	
Subject: RE: BMGF:VI	RC touchbase next week	

Hi All,

I will now be giving my talk by videoteleconference, so I will be in town for this meeting and glad to join. I'm not aware of all the topics that would take 3+ hours, so agree with John, need a clear agenda.

Barney

From: Mascola, John (NIH/VRC) [E] (b)(6) Sent: Thursday, February 20, 2020 1:19 AM To: Lynda, Stuart (b)(6) Cc: Harry Kleanthous (b)(6) Graham, Barney (NIH/VRC) [E] (b)(6) Bok, Karin (NIH/VRC) [E] (b)(6) Gall, Jason (NIH/VRC) [C] (b)(6) Ledgerwood, Julie (NIH/NIAID) [E] (b)(6) Austin, Sarah (NIH/NIAID) [E] (b)(6) Suhana, Tina (NIH/VRC) [E] (b)(6) Subject: RE: BMGF:VRC touchbase next week

Hi Lynda,

Thanks for touching base on this.

I see we are scheduled for Fri Feb 28th, and though Barney is not here that day, others can join. I've copied Julie, Jason and Karin here.

Fine to take advantage of your time here, so yes, would be useful to have agenda for meeting. Mostly CoV, or other topics? Also, remind us of time?

Thanks, John

From: Lynda Stuart	(b)(6)	
Sent: Wednesday, February 19, 2020 9:04 PM		
To: Mascola, John (NIH/VRC) [E] <	(b)(6)	
Cc: Harry Kleanthous <		(b)(6)
Subject: BMGF:VRC touchbase next week		

Hi John

We are looking forward to visiting next week but I wanted to check in to make sure it was still convenient. I think it could be a very productive time to have a face to face but I also realize you might be inundated (as we are) with coronavirus but we may want to rescope the agenda to accommodate this. We will be on a call together tomorrow I believe so we should make sure to identify points of synergy that we can go more deeply into next week when we meet. Best Lynda

Lynda Stuart MD PhD Deputy Director, Vaccines & Human Immunobiology Global Health Discovery & Translational Sciences

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

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E <u>Twitter</u>



Maliha Anwar

Program Assistant Discovery & Translational Sciences Global Health

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

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 31 Jan 2020 11:23:21 +0000
То:	Dekosky, Brandon J;Taylor, Stephanie (NIH/NIAID) [E]
Cc:	Ledgerwood, Julie (NIH/NIAID) [E]
Subject:	RE: Updated/resubmission letter
Attachments:	Graham BioSketch for flu 2020.docx

Hi Brandon,

I'm out of town and can't get to my H drive.

The only biosketch I can access is flu oriented if that helps.

BG

From: Dekosky, Brandon J (b) Sent: Thursday, January 30, 2020 7:28 PM	6)
To: Taylor, Stephanie (NIH/NIAID) [E]	(b)(6)
Cc: Ledgerwood, Julie (NIH/NIAID) [E]	(b)(б) Graham, Barney (NIH/VRC) [E]
(b)(6)	
Subject: RE: Updated/resubmission letter	
Looks great – thank you Stephanie, Julie	, and Barney!!
Would you also be able to share NIH Bio	sketches to go along with the letter?
Thanks! Brandon	
From: Taylor, Stephanie (NIH/NIAID) [E] Sent: Thursday, January 30, 2020 12:28 PM	(b)(6)
To: Dekosky, Brandon J < (b)(6)	
Cc: Ledgerwood, Julie (NIH/NIAID) [E]	ശ്ര് Graham, Barney (NIH/VRC) [E]
Subject: Updated/resubmission letter	
Dear Brandon,	
Please see attached letter from Julie and Bar	ney.
Best,	

Stephanie

Management Analyst Clinical Trials Program Vaccine Research Center/NIAID/NIH (b)(6) (office) (b)(6) (mobile) 40 Convent Drive Bldg. 40 Rm 1202 Bethesda, MD 20892 (b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 29 Mar 2020 23:30:25 +0000
То:	Zackowitz, Gary (NIH/NIAID) [E]
Subject:	Accepted: Coronavirus Roundtable - NBL/RBL Network Meeting

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 18 Mar 2020 14:24:20 +0000
То:	Mascola, John (NIH/VRC) [E];Hiatt, Nissa (NIH/VRC) [C]
Cc:	Austin, Sarah (NIH/NIAID) [E]
Subject:	RE: Brief media inquiry related to COVID-19 vaccine

Agree. Better to address directly with Moderna. Not our area of expertise.

BG

From: Mascola, John (NIH/VRC) [E]		(b)(6)
Sent: Tuesday, March 17, 2020 7:36 PM		
To: Hiatt, Nissa (NIH/VRC) [C] <	(b)(6)	
Cc: Graham, Barney (NIH/VRC) [E]		(b)(6) Austin, Sarah (NIH/NIAID) [E]
< (b)(6)		
Subject: Re: Brief media inquiry related to C	OVID-19 v	accine

Thanks. I'm not anxious to talk on this topic but reasonable questions.

From: "Hiatt, Nissa (NIH/VRC) [C]" <	(b)(6)
Date: Tuesday, March 17, 2020 at 19:30:55	
To: "Mascola, John (NIH/VRC) [E]"	(b)(6)
Cc: "Graham, Barney (NIH/VRC) [E]"	(b)(6) "Austin, Sarah (NIH/NIAID) [E]"
(b)(6)	
Subject: Re: Brief media inquiry related to COVID-1	9 vaccine
I will be in touch once it is cleared.	
Best,	
Nissa	
Nilson Ulant	
Nissa Hiatt	
Communications	
Vaccine Research Center, NIAID, NIH	
40 Convent Drive, Bldg 40, Rm 1100	
Bethesda, MD 20892	
Office: (b)(6)	
Mobile: (b)(6)	
(b)(6)	

On Mar 17, 2020, at 7:29 PM, Mascola, John (NIH/VRC) [E] (b)(6) wrote:

Please do. Thanks.

From: "Hiatt, Nissa (NIH/VRC) [C]" (b)(6) Date: Tuesday, March 17, 2020 at 19:24:25 To: "Mascola, John (NIH/VRC) [E]" (b)(6) Cc: "Graham, Barney (NIH/VRC) [E]" < (b)(6) "Austin, Sarah (NIH/NIAID) [E]" < (b)(6) Subject: Re: Brief media inquiry related to COVID-19 vaccine

Hi John,

She does check out as a freelancer who writes for the Intercept. OCGR could reach out for more information and to make sure her story is accepted by that outlet.

Please let me know if you would like to help with this request or decline.

Best, Nissa

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

On Mar 17, 2020, at 6:57 PM, Mascola, John (NIH/VRC) [E] < (b)(6) wrote: To check. Credible? Thanks Sent from my iPhone Begin forwarded message: From: Rachel Cohen < (b)(6) Date: March 17, 2020 at 18:39:27 EDT To: "Graham, Barney (NIH/VRC) [E]" (b)(6) "Mascola, John (NIH/VRC) [E]" < (b)(6)

Subject: Brief media inquiry related to COVID-19 vaccine

Dear Dr. Graham and Mascola

I hope you are doing well during this chaotic time, and I thank you for your work on researching a COVID-19 vaccine.

I am reporting a story for The Intercept on the capacity of the US to manufacture a COVID-19 vaccine if one were ultimately developed and approved in the next 18-24 months, looking into supply side issues that may arise and how to prepare for them.

I am reaching out to see if you think the manufacturing of a coronavirus vaccine would be easier or different to produce from that of an influenza vaccine, and if so why? And I am wondering if you think the use of recombinant DNA would also make it easer to produce widely and quickly? How might that hasten the process?

Are there any other challenges the Vaccine Research Center sees for potentially manufacturing a successful vaccine that policymakers should be looking to address now, or is it too early to do even know what those challenges might be without a working vaccine? I know you both are incredibly busy but any help or insight or help you could offer I know would strengthen the piece considerably. If you have any time to connect by phone today, tomorrow, or Thursday, let me know. Email also works too.

Warmly,

Rachel

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 17 Mar 2020 17:44:59 +0000
To:	Alain Townsend
Subject:	RE: Vaccination with full length Spike Fir SARS-CoV-2
Attachments:	Vaccine Enhanced Disease_commentary.docx

Hi Alain,

I'm attaching a brief summary of my thoughts on the concerns around the vaccine-enhanced illness. We have shown (b) (4)

Best wishes,

Barney

Original Message	
From: Alain Townsend <	(b)(6)
Sent: Tuesday, March 17, 2020 2	:50 AM
To: Graham, Barney (NIH/VRC)	[E] < (b)(6)
Subject: Vaccination with	(b) (4) SARS-CoV-2

Dear Barney

I saw the announcement about the RNA vaccine expressing the stabilised full length spike going into humans without animal studies. I can't help asking (b) (4) (b) (4)

		(b) (4)
	(b) (4)	
		(b) (4)
With best wishes		
Alain Townsend		

WIMM Oxford.

Envoyé de mon iPad

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 2 Mar 2020 19:55:39 +0000
То:	Alter, Galit
Cc:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	RE: A little covid (b) (4)

Hi Galit,

I am going to let Dr. Corbett answer your question

(b) (5) Kizzmekia is the scientific lead on our coronavirus program and if you don't already know each other, I'm glad to make the introduction.

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

Best wishes,

Barney

(b)(6)		
	(b)(6)	
_		4.2.0
share		(b) (4)
	(b) (4)	
		(b)(6)

Sent from my iPhone

The information in this e-mail is intended only for the person to whom it is addressed. If you believe this e-mail was sent to you in error and the e-mail contains patient information, please contact the Partners Compliance HelpLine at http://www.partners.org/complianceline. If the e-mail was sent to you in error but does not contain patient information, please contact the sender and properly dispose of the e-mail.

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 9 Feb 2020 21:11:51 +0000
То:	Valda Vinson
Cc:	Priscilla Kelly; Jason McLellan; Daniel P. Wrapp; Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Re: Coronavirus research for Science

Will do.

Barney

Sent from my iPhone

On Feb 9, 2020, at 4:00 PM, Valda Vinson <vvinson@aaas.org> wrote:

Could you please e-mail me once you have submit immediately.	tted, that way I can get	it out to review
Thanks		
Valda		
From: Valda Vinson <vvinson@aaaas.org></vvinson@aaaas.org>		
Sent: Sunday, February 9, 2020 12:54 PM		
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Cc: Priscilla Kelly <pkelly@aaas.org>; Jason McLellan <</pkelly@aaas.org>		(b)(6) Daniel P. Wrapp
< (b)(6) Corbett, Kizzn	nekia (NIH/VRC) [E] <	(b)(6)
Subject: Re: Coronavirus research for Science		
Excellent -I will work on finding reviewers today.		
Valda		
From: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Sent: Sunday, February 9, 2020 12:05 PM		
To: Valda Vinson <vvinson@aaas.org></vvinson@aaas.org>		
Cc: Priscilla Kelly <pkelly@aaas.org>; Jason McLellan <</pkelly@aaas.org>		(b)(6) Daniel P. Wrapp
< (b)(6) Corbett, Kizzn	nekia (NIH/VRC) [E] <	(b)(6)

Subject: Re: Coronavirus research for Science

Thank you for your interest. Yes we are finalizing the paper and plan to submit tomorrow. It will be submitted to BioRxiv as requested. I will be at WHO on Tuesday and can provide the report to them. Best wishes, Barney

Sent from my iPhone

On Feb 9, 2020, at 11:55 AM, Valda Vinson <vvinson@aaas.org> wrote:

Dear Barney,

Priscilla passed this on to me because I handle structural biology of viral proteins. I look forward to handling this rapidly. Can you confirm we will get the paper tomorrow, if so I will line up reviewers. I also want to let you know that we are signatories to the Wellcome statement on data sharing in public health emergencies. The key provisions are below. We would hope therefore that you would post to BioRxiv concurrent with submission to Science and that you would deposit coordinates in PDB with no hold. Either you or we can send the paper to WHO - we have a contact and it is simply sent by e-mail. We will expedite review and can often get these papers reviewed within 48 hours, but we are committed to thorough review as we believe this is an important role for journals at this time. I look forward to handling the paper.

Best regards

Valda

all peer-reviewed research publications relevant to the outbreak are made immediately open access, or freely available at least for the duration of the outbreak

research findings relevant to the outbreak are shared immediately with the WHO upon journal submission, by the journal and with author knowledge

research findings are made available via preprint servers before journal publication, or via platforms that make papers openly accessible before peer review, with clear statements regarding the availability of underlying data

researchers share interim and final research data relating to the outbreak, together with protocols and standards used to collect the data, as rapidly and widely as possible - including with public health and research communities and the WHO

authors are clear that data or preprints shared ahead of submission will not pre-empt its publication in these journals

From: Graham,	Barney (NIH/VRC) [E] <	(b)(6)	
Sent: Thursday,	February 6, 2020 3:37 PM		
To: Priscilla Kell	y < <u>pkelly@aaas.org</u> >		
Cc:	(b)(6) <	(b)(6) Daniel P. Wrapp	
<	(b)(6) Corbet	t, Kizzmekia (NIH/VRC) [E] <	(b)(6)
Subject: Corona	wirus research for Science		

Subject: Coronavirus research for Science

Dear Priscilla,

Thank you for your interest in this paper. I have appended the title, abstract, communicating authors, and reviewer suggestions below. Let me know if you need additional details and we will work toward having a polished draft by Monday, Feb 10th.

Best wishes,

Barney

Cryo-EM Structure of the 2019-nCoV Spike Glycoprotein

The outbreak of a novel beta-coronavirus (2019-nCov) represents a pandemic threat that has been declared a public health emergency of international concern. CoV spike (S) glycoprotein is a key target for vaccines, therapeutic antibodies, and diagnostics that are urgently needed. To facilitate medical countermeasure (MCM) development we describe a 3.5 Å resolution cryo-EM structure of the 2019nCoV spike (S) glycoprotein trimer in the prefusion conformation. The structure is similar to the SARS-CoV S, and the predominant conformation has one of the three receptor-binding domains (RBD) rotated up in a receptor-accessible conformation. We also show biophysical and structural evidence that the 2019-nCoV S binds ACE2 with higher affinity than SARS-CoV S, suggesting both viruses share the same receptor on human cells. We also show several published SARS-CoV RBD-specific monoclonal antibodies do not have appreciable binding to nCoV-2019, indicating antibody cross-reactivity may be limited between the two virus RBDs. Atomic level structure of the 2019-nCoV S will enable rapid development and evaluation of MCMs to address the ongoing public health crisis.

Corresponding authors: Jason S. McLellan and Barney S. Graham

Suggested reviewers:	(b) (6)
	(0) (0,
Reviewers to exclude:	
முற	

From:	Graham, Barney (NIH/VRC) [E]		
Sent:	Thu, 19 Mar 2020 14:18:22 +0000		
To:	(b) (6)		
Subject:	Re: Update		

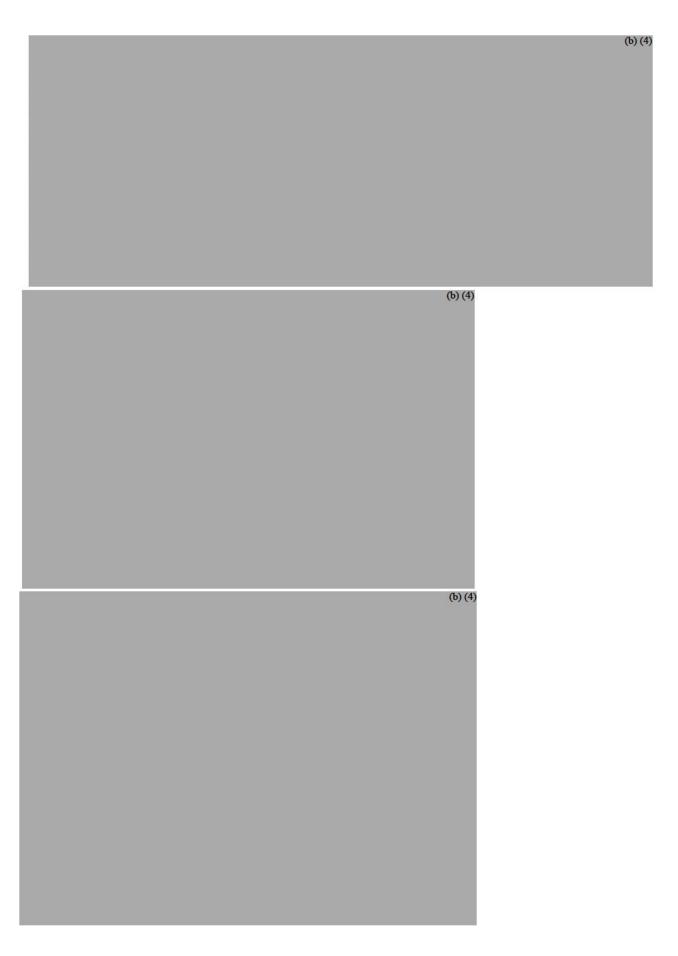
Thanks you for letting me know and you did the right thing by calling (b) (6). (b) (6)	Please let know	(b) (6)
Barney		
Sent from my iPhone		
> On Mar 19, 2020, at 9:06 AM, (b) (6) > Good Morning Dr. Graham, >	(b)(6) wrote:	
> I informed Kizzmekia about this, but also wanted to let you know as well.		(b) (6) (b) (6)
> Best Regards, > (b) (6)		

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Wed, 1 Apr 2020 10:44:57 +0000	
То:	Andrea Carfi	
Cc:	Corbett, Kizzmekia (NIH/VRC) [E];Guillaume Stewart-Jones	
Subject:	Re: Preliminary Assessment of	(b) (4)
	(b) (4)	

(b) (4)

BG Sent from my iPhone (b)(6). wrote: On Apr 1, 2020, at 6:39 AM, Andrea Carfi (b) (4) Thank you Kizzy for sharing the data and plans. (b) (4) Thank you, Andrea From: Corbett, Kizzmekia (NIH/VRC) [E] [mailto (b)(6) Sent: Wednesday, April 01, 2020 5:33 AM To: Andrea Carfi (b)(6) Morabito, Kaitlyn (NIH/VRC) [E] (b)(6) Corbett, Kizzmekia (NIH/VRC) [E] < (b)(6) Bok, Karin < (b)(6) Carlton, Kevin (NIH/VRC) [E] (NIH/VRC) [E] (b)(6) Alvarado, (b)(6) Andrews, Charla (NIH/NIAID) [C] Gabriela (NIH/VRC) [C] < (b)(6) Ledgerwood, Julie (NIH/NIAID) [E] (b)(6) Darin Edwards (b)(6) Christy Shaw (b)(6) Guillaume Stewart-Jones (b)(6) Hamilton Bennett (b)(6) Sunny Himansu (b)(6) Graham, Barney (NIH/VRC) [E] < (b)(6) Cc: Abiona, Olubukola (NIH/VRC) [F] (b)(6) Wang, Lingshu (NIH/VRC) [E] (b)(6) Mascola, John (NIH/VRC) [E] (b)(6) Ziwawo, Cynthia (b)(6) Hutchinson, Geoffrey (NIH/VRC) [F] (NIH/VRC) [F] (b)(6) Ruckwardt, Tracy (NIH/VRC) [E] (b)(6) Subject: Preliminary Assessment of (b) (4) (b) (4)

Good morning to you all,



(b) (4)

(b) (4)

(b) (4)

(b) (4)

Comment and thoughts welcomed to all aforementioned points.

Have a great day.

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:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 16 Mar 2020 12:50:33 +0000
То:	Rebecca Rosman
Subject:	RE: Interview with PRI's 'The World' today Moderna's work on Covid-19
vaccine	

I think this can work. Good luck.

Best wishes,

Barney

From: Rebecca Rosman(b)(6)Sent: Monday, March 16, 2020 5:47 AMTo: Graham, Barney (NIH/VRC) [E] <</td>Subject: Re: Interview with PRI's 'The World' today -- Moderna's work on Covid-19 vaccine

Thanks so much for this and for the clarification about the trial phases, I will make these adjustments. I also reworded the explanation part to say this:

Moderna is using something called mRNA medicine, which deliver instructions to cells in the body to make certain proteins that can fight disease.

I'm just trying to use as simple language as possible to make sure listeners can easily digest the information. Again, thanks so much.

Best, Rebecca

On Mon, Mar 16, 2020 at 2:24 AM Graham, Barney (NIH/VRC) [E] < (b)(6) wrote:

See comments below in red. Major change is that we are starting a phase 1, not efficacy trials yet. I explain at the end.

Best wishes,

BG

From: Rebecca Rosman(b)(6)Sent: Sunday, March 15, 2020 4:11 PMTo: Graham, Barney (NIH/VRC) [E] < (b)(6)</td>Subject: Re: Interview with PRI's 'The World' today -- Moderna's work on Covid-19 vaccine

Hi Dr. Graham,

I hope all is well. I'm just putting the final touches on this report and have two small questions for you:

1. The first is the pronunciation of NIAID. In our interview, you pronounced it as **NI-ADD**. I just want to confirm that's the correct way to say the acronym.

This is how most people say it. "NI" rhymes with hi.

2) I normally don't send sections of reports ahead of time, but given the science here, I wanted to confirm with you that what I'm saying is scientifically accurate. Would you be able to confirm this for me? See the paragraph below.

In the simplest terms, this type of vaccine would involve sending synthetic genetic code into the body that serves as messengers. They tell cells to make certain proteins that fight the virus.

Not the way I would say it, but OK

Barney Graham -10:23

But now the question is what do we have to do to make the more advanced development go rapidly so that we can actually have a vaccine for use within a reasonable amount of time.

For him, reasonable could mean in less than 2 years. That's even faster than estimates for other possible vaccines because they are using a new tool: synthetic biology. You don't have to wait for anything to grow in a lab and methods for purification and scale up have already been established -saving months of time.

That's why the vaccine was able to move so quickly into **Phase 1** trials, which start later this month.

We have to start with Phase 1 which will be in 45 healthy adults. When we have data from that trial and more data from animal testing we would ask the FDA to go to a phase 2 trial of ~600 this summer and if everything is still looking good, try to start a trial of several thousand before the next

winter season in the Northern hemisphere. When there is clear proof that the vaccine works it could be scaled up for broader distribution. We have to start the phase 1 quickly in order to be ready with the larger trial by next winter.

I wish it could go faster than this, but at this point in time this is as fast as I can envision it.

Thanks so much in advance.	
Best, Rebecca	
On Sat, Mar 14, 2020 at 5:31 PM Rebecca Rosman < So sorry, would you mind trying one more time?	^{(b)(6)} wrote:
On Sat, Mar 14, 2020 at 5:26 PM Graham, Barney (NIH/VRC) [E] < I'm trying to call now.	(b)(6) wrote:
BG	
Sent from my iPhone	
On Mar 14, 2020, at 12:31 PM, Rebecca Rosman <	^{(b)(6)} wrote:
Not a problem	
On Sat, Mar 14, 2020 at 3:18 PM Graham, Barney (NIH/VRC) [E] < Will be closer to between 12:30 and 1:00.	(b)(6) wrote:
BG	
Sent from my iPhone	
On Mar 14, 2020, at 9:03 AM, Rebecca Rosman	(b)(6) wrote:

Thanks so much. How would im around 3 hours from now sound (12pm EST)?

I am currently in Senegal so have a local number: (b)(6)

If you aren't able to call internationally, I could give you a call whenever you tell me you are available.

The other thing I'm not sure was passed down to you- because this is for radio I was hoping I could call you on a landline and you could use a smartphone to record yourself. You simply press record using voice memos and hold the phone to your ear as if you're speaking to someone on the phone. At the end of the recording, you share the file and send it to my email.

Let me know if this is an option for you.

In any case I am available any time from 12pm EST onwards today.

On Sat, Mar 14, 2020 at 12:54 PM Graham, Barney (NIH/VRC) [E] < (b)(6) wrote: I have a few more things I need to urgently deal with, but I could probably call about 2 hours from now.

Barney

From: Rebecca Rosman	(b)(6)
Sent: Saturday, March 14, 2020 8:43 AM	
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)
Subject: Re: Interview with PRI's 'The Worl	d' today Moderna's work on Covid-19 vaccine

Hi Dr. Graham,

I hope you are well. I spoke with your communications team yesterday and they said I should expect a call from you.

I just wanted to check in to see when / if that availability still stands. For now, this piece is set to air Monday.

I know it's the weekend, but if you had any availability today or tomorrow that would be a huge help. Otherwise I'll have another chat with my editor, but I think we would have to move on with mixing the piece without your voice.

Many thanks in advance for letting me know either way.

Best, Rebecca

On Fri, Mar 13, 2020 at 10:27 AM Rebecca Rosman	(b)(6)	wrote:
Hi Dr. Graham,		

I hope you are well. My name is Rebecca Rosman, I'm a journalist working with PRI's 'The World,' a daily radio program broadcast by local NPR stations around the US.

I'm currently working on a report about the different kinds of vaccine research taking place for Covid-19. Since I'm Paris-based, I spoke with the head of vaccine research at the Pasteur Institute, where they are working on a measles-vector vaccine.

This report will also touch on Moderna's promising mRNA vaccine. I understand your office has been working with Moderna on trials for this vaccine.

I was wondering if you would have any **availability today for a short phone interview to discuss this** work? It wouldn't take more than ten minutes.

To give you more information about the show, it's an hour long daily international news program that reaches around 7 million weekly listeners. Here is a link to the site:

https://www.pri.org/programs/the-world

In the meantime, feel free to let me know if there's any other questions | can answer for you about the piece.

Many thanks in advance and I look forward to hearing from you.

Best, Rebecca

Rebecca Rosman | Journalist France: (b)(6) USA: (b)(6) www.rebeccalynnrosman.com

Rebecca Rosman | Journalist (b)(6) France: USA: (b)(6) www.rebeccalynnrosman.com ---Rebecca Rosman | Journalist (b)(6) France: USA: (b)(6) www.rebeccalynnrosman.com Rebecca Rosman | Journalist France: (b)(6)

USA: (b)(6) www.rebeccalynnrosman.com

Rebecca Rosman | Journalist France: (b)(6) USA: (b)(6) www.rebeccalynnrosman.com

--Rebecca Rosman | Journalist France: (b)(6) USA: (b)(6) www.rebeccalynnrosman.com

--Rebecca Rosman | Journalist France: (b)(6) USA: (b)(6) www.rebeccalynnrosman.com

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 4 Feb 2020 03:35:55 +0000
To:	Boritz, Eli (NIH/NIAID) [E];Ledgerwood, Julie (NIH/NIAID) [E]
Subject:	RE: Rotation student

Someone at Johns Hopkins is managing the web site tracking the Wuhan CoV. Otherwise it would be someone at CDC. I don't know if someone at Fogarty might be involved.

BG

From: Boritz, Eli (NIH/NIAID) [E]	(b)(6)
Sent: Monday, February 3, 2020 9:48 PM	
To: Graham, Barney (NIH/VRC) [E] <	(b)(6) Ledgerwood, Julie (NIH/NIAID) [E]
(b)(6)	
Subject: Rotation student	

Dear Barney and Julie,

My lab is currently hosting a very bright rotation student from the NIAID Emerging Leaders in Data Science Program who is looking for her next rotation and is very interested in epidemiology. She would be thrilled to be involved in some way with the coronavirus outbreak. Can either of you think of anyone she might contact who would know about epidemiology opportunities? Thanks,

Eli

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 27 Mar 2020 13:33:09 +0000
To:	Daucher, Marybeth (NIH/NIAID) [E]
Subject:	Re: Follow-up on Call with Kizzmekia

I'll look for an opening in the back-to-back calls today. Maybe one will end early.

Barney

Sent from my iPhone

On Mar 27, 2020, at 9:25 AM, Daucher, Marybeth (NIH/NIAID) [E] (b)(6) wrote:

Barney Still happy to chat today. Call me anytime on my cell phone. I'll interrupt what I'm doing. MB

From: Mascola, John (NIH/VRC) [E]	(b)(6)
Sent: Friday, March 27, 2020 7:56 AM	
To: Ledgerwood, Julie (NIH/NIAID) [E]	(b)(6) Daucher, Marybeth (NIH/NIAID) [E]
(b)(6) Koup, Richard (NIH/VRC)) [E] (b)(6)
Subject: FW: Follow-up on Call with Kizzmekia	

Julie, Marybeth, Rick,

Since each of you have seen or heard of some of the issue involved here, I am forwarding this email. The discussion (b) (5) (5)

(b) (5)

(b) (5)

(b) (5) Please verbally talk to your staff, in general terms, to try to accomplish this.

Importantly, there is real work to do here - the world is depending on NIH. That is our first priority.

Thanks,

John

From: Corbett, Kizzmekia (NIH/VRC) [E] <		(b)(6)
Sent: Thursday, March 26, 2020 11:21 PM		
To: Mascola, John (NIH/VRC) [E]	(b)(6)	
Cc: Graham, Barney (NIH/VRC) [E]	(b)(6)	
Subject: Follow-up on Call with Kizzmekia		

Dr. Mascola,

Thanks for talking to me today. I just want to summarize some key points of the conversation so that we are all on the same page moving forward.



Have a good night.

Kizzmekia S. Corbett, PhD

Senior Research Fellow | Scientific Lead Coronavirus Vaccines & Immunopathogenesis (coVip) Team Viral Pathogenesis Laboratory | Vaccine Research Center National Institutes of Allergy and Infectious Diseases National Institutes of Health

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

From: (b)(6) When: 2:00 PM - 2:30 PM March 26, 2020 Subject: Call with John Mascola Location: Zoom: https://zoom.u (b)(6)

Join Zoom Meeting https://zoom.us/	(b)(6)
Meeting ID: (b)(5)
One tap mobile	
	^{(b)(6)} US (New York)
	(b)(6)US (Chicago)
Dial by your location	
(b)(⁶⁾ (New York)
	(Chicago)
	(San Jose)
	(Houston)
Me	
Find your local number	https://zoom.us/ (b)(6)
Join by SIP	
	b)(6)

Join by H.323

(b)) ⁽⁶⁾ S West)
	S East)
	China)
	ıdia Mumbai)
	ndia Hyderabad)
	EMEA)
	Australia)
	long Kong)
	Brazil)
	anada)
	(Japan)
Meeting ID:	(b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 3 Mar 2020 16:56:42 +0000
То:	Morabito, Kaitlyn (NIH/VRC) [E];Ruckwardt, Tracy (NIH/VRC) [E]
Subject:	RE: Discussions with (b) (4) re COVID-19

As you said, we probably just saved 40K on travel.

BG

Original Message		
From: Morabito, Kaitlyn (NIH/VRC) [E] <	(b)(6)	
Sent: Tuesday, March 3, 2020 11:46 AM		
To: Graham, Barney (NIH/VRC) [E] <	(b)(6) Ruckwardt, Tracy (NIH/VRC) [E]	
(b)(6)		
Subject: Re: Discussions with (b) (4) re COVID-1	19	
		(b) (5), (b) (4)
On 3/3/20, 11:45 AM, "Graham, Barney (NIH/V	(b)(6) wrote:	
, , , , , ,		
FYI.	(b) (5)	
BG		
Original Massage		
Original Message From: (b) (4) < (b) (4), ((h) (h)	
Sent: Tuesday, March 3, 2020 11:43 AM		
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)·	
Subject: Discussions with (b) (4) re COVID-19		
Dear Dr. Graham,		
I am a scientist at (b)	(4)	
		(b) (4)
		a) (1)
(b) (4) whe	ere we develop high quality assays and instruments	(b) (4)
		(b) (4)
	(b) (4) esterday and he	recommended
we get in touch with you. Would you be availab	le to have a phone meeting to discuss possibilities?	

we get in touch with you. Would you be available to have a phone meeting to discuss possibilities? We look forward to hearing from you.

Thank you.

Best regards,

(b) (4)

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From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Wed, 22 Apr 2020 15:13:21 +0000	
То:	Ledgerwood, Julie (NIH/NIAID) [E]	
Cc:	Gall, Jason (NIH/VRC) [C];Bok, Karin (NIH/VRC) [E]	
Subject:	RE: GSK-NIAID Clinical Collaboration using	(b) (4)

(b) (5)

Barney

From: Ledgerwood, Julie (NIH/NIAID) [E]		(b)(6)
Sent: Wednesday, April 22, 2020 10:49 AM		
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Cc: Gall, Jason (NIH/VRC) [C] (b)(6)		
Subject: RE: GSK-NIAID Clinical Collaboration using		(b) (4)

Hi Barney

Julie

From: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Sent: Wednesday, April 22, 2020 10:05 AM		
To: Ledgerwood, Julie (NIH/NIAID) [E]	(b)(6)	
Subject: Fwd: GSK-NIAID Clinical Collaboration using		(b) (4)

FYI. See below. They are playing ignorant. Any comments?

BG

Sent from my iPhone

Begin forwarded message:

From: Ventzislav Vassilev	(b)(6)	
Date: April 22, 2020 at 9:17:09 AM EDT		
To: "Graham, Barney (NIH/VRC) [E]" <	(b)(6)	"Bok, Karin (NIH/VRC) [E]"
(b)(6)		
Subject: RE: GSK-NIAID Clinical Collaboration using		(b) (4)

(b) (5)

Barney		(b) (4)
(b) (4)		(b) (4)
Please send me more info if I am missing sor	mething.	
BR Ventzi		
From: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Sent: Wednesday, 22 April 2020 15:12		
To: Ventzislav Vassilev <	(b)(6) Bok, Karin (NIH/VRC) [E] <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collaboration	n using (b) (4)	

EXTERNAL

Hi Ventzi,

(b) (4)

Barney

From: Ventzislav Vassilev <	(b)(6)	
Sent: Wednesday, April 22, 2020 8:26 AM		
To: Bok, Karin (NIH/VRC) [E] <	(b)(б) Graham, Barney (NIH/VRC) [E]	
< (b)(6)		
Subject: FW: GSK-NIAID Clinical Collaboration	using (b) (4)	
Karin, Barney - Fyi		
	(h) (A)	
	(b) (4)	
		(b) (4)

We should be able to show you those data in the coming weeks.

Best regards and stay safe Ventzi

From: Salata, Carol (NIH/NIAID) [E] <	(b)(6)	
Sent: Wednesday, 22 April 2020 13:4	14	
To: Najoua Dendouga <	(b)(6) Stein, Judy (NIH/VRC) [C] <	(b)(6)
Cc: Gillian Fenton <	(b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collal	boration using (b) (4)	

EXTERNAL

Attached is the most recent draft of the	(b) (4)
	(b) (4)
Carol	
Carol A. Salata, Ph.D.	
Senior Advisor for Technology Transfer	
Technology Transfer and Intellectual Property Office	
NIAID, NIH, DHHS	
5601 Fishers Lane, Room 2G22	
Rockville, MD 20892	
(b)(6)	
(b)(6)	

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From: Najoua Dendouga <	(b)(6)	
Sent: Tuesday, April 21, 2020 12:3	33 PM	
To: Stein, Judy (NIH/VRC) [C] <	(b)(6) Salata, Carol (NIH/NIAID) [E]	
< (b)(6)		
Cc: Gillian Fenton <	(ው)) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Co	llaboration using (b) (4)	

Dear Judy,

Hope this note finds you well and safe.

Hopefully you start to see like we do in EU, some light toward deconfinement and hopefully rebalancing project priorities, life etc.

On this note, when do you believe you can share your comments?

Many thanks in advance

Take care

Najoua

From: Najoua Dendouga	
Sent: vendredi 10 avril 2020 19:10	
To: Stein, Judy (NIH/VRC) [C] < (b)(6) Salata, Carol (NIH/NIAID) [E]	
< (b)(6)	4210
Cc: Gillian Fenton < (b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
Thank you very much Judy for the update.	
All well & safe,	
Kind regards,	
Najoua	
From: Stein, Judy (NIH/VRC) [C] < (b)(6)	
Sent: vendredi 10 avril 2020 18:43	
To: Najoua Dendouga < (b)(6) Salata, Carol (NIH/NIAID) [E]	
< (b)(6)	
Cc: Gillian Fenton < (b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
EXTERNAL	
Hi Najoua,	
I have not yet had a chance to solicit answers to the questions. I will try to do that today.	
Thanks and I hope all is well with you too,	
Judy	
From: Najoua Dendouga < (b)(6)	
Sent: Thursday, April 9, 2020 9:10 AM	
To: Stein, Judy (NIH/VRC) [C] < (b)(6) Salata, Carol (NIH/NIAID) [E]	
< (b)(6)	
Cc: Gillian Fenton < (b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
Hi Judy, Carol	

Hope this note finds you well.

Would you have any update? Alternatively shall we organize a short call next week just to hear any highlevel comments and agree on next steps? Looking forward to hearing from you, Kind regards, Najoua

From: Stein, Judy (NIH/VI	RC) [C] <	(b)(6)	
Sent: mardi 31 mars 2020	0 18:52		
To: Salata, Carol (NIH/NIA	AID) [E] <	(b)(6) Najoua Dendouga	
<	(b)(6)		
Cc: Gillian Fenton <		(b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID C	linical Collabor	ation using (b) (4)	

EXTERNAL

And this is in my court. We have been inundated with CoV agreements but once I catch up a little, I will work on the questions.

Thanks, Judy

From: Salata, Carol (NIH/NIAID) [E]	< (b)(6)	
Sent: Tuesday, March 31, 2020 12:4	46 PM	
To: Najoua Dendouga <	(b)(6)	
Cc: Gillian Fenton <	(b)(6) Ventzislav Vassilev <	(b)(6)
Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Subject: RE: GSK-NIAID Clinical Coll	aboration using (b) (4)	

Hi Najoua,

I hope you are well too!

I reviewed the most recent draft of the CTA last week and gave the VRC a list of questions that need to be answered before I can make changes and then send back to you.

Thanks, Carol

Carol A. Salata, Ph.D. Senior Advisor for Technology Transfer Technology Transfer and Intellectual Property Office NIAID, NIH, DHHS 5601 Fishers Lane, Room 2G22 Rockville, MD 20892 (b)(6)

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From: Najoua Dendouga < (b)(6)	
Sent: Tuesday, March 31, 2020 11:33 AM	
To: Salata, Carol (NIH/NIAID) [E] < (b)(б)	
Cc: Gillian Fenton < (b)(6) Ventzislav Vassilev < (b))(6)
Stein, Judy (NIH/VRC) [C] < (b)(6)	
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
Dear Carol,	
Would you have any update on GSK's draft CTA?	
I hope everyone cc'd here is well, safe and healthy, Kind regards, Najoua	
From: Salata, Carol (NIH/NIAID) [E] < (b)(6) Sent: lundi 23 mars 2020 13:14	
To: Najoua Dendouga < (b)(6) Petrik, Amy (NIH/NIAID) [E]	
< (b)(6) Stein, Judy (NIH/VRC) [C] < (b)(6)	
Cc: Gillian Fenton < (b)(6) Ventzislav Vassilev < (b)	(6)
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
EXTERNAL	
Hi Najoua,	
Good to work with you again too! I started reviewing this CTA and I need to get more input from	n the
VRC before I send the next draft to you. As you can imagine, this will not be easy at this time. I	will let
you know by the end of the week of my progress.	
Thanks,	
Carol	
Carol A. Salata, Ph.D.	
Senior Advisor for Technology Transfer	
Technology Transfer and Intellectual Property Office	
NIAID, NIH, DHHS	
NIAID, NIH, DHHS 5601 Fishers Lane, Room 2G22 Rockville, MD 20892	
NIAID, NIH, DHHS 5601 Fishers Lane, Room 2G22	

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or any other storage devices. National Institute of Allergy and Infectious Diseases shall not accept liability for any statements made that are sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From: Najoua Dendouga <	(b)(6)	
Sent: Monday, March 23, 2020 8:07 AM		
To: Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Stein, Judy (NIH/VRC) [C] <	(b)(6)
Salata, Carol (NIH/NIAID) [E] <	(b)(6)	
Cc: Gillian Fenton <	(b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collabora	tion using (b) (4)	

Hi Amy,

Thanks for your prompt follow-up. Glad you are doing well in this crisis.

We have the same here it's been a very hectic week last week to manage Covid-19 related matters (direct & indirect).

Carol – great to work with you again & thanks for picking this file up. Let me know if a call is preferred at this stage.

Looking forward to h	earing from you,
Best regards,	
Najoua	

From: Petrik, Amy (NIH/NIAID) [E] <	(b)(6)	
Sent: lundi 23 mars 2020 12:48		
To: Najoua Dendouga <	(b)(6) Stein, Judy (NIH/VRC) [C] <	(b)(6)
Salata, Carol (NIH/NIAID) [E] <	(b)(6)	
Cc: Gillian Fenton <	(b)(6) Ventzislav Vassilev <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collabor	ration using (b) (4)	

EXTERNAL

Hi Najoua,

Thank you. I hope you are doing well too.

We've been quite busy with assisting the NIAID scientists on matters relating to SARS-CoV-2. Accordingly, my colleague, Dr. Carol Salata, has agreed to take over this matter. Best, Amy

From: Najoua Dendouga < Sent: Monday, March 23, 2020 7:38 AM (b)(6)

 To: Petrik, Amy (NIH/NIAID) [E] <</td>
 (b)(6) Stein, Judy (NIH/VRC) [C] <</td>
 (b)(6)

 Cc: Gillian Fenton <</td>
 (b)(6) Ventzislav Vassilev <</td>
 (b)(6)

 Subject: RE: GSK-NIAID Clinical Collaboration using
 (b)(4)

Dear Amy,

I hope this note finds you well in the fast evolving context.

Our respective scientists are inquiring where we are in the negotiation of the draft agreement.

Would you have a mark-up to share or (if easier) shall we organize a call?

I'd be happy to accommodate late call (my time) if this helps.

Thanks in advance & be safe!

Najoua

Najoua Dendouga, PhD, MBA

Director, Corporate Business Development Vaccines, Business Development & Licensing GSK Avenue Fleming 20 1300 Wavre, Belgium Email (b)(6) Mobile (b)(6) Tel (b)(6)

gsk.com | Twitter | YouTube | Facebook | Flickr



From: Petrik, Amy (NIH/NIAID) [E] <	0	b)(6)	
Sent: mercredi 11 mars 2020 12:28			
To: Najoua Dendouga <	(b)(5) Stein, Judy (NIH/VRC) [C] <	(b)(6)
Cc: Gillian Fenton <	(b)(6)		
Subject: RE: GSK-NIAID Clinical Collabo	ration using	(b) (4)	

EXTERNAL

Dear Najoua,

Thanks for providing. I've been in the process of working through the first draft CTA to answer the questions posed within it.

Will transition to this version and provide an updated draft soon. Best, Amy

From: Najoua Dendouga <	(Ს)(Ნ)	
Sent: Wednesday, March 11, 2020 1:28 AM		
To: Stein, Judy (NIH/VRC) [C] <	o)(6) Petrik, Amy (NIH/NIAID) [E] <	(b)(6)
Cc: Gillian Fenton < (b)(6)		
Subject: RE: GSK-NIAID Clinical Collaboration usin	ng (b) (4)	
Dear both,		
Hereto attached a		(b) (4)
		(b) (4)
Can you please let us share few slots for a T Best regards, Najoua	C?	
From: Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Sent: mardi 25 février 2020 18:23		
To: Najoua Dendouga <	(b)(6)	
Subject: RE: GSK-NIAID Clinical Collaboration usin	ng (b) (4)	

EXTERNAL

Hi Najoua, This is in review by TTIPO. Amy had a few questions for the clinical and production groups and we are collecting responses now. Thanks, Judy

From: Najoua Dendouga <	(b)(6)	
Sent: Monday, February 24, 2020 9:39 I	PM	
To: Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Subject: RE: GSK-NIAID Clinical Collabor	ration using	(b) (4)

Hi Judy,

Would you have any update? Sorry I was travelling and had IT issues.

Thanks for your	kind	understanding,
Najoua		

From: Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Sent: mercredi 19 février 2020 18:	37	
To: Najoua Dendouga <	(b)(6)	
Cc: Gillian Fenton <	(b)(6) Petrik, Amy (NIH/I	NIAID) [E] < (b)(6)
Subject: RE: GSK-NIAID Clinical Col	laboration using	(b) (4)

EXTERNAL

Hi Najoua, Amy and I will coordinate to propose some suggested times. Thanks, Judy

From: Najoua Dendouga <	(b)(6)	
Sent: Wednesday, February 19, 2020) 12:33 PM	
To: Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Cc: Gillian Fenton <	(b)(6) Petrik, Amy (NIH/NIAID) [E] <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collal	coration using (b) (4)	

Dear Judy,

As the GSK team is finalizing the review of the draft CTA, I was wondering whether you & I could connect this week (I'll be in Rockville so easier timing-wise) by TC to share any high level comments and/or agree on the process, timing and next step.

If agreeable, would you please kindly share few possibilities for a call on Thursday or Friday?

Thanks in advance

Najoua

From: Stein, Judy (NIH/VRC) [C] <	(b)(6)		
Sent: samedi 15 février 2020 19:02			
To: Gillian Fenton <	(b)(6) Najoua Dendouga	<	(b)(6)
Petrik, Amy (NIH/NIAID) [E] <	(b)(6)		
Subject: RE: GSK-NIAID Clinical Colla	boration using	(b) (4)	

EXTERNAL

Thanks Gillian.

From: Gillian Fenton < (b)(6)	
Sent: Friday, February 14, 2020 5:15 PM To: Stein, Judy (NIH/VRC) [C] < (b)(6) Najoua Dendouga < (b)(6))
Petrik, Amy (NIH/NIAID) [E] < (b)(6)	2
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	
Hi Judy, I've attached the (b) (4):	
•	b) (4)
	(b) (4)
Gillian M Fenton Senior Counsel, Vaccines Legal Operations Innovation, Business Development and Strategic Partnerships Mobile (b)(6)	
From: Stein, Judy (NIH/VRC) [C] < (b)(6)	
Sent: Friday, February 14, 2020 12:49 PM	
To: Najoua Dendouga < (b)(6) Petrik, Amy (NIH/NIAID) [E]	
< (b)(6)	
Cc: Gillian Fenton <	
EXTERNAL	
Hi Najoua, Also, if you could circulate your draft CTA, I think that it would be helpful in giving us an idea of the proposed edits – and we understand that there may be additional changes. Thanks Judy	
From: Najoua Dendouga < (b)(6)	
Sent: Friday, February 14, 2020 12:41 PM	
To: Petrik, Amy (NIH/NIAID) [E] <	
Subject: RE: GSK-NIAID Clinical Collaboration using (b) (4)	

Dear Amy, Judy,

Since our last call, Gillian has kindly prepared a markup generated from adapting the (b) (4)

(b) (4)

(b) (4)

(b) (4)

Let us know whether you agree a call may be better to align?

Looking forward to hearing from you Best regards,

Najoua

From: Petrik, Amy (NIH/NIAID) [E] [mailto:	(b)(6)
Sent: mercredi 15 janvier 2020 22:04	
To: Najoua Dendouga <	(b)(6) Stein, Judy (NIH/VRC) [C
< (b)(6) Gillian Fenton <	(b)(6)
Subject: RE: GSK-NIAID Clinical Collaboration using	(b) (4)

EXTERNAL

Good afternoon,

Thank you all for taking the time to talk over this project today. It was very helpful.

Please find two documents attached as follows:

(b) (4)

(b) (4)

If you have any questions resulting from these, please don't hesitate to call or write.

Best, Amy (b)(6)

From: Najoua Dendouga <	(b)(6)	
Sent: Friday, January 10, 2020 3:25 PM		
To: Stein, Judy (NIH/VRC) [C] <	(b)(6) Petrik, Amy (NIH/NIAID) [E] <	(b)(6)
Gillian Fenton < (b)(6)		
Subject: RE: GSK-NIAID Clinical Collaboration	using (b) (4)	
Hi Everyone		
As far as I am concerned the only slot possib	le would be Wed 3-4 pm.	
Kind regards,		
Najoua		
From: Stein, Judy (NIH/VRC) [C] [mailto	(b)(6)	
Sent: vendredi 10 janvier 2020 20:04		
To: Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Gillian Fenton <	(b)(6)
Cc: Najoua Dendouga <	(b)(6)	
Subject: RE: GSK-NIAID Clinical Collaboration	using (b) (4)	
EXTERNAL		
Hi everyone,		
Those times work for me.		
(Thanks Amy).		
Judy		
From: Petrik, Amy (NIH/NIAID) [E] <	(b)(6)	
Sent: Friday, January 10, 2020 1:51 PM		
100)(6) Stein, Judy (NIH/VRC) [C]	(b)(6)>
Cc: Najoua Dendouga <	(b)(6)	
Subject: RE: GSK-NIAID Clinical Collaboration	using (b) (4)	
Hi Gillian,		

Thanks for providing this. I'll take a read through it in preparation for our discussion next week.

I also looked at Judy's calendar and we are both available on Monday, 1/13, from 9am-11am and 12pm-1pm or on Wednesday, 1/15, 2:30pm-4pm. (Judy, please let us know if these aren't good for you!) Would you be able available for a time within one of those periods?

Thanks, Amy

From: Gillian Fenton < Sent: Friday, January 10, 2020 1:29 PM **(b)(6)**

To: Petrik, Amy (NIH/NIAID) [E] < Cc : Najoua Dendouga < Subject: GSK-NIAID Clinical Collaboration using	(b)(6) Stein, Judy (NIH/VRC) [C] < (b)(6) (b) (4)	(b)(6)
Hi again Amy,		
I'm reaching out to you to open discussions f	for a	(b) (4) (b) (4)
		(b) (4)
(b) (4) Would you steps?	u be available next week for a call to d	liscuss next
Many thanks,		
Gillian M Fenton Senior Counsel, Vaccines Legal Operations Innovation, Business Development and Strate	egic Partnerships	
Slaoui Center for Vaccines Research 14200 Shady Grove Road, Rockville MD 20850 U	JSA	
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gsk.com Twitter YouTube Facebook Flickr		
do more feel better live longer		

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From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sat, 14 Mar 2020 22:25:09 +0000
То:	Wing-Yun Cheung
Subject:	RE: ViE award finalist, Submission required
Attachments:	20200303_Best Academic Research Team - Dr Barney Graham.docx

Sorry for delay. Too much going on.

Thanks for considering.

Barney

From: Wing-Yun Cheung <</th>(b)(6)Sent: Wednesday, March 11, 2020 10:22 AMTo: Graham, Barney (NIH/VRC) [E] <</td>Subject: RE: ViE award finalist, Submission required

Dear Barney, please do send along. Update on the congress about to come..

From: Graham, Barney (NIH/VRC) [E] <</td>(b)(6)Sent: 11 March 2020 13:15To: Wing-Yun Cheung <</td>(b)(6)Subject: Re: ViE award finalist, Submission required

Sorry Wing. I didn't get this in by Monday. Too much going on. I can send today if not too late.

Also, every meeting of more than 50 people on my calendar for the next two months has been canceled or postponed. It seems likely that you will need to make the same decision. I saw Greg Poland's message yesterday, but it seems inevitable. Even the main coronavirus meeting that only comes around every three years that was scheduled in mid May in the Netherlands had been postponed. If any meeting would go forward that should have been the one.

Best wishes,

Barney

Sent from my iPhone

On Mar 5, 2020, at 12:41 PM, Wing-Yun Cheung <

(b)(6) wrote:

Dear Barney,

I'm sure you're extremely busy but if someone in in your team is doing this for you, the deadline is Monday.

Kind regards, Wing

Wing-yun Cheung, MSci Congress Director, Life Sciences Terrapinn Holdings Direct line: (b)(6) LinkedIn: (b)(6)

Warning: We DO NOT work with third parties for accommodation and will NOT call you directly to book for this. All speakers and delegates are advised to book through the official event website. Only trust correspondance from Terrapinn emails.

From: Wing-Yun Cheung Sent: 26 February 2020 12:08 To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: ViE award finalist, Submission required Importance: High

Dear Barney,

Hope you are having a good week?

I have some great news. The voting has come in and you've made it through as one of the shortlisted finalists of this year's **13th Vaccine Industry Excellence (ViE) Awards on April 7**, held in conjunction with the <u>20th World Vaccine Congress</u> Washington, April 6-9, for the category of "Best Academic/Research Team Award".

The full shortlist below will publicly be released on our website soon and in the coming days to the vaccine industry via our marketing channels. Winners will be exclusively announced during the ceremony. In order to ensure our Judging Panel are able to select a winner in combination with the votes so far, we require all finalists to submit a **short document to accompany your nomination**. Please see the attachment.

To allow the Judging Panel time to read all submissions, we require your completed form no later than **Monday March 9th**. We hope you're excited at this news and we hope to receive your submission form shortly – please do forward on and put me in touch with colleagues if this is more relevant for them to complete.

All the best of luck and look forward to seeing you in DC!

Kind regards, Wing

World Vaccine Congress & ViE Awards Team

https://www.terrapinn.com/conference/world-vaccine-congress-washington/ViE-Awards-2020.stm

Best Academic/Research Team Award Shortlist

Brighton Collaboration - Dr Robert Chen Centre for Vaccine Development and Global Health (CVD), University of Maryland School of Medicine -Prof Kathy Neuzil NIH Viral Pathogenesis Laboratory - Dr Barney S. Graham, MD Ospedale Pediatrico Bambino Gesù - Dr Alberto Tozzi Precision Vaccines Program, Boston Children's Hospital - Dr Ofer Levy The Pirbright Institute - Bryan Charleston University of Western Ontario, HIV research - Dr Chil-Yong Kang Wistar Institute - Dr David Weiner Laboratory

<Best Academic Research Team - Dr Barney Graham.docx>

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 27 Apr 2020 17:12:32 +0000
То:	Mascola, John (NIH/VRC) [E]
Subject:	RE: BY 4PM TODAY - CNN inquiry questions for NIH story about Moderna

		(b) (4)	t.
	(b) (4)		
BG			
From: Mascola, John	n (NIH/VRC) [E] <	(b)(6)	
Sent: Monday, April	27, 2020 12:51 PM		
To: Graham, Barney	(NIH/VRC) [E] <	(b)(6)	
Cultant DE DV 4014	TODAY CNINI		
Subject: RE: BY 4PINI	IODAY - CNN inquiry	 questions for NIH story about M 	oderna
Subject: RE: BY 4PM	TODAY - CNN Inquiry	- questions for NIH story about M	oderna
Subject: RE: BY 4PM	TODAY - CNN Inquiry	- questions for NIH story about M	oderna (b) (5), (b) (4)
From: Graham, Barn		- questions for NIH story about M (ه)(ه)	
	ey (NIH/VRC) [E] <		
From: Graham, Barn	ey (NIH/VRC) [E] < 27, 2020 12:25 PM		(b) (5), (b) (4)
From: Graham, Barn Sent: Monday, April To: Mascola, John (N	ey (NIH/VRC) [E] < 27, 2020 12:25 PM	رە)(6) (ە)(6) Hiatt, Nissa (NIH/V	(b) (5), (b) (4)
From: Graham, Barn Sent: Monday, April To: Mascola, John (N	ey (NIH/VRC) [E] < 27, 2020 12:25 PM IIH/VRC) [E] < 10 Koup, Richard (NIH/	رە)(6) (ە)(6) Hiatt, Nissa (NIH/V	(b) (5), (b) (4) RC) [C]
From: Graham, Barn Sent: Monday, April To: Mascola, John (N <(b)	ey (NIH/VRC) [E] < 27, 2020 12:25 PM IIH/VRC) [E] < 10 Koup, Richard (NIH/ 6)(6) (0)	රාග (රාග) Hiatt, Nissa (NIH/V VRC) [E] < රාග Le	(ხ) (5). (ხ) (4) RC) [C] dgerwood, Julie
From: Graham, Barn Sent: Monday, April To: Mascola, John (N < (b) (NIH/NIAID) [E] <	ey (NIH/VRC) [E] < 27, 2020 12:25 PM IIH/VRC) [E] < 106 Koup, Richard (NIH/ 6)(6) (6)(6) Carlto	(b)(6) (b)(6) Hiatt, Nissa (NIH/V VRC) [E] < (b)(6) Le Gall, Jason (NIH/VRC) [C] <	(ხ) (5). (ხ) (4) RC) [C] dgerwood, Julie (ხ)(რ) Stein, Judy
From: Graham, Barn Sent: Monday, April To: Mascola, John (N < (b) (NIH/NIAID) [E] < (NIH/VRC) [C] <	ey (NIH/VRC) [E] < 27, 2020 12:25 PM JIH/VRC) [E] < 06 Koup, Richard (NIH/ 06 (0) (b)(6) Carlto	له)(6) (b)(6) Hiatt, Nissa (NIH/V VRC) [E] < ه)(6) Lea Gall, Jason (NIH/VRC) [C] < on, Kevin (NIH/VRC) [E] < (ه)(6) Bok, Karin (NIH/VRC) [E] <	(b) (5), (b) (4) RC) [C] dgerwood, Julie (b)(6) Stein, Judy (b)(6) Morabito,
From: Graham, Barn Sent: Monday, April To: Mascola, John (N < (b) (NIH/NIAID) [E] < (NIH/VRC) [C] < Kaitlyn (NIH/VRC) [E]	ey (NIH/VRC) [E] < 27, 2020 12:25 PM JIH/VRC) [E] < 06 Koup, Richard (NIH/ 06 (0) (b)(6) Carlto	له)(6) (b)(6) Hiatt, Nissa (NIH/V VRC) [E] < (b)(6) Le Gall, Jason (NIH/VRC) [C] < on, Kevin (NIH/VRC) [E] < (b)(6) Bok, Karin (NIH/VRC) [E] <	(b) (5), (b) (4) RC) [C] dgerwood, Julie (b)(6) Stein, Judy (b)(6) Morabito, (b)(6)

I have added a long comment here but did not edit.

Barney

From: Mascola, John (NIH	/VRC) [E] < (b)(6)	
Sent: Monday, April 27, 2	020 12:20 PM	
To: Hiatt, Nissa (NIH/VRC)	(C] < (b)(6) Graham, Barney	/ (NIH/VRC) [E]
< (b)(6) Koup, Richard (NIH/VRC) [E] <	(b)(6) Ledgerwood, Julie
(NIH/NIAID) [E] <	ه)(6) Gall, Jason (NIH/VRC) [C] <	(b)(6) Stein, Judy
(NIH/VRC) [C] <	(b)(6) Carlton, Kevin (NIH/VRC) [E] <	(b)(6) Morabito
Kaitlyn (NIH/VRC) [E] <	(b)(6) Bok, Karin (NIH/VF	RC) [E] < (b)(6)
Cc: Prince, Tasheema (NIF	1/VRC) [C] < (b)(6) Mo	watt, Michael (NIH/NIAID) [E]

< (b)(6) Green, Wade (NIH/NIAID) [E] < (b)(6) Subject: RE: BY 4PM TODAY - CNN inquiry -- questions for NIH -- story about Moderna

Barney and I can edit - but perhaps comm here could take first pass at edits.

John

From: Hiatt, Nissa (NIH	/VRC) [C] <	(b)(6)		
Sent: Monday, April 27	, 2020 11:55 AM			
To: Mascola, John (NIH	/VRC) [E] <	ര്ര്ര Graham, Ba	arney (NIH/VRC) [E]	
< (b)(6) Koup, Richard (I	NIH/VRC) [E] <	(b)(6) Ledgerwood, Juli	e
(NIH/NIAID) [E] <	(b)(6)	Gall, Jason (NIH/VRC) [C] <	(b)(6) Stein	, Judy
(NIH/VRC) [C] <	(b)(6) Carlt	on, Kevin (NIH/VRC) [E] <	(b)(6) Moi	rabito,
Kaitlyn (NIH/VRC) [E] <		(b)(6) Bok, Karin (NIH/VRC	C) [E] < (b)(6	0
Cc: Prince, Tasheema (NIH/VRC) [C] <	(b)(6)		
Subject: BY 4PM TODA	Y - CNN inquiry qu	uestions for NIH story abou	ut Moderna	

(b) (5)

CNN is working on a deep dive story about Moderna and had some questions for NIH. NIAID OCGR News team has drafted answers to their questions that would be attributed to NIAID generally. Thank you in advance for your time!

Ask:

Review the draft NIAID answers -see attached.

Deadline: 4 PM, Monday, April 27

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]
Sent:	Sat, 7 Mar 2020 16:54:48 +0000
To:	Jon Cohen
Subject:	RE: Coronavirus vaccine literature
Attachments:	book_978-3-642-38919-1.pdf, RSV Review Immunity 2019.pdf

Hi Jon,

This is not exhaustive, but these are the papers I've been reading in order to frame the way of thinking about this.

See last chapter in book and the review for data on RSV which is probably the most relevant example of vaccineassociated ERD (enhanced respiratory disease.

I'll send some additional CoV papers in next email.

Barney

-----Original Message-----From: Jon Cohen < (b)(6) Sent: Friday, March 6, 2020 5:37 PM To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Coronavirus vaccine literature

Hi Barney,

I want to do a story about human coronavirus vaccines studied in the past. I want to read everything.

Is there a review article with references with SARS, MERS and 4 common cold ones?

If not, can you give me a reading list?

Then once I'm done, I want to interview you, the guru.

Thanks Professor,

Jon

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 27 Feb 2020 19:51:25 +0000
То:	(b)(6)
Subject:	FW: nCoV licensing-partnership opportunity
Attachments:	CDA-NCA GNBT NGIO Feb2020.docx, Generex Presentation Feb2020.pdf,
NuGenerex ImmunoOn	cology (NGIO) Presentation Jan2020.pdf, 2019 nCoV One Pager for Distribution
Feb2020.pdf, 2019 nCo	V Project Presentation Feb2020.pdf, Index of NGIO Publications.pdf
FYI. Do you know this p	berson? (b) (4)

BG

From: Terrell, Jason <	(b)(6)	
Sent: Thursday, February 27, 202	0 2:37 PM	
To: Jason McLellan <	(b)(6)	(b)(6)
(b)(6) <		(b)(6) Graham, Barney (NIH/VRC) [E]
< (b)(6)		
Cc: Leahy, Daniel J <	(b)(6) Eckhardt, Gail	< (b)(6)
Jason Terrell <	(b)(6)	
Subject: FW: nCoV licensing-part	nership opportunity	
Importance: High		

Following up on Tuesday's email ...

I've copied CNS Chair, Dr. Dan Leahy, and my Oncology Chair, Dr. Gail Eckhardt, to help make contact as I'm sure you've been overwhelmed with inquiries.

Today NGIO received	(b) (4)
(b) (4) for nCoV (<u>press release</u>). We received this because	(b) (4) (b) (4
However, I suspect your	(b) (4)
	(b) (4
	(6

interested. Thanks.

(b) (4). Please let me know if you're

Jason

JASON TERRELL, MD

Affiliate Faculty, Department of Oncology

 Dell Medical School
 The University of Texas at Austin

 c:
 (b)(6)
 dellmedschool.utexas.edu

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The University of Texas at Austin Dell Medical School

Health Discovery Building • 1701 Trinity St. • Austin, TX 78712 • T:

From: "Terrell, Jason" < b)(6) Date: Tuesday, February 25, 2020 at 1:07 PM To: Jason McLellan < b)(6) (b)(6) (b)(6) (b)(6) (b)(6) (b)(6) Cc: Jason Terrell < b)(6) Subject: nCoV licensing-partnership opportunity

(b)(6)

Dr. McLellan, Dr. Graham, and team:

I'm an affiliate faculty member in Oncology at UT Dell Med and work full time as the Chief Medical and Scientific Officer for Generex Biotechnology and subsidiary NuGenerex ImmunoOncology (NGIO). Generex/NGIO is partnering with (b) (4)

(b) (4)

(b) (4)

I attached a few documents from the public domain for you to learn more about the companies, science, and opportunity. Attached are corporate decks for both parent company Generex Biotechnology (NuGenerex Family of Companies) and subsidiary NuGenerex ImmunoOncology (NGIO), a one pager summary of the nCoV (b) (4);, a short 13 slide presentation of the (b) (4) (4); and an index of 38 publications relating to the (b) (4).

If you're interested in learning more please complete the attached NDA allowing me to disclose details. Please don't hesitate to contact me directly by text or call on my personal cell at (b)(6) Thank you.

(b)(6)

Jason

JASON TERRELL, MD

Affiliate Faculty, Department of Oncology

Dell Medical School | The University of Texas at Austin c: (b)(6) | dellmedschool.utexas.edu



Health Discovery Building • 1701 Trinity St. • Austin, TX 78712 • T

NIH-004469

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 13 Feb 2020 05:07:06 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Re: Coronavirus Preparedness Summit to Be Held in Washington, DC, June 17-
19	
Attachments:	image001.gif

This looks like a for-profit meeting. I'm surprised Greg would send this out. I would go to One Health meeting if sponsored by an academic group.

BG

Sent from my iPhone

On Feb 13, 2020, at 1:46 AM, Corbett, Kizzmekia (NIH/VRC) [E]

Should I be going to this. Overlaps on the tail end of the One Health congress.

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: "Folkers, Greg (NIH/NIAID) [E]" < (b)(6) Date: Tuesday, January 28, 2020 at 3:14 PM Subject: Coronavirus Preparedness Summit to Be Held in Washington, DC, June 17-19

Coronavirus Preparedness Summit to Be Held in Washington, DC, June 17-19

Emergency Preparedness Leaders, Health and School Officials, Business, Public and Private sector Partners will have access to coronavirus experts from around the world to address the issues of continued planning for the possibility of a more severe outbreak of human coronaviruses later this year. January 28, 2020 09:00 AM Eastern Standard Time

WASHINGTON--(<u>BUSINESS WIRE</u>)--The Coronavirus Preparedness Summit will occur in Washington, DC on June 17-18 and followed by hands-on workshops. SyllabusX officials announced today.

The ongoing 2019 Novel Coronavirus outbreak proved that now more than ever health, education, government, non-profit organizations, and business executives need to discuss and share best practices and lessons learned during this ongoing first outbreak and prepare for the possibility of a more sever outbreak of 2019-nCoV later this year.

With expected delegates from Tribal, local, state, federal, and abroad. The 2019-nCoV summit will provide a platform for public health officials and community stakeholders to come together, to network and exchange preparedness and response efforts. Special emphasis will be placed on identifying the responsibilities of various stakeholders in order to improve global communication coordination and collaboration.

Each day of the conference will offer papers on a wide range of topics including:

- Preparing Community Strategies
- Local Partnership and Participation
- Delivery of Vaccine and Antiviral Medication
- Emergency Response and Hospital/Healthcare Coordination
- Prevention Education Efforts and Risk Communication
- Command, Control and Management
- Business Community's Role

Over 20 breakout sessions will be offered addressing a wide range of issues, including:

- Breakout 1. Mass Fatality Management Planning
- Breakout 2. Business Continuity Planning
- Breakout 3. Continuity of Operations (COOP) and Continuity of Government Planning
- Breakout 4. Emergency Management Services
- Breakout 5. Law Enforcement Agencies
- Breakout 6. First Responders: Fire Department
- Breakout 7. First Responders: Public Works
- Breakout 8. 911 Call Center Services
- Breakout 9. Hospital and Emergency Medical Services
- Breakout 10. Workplace-based Planning
- Breakout 11. Community-Based Planning
- Breakout 12. School/University Planning
- Breakout 13. Airlines, Travel, Airport, Quarantine and Border Health Services
- Breakout 14. Infectious Medical Waste

And many more...

3 different ways to participate

The 2-day event is open to all interested governmental agencies, organizations, and businesses from all countries. To register, call us at (703) 466-0011, or download a registration form: <u>www.cov-s.com</u>

Call for Papers

To submit a presentation, please visit

http://cov-s.com/call-for-papers/

Call for Posters

To submit a poster, please visit http://cov-s.com/call-for-posters/

Attendee

To register, please visit

www.cov-s.com

Speaking Opportunities

Those interested in making presentations related to the nCoV or pandemic preparedness, please Email Edna Santos at <u>events@cov-s.com</u>

Registration & Sponsorship Opportunities

Email info@cov-s.com or call (703) 466-0011

About SyllabusX

The Coronavirus Preparedness Summit is organized by SyllabusX, Reston, Virginia, international specialists in public health and emergency planning events and disaster recovery conferences. <image001.gif>

Contacts

SyllabusX, Inc. 11250 Roger Bacon Drive #10 Reston, VA 20190 Phone (703) 466-0011, info@syllabusx.com

Disclaimer: Any third-party material in this email has been shared for internal use under fair use provisions of U.S. copyright law, without further verification of its accuracy/veracity. It does not necessarily represent my views nor those of NIAID, NIH, HHS, or the U.S. government.

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Tue, 31 Mar 2020 00:47:12 +0000	
To:	Embry, Alan (NIH/NIAID) [E];Stemmy, Er	ik (NIH/NIAID) [E]
Subject:	FW: Therapy Proposal	
Attachments:	(b) (4) - 25-3-20	.pdf, (b) (4)
	(b) (4) - 25-3-20.doc	(b) (4).pdf

More ideas.

BG

Original Message			
From: Stillman, Bruce <	(b)(6)·		
Sent: Thursday, March 26, 2020 7:	:58 AM		
To: Graham, Barney (NIH/VRC) [E] < (b)(6) Holla	nd, Steven (NIH/NIAID) [E]	
< (b)(6) Fauci,	Anthony (NIH/NIAID) [E] <	(b)(6)·	
Cc: Jennifer MacDiarmid <	(b)(б) Himanshu E	Brahmbhatt <	(b)(6)
Sharpless, Norman (NIH/NCI) [E]	< (b)(6)		
Subject: Therapy Proposal			

Dear Barney, Steve and Tony,

I am an advisor to EnGeneIC, a biotech company in Sydney Australia that has developed a targeted therapy that is in Phase 2 clinical trials for treating cancer, but their technology can be applied more broadly, including infectious disease. They asked me to introduce you to an idea they have for treatment of COVID-19 patients, particularly (b) (4) that is outlined in the attached EDV-based Rescue therapeutics PDF. Their proposal is in the attached Word document. They are interested in talking to the NIAID, either the vaccine research center or clinicians at NIAID clinical center about applying their technology to COVID-19, especially (b) (4). Their technology has been approved for clinical trials in the US and

Australia.

They just published last week a paper in Cancer Cell (also attached) that describes their latest research on cancer. In it, there is data on the innate and adaptive immune responses to cancer, but also systemic responses. They suggest that an adaptation of the technology to introduce SARS-CoV-2 antigens via their drug targeting system might be beneficial in COVID-19.

I have copied the co-CEOs of the Company, Jennifer MacDiarmid and Himanshu Brahmbhatt.

I have to say that you are doing a remarkable job in this crisis, providing key leadership that is desperately needed. So, thanks very much.

Best wishes,

Bruce

Cc: Ned Sharpless.

Bruce Stillman, AO, PhD, FAA, FRS President & CEO Cold Spring Harbor Laboratory 1 Bungtown Road Cold Spring Harbor, NY 11724 ph: (b)(6) www.cshl.edu<http://www.cshl.edu/>

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 1 Mar 2020 01:47:51 +0000
То:	Mascola, John (NIH/VRC) [E]
Cc:	Marston, Hilary (NIH/NIAID) [E];Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	WH visit VRC 3March2020.pptx
Attachments:	WH visit VRC 3March2020.pptx

This is what we were thinking for the WH visit on Tuesday. Still working on text.

BG

From: Sent: To: Geoffrey (NIH/VRC) [F]; (NIH/VRC) [E];Fisher, Br Subject:	Ziwawo, Cynthia (NIF	2:27:00 +0000 NIH/VRC) [E];Abiona,		수가 바람이 가 있는 것 것 같아요. 이 것 것 것 같아요. 것 것 같아요. ????????????????????????????????????
FYI. The	(b) (5) contam	inated. Please dispos	e and clean everything	g up ASAP.
BG				
From: Mascola, John (N		(b)(6)		
Sent: Monday, April 27,				
To: Lin, Bob (NIH/VRC)	and the second se	6) Doria-Rose, Nicole (
<	(b)(6) Wang, Lingshu		(b)(6) C(orbett,
Kizzmekia (NIH/VRC) [E]<	(b)(6) Schmidt, St	tephen (NIH/VRC) [C]	
<	(b)(6) Shi, Wei (NIH/VI	RC) [E] <	(b)(6) Zhang, Yi (NIH,	/NIAID) [C]
< (b)(6)				
Cc: Flach, Britta (NIH/VI		(b)(6) Louder, Ma		
< (b))(6) McDermott, Adria	n (NIH/VRC) [E] <	(t))(6) Graham,
Barney (NIH/VRC) [E] <)(6)		
Subject: RE:	(b) (5) : encou	raging initial data		
All – we		(b) (5)	1	
Also, Steve, you can let	the lab that sent us t	he line know.		
From: Lin, Bob (NIH/VR	C) [C] <	b)(6)		
Sent: Monday, April 27,	, 2020 5:56 PM			
To: Doria-Rose, Nicole (No. P. C. N.	ຈ Wang, Lingshu (NIH/	
< (ы))) Corbett, Kizzmek)(6) Schmidt,
Stephen (NIH/VRC) [C]	<	ው) Shi, Wei (NIH/	/RC) [E] <	(b)(ፅ) Zhang,
Yi (NIH/NIAID) [C] <	(b)(6)			
Cc: Flach, Britta (NIH/VI	RC) [C] <britta.< td=""><td>(b)(6) Louder, Ma</td><td>rk (NIH/VRC) [C]</td><td></td></britta.<>	(b)(6) Louder, Ma	rk (NIH/VRC) [C]	

een nach, britter (ining th		1
< (b)	(6) McDermott, Adrian (NIH/VRC) [E] <	(b)(6) Mascola,
John (NIH/VRC) [E] <	(b)(6) Graham, Barney (NIH/VRC) [E] <	(b)(6)
Subject: RE:	(b) (5): encouraging initial data	
Importance: High		

Hi All,

Best, Bob C. Lin Automated Testing Manager Contractor, Medical Science & Computing, Inc. VIP (Formally VITL), Vaccine Research Center, NIAID/NIH 9 West Watkins Mill Road Suite 165A Gaithersburg, MD 20878 Phone: (b)(6)

From: Doria-Rose, Nicole	(NIH/NIAID) [E] <	(b)(6)	
Sent: Monday, April 27, 2	020 8:45 AM	0.04		
To: Lin, Bob (NIH/VRC) [C] <	(b)(6) Wang, Li	ngshu (NIH/VRC) [E] <	(b)(6)
Corbett, Kizzmekia (NIH/	/RC) [E] <		(b)(6) Schmidt, Stephe	en (NIH/VRC) [C]
< (b	6) Shi, Wei (NI	H/VRC) [E] <	(b)(6) Zhang	, Yi (NIH/NIAID) [C]
< (b)(6)				
Cc: Flach, Britta (NIH/VRO			ouder, Mark (NIH/VRC) [
< (b)(6) McDermott, A	Adrian (NIH/VR	C) [E] <	(b)(6) Mascola,
John (NIH/VRC) [E] <			Barney (NIH/VRC) [E]	(b)(6)
Subject: Re:	(b) (5) : er	ncouraging initia	il data	
ه (5) Looking forward to se Thanks N	eing all the o	data		
From: "Lin, Bob (NIH/V Date: Friday, April 24, 2		(b)(6)		
			(b)(6) "\\/_	
To: "Doria-rose, Nicole				ng, Lingshu (NIH/VRC
[E]" <			a (NIH/VRC) [E]"	(1)(6)
			NIH/VRC) [C]" <	(b)(6)
"Shi, Wei (NIH/VRC) [E] <	"<	(b)(6) "Zh	ang, Yi (NIH/NIAID) [C]	
Cc: "Flach, Britta (NIH/	/RC) [C]" <		(b)(6) "Louder, Mark (N	IH/VRC) [C]"

Cc: "Flach, Britta (NIH/VRC) [C]" < (b)(6) "Louder, Mark (NIH/VRC) [C]" < (b)(6) "McDermott, Adrian (NIH/VRC) [E]" (b)(6) "Mascola, John (NIH/VRC) [E]" < (b)(6) "Graham, Barney (NIH/VRC) [E]" < (b)(6) Subject: RE: (b)(5) encouraging initial data

Hi,

(b) (5) Please let me know if any question.

Thank you, Bob C. Lin Automated Testing Manager Contractor, Medical Science & Computing, Inc. VIP (Formally VITL), Vaccine Research Center, NIAID/NIH 9 West Watkins Mill Road Suite 165A Gaithersburg, MD 20878 Phone: (b)(6)

From: Doria-Rose, Nicole	(NIH/NIAID) [E] <	(b)(6)	
Sent: Tuesday, April 21, 20	020 6:50 PM		
To: Lin, Bob (NIH/VRC) [C]	< (b)(6)	Wang, Lingshu (NIH/VRC)	[E] < (b)(6)
Corbett, Kizzmekia (NIH/V	RC) [E] <	(b)(6) Schmidt,	Stephen (NIH/VRC) [C]
< (b)	6) Shi, Wei (NIH/VR	C) [E] < (b)(6)	Zhang, Yi (NIH/NIAID) [C]
< (b)(6)			
Cc: Flach, Britta (NIH/VRC)	[C] <	(b)(6) Louder, Mark (NIH	/VRC) [C]
< (b)(6)	McDermott, Adrian	(NIH/VRC) [E] <	(b)(б) Mascola,
John (NIH/VRC) [E] <	(b)(6)	Graham, Barney (NIH/VRC)) [E] < (b)(6)
Subject:	(b) (5): encouragin	g initial data	

Hi all,

	(b) (5)
Kizzmekia and I propose the following:	

NIH-004478

(b) (5)

(b) (5)

We will send out proposed assay details in the morning.

Thanks all Nicole

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 26 Feb 2020 19:24:50 +0000
То:	Daniela Weiskopf
Cc:	Ruckwardt, Tracy (NIH/VRC) [E];Alessandro Sette;Morabito, Kaitlyn (NIH/VRC)
[E];Corbett, Kizzmekia	(NIH/VRC) [E];Alba Grifoni
Subject:	RE: nCov

Dr. Morabito is our main point of contact and will involve the right people on our end.

BG

From: Daniela Weiskopf < (b)(6)	
Sent: Wednesday, February 26, 2020 2:07 PM	
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)
Cc: Ruckwardt, Tracy (NIH/VRC) [E] <	(b)(6) Alessandro Sette < (b)(6)
Morabito, Kaitlyn (NIH/VRC) [E] <	(b)(6) Corbett, Kizzmekia (NIH/VRC) [E]
< (b)(6) Alba Grifoni <	(b)(6)
Subject: Re: nCov	
Thanks for getting back to us to fast. Agreed! We have interest. I think it might be best to set up a phone call? Who should I coordinate best on your side?	
On Wed, Feb 26, 2020 at 11:01 AM Graham, Barney (N Thanks Daniela,	IH/VRC) [E] < (b)(6) wrote:
We have ordered	(ው) (4), but it might be
useful to discuss with you other ways to study the resp	onses.
Barney	
From: Daniela Weiskopf < (b)(6) Sent: Wednesday, February 26, 2020 12:22 PM To: Alessandro Sette < (b)(6) Cc: Graham, Barney (NIH/VRC) [E] < Subject: Re: nCov	(ხ)(6) Alba Grifoni < (ხ)(6)
Hi Barney, I'm following up on Alex email. I just wanted to let you ^{(b) (4)} in house. We would be very	know that we now have COVID-19 derived (b) (4 (b) (6

	(b)	(4) Also, as Alex
pointed out we would also be happy to make Looking forward to hear from you, Daniela	(b) (4) available to your lab.	_
On Thu, Feb 20, 2020 at 7:04 PM Alessandro Sett Hi Barney,	e < (b)(6) wrote:	
It was great to see you yesterday and today I an	n flying back to SD. As mentioned v	we have derived
	(b) (4). Here is	a copy of a paper
describing the selection process. We would be keep	een on collaborating by either	(b) (4) from any
		(b) (4)
	(b) (4)	
Let me know what you think		
best		

Alex

Daniela Weiskopf, PhD

Research Assistant Professor Center for Infectious Disease, Division of Vaccine Discovery La Jolla Institute for Immunology (LJI) 9420 Athena Circle, La Jolla, CA 92037 T (b)(6)

F (858) 752-6987 www.lji.org La Jolla Institute Without Disease.

Daniela Weiskopf, PhD

Research Assistant Professor Center for Infectious Disease, Division of Vaccine Discovery La Jolla Institute for Immunology (LJI) 9420 Athena Circle, La Jolla, CA 92037

T (b)(6) F (858) 752-6987 www.lji.org La Iolla Life *

La Jolla Institute ROR IMMUNOLOGY

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 9 Apr 2020 19:27:08 +0000
То:	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

FYI. Is this something NIAID wants to support?

BG

Sent from my iPhone

Begin forwarded message:

From: Roman Giverts < (b)(6) Date: April 9, 2020 at 1:32:48 PM EDT To: "Graham, Barney (NIH/VRC) [E]" < (b)(6) Subject: Sharing Best Practices for COVID-19 Crisis

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:	Thu, 6 Feb 2020 16:11:47 +0000
To:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Paragraphs.
Attachments:	Paragraphs for Wuhan CoV stories.docx

I haven't gone that far but started writing some general paragraphs.

Barney

The information in this e-mail and any of its attachments is confidential and may contain sensitive information. It should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage devices. National Institute of Allergy and Infectious Diseases shall not accept liability for any statements made that are sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Thu, 5 Mar 2020 15:00:24 +0000	
То:	Jason McLellan	
Subject:	RE: COVID	(b) (4)

We should have a conversation and work out how to handle. It's also going to be messy with Gordon Joyce, and I can explain further.

Also, Anita Mora was visiting NIH today and we met for about an hour this morning. She might help with a CoV movie as well since the rearrangement process is a little different.

BG

From: Jason McLellan <	(b)(6)	
Sent: Thursday, March 5, 2020 9:57 AM		
To: Graham, Barney (NIH/VRC) [E] <		(b)(6)
Subject: FW: COVID		(b) (4)

This thread seems like things are going to get messy with us and Andrew Jason

From: Corbett, Kizzmekia (NIH/VRC) [E] <			(b)(6)
Sent: Thursday, March 5, 2020 7:52 AM			
To: Jason McLellan <	(b)(6)		
Cc: Daniel P. Wrapp <		(b)(6)	
Subject: FW: COVID		(b) (4)	

Good morning,

Can you remind me which of these we sent to you guys? As other people inquire about getting in on structures, we would like to not double up.

	(b) (4)
1	
2	
3	
4	
5	
6	
4 5 6 7 8	
8	
9	

Full thread for your reference:

Hi Kizzie,

Good morning! We can start (b) (4) (b) (4) Please let me know if you need anything. Thanks. Best,			
Sandhya			
From: Corbett, Kizzmekia (NIH/VRC) [E] (b)(6) Sent: Sunday, February 23, 2020 9:47 AM To: Andrew Ward <			
< (b)(6) Subject: Re: SARS (b) (4) Data Good morning Andrew,			
Please let us know your questions and/or (b) (4) and we will certainly get them to you. 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) (b)(6)			

From: Andrew Ward <	(b)(6)		
Date: Saturday, February	22, 2020 at 1:33 AM		
To: Kizzmekia Corbett <		(b)(6)	
Cc: "Wang, Lingshu (NIH/	/VRC) [E]" <		(b)(6)
Subject: Re: SARS	(b) (4) Data		

No worries. Would be good to have them now though. Best

Andrew

On Feb 21, 2020, at 7:49 PM, Corbett, Kizzmekia (NIH/VRC) [E] < (1	b)(6) wrote:	
Ok, great. I saw it on your old slides I was looking through. Sorry, Andrew.		
Sent from the mobile device of: Kizzmekia S. Corbett, PhD Senior Research Fellow coVip Scientific Lead VRC NIAID NIH (b)(6)		
From: "Wang, Lingshu (NIH/VRC) [E]" < (b)(6)		
Date: Friday, February 21, 2020 at 10:04:03 PM		
To: "Corbett, Kizzmekia (NIH/VRC) [E]" < (b)(6) "Andrew Ward"		
< (b)(6) Subject: Re: SARS (b) (4) Data		
Subject: Re: SARS (b) (4) Data		
Hi Kizzie and Andrew,		
We discussed in the call. But we did send because your group was more interested in	(b) (4).	
Thanks,		
lingshu		
From: "Corbett, Kizzmekia (NIH/VRC) [E]" < (b)(6) Date: Friday, February 21, 2020 at 8:32 PM		
To: Andrew Ward < (b)(6)		
Cc: "Wang, Lingshu (NIH/VRC) [E]" < (b)(6)		
Subject: Re: SARS (b) (4) Data		
I'm an connecting this to Lingshu, as she would have sent them.		
Sent from the mobile device of:		
Kizzmekia S. Corbett, PhD		
Senior Research Fellow		
coVip Scientific Lead		
VRC NIAID NIH (b)(6)		
From: "Andrew Ward" < (b)(6)		
Date: Friday, February 21, 2020 at 7:30:05 PM To: "Corbett, Kizzmekia (NIH/VRC) [E]" < (b)(6)		
Subject: Re: SARS (b) (4) Data		
Hi Kizzie,		

I just checked around and we could not find the (b) (4) mentioned below or any email reference to them. Are you sure you sent them, or were they labeled differently? If you have an email thread that would be helpful.

Best

Andrew

(b)(6)

From: "Corbett, Kizzmekia	a (NIH/VRC) [E]" < (b)(6)	
Date: Friday, February 21,	2020 at 1:40	AM	
To: Andrew Ward <	(b)(6)	
Subject: SARS	(b) (4) Data		
Good morning Andrew,			
Previously we sent you guys	, Robert et.al,		(b) (4)
We are gathering data for	(b) (4	would like to know who we should reach out to for	
	(b) (4)	_	
Sent from the mobile device	of:		
Kizzmekia S. Corbett, PhD			
Senior Research Fellow			
coVip Scientific Lead			
VRC NIAID NIH			

From:Graham, Barney (NIH/VRC) [E]Sent:Wed, 25 Mar 2020 14:26:49 +0000To:Oplinger, Anne (NIH/NIAID) [E]Cc:Hiatt, Nissa (NIH/VRC) [C];Routh, Jennifer (NIH/NIAID) [E]Subject:Re: Hi from Andreas (formerly IAVI Report) - asking for comment on COVID-19vaccine development candidates & challenges

Maybe early next week, but then I need a break from journalists. It's been helpful for communication, but I don't have enough time or energy.

Barney

Sent from my iPhone

On Mar 25, 2020, at 8:15 AM, Oplinger, Anne (NIH/NIAID) [E] < (b)(6) wrote:

Barney,

Would you like to do this? I can an OK readily, I think. Our office has assisted Andreas many times in the past. He's a good reporter.

Anne A. Oplinger

(b)(6)

Office of Communications and Government Relations National Institute of Allergy and Infectious Diseases, NIH MEDIA request phone (b)(6)

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

 Sent: Tuesday, March 24, 2020 9:50 PM
 (b)(6)

 To: Hiatt, Nissa (NIH/VRC) [C] <</td>
 (b)(6)

 Cc: Routh, Jennifer (NIH/NIAID) [E] <</td>
 (b)(6)

 Oplinger, Anne (NIH/NIAID) [E]
 (b)(6)

Subject: FW: Hi from Andreas (formerly IAVI Report) - asking for comment on COVID-19 vaccine development candidates & challenges

Another request.

BG

From: Andreas von Bubnoff <	(b)(6)
Sent: Tuesday, March 24, 2020 1:34 PM	

To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Hi from Andreas (formerly IAVI Report) - asking for comment on COVID-19 vaccine development candidates & challenges

Dear Dr. Graham,

Hope this note reaches you well. Not sure if you remember me but we were in touch a number of years ago while I was covering HIV vaccines *IAVI Report* in NYC. I'm now a Brooklyn & Düsseldorf-based freelance science/tech journalist writing for *The Atlantic, Quanta, Nautilus, Nature, The Guardian* and German media such as the *Frankfurter Allgemeine Zeitung,* currently covering vaccine development for COVID-19, and was wondering if you might have a few minutes in the next few days to comment on the vaccine development situation for the novel coronavirus.

You can just email me to let me know when you're available, or call my US cell phone number (+ (b)(6) When you call, I can immediately call you back. After hours or over the weekend is fine, if that fits better in your busy schedule. (As for time zones, I'm in Germany right now.)

Thank you very much --- I look forward to speaking with you!

Best,

Andreas

Andreas von Bubnoff Multimedia Producer | Science Journalist Brooklyn, NY & Kleve, Germany 2019 <u>HITS Journalist in Residence</u>, Heidelberg, Germany Team member <u>AnthropoScene</u> section of RiffReporter, Berlin, Germany Worldwide Cell: (b)(6) andreasvonbubnoff.com

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 3 Feb 2020 21:40:59 +0000
To:	Lawrence Wright
Subject:	Re: Wuhan

It's likely that there are some infected people who have mild symptoms who are shedding but don't know it. In most viral infections of the respiratory tract the peak viral load happens before or at the same time as the beginning of symptoms, so there is almost always shedding before symptoms.

Barney

Sent from my iPhone

> On Feb 3, 2020, at 4:24 PM, Lawrence Wright <	(b)(6) wrote:
>	
> Any truth to the idea that people are infectious up to two weeks before syn	mptoms?
>	
> Sent from my iPhone	
>	
>> On Feb 3, 2020, at 11:46 AM, Graham, Barney (NIH/VRC) [E] <	(b)(6) wrote:
>>	
>> Not sure how much to be concerned, so the concern and response activit candidate in GMP manufacturing, but will be a long time before it could be	
>>	
>> Barney	
>>	
>>	
>>	
>> Sent from my iPhone	
>>	
>>>> On Feb 3, 2020, at 10:50 AM, Lawrence Wright <	(b)(6) wrote:
>>>	
>>> Gosh, Barney, it's spooky. That big NYT spread yesterday was like a c because of the help of you and others in the field who drew the lines of what	
>>> How seriously do you regard this outbreak?	
	0.00
>>>>> On Feb 3, 2020, at 7:21 AM, Graham, Barney (NIH/VRC) [E] <	(b)(6) wrote:
>>>>	
>>>> Hi Larry,	
>>>>	
>>>> Hope things are going well for you.	
>>>>	
>>>> With Wuhan coronavirus and melting glaciers, seems like this would	be a good time for your book to come
out.	
>>>>	
>>>> Best wishes,	
>>>>	

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 6 Apr 2020 19:17:31 +0000
To:	Corbett, Kizzmekia (NIH/VRC) [E];Ruckwardt, Tracy (NIH/VRC) [E];Kanekiyo,
Masaru (NIH/VRC) [E];I	Bok, Karin (NIH/VRC) [E];Morabito, Kaitlyn (NIH/VRC) [E];Alvarado, Gabriela
(NIH/VRC) [C]	
Subject:	work exemptions
Attachments:	Continuing Research Exemption032120final_Fillable_BG to edit.pdf

Hi All,

I guess this is the form Marybeth and NIAID need to decide who works.

I've filled in most of what I think is needed. If you all could add anything, please do and then we will ask Christy Harris and Marybeth whether this is good enough and can be sent in. I've tried to argue that most people in our lab need periodic or routine access.

Karin, could you compile answers and send forward?

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 Bldg 40, Room 2502 Bethesda, MD 20892-3017 Phone: (b)(6) URL: https://www.niaid.nih.gov/research/barney-graham-md-phd

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From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 27 Feb 2020 14:12:41 +0000
To:	Mark Feinberg
Cc:	Mascola, John (NIH/VRC) [E]
Subject:	Re: Great Presentation and Wonderful Progress!

Thanks Mark, 1'm glad some people will realize not all parts of government are broken. Wish I could be there.

BG

Sent from my iPhone

On Feb 27, 2020, at 9:09 AM, Mark Feinberg < (b)(6) wrote:

Dear Barney,

I hope you are doing very well---even if you are no doubt very busy....

I am at the IABS meeting in Lyon. While I had been looking forward to seeing you here, I was not surprised to learn that you needed to stay close to home to work on the SARS-CoV-2 vaccine effort. I did want you to know that I thought your presentation was great and it is very positive to see the truly impressive progress that you and the VRC team are making in your partnership with Moderna. It is very encouraging to see such great science being applied to a real public health threat so creatively, effectively and quickly. The world certainly needs it!

Very best,

Mark

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 8 Apr 2020 16:09:12 +0000
To:	(b)(6)
Cc:	Charles Chen;Corbett, Kizzmekia (NIH/VRC)
[E];	(b)(6)Michael Malison
Subject:	RE: Introduction and question

Hi Ali,

I'm introducing you to Dr. Charles Chen who is CEO of a company in Taiwan, Medigen. They have made other vaccines including one for EV71, and are planning to develop a (b) (4) (b) (4)

(b) (4) but would make sense for COVID-

19.

Best wishes and take care,

Barney

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 3 Apr 2020 21:01:05 +0000
То:	Cassetti, Cristina (NIH/NIAID) [E]
Cc:	Michael Malison
Subject:	Vaccine manufacturing in Taiwan

Hi Cristina,

I'm introducing you to Dr. Mike Malison. He is retired from high level epidemiology jobs at CDC and is working as a consultant and liaison to Medigen, a pharmaceutical company in Taiwan. This is the company that licensed Steve Whitehead's vaccine and has also made an EV71 vaccine. They were very quick to show interest in responding to COVID-19 in February and are planning to make (b) (4)

(b) (4) eventually. They have an aggressive	timeline to have a
(b) (4), and will do clinical trials in Taiwan,	(b) (4)
(b) (4) I thought you might be able to	(b) (4)
(b) (4);	

Thanks and take care,

Barney

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From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 23 Mar 2020 02:30:39 +0000
То:	Laferriere, Roger (NIH/NIAID) [E]
Subject:	Re: PHONE CONTACT LIST
Attachments:	image001.jpg, image002.jpg

See below

Sent from my iPhone

On Mar 22, 2020, at 9:03 PM, Laferriere, Roger (NIH/NIAID) [E] < (b)(6) wrote:

Dear VRC Recovery Team,

Please provide the following information for our phone contact list:

Name: Barney Graham

Office: deputy director, VRC

Primary Phone Number: (b)(6)

Secondary Phone Number. (b)(6)

We will place it on an ICS form and distribute.

Please ensure you copy my assistant Ms. Brenda Mark.

Thank you.

Roger

Roger Laferriere Emergency Preparedness Coordinator Rocky Mountain Laboratories National Institutes of Health 904 South 4th Street Hamilton, MT 59840 (b)(6)

From: Wheeland, Daniel (NIH/OD/ORF) [E] <	(b)(6)
Sent: Sunday, March 22, 2020 10:34 AM	
To: Mascola, John (NIH/VRC) [E] <	(b)(6) Daucher, Marybeth (NIH/NIAID) [E]

(b)(6) Harper, Jill (NIH/NIAID) [E] < (b)(6) Phillips, Donna (NIH/OD/ORF) [E] < (b)(6) Graham, Barney (NIH/VRC) [E] < (b)(6) McGowan, Colleen (NIH/OD/ORS) [E] < (b)(6) Veitch, John (NIH/OD/ORS) [E] (b)(6) Potts, Jeffrey (NIH/OD/ORS) [E] < (b)(6) Odegaarden, Gregar (NIH/OD/ORF) [E] < (b)(6) Cowman, Gretchen (NIH/OD/ORF) [E] (b)(6) Memarzadeh, Farhad (NIH/OD/ORF) [E] < (b)(6) Guptill, Virginia (NIH/CC/OCRS) [E] < (b)(6) Veitch, John (NIH/OD/ORS) [E] (b)(6) Miller, Mark F. (NIH/OD/ORF) [E] < (b)(6) Laferriere, Roger (b)(6) Floyd, William (NIH/OD/ORF) [E] < (NIH/NIAID) [E] < (b)(6) Cullen, William (NIH/OD/ORS) [E] < (b)(6) Southers, Jordan (NIH/OD/ORS) [E] (b)(6) < Subject: RE: URGENT: Bldg 40 Cleanup

All,

(b) (5)

Thanks, Dan

Thanks,

Dan

Dan Wheeland, P.E. Director, Office of Research Facilities Office of Management National Institutes of Health

From: Mascola, John	(NIH/VRC) [E] <		(b)(6)		
Sent: Saturday, March	n 21, 2020 8:24 I	PM			
To: Wheeland, Daniel	(NIH/OD/ORF)	[E] <	(b)(6	Daucher, Marybetl	h (NIH/NIAID) [E]
<	(b)(6) Harper, J	iill (NIH/NIAID) [E]	<	(b)(6) Phi	llips, Donna
(NIH/OD/ORF) [E] <		(b)(6)			
Cc: Graham, Barney (NIH/VRC) [E] <		(b)(6) Mc(Gowan, Colleen (NIH	/OD/ORS) [E]
<	(b)(6) Veitch,	John (NIH/OD/OF	RS) [E] <	(b)	(6) Potts, Jeffrey
(NIH/OD/ORS) [E] <		(b)(6) Odegaarde	n, Gregar	(NIH/OD/ORF) [E]	
<	(b)(6) Cowman,	Gretchen (NIH/OD	/ORF) [E]	<	(b)(6)
Memarzadeh, Farhad	(NIH/OD/ORF) [[E] <		(b)(6) Guptill, Virginia	a (NIH/CC/OCRS)
[E] <	(b)(6) Veitch,	John (NIH/OD/OF	(S) [E] <	(b)	6 Miller, Mark F.
(NIH/OD/ORF) [E] <		(b)(6) Laferriere,	Roger (NI	H/NIAID) [E]	
<	(b)(6) Floyd, W	illiam (NIH/OD/OR	F) [E] <	(b)(6)	
Subject: DE. LIDCENT	Pldg 40 Classin	2			

Subject: RE: URGENT: Bldg 40 Cleanup

Thanks again to all here.

I would note – that this will happen again, probably soon, in a lab space. So NIH will likely need an SOP for handling COVID cases in labs.

John R. Mascola, M.D. Director, Vaccine Research Center National Institute of Allergy and Infectious Diseases National Institutes of Health email: (b)(6) office tel: (b)(6)

From: Wheeland, D	aniel (NIH/OD/ORF) [E] <	(b)(6)		
Sent: Saturday, Mar	ch 21, 2020 7:28 PM			
To: Daucher, Maryb	eth (NIH/NIAID) [E] <	(b)(6)	Harper, Jill (NIH/N	IAID) [E]
<	(b)(6) Phillips, Donna (NI	H/OD/ORF) [E] <	(b)(6)	
Cc: Mascola, John (N	NIH/VRC) [E] <	(b)(6) Graham,	Barney (NIH/VRC)	[E]
<	(b)(6) McGowan, Collee	n (NIH/OD/ORS) [E] <		(b)(6) Veitch,
John (NIH/OD/ORS)	[E] <	(b)(6) Potts, Jeffrey (NIH	/OD/ORS) [E]	
<	(b)(6) Odegaarden, Grega	ar (NIH/OD/ORF) [E] <		(b)(6) Cowman,
Gretchen (NIH/OD/	ORF) [E] <	(b)(6) Memarza	adeh, Farhad (NIH/	OD/ORF) [E]

< 000 Guptill, Virginia (NIH/CC/OCRS) [E] < John (NIH/OD/ORS) [E] < 000 Miller, Mark F. (NIH/OD/ORF)	1000	b)(6) Veitch,
< (NIH/OD/ORF) [E] < (NIH/OD/OR	ALC: STOLEN	Floyd, William
All,		
I have annotated the drawings with red dots to think, mail and post signs.	(b) (5) _{;.}	We agreed, I ^{(b) (5)} via e-
Proposed action items:		
 We agreed, I think, to close NIAID will notify staff via e-mail and post signs. Roger Laferriere to (b) (5) Jeff Potts to contact (b) (5) Farhad will contact Mark Miller to contact 	(b) (5)	(b) (5) (b) (5)
(b) (5)		(b) (5)
Perhaps we should have another teleconference tomorrow.		
Dan		
<image001.jpg></image001.jpg>		

Thanks, Dan

Dan Wheeland, P.E. Director, Office of Research Facilities Office of Management National Institutes of Health

From: Wheeland, Daniel (NIH/OD/ORF) [E]		
Sent: Saturday, March 21	, 2020 6:20 PM		
To: Daucher, Marybeth (N	IIH/NIAID) [E] <	(b)(6) Harpe	er, Jill (NIH/NIAID) [E]
< (b)(6)	Phillips, Donna (NIH/OD/0	ORF) [E] <	(b)(б)
Cc: Mascola, John (NIH/VI	RC) [E] <	(b)(6) Graham, Barney	(NIH/VRC) [E]
< (b)(6	McGowan, Colleen (NIH/	OD/ORS) [E] <	(b)(6) Veitch,
John (NIH/OD/ORS) [E] <	(b)(6) Pc	otts, Jeffrey (NIH/OD/OR	S) [E]

Gretchen (NIH/OD/ORF) [E] < (b)(6) Memarzadeh, Farhad (NIH/O < (b)(6) Guptill, Virginia (NIH/CC/OCRS) [E] < John (NIH/OD/ORS) [E] < (b)(6) Miller, Mark F. (NIH/OD/ORF) [E] < (b)(6) Subject: RE: URGENT: Bldg 40 Cleanup	(ხ)(6) Cowman, DD/ORF) [E] (ხ)(6) Veitch,
I've copied and pasted the floor plan below and (b) (5), (b) (6).	(b) (5), (b) (6)
<image002.jpg></image002.jpg>	
Thanks, Dan	
Dan Wheeland, P.E. Director, Office of Research Facilities Office of Management National Institutes of Health	
From: Wheeland, Daniel (NIH/OD/ORF) [E] Sent: Saturday, March 21, 2020 6:14 PM	
To: Daucher, Marybeth (NIH/NIAID) [E] < (b)(6) Harper, Jill (NIH/N (b)(6) Phillips, Donna (NIH/OD/ORF) [E] < (b)(6) S Cc: Mascola, John (NIH/VRC) [E] < (b)(6) Graham, Barney (NIH/VRC) [(b)(6) McGowan, Colleen (NIH/OD/ORS) [E] < John (NIH/OD/ORS) [E] < (b)(6) Potts, Jeffrey (NIH/OD/ORS) [E] (b)(6) Odegaarden, Gregar (NIH/OD/ORF) [E] < Gretchen (NIH/OD/ORF) [E] < (b)(6) Memarzadeh, Farhad (NIH/O (b)(6) Guptill, Virginia (NIH/CC/OCRS) [E] < John (NIH/OD/ORS) [E] < (b)(6) Subject: RE: URGENT: Bldg 40 Cleanup	E] (b)(6) Veitch, (b)(6) Cowman,
I think a simple teleconference would work. Info is below.	

Dial In Number (b)(6) Passcode (b)(6)

Thanks, Dan Dan Wheeland, P.E. Director, Office of Research Facilities Office of Management National Institutes of Health

From: Daucher, Maryb	eth (NIH/NIAID) [E] <	(b)(6)		
Sent: Saturday, March	21, 2020 6:11 PM			
To: Harper, Jill (NIH/NI	AID) [E] <	(b)(6) Wheeland, Da	niel (NIH/OD/ORF)) [E]
< (b))(6) Phillips, Donna (NIH/(DD/ORF) [E] <	(b)(6)	
Cc: Mascola, John (NIH	/VRC) [E] <	(b)(6) Graham, Ba	rney (NIH/VRC) [E]]
< (b)(6) McGowan, Colleen (f	NIH/OD/ORS) [E] <		(b)(6) Veitch,
John (NIH/OD/ORS) [E]	< (b)(6) Potts, Jeffrey (NIH/O	D/ORS) [E]	
< (b)	6) Odegaarden, Gregar (NIH/OD/ORF) [E] <	(b)(6) Cowman,
Gretchen (NIH/OD/ORI	F) [E] <	(b)(6) Memarzade	eh, Farhad (NIH/O	D/ORF) [E]
<	(b)(6) Guptill, Virginia (N	NIH/CC/OCRS) [E] <	(b)	(6)
Subject: RE: URGENT: E	Bldg 40 Cleanup			

Should we set up a zoom meeting?

From: Harper, Jill	(NIH/NIAID) [E] <	(b)(6)	
Sent: Saturday, N	1arch 21, 2020 6:10 PM		
To: Wheeland, Da	aniel (NIH/OD/ORF) [E] <	(b)(6) Harper,	Jill (NIH/NIAID) [E]
<	(b)(6) Phillips, Donna (NII	H/OD/ORF) [E] <	(b)(6)
Cc: Mascola, John	n (NIH/VRC) [E] <	(b)(6) Graham, Barne	ey (NIH/VRC) [E]
<	(b)(6) Daucher, Marybet	th (NIH/NIAID) [E] <	(b)(6) McGowan,
Colleen (NIH/OD/	ORS) [E] < <u>colleen.</u>	ര്)ര്) Veitch, John (NIH	/OD/ORS) [E]
<	(b)(6) Potts, Jeffrey (NIH	/OD/ORS) [E] <	(b)(6) Odegaarden,
Gregar (NIH/OD/	ORF) [E] <	(b)(6) Cowman, Gretchen (NIH/OD/ORF) [E]
<	(b)(6) Memarzadeh	, Farhad (NIH/OD/ORF) [E] <	(b)(6)
Guptill, Virginia (I	NIH/CC/OCRS) [E] <	(b)(6)	
Subject: Re: URG	ENT: Bldg 40 Cleanup		

VRC folks, please confirm room number and availability to call at 6:30 pm.

From: "Wheeland, Da	aniel (NIH/OD/ORF) [E]" ·	<	(b)(6)	
Date: Saturday, Marc	ch 21, 2020 at 6:07:26 PN	Л		
To: "Harper, Jill (NIH)	/NIAID) [E]" <	(b)(6) "Phill	ips, Donna (NIH/C	DD/ORF) [E]"
<	(b)(6)			
Cc: "Mascola, John (N	JIH/VRC) [E]" <	(b)(6) "G	raham, Barney (N	IH/VRC) [E]"
<	(b)(6) "Daucher, Marybe	th (NIH/NIAID) [E]"	<	(b)(6)
"McGowan, Colleen (NIH/OD/ORS) [E]" <		(b)(6) "Veitch, Joh	nn (NIH/OD/ORS) [E]"
<	(b)(6) "Potts, Jeffrey (NIH	I/OD/ORS) [E]" <		(b)(6) "Odegaarden,
Gregar (NIH/OD/ORF) [E]" <	(b)(6) "Cowman	, Gretchen (NIH/C	D/ORF) [E]"

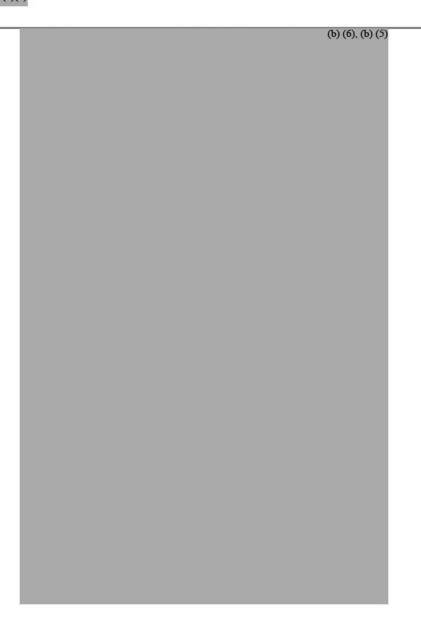
< (b)(6) "Memarza	adeh, Farhad (NIH/OD/ORF) [E]" <	(b)(6)
"Guptill, Virginia (NIH/CC/OCRS) [E]" <	(b)(6)	
Subject: RE: URGENT: Bldg 40 Cleanup		
10		
Jill,	(b)(6) le thet compat?	
 It was stated that it's (b) (5). Could we use 	(b) (6). Is that correct?	(b) (5)
(b) (5) I think		(b) (5)
	(b) (5)	
3. I propose a teleconference	at 6:30.	
Teleconference info:		
Dial In Number (b)(6)		
Passcode (b)(6)		
Theodo		
Thanks,		
Dan		
Dan Wheeland, P.E.		
Director, Office of Research Faciliti	ies	
Office of Management		
National Institutes of Health		
(b)(6)		
From: Harper, Jill (NIH/NIAID) [E] <	(b)(6)	
Sent: Saturday, March 21, 2020 5:24 PM		
To: Phillips, Donna (NIH/OD/ORF) [E] <	(b)(6) Wheeland, Dani	el (NIH/OD/ORF) [E]
< (b)(6)		
Cc: Mascola, John (NIH/VRC) [E] <	(b)(6) Graham, Barney (NIH,	
	ybeth (NIH/NIAID) [E] <	(b)(6) Harper, Jill
(NIH/NIAID) [E] < (b)(6) Subject: URGENT: Bldg 40 Cleanup		
Importance: High		

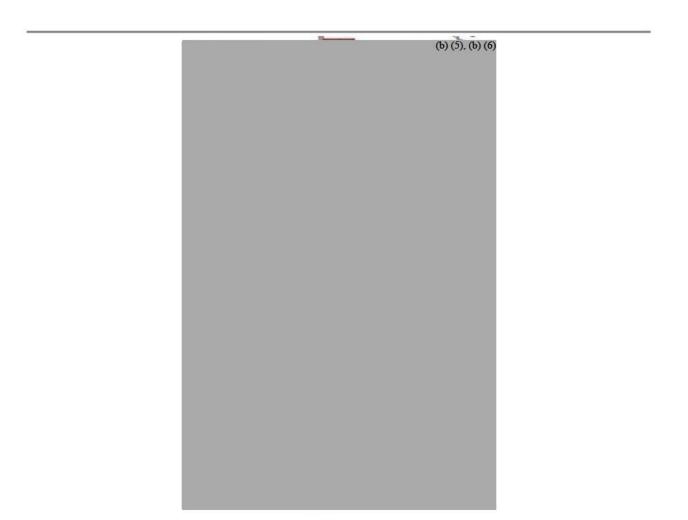
Donna and Dan,

NIAID would greatly appreciate your assistance in expediting clean-up of areas of Bldg 40, following the identification of a COVID-19 case in the building. As you know, the Vaccine Research Center is conducting critical research to develop vaccines to prevent COVID-19 as well as other basic and applied research to support the response to the current pandemic. Given VRC's mission criticality, it is important to ensure that the research can continue as soon as possible without extended closure.

I've copied Drs. Mascola, Graham, and Daucher on this email. Please let us know how we can assist in this effort.

Thanks, Jill Jill R. Harper, Ph.D. Associate Director for Science Management Office of Science Management and Operations (OSMO) NIAID/NIH/DHHS Bldg. 31, Room 7A24, MSC 2520 Bethesda, MD 20892-2520 Phone: (b)(6)





From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 1 Apr 2020 13:25:25 +0000
То:	Chen, Grace (NIH/NIAID) [E]
Subject:	RE: Niaid grand rounds

I could do that. Should have a lot more information by then.

Barney

From: Chen, Grace (NIH/NIAID) [E] <</th>(b)(6)Sent: Wednesday, April 1, 2020 9:20 AMTo: Graham, Barney (NIH/VRC) [E] <</td>Subject: FW: Niaid grand rounds

HI Barney,

I received this from Christa who's now the director of the NAIID ID fellowship and is planning NIAID grand rounds in May. Would you (or someone in your group) be interested in speaking about preliminary data or the development of the COVID vaccine?

Thanks, Grace

From: "Zerbe, Christa (NIH/NIAID) [E]" <</th>(b)(6)Date: Tuesday, March 31, 2020 at 11:40 PMTo: Grace Chen <</td>(b)(6)Subject: Niaid grand rounds

Grace is there someone at the VRC that could talk for 10-15 minutes at a virtual grand rounds about any data or preliminary data on covid vaccine development? We have John Beigel talking about his protocol and Dan Lucey talking. Was wondering if you or someone at the VRV could give a virtual talk about vaccine. Shooting for May 1, 8 am.

Christa Zerbe MD

Sent from my iPhone

From:	Graham, Barney (NIH/	VRC) [E]	
Sent:	Mon, 13 Apr 2020 12:36:35 +0000		
То:	Petrik, Amy (NIH/NIAID) [E];Morabito, Kaitlyn (NIH/VRC) [E]		
Cc:		C];Corbett, Kizzmekia (NIH/VRC) [E]	
Subject:	RE: Moderna (b) (4)		
Hi Amy,			
NIAID	(b) (5), (b) (4) ₁		
		(b) (4), (b) (5)	
BG			
From: Petrik, Amy (NIH,		(b)(6)	
Sent: Monday, April 13,			(6)
To: Graham, Barney (NI	The second se	(b)(6) Morabito, Kaitlyn (NIH/VRC)	[E]
Cc: Stein, Judy (NIH/VR	(b)(6)	(b)(6) Corbett, Kizzmekia (NIH/VRC) [E]	
	(b)(6)		
Subject: RE: Moderna	(b) (4)		
Thanks, Barney.			
We recently learned that	at		(b) (4)
		(b) (4)).	
Should that be an	(b) (5), (b) (4) ₁ ?		
Amy			
From: Graham, Barney		(b)(6)	
Sent: Sunday, April 12,		(A)(A)	
To: Morabito, Kaitlyn (N		(b)(6)	(b)(6)
Cc: Petrik, Amy (NIH/NI		(b)(6) Stein, Judy (NIH/VRC) [C] <	(0)(0)
Corbett, Kizzmekia (NIH Subject: Re: Moderna			
Subject Net Moderna	~~~~~		
Yes,		(t	b) (4), (b) (5)
		(b) (4), (b) (5)	

Barney

Sent from my iPhone

On Apr 10, 2020, at 10:47 AM, Morabito, Kaitlyn (NIH/VRC) [E]	(b)(6) > wrote:
On Apr 10, 2020, at 10:47 AW, Morabito, Kaitiyn (Nin/ VKC) [E]	wrote:

I think so, and I'm including Barney for his opinion.

From: "Petrik, Amy (NIH/NIAI	D) [E]" <	(b)(6)	
Date: Friday, April 10, 2020 at	: 10:06 AM		
To: Judy Stein <	(b)(б) "Morabito, Kaitl	lyn (NIH/VRC) [E]"	
< (b)(6)>			
Cc: Kizzmekia Corbett <	(b)(6)		
Subject: RE: Moderna (b) (4)			
Thanks, Kaitlyn and Judy.			
So we think that		(b) (4)	, (b) (5)
From: Stein, Judy (NIH/VRC) [C]	< (b)(6)		
Sent: Friday, April 10, 2020 9:52			
To: Morabito, Kaitlyn (NIH/VRC)	[E] <	(b)(6)	
Cc: Corbett, Kizzmekia (NIH/VRC) [E] <	(b)(6) Petrik, Amy (NIH/NIA	ID) [E]
< (b)(6)			
Subject: RE: Moderna (b) (4)			
Hi Kaitlyn,			
I am copying Amy here. We wil			(b) (4), (b) (5)
	We can explain that		(b) (4), (b) (5)
SARS-CoV-2.			
Thanks for letting me know.			
Judy			
		a.v.a	
From: Morabito, Kaitlyn (NIH/VF		(b)(6)	
Sent: Friday, April 10, 2020 9:50			
To: Stein, Judy (NIH/VRC) [C] < is		(h)(f)	
Cc: Corbett, Kizzmekia (NIH/VRC)[E] <	(b)(6)	
Subject: Re: Moderna (b) (4)			
Hi Judy,			
in suuy,			
I think we also need to		(b) (4), (b) (5)
	(b) (5), (b) (4)	of SARS-CoV-2.	

Kaitlyn

From: Judy Stein < (b)(6)	
Date: Saturday, April 4, 2020 at 12:34 PM	
To: "Morabito, Kaitlyn (NIH/VRC) [E]" <	(b)(6) "Morabito, Kaitlyn
(NIH/VRC) [E]" (b)(6)
Subject: Moderna (b) (4)	
Hi Kizzmekia and Kaitlyn,	
I hate to bother you with one more thing, but	do you think that you would be able to look at the
Moderna	(b) (4)
	(b) (4)
I am going to	(b) (4)
	(b) (4)
After you review, I will	(b) (4)
Thanks,	
ypnr	

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Fri, 31 Jan 2020 12:17:03 +0000	
То:	Marston, Hilary (NIH/NIAID) [E]	
Subject:	RE: 2019-nCoV vaccine / (b)	

Sure. It is public information.

BG

From: Marston, Hilary (NIH/NIAID) [E] <	(b)(6)	
Sent: Friday, January 31, 2020 7:03 AM To: Graham, Barney (NIH/VRC) [E] <	(b)(6) Pierson, Theodore (NIH/NIA	AID) [E]
This is excellent. May share with Erik and Alan?		
On Jan 31, 2020, at 5:47 AM, Graham, Barney (NIH,	/VRC) [E] <	(b)(6) wrote:
Thanks Ted,		
I totally agree with your definition and interpretation of		(b) (5) (b) (5)
		(b) (5)

We already have (b) (5), (b) (4) (b) (4), (b) (5), so I believe we are covered. Since (b) (4), (b) (5)	
(b) (4), (b) (5) would be	
informative.	
Barney	
From: Pierson, Theodore (NIH/NIAID) [E] <	
To: Beigel, John (NIH) [E] < (b)(6)	
Cc: Marston, Hilary (NIH/NIAID) [E] <hi (b)(6)="" (nih="" [e]<="" barney="" graham,="" td="" vrc)=""><td></td></hi>	
< (b)(6) Ledgerwood, Julie (NIH/NIAID) [E] < (b)(6)	
Subject: Re: 2019-nCoV vaccine / (b)	
Hi John,	
Thank you for the email. My apologies for the delay, I needed to revisit some of the SARS literature you referenced.	l
(b) ((5)
(b)	(5)

(ნ) (5)

	(b) (5). We and others have shown pretty		
carefully for	(b) (5), The concentrations of (b) (5)		
that	(b) (5) our thoughts are		
this is	(b) (5)		
	(b) (5)		

(b) (5)

1	1	1	1	5
1	(L	ŋ	6	2

(b) (5) (b) (5) ... I've cc'd folks in the VRC to add to

this element of this discussion.

Warmest regards,

I would expect the

Ted

From: "Beigel, John (NIH) [E]" <	(b)(6)		
Date: Tuesday, January 28, 2020 at 7:38 AM			
To: "Pierson, Theodore (NIH/NIAID) [E]" <	(b)(6)		
Subject: 2019-nCoV vaccine / (b) (4)			
Dr Pierson,			
DMID is developing the phase 1 protocol for the	nRNA LNP vaccine f	from Moderna for t	he 2019-
nCoV.			(b) (5), (b) (4)
			(b) (5), (b) (4)
Is there			(b) (4), (b) (5)
			(b) (4), (b) (5) ²
(b) (4)	(b) (5). However, if	we can	(b) (5), (b) (4)
	(b) (5), (b) (4) We would	d appreciate any
input you or your colleagues may have.			

Thanks, John John Beigel, M.D. Associate Director for Clinical Research Division of Microbiology and Infectious Diseases National Institute of Allergy and Infectious Diseases (NIAID) Phone: (1) (b)(6) email: (b)(6)

From:	Graham, Barney (NIH/VRC) [E]			
Sent:	Mon, 30 Mar 2020 00:05:54 +0000			
To:	Mascola, John (NIH/VRC) [E];Carlton, Kevin (NIH/VRC) [E];Gall, Jason (NIH/VRC)			
[C]				
Cc:	Ledgerwood, Julie (NIH/NIAID) [E];Koup, Richard (NIH/VRC) [E];Bok, Karin			
(NIH/VRC) [E];Daucher, Marybeth (NIH/NIAID) [E]				
Subject:	RE: Phase 2 Pre-IND			
Attachments:	FDA pre-IND comments excerpted.docx, PTS 5499 mRNA-1273 SARS CoV 2			
Vaccine Written Responses with highlights.pdf				

Hi Kevin,

We have a recurrent 11am coordination meeting of the VPL/Virology core bldg. 40 team every Monday. We were planning to discuss the pre-clinical data and plans to satisfy the pre-IND comments needed to move into phase 2 tomorrow. There is a meeting with DMID, Moderna, and VRC to discuss this on Wednesday at 4pm.

I excerpted the relevant text from the pre-IND comments and highlighted main requirements. The appendices A and B from the pre-IND submission are attached for your reference.

You are welcome to come to the 11am meeting and we can also discuss later in day perhaps with Julie to make sure I am reading everything correctly, and so VRC can be aligned before Wed call.

I'm tied up all morning on Tues and Wed for the virtual SAGE meeting.

Barney

Original Message From: Mascola, John (NIH/VRC) [E] <	(b)(6)
Sent: Sunday, March 29, 2020 7:32 PM	
	(6) Gall, Jason (NIH/VRC) [C] < (b)(6)
	(b)(6) Ledgerwood, Julie (NIH/NIAID) [E]
(b)(6) Koup, Richard (NIH/VRC) [E]	
(NIH/NIAID) [E] < (b)(6)	
Subject: FW: Phase 2 Pre-IND	
Hi Kevin, and Jason	
Please see Barney's note below and relay this weeks plans for	or CoV specific meetings, both strategic and tactial.
Thanks, John	
Original Message	
From: Graham, Barney (NIH/VRC) [E] <	(b)(6)·
Sent: Saturday, March 28, 2020 9:54 AM To: Mascola, John (NIH/VRC) [E] < (b)	6
Cc: Ledgerwood, Julie (NIH/NIAID) [E] <	(b)(6) Corbett, Kizzmekia (NIH/VRC) [E]
< (b)(6) Morabito, Kaitlyn (NIH/VR	· · · · · · · · · · · · · · · · · · ·
(NIH/VRC) [E] < (b)(6) Alvarado, Gabriela	
Subject: Phase 2 Pre-IND	

Hi John et al.

I got a preview of the FDA comments back to Moderna this morning and the clinical and Pre-clinical requirements to address (b) (5), (b) (4);.

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

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

Barney

Sent from my iPhone

From:	Graham, Barney (NIH/VRC) [E]		
Sent:	Wed, 18 Mar 2020 14:29:32 +0000		
To:	(b) (4)		
Cc:	Chopra, Nandita (NIH/NIAID) [E];	(b) (4) ';Gall, Jason (N	JIH/VRC)
[C];Mascola, Joh	n (NIH/VRC) [E];Corbett, Kizzmekia (NIH/VRC) [E];Bok, Karin (NIH/VRC)	[E];Morabito,
Kaitlyn (NIH/VRC	C) [E];Alvarado, Gabriela (NIH/VRC) [C];Stein, Ju	dy (NIH/VRC) [C];	(b) (4) '
Subject:	RE: Equivalent technology to		(b) (4)
presentation and	d proposal		

Thanks (b) (4) Very helpful to know (b) (4). We will help you in working toward these goals.

Barney

From:	(b) (4) <		(b) (4), (b) (6)		
Sent: Wedr	nesday, March 18,	2020 4:17 AM			
To: Graham	n, Barney (NIH/VR	C) [E] <	(b)(6)		
Cc: Chopra,	Nandita (NIH/NI)	AID) [E] <	(b)(6) '	(b) (4) ¹	(b) (6), (b) (4) -
(b) (4), (b) (6) Gall, Ja	son (NIH/VRC) [C] <	(b)(6)	Mascola, John (N	IIH/VRC) [E]
<	(b)(6) Co	orbett, Kizzmekia (NIH	I/VRC) [E] <		(b)(6) Bok, Karin
(NIH/VRC)	[E] <	(b)(6) Morabito, Kai	tlyn (NIH/VRC) [E] <		(b)(6)
Alvarado, G	abriela (NIH/VRC) [C] <	(b)(6) Stein,	Judy (NIH/VRC)	[C]
<	(b)(6)	(b) (4)' <	(b) (4) ,	(b) (6)	
Subject: RE proposal	: Equivalent techr	hology to		(b) (4) - pr	esentation and

Dear Barney,

Thank you very much for your email.



(b) (4)

(b) (4)

This is what is complete picture, I thought I should share with you.

Regards, (b) (4)

.

	(b) (4), (b) (6)	
Ph-	(b) (4), (b) (6)	
Fax- (b) (4), (b) (6)	
Forwarded mes	sage	
From: Graham, Barney	(NIH/VRC) [E] < (b)(6)	
Date: Wed, Mar 18, 202	0 at 12:15 AM	
Subject: RE: Equivalent t	echnology to	(b) (4) - presentation and
proposal		
To: (b) (4) <	(b) (4), (b) (6) Chopra,	Nandita (NIH/NIAID) [E]
< (t	p)(6)	
Cc: (b) (4) <	(b) (4), (b) (6) Ga	II, Jason (NIH/VRC) [C]
< (b)(6) N	Iascola, John (NIH/VRC) [E] <	(b)(6) Corbett, Kizzmekia
(NIH/VRC) [E] <	(b)(6) Bok, Karin (NIH/VR	C) [E] (b)(6) Morabito,
Kaitlyn (NIH/VRC) [E] <	(b)(6) Alvarado, Ga	briela (NIH/VRC) [C]
<gabriela.< td=""><td>(b)(6) Stein, Judy (NIH/VRC) [C] <</td><td>(b)(6)</td></gabriela.<>	(b)(6) Stein, Judy (NIH/VRC) [C] <	(b)(6)

Thanks (b) (4)

Barney
From: (b) (4) < (b) (4). (b) (6)
Sent: Tuesday, March 17, 2020 12:07 PM
To: Chopra, Nandita (NIH/NIAID) [E] < (b) (6)

Cc:	(b) (4) <	(b) (4), (b) (6) Graham, Barney (NIH/VRC) [E]
<	(b)(6)	
Subject: F proposal	wd: Equivalent technology to	(b) (4) - presentation and
Dear Nand	lita & Barney ,	
		(b) (4)
regards (b) (4)		

Dear Barney,

I was not sure if your email ID so sending email to Nandita (as discussed with her) she will forward it to you

Regards (b) (4)

Please pardon me for any auto-correct spelling errors , may leading incorrect interpretation. Feel free to send me email to get clarity.

Sent from iPhone

Begin forwarded message:

From:	(b) (4) <	(b) (4), (b) (6)		
Date: 16 M	March 2020 at 10:42:06 PM IS	ST		
To:	(b) (4) <	(b) (4), (b) (6)		
Cc: '	(b) (4)" <	(b) (4), (b) (6)	(b) (4)	
<	(b) (4), (b) (6)	(b) (4) <	(b) (4), (b) (6)	
Subject: A	W: Equivalent technology to	D	(b) (4) - pre	esentation

and proposal

Dear (b) (4)

please find attached hereto the requested slides about the approach of	(b) (4)
· · · · · · · ·	(b) (4)
	(b) (4)

(b) (4)

(b) (4)

Kindly inform, if these slides serve your needs.

Best wishes,

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

_	 _	_	
			(b) (4)

(b) (4)

STATEMENT OF CONFIDENTIALITY

Von: (b) (4)		
Gesendet: Montag, 16. März 2020 11:07		
An: (b) (4)'		
Cc:	(b) (4)	
Betreff: AW: Equivalent technology to proposal		(b) (4) - presentation and
Wichtigkeit: Hoch		

Dear (b) (4)

As promised, we have digested the article sent by you and additional publications and trust being able to present exciting and promising approaches.



(b) (4) (b) (4) All publications are attached hereto for your review. We stay available at any time to discuss this proposal in more detail in a telco, (b) (4) (b) (4)

(b) (4)

Please drop me a short reply call or mail to agree on next steps.

With best regards,

(b) (4)

.....

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

STATEMENT OF CONFIDENTIALITY

The information contained in this electronic message and any attachments to this message are intended for the exclusive use of the addressee(s) and may contain confidential or privileged information. If you are not the intended recipient, please notify (b) (4) immediately at either (b) (4)

(b) (4) and destroy all copies of this message and any attachments.

Von: (b) (4) [ma	ailto	(b) (4), (b) (6)	
Gesendet: Freitag, 13. Mä	rz 2020 12:37		
An: (b) (4)			
Cc:	(b) (4)'		
Betreff: Equivalent technol	logy to		(b) (4) - presentation and
proposal			

Dear (b) (4)

Regards,

(b) (4)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 20 Mar 2020 17:40:21 +0000
To:	Case, Chris (NIH/NCI) [C];Kanekiyo, Masaru (NIH/VRC) [E];Scorpio, Diana
(NIH/VRC) [E];Taylor,	Alida (NIH/VRC) [E];Boyoglu-Barnum, Seyhan (NIH/VRC) [E];Lederhofer, Julia
(NIH/VRC) [F]	
Cc:	Gupta, Shanker (NIH/VRC) [E];Daucher, Marybeth (NIH/NIAID) [E];Wilson, Hope
(NIH/VRC) [E];Harris,	Christina (NIH/NIAID) [E]
Subject:	RE: (b) (4) during COVID-19 response

Thank you Chris. We may need some new task orders for CoV work.

Barney

From: Case, Chris (NIH/NCI) [C] <	(b)(6)
Sent: Friday, March	1 20, 2020 1:30 PM	
To: Kanekiyo, Masa	aru (NIH/VRC) [E] <	(b)(6) Scorpio, Diana (NIH/VRC) [E]
<	(b)(6) Taylor, Alida (NIH/VRC) [E]	< (b)(6) Boyoglu-Barnum, Seyhan
(NIH/VRC) [E] <	(b)(6) Le	derhofer, Julia (NIH/VRC) [F]
<	(b)(6)	
Cc: Gupta, Shanker	(NIH/VRC) [E] <	(b)(6) Graham, Barney (NIH/VRC) [E]
<	(b)(6)	
Subject:	(b) (4) during COVID-19 response	

Hi all,

I want to make everyone aware that as a result	(b) (4)
	(b) (4)
	(b) (4

I have been in contact with the individual scientists at VRC to discuss the specific studies that are impacted.

Please let me know if there are any questions or concerns.

Best, Chris

Chris Case, Ph.D. (Contractor)

Manager, Scientific Programs Vaccine Clinical Materials Program Frederick National Laboratory for Cancer Research Leidos Biomedical Research, Inc. 7114 Geoffrey Way Frederick, MD 21704 Phone: (b)(6) Fax: 301-228-4039

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From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Tue, 17 Mar 2020 17:47:36 +0000	
То:	Young, Monique (NIH/VRC) [E]	
Subject:	FW: Please respond: DMID/VRC/IDCRC LOU/Denison call to discuss	(b) (4)
(b) (4) COVID-19 trial	

FYI

BG

From: Renee Ireton <	(b)(6)				
Sent: Tuesday, March	17, 2020 12:11 AM				
To: Lee, Marina (NIH/	NIAID) [E] <	(b)(6) Graham, E	arney (NIH/VRC	:)[E]	
<	(b)(6) Morabito, Kaitlyn	(NIH/VRC) [E] <		(b)(6) Rober	ts, Chris
(NIH/NIAID) [E] <	(b)(6) Buc	hanan, Wendy (NIH/I	NIAID) [E] <		(b)(6)
Cc: Michael J Gale <	(b)(6)				
Subject: Please respon	nd: DMID/VRC/IDCRC L	OU/Denison call to di	scuss		(b) (4)
COVID-19 trial					
Hello,					
	nd to the email below v		nes for a call wit	h Mark Denis	on to
discuss	(b) (4) for COV	ID-19 trial.			
Thank you!					
From: Renee Ireton					
Sent: Friday, March 1	3, 2020 3:37 PM				
To: McElrath, Julie <	(b)(6) Posavad, Chris		(b)(6)	
(b)(6)	Chappell, Jim <	(b)(d) Der	nison, Mark		
<	(b)(6) Ralph Baric <	(b)(6)		(b)(6)	
	(b)(6)	(b)(6)	(b)(6)		(b)(6)
	(b)(6)				
Cc: Michael J Gale <	(b)(6) Roessn	ner, Ashley G <	(t)(6)	
Subject: DMID/VRC/II	DCRC LOU/Denison call	to discuss	(b) (4) for COVID-:	19 trial

Hello,

We would like to schedule a call between the DMID/VRC/IDCRC LOU/Mark Denison to discuss the (b) (4) COVID-19 vaccine trial. Below I have listed possible dates/times for this meeting. Please let me know if you are NOT available at any of the listed times. We will send an agenda prior to the meeting once the time has been confirmed. We would like to have 30 min for this call. Thursday, 3/19: noon-1pm ET (11am-noon CT, 9-10am PT) Thursday 3/19: 2pm-3pm ET (1pm-2pm CT, 11am-noon PT) Friday 3/20: 10am-11am ET (9am-10am CT, 7-8am PT) Friday 3/20: anytime between noon-3pm ET (11am-2pm CT, 9-noon PT)

Thank you!

Renee Ireton, Ph.D.

Assistant Director Center for Innate Immunity and Immune Disease (CIIID) UW School of Medicine Department of Immunology 750 Republican St. Seattle, WA 98109 (b)(6) (b)(6) CIIID website: https://ciiid.washington.edu/ Gale laboratory website: http://depts.washington.edu/galelab/



From:Graham, Barney (NIH/VRC) [E]Sent:Thu, 19 Mar 2020 15:41:59 +0000To:Pontiano KaleebuSubject:Re: COVID-19

Glad to hear there are (b) (4).

Even we are starting to have some problems with the supply chain for reagents. I would try to get ahead of that and try to accumulate more than you think you need.

Barney

Sent from my iPhone

On Mar 19, 2020, at 11:01 AM, Pontiano Kaleebu <	(b)(6). wrote:
--	----------------

Dear Barney

Many thanks for the message and good to know the v	accine trial is progressing well. For COVID-19 we
are using the	(b) (4). We are
	(b) (5)

Best wishes Pontiano

From: Graham, Barney (NIH/VRC) [E] [mailto		(b)(6)
Sent: 19 March 2020 14:35		
To: Pontiano Kaleebu <	(b)(6)	
Subject: COVID-19		

Hi Pontiano,

Hope you and your family are well and staying safe.

I've been wondering about Africa these last few weeks. Do you have the primers and reagents to do PCR testing? There are so many Chinese and other nationalities visiting and living in Africa, the virus has to be there, but there is not much information even from WHO.

Our Phase 1 vaccine trial started.	(b) (4), but as you know
it will take time to go through the phases.	

Best wishes,

Barney

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NIH-004529

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 1 Apr 2020 11:23:13 +0000
То:	Seder, Robert (NIH/VRC) [E]
Subject:	FW: VRC/Reithera Coronavirus Discussion

FYI.

BG

From: Graham, Barney (NIH/VRC) [E]					
Sent: Wednesday, April 1, 2020 6:20 AM To: Alessandra Vitelli <		ein, Judy (NIH/\			
< (b)(6) Manuela Mazzes	CONTRACTOR IN CONTRACTOR INCONTRACTOR INCONTRACTOR IN CONTRACTOR INCONTRACTOR INCONTRACTORICONTRACTOR INCONT		ው)(6) Petrik, Am		
	Vorabito, Kaitlyn (N		(0)(0) Petrik, Am	у (b)	(6)
Alvarado, Gabriela (NIH/VRC) [C] <			harla (NIH/NIAID)		
	zmekia (NIH/VRC) [E		(b)(6)		
Cc: Bok, Karin (NIH/VRC) [E] <	(b)(6) Antonella				(b)(6)
Gall, Jason (NIH/VRC) [C] <	(b)(6) Stefano Coll			(b)(6)	
Carlton, Kevin (NIH/VRC) [E] <	(b)(6) Masc	ola, John (NIH/	VRC) [E]		
< (b)(6)					
Subject: RE: VRC/Reithera Coronavirus D	iscussion				
Hi Alessandra,					
Thank you for (b) (4)					
					(b) (4)
				(b) (4	4), (b) (5)
				(b) ((4), (b) (5)
Best wishes,					
Barney					
From: Alessandra Vitelli <	(b)(6)				

Sent: Tuesday, March 31, 2020 12:26 PM

	anuela Mazzeschi	
< (b)(6) Petrik, Amy (NIH		(b)(6) Morabito,
	arado, Gabriela (NIH/VRC) [C	
< (b)(6) Andrews, Charla (NIH/N	AID) [C] <	(b)(6) Corbett,
Kizzmekia (NIH/VRC) [E] < (b)(6)		
Cc: Graham, Barney (NIH/VRC) [E] <	(b)(6) Bok, Karin (NIH/VRC)	[E]
< (b)(6) Antonella Folgori <	(b)(6) Stefan	o Colloca
< (b)(6)		
Subject: RE: VRC/Reithera Coronavirus Discussion		
Dear Barney and team,		
		(b) (4)
Please, let me know any comment you might have		
Thank you very much		
Kind regards		
Alessandra		
Alessaliura		
From: Stein, Judy (NIH/VRC) [C] [mailto	(b)(6)	
Sent: venerdì 27 marzo 2020 15:28		
To: Manuela Mazzeschi <	(b)(6) Petrik, Amy (NIH/NI/	AID) [E]
< (b)(6) Morabito, Kaitlyn (NIH/VRC) [E	200022	6 Alvarado, Gabriela
(NIH/VRC) [C] < (b)(6) Andrews,	Charla (NIH/NIAID) [C]	
< (b)(6) Corbett, Kizzmekia (NIH/V	RC) [E] <	(b)(6)
Cc: Graham, Barney (NIH/VRC) [E] <	(b)(6) Bok, Karin (NIH/VRC)	[E]
< (ه)(ه) Alessandra Vitelli <	(මාරා Anton	ella Folgori
< (b)(6) Stefano Colloca <	(b)	(6)
Subject: RE: VRC/Reithera Coronavirus Discussion		
Thanks Manuela.		
From: Manuela Mazzeschi <	(b)(6)	
Sent: Friday, March 27, 2020 10:21 AM		
To: Stein, Judy (NIH/VRC) [C] < (b)(6) Pe	etrik, Amy (NIH/NIAID) [E] <	(b)(6)
Morabito, Kaitlyn (NIH/VRC) [E] <	ര്രി Alvarado, Gabriela (N	IIH/VRC) [C]
< (b)(6) Andrews, Charla (NIH/N	AID) [C] <	(b)(6) Corbett,
Kizzmekia (NIH/VRC) [E] < (b)(б)		
Cc: Graham, Barney (NIH/VRC) [E] <	(b)(6) Bok, Karin (NIH/VRC)	[E]
< (b)(6) Alessandra Vitelli <	(b)(6) Anton	ella Folgori
< (b)(6) Stefano Colloca <	(b)	(6)
Subject: RE: VRC/Reithera Coronavirus Discussion		
Deen lude		

Dear Judy, Thanks for your email. The draft you provided us with is fine with us and as yesterday Alessandra shared with Gabriela our proposal for the research plan, it seems we are close to a possible finalization of the agreement.

Thanks for your collaboration, Manuela

From: Stein, Jud	y (NIH/VRC) [C] < (b))(6)		
Sent: giovedì 26	marzo 2020 12:37			
To: Manuela Ma	zzeschi <	(b)(6)	Petrik, Amy (NIH/NIAI	D) [E]
<	(b)(6) Morabito, Kaitlyn (NIH/VRC)	[E] <	(b)(6)	Alvarado, Gabriela
(NIH/VRC) [C] <	(b)(6) Andrew	vs, Charla	(NIH/NIAID) [C]	
<	(b)(6) Corbett, Kizzmekia (NIH	/VRC) [E]	<	(b)(6)
Cc: Graham, Bar	ney (NIH/VRC) [E] <	(b)(6)	Bok, Karin (NIH/VRC) [E	[]
<	(b)(6) Alessandra Vitelli <		(b)(6) Antonel	la Folgori
<	(b)(6) Stefano Colloca	<	(b)(6)
		20		

Subject: RE: VRC/Reithera Coronavirus Discussion

Dear Manuela,

The VRC is drafting a research plan for a collaborative effort and should have be able to send a version for your review soon.

I have attached our template research collaboration agreement (RCA) terms. Once there is a research plan, we will merge it with these terms and then circulate for final review and signature.

Thanks very much. Judy

(b)(6)

From: Manuela Mazzeschi < (b)(6)

FIOID. Manue		(0)(0)	
Sent: Thursda	y, March 26, 2020 5:29 AM		
To: Stein, Jud	y (NIH/VRC) [C] < (b)	6 Petrik, Amy (NIH/NIAID) [E] <	(b)(6)
Cc: Graham, E	Barney (NIH/VRC) [E] <	(b)(6) Sullivan, Nancy (NIH/VRC) [E]	
<	(b)(6) Bok, Karin (NIH/VRC) [E] <	(b)(6) Alessandra Vitelli	
<	(b)(6) Antonella Folg	gori < (b)(6) Stefano	
Colloca <	(b)(6)		
Subject: EW/-	VBC/Reithera Coronavirus Discussion		

Subject: FW: VRC/Reithera Coronavirus Discussion

Dear Judy and Amy,

following to the positive recent discussion we had, we are eager to start working together on this project.

If you agree,	, can you please provide us with your template?	

(b) (4) In order to ponder

all possible scenarios, would you be able to provide us with some information for the licencing in terms of activation fee, royalties and payment milestones?

Thanks and kind regards, Manuela

From: Graham, Barne	y (NIH/VRC) [E] <	(b)(6)		
Sent: martedì 24 mar	zo 2020 01:32			
To: Alessandra Vitelli	<	(b)(6)		
Cc: Bok, Karin (NIH/VI	RC) [E] <	(b)(6) Gall, Jason (NIH/VRC	C) [C] <	(b)(6)
Corbett, Kizzmekia (N	IH/VRC) [E] <	(b)(6) Morab	ito, Kaitlyn (NIH/V	RC) [E]
<	(b)(6) Alvarado, Gal	briela (NIH/VRC) [C] <	(b)(6) Carlton,
Kevin (NIH/VRC) [E] <	(b)(6) Ledgerwood, Julie (NIH/I	NIAID) [E]	
<	(b)(6) Sullivan, Nancy	(NIH/VRC) [E] <	(b)(6)	
	(b)(6) Antonella Folg	ori <	(b)(6) >; Stein, J	udy (NIH/VRC)
[C] <	(b)(6) Petrik, Amy (NIH	1/NIAID) [E] <	(b)(6) Young, Mc	onique
(NIH/VRC) [E] <	(b)(6) S	uhana, Tina (NIH/VRC) [E]		(b)(6) Austin,
Sarah (NIH/NIAID) [E]	<	(b)(6) Grier, Shardae (NIH/VF	(C) [E]	(b)(6)
Taylor, Stephanie (NII	H/NIAID) [E] <	هه (b)(6) Chapman,	Latanya (NIH/VRC) [C]
<	(b)(6) Manuela Ma	zzeschi <	(b)(6)	Stefano
Colloca <	(b)(6)			
Subject: Re: VRC/Reit	hera Coronavirus Disc	cussion		

Thanks Alessandra. I agree with the content of vou outline

(b) (4) (b) (4)

How much we can support your work in an active collaboration we need additional time to decide. There is a lot going on and we have a reduced work force.

Putting the agreements in place would be a good place to start.

Take care,

Barney

Sent from my iPhone

On Mar 23, 2020, at 7:13 PM, Alessandra Vitelli <

(b)(6) wrote:

Dear Barney,

I wish to thank you and all the VRC team for the interesting discussion last Friday.

If I may try to summarize our conversation, here are some notes and questions:

(b) (4)

Please, let me know if I missed some points

Hoping to hear from you soon Best wishes Alessandra

Alessandra Vitelli CSO, ReiThera Srl Via di Castel Romano, 100 00128 – Rome Tel: (b)(6)

×

<Picture (Device Independent Bitmap) 1.jpg>

From:Graham, Barney (NIH/VRC) [E]Sent:Tue, 3 Mar 2020 17:11:04 +0000To:Fauci, Anthony (NIH/NIAID) [E];George GAOCc:Mascola, John (NIH/VRC) [E];Conrad, Patricia (NIH/NIAID) [E];Conrad, Patricia(NIH/NIAID) [E];戴连攀RE: Vaccine—confidential PPT

Thank you for sharing this information George. Your colleague Dr. Lai mentioned this approach to me in a previous email and the data you show look promising. As you know, Moderna is (b) (4)

(b) (4)

Please let us know how you would like us to proceed and we can initiate the contact.

Best wishes,

Barney

From: Fauci, Anthon	y (NIH/NIAID) [E] <	(b)(6)	
Sent: Tuesday, Marc	h 3, 2020 8:10 AM		
To: George GAO <	(b)(6)		
Cc: Mascola, John (N	IH/VRC) [E] <	(b)(6) Conrad, Patric	ia (NIH/NIAID) [E]
<	(b)(6) Graham, Barney (I	NIH/VRC) [E] <	(b)(6) Conrad, Patricia
(NIH/NIAID) [E] <	(b)(6)		
Subject: FW: Vaccine	e—confidential PPT		

George:

Thanks for the note. I will send this to Dr. John Mascola Director of the NIAID Vaccine Research Center and Dr. Barney Graham to follow-up with you. Best regards,

Tony

Anthony S. Fauci, MD Director National Institute of Allergy and Infectious Diseases

Building 31, Room 7A-03 31 Center Drive, MSC 2520 National Institutes of Health Bethesda, MD 20892-2520 Phone: (301) (b)(6) FAX: (301) 496-4409 E-mail: (b)(6)

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(b) (4)

(b) (4)

From: George GAO < (b)(6) Sent: Tuesday, March 3, 2020 7:12 AM To: Fauci, Anthony (NIH/NIAID) [E] < (b)(6) Subject: Vaccine—confidential PPT

Dear Tony Hope this email finds you well and the US will soon get the COVID-19 down.

I know you have

(b) (4)

All the best George

发自我的iPhone

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 22 Apr 2020 15:22:19 +0000
То:	Wilson, Hope (NIH/VRC) [E];Morabito, Kaitlyn (NIH/VRC) [E];Royal, Thomas
(NIH/NIAID) [E]	;Alvarado, Gabriela (NIH/VRC) [C];Osei, Gloria (NIH/VRC) [C]
Subject:	RE: Cost Summary Report - April

Ні Норе,

Thank you for the summary. Today is complicated by a lecture I was asked to give between 3 and 4 pm. Hopefully Kaitlyn or Gabriela will be available.

Barney

From: Wilson, Hope	(NIH/VRC) [E] <	(b)(6)	
Sent: Tuesday, April	21, 2020 7:28 PM		
To: Graham, Barney	(NIH/VRC) [E] <	(b)(6) Morabito, Kai	tlyn (NIH/VRC) [E]
<	(b)(6) Royal, Tho	mas (NIH/NIAID) [E] <	(b)(6) Alvarado, Gabriela
(NIH/VRC) [C] <	(b)(6) Osei, Gloria (NIH/VRC) [C] <	(b)(6)
Subject: Cost Summ	ary Report - April		

(b) (5)

Hi Barney,

Attach is the Cost Summary report for our review tomorrow.

Highlights:

Thanks,

Hope Wilson Lead, Program Analyst NIH/NIAID/VRC (b)(6) cell

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 15 Mar 2020 06:46:02 +0000
То:	Ackermann, Mark R
Subject:	Re: (b) (4)
Attachments:	image002.jpg

Hi Mark,

That seems like a reasonable concept, but I am better on vaccines than I am on antivirals. DMID people like Sonnie Kim May be interested.

(b) (4) . Ralph Baric has made (b) (4)

Best wishes,

Barney

Sent from my iPhone

On Mar 14, 2020, at 10:23 PM, Ackermann, Mark R <	(b)(6)
wrote:	

Hi Barney

A thought about a COVID-19 therapy if you don't mind. I am very hesitant to bother you, but I thought maybe you would have insight on the concept and perhaps ideas of others who may as well. So, I apologize ahead of time.

Several years ago we showed		(b) (4)
		(b) (4
I am thinking that	(b) (4). Also,	the (b) (4)
	(b) (4) As above,	(b) (4)
(b) (4)		
		(b) (4)

(b) (4)

(b) (4)

I hope that you are doing well!

Thank you Barney

Mark

(b) (4)

<image002.jpg>

Reviews:

(b) (4) (b) (4)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 13 Feb 2020 06:04:40 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Cc:	Morabito, Kaitlyn (NIH/VRC) [E];Abiona, Olubukola (NIH/VRC) [F];Wang, Lingshu
(NIH/VRC) [E]	
Subject:	Re: Emerging Microbes and Infections

Your call.

BG

Sent from my iPhone

On Feb 13, 2020, at 12:08 AM, Corbett, Kizzmekia (NIH/VRC) [E]

I would propose that if Olu can get the and go here, if it's still an option...

(b) (4) a full story

Would be good for Olu's CV.

(obviously cleaning out my inbox today)

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, Septembe	r 6, 2019 at 5:56 PM	
To: Kaitlyn Morabito <	(b)(6) "Kanekiyo, Masaru (NIH/VRC) [E]"	
<	(b)(6) "Ruckwardt, Tracy (NIH/VRC) [E]" <	(b)(6)

Kizzmekia Corbett <	(b)(6) Michelle Crank <	(b)(6)
Cc: "Bok, Karin (NIH/VRC) [E]" <	(b)(6)	
Subject: Emerging Microbes and Infection	ons	

My former postdoc and friend, Yi-Wei Tang, who is director of molecular diagnostics at Sloan-Kettering and who originally introduced us to the people in Xiamen and who has also helped in many other ways (for example the (b) (4)), has asked me to consider submitting a paper to this journal for which he is one of the Associate Editors along with Adolfo Garcia-Sastre and a few other people we know. Shan Lu from U Mass is the editor in chief. The impact factor is 6.2 which is higher than Journal of Virology.

If there is something that would fit this journal, please keep it in mind and let me know. He would also be receptive to editorials and commentaries if you have an opinion that needs to be broadcast.

Thanks,

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/	(b)(6)

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From:Graham, Barney (NIH/VRC) [E]Sent:Sat, 7 Mar 2020 16:56:39 +0000To:Jon CohenSubject:RE: Coronavirus vaccine literatureAttachments:RSV vaccine-enhances disease in NHP J Virol 2002.pdf, Atypical measles RhesusNat Med 2007.pdf

Ways of studying vaccine enhanced disease in an animal model.

Barney

-----Original Message-----From: Jon Cohen < (b)(6) Sent: Friday, March 6, 2020 5:37 PM To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Coronavirus vaccine literature

Hi Barney,

I want to do a story about human coronavirus vaccines studied in the past. I want to read everything.

Is there a review article with references with SARS, MERS and 4 common cold ones?

If not, can you give me a reading list?

Then once I'm done, I want to interview you, the guru.

Thanks Professor,

Jon

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Tue, 31 Mar 2020 00:53:36 +00	00
To:	Eric Sievers	
Subject:	RE: Conversations with	(b) (4); might you provide your thoughts
please?		

Hi Eric,

Seems like a clever idea and would be nice to see (b) (4) responses.

We are too busy at the moment to think about new collaborations, but I will forward your email to DMID who is processing these types of ideas.

You might also look at Scripps near you to see if any of the immunologist there are interested.

Take care,

Barney

From: Eric Sievers <	(b)(6)
Sent: Sunday, March 22, 2020 9:19 AM	
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)
Subject: Conversations with	(b) (4); might you provide your thoughts please?
Importance: High	2 3 9250 5333 PA

Dear Dr. Graham,

Might you and I share a call to discuss further? I'm working every day on this effort, so no worries regarding weekends or hour of the day. I live in (b) (6).

Grateful during these extraordinary times, Eric

Eric Sievers, MD Consulting Medial Officer Symvivo + (b)(6)

 From:
 (b)(6)

 Sent:
 Mon, 27 Apr 2020 21:53:28 -0400

 To:
 Neil King

 Subject:
 Gates

 Attachments:
 image002.JPG, ATT00001.txt

Hi Neil,

You think Bill Gates remembers the first time he heard about the coronavirus spike protein?

(b) (4) We need to discuss what type of experimental data is needed to get to a paper.

Barney



From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 26 Feb 2020 19:51:04 +0000
To:	(b)(6)
Subject:	Graham BioSketch for RSV 2020
Attachments:	Graham BioSketch for RSV 2020.docx

Updated RSV biosketch

BG

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 9 Apr 2020 20:58:01 +0000
То:	Reilly, Deborah (NIH/VRC) [E]
Subject:	Accepted: COVID-19 Daily Check-in

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 13 Mar 2020 09:52:09 +0000
То:	Ledgerwood, Julie (NIH/NIAID) [E]
Subject:	Re: IP

Separate. The first one is just (b) (4). (b)

There will will be		(b) (4), (b) (5),
BG		
Sent from my iPhone		
On Mar 12, 2020, at 10:06 PM, Ledgerwood, Julie (NIH/NIA) wrote:	ID) [E] <	(b)(6).
Thanks Barney I meant to ask—will the patent filing for separate? Thanks, Julie	(b) (4), (b) (5)	be combined? Or
On Mar 11, 2020, at 4:58 PM, Graham, Barney (NIH/VRC) [I wrote:	E] <	(b)(6)
Sounds fine. I think everyone needs to Make an honest assess BG	ment and decide	for themselves.
Sent from my iPhone		
On Mar 11, 2020, at 2:27 PM, Ledgerwood, Julie (NIH/NIAII wrote:	D) [E] <	(b)(6).
Hi Barney I did some digging and I think		(b) (4), (b) (5) (b) (4), (b) (5)
However,	(h) (d) (h) (5)	(b) (4), (b) (5)
Does that seem acceptable to you?	(b) (4), (b) (5)	

Best, Julie

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

(b)(6)

From:Graham, Barney (NIH/VRC) [E]Sent:Thu, 6 Feb 2020 16:19:23 +0000To:Corbett, Kizzmekia (NIH/VRC) [E]Subject:RE: Assigned to You: Edit Kizzmekia's (b) (5) rough draft. Aiming to
have it to co-authors by Monday 02/10/20. Feel free to send just the two paragraphs you wrote. [CoV
Manuscripts]

I will write a closing after reading tonight (or tomorrow)

BG

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

 Sent: Thursday, February 6, 2020 9:17 AM
 To: Graham, Barney (NIH/VRC) [E] <</td>

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

 Subject: Re: Assigned to You: Edit Kizzmekia's
 (b)(5) rough draft. Aiming to have it to co-authors by Monday 02/10/20. Feel free to send just the two paragraphs you wrote. [CoV Manuscripts]

Here you are. I thought you said you wrote a closing paragraph. That is my issue. No idea how to close or not satisfied with closing without (b) (5).

If you didn't write one, then I can certainly just power thru it tonight.

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, February 6, 2020 at 8:55 AM To: Kizzmekia Corbett < (b)(6) Subject: FW: Assigned to You: Edit Kizzmekia's (b)(5) rough draft. Aiming to have it to co-authors by Monday 02/10/20. Feel free to send just the two paragraphs you wrote. [CoV Manuscripts] Can you send me paper directly?

BG

 From: Kizzmekia Corbett via Asana <</td>
 (b)(6)

 Sent: Thursday, February 6, 2020 7:55 AM
 To: Graham, Barney (NIH/VRC) [E]

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

 Subject: Assigned to You: Edit Kizzmekia's
 (b) (5) rough draft. Aiming to have it to co-authors by

 Monday 02/10/20. Feel free to send just the two paragraphs you wrote. [CoV Manuscripts]

Kizzmekia Corbett assigned a task to you View in Asana

Task (b) (5) rough draft. Aiming to have it to co-authors by Monday 02/10/20. Feel free to send just the two paragraphs you wrote.

Assigned to Due date Barney Feb 7 Graham

Projects CoV Manuscripts



Collaborators



Send us your feedback!

Reply directly to this email to comment, and CC teammates to add them as collaborators. If you want to stop receiving notifications about this task, you can <u>remove yourself from</u> it.



Science

From:Graham, Barney (NIH/VRC) [E]Sent:Thu, 30 Apr 2020 16:17:22 +0000To:Jane TeelingCc:Robin KazmierSubject:RE: NOVA urgent request

Thank you for reaching out and sharing your work with me. I can take a look but the depth of review will depend on how much time it will take. I can spend minutes, but not hours. Just too much going on.

Take care,

Barney

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 From: Jane Teeling <</td>
 (b)(6)

 Sent: Thursday, April 30, 2020 11:43 AM

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

 Cc: Robin Kazmier <</td>
 (b)(6)

 Subject: Re: NOVA urgent request

Hello Dr. Graham,

I wanted to circle back and see if you might indeed have time to review some materials for us, while keeping them confidential?

If not, that's entirely fine -- I imagine you must be incredibly busy, and we would not want to take time away from your work.

And if you can, then please do let us know and we will send you the materials.

I should mention, we are under a tight deadline and ideally would like to hear your thoughts in the next few days, if possible.

Thank you, Dr. Graham, for your time and attention.

Best,

JT

On Wed, Apr 29, 2020 at 3:46 PM Jane Teeling < (b)(6) wrote: Hello Dr. Graham,

As mentioned, we would greatly appreciate your help on our NOVA film, Decoding COVID19. Our vaccines section has a a few animations that could really use an expert eye, as well as critique on the overall story we are trying to tell here (of which Dr. Corbett is a big part--she gave a fantastic interview, by the way).

If you are willing and able, and can confirm that you will keep the materials confidential, then I'll send you the script and corresponding video of our Vaccines section.

Thank you for your time, Dr. Graham. We'd be quite lucky to have an advisor such as yourself for this very important section of the film, and we look forward to hearing from you.

Best,

JT

On Wed, Apr 29, 2020 at 3:30 PM Jane Teeling < (b)(6) wrote: Dr. Corbett, thank you for introducing us to The Vaccinator!

Honored to meet you, Dr. Graham. We look forward to your critique!

I will move Dr. Corbett to bcc here, and write back to you, Dr. Graham, with a bit of an overview about what we're sending you.

Thank you, both -- for helping NOVA, and for the amazing work you do for everyone, every day.

Best,

JT

On Wed, Apr 29, 2020 at 3:08 PM Corbett, Kizzmekia (NIH/VRC) [E] < (b)(6) wrote: My favorite vaccine expert is cc'ed... my boss the "vaccinator"... Dr. Barney Graham. He likely needs a

fun animation to critique right about now ;)

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: Jane Teeling < (b)(6) Date: Wednesday, April 29, 2020 at 3:07 PM To: Kizzmekia Corbett < (b)(6) Subject: Re: NOVA urgent request

We got everything, thank you!

Question: can you recommend a vaccine expert who can take a look at a vaccine animation we made and offer expert feedback? I would ask you but 1) I know you are super busy 2) we can't use people in the show.

Thanks so much,

JT

On Wed, Apr 29, 2020 at 7:40 AM Corbett, Kizzmekia (NIH/VRC) [E] < (b)(6) wrote: Good morning. Did you get all that you needed from the Dropbox file that I shared?

Sent from the mobile device of: Kizzmekia S. Corbett, PhD Senior Research Fellow

From: "Jane Teeling" < (b)(6)	
Date: Monday, April 13, 2020 at 2:21:17 PM	
To: "Corbett, Kizzmekia (NIH/VRC) [E]" <	(b)(6)
Cc: "Holt Productions"	(b)(6) "Oplinger, Anne (NIH/NIAID) [E]"
< (b)(6)	
Subject: Re: NOVA urgent request	
Can you refresh and try it again?	
On Mon, Apr 13, 2020, 2:13 PM Corbett, Kizzmekia (NIH	I/VRC) [E] < (b)(6) wrote:
It is saying that I do not have permission to edit???	
Kizzmekia S. Corbett, PhD	
Senior Research Fellow Scientific Lead	
Coronavirus Vaccines & Immunopathogenesis (coVip)	Team
Viral Pathogenesis Laboratory Vaccine Research Cente	er
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: Holt Productions <		(b)(6)
Date: Monday, April 13, 2020 at 2:04 PM		
To: Kizzmekia Corbett <	(b)(6)	
Cc: "Oplinger, Anne (NIH/NIAID) [E]" <		(b)(6) Jane Teeling
< (b)(6)		
Subject: NOVA urgent request		

Dear Kizzmekia,

Thank you again for your wonderful interview. I know you are very busy, but we need you to upload the audio files you recorded on your i-phone and the quicktime files from you computer

It's critical for us to have good audio and video.

We are under a tight deadline and need to edit your interview ASAP

Can you please confirm that you can do this today.

Here is the link you use to upload the files. It will only take a few minutes.

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

Please upload 2 files:

The voice memo file from her phone The QuickTime file from her computer

Also, if you have any photos of yourself in the lab or in the field, please send them to us.

We greatly appreciate your time and help.

Sarah

Sarah Holt, Producer NOVA/PBS Holt Productions, LLC Tel: (b)(6) Cell: (b)(6) http://www.holtproductions.org

--Jane Teeling (6)(6)

--Jane Teeling (b)(6)

--Jane Teeling (b)(6) --Jane Teeling (b)(6)

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 11 Mar 2020 02:15:56 +0000
То:	Venigalla B Rao
Cc:	Corbett, Kizzmekia (NIH/VRC) [E];Young, Monique (NIH/VRC) [E]
Subject:	Re: Letter for Coronavirus (b) (4)

I am just getting to yesterday's emails. I won't be able to provide a formal letter of collaboration, (b) (4) when I can to help facilitate your work.

Barney

Sent from my iPhone

On Mar 10, 2020, at 1:56 PM, Venigalla B Rao < (b)(6) wrote:

Dear Barney,

Sorry for doing this, I hope that you will be able to provide the letter, basically stating what has been (b) (4). Latest I would need the letter by tomorrow morning when all the fill will go out to the sponsored programs office for submission. In any case, please let me know. Thanks for consideration, Rao

On Mon, Mar 9, 2020 at 2:25 PM Venigalla B Rao <	(b)(6) wrote:
Dear Barney,	
Thank you and your team for	(b) (4)
(b) (4);	
I do have another important request, fully aware that you are	all extremely busy. I wouldn't have unless
it is very important. I am submitting	(b) (4)
	(b) (4). I

prepared a draft letter for you (attached). Please feel free to modify as you prefer. If you have any questions or need additional information, please let me know. If you could put it on your letterhead with your signature, I would greatly appreciate it. It will make a big difference! I hope to submit the proposal on Wednesday. With best regards, Rao

On Wed, Feb 26, 2020 at 5:57 PM Corbett, Kizzmekia (NIH/VRC) [E] (b)(6) wrote:

Dr. Venigalla B. Rao

Department of Biology 103 McCort Ward Hall The Catholic University of America 620 Michigan Ave, NE Washington, DC, 20064.

Is this the address? If so, we will send the

(b) (4) tomorrow via fed ex.

--

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) (b)(6)

Personal: (919) (b)(6)

Fax: (301) (b)(6)

From: Venigalla B Rao < (b)(6)- Date: Wednesday, February 26, 2020 at 5:34 PM
To: "Stein, Judy (NIH/VRC) [C]" < (b)(6) Cc: "Petrik, Amy (NIH/NIAID) [E]" < (b)(6) Kizzmekia Corbett < (b)(6) Kizzmekia Corbett < (b)(6)
< (b)(6). Subject: Re: Request for collaboration on (b) (4).
Dear Kizzmekia,
Would it be possible to ship the (b) (4) tomorrow for Friday delivery?
Thanks.
Rao
On Tue, Feb 25, 2020 at 11:27 AM Venigalla B Rao < (b)(6). wrote:
Dear Judy, Kizzmekia,
Thank you! I confirm that nothing in the SLA has been changed.
Rao
On Tue, Feb 25, 2020 at 10:44 AM Stein, Judy (NIH/VRC) [C] < (b)(6) wrote:
Dear Rao,
Kizzmekia Corbett can let you know what is available to be provided now.
If the SLA was unchanged then it is fine for the materials to be transferred.
Thanks,
Judy
From: Venigalla B Rao < (b)(6) Sent: Tuesday, February 25, 2020 10:39 AM To: Stein, Judy (NIH/VRC) [C] < (b)(6) Petrik, Amy (NIH/NIAID) [E] <amy. (b)(6)<="" td=""></amy.>

Cc: Ralph A. Albano < (b)(6) Subject: Re: Request for collaboration on (b) (4)

Dear Judy, Barney,

Hope everything is in place for the SLA. If you need anything else, please let us know.

Many thanks for moving this process fast and sharing the materials.

Rao

Dr. Venigalla B. Rao

Department of Biology

103 McCort Ward Hall

The Catholic University of America

620 Michigan Ave, NE

Washington, DC, 20064.

Phone: (202) (b)(6) (202) (b)(6)

On Mon, Feb 24, 2020 at 5:32 PM Venigalla B Rao < (b)(6) wrote:

Dear Judy,

Please see the attached SLA with the required signatures from CUA. Please let us know if you need anything else.

Thanks.

Rao

On Mon, Feb 24, 2020 at 9:36 AM Venigalla B Rao < (b)(6) wrote:

Dear Judy,

Thank you for coordinating the SLA very fast in this very busy time. This is greatly appreciated!!

I am forwarding the SLA to Ralph Albano for review and approval. We should be getting back to you soon.

Rao

Forwarded message	
From: Stein, Judy (NIH/VRC) [C] <	(b)(6).
Date: Mon, Feb 24, 2020 at 9:02 AM	
Subject: RE: Request for collaboratio	n on universal flu vaccine
To: Venigalla B Rao < (b)(6).	
Cc: Petrik, Amy (NIH/NIAID) [E] <	(b)(6).

Dear Rao,

Barney agreed that we could potentially send (b) (4) (b) (4), as available and pending the workload at the VRC. Given this, I have added these materials to the attached SLA.

Thanks,

Judy

(b)(6)

From: Venigalla B Rao < (b)(6). Sent: Monday, February 24, 2020 8:16 AM

To: Stein, Judy (NIH/VRC) [C] <	(b)(6).
Cc: Petrik, Amy (NIH/NIAID) [E] <	(b)(6) .
Subject: Re: Request for collaboration on	(b) (4)

Dear Judy,

	(b) (4
^{(b) (4)} please include them as well. I do not need moment, therefore you can hold off on that.	^{(b) (4)} at the
Thanks.	
Rao	
On Mon, Feb 24, 2020 at 8:06 AM Stein, Judy (NIH/VRC) [C] <	(b)(6) wrote:
Dear Rao,	
	(b) (4)

We need to list items more specifically on the SLA, so I will revise the description and re-send the SLA for signature.

Thanks

Judy

From: Venigalla B Rao < (b)	(6).	
Sent: Sunday, February 23, 2020 2:57	PM	
To: Stein, Judy (NIH/VRC) [C] <	(b)(6) .	
Cc: Graham, Barney (NIH/VRC) [E] <	(b)(6) Youn	g, Monique (NIH/VRC)
[E] < (b)(6) Corbe	tt, Kizzmekia (NIH/VRC) [E]	
< (b)(6) Morab	ito, Kaitlyn (NIH/VRC) [E] <	(b)(6)
Bok, Karin (NIH/VRC) [E] <	(b)(6) Ralph A. Albano <	(b)(6) Petrik,
Amy (NIH/NIAID) [E] <	(b)(6) .	
Subject: Re: Request for collaboration	n on (b) (4)	

Dear Judy,

Many thanks for getting the SLA forward on a Sunday, greatly appreciate it. I have been in communication with Dr. Graham regarding reagents for both (b) (4) (b) (4) The types of materials are similar except that they come from different viruses. Therefore, I have revised the list of materials such that the SLA will cover these materials that Dr. Graham is willing to provide for our research.

Please note that the materials will be used for research purpose only, not for commercialization. Therefore, these fall under the umbrella of sharing materials among researchers, as per the regular NIH policies. Therefore, research materials even if they are under patent consideration can be exchanged under this policy.

I am attaching the revised statement of materials in the SLA. Please let me know if this is ok. I plan to meet with Ralph tomorrow for another reason and will also be able to explain any questions he may have.

With best regards,

Rao

On Sun, Feb 23, 2020 at 12:58 PM Stein, Judy (NIH/VRC) [C] < (b)(6) wrote:

Dear Ralph,

I have attached our standard patent pending SLA. Can you please complete the signature block, sign and email the pdf back to me.

Thanks very much.

Judy

Judy Stein, MBA, MSPH [C]

Strategic Planning and Development

Vaccine Research Center, NIAID, NIH

Tel: + (b)(6)

From: Venigalla B Rac	o < (b)(6).		
Sent: Sunday, February	23, 2020 8:42 AM		
To: Graham, Barney (N	IH/VRC) [E] <	(b)(6)	
Cc: Young, Monique (N	NIH/VRC) [E] < <u>myoung</u>	(b)(6)	Corbett, Kizzmekia
(NIH/VRC) [E] <	(b)(6) M	orabito, Kaitlyn	(NIH/VRC) [E]
<	(b)(6) Bok, Karin (NIH/V	RC) [E] <	(b)(6) Stein, Judy
(NIH/VRC) [C] <	(b)(6) Ralph A.	Albano <	(b)(6)
Subject: Re: Request for	or collaboration on	(b) (4)	

Dear Judy,

Good morning!

I know you have helped us in the past to execute SLAs for transfer of materials from Dr. Peter Kwong's lab. Therefore, I am reaching out to you to let me know how to proceed. If the SLA is sent to Mr. Ralph Albano, he will be able to turn it around in a short period of time.

Please let me know if you need anything from us.

Many thanks.

Rao

On Sat, Feb 22, 2020 at 2:21 PM Venigalla B Rao < (b)(6) wrote:

That would be fabulous! I assume that it is a ^{(b) (4)} I am including Mr. Ralph Albano from CUA in the CC. He will review the SLA and execute it from our end.

With rega	ard to the materials to be transferred,	(b) (4)
		(b) (4)
(b) (4)	so that we	^{(b) (4)} . However,
it is also		(b) (4)

Many thanks.

Rao

On Sat, Feb 22, 2020 at 2:10 PM Graham, Barney (NIH/VRC) [E] < wrote:

Dr. Rao,

We have a academic investigators. We have not made (b) (4) through an EU-SLA.

(b) (4) that we have shared with other(b) (4). We will arrange to send you the

(b)(6)

Best wishes,

Barney

From: Venigalla B Rao <	(b)(6) .	
Sent: Thursday, February 20, 2	020 10:05 PM	
To: Graham, Barney (NIH/VR)	C) [E] <	(b)(6)
Cc: Young, Monique (NIH/VR	C) [E] <myoung< td=""><td>(b)(6)</td></myoung<>	(b)(6)
Subject: Re: Request for collab		vaccine

Dear Barney,

I am following up my request on the possibility of receiving	(b) (4)
	^{(b) (4)} We have in the past

signed SLAs from VRC for receiving ^{(b) (4)}materials. Please let me know and who might be in charge of processing the SLAs. I will be happy to contact that person(s) and move it forward.

Many thanks.

Rao

On Tue, Feb 18, 2020 at 8:41 AM Venigalla B Rao < (b)(6) wrote:

Dear Barney,

Good morning!

Having submitted the flu grant proposal, we are seriously considering applying the (b) (4) (b) (4). In fact, the (b) (4) (b) (4)
I am hoping that you group can help us by providing (b) (4) (b) (4)
(b) (4). It would be useful to discuss this over the phone and clarify any questions you may have, which I would greatly appreciate.
With best regards,
Rao
On Sun, Feb 9, 2020 at 11:44 AM Venigalla B Rao < (b)(6) wrote:
Thanks for consideration, best of luck with your WHO meeting on Coronavirus.
Rao
On Sun, Feb 9, 2020 at 11:20 AM Graham, Barney (NIH/VRC) [E] < (b)(6) wrote:
Dr. Rao,
As noted in the last note, we won't have the bandwidth to collaborate, but can provide access to some reagents like the (b) (4)

The ability to collaborate is even more difficult now with the onset of the Wuhan CoV. I am out of town and headed to Geneva tomorrow for an emergency WHO meeting.

Barney

Sent from my iPhone

On Feb 9, 2020, at 11:09 AM, Venigalla B Rao < (b)(6). wrote:

Dear Barney,

I am wondering if you will be able to provide a letter of collaboration. As I mentioned, please feel free to make any changes to the letter I sent to you last week. I will need the grant finalized and sent to the University office by Tuesday of this week. Greatly appreciate your consideration and letting me know.

With best regards,

Rao

On Tue, Feb 4, 2020 at 12:15 PM Venigalla B Rao < (b)(6) wrote:

Dear Barney,

To make things easier, I have prepared a draft of collaboration letter for your perusal, which I hope that you will be able to provide. This is merely a draft, please make changes as you wish. I would appreciate it if you could add some specific information regarding the materials available at VRC that you could provide for our project. As written, it is quite general.

Please also note that challenges will be done at our university, you are not committing for that.

I know that your time is overstretched, therefore we do not need a conference call as long as you are basically ok with the letter. If you have any questions, please let me know.

With best regards,

Rao

On Sat, Jan 25, 2020 at 8:25 PM Venigalla B Rao < (b)(6) wrote:

Dear Barney,

I understand, the Wuhan virus situation seems rather scary. Thank you all for the work you are doing to develop a potential vaccine fast.

Thank you for consideration regarding the (b) (4). The grant is due in the university office by ~Feb 10th.

Monique, please free to send me potential days and times for a phone call.

With best regards,

Rao

On Sat, Jan 25, 2020 at 4:24 PM Graham, Barney (NIH/VRC) [E] < wrote:

(b)(6)

Dear Rao,

We have been consumed by the response to the Wuhan outbreak, and I will be out of town next week. I'll ask Monique Young to find time for a brief call sometime in February. As noted, we are already working beyond our bandwidth and a more involved collaboration beyond reagent sharing is not going to be possible at this time.

Best wishes,

Barney

From: Venigalla B Rao < (b)(6). Sent: Tuesday, January 21, 2020 2:26 PM To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Re: Request for collaboration on universal flu vaccine Dear Barney,

Good afternoon!

I have a couple of questions that can be quickly clarified in a phone call. I would greatly appreciate it if you could give me a few minutes of your time as per your convenience. Please let me know.

Many thanks.

Rao

On Wed, Jan 8, 2020 at 9:29 AM Venigalla B Rao < (b)(6) wrote:

Dear Barney,

(please call me "rao")

Thanks for your email. Greatly appreciate extending your help with reagents, mAbs, and assay protocols. These would be very helpful for us. Regarding the (b) (4)

(b) (4)

me know if in principle you can consider it, that is all that is needed at this point. DMID is a good source but they will not entertain any proposals for (b) (4)

MTA is not necessary at this point we are not there yet with specifics. At minimum, we are talking about at least a year. All I need now is a letter of collaboration stating that you will provide such and such for the proposed studies. I can draft a preliminary letter and send to you for consideration and feel free to make any changes you wish to make.

Many thanks.

With best regards,

Rao

On Wed, Jan 8, 2020 at 8:53 AM Graham, Barney (NIH/VRC) [E] < (b)(6)wrote:

Hi Dr. Rao,

Thank you for your note and sorry I couldn't be there for the lecture a few months ago.

Your (b) (4) idea sounds interesting. However, we have a pipeline here that is already more than we can manage. We would be able to provide (b) (4) (b) (4), but we would not be able to (b) (4) (b) (4) DMID (extramural NIAId) recently announced the CIVICs program that is a consortium of academic sites focused on (b) (4) development and they may be able to help with this, but you would need to check with DMID.

Let me know if the reagents would be helpful to you and we could initiate an MTA.

Best wishes,

Barney

Sent from my iPhone

On Jan 6, 2020, at 5:14 PM, Venigalla B Rao < (b)(6) wrote:

Dear Barney,

We communicated briefly through email in Sept '19 (below). After that, I had a chance to meet with and discuss further about the ^{(b) (4)} with your then colleague Dr. Michelle Crank. I am getting back to you and see whether you can help us

by collaborating on the	(b) (4) (b) (4)

I am preparing an R21 grant proposal for submission to NIH for the Feb '20 deadline. I would very much appreciate it if you could provide a letter of collaboration that would involve (b) (4)

I will be happy to put together a draft letter for your consideration. I will also be happy to discuss more details with you over the phone, or meet in person.

With best regards,

Rao

Dr. Venigalla B. Rao

Professor

Department of Biology

The Catholic University of America

Washington, DC.

------ Forwarded message ------From: Venigalla B Rao < (b)(6) Date: Mon, Sep 30, 2019 at 12:36 PM Subject: Rao (b) (4) To: Crank, Michelle (NIH/NIAID) [E] < (b)(6)

Michelle,

I enjoyed your talk!!

Thank you very much for taking the time to meet with me today. As per our conversation, I am attaching the

I will send the animation by a separate email to increase the chances of transmission. Please let me know if you received it ok.

(b) (4)

Best,

Rao

On Mon, Sep 30, 2019 at 9:02 AM Crank, Michelle (NIH/NIAID) [E] <<u>crankm</u> (b)(6) wrote:

Perfect. Thanks so much, and see you soon.

Michelle

From: Venigalla B Rao <</th>(b)(6)Date: Monday, September 30, 2019 at 8:46 AMTo: Michelle Crank <</td>Cc: Lauren Bassaro <</td>(b)(6)Subject: Re: Meeting at Catholic

Good morning, Michelle!

After you come out of the Metro escalator, please walk a bit and cross the road. There is a security post at the corner. Walk straight up the hill (it is brand new paved, tiled, road). Biology is at the end of that block on left. There is a sign "McCort Ward Hall" at the end of that street (go past the Nursing-Biology sign). Enter the building near the McCort Ward sign, turn right and take two flights of stairs. Or, go through the double door after you turn right at the entrance and take the elevator on the left to 3rd floor. My office is in Rm 306.

I should be in office by \sim 9:40. Swati is my student. She will take you to the lecture room at \sim 10:50 or so.

My Cell# (b)(6) feel free to call me if there is a question.

Look forward to meeting you!

Rao

On Mon, Sep 30, 2019 at 6:32 AM Crank, Michelle (NIH/NIAID) [E]

Good morning, yes I should be able to meet you at 10.

I will be walking over from the metro and have not been to the biology building before, but on the map it seems to be immediately beside the metro exit.

Which section of the building is your office in?

Would you be able to direct me to the room for the seminar when we are finished, or I can let the student organizers know where I will be and maybe they can come meet me?

I believe they would like me to arrive half an hour before my talk to load my slides.

Many thanks.

Michelle

From: Venigalla B Rao < (b)(6). Date: Friday, September 27, 2019 at 5:23 PM To: Michelle Crank < (b)(6). Subject: Re: Meeting at Catholic

Sure, I will be in my office (Rm 306) by 10am. I could also come earlier than 10am if you prefer to meet early.

Thanks.

Rao

On Fri, Sep 27, 2019 at 4:19 PM Crank, Michelle (NIH/NIAID) [E] < (b)(6) wrote:

Hi Rao,

I would like to meet with you, but would it be possible to talk before my presentation rather than afterward? I have an obligation back at NIH at 2pm, so I won't be able to stay after lunch.

Thanks so much for contacting us.

Michelle C. Crank, M. D.
Head, Translational Science Core
Viral Pathogenesis Laboratory
National Institutes of Health
National Institute of Allergy and Infectious Disease
Vaccine Research Center
40 Convent Drive
Building 40 / Room 2508 / MSC 3017
Bethesda, MD 20892-3017
Phone: (b)(6)
Cell: (b)(6)
Email: (b)(6)
> On Sep 27, 2019, at 4:01 PM, Venigalla B Rao < (b)(6) wrote:
>
> Dear Dr. Crank,
> I reached out to Dr. Barney Graham as he is scheduled to give a seminar at Catholic on
Monday. But he informed me that you will be presenting the seminar instead (email below). My
lab has some interest in developing a (b) (4). I would be very
much interested to meet with you as well, if possible, after your lunch meeting with students.
Probably ~1:30 to 2pm. Please let me know if this works for you. I am attaching a couple of our
recent papers that relate to the (b) (4)
> Many thanks.
> Rao
> Forwarded message
> From: Graham, Barney (NIH/VRC) [E]
< (b)(6)mailto: (b)(6)>
> Date: Tue, Sep 24, 2019 at 3:54 PM
> Subject: RE: Meeting at Catholic
> To: Venigalla B Rao < (b)(6) mailto: (b)(6)
>
>
> Dr. Rao,
>
> Thank you for your email and for sharing your papers. I will look over them, and will enjoy
learning more about (b) (4)
(b) (4).
 > Unfortunately, I had an obligation come up that I could not avoid, so my colleague who helps manage the influenza program will be giving the talk on Monday instead of me. Dr. Crank will show most of what I just showed 2 weeks ago at the international influenza meeting.

>

> Sorry I was unable to attend in person.

>

> Best wishes,

>	
> Barney	
>	
>	
>	
> From: Venigalla B Rao < (b)(6) mailto: (b)(6)	
> Sent: Tuesday, September 24, 2019 3:00 PM	
> To: Graham, Barney (NIH/VRC) [E]	
< (b)(6) mailto: (b)(6) >	
> Subject: Meeting at Catholic	
>	
> Dear Dr. Graham,	
> I am happy to know that you will be giving a talk at the Catholic University of	on Monday. I
know Peter Kwong and his work for many years and I am also little bit familian	r with the HIV
and Flu vaccine work at VRC including yours. Although my lab is focused on	(b)
	(b) (4)

(b) (4)

(b) (4)

. I am attaching a couple of our recent papers.

> I would be very much interested to meet with you, if time permits on Monday. Lunch with students will generally finish by \sim 1 to 1:30. If we can meet for about half an hour immediately after lunch, that would be great. You would still be able to leave CUA by \sim 2pm.

> Please let me know if this is possible.

- > With best regards,
- > Rao
- >
- > Dr. Venigalla B. Rao
- > Professor
- > Department of Biology
- > The Catholic University of America
- > Washington, DC, 20064.

>

> < Oct 2018 anthrax plague vaccine mBio.pdf>

> < Aug 2019 Science Advances T4-AAV hybrid vector.pdf>

<2019 HIV structure Nature Communications.pdf>

> Looking forward to your talk on Monday.

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Mon, 9 Mar 2020 19:25:37 +0000	
То:	Bloom, Marshall (NIH/NIAID) [E]	
Subject:	RE: 2020 spring RML public lecture	

Having something before the next winter season may be useful. Would probably draw a crowd.

Barney

From: Bloom, Marshall (NIH/NIAID)	[E] < (b)	(6)
Sent: Monday, March 9, 2020 3:24	PM	
To: Graham, Barney (NIH/VRC) [E] <	(ხ)(б)	
Subject: RE: 2020 spring RML public	clecture	
So it goes		
From: Graham, Barney (NIH/VRC) [E] < (b)(6)	
Sent: Monday, March 9, 2020 1:21	PM	
To: Bloom, Marshall (NIH/NIAID) [E]	< (b)(6)	Young, Monique (NIH/VRC) [E]
< (b)(6)		
Cc: Pekoc, Ken (NIH/NIAID) [E] <	(b)(6) Miller,	Susie (NIH/NIAID) [E]
< (b)(6) Bowland,	Toby (NIH/NIAID) [E] <	(b)(6) Mora, Anita
(NIH/NIAID) [E] <	(b)(6)	
Subject: RE: 2020 spring RML public	: lecture	
Subject: RE: 2020 spring RML public		
(
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin		
Subject: RE: 2020 spring RML public		
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin		
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney	gtime visit to RML.	
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID)	gtime visit to RML. [E] < (b)	(6)
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03	gtime visit to RML. [E] < (b) PM	-
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03 To: Young, Monique (NIH/VRC) [E]	gtime visit to RML. [E] < (b) PM	რე Graham, Barney (NIH/VRC) [E]
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03 To: Young, Monique (NIH/VRC) [E]	gtime visit to RML. [E] < ه) PM (ه)(ه) (Graham, Barney (NIH/VRC) [E]
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03 To: Young, Monique (NIH/VRC) [E] (b)(6) Cc: Pekoc, Ken (NIH/NIAID) [E] (gtime visit to RML. [E] < ه PM ره)ره ر شهر Miller,	Graham, Barney (NIH/VRC) [E] Susie (NIH/NIAID) [E]
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03 To: Young, Monique (NIH/VRC) [E] Cc: Pekoc, Ken (NIH/NIAID) [E] < (b)(6) Bowland,	Igtime visit to RML. [E] < ه PM ه(ه)(ه) ر ش(ه)(ه) Miller, Toby (NIH/NIAID) [E] <	Graham, Barney (NIH/VRC) [E] Susie (NIH/NIAID) [E] (රාල Bloom, Marshal
Subject: RE: 2020 spring RML public Indeed. Sorry to miss another sprin Barney From: Bloom, Marshall (NIH/NIAID) Sent: Monday, March 9, 2020 3:03 To: Young, Monique (NIH/VRC) [E] (b)(6) Cc: Pekoc, Ken (NIH/NIAID) [E] (egtime visit to RML. [E] < ه PM ه)(۵) (۵) ش)(۵) Miller, Toby (NIH/NIAID) [E] < ش)(۵) Mora, Anita (NIH/NI	Graham, Barney (NIH/VRC) [E] Susie (NIH/NIAID) [E] (මාල Bloom, Marshal

Barney and Monique.

Based on the long-awaited COVID-19 guidance released by NIH this morning, it seems prudent to cancel the visit to RML next month. This is really too bad, but seems proper in the face of the outbreak. Let's touch base in early summer and try to arrange something for next fall or spring.

Interesting times. Thanks for your patience. Marshall Marshall E. Bloom, M.D. Associate Director for Scientific Management Division of Intramural Research Chief, Biology of Vector-borne Viruses Section Laboratory of Virology Rocky Mountain Laboratories National Institute of Allergy and Infectious Diseases National Institutes of Health 903 South 4th Street Hamilton, MT 59840

PHO: (b)(6) Cell: (b)(6) email: (b)(6)

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made on behalf of the NIAID by one of its representatives.

From: Bloom, Mars	hall (NIH/NIAID) [E] <	(b)(6	0
Sent: Tuesday, Mar	ch 3, 2020 9:44 AM		_
To: Young, Monique	e (NIH/VRC) [E] <	(b)(6)	
Cc: Bloom, Marshal	I (NIH/NIAID) [E] <	(b)(6)	Pekoc, Ken (NIH/NIAID) [E]
<	(b)(6) Mora, Anita (NIH/NIAID) [E] <		(b)(6) Miller, Susie (NIH/NIAID)
[E] <	(b)(6) Bowland, Toby (NIH/NIAID	[E]	(b)(6)
Subject: FW: 2020	spring RML public lecture		

Monique,

I want to follow up with you all about Barney's visit next month. It is clear to me how busy he is with the nCoV projects and everything else so we truly appreciate his taking the time to come out. Here are the salient points at this time:

- We have the auditorium reserved for the evening of Thursday, April 23.
- We need to have a presentation title, a photo and a CV or brief bio. If he wants to throw in a little nCoV vaccine fodder, that would be fine.
- We need to firm up his travel plans.
 - The initial concept was for him to fly out Weds, give a scientific talk (need a title for that too) and meet with RML staff on Thursday, public lecture on Thursday evening, more meetings with RML staff on Friday (including with Anita Mora about your video), spend Friday night in Missoula and then fly back early Saturday.
 - You can book the flights, accommodations at the Bitterroot River Inn in Missoula, and the Wingate in Missoula.
 - o I will get a CAN from Joe Blaney in DIR to charge against.

Please let me know if you have any questions or need clarification. Thanks very much! Marshall

Marshall E. Blo	oom, M.D.
Associate Dire	ctor for Scientific Management
Division of Intr	amural Research
Chief, Biology	of Vector-borne Viruses Section
Laboratory of '	Virology
Rocky Mounta	in Laboratories
National Institu	ute of Allergy and Infectious Diseases
National Instit	utes of Health
903 South 4th	Street
Hamilton, MT	59840
PHO:	(b)(6)
Cell:	b)(6)
email:	(b)(6)
*****	*******

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made on behalf of the NIAID by one of its representatives.

From: Graham, B	arney (NIH/VRC) [E] <	(b)(6)	
Sent: Wednesday	, November 27, 2019 10:28	AM	
To: Pekoc, Ken (N	IIH/NIAID) [E] <	ه)(ه) Bloom, Marshall (N	IH/NIAID) [E]
<	(b)(6)·		
Cc: Young, Monic	ue (NIH/VRC) [E] <	(b)(6) Morabito, Kait	tlyn (NIH/VRC) [E]
<	(b)(6) Bowland, Toby	(NIH/NIAID) [E] <	(b)(6)
Subject: RE: 2020	spring RML public lecture	55 UZOK (250-321)	

OK, sounds good. | will plan on April 23rd.

BG

From: Pekoc, Ken (NIH/NIAID) [E] <	(b)(6)
Sent: Wednesday, November 27, 2019 12:20 PM	
To: Bloom, Marshall (NIH/NIAID) [E] <	(b)(б) Graham, Barney (NIH/VRC) [E]
< (b)(6)	
Cc: Young, Monique (NIH/VRC) [E] <	(b)(6) Morabito, Kaitlyn (NIH/VRC) [E]
(b)(6)>; Bowland, Toby (NIH/	(NIAID) [E] < (b)(6)
Subject: RE: 2020 spring RML public lecture	

The school has approved our Performing Arts Center rental for Thursday, April 23, with a presentation from 7-8 p.m.

Dr. Graham, when we get about a month from the event I'll need to get a presentation title, photo, and Cv / background about you to develop a press release and promo poster (you'll be able to review both in advance).

Thanks

From: Bloom, Marsh	all (NIH/NIAID) [E] <	(b)(6)		
Sent: Wednesday, No	ovember 20, 2019 2:1	LO PM		
To: Graham, Barney	(NIH/VRC) [E] <	(b)(6)		
Cc: Young, Monique	(NIH/VRC) [E] <	(b)(6) Morabito,	, Kaitlyn (NIH/VRC) [E]	
<	(b)(6) Pekoc, Ken	(NIH/NIAID) [E] <	(b)(6) Bowland, Toby	
(NIH/NIAID) [E] <	(b)(6) Bloom, Marshall (NIH/NIA	ID) [E] <	(b)(6)
Subject: PE: 2020 spi	ing PML public lectu	ra		

Subject: RE: 2020 spring RML public lecture

Barney,

We have reserved the high school auditorium for the evening of Thursday, April 23, but Ken Pekoc says that it seems to be open on Friday, April 24, too.

If you could please send my Program Specialist Toby a tentative title for you talk, she can initiate the approval to book the hall.

There are several strategies for your trip depending on how much time you can take. In essence, they revolve around whether you prefer to do the public lecture on Thursday or Friday, and if you want to stay and visit the area on Saturday. Let me know your preference a

Thanks very much!

Marshall

Marshall E. Bloom, M.D. Associate Director for Scientific Management Division of Intramural Research Chief, Biology of Vector-borne Viruses Section Laboratory of Virology **Rocky Mountain Laboratories** National Institute of Allergy and Infectious Diseases National Institutes of Health 903 South 4th Street Hamilton, MT 59840 PHO: (b)(6) Cell: (b)(6) (b)(6) email: ****** *******

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made on behalf of the NIAID by one of its representatives.

nd we can sketch out some ideas with your staff. It will be terrific having you visit.

From: Graham, Barney (NIH/VRC) [E] < (b)(6)								
Sent: Saturday, November 16, 2019 8:45 AM								
To: Bloom, Marshall (NIH/NIAID) [E] <	(b)(6)							
Cc: Young, Monique (NIH/VRC) [E] <	(b)(6) Morabito, Kaitlyn (NIH/VRC) [E]							
< (b)(6) Pekoc, Ke	n (NIH/NIAID) [E] < (b)(6) Bowland, Toby							
(NIH/NIAID) [E] <	(b)(6)							
Subject: RE: 2020 spring RML public lect	ure							
Subjett HEL 2020 spinile here public lecture								
Hi Marshall,								
I think we've identified dates that could work. Would either April 23 or 24 work for you?								
Thanks,								
Barney								
From: Bloom, Marshall (NIH/NIAID) [E]	(b)(6)							
Sent: Tuesday, October 1, 2019 2:18 PM								
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)							
Cc: Young, Monique (NIH/VRC) [E] <	රාග Morabito, Kaitlyn (NIH/VRC) [E]							
	n (NIH/NIAID) [E] < (b)(6) Bowland, Toby							
(NIH/NIAID) [E] <	(b)(6)							

Subject: 2020 spring RML public lecture

Barney,

This is great and it will be terrific to have you give our spring 2020 public lecture about vaccines and related topics. I am confident that Steve Holland will be particularly pleased that you are coming.

We try to do the public lectures either on a Thursday or Friday evening at 7:00 PM. The local high school has an amazing performing arts auditorium that seats about 700. Precise scheduling is dependent on the school's schedule for concerts, etc, but it is rare that they have something on both Thursday and Friday evening.

Speakers like you, with a lot of friends and interest in RML programs, typically come in on a Wednesday afternoon, give a seminar and meet with the staff on Thursday and Friday, and then head out on Saturday morning. Some stay Saturday for extracurricular activities, like skiing or fishing, and leave on Sunday. The costs are borne by my office.

Monique, if you want to check Barney's calendar and come up with some possible dates in March, April and May, Ken and I will check with the school.

Thanks very much! Marshall

Marshall E. Bloom, M.D.
Associate Director for Scientific Management
Division of Intramural Research
Chief, Biology of Vector-borne Viruses Section
Laboratory of Virology
Rocky Mountain Laboratories
National Institute of Allergy and Infectious Diseases
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(b)(6)
(b)(6)
(b)(6) Morabito, Kaitlyn (NIH/VRC) [E]

Subject: RE: RML visit?

Hi Marshall,

Thank you for thinking of me. I was just speaking to someone a few days ago about needing to visit RML, so this is timely. I tried with Kim Hasenkrug a few times and various other obligations interfered. I would very much like to schedule this in advance and visit the RML faculty. There is a lot to discuss, especially in the area of pandemic preparedness.

I've copied Monique Young here who can help identify dates. I've also copied Kaitlyn Morabito who manages our EID projects. Are the community lectures on a particular day of the week?

Best wishes,

Barney

From: Bloom, Marshall (NIH/NIAID) [E] <	(b)(6)
Sent: Tuesday, October 1, 2019 10:51 AM	
To: Graham, Barney (NIH/VRC) [E] <	(b)(6)

Cc: Bloom, Marshall (NIH/NIAID) [E] < (b)(6) Subject: RML visit?

Dear Barney,

Every year for the past 15 years, I have sponsored public lectures for our community here in Montana. Past speakers have included Tony Fauci, Dick Krause, Dave Baltimore, Stan Falkow, Irv Weissman, Ian Lipkin, Karl Johnson, Jeff Taubenberger, Kanta Subbarao, and many others.

I would like to invite you to come to RML and present the spring 2020 public lecture on vaccines and vaccinations. Vaccines and vaccination are of huge interest now, so this would be very timely topic and I think that you are the best person at NIAID to talk about it.

Of course, we would couple this with a seminar at RML and visits with our scientific staff.

Please let me know if you are interested, and we can ruminate on dates and specific topics.

Thanks very much for your kind consideration! Marshall

Marshall E. Bloom, M.D. Associate Director for Scientific Management **Division of Intramural Research** Chief, Biology of Vector-borne Viruses Section Laboratory of Virology **Rocky Mountain Laboratories** National Institute of Allergy and Infectious Diseases National Institutes of Health 903 South 4th Street Hamilton, MT 59840 PHO: (b)(6) Cell: (b)(6) email: (b)(6) ***** *******

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

 Sent:
 Mon, 3 Feb 2020 21:44:08 +0000

 To:
 Stein, Judy (NIH/VRC) [C]

 Cc:
 Morabito, Kaitlyn (NIH/VRC) [E]

 Subject:
 Re: Introduction

Ok. Thanks. Will do.

BG

Sent from my iPhone

On Feb 3, 2020, at 3:44 PM, Stein, Judy (NIH/VRC) [C] < (b)(6) wrote:

Hi Barney,

Here is an instance where the phone call should be followed with a summary email that describes very generally what you told them.

I don't plan to dial in unless you prefer that I do.

Thanks

Judy

From: Holger Kissel <	(b)(6)		
Sent: Monday, Febru	ary 3, 2020 3:08 PM		
To: Ugur.Sahin.Uni <	(b)(6) Graham	, Barney (NIH/VRC) [E]	< (b)(6)
Cc: Holger Kanzler <		(b)(6) Ugur Sahin <	(b)(6)
Lynda, Stuart <	(b)(6)	Mascola, John (NIH/VR	C) [E]
<	(b)(6) Gall, Jason (NIH/VRC) [C]	< (b)(6)	Morabito, Kaitlyn (NIH/VRC)
[E] <	(b)(6) Stein, Judy (NIH/VR	(C) [C] <	(b)(6) Young, Monique
(NIH/VRC) [E] <	(b)(6)		
Subject: AW: Introdu	ction		

Dear Barney,

I have just sent out an invite for 3:45 PM EST/9.45 CET with the dial in information copied below:

(b)(6) US/Canada Toll Free (b)(6) Germany Toll Free

Access code: (b)(6)

Best wishes,

Holger

Von: Sahin, Prof. Dr. Ugur <	(b)(6)	
Gesendet: Montag, 3. Februar 2020 21:04		
An: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Cc: Holger Kanzler < <u>Holger</u> .	(b)(6) Ugur Sahin <	(b)(6)
Lynda, Stuart <	(b)(6) Holger Kisse	(b)(6)
Mascola, John (NIH/VRC) [E] <	(b)(6) Gall, Jason (NIH/VRC) [C] <	(b)(6)
Morabito, Kaitlyn (NIH/VRC) [E] <	(b)(6) Stein, Judy (NIH/VRC) [[C]
< (b)(6) Young, Monique (NI	H/VRC) [E] (b)(6)	
Betreff: AW: Introduction		

Thanks, Barney. 3:45pm i.e. in 40min is fine for me. Holger Kissel will set-up a TC. Best regards, Ugur

Von: Graham, Barney (NIH/VRC) [E] [mailto: (b)(6)
Gesendet: Montag, 3. Februar 2020 20:58
An: Sahin, Prof. Dr. Ugur
Cc: Holger Kanzler; Ugur Sahin; Lynda, Stuart; Holger Kissel; Mascola, John (NIH/VRC) [E]; Gall, Jason (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C]; Young, Monique (NIH/VRC) [E]
Betreff: Re: Introduction

I could speak briefly at 3:45 pm EST today. That is about 45 minutes from now. If that does not work we can look for a time tomorrow. I've copied Monique Young who can help with scheduling if we can't talk today.

Barney

Sent from my iPhone

On Feb 3, 2020, at 10:30 AM, Sahin, Prof. Dr. Ugur < (b)(6) wrote:

Dear Graham,

Many thanks for your willingness to support. We have foreseen vaccine Wuhan corona virus (b) (4) (b) (4). I would like to get further advice about your opinion to potential other changes. Moreover, I would like to understand your opinion about (b) (4) Given the urgency, it would be great if we could have a 15min phone call today, ideally after 8:30pm German time (i.e. 2:30 or later Bethesda time). Please, let me know if this work for you. We would be happy to set up a TC.

Best regards,

Ugur

Von: Graham, Barney (NIH/VRC) [E] [mailto: (b)(6) Gesendet: Montag, 3. Februar 2020 13:37 An: Sahin, Prof. Dr. Ugur Cc: Holger Kanzler; Ugur Sahin; Lynda, Stuart; Holger Kissel; Mascola, John (NIH/VRC) [E]; Gall, Jason (NIH/VRC) [C]; Morabito, Kaitlyn (NIH/VRC) [E]; Stein, Judy (NIH/VRC) [C] Betreff: Re: Introduction

Dear Prof. Ugur,

Thank you for your interest in our antigen design effort for CoV vaccines. If we can help by providing advice and information on (b) (4)

	(b) (4), we are glad to do so. Fortunately,		(b) (4)
(b) (4) Therefore, we believe the		(b) (4) _.	

Let us know if you would like to arrange a call to discuss for which we would probably want to complete a CDA.

Best wishes,

Barney

Sent from my iPhone

On Feb 2, 2020, at 12:22 PM, Sahin, Prof. Dr. Ugur <	(b)(6) wrote:
--	---------------

Dear Holger,

many thanks for connecting.

Dear Barney,

I have read your excellent studies related to (b) (4) (b) (4) and would greatly appreciate to learn more and get your advice for (b) (4) (b) (4).

Best regards,

Ugur

Von: Holger Kanzler [mailto: (b)(6) Gesendet: Sonntag, 2. Februar 2020 17:53 An: Graham, Barney (NIH/VRC) [E]; Ugur Sahin; Sahin, Prof. Dr. Ugur Cc: Lynda Stuart; Holger Kissel Betreff: Introduction

Dear Barney, Ugur,

I wanted to take a moment to introduce you to each other regarding 2019-nCoV.

Ugur, Barney is Deputy Director, Vaccine Research Center, Chief, Viral Pathogenesis Laboratory and Translational Science Core, and there is nobody who knows more about structural basis of antibody-based virus neutralization than him. https://www.niaid.nih.gov/research/barney-graham-md-phd

Barney, Ugur is CEO of BioNTech, a cutting edge mRNA company with a tremendous technology pipeline and partner of the foundation in TB and HIV. <u>https://biontech.de/our-dna/leadership</u>

I was hoping you could have a conversation on 2019-nCoV vaccine immunogen design and use of the mRNA vaccine platform.

Best, Holger

Holger Kanzler PhD

Senior Program Officer, Vaccines & Human Immunobiology Global Health – Discovery Cross Cutting **v** + (b)(6) **E** (b)(6) Bill & Melinda Gates Foundation www.gatesfoundation.org <image001.png> Facebook

<image002.png> Twitter <image003.png> Impatient Optimists Note: For a text version of these three links, use this format: Join the conversation on Facebook, Twitter, and our blog: www.impatientoptimists.org

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Sun, 16 Feb 2020 19:21:16 +0000
То:	Jason McLellan
Cc:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	RE: 2019-nCoV manuscript
Attachments:	Expanded last paragraph for Science.docx

Hi Jason,

Here is a beefed up last paragraph. They may not have wanted this much more, but they asked for it.

The numbering in the new PDB is correct relative to the GenBank sequence. Thanks.

Barney

From: Graham, Barney (NIH/VRC) [E]Sent: Sunday, February 16, 2020 12:54 PMTo: Jason McLellan <</td>Subject: Re: 2019-nCoV manuscript

Will do.

BG

Sent from my iPhone

On Feb 16, 2020, at 12:49 PM, Jason McLellan <

(b)(6) wrote:

Reviewer #1 wanted a little more at the end about how the structure and data in this manuscript can inform vaccine design: (b) (6)

Would you mind writing a sentence or two to address this? Maybe something to include (b) (5), (b) (4) (b) (5), (b) (4)

(b) (5), (b) (4) Or whatever you like.

Regarding the numbering, can you let me know if the attached coordinates are still off? I believe the (b) (5), (b) (4) and I think they are all

fixed.

Thanks Jason

From: Graham, Barney (NIH/VRC) [E] <</th>(b)(6)Sent: Sunday, February 16, 2020 11:43 AMTo: Jason McLellan <</td>Subject: Re: 2019-nCoV manuscript

Let me know how I can help.

Did you understand my comment about the numbering?

BG

Sent from my iPhone

On Feb 16, 2020, at 12:41 PM, Jason McLellan

(b)(6) > wrote:

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

I haven't had a chance to look. I'm responsible today for making all the corrections/edits to the manuscript and getting it ready for submission tomorrow. Daniel is unfortunately flying back from Dartmouth today.

Jason

From: Graham, Barney (NIH/VRC) [E] <</th>(b)(6)Sent: Sunday, February 16, 2020 11:36 AMTo: Jason McLellan <</td>Subject: Re: 2019-nCoV manuscript

What did you think about

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

Barney

Sent from my iPhone

O. F. L. 4.C. 2020		
On Feb 16, 2020, at 12:01 P	'IVI, Jason Miclellan <	(b)(6) wrote:

Hi Barney,

Do you think it's ok if I tell Fang Li we submitted to Science?

I assume he means he has the (b) (4).

Jason

From: Fang Li <</th>(b)(6)Sent: Sunday, February 16, 2020 10:56 AMTo: Jason McLellan <</td>Subject: 2019-nCoV manuscript

Hi Jason,

Hope all is well with you. I just saw your manuscript on the cryo-EM structure of 2019-nCoV, prepublished in bioRxiv. Very nice work! Congratulations!

I am submitting a manuscript on the (b) (4) Would you mind telling me which journal you submitted your manuscript to? I am considering submitting my manuscript to the same journal since the two manuscripts can help each other's chances of being accepted.

<D_1000246985_model-annotate_P1.pdb>

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Thu, 27 Feb 2020 14:15:34 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	RE: Introduction- BioNTech COVID-19

I want you on the call.

BG

From: Corbett, Kizzmekia (NIH/VRC) [E] < Sent: Thursday, February 27, 2020 9:12 AM To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Re: Introduction- BioNTech COVID-19

Can I please be on the call? I just need to listen, not talk.

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, Febru	ary 27, 2020 at 9:10 AM			
To: Holger Kissel <	(b)(6)			
Cc: Kizzmekia Corbett	<	(b)(6) Monique Yo	oung	
<	(b)(6) "Petrik, Amy (NIH/N	IAID) [E]" <		(b)(6) "Stein, Judy
(NIH/VRC) [C]" <	(b)(6) Kaitlyn M	lorabito <		(b)(6)
Subject: Re: Introducti	ion- BioNTech COVID-19			
Ok. I'll call then. We hav	e those		(b) (4) etc.	

(b)(6)

Barney

Sent from my iPhone

On Feb 27, 2020, at 8:28 AM, Holger Kissel < (b)(6) wrote:

Dear Barney,

Thank you for your response. Just for clarity, as my initial mail could be misleading, I was referring to the

(b) (4) . I'd be happy giving you a call tomorrow/Friday at 9:30 am EST at (b)(6)

Kind regards,

Holger

Dr. Holger Kissel

Vice President B	usiness Alliances Bio	NTech SE	An der Goldgrub	e 12 55131 Mainz	Germany
Tel.:	(b)(6) Fax:	+49 6131	. – 9084 – 390 E	-Mail:	(b)(6)

Von: Graham, Ba	rney (NIH/VRC) [E] <	(b)(6)	
Gesendet: Donne	rstag, 27. Februar 2020 01:59		
An: Holger Kissel	< (b)(6)		
Cc: Corbett, Kizzn	nekia (NIH/VRC) [E] <		(b)(6) Young, Monique (NIH/VRC) [E]
<	(b)(6) Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Stein, Judy (NIH/VRC) [C]
<	(b)(6) Morabito, Kaitlyn (NIH/VRC) [I] <	(b)(6)
Betreff RE Intro	duction- BioNTech COVID-19		

Betreff: RE: Introduction- BioNTech COVID-19

Attention: This is an external email. Please verify sender before replying, clicking links or opening any attachments.

Sorry, but | have been in meetings and calls all day and did not have time for a call. (b) (4) . I would have some time to talk on Friday morning before 11 am EST if that works for you.

Barney

From: Holger Kissel <</th>(b)(6)Sent: Wednesday, February 26, 2020 10:11 AMTo: Graham, Barney (NIH/VRC) [E] <</td>Subject: AW: Introduction- BioNTech COVID-19

Dear Dr. Graham,

We recently met during a TC to discuss (b) (4) with my colleague Ugur Sahin from BioNTech, facilitated through our mutual connection Holger Kanzler from the Gates foundation.

Our vaccine efforts are well under way. In parallel I am in contact with your colleagues from tech transfer/ strategic planning & development re. a corresponding license agreement.

We were wondering if it were possible to red	ceive the	(b) (4)
It may be best if we could have a short call to	oday. Would that be possible?	
Kind regards,		
Holger		
Dr. Holger Kissel Vice President Business Alliances BioNTech SE Tel.: (b)(6) Fax: +49 6131	An der Goldgrube 12 55131 Mainz Ger – 9084 – 390 E-Mail:	many (b)(б)
Von: Graham, Barney (NIH/VRC) [E] <	(b)(6)	
Gesendet: Montag, 3. Februar 2020 13:37		
An: Ugur.Sahin.Uni < (b)(6)		
Cc: Holger Kanzler <	(b)(6) Ugur Sahin <	(b)(6)
Lynda, Stuart <	(b)(6) Holger Kissel <	(b)(6)
Mascola, John (NIH/VRC) [E] <	(b)(6) Gall, Jason (NIH/VRC) [C] <	(b)(6)
Morabito, Kaitlyn (NIH/VRC) [E] <	(b)(6) Stein, Judy (NIH/VRC)	[C]
< (b)(6)		
Betreff: Re: Introduction		

Attention: This is an external email. Please verify sender before replying, clicking links or opening any attachments.

Dear Prof. Ugur,

Thank you for your interest in our antigen design effort for CoV vaccines. If we can help by providing advice and information on (b) (4) (b) (4)

Let us know if you would like to arrange a call to discuss for which we would probably want to complete a CDA.

Best wishes,

Barney

Sent from my iPhone

On Feb 2, 2020, at 12:22 PM, Sahin, Prof. Dr. Ugur < (b)(6) wrote:

Dear Holger,

many thanks for connecting.

Dear Barney,

I have read your excellent studies related to (b) (4) (b) (4) and would greatly appreciate to learn more and get your advice for (b) (4) (b) (4)

Best regards,

Ugur

Von: Holger Kanzler [mailto (b)(6) Gesendet: Sonntag, 2. Februar 2020 17:53 An: Graham, Barney (NIH/VRC) [E]; Ugur Sahin; Sahin, Prof. Dr. Ugur Cc: Lynda Stuart; Holger Kissel Betreff: Introduction

Dear Barney, Ugur,

I wanted to take a moment to introduce you to each other regarding 2019-nCoV.

Ugur, Barney is Deputy Director, Vaccine Research Center, Chief, Viral Pathogenesis Laboratory and Translational Science Core, and there is nobody who knows more about structural basis of antibody-based virus neutralization than him. https://www.niaid.nih.gov/research/barney-graham-md-phd

Barney, Ugur is CEO of BioNTech, a cutting edge mRNA company with a tremendous technology pipeline and partner of the foundation in TB and HIV. <u>https://biontech.de/our-dna/leadership</u>

I was hoping you could have a conversation on 2019-nCoV vaccine immunogen design and use of the mRNA vaccine platform.

Best, Holger

Holger Kanzler PhD Senior Program Officer, Vaccines & Human Immunobiology Global Health - Discovery Cross Cutting V (b)(6) E (b)(6) Bill & Melinda Gates Foundation www.gatesfoundation.org <image001.png> Facebook <image002.png> Twitter <image003.png> **Impatient Optimists** Note: For a text version of these three links, use this format: Join the conversation on Facebook, Twitter, and our blog: www.impatientoptimists.org

--- This email was Virus checked by UTM 9. http://www.sophos.com---

From:	Graham, Barney (NIH/VRC) [E]	
Sent:	Wed, 8 Apr 2020 16:15:07 +0000	
To:	Ann-Muriel Steff;Stein, Judy (NIH/VRC) [C]	
Cc:	Eric Kron;Gillian Fenton;Sally Mossman;Ilaria Pastorello;Corbett, Kizzmekia	
(NIH/VRC) [E];Morabito	o, Kaitlyn (NIH/VRC) [E];Bok, Karin (NIH/VRC) [E];Alvarado, Gabriela (NIH/VRC)	
[C];Stein, Judy (NIH/VRC) [C];Mascola, John (NIH/VRC) [E];Gall, Jason (NIH/VRC) [C]		
Subject:	RE: Meeting GSK VRC on Friday	

Hi Ann-Muriel,

Good to hear from you and to know that you will be involved in this project. I think your agenda looks fine. We can share reagents and data under an agreement as long as it is not proprietary to other groups. Judy Stein is the best person to say what type of agreement is best.

My understanding is that there are 2 major discussion points.	(b) (4)
	(b) (4)

Best wishes,

Barney

From: Ann-Muriel S	teff < (b)	(6)
Sent: Tuesday, Apri	7, 2020 5:24 PM	—
To: Graham, Barney	(NIH/VRC) [E] <	(b)(6) Stein, Judy (NIH/VRC) [C]
< (b))(6)	
Cc: Eric Kron <	(b)(6) Gillian Fenton	(b)(б)>; Sally Mossman
<	(b)(6) Ilaria Pastorello <	(b)(6)
Subject: Meeting G	SK VRC on Friday	

Dear Barney and Judy,

I hope this mail finds you well.

Not surprisingly, our paths cross again and I am delighted to be back in touch with you! I will be leading the Coronavirus effort at GSK.

There have been a few back and forth e-mails on the topics of our call next Friday, so I would like to summarize the objectives of the meeting as we see them.

•	(b) (4)
	(b) (4) Please let us know your
views on that.	
Discuss	(b) (4) -
	(b) (4)

• Discuss next steps

Please let me know if this is agreeable to you before we share with a larger audience. Thanks a lot.

Best regards,

Ann-Muriel

Ann-Muriel Steff, PhD Discovery Performance Unit (DPU), R&D Center US

GSK Vaccines 245 Boul. Armand-Frappier | Laval | QC, H7V 4A7 | Canada Email (b)(6) Mobile (b)(6)

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From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 23 Mar 2020 02:50:10 +0000
То:	Daniel Ellis
Cc:	Neil King;Corbett, Kizzmekia (NIH/VRC) [E];Hutchinson, Geoffrey (NIH/VRC) [F]
Subject:	Re: (b) (4)

(b) (4)

BG

Sent from my iPhone

On Mar 22, 2020, at 5:45 PM, Daniel Ellis < (b)(6) wrote:

	(b) (4)
	(b) (4)
Out of curiosity, (b) (4)?	
Thanks, Dan	
On Sun, Mar 22, 2020, 8:41 AM Neil King < I'd say it's up to you and Barney. We will follow your lead	(b)(6). wrote: d.

Let us know when and how we should get involved with writing and figure-making. I think Dan has the info he needs to make (b) (4).

Neil

On Sun, Mar 22, 2020, 8:12 AM Corbett, Kizzmekia (NIH/VRC) [E]

Editing text today... Can we get a vote on where we may send this? I vote from Science or Nature. If we are aiming lower tier I need to format differently, trying to not waste too much time and plan from the front end.

--

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: Saturday, March 21, 2020 at 2:25 PM To: Daniel Ellis < (b)(6) Cc: Kizzmekia Corbett < (b)(6) Barney Graham < (b)(6) "Hutchinson, Geoffrey (NIH/VRC) [F]" < (b)(6) Subject: Re: (b)(4)

Seconded! What would be the goals	(b) (4) <u>?</u>	
On Sat, Mar 21, 2020, 11:18 AM Daniel Ellis	(b)(6) wrote:	
		(b) (4)
		(b) (4)
More than happy to lend a hand for any other structura (b) (4) if you ever		1
On Sat, Mar 21, 2020 at 7:42 AM Corbett, Kizzmekia	(NIH/VRC) [E]	
Yes. We are working towards , Nianshuang Wang.		(b) (4)
Sent from the mobile device of:		
Kizzmekia S. Corbett, PhD		
Senior Research Fellow		
coVip Scientific Lead		
VRC NIAID NIH		
(b)(6)		

From: "Neil King" < (b)(6). Date: Saturday, March 21, 2020 at 10:35:46 AM To: "Graham, Barney (NIH/VRC) [E]" < (b)(6). Cc: "Corbett, Kizzmekia (NIH/VRC) [E]" < (b)(6). Geoffrey (NIH/VRC) [F]" < (b)(6). Subject: Re:
Cool! Will be interesting to understand the mechanism of (b) (4).
(b) (4
We'd be happy to help if there's a reason to bring in design.
Neil
On Sat, Mar 21, 2020, 6:39 AM Graham, Barney (NIH/VRC) [E] < (b)(6) wrote:
Neil,
Kizzy is probably the worlds expert on (b) (4). We just need to publish the papers. (b) (4)
BG

Sent from my iPhone

On Mar 21, 2020, at 9:36 AM, Corbett, Kizzmekia (NIH/VRC) [E]

Good morning,

(b) (4)	
((b) (5), (b) (4)
Sent from the mobile device of:	
Kizzmekia S. Corbett, PhD	
Senior Research Fellow	
coVip Scientific Lead	
VRC NIAID NIH	
(b)(6)	
	1
From: "Neil King" < (b)(6)	
Date: Saturday, March 21, 2020 at 8:33:59 AM To: "Hutchinson Geoffrey (NIH/VRC) [F]" < (b)(6)	
rot mateminison, ecomely (min me)[r]	
Cc: "Daniel Ellis" < (b)(6) "Corbett, Kizzmekia (NIH/VRC) [E]"	

< Subject: Re:

Geoff and Kizzy,

What is the

 $^{(b)}$ (4) what does it do?

(b) (4)

(b) (4)? Do you

Do you think there are any opportunities for think Jason McLellan would be interested in working with us on that? Neil

On Fri, Mar 20, 2020 at 11:02 AM Hutchinson, Geoffrey (NIH/VRC) [F]

Oh yeah, that would be great!

From: Daniel Ellis	(b)(6) .	
Date: Friday, March 20, 2020) at 1:50 PM	
To: "Corbett, Kizzmekia (NII	H/VRC) [E]" <	(b)(6)
Cc: Neil King <	(b)(6) "Hutchinson, Geoffrey (NII	H/VRC) [F]"
< (o)(6).	
Subject: Re:		(b) (4)
If you do want to pursue the	^{(b) (4)} I'm happy to handle	(b) (4)
(b) (4); as usual. All I'd need	is a	^{(b) (4)} I could start
from there.		

On Fri, Mar 20, 2020 at 10:43 AM Corbett, Kizzmekia (NIH/VRC) [E]

Agreed, We should totally put (b) (4) alone. Will let Geoff do the color answer.

--

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: Daniel Ellis	(b)(6)>	
Date: Friday, March 20, 20	20 at 1:41 PM	
To: Neil King <	(b)(6) .	
Cc: Kizzmekia Corbett <		(b)(6) "Hutchinson, Geoffrey (NIH/VRC) [F]"
<	(b)(6) .	
Subject: Re:		(b) (4)

Thanks for sending	this data - this is very exciting to see! Given the	(b) (4)
		(b) (4)?
Wondering if	(b) (4) from different CoVs could help enhance breadth.	

(b) (4)

I can get cracking on publication-quality models.

On Fri, Mar 20, 2020 at 5:56 AM Neil King < (b)(6) wrote:

Hi Kizzy,

Yes. I know how BMGF heard about that, and I apologize. I will stress to my colleagues again the importance of maintaining confidentiality around this program.

Thanks Geoff for the update and the slides -- that's exactly what Dennis is looking for and is pretty much (b) (4)

(b) (4)

I'm assuming there's a manuscript being written? Let us know how we can help -- Dan can make some killer figures (b) (4)

Thanks again,

Neil

On Fri, Mar 20, 2020 at 3:51 AM Corbett, Kizzmekia (NIH/VRC) [E]

Also Niel, can we express to our additional co-inventor that it is IMPORTANT that we are confidential here. Somehow Gates got word of this circle around what will likely be the (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: "Hutchinson,	Geoffrey (NI	H/VRC) [F]" <		(b)(6)
Date: Thursday, Mar	ch 19, 2020 a	t 10:09 PM		
To: Neil King <	(b)(6	Kizzmekia Corbett <		(b)(6) Daniel
Ellis < <u>ellisdr1</u>	(b)(6) .			
Subject: Re:			(b) (4)	

Hi Neil,

My apologies. There was a brief miscommunication on our side. Notable updates:

•	(b) (4)
•	

Best,

Geoff

From: Neil King < (b)(6).		
Date: Thursday, March 19, 2020 at 7:01 PM		
To: "Hutchinson, Geoffrey (NIH/VRC) [F]" <		(b)(6) "Corbett,
Kizzmekia (NIH/VRC) [E]" <	(b)(6) Daniel Ellis	
< (b)(6).		
Subject: Fwd:	(b) (4)	

Forwa	arded message					
From: Dennis	A Hanson <	(b)(6) .				
Date: Thu, Ma	r 19, 2020 at 3:58 PM					
Subject: RE:				(b) (4)		
To:	(b)(6) <	(b)(6) Dani	el R. Ellis <		(b)(6) George T U	eda
<	(b)(6).					
Cc: Samantha	N. Cayabyab <	(b)(ര്.			
Hi Neil, Dan, a I did take this 1						(b) (4) (b) (4)
		(b) (4) Ple	ase do send the	slide dec	k when you can.	
Thanks,			use uo sena me		k when you cull.	
Dennis						

From: Den	nis A Hanson		
Sent: Mond	lay, March 16, 2020 2:08 PM		
To:	(b)(6) Daniel R. Ellis <	(b)(6) George T Ueda <	(b)(6)
Cc: Saman	tha N. Cayabyab <	(b)(6) Amy Simmonsen <	(b)(6) .
Subject: R	E:	(b) (4)	

Hi Neil, Daniel, and George,

I will start the internal process to get	(b) (4)
	(b) (4)

believe Neil mentioned a slide deck when I spoke with him this morning, so will look for that to come either later today or tomorrow.

(b) (4) (b) (4)

Best,

Dennis

DENNIS A. HANSON, PhD Associate Director, Innovation Development

CoMotion at University of Washington

CoMotion Innovation Center, Box 354950 4545 Roosevelt Way NE, Suite 400, Seattle, WA 98105 (b)(6) | fax 206.543.0586



From: CoMo	tion Reporting [mailto:	(b)(6)		
Sent: Thursd	ay, March 12, 2020 11:58	3 AM		
To:	(b)(6) Daniel R. Ellis	< (b)(6)	George T Ueda <	(b)(6)
Cc: Dennis A	Hanson <	(b)(6) Samantha N	N. Cayabyab <	(b)(6)
Trisha N Dav	is < (b)(6).			
Subject:			(b) (4)	

Dear Investigators King, Ellis and Ueda:

	(b) (4)
Dennis Hanson	
Title: Senior Technology Manager	
Phone: (b)(6)	
Email: (b)(6)	
Thank you for submitting	(b) (4)

Sincerely,

Tina Huang

CoMotion Reporting CoMotion at University of Washington

CoMotion Innovation Center, Box 354950 4545 Roosevelt Way NE, Suite 400, Seattle, WA 98105 (b)(6) | fax (206) 616-3322 (b)(6) | comotion.uw.edu ---

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

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

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Wed, 1 Apr 2020 14:30:49 +0000
To:	Carlton, Kevin (NIH/VRC) [E]
Subject:	Re: Strategic Planning Meeting / Phase II CoV Planning
Attachments:	image003.jpg

I'm working on slides.

Does Kizzy know you have her on agenda? I will probably cover this in my slides.

BG

Sent from my iPhone

On Apr 1, 2020, at 10:23 AM, Carlton, Kevin (NIH/VRC) [E] < (b)(6) wrote:

Hi Barney,

Did you have any updates to the agenda for the 1:00 meeting?

I will start the meeting off by framing the impo	ortance of this discussion and focusing it on the immediate
needs to	(b) (4), (b) (5)
	(b) (4), (b) (5)

<image003.jpg>

Agenda:

Goal of Meeting:		(b) (4), (b) (5)
0) (4), (b) (5) (Kevin)	
•		(b) (4), (b) (5)

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

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

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Mon, 13 Apr 2020 13:38:33 +0000
To:	Daucher, Marybeth (NIH/NIAID) [E];Harris, Christina (NIH/NIAID) [E]
Cc:	Fisher, Brian (NIH/VRC) [E];Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	Fwd: Invitation: Scientific collaboration and support for your COVID-19 needs

FYI. Do you think

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

BG

Sent from my iPhone

Begin forwarded message:

From: Steve Martin <	(b)(6).	
Date: April 13, 2020 at 9:22:46 AM	EDT	
To: "Corbett, Kizzmekia (NIH/VRC)) [E]" <	(b)(6) "Graham, Barney
(NIH/VRC) [E]" <	(b)(6)·	
Cc: Betsy Baer < Betsy	(b)(6) Matthew Lauber <	<matthew (b)(6<="" td=""></matthew>
Selena Larkin <selena< td=""><td>(b)(6) Kelly Johnson <</td><td>Kelly (b)(6)</td></selena<>	(b)(6) Kelly Johnson <	Kelly (b)(6)
Subject Invitedien Colontific cells	haustion and summout for	COVID 10 monda

Subject: Invitation: Scientific collaboration and support for your COVID-19 needs

Complimentary COVID-19 collaborative and analytical support from Waters

Dear Drs. Corbett and Graham,

Your work at the center of the COVID response to accelerate the development of a vaccine for SARS-CoV-2 is remarkable and hugely commendable. Your recent structural biology work is very insightful in terms of antigens and their developability. Noting this, we are reaching out to

(b) (4)

(b) (4)

I hope you, your families and those with whom you work are safe and healthy.

Sincerely,



Stephen A. Martin VP Global Research Waters Corporation Milford, MA 01757 USA (b)(6)

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From: Sent: To: Subject:	Graham, Barney (NIH/VRC) [E] Mon, 30 Mar 2020 00:07:13 +0000 Daucher, Marybeth (NIH/NIAID) [E];Mascola, John (NIH/VRC) [E] RE: (b) (5)		
Can you send me a		(b) (5)	
BG			
From: Daucher, Marybe Sent: Sunday, March 29		(b)(6)	
To: Graham, Barney (NI () Subject: Re: (b) (H/VRC) [E] < 6)	ው(ው) Mascola, John (NIH/VR	C) [E]
I agree that			(b) (5) [,] . We will
need Marie and I will assist Best mb			(b) (5) _.
From: "Graham, Barney Date: Sunday, March 29 To: "Mascola, John (NIH Cc: "Daucher, Marybeth Subject: RE: (b) (5	9, 2020 at 7:04:22 PM //VRC) [E]" < (NIH/NIAID) [E]" <	(b)(6) (b)(6) (b)(6)	
Thanks John.			
BG			
From: Mascola, John (N Sent: Sunday, March 29 To: Graham, Barney (NI Cc: Daucher, Marybeth Subject: RE: (b) (3 Hi Barney, Marybeth,	, 2020 7:02 PM H/VRC) [E] < (NIH/NIAID) [E] <	(b)(6) (b)(6) (b)(6)	

Lets proceed with (b) (5).	
I think the part that is important for the (b) (5)	(b) (5)
Thanks, John	
From: Graham, Barney (NIH/VRC) [E] < (b)(6)	
Sent: Sunday, March 29, 2020 6:46 PM To: Mascola, John (NIH/VRC) [E] < (b)(6)	
Cc: Daucher, Marybeth (NIH/NIAID) [E] < (b)(6)	
Subject: (b) (5)	
Hi John,	
We had discussed	(b) (5)
	(b) (5)
Barney	

Barney S. Graham, MD, PhD Senior Investigator	
Deputy Director, Vaccine Research Center	
Chief, Viral Pathogenesis Laboratory	
National Institute of Allergy and Infectious Diseases, NIH 40 Convent Drive, MSC 3017	
Bldg 40, Room 2502	
Bethesda, MD 20892-3017	
Phone: (b)(6)	
URL: https://www.niaid.nih.gov/research/barney-graham-md-phd	

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From:	Graham, Barney (NIH/VRC) [E]
Sent:	Fri, 21 Feb 2020 20:25:43 +0000
То:	Hiatt, Nissa (NIH/VRC) [C];Mascola, John (NIH/VRC) [E];VRC_CoV
Cc:	Daucher, Marybeth (NIH/NIAID) [E];Harris, Christina (NIH/NIAID) [E];Prince,
Tasheema (NIH/VRC	C) [C]
Subject:	RE: Moderna press release for review
Attachments:	DRAFT_1273 Shipped_2.21.2020_1130AM NIAID_BG.docx

Here are a few edits.

BG

From: Hiatt, Nissa (NIH/VRC) [C] <	(b)(6)	
Sent: Friday, February 21, 2020 3:16 PM		
To: Mascola, John (NIH/VRC) [E] <	(b)(6) VRC_CoV <	(b)(6)
Cc: Daucher, Marybeth (NIH/NIAID) [E] <	ه)(ه) Harris, C	hristina (NIH/NIAID) [E]
< (b)(6) Prince, Tashee	ema (NIH/VRC) [C] <	(b)(6)
Subject: FW: Moderna press release for rev	iew	

Hi everyone,

Moderna shared the attached release about shipping the product (see Jen's note below on Ph. 1 announcement after first participant is vaccinated) and NIAID shared it for VRC review with their suggestions for NIAID related content. If you have any must-change suggestions, please send them by 430 PM, Friday, Feb. 21. Otherwise, please consider this as an FYI. No confirmed date for when Moderna will distribute the press release.

Best, Nissa

Nissa Hiatt Communications Vaccine Research Center, NIAID, NIH 40 Convent Drive, Bldg 40, Room 1100 Bethesda, MD 20892







From: Routh, Jennif	er (NIH/NIAID) [E] <	(b)(6)		
Sent: Friday, Februa	ry 21, 2020 3:02 PN	Λ		
To: Hiatt, Nissa (NIH	/VRC) [C] <	(b)(6) Graham, Barney (NIH/V	RC) [E]	
<	(b)(6) Corbett, Kizz	zmekia (NIH/VRC) [E] <	(b)(6)	Ranjan,
Mukul (NIH/NIAID)	[E] <	(b)(6) Mowatt, Michael (NIH/NIA	D) [E]	
<	(b)(6) Marston, H	lilary (NIH/NIAID) [E] <	(b)(6)	
Cc: Billet, Courtney	(NIH/NIAID) [E] <	(b)(6) Stover, Kathy (NI	H/NIAID) [E]	
<	(b)(6) Oplinger, Ann	e (NIH/NIAID) [E] <	(b)(6) Deatr	ick, Elizabeth
(NIH/NIAID) [C] <		(b)(6) Pekoc, Ken (NIH/NIAID) [E] <		(b)(6)
Lavelle, Judith (NIH/	NIAID) [E]	(b)(6)		
Subject: Moderna p	ress release for revi	iew		

Moderna shared the attached press release for review and would like comments back today. Please let me know if VRC or TTIPO has any comments or edits.

This release likely will set us up to have to deal with some questions from press about Phase 1 details. Also logical question is shipped where. For awareness, NIAID does not plan to formally announce the Phase 1 study in a press release until after the first participant has been vaccinated. Moderna is aware of this plan.

Thanks, Jen

Jennifer Rou	1 (E)	
News and So	ence Writing Branch	
Office of Con	munications and Government Relation	ons
National Inst	ute of Allergy and Infectious Disease	s (NIAID)
NIH/HHS		
31 Center Dr	e Room 7A17C	
Bethesda, M	20892	
Direct: ((b)(6)	

(b)(6)

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statements made that are sender's own and not expressly made on behalf of the NIAID by one of its representatives.

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 24 Mar 2020 11:33:52 +0000
То:	Corbett, Kizzmekia (NIH/VRC) [E]
Subject:	RE: Assays call this week

I'll leave you alone anyway. We have something scheduled later.

BG

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

 Sent: Tuesday, March 24, 2020 7:33 AM
 To: Graham, Barney (NIH/VRC) [E] <</td>
 (b)(6)

 Subject: Re: Assays call this week
 (b)(6)

I'm probably not going to be able to do either, honestly.

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 <</th>(b)(6)Date: Tuesday, March 24, 2020 at 7:32 AMTo: Kizzmekia Corbett <</td>Subject: RE: Assays call this week

This is enough. If you are resting or writing I'm leaving you alone.

BG

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

 Sent: Tuesday, March 24, 2020 7:29 AM
 To: Graham, Barney (NIH/VRC) [E] <</td>
 (b)(6)

 Subject: Re: Assays call this week
 (b)(6)

When is this meeting. I vowed I would make ya'll miss me today. But I can organize the slides and talk if you want me to.

--

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 <</th>(b)(6)Date: Tuesday, March 24, 2020 at 7:25 AMTo: Kizzmekia Corbett <</td>Subject: RE: Assays call this week

OK, then I would need a few slides. Mostly on the

(b) (5)

It never hurts to show (b) (5)

I don't want to show more than 3 slides.

Barney

From: Corbett, Kizzmekia (NIH/VRC) [E] < Sent: Tuesday, March 24, 2020 7:23 AM To: Graham, Barney (NIH/VRC) [E] < (b)(6) Subject: Re: Assays call this week

I think I need to back a way just a little bit. Happy to let you do it.

(b)(6)

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 <</th>(b)(6)Date: Tuesday, March 24, 2020 at 7:22 AMTo: Kizzmekia Corbett <</td>Subject: RE: Assays call this week

I meant would you be ready and interested in doing this?

BG

From: Corbett, Kizzmekia (NIH/VRC) [E] <</th>(b)(6)Sent: Tuesday, March 24, 2020 6:41 AMTo: Graham, Barney (NIH/VRC) [E] <</td>(b)(6)Subject: Re: Assays call this week

It's okay with me. Do you have slides?

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)(б) Fax: (301) 480-2771

(b)(6) From: Barney Graham < Date: Tuesday, March 24, 2020 at 4:34 AM To: Kizzmekia Corbett < (b)(6) Subject: Fwd: Assays call this week Are you up for this? I would just show (b) (5) BG Sent from my iPhone Begin forwarded message: From: William Dowling < (b)(6) Date: March 23, 2020 at 9:37:18 PM EDT (b)(6) To: "Graham, Barney (NIH/VRC) [E]" < Subject: Assays call this week Hi Barney Would it be possible for you or someone from your group to briefly present a few slides at this weeks (b) (5)? Please let me know. meeting on Thanks Bill Get Outlook for iOS

From:	Graham, Barney (NIH/VRC) [E]
Sent:	Tue, 17 Mar 2020 18:00:48 +0000
To:	Mascola, John (NIH/VRC) [E]
Subject:	RE: COVID redundancy plans - Duke

Worth exploring. I can't really envision what is going to happen yet.

BG

From: Mascola, John (NIH/VRC) [E] < ნარი Sent: Tuesday, March 17, 2020 8:55 AM	
To: Graham, Barney (NIH/VRC) [E] < (b)(6)	
Subject: COVID redundancy plans - Duke	
Barney,	
I had interesting conversions with Bart today.	(b) (4)
He is pointing out that they have	(b) (4), (b) (5)
(b) (4), (b) (5)	
Duke will do some (b) (4), work.	
	(b) (4), (b) (5)
	(b) (5)
	(b) (5)

Thoughts, John

	Graham, Barney (NIH/VRC) [Wed, 1 Apr 2020 12:29:52 +0 Morabito, Kaitlyn (NIH/VRC) Bok, Karin (NIH/VRC) [E];Stei C) [C];Corbett, Kizzmekia (NIH, ;Carlton, Kevin (NIH/VRC) [E] Re: TC for Nexelis VRC disc	0000 [E] n, Judy (NIH/VRC) [C];Petrik /VRC) [E];Young, Monique (NIH/VRC) [E];Alvarado,
They need to		(b) (4), (b) (5)	
BG			
Sent from my iPhone			
Sent Hom my II none	~		
On Apr 1, 2020, at 8 wrote:	:27 AM, Morabito, Kaitlyn (NIH/VRC) [E] <	(b)(6)
Hi Karin and VRC only,			
We certainly do not			(b) (4), (b) (5)
	(b) (4), (b) (5)		
l don't believe		(b) (4), (b) (5) [.] so	Kizzmekia and I
determined			(b) (5)
We could consider		A) (A) (A) (5)	(b) (4), (b) (5)
		(b) (4), (b) (5)	
Kaitlyn			
From: Luc Gagnon <	(b)(6)		
	h 31, 2020 at 10:18 PM		
To: Karin Bok <	ره) (ه) (ه) (ه) (ه) (ه) (ه) (ه) (ه) (ه) (r <	ക്ര്ര Judy
Stein	(b)(6) Julien St-Jean <	(b)(6)	
Cc: "Petrik, Amy (NIH		(b)(б) Jason Gall <	(b)(6)
Barney Graham <		abito, Kaitlyn (NIH/VRC)	New York Constraints and Annual States
<			ave have in ve
	(b)(6) Kizzmekia Corbett (b)(6) Judy Stein <	< (b)(6)	(b)(6) Monique Young

Subject: RE: TC for Nexelis | VRC discussion of assays for nCOV-2019

Dear Karin,

I hope you are doing well.

First of all, I would like to confirm that the (b) (4) were received in good conditions (see attached document) (thank you !)

(b) (4)

(b) (4)

We can schedule a TC to further discuss if needed.

Thank you so much for your support.

Best regards,

Luc

From: Bok, Kar	in (NIH/VRC) [E] <	(b)(6)	
Sent: March 10	, 2020 10:37 AM		
To: Karen Maka	ar <	(b)(6) Stein, Judy (NIH/VRC) [C]	
<	(b)(6) Luc Gagnon <	(ه)(ه) Julien St-Jean <	(b)(6)t-
	(b)(6)		
Cc: Petrik, Amy	(NIH/NIAID) [E] <	(b)(6) Gall, Jason (NIH/VRC) [C] <	(b)(6)
Graham, Barne	y (NIH/VRC) [E] <	(b)(6) Morabito, Kaitlyn (NIH/	VRC) [E]
<	(b)(6) Corbett, Kizz	mekia (NIH/VRC) [E] <	(b)(6) Young,
Monique (NIH/	VRC) [E] <	(b)(6) Stein, Judy (NIH/VRC) [C] <	(b)(6)
Subject: Re: TC	for Nexelis VRC discussion	n of assays for nCOV-2019	

Dear Dr. Makar,

I understand we have a draft of the MTA ready to be signed, and we need to add a list of materials to be transferred.

I know we had discussed (b) (4):. Is there anything else you need to set up your assays?

We would prefer to send you the materials asap, and reply to any questions you might have via email. Since we discussed this topic during the BMGF visit the week before, we think it would be best to not have another meeting so soon.

Thank you, let me know the list of materials so we can arrange shipment, and we would be happy to answer Nexelis' questions via email.

Best,

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: Karen Makar <		(b)(6)	
Date: Monday, March	2, 2020 at 1:23 PM	Λ	
To: "Stein, Judy (NIH/	VRC) [C]" <	(b)(6) Karin Bok <	(b)(6)
II.	(b)(6) <	(b)(6) "	(b)(6)
<	(b)(6)		
Cc: "Petrik, Amy (NIH/	'NIAID) [E]" <	(b)(6) "Gall, Jason (N	NIH/VRC) [C]"
< (b)(6)	"Graham, Barney	(NIH/VRC) [E]" <	(b)(6) "Morabito,
Kaitlyn (NIH/VRC) [E]"		(b)(6)>, "Corbett, Kizzmekia	a (NIH/VRC) [E]"
<	(b)(6)		

Subject: RE: TC for Nexelis | VRC discussion of assays for nCOV-2019

Thanks, Judy! I think	(b) (4)
	(b) (4)
Karen	
5570(0149)	

From: Stein, Judy (NIH/VRC) [C] <	(b)(6)	
Sent: Monday, March 2, 2020 9:32 AM		
To: Bok, Karin (NIH/VRC) [E] <	(b)(6) Karen Makar <	(b)(d

(b)(6)	(b)(6)		
Cc: Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Gall, Jason (NIH/VRC) [C]<	(b)(6)
Graham, Barney (NIH/VRC) [E] <	(b)(6) Morabito, Kaitlyn (NII	H/VRC) [E]	
< (b)(6) Corbett, Kizzme	kia (NIH/VRC) [E] <	(b)(6)	
Subject: RE: TC for Nexelis VRC discussion o	f assays for nCOV-2019		
Hi Karen,			
I have attached the standard SLA that we are	using for this transfer.		
If you could fill in the highlighted sections and	the signature block and send this	back to me, we	would
appreciate it.	-		(b) (4)
			(b) (4)
Thanks yong much			
Thanks very much.			
Judy (b)(6)			
(0)(0)			
From: Bok, Karin (NIH/VRC) [E] <	(b)(6)		
Sent: Monday, March 2, 2020 12:23 PM			
To: Karen Makar <	(b)(6) (t	b)(6) (b)(6)-	
(b)(6)		_	
Cc: Stein, Judy (NIH/VRC) [C] <	(b)(6) Petrik, Amy (NIH/NIAID) [E]] <	(b)(6)
	6 Young, Monique (NIH/VRC) [E]		
< (b)(6) Graham, Barney (l	NIH/VRC) [E] <	(b)(6) Morabito,	Kaitlyn
and and a second se	orbett, Kizzmekia (NIH/VRC) [E]		
< (b)(6)			
Subject: Re: (b) (4) VRC discussion o	f assays for nCOV-2019		
Dear Dr. Makar,			
			A > (4)
During our meeting with BMGF on Friday, we			(b) (4)
(b) (4):. I think the fastest way to help your	project, would be to avoid the cal	l and just set up	an MTA

to share reagents, and we could also share SOPs. Miss Stein copied here can help start the process.

Let me know if this works,

Best Regards,

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

(b)(6) From: Karen Makar < Date: Monday, March 2, 2020 at 11:02 AM To: "Graham, Barney (NIH/VRC) [E]" < (b)(6) "Corbett, Kizzmekia (NIH/VRC) (b)(6) "Young, Monique (NIH/VRC) [E]" < (b)(6) [E]" < (b)(6)>, (b)(6) "Morabito, Kaitlyn (NIH/VRC) [E]" (b)(6) (b)(6) (b)(6) < < (b)(6)>, "Petrik, Cc: "Stein, Judy (NIH/VRC) [C]" (b)(6)>, Karin Bok Amy (NIH/NIAID) [E]" < (b)(6) "Gall, Jason (NIH/VRC) [C]" < (b)(6) "Young, Monique (NIH/VRC) [E]" < (b)(6) Subject: RE: TC for Nexelis | VRC discussion of assays for nCOV-2019

Hi Monique,

Due to the new COVID-19 outbreak in Seattle, I am no longer travelling. Thus I am available for this call anytime today and anytime tomorrow except 8:30-10am eastern. We would like to have the contract & MTA executed and materials shipped this week given the urgency, so happy to be flexible.

Thanks, Karen

From: Karen Makar					
Sent: Thursday, Februa	ry 27, 2020 12:03	PM			
To: Graham, Barney (N	IH/VRC) [E] <	(b)(6)	Corbett, Kizzmekia	(NIH/VR	C) [E]
<	(b)(6) Young, Mo	onique (NIH/VRC) [E	<	(b)(6)	Morabito,
Kaitlyn (NIH/VRC) [E] <		(b)(6)	(b)(6)	(b)(6) <u>-</u>	
(b)(6)					
Cc: Stein, Judy (NIH/VR	C) [C] <	(b)(6) Bok, Kar	in (NIH/VRC) [E] <		(b)(6)
Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Gall, Jaso	n (NIH/VRC) [C] <		(b)(6)
Young, Monique (NIH/	VRC) [E] <	(b)(6)			
Thank you, Barney. Yes					
Thank you, Barney. Yes Karen	, I expect this will o	come up tomorrow			
Thank you, Barney. Yes Karen From: Graham, Barney	, I expect this will o (NIH/VRC) [E] <	come up tomorrow (6)	too.		
Subject: RE: TC for Nex Thank you, Barney. Yes Karen From: Graham, Barney Sent: Thursday, Februa To: Karen Makar <	, I expect this will o (NIH/VRC) [E] <	come up tomorrow (ه) PM	too.	/VRC) [E]	
Thank you, Barney. Yes Karen From: Graham, Barney Sent: Thursday, Februa	, I expect this will ((NIH/VRC) [E] < ry 27, 2020 12:00	come up tomorrow (ه) PM	too. هوالله ett, Kizzmekia (NIH		
Thank you, Barney. Yes Karen From: Graham, Barney Sent: Thursday, Februa To: Karen Makar <	, I expect this will ((NIH/VRC) [E] < ry 27, 2020 12:00 (())))))))))))))))))))))))))))))))))	come up tomorrow (ხ) PM (ხ)(რ) Corb	too. هوالله ett, Kizzmekia (NIH		Morabito,

Petrik, Amy (NIH/NIAID) [E] <	(b)(6) Gall, Jason (NIH/VRC) [C] <	(b)(6)
Young, Monique (NIH/VRC) [E] <	(b)(6)	
Subject: RE: TC for Nexelis VRC discus	sion of assays for nCOV-2019	

I'll ask Monique Young to coordinate the call.

I assume this will also be a topic at our meeting with BMGF people here at NIH tomorrow afternoon.

Thank you.

Barney

From: Karen Makar	<	(b)(6)	
Sent: Thursday, Fel	oruary 27, 2020 2:14	PM	
To: Corbett, Kizzme	ekia (NIH/VRC) [E] <		(b)(6) Morabito, Kaitlyn (NIH/VRC) [E]
<	(b)(6)	(b)(6)	(b)(6)
Cc: Stein, Judy (NIH	/VRC) [C] <	(b)(6) Graham,	Barney (NIH/VRC) [E]
<	(b)(6) Bok, Karin (N	IIH/VRC) [E] <	(b)(6) Petrik, Amy (NIH/NIAID) [E]
<	(b)(6) Gall, Jason (NIH	/VRC) [C] <	(b)(6) Young, Monique (NIH/VRC) [E]
<	(b)(6)		
		10 Not 12 Descard	

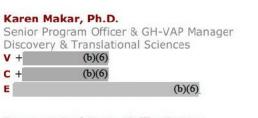
Subject: RE: TC for Nexelis | VRC discussion of assays for nCOV-2019

Hi Kizzmekia,

I do think it is probably easier for you to schedule this meeting. Nexelis folks- can you please provide your availability for the following windows so Kizzmekia can coordinate?

Monday 4:30pm ET onwards Tuesday 10am ET onwards Wednesday prior to 5pm ET

Karen



Program Assistant: Maliha Anwar (b)(6)

Global Health-Vaccine Accelerator Platforms www.ghvap.org

From: Corbett, Kizz	zmekia (NIH/VRC)	[E] <	(b)(6)
Sent: Thursday, Fe	bruary 27, 2020 10):00 AM	
To: Karen Makar <		(b)(6) Mora	abito, Kaitlyn (NIH/VRC) [E]
<	(b)(6)	(b)(6)	(b)(6)
Cc: Stein, Judy (NIH	I/VRC) [C] <	(b)(6) Graham,	Barney (NIH/VRC) [E]
<	(b)(6) Bok, Karin	(NIH/VRC) [E]	(b)(6)>; Petrik, Amy (NIH/NIAID) [E]
<	(b)(6) Gall, Jason (N	IIH/VRC) [C] <	(b)(6) Young, Monique (NIH/VRC) [E]
<	(b)(6)		
Subject: Re: TC for	Nexelis VRC disc	ussion of assays for nCO	V-2019

Great, here are our attendees. Off top, I can say we are unavailable Monday am. <u>VRC Attendees:</u> Barney Graham via Monique Young Kizzmekia Corbett Kaitlyn Morabito Jason Gall Judy Stein Amy Petrik

Karin Bok (optional)

--

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: Karen Makar <		(b)(6)	
Date: Thursday, Febru	ary 27, 2020 at 12:57 PN	Л	
To: Kizzmekia Corbett	<	(b)(6) Kaitlyn Morabito)
<	(b)(6) Greg Kulnis <	(b)(6)
u .	(b)(6) <	(b)(6) "	(b)(6)
<	(b)(6) Julie Lauzon <	Q	b)(6)
Cc: "Stein, Judy (NIH/\	/RC) [C]" <	(b)(6) Barney Grahan	n
<	(b)(6) "Bok, Karin (NIH/VF	RC) [E]" <	ه)(ه) "Petrik, Amy

(NIH/NIAID) [E]" <		(b)(6)>, "Gall, Jason (NIH/VRC) [C]" <	(b)(6)
"Lynda, Stuart" <		(b)(6) David Vaughn	
<		(b)(6) Max Silverman <	(b)(6)
Jacqueline Kirchner		ര്ഗര് Monique	e Young
<	(b)(6)		

Subject: RE: TC for Nexelis | VRC discussion of assays for nCOV-2019

Very happy to have to own the calendar invite. I'm the only required person from BMGF, the others are optional. I'll let Nexelis provide their availability but they have been very flexible and responsive. Karen

From: Corbett, H	(izzmekia (NIH/VRC) [E] <	(b)(6)	
Sent: Thursday,	February 27, 2020 9:53 AM		
To: Karen Maka	r < (b)(⁶⁾ Morabito, Kaitlyn (NIH/VRO	C) [E]
<	(b)(6) Greg Kulnis <	(b)(6)	(b)(6)
	(ര)ഗ്ര Julie Lauzon <	(b)(6)	
Cc: Stein, Judy (I	NIH/VRC) [C] < (b)(6) G	raham, Barney (NIH/VRC) [E]	
<	(b)(6) Bok, Karin (NIH/VRC) [E] <	(ந)ஞ் Petrik, Al	my (NIH/NIAID) [E]
<	(b)(6) Gall, Jason (NIH/VRC) [C] <	(ந)ஞ் Lynda Stuar	rt
<	(b)(6) David Vaughn <		(b)(6) Max
Silverman <	(b)(6) Jacqueline	Kirchner	
<	(b)(6) Young, N	/lonique (NIH/VRC) [E] <	(b)(6)
Subject: Re: TC 1	for Nexelis VRC discussion of assays f	or nCOV-2019	Sec. 12

Okay, There are several people from our side to be on the call so maybe it's best to schedule through our side? If you agree, Monique Young, cc'ed can help us with that.

--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: Karen Makar Date: Thursday, February 27, 2020 at 12:46 PM (b)(6)

To: Kizzmekia Corbet	tt <	(b)(6) Kaith	yn Morabito	
<	(b)(6) Greg Kuln	is <	(b)(6)	
u da	(b)(6) <	(b)(6)	6	(b)(6)
<	(b)(6) Julie Lau	zon <	(b)	(6)
Cc: "Stein, Judy (NIH,	/VRC) [C]" <	(b)(6) Bar	ney Graham	
<	(b)(6) "Bok, Karin (NIH/VRC) [E]" <		(b)(6) "Petrik, Amy
(NIH/NIAID) [E]" <	(b)(6)	Gall, Jason (NIH/	'VRC) [C]" <	(b)(6)
"Lynda, Stuart" <		(b)(6) Davi	id Vaughn	
<	(b)(6)	Max Silverman <		(b)(6)
Jacqueline Kirchner	4		(b)(6)	
Subject: TC for Nexe	lis VRC discussion	of assays for nCOV	/-2019	

Hi Kizzmekia,

Thanks very much for your flexibility and your willingness to collaborate with us. We had a good call with Nexelis yesterday and they are keen to talk directly with the scientific team at the VRC to discuss

(b) (4)

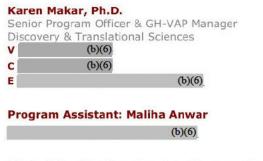
(b) (4)

Several of our team are visiting the VRC today and tomorrow, so perhaps a call with Nexelis early next week would be ideal? I'm on a plane most of Monday but could do early (8am-10am ET) or late (4pm onwards ET) and will be on the East Coast Tuesday & Wednesday with a flexible schedule. Could you please advise which times would work best for your side?

Amy & Judy- Julie Lauzon and Greg Kulnis are the right folks to start with for MTA/legal discussions.

We are looking forward to working with you,

Karen



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From: Corbett, Kizzmekia (NIH/VRC) [E] < Sent: Tuesday, February 18, 2020 5:36 AM

(b)(6)

To: Karen Makar <	(b)(6) Mo	rabito, Kaitlyn (NIH/VRC) [E]
< (b)(6)	
Cc: Stein, Judy (NIH/VRC)	[C] < (b)(6) Graham	n, Barney (NIH/VRC) [E]
< (b)(6)	Bok, Karin (NIH/VRC) [E] <	(b)(6) Petrik, Amy (NIH/NIAID) [E]
< (b)(6) G	all, Jason (NIH/VRC) [C] <	(b)(6) Lynda Stuart
<	(b)(6) David Vaughn <	(b)(6) Max
Silverman < <u>Max.Silverma</u>	(b)(6)	

Subject: Re: List of assays for nCOV-2019 for possible transfer to Nexelis

I'm available next week, & generally rather flexible. Best for times to come from that direction from your direction. Or that we have a standing meeting until things are ironed out.

Sent from the mobile device of: Kizzmekia S. Corbett, PhD Senior Research Fellow coVip Scientific Lead VRC | NIAID | NIH

From: "Karen Ma	kar" <	(b)(6)	
Date: Tuesday, Fe	ebruary 18, 2020 at 12:18:34 AM		
To: "Corbett, Kizz	mekia (NIH/VRC) [E]" <	(b)(6) "Morabito, Kaitlyn (NIH/VRC) [E]"
<	(b)(6)		
Cc: "Stein, Judy (I	NIH/VRC) [C]" < (b)	6) "Graham, E	Barney (NIH/VRC) [E]"
<	(b)(б) "Bok, Karin (NIH/VRC) [Е	" <	(b)(6) "Petrik, Amy (NIH/NIAID)
[E]" <	(b)(6) "Gall, Jason (NIH/VRC)	C]" <	(b)ஞ் "Lynda, Stuart"
<	(b)(6) "David Vaugh	n" <	(b)(6) "Max
Silverman" <	(b)(6)		

Subject: RE: List of assays for nCOV-2019 for possible transfer to Nexelis

Thank you, Kaitlyn! This is very helpful. We'll work on refining a set of key assays based on this feedback and will also work to connect your team with the Nexelis team to talk practicalities in the near future. I am OOO this week, but perhaps you have some availability the week after? Best,

Karen

From: Corbett, Kizz	mekia (NIH/VRC) [E] <		(b)(6)	
Sent: Monday, Feb	ruary 17, 2020 9:23 AM			
To: Karen Makar <		(b)(6) Morab	oito, Kaitlyn (NIH/VRC) [E]	
	(b)(6)			
Cc: Stein, Judy (NIH	/VRC) [C] <	(b)(6) Graham, B	Barney (NIH/VRC) [E]	
<	(b)(6) Bok, Karin (NIH/	VRC) [E] <	(b)(6) Petrik, Amy (I	NIH/NIAID) [E
<	(b)(6) Gall, Jason (NIH/VR	C) [C] <	(b)(6) Lynda Stuart	
<	(b)(6) Davi	d Vaughn <		(b)(6) Max
Silverman	(b)(6)	2.72	Des design in	

Subject: Re: List of assays for nCOV-2019 for possible transfer to Nexelis

Good afternoon all, I took a look at the list. Here are my comments:



Let us know how we can help otherwise, whether by suggesting labs for certain aspects of this list or other.

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: Karen Makar <		(b)(6)	
Date: Friday, Februar	y 14, 2020 at 2:56 F	PM	
To: Kaitlyn Morabito		(b)(6) >	
Cc: "Stein, Judy (NIH/	VRC) [C]" <	(b)(6) Barney Gra	ham
<	(b)(6) "Bok, Karin (N	NIH/VRC) [E]" <	(b)(6) Kizzmekia Corbett
<	(b)(6) "Petrik, A	my (NIH/NIAID) [E]" <	(b)(б) "Gall,
Jason (NIH/VRC) [C]"	< (b)(6) "Lynda, Stuart"	

<	^{(b)(6)} David Vaughn <	(b)(6)
Max Silverman <	(b)(6)	

Subject: List of assays for nCOV-2019 for possible transfer to Nexelis

Dear Kaitlyn and team,

Thank you very much for your time yesterday discussing possible assay and reagent transfer to the CRO, Nexelis, in support of our collective efforts to develop vaccines and biologics for nCOV-2019. I've attached the list we've put together so far as a starting point for your feedback. Thank you again for your support and partnership, I am looking forward to working together with you on this. All the best,

Karen

Karen Makar, Ph.D.

Senior Program Officer & GH-VAP Manager Discovery & Translational Sciences

V	(b)(6)	Dererreeb
C +	(b)(6)	
E		(b)(6)

Program Assistant: Maliha Anwar (b)(6)

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-----Original Appointment-----

From: Stein, Judy (NIH/VRC) [C] < (b)(6)

Sent: Thursday, February 13, 2020 6:44 AM

To: Stein, Judy (NIH/VRC) [C]; Karen Makar; Lynda Stuart; Graham, Barney (NIH/VRC) [E]; Morabito, Kaitlyn (NIH/VRC) [E]; Bok, Karin (NIH/VRC) [E]; Corbett, Kizzmekia (NIH/VRC) [E]; Petrik, Amy (NIH/NIAID) [E]; Gall, Jason (NIH/VRC) [C]

Subject: Call between BMGF and VRC/NIAID TTIPO to discuss potential arrangement with Nexelis for coronavirus

When: Thursday, February 13, 2020 12:00 PM-12:30 PM (UTC-05:00) Eastern Time (US & Canada). Where: Teleconference number is below

Hi everyone,

Here is information for a meeting at noon. My apologies if it doesn't fit with everyone's schedule – we had wanted to have this initial discussion this week so we can determine how to move forward. Thanks,

Judy

Call in: (b)(6) Leader passcode: (b)(6) Participant passcode: (b)(6) We are rapidly drafting a contract with Nexelis (formerly Neomed labs) to stand up a suite of assays and I would like to ask for your help on this.

I believe Barney has	(b) (4)	
		(b) (4)
About Nexelis- they are an ex-GSK group in Canada which now functions as a CRO for assay		
development and implementation of large scale immune monitoring of vaccine clinical trials.	They are	5
comprised of GSK's former antigen discovery and immune monitoring units. They can handle		
production, assay development, preclinical standardized assays through to validated assays for		
scale phase III trials and have partnerships with many large pharma companies as well as a str	ategic	

(b) (4)

(b) (4)

partnership with Publich Health England. Our initial discussion has focused on