

May Edition

May 7th, 2021
Volume 2, Issue 9

COVID-19

[HUB AT HOPKINS](#)
[JHU COVID RESOURCE CENTER](#)
[MARYLAND DEPT OF HEALTH](#)
[CENTERS FOR DISEASE CONTROL](#)

Johns Hopkins has moved to Phase 2 of reopening efforts, resuming medium-risk activities but still relying on distancing and mask-wearing in addition to providing online alternatives to in-person activities. COVID-19 safety measures remain unchanged on-campus for vaccinated individuals; CDC guidelines do not apply to JHU facilities. Help keep the Hopkins and Physiology community safe by respecting safety regulations!

Announcements

HELP WANTED FOR DEPT WEBSITE

The Physiology Department relies on the webpage to disseminate information to members of our department and the wider world. As the academic year ramps up, many updates are made to the site! If you have any skills in HTML, CSS, or any other web language, email Marsha Miller and help the department site stay up to date!

THE COOLEY CENTER IS REOPENING!

The Cooley Center will reopen under Phase 1 restrictions, M-F 6am-8pm. The School of Public Health gym remains closed. Fitness classes will be outside or virtual. Please visit [jhmifitness.com](#) for more information and to sign up for time slots up to one hour.

AMERICAN PHYSIOLOGICAL SOCIETY VIRTUAL NETWORKING EVENT

If you are a trainee with **interest in teaching**, consider registering for an upcoming Teaching Section Trainee Networking Event on **May 13 at 5pm**. The format will be a panel discussion on Tips and Tricks for Your First Year Teaching. [Register here.](#)

Upcoming Events

May 7: Journal Club at Noon
Kevin Chen

May 13: Thesis Seminar 2pm
Pingdewinde Sam, Claypool Lab
“Non-Functional Phosphatidylserine Decarboxylase One (Psd1) Protein is Mistargeted to the ER”

May 14: Department Seminar at Noon
Dylan Sarver, Wong Lab

Physiology Newsletter

Two members of Physiology share wisdom at annual Johns Hopkins Postdoctoral Association Conference



Recently, the Johns Hopkins Postdoctoral Association (JHPDA) held a session on “How to have a productive meeting with your Mentor/Mentee” that featured Physiology Department postdoc Jenifer Calvo (Lutsenko lab) and Professor Rajini Rao. Moderated by Irina Duff (postdoc, department of Psychiatry), the discussion covered best practices and proposals for better mentoring of postdocs at Hopkins.



What is the best way to approach a potential mentor?

RR: This depends on career stage. Predoctoral students have structured access to mentors, through thesis committees, rotation advisors and teachers. Junior faculty may have mentoring committees and department chairs to advise them on career development. Unfortunately, postdoctoral fellows fall in between and often lack access to mentors, especially outside their lab. We can change this.

What are signs of a good mentor? How to recognize them before reaching out to the faculty?

JC: For me, a good mentor is one who would not only guide my growth as a scientist, but also help and support me in reaching my career goals as well. I don’t think this is something you can easily determine from their publications or websites, so you really need to talk to them and to their lab members. You need to discuss their mentoring style and expectations and see if these match your needs and personality.

RR: A good mentor must make time for their mentee. If they are too busy to meet with you, then find someone else. A potential mentor will have expertise in a scientific field that complements that of your lab mentor, model a shared life experience (for example, as a woman of color) or specific career that matches your aspirations.

For me, a good mentor is one who would not only guide my growth as a scientist, but also help and support me in reaching my career goals as well.

How frequently do you meet? Do you meet regularly (for example, every week) or per the mentee’s request? How do you prepare for these meetings?

JC: I meet with my PI every week, at a fixed day and time. The day before, I send them a weekly report, which includes a summary of the previous meeting, updates, other issues that needs to be discussed, and plans for the following week. This gives me a chance to organize my results and plan for the meeting, while it allows my PI to prepare by giving them time to look at my data and think about any issues. This is also a good way to make sure I am on track and goals are being met.

RR: I individualize the frequency of meetings depending on the mentee’s needs and career stage, so that there continues to be growth and development in our discussions. I prepare for the meeting by reviewing any notes from prior meetings and going over their research plans. If the mentee is not a trainee in my lab, I may ask for an updated CV to review their career trajectory.

Do you set a mentorship plan with goals and milestones to be accomplished every month/year and follow it, or is it more on a question/answer basis?

JC: When I started, my PI and I discussed not only my project goals but my professional goals as well. This allowed us to tailor my research projects so that I can attain skill-sets beneficial for my next career step after this fellow-

ship. Postdocs are also required each year to accomplish an Individual Development Plan (IDP) with their PIs, so this is a great opportunity to plan and think about goals and milestones.

RR: I strongly recommend separate plans for short, medium and long-term goals that can be tracked at different intervals. It’s important to develop your career in the direction of your long-term goals. For example, if you would like a job at a predominantly undergrad institution, like a liberal arts college, get a teaching certificate and real world experience teaching at a local college. Find a mentor who is already in the career that you want.

How to handle conflicts and disagreements in mentor/mentee relationships?

JC: Fortunately, I haven’t had any major conflicts, and this is mainly because I always had a chance to share my opinions and be listened to with an open mind. Disagreements are normal, but if you talk about them and each party has a chance to explain their thoughts, then hopefully you can agree on a solution. Most of the conflicts I’ve seen are usually due to lack of communication, and so I think this is really key in maintaining a good relationship with your mentor or PI.

RR: In addition to good communication, mutual respect and trust are also important in mentor/mentee relations. If

you find yourself in a toxic relationship, be sure to seek advise from other mentors and peers. It may be better for your career and health to move on, however hard and scary that may seem.

How to foster interdepartmental mentorship programs at JHU? What might faculties do for that? How can postdocs take initiatives to seek expertise outside of their department/school?

JC: For me, I only had opportunities to have interdepartmental collaborations from my research projects. I also look out for seminars from other departments that interest me. Additionally, PDCO and PHutures have useful seminars about careers options. However, one really has to take initiative and spare time for these seminars, so I think it would be very useful if there is a system in place for Postdocs to find mentors.

RR: We should normalize having a mentoring committee for each postdoctoral fellow, as is required for K99/R00 applications. This committee could provide feedback on research proposals, practice job talks and offer networking connections. Departments that are recruiting new faculty could allow postdocs access to candidate chalk talks. To build a mentoring network outside of their institution, postdocs should to join a professional society in their field, regularly attend their annual meetings and volunteer in society committees.

Jiaojiao Xu, Pluznick Lab

May 17: Thesis Seminar 10am

Kelli Johnson, Donowitz Lab

"Complex Cholinergic Signaling in the Mouse Intestinal Epithelium"

May 19: 26th Philip Bard Lecture in Medical Physiology at Noon
Nieng Yan, Ph.D.

Department of Molecular Biology
Princeton University

"Structural basis for the initiation of electrical signaling."

Host: Dr. Guggino

May 21: Journal Club at Noon

Brittini Moore & Erica Avery

May 28: Department Seminar at Noon
First-Year Rotation Seminars

Jessica Hernandez

Mackenzie Kui

Yi (Henry) Cheng

Welcome!

Please give a warm welcome to soon-to-be first-year Cellular and Molecular Physiology students **Katie Sullivan**, **Manuella Andrade**, and **Luoluo Chen** who will be joining us in the fall to begin their graduate student journeys in Physiology.

A congrats is in order for first-year Biochemistry, Cellular and Molecular Biology (BCMB) student **Noel Getachew**, who has officially joined the Pluznick Lab to pursue his PhD.

Contact Us

Newsletter Team

[Kelly Summers](#)

[Erica Avery](#)

[Dr. Rajini Rao](#)

Physiology Department

[Physiology Twitter @JHMIPhysiology](#)

[Physiology Slack Channel](#)

[Physiology Website](#)

Pluznick lab adds new BCMB graduate student to the team of kidney enthusiasts

Noel Getachew, Pluznick Lab

1st Year BCMB Graduate Student

Hello everyone! I am Noel Getachew, a first-year graduate student in Dr. Jennifer Pluznick's lab. I grew up in Maryland and have been here all my life and I just finished my undergrad at UMBC last spring. Right after undergrad I joined the BCMB program at JHMI and I am currently deciding on a thesis project. I love reading books, when I was a kid I used to read fiction books all the time but unfortunately since undergrad I haven't been reading as much as I would like to. I also played soccer growing up and in high school (I played left bench) and my favorite team is Manchester United. I love watching basketball too, my favorite team is the Wizards but because they're bad I usually root for players (Kyrie Irving is my favorite). I'm also into a few animes and shows like Naruto, DBZ, Nathan for You, and The Office. I am pretty shy and introverted but I do like joking around once I get to know someone. I look forward to being in the department!



Photo courtesy of Noel Getachew

Researcher Reflections



Juliana Márquez, Claypool Lab

Undergraduate Cellular & Molecular Biology Major

Submerged in a world of magical realism, butterflies, and yellow flowers, just before graduating high school I had been reading a book that I now consider one of my favorites: One Hundred Years of Solitude by Gabriel García Márquez. Its stories of creation, struggles for power, and beautiful family relationships were something that really made me reflect on the world. However, there was nothing I found so relatable like the scene when one of the characters, who was interested in science and all the innovation it could bring to the book's setting of Macondo, saw ice for the first time. Excited about this new finding, he described ice as "the greatest diamond in the world". And that is exactly how I feel about mitochondria and everything I have learned at the Claypool lab.

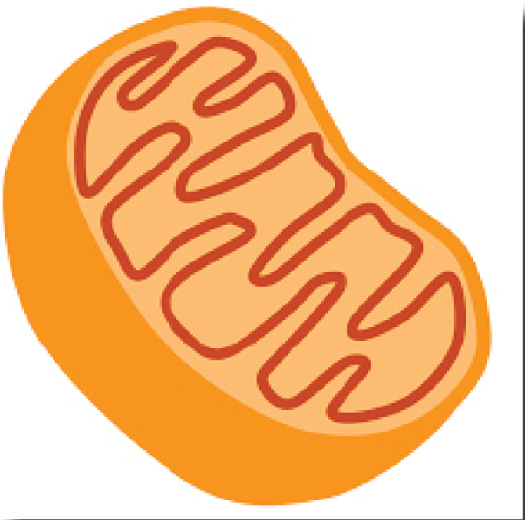
What I knew about mitochondria in high school was limited to the production of ATP. That is precisely why, while scrolling through all of the labs at Hopkins, I was specifically captured by the Claypool lab: it showed me a whole new world of possibilities within mitochondria. The idea of learning more about mitochondrial phospholipids amazed me not only because of how specific it was but, also, because of all the implications it has on the development of disease (my mom had always told me mitochondria are "the key to understanding disease", and this gave me an insight as to why). That is why, although I knew my first semester of college was going to be online due to COVID-19 and that I would be in a whole different country, I still gathered the courage to email Dr. Claypool about being at his lab and attending lab meetings.

Starting online at the lab was definitely exciting even if it was not the typical lab experience. As I learned about different mitochondrial phospholipids, pathways, diseases, and new terms, I realized the complexity of researching something we cannot see with our naked eye. Still, lab meetings were full of Dr. Claypool's wise advice, Erica's immense determination and kindness, Psam's energetic and welcoming personality, Alex's passion for Alzheimer's, Michelle's SFXN1, Nanami's and

Why I got involved in research as a freshman at Hopkins

Wenjia's interest in cardiolipin and, above all, the question "what does that mean?". With journal club meetings, I have learned terms such as post-prandial (it is crazy how science has terms for everything) and tried my best to understand complex methodologies and discussion sections. With all of this, I haven't only learned about science but, also, I have seen the value of collaboration in the creation of scientific knowledge. Scientists rely on each other to innovate, and that is in part the reason why I want to become one myself.

I am an advocate of the fact that disease cannot be treated without understanding cells and metabolism first, so everything I have learned at the laboratory has



contributed to giving me a more detailed perspective of science and the root causes of disease. I have also learned about the intersection between what is investigated at the Claypool lab and other areas in physiology. Through the Department of Physiology's Seminars, I have learned about gut microbiota and research at the Pluznick lab. Meanwhile, the Departmental Journal Clubs have shown me the intersection between science,

equality, and inclusion. Such relationships between areas of knowledge motivate me to learn more and more and have given me a more human perspective of science and research.

Now that I can attend the lab in person (finally!), I could not be happier about the opportunity and privilege of learning about mitochondria and metabolism at the Claypool lab. Everyone's warm personality and willingness to teach reinforces my interest in mitochondria and science and shows me the value of observation, asking questions, and thinking about problems deeply. I am just an undergraduate student who is interested in metabolism, who is new to the world of research, and who has a lot of things to learn. However, like the character of One Hundred Years of Solitude, with every new thing I learn about mitochondria, a whole new world of innovation and possibilities in the understanding of metabolism, mitochondria, and disease opens upon my eyes.



Alex Maya-Romero, Claypool Lab Post-Baccalaureate Fellow

During the last month’s Diversity, Equity and Inclusion Journal Club, we discussed Lambert et al’s “Research Culture: Career choices of underrepresented and female postdocs in the biomedical sciences”. These authors sought to further understand factors driving the career choices of underrepresented minorities (URM) or women compared to their well-represented or male counterparts, respectively. Data was grouped by either gender or minority status such that female respondents included both well-represented (WR) and URM postdocs. URM respondents included both male and female postdocs. Additionally, the well-represented group included Asian or White participants.

During our discussion, one of our main focuses was figure 5 (shown below) which shows negative and positive factors involved in career choices as reported by participants. Figure 5 shows that the two most positive factors in deciding to pursue a research focused academic position are self-worth and career mentorship. Interestingly enough, participants who left science altogether reported self-worth and career mentorship as the two most negative factors in their choice. Here, the authors define self-worth as how the participants feel about themselves and their work. These findings raise two questions, first, can a trainee’s self-worth be improved, if so, how? Second, does career mentorship play a role in self-worth? Given the lack of diversity in faculty holding research focused academic positions, we also discussed how these two-factors may uniquely affect URM and women. For me, the goal of the discussion was to bring about ideas to enhance the overall training experience in the department.

A common misconception is that self-worth is strictly intrinsic and the sole responsibility of the trainee. On the contrary, self-worth is highly influenced by external factors including, but not limited to, mentorship. It is important to note that those surveyed are highly accomplished postdocs at top-tier institutions making it unlikely that their reported self-worth is purely intrinsic or stems carried over from experiences outside of academia. Additionally, given the broad range of trainees in attendance, the discussion became concerned with all career stages and not just postdocs.

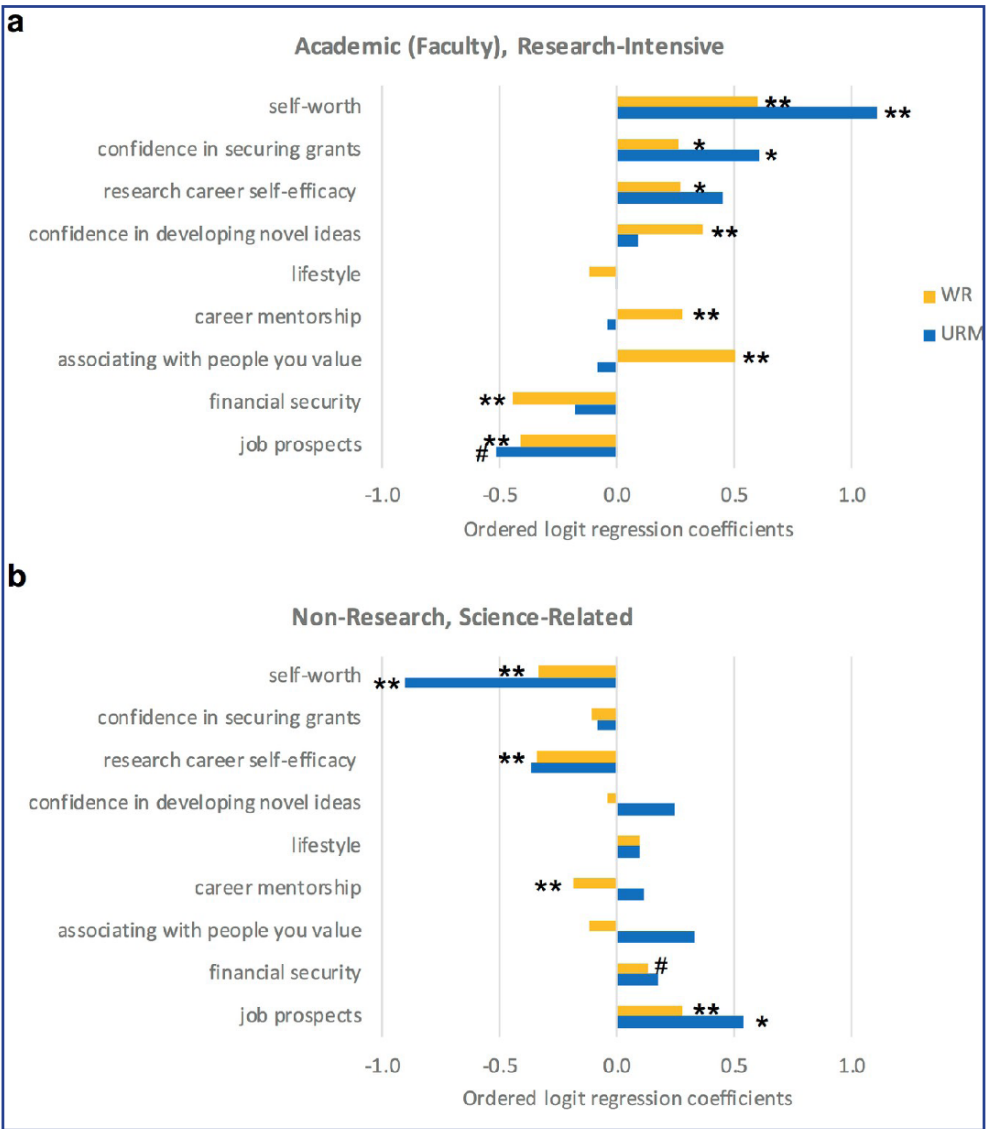
During training, mentorship from the PI can be a great determinant of self-worth. Poor or non-existent feedback can make it difficult to view one’s capabilities or the impact of their work in a positive light. Imagine working long hours for several years and hardly receiving positive feedback. Poor reinforcement can leave trainees questioning their abilities and career choices. These effects may be greater for URM and women trainees who already lack representation. When coupled with a lack of diversity in the academic workforce, poor or negative reinforcement can further drive these negative feelings of not belonging. Additional considerations are necessary for international trainees who may be adjusting to a new environment and set of dynamics. Lucky for us, the solution is attainable and does not require a hierarchy of committees or task forces. Simply recruiting more diverse students is not the complete answer, but a tiny aspect of it.

In addition to recruiting more, the environment needs to be one that trainees desire to stay in. One possible solution lies in conscious effort and greater attention to the mentoring infrastructure within the department.

Through this, we can take an equity-based approach as opposed to a diversity focused one. Equity not only increases numbers but builds more inclusive environments while providing equal access to opportunities. An overall supportive environment can preserve the self-worth of trainees by promoting feelings of competency and accomplishment. To do so, continue to find ways to uplift your trainees when possible and be intentional in your mentoring efforts. Effectively accomplishing this may require tailoring the mentoring approaches and checking-in with trainees to make sure their needs are being met. In addition, it is important to value the work trainees do outside of science, like outreach, advocacy, and science

communication. Providing effective mentorship means potentially changing the current environment or climate to help make trainees feel welcomed. To identify other areas of improvement, we ought to begin or continue data collection to identify areas in need improvement. This may help boost not only mentorship, but other aspects of the department.

Anyone interested in further understanding an equity based perspective and possible interventions should check out Dr. Kimberly Griffin’s talk on interventions for increasing diversity and equity in STEM. This was a talk hosted by the Biochemistry, Cellular and Molecular Biology (BCMB) graduate program here at Hopkins.



Previous DEI Journal Club Paper: [“Research Culture: Career choices of underrepresented and female postdocs in the biomedical sciences”](#)

[Recorded seminar by Dr. Kimberly Griffin](#), Associate Professor of Student Affairs at the University of Maryland and the editor-in-chief of the *Journal of Diversity in Higher Education (JDHE)*.

[A recorded seminar by Dr. Marcus Lambert](#) from Weill Cornell Medicine, hosted by Hopkins was provided as an additional resource by the Kralli Lab entitled “Promoting an Inclusive Scientific Workforce: Factors that Affect Career Choices.”

Awards and Accomplishments

Pluznick lab postdoc Jiaojiao Xu won 3rd place in the Basic Science category at the National Kidney Foundation National Young Investigators Forum for “Uncovering the Physiological Role of Olfactory Receptor 558 in Renal Vasculature”.

Congratulations Dawson lab graduate student Aanishaa Jhaldiyal, the poster prize winner at the Journal of Cell Biology-Journal of Experimental Medicine symposium on neurodegeneration. She won for her poster, “Understanding the role of PARP-1 biology in murine model of Alzheimer’s disease”.

Shaopeng Wang (1st place) and Yini Li of the Sun lab won the Excellence in Basic Research Award in the 23rd Annual Department of Pathology Young Investigators’ Day held by Zoom on Friday, March 19, 2021.

The Fu lab’s successful US patent (16/095,394) entitled “ZnT8 assays for drug development and pharmaceutical compositions” was issued on April 26, 2021. This patent covers a novel method for production, purification and reconstitution of human zinc transporter-8 (ZnT8). Human ZnT8 is a major autoantigen in type-1 diabetes, and its loss-of-function mutations are protective against the risk of type-2 diabetes.

Publications

Blogs and Media

Sixth-year graduate student Anna Moyer of the Reeves lab had a recent [Biomedical Odyssey blog post](#) of hers shared on the HUB entitled [“Too good to be true: reflections on a Down syndrome clinical trial.”](#) It has a drop-cap and everything!

Yet again Anna Moyer has been featured for her Down syndrome advocacy, this time in TWO separate *LA Times* articles entitled [“Chefs and cooks in the disability community share recipes for accessibility”](#) and [“Cooking tips and tools for the blind and disable”](#) which highlight the [“Accessible Chef”](#) blog she made sharing cooking skills with her brother Sam who has Down syndrome.

Manuscripts

The Sun lab recently published their manuscript, [UPF1 reduces C9orf72 HRE-induced neurotoxicity in the absence of nonsense-mediated decay dysfunction](#), in Cell Reports. Their findings suggest that UPF1 is neuroprotective in models of amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD), specifically those with the C9 mutation. These neuroprotective effects are shown to be independent of known UPF1-associated nonsense-mediated mRNA decay (NMD) pathways.

The newsletter needs YOU!

Interested in submitting a clip to the newsletter? Have a knack for writing? Got an idea you want to share? Any news you think we should highlight? Looking to beef up your CV? Or just have an announcement you want included? We're looking for ***your*** contributions to the newsletter! Contact the newsletter team so you can be featured.