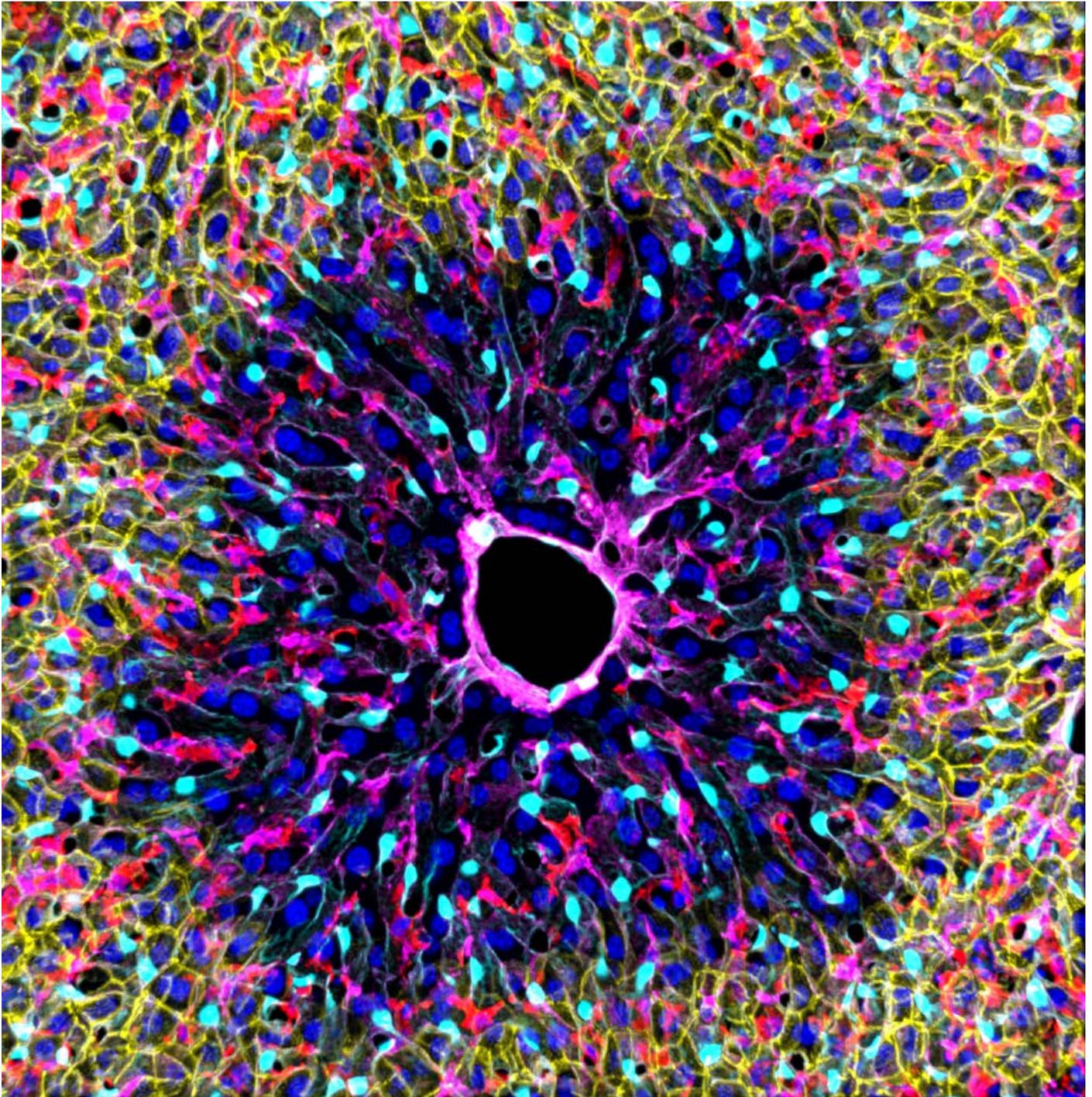




# THE GSCHRONICLES

*The Official Newsletter of the NIH Graduate Student Community*

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**Natures' Hexagons**  
Anita Gola (NIAID, University of Oxford)

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# Upcoming (Virtual) OITE Events

## WELLNESS SEMINARS

**Discussion for Building Resilience: Graduate Students**  
Aug 25, 2020 3:00-4:00 pm

**Mindfulness Meditation: Breathing the Body**  
Aug 25, 2020 12:00-12:30 pm  
Aug 27, 2020 5:00-5:30 pm  
Aug 28, 2020 12:00-12:30 pm

**Discussion for Building Resilience: Struggling to Get a Good Night's Sleep**  
Aug 26, 2020 3:00-4:00 pm

**Wellness Wednesday: Developing a Personal Mediation Practice**  
Aug 26, 2020 12:00-1:00 pm

**Discussion for Building Resilience: Job Search & Life Stress for International Trainees**  
Aug 27, 2020 3:00-4:00 pm

**Discussion for Building Resilience: Navigating Life and Coronavirus While Dealing with Anxiety, Depression, & Other Emotional Challenges**  
Aug 27, 2020 1:00-2:00 pm

**Discussion for Building Resilience: Academic Planning During COVID**  
Aug 28, 2020 1:00-2:00 pm

**Discussion for Building Resilience: Controlling Cognitive Distortions & the Catastrophic Stories We Tell**  
Aug 28, 2020 11:15-12:15 pm

## CAREER SEMINARS

**Faculty Jobs Application Advice Q&A Session**  
Aug 31, 2020 1:30-3:00 pm

**OITE Orientation for Graduate Students and Postdoctoral Fellows**  
Sept 08, 2020 11:00-12:30 pm

**Career Planning for Scientists**  
Sept 14, 2020 1:30-3:00 pm

**Career Planning Advice Q&A Session**  
Sept 21, 2020 4:00-5:00 pm

**Scientists Teaching Science 90-minute workshop**  
Sept 03, 2020 9:00-10:30 am  
Sept 03, 2020 1:00-2:30 pm

**Scientists Teaching Science 9-week Pedagogy Course**  
Starts Sept 30, 2020  
*Registration opens Sept 01*

**Networking for Scientists**  
Oct 05, 2020 2:30-3:30 pm

**Networking Advice Q&A Session**  
Oct 19, 2020 3:00-4:00 pm

**Industry Careers Overview and Job Packages**  
Oct 26, 2020 4:00-5:00 pm

**Industry Jobs Advice Q&A Session**  
Nov 02, 2020 4:00-5:00 pm

**Resumes, CVs, and Cover Letters**  
Nov 09, 2020 3:00-4:30 pm

**Resumes, CVs, and Cover Letter Q&A Session**  
Nov 16, 2020 4:00-5:00 pm

**Academic Job Interviews**  
Nov 23, 2020 1:30-3:30 pm

**Industry: The Organization of Business**  
Dec 07, 2020 4:00-5:00 pm

**Interviewing Skills**  
Dec 14, 2020 3:00-5:00 pm

All upcoming OITE events are being held virtually online.

Register at <https://www.training.nih.gov/events/upcoming>

# Call for a New GSC Logo

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Calling all NIH Grad Students—

The Graduate Student Council is in search of a new logo that represents the GSC and who we are. We invite you to create an original logo and send us your submission(s) to be considered. The logo can be original artwork (eg, drawing, painting), graphic design, photography, or any modality you think works for this context. This is a chance to access your creative side! All submissions must contain the letters “GSC” but color, shape, modality, etc are up to you. Two previous logos are shown to the right as examples.



Please send all submissions to [GSChronicles@od.nih.gov](mailto:GSChronicles@od.nih.gov)

**All submissions are due by Tuesday, September 8.**

# GSC Update- Changing to Virtual

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As we are all continuing to endure the changes to our schedules, routines, and research as a result of COVID-19, we are slowly learning to how to navigate this “new normal” using technology, flexibility, and wit. The Graduate Student Council (GSC) has remained strong through the pandemic, continuing to provide a variety of resources and events for the NIH graduate student community! As Dr. Francis Collins, Dr. Sharon Milgram, and the rest of OITE have repeatedly expressed, the trainees at the NIH are important and the safety and well-being of our community is vital. As the OITE continues to transfer their resources online, the GSC also has adapted. GSC monthly meetings and all our various committee events have also moved to different virtual platforms, providing scientific discussions through GS3 and clinical case presentations as well as bringing us together through some fun virtual trivia nights and a virtual book club. Check out our GSC updates below and be sure to join us for our upcoming GSC monthly meetings and other GSC events!

**Be sure to stay connected with other NIH Graduate Students and keep posted on all GSC events through all of our platforms:**



[Graduate Student Council Website](#)



[GS Underground Google Group](#)

Please send your personal (non-NIH) email address to [GSCcochair@mail.nih.gov](mailto:GSCcochair@mail.nih.gov) to be added to this group.



[GS Underground Instagram](#)

@graduate\_student\_underground



[GS Underground Facebook](#)

@Graduate Student Underground



[NIH Graduate Student LinkedIn Group](#)

Search for: NIH Graduate Partnerships Program - Current Students & Alumni

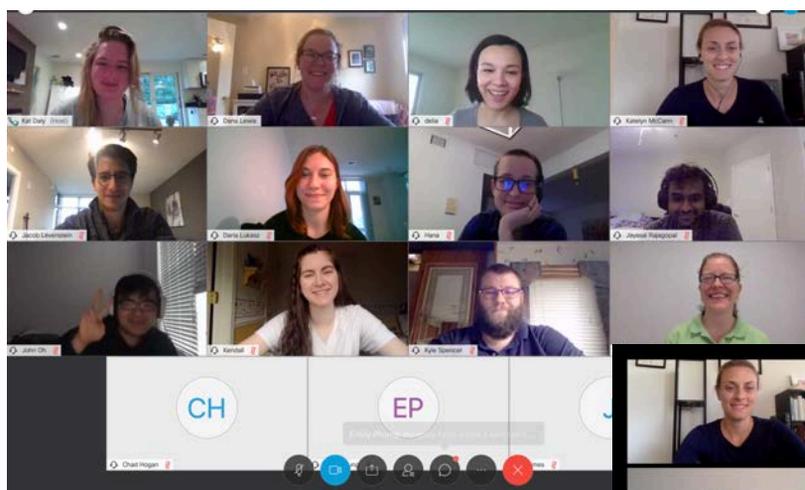


[GSC Slack Group](#)

@GS\_Underground\_Slack

The **Graduate Student Council (GSC)** was formed in 2001 with the goal of facilitating the intellectual, social, and living needs of graduate students conducting research at the NIH. As such, the council organizes regular events through eight committees and liaisons. We are always looking for talented graduate students to help with these committees – if you would like to get more involved with any of the following initiatives, please contact the Graduate Student Council Co-Chairs at [GSCcochair@mail.nih.gov](mailto:GSCcochair@mail.nih.gov). Read on to learn more about our exciting work! *We hope to see you at the next GSC meeting or at one of our GSC events!*

*\*The GSC is looking to fill some specific positions (see below) but please reach out if you have interest in serving on any committee. It's a lot of fun and a great resume booster\**



**GSC Virtual Meetings**

**Community Service/Mentoring/Outreach Committee** – This committee organizes events for graduate students to contribute to the community and to advance their personal and professional development. The committee organized volunteer events to assemble boxes of food for those in need (**Manna Food Bank**), prepared treats for patients at the **Children’s Inn**, and publicized **blood drives**. Through collaborations with the **Prince George’s County Project Lead the Way**, we provide opportunities for graduate students to mentor aspiring biomedical scientists. Back in May, one of our key virtual events involved **making cloth face masks!**

This committee also organizes regular events and career seminar series to discuss professional development: **PhDs in the Real World**, which brings in GPP alumni and speakers from a wide range of career paths, and the **Academic Journeys and Building Networks**, which is a great series to hear directly from current NIH PIs (early and well established) about their academic career paths. Graduate students who have attended these events have not only enjoyed these events, but also found them to be remarkably helpful in their personal and professional development.

Stay tuned for upcoming announcements for these volunteering and mentoring events that will be happening virtually soon.

**\*\*We are currently seeking a co-organizer for both career seminar series. If interested, please contact one of your GSC co-chairs ([GSCcochair@mail.nih.gov](mailto:GSCcochair@mail.nih.gov)). \*\***

**Public Relations Committee** –The Public Relations Committee helps in promoting opportunities available to graduate students. These fall into three key efforts: 1) publication of the quarterly **GSChronicles, the official newsletter of the NIH Graduate Student Community**; 2) publication of the **Graduate Student Newsletter**; and 3) maintenance of the social media accounts for the Graduate Student Community, including the **Facebook, Google, and Instagram accounts**. The public relations committee is always looking for new ideas, as well as new writers, for the GSChronicles. Serving in this capacity is an excellent opportunity for graduate students to hone their writing skills and may be useful for professional development.

**Social Committee \*Recruiting for more members\***

– The Social Committee organizes events to build camaraderie and to promote networking among graduate students at the NIH. The Social Committee has worked with postdoctoral and postbaccalaureate fellows as well to organize **joint events such as social hours and game nights**. In the past few months, the Social Committee developed and organized some amazing **virtual trivia nights**. These events have been a great way to de-stress and take

the pandemic off our mind for a little bit. It’s also a great way to meet other graduate students! Looking forward, during this troubling new lifestyle we are dealt, the social committee and the GSC are continuously brainstorming new ideas to keep the graduate student community connected. **Recently, we have developed a slack group (see above) and other social groups to keep posted on upcoming virtual social events to stay engaged with your fellow fellows!**

**Virtual Trivia Night**

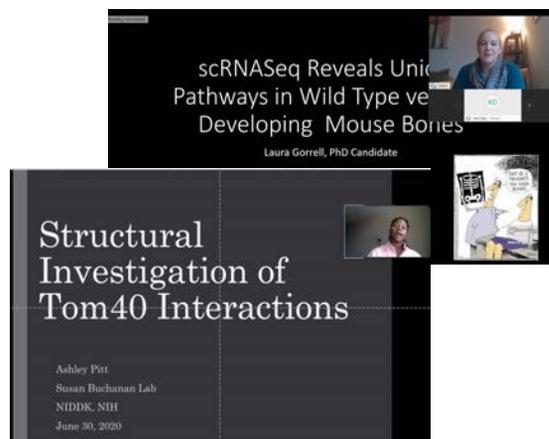


**Graduate Student Seminar Series (GS3)** – This series is an excellent opportunity for graduate students to practice their presentation skills in a relaxed setting and to receive feedback on your presentation skills and research. Graduate Student Seminars are held on the last Tuesday of every month, from 5-5:30pm. We recently had impressive **virtual presentations** by Ashley Pitt, on the interactions of the TOM complex, and by Laura Gorrell on pathways in developing mouse bones. Be sure to tune into the next seminar series!

**\*\*If you'd like to sign up to present and get feedback on your presentation, please contact Julia Gross ([julia.gross@nih.gov](mailto:julia.gross@nih.gov)).**\*\*

**Upcoming GS3 Seminars:**

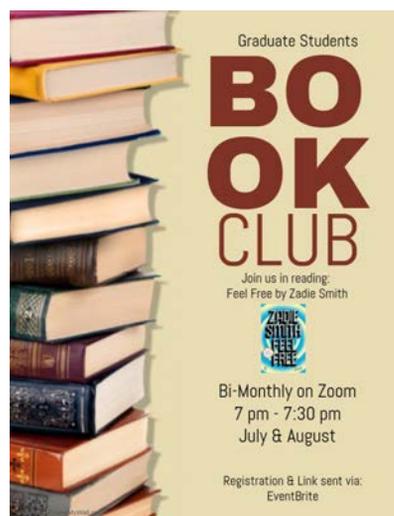
- Aug 25 Chad Coomer
- Sept 29 Emily Phung
- Oct 27 Spot still available!**
- Nov 17 Jorge Romo Tena
- Dec 15 Marya Sabir



**Virtual GS3 Seminars**

**Foundation for Advanced Education in the Sciences (FAES) Liaison** – FAES provides educational and professional services in addition to fostering a collegial environment for the NIH scientific community. As such, FAES provides graduate students with educational opportunities and health insurance. In addition, FAES provides us with the Graduate Student Lounge (Building 10, Room 4-3330), a unique space for graduate students to meet, study, and conduct events specific to graduate students. The FAES liaison of the GSC provides a critical voice for graduate students in the design and implementation of FAES initiatives.

**\*\*We are currently seeking a new FAES liaison. If interested, please contact one of your GSC co-chairs ([GSCcochair@mail.nih.gov](mailto:GSCcochair@mail.nih.gov)).**\*\*



**Fellow's Liaison** – The liaison to the Fellows Committee builds on our successful relationship with the postdoctoral community. As such, the liaison helps organize **social and professional events with postdocs**. More recently, we developed a **virtual book club**. For July & August, we are reading *Feel Free* by Zadie Smith. **[Register for the Book Club](#)** now so you can join us for our upcoming sessions in August!

**Postbac Liaison** – The liaison to the Postbaccalaureate Committee works to deepen our relationship with the postbaccalaureate community at NIH. As such, the liaison has helped organized **joint social events** such as game nights and social hours.

**OxCam Liaison** – The liaison to the Oxford-Cambridge Program furthers our relationship with this unique graduate program. As such, the liaison has helped secure attendance for NIH Graduate Students at the **monthly OxCam clinical case conferences**, currently happening **virtually**. This conference helps bridge the gap between basic and translational science and has been well-received. Back in April, Dr. Ramya Ramaswami and Dr. Kathyn Lurain joined us for our clinical case conference on cancer. For July’s conference, we hosted Dr. Aaron Neal to discuss the interesting changes of clinical research in the time of COVID. Stay tuned for all upcoming clinical case conferences!



**Virtual OxCam Clinical Case Conference**

# 13th Annual Career (Virtual) Symposium

As most things have moved to virtual platforms, the Career Symposium this year was no exception. Although you didn't have the advantage of in-person networking, the 13<sup>th</sup> Annual Career Symposium still put on a show, featuring various career paths as well as all the resources you may need to help you prep for your next career step. The all-day virtual event on May 8<sup>th</sup>, 2020 consisted of various career panels, live interviews, and sessions on career resources. This virtual event kicked off with Dr. Collins highlighting the importance of research fellows at the NIH as well as taking note of your well-being during this COVID-19 pandemic for your current and future endeavors, whatever they may be.

This year's symposium hosted four live panels aiming to grasp a wide range of careers involving being on or off the bench: 1. Faculty Careers: An Introduction to Academia, 2. Industry Research and Development Careers, 3. Science Administration Careers, 4. Industry: Non-Bench Careers. The Career Symposium committee also put together a list of pre-recorded panels and interviews that featured even more career paths including, Science Policy, Government, Tech Transfer, Science Education and Outreach, Science Communication among many others.

If you missed out on the career symposium...DO NOT FEAR! All of the 2020 Virtual Career Symposium's sessions were [recorded and archived](#). You can check out the [program](#), [speaker bios](#), and even [watch the recorded panels and interviews](#)!



**Industry: Non-Bench Careers Panel**



**Industry R&D Panel**



**Science Administration Panel**

**Need even more career development content?** Check out [archived materials from other past Career Symposiums](#).

**Other great resources by the Office of Intramural Training and Education include:** [OITE Careers Blog](#), [Videocasts of OITE events](#), and the [NIH OITE Youtube page](#).

Also be sure to take advantage of [OITE's career counselors](#) who are available to help you with all aspects of careers, from determining what career would work for you up to landing the interview or negotiating salary.

**Are you about to leave the NIH or want to know what career paths of graduate students have taken?** Be sure to check out the [NIH database](#). When you graduate, be sure to add your name to the list to help future graduate students!

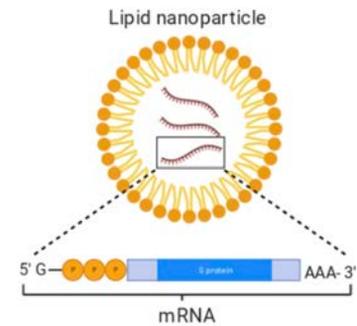
Another great way to build your network is through LinkedIn, so be sure to add the [NIH Graduate Partnership Program](#) to your profile!

# From Bench to Bedside:

## The Journey to a SARS-CoV-2 Vaccine

Last issue, we interviewed two NIH scientists directly involved in creating the SARS-CoV-2 mRNA-1273 vaccine in collaboration with Moderna. Since then, the vaccine has made tremendous progress, with three published manuscripts in *Nature* and *The New England Journal of Medicine*. These manuscripts described the non-clinical challenge studies with mice and non-human primates (NHP), and lastly, the first set of data from the phase 1 clinical trial. As of July 27th, Moderna has launched its randomized, placebo-controlled phase 3 trial, which will encompass 30,000 participants in approximately 89 clinical trial sites across the United States.

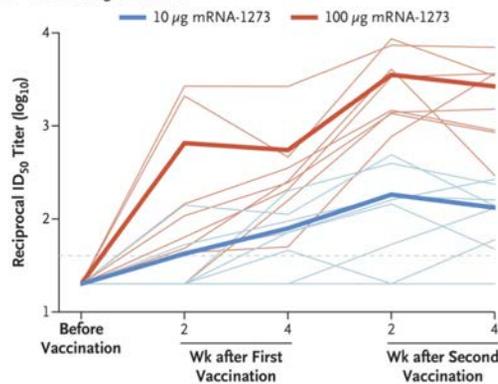
### Moderna (mRNA-1273)



Platform: LNP-encapsulated mRNA encoding S protein.

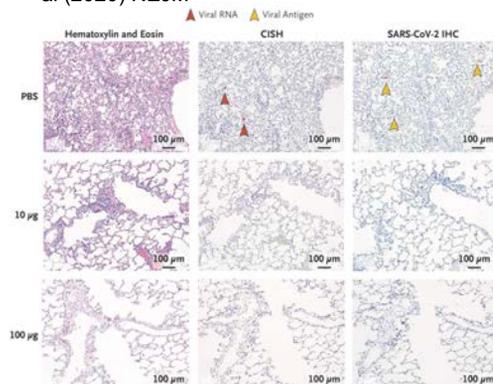
Source: Biorender

B Neutralizing Antibodies



#### Antibody response after mRNA-1273

**vaccination in rhesus macaques.** Neutralizing antibodies 4 weeks following the first vaccination in animals that received 100 µg was 5 times that seen at the lower dose (10 µg) and rose again after the second vaccination. Source: Corbett et al (2020) NEJM



#### Lung histopathological analysis and viral

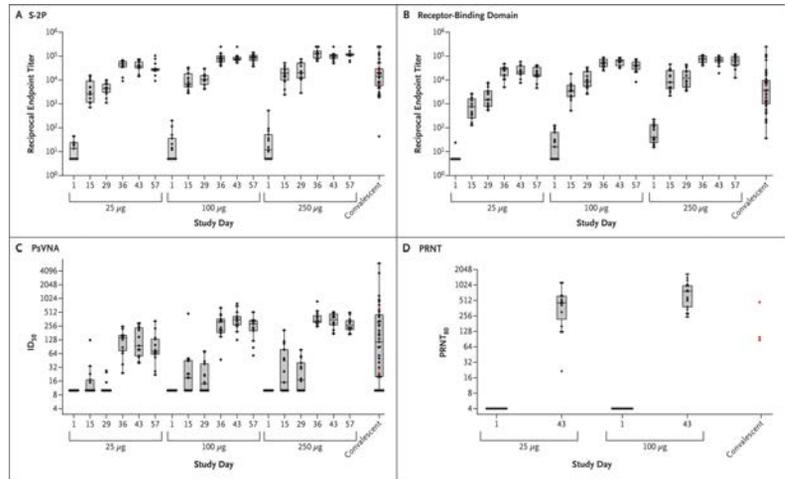
**detection in rhesus macaques.** In control animals, multiple pneumocytes positive for viral RNA & antigen were found. Animals vaccinated with 10 µg and 100 µg of mRNA-1273 showed mild inflammation and no viral mRNA. Source: Corbett et al (2020) NEJM

The vaccine uses the mRNA delivery platform

to encode for the SARS-CoV-2 spike immunogen (S-2P). This is an attractive vaccine target because the spike protein facilitates entry into the cell and is a target for neutralizing antibodies. The mRNA vaccine directs the body's cells to express the spike protein, causing the host to produce antibodies targeting the spike protein. In three strains of mice, 1 µg of mRNA-1273 elicited neutralizing antibodies, a favorable T cell profile, and protected against infection in the upper and lower airways. The same results were observed in NHP, where mRNA-1273 elicited neutralizing antibodies and protected against viral replication in the lungs and in the nose (*left*). Finally, the preliminary report of 45 participants from the phase I clinical trial demonstrated that the vaccine was safe and immunogenic. All participants (receiving either 25 µg, 100 µg, or 250 µg of mRNA-1273) generated a neutralizing antibody response after the second immunization.

mRNA-1273 is one of the five vaccines that are part of Operation Warp Speed, which is a multi-agency collaboration led by the HHS to accelerate the development, manufacturing, and distribution of vaccines against SARS-CoV-2. Other vaccine candidates include: BNT162(a1/b1/b2/c2), an RBD (a domain on the spike protein) mRNA vaccine from Pfizer, Fosun Pharma, and BioNTech, a

recombinant vesicular stomatitis virus vector from Merck, Sharpe & Dohme and the International AIDS Vaccine Initiative, a replication-defective human adenovirus 26 vector from Johnson & Johnson/Janssen Pharmaceuticals, and the ChAdOx1 nCoV-19 (replication defective simian adenovirus vector) from AstraZeneca and the University of Oxford. All vaccine candidates are in various stages of preclinical and clinical trials. Although the outcomes of these trials are still to be determined, several vaccine candidates have reported very favorable results. Regardless, the ability to rapidly generate vaccine constructs using structure-based technology has ultimately transformed the field of vaccinology and paved the way for future pandemic responses.



**SARS-CoV-2 Antibody and Neutralization Responses.** Geometric mean reciprocal end-point enzyme-linked immunosorbent assay (ELISA) IgG titers to S-2P (Panel A) and receptor-binding domain (Panel B), pseudotyped lentivirus reporter single-round-of-infection neutralization assay (PsVNA) ID<sub>50</sub> responses (Panel C), and live virus PRNT<sub>80</sub> responses (Panel D) are shown. (A) Binding antibody IgG geometric mean titers to S-2P increased rapidly after the first vaccination, with seroconversion in all participants by day 15. (B) Receptor-binding domain-specific antibody responses were similar in pattern and magnitude. (C) After the first vaccination, PsVNA responses were detected in less than half the participants. However, after the second vaccination, PsVNA responses were identified in serum samples from all participants. (D) At day 43, wild-type virus-neutralizing activity capable of reducing SARS-CoV-2 infectivity by 80% or more (PRNT<sub>80</sub>) was detected in all participants. Source: Jackson et al (2020) NEJM

Sources:

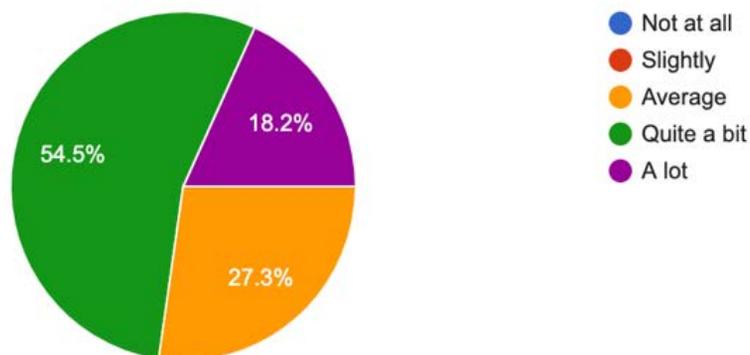
“Phase 3 clinical trial of investigational vaccine for COVID-19 begins” <https://www.nih.gov/news-events/news-releases/phase-3-clinical-trial-investigational-vaccine-covid-19-begins>  
 O’Callaghan KP, Blatz AM, Offit PA. “Developing a SARS-CoV-2 Vaccine at Warp Speed”. JAMA. 2020 Jul 6. doi: 10.1001/jama.2020.12190. Online ahead of print.  
 PMID: 32628244  
 Corbett KS, Edwards DK, Leist SR, Abiona OM, Boyoglu-Barnum S, et al. “SARS-CoV-2 mRNA vaccine design enabled by prototype pathogen preparedness”. Nature. 2020 Aug 5. doi: 10.1038/s41586-020-2622-0. Online ahead of print.  
 PMID: 32756549  
 Corbett KS, Flynn B, Foulds KE, Francica JR, Boyoglu-Barnum S, et al. “Evaluation of the mRNA-1273 Vaccine against SARS-CoV-2 in Nonhuman Primates” N Engl J Med. 2020 Jul 28. doi: 10.1056/NEJMoa2024671. Online ahead of print.  
 PMID: 32722908  
 Jackson LA, Anderson EJ, Roupheal NG, Roberts PC, Makhene M, Coler RN, et al. “An mRNA Vaccine against SARS-CoV-2 - Preliminary Report”. N Engl J Med. 2020 Jul 14:NEJMoa2022483. doi: 10.1056/NEJMoa2022483. Online ahead of print.  
 PMID: 32663912

# How has COVID-19 affected you?

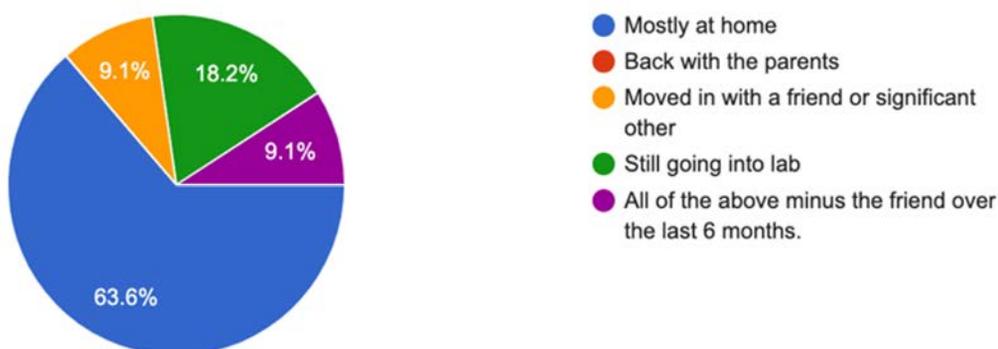
With the arrival of SARS-CoV-2 to the states towards the beginning of 2020, we as a country have taken the necessary precautions to halt the spread of the virus and prevent those most at-risk from contracting COVID-19. This has been an extremely difficult time for those with loved ones who have experienced the disease, and our hearts go out to you. For those of you that have remained home during the quarantine, we thank you. This time stuck indoors has made us all quite aware of how vital social interactions can be to one's mental health. As campus begins to open back up, please make sure to pay attention to any lasting mental or physical effects from the quarantine, and do not rush back into lab as if it's business as usual. Take care of yourselves, and do not be afraid to reach out; take advantage of the [Health and Wellness Resources found on the OITE website](#).

We want to let you know that you are not alone! This summer we sent out a survey to ask NIH graduate students (as well as postdocs and postbacs) how the COVID-19 pandemic has affected them. Here are the results:

## How much has COVID-19 affected you?



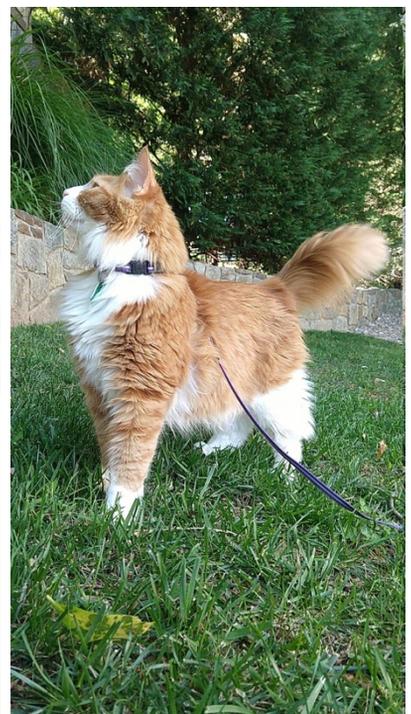
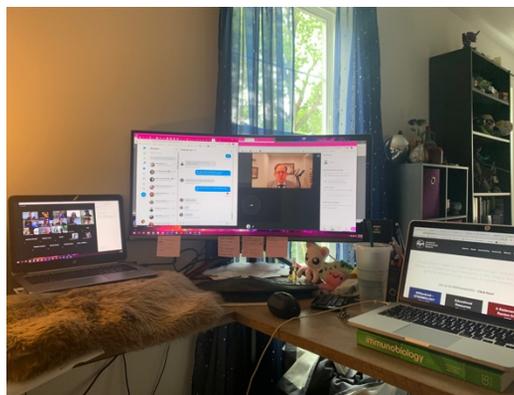
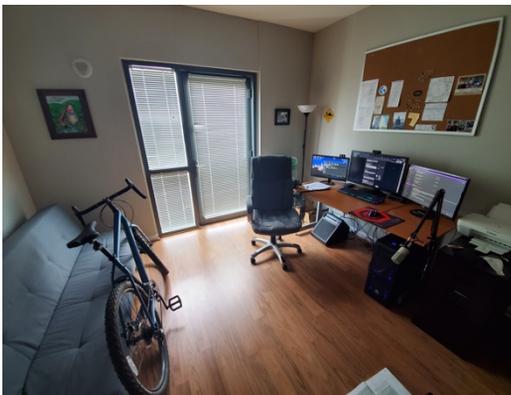
## Where was your workplace during quarantine?



### Our New Day-to-Day

<p>Staying up way too late at night, sleeping in, lab zoom meeting, reading papers and planning for future experiments, and studying for the MCAT</p>			
<p>No work-life balance, all work; more meetings</p>	<p>Looking for job, being in contact with people, working on a paper, training for half marathon, bike, TV shows.</p>	<p>Extended work hours, zoom social hours weekly, scheduled check-ins with supervisees, attending more trainings and webinars.</p>	<p>At the beginning of quarantine, I did a bad job with work-life balance and was working a ton; but have now fallen into a routine in which I sleep in and take a lot of breaks during the day which I find helps my productivity. I definitely am working odd hours (lab experiments on the weekends, zoom meetings in the evenings, etc) but I'm ok with it since I have more flexibility in all other aspects.</p>
<p>Mid-day naps in between work sessions, a lot more homemade food.</p>	<p>Inconsistent working hours, difficulty with work-life balance.</p>		
<p>At first it was a lack of routine, now I get a chance to do yoga on mornings I don't have zoom meetings.</p>		<p>Manically plan for every minute I'm able to be in lab and make up work to do at home in the meantime. Way more outside lunches...</p>	
<p>Went from one weekly meeting to two long zoom meetings every week, I paused my project and started working on the coronavirus, went from working with people in the lab to working alone and spending my breaks alone, went from having a regular schedule to an irregular one.</p>			

### New Workspaces & Lab Mates!



### Words of Advice from Fellow Graduate Students

- Mental health is just as important as physical health, make sure to take care of both!
- I didn't get the chance to rest and recharge my batteries during these months like most of my colleagues, so my advice to the people who are too stressed about not going to work and their projects not progressing is to value this pause and take advantage of the chance to relax from the hectic lifestyle that we've been so accustomed to.
- Cool paper about the potential origins of SARS-CoV2:  
<https://www.nature.com/articles/s41591-020-0820-9>
- The first appearance deceives many, things are not always as they appear –  
Phaedrus

We would like to thank those of you who participated in the survey to help us realize that we are not alone in this! We would also like to thank those of you reading as well as the entire NIH community for patiently remaining in quarantine while safe, socially distant plans for re-opening research labs are continuously being developed.

See you (socially distant) soon!

## Student Spotlight: Delia Sass



**Delia Sass, PhD**

**Please state your name, GPP program and year in the program.** My name is Delia Sass and I recently defended my dissertation in April of 2020 from the University of Nebraska Medical Center (UNMC)/ National Institute of Nursing Research (NINR).

**What and where is your current position?** I have continued at NINR as a post-doctoral fellow of the Symptom Science Center, working in two intramural units between the Tissue Injury Unit and the Symptoms Biology Unit.

**How did you decide to do a postdoc or to seek employment outside of academia? What pros and cons have you found in your choice?** I conducted multiple informational interviews with people that pursued postdoctoral positions versus industry roles. In addition, I also attended NIH career symposium. It was very helpful to

hear the stories and rationale of those that pursued both paths. One of the pros I considered was flexibility with training and time during postdoctoral training. I was not able to finish my clinical training during my dissertation stage, and the postdoc not only allows me to build on that with a flexible timeline, but also offers additional training courses to strengthen my bench and clinical expertise. It also allows time to publish and gain expertise in the field while establishing myself as a new investigator.

**How did your training at NIH prepare you for your current position?** My training at NIH allowed me to become an expert at biomarker discovery and in a short time I was introduced to multiple bench methods. In addition, it opened opportunities to have a trans-NIH experience and work with investigators from multiple institutes. Such an environment is a diamond in the rough for advancing nursing science and education.

**What are some challenges you faced during the transition from graduate student to postdoc/or employee?** My challenges have been mostly navigating our new “normal” with Covid19 and having a newborn in the house. I had to adapt and get some work done at later hours when the baby is sleeping. A non-Covid19 related challenge is getting rejections while trying to publish dissertation findings; it is one way to learn to be resilient! “All research eventually gets published!”

**What is your current work focused on?** My current work seeks to understand the biological correlates of psychoneurological symptoms such as fatigue, sleep disturbances, depression, anxiety, and cognitive disturbances in the presence of cancer and its treatments.

**Where do you see yourself in 2 to 5 years?** I would like to finish my clinical training as a Nurse Practitioner and work in a clinical + bench environment where I can see patients but also have laboratory access and contribute to the bench-to-bed advancements.

**If you could do it all over again, is there anything you would do differently?** The only thing I would have changed would be to attend NINR Summer Genetics Institute during my 1<sup>st</sup> year in the graduate program to get some of the bench method principles earlier in the training. But otherwise, I would not change anything else.

**What are your words of wisdom to current graduate students that are looking to get a postdoc or employment after graduation?** Outline your long-term goals and spend some time talking to those that graduated recently or have graduated in the past 5-10 years. I felt it was important my next position would fill the gaps for where I wanted to see myself and potentially open more opportunities. But ultimately, no matter how arduous and unpaved the path may look, it is your journey and you can forge your way with the help of your mentors.

**Looking back, what were some of the most valuable lessons you learned and hope to pass on your mentees?** I learned having strong mentors that have your best interests in mind and help you grow the skills is critical. Also having a circle of mentors, official and unofficial ones, that each can share their strengths with you has been very valuable. Don't be afraid to ask for help or advice. Also, please don't be afraid to seek mentorship in navigating interpersonal communication difficulties; we can always learn and grow and being uncomfortable is part of the growth. And lastly, find what feeds your soul. For me I realized patient care must be an integral part to feed my soul and research. Find it and hold on to it!

## 2019-2020 Awards & Publications

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### Gianvito Arpino (NIEHS/Karolinska University)

2019 Microscopy Society Poster Award

Shin W, **Arpino G**, Thiyagarajan S, Su R, Ge L, McDargh Z, ... & O'Shaughnessy B. (2020). Vesicle Shrinking and Enlargement Play Opposing Roles in the Release of Exocytotic Contents. *Cell reports*, 30(2), 421-431.

### Tara Eicher (NCATS/Ohio State University)

**Eicher T**, Kinnebrew G, Patt A, Spencer K, Ying K, Ma Q, Machiraju R, & Mathé EA. (2020). Metabolomics and Multi-Omics Integration: A Survey of Computational Methods and Resources. *Metabolites*, 10(5), 202. doi: 10.3390/metabo10050202

### Neysha Martinez-Orengo (CC/Ponce Health Sciences University)

Chompre G, **Martinez-Orengo N**, Cruz M, Porter J T, & Noel RJ, Jr (2019). TGFβRI antagonist inhibits HIV-1 Nef-induced CC chemokine family ligand 2 (CCL2) in the brain and prevents spatial learning impairment. *Journal of neuroinflammation*, 16(1), 262. doi: 10.1186/s12974-019-1664-4

### M Jeremiah Matson (NIAID/Marshall University)

IDSA 2019 Grant for Emerging Researcher Mentorship

IDSA 2019 Infectious Diseases Week Travel Award

American Society for Virology 2020 Travel Award

NIH 2020 FARE Award

Fischer RJ, Morris DH, van Doremalen N, Sarchette S, **Matson MJ**, Bushmaker T, et al. (2020). Effectiveness of N95 Respirator Decontamination and Reuse against SARS-CoV-2 Virus. *Emerg Infect Dis*, 26(9).

**Matson MJ**, Anzick SL, Feldmann F, Martens CA, Drake SK, Feldmann H, et al. (2020). Bacillus paranthracis Isolate from Blood of Fatal Ebola Virus Disease Case. *Pathogens*, 9(6):475.

**Matson MJ**, Chertow DS, Munster VJ. Delayed recognition of Ebola virus disease is associated with longer and larger outbreaks. (2020). *Emerg Microbes Infect*, 9(1):291-301.

**Matson MJ**, Yinda CK, Seifert SN, Bushmaker T, Fischer RJ, van Doremalen N, et al. (2020). Effect of Environmental Conditions on SARS-CoV-2 Stability in Human Nasal Mucus and Sputum. *Emerg Infect Dis*, 26(9).

Schulz JE, Seifert SN, Thompson JT, Avanzato V, Sterling SL, Yan L, Letko MC, **Matson MJ**, et al. (2020). Serological Evidence for Henipa-like and Filo-like Viruses in Trinidad Bats. *J Infect Dis*, 221(Supplement\_4):S375-S82.

## Emily Phung (VRC/George Washington University)

RSVW 2019 Best Oral Presentation

NIH Fellows Award for Research Excellence

Corbett KS, Edwards DK, Leist SR, Abiona OM, Boyoglu-Barnum S, Gillespie RA, Himansu S, Schäfer A, Ziwawo CT, DiPiazza AT, Dinnon KH, Elbashir SM, Shaw CA, Woods A, Fritch EJ, Martinez DR, Bock KW, Minai M, Nagata BM, Hutchinson GB, Wu K, Henry C, Bahi K, Garcia-Dominguez D, Ma L, Renzi I, Kong WP, Schmidt SD, Wang L, Zhang Y, **Phung E**, ... & Graham BS. (2010). SARS-CoV-2 mRNA vaccine design enabled by prototype pathogen preparedness. *Nature*, online ahead of print. doi: 10.1038/s41586-020-2622-0. PMID: 32756549

Corbett KS, Flynn B, Foulds KE, Francica JR, Boyoglu-Barnum S, Werner AP, Flach B, O'Connell S, Bock KW, Minai M, Nagata BM, Andersen H, Martinez DR, Noe AT, Douek N, Donaldson MM, Nji NN, Alvarado GS, Edwards DK, Flebbe DR, Lamb E, Doria-Rose NA, Lin BC, Louder MK, O'Dell S, Schmidt SD, **Phung E**, ... & Graham BS. Evaluation of the mRNA-1273 Vaccine against SARS-CoV-2 in Nonhuman Primates. (2020). *N Engl J Med*, online ahead of print. doi: 10.1056/NEJMoa2024671. PMID: 32722908

Crank MC, Ruckwardt TJ, Chen M, Morabito KM, **Phung E**, ... & Graham BS; VRC 317 Study Team. (2019). A proof of concept for structure-based vaccine design targeting RSV in humans. *Science*, 365(6452):505-509. doi: 10.1126/science.aav9033. PMID: 31371616

## Naemeh Pourshafie (NINDS/George Washington University)

Grand Prize winner of the 2019 GW Art of Science Competition

Chopra N, Wang R, Maloney B, Nho K, Beck JS, **Pourshafie N**, et al. (2019). MicroRNA-298 reduces levels of human amyloid- $\beta$  precursor protein (APP),  $\beta$ -site APP-converting enzyme 1 (BACE1) and a specific tau protein moiety. *Molecular Psychiatry*. doi:10.1038/s41380-019-0610-2.

**Pourshafie N**, Masati E, Bunker E, Nickolls A, Thepmankorn P, Johnson K, Fing X, Ekins T, Grunseich C, and Fischbeck K.H. (2020). Linking epigenetic dysregulation, mitochondrial impairment, and metabolic dysfunction in SBMA motor neurons. *JCI Insight*. doi: 10.1172/jci.insight.136539

## Michael Ronzetti (NCATS/UMaryland College Park)

Baljinnyam B, **Ronzetti M**, Yasgar A, & Simeonov A. (2020). Applications of Differential Scanning Fluorometry and Related Technologies in Characterization of Protein-Ligand Interactions. In *Targeting Enzymes for Pharmaceutical Development* (pp. 47-68). Humana, New York, NY.

Jaynes JM, Sable R, **Ronzetti M**, Bautista W, Knotts Z, Abisoye-Ogunniyan A, ... & Guerin T. (2020). Mannose receptor (CD206) activation in tumor-associated macrophages enhances adaptive and innate antitumor immune responses. *Science translational medicine*, 12(530).

## Marya Sabir (NINDS/University of Oxford)

Portley MK, **Sabir MS**. (2020). Quarantined thoughts: The sensory stimuli we miss from wet lab. *ASBMB Today*, <https://www.asbmb.org/asbmb-today/opinions/042220/quarantined-thoughts>

**Sabir MS** (2019). Looking back at the journey: Three early-career researchers answer questions about their educational paths. *ASBMB Today*, <https://www.asbmb.org/asbmb-today/careers/080119/looking-back-at-the-journey>

## Albert Sek (NIAID/UCLA)

Society for Leukocyte Biology 2019 Presidential Award

Limkar AR, Mai E, **Sek AC**, Percopo CM, Rosenberg HF. (2020). Frontline Science: Cytokine-mediated developmental phenotype of mouse eosinophils: IL-5-associated expression of the Ly6G/Gr1 surface Ag. *J Leukoc Biol*, **107**(3): p. 367-377.

## Audrey Winkelsas (NINDS/University of Oxford)

**Winkelsas AM**, Fischbeck KH. (2020). Nucleic acid therapeutics in neurodevelopmental disease. *Curr Opin Genet Dev*. 65:112-116. doi:10.1016/j.gde.2020.05.022

## Zinan Zhang (NIAID/Cambridge University)

NIH/Oxford-Cambridge 2019 Translational Award for Advances in Medical Science

**Zhang Z**, Gothe F, Pennamen P, ... & Lenardo MJ. Human interleukin-2 receptor beta mutations associated with defects in immunity and peripheral tolerance. *Journal of Experimental Medicine*. 2019. 216(6): 1311-1327

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**Special thanks all the students who responded to our survey and to the students who submitted their recent accomplishments!**

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