

December Edition

Dec 3<sup>rd</sup>, 2021  
Volume 3, Issue 4

COVID-19

[HUB AT HOPKINS](#)  
[JHU COVID RESOURCE CENTER](#)  
[JHM COVID-19 INTERNAL RESOURCE PANEL](#)  
[MARYLAND DEPT OF HEALTH](#)  
[CENTERS FOR DISEASE CONTROL](#)

[CLICK HERE](#) to read what we know about the Omicron variant.

[CLICK HERE](#) to read about **Booster Shots**: Hopkins encourages 3rd doses of COVID vaccines for all adults. Make an appointment for a booster through MyChart.

Johns Hopkins has moved to Phase 3 of reopening efforts, resuming higher-risk activities but still relying on distancing and mask-wearing in addition to providing online alternatives to in-person activities.

**Universal masking** was reinstated July 30 due to a rise in cases associated with the delta variant; all personnel must wear masks in JHM facilities, regardless of vaccination status, unless alone in an office with the door closed.

**Meetings and gatherings** indoors and outdoors should not exceed 50 people. Food and drink should be individually wrapped in a “grab-and-go” fashion.

If you experience COVID-19 symptoms, call the Johns Hopkins COVID-19 Call Center at **443-287-8500** for evaluation and guidance.

Opportunities

**The Graduate Women In Science (GWIS) National Fellowship Program**  
Encourages women’s academic and professional careers in the sciences. \$10K in funding for one academic year (July 1 – June 30) to cover various research costs. Application deadline January 10. [Click here](#) for more info.

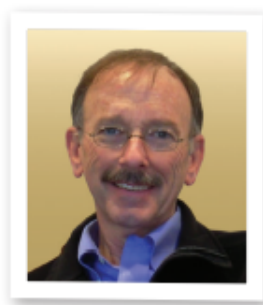
**Dolores Zohrab Liebmann Fund**  
Fellowship candidates must have an outstanding undergraduate record, demonstrate financial need and be attending a designated college or university. [Internal Deadline](#): Dec 21 [Click Here](#) for more info

[JHU list of grad student funding sources](#)  
[JHU list of postdoc funding sources](#)

Calendar

Physiology Newsletter

*Peter C. Maloney*  
FOURTH ANNUAL MEMORIAL LECTURE



CFTR:  
the odd ABC transporter  
responsible for cystic fibrosis



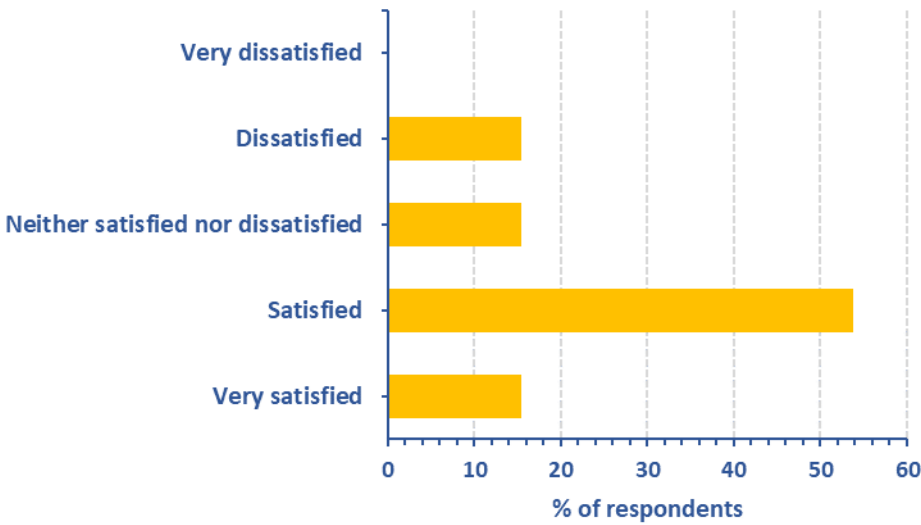
**Jue Chen , Ph.D.**  
William E. Ford Professor  
The Rockefeller University  
Investigator, Howard Hughes Medical Institute

On Dec. 1, the Peter Maloney Memorial Lecture was given by Dr. Jue Chen, William E. Ford Professor of Membrane Biology and Biophysics at Rockefeller University and Howard Hughes Medical Institute (HHMI) Investigator. The lectureship is traditionally arranged by the students, inviting a speaker they’re interested in hearing from themselves. This year we can thank Jiachen Chu and Ljubica Mihaljevic for arranging the lecture, so any students interested in helping arrange future Maloney lectures are welcome. Chen’s talk, was entitled "CFTR, the odd ABC transporter responsible for cystic fibrosis" and discussed the structure of the CFTR transporter.

Dr. Peter Charles Maloney (1941-2013) was recruited to Hopkins in 1976 by neuroscience pioneer Dr. Vernon Mountcastle. Maloney rose to the rank of full Professor of Physiology in 1988 and Interim Director of the Physiology Department and the Associate Dean for Graduate Students at Hopkins School of Medicine from 2001-2013. He pioneered development of tools and experimental approaches to study bacterial membrane transporters. This year’s lecture is especially relevant because Maloney’s own work was groundbreaking in the Cystic Fibrosis field and contributed greatly to the current understanding of this disease. Having Chen speak about CFTR and cystic fibrosis was an excellent way to further honor that legacy. “His studies have greatly impacted my work,” Chen said before her talk. Unfortunately, Maloney died December, 2013 at the age of 72 after a long battle with cancer.

To commemorate his illustrious career as a scientist and mentor at JHMI and honor his many contributions, the Department of Physiology established the Peter C. Maloney Lectureship in 2017.

The Survey Results are In!



Based on our survey results from a poll of international department members, about 69% say that they are satisfied or very satisfied with their experience with the Office of International Services since the office has moved to remote operations. Only ~15% of our international students and scholars have been dissatisfied with their experience with OIS.



**Dec 8: Guest Speaker Physiology Seminar at Noon**

**Speaker: Vivek Garg, PhD**  
Assistant Professor of Physiology  
U. Maryland, Baltimore  
“Molecular Physiology of Mitochondrial Calcium Uniporter”  
Host: Dr. Qiu

**LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB**

**Dec 10: Department Research Seminar at Noon**

**Speaker: Som Dev, PhD**  
**Alex Maya Romero**  
**LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB**

**Dec 15: Guest Speaker Physiology Seminar at Noon**

**Speaker: Yubin Zhou, MD, PhD**  
Associate Professor,  
Center for Translational Cancer Research  
Institute of Biosciences and Technology  
& Department of Translational Medical Sciences  
College of Medicine, Texas A&M U.  
Host: Dr. Rao

**LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB**

**Dec 17: Department Research Seminar at Noon**

**Rotation Talks: Luouo Chen, Manuella Ribas Andrade, Katie Sullivan**

**Jan 7: Journal Club at Noon**  
**IN-PERSON IN THE PHYSIOLOGY LIBRARY**  
Noel Getachew and Yingzhi Yi

Other Events

**Nov 28 – Dec 6: Eight days of Hannukah**  
**Dec 1: World AIDS Day**  
**Dec 3: International Day of Persons with Disabilities**  
**Dec 7: Pearl Harbor Remembrance Day**  
**Dec 10: International Human Rights Day**  
**Dec 25: Christmas Day**  
**Dec 26: Kwanza**  
**Dec 30: New Year’s Eve**

[PDCO Calendar](#)

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# Researcher Reflections

## I may be the grad student mentor but my undergrad mentee has taught me far more than I ever imagined



**Erica Avery**  
**6th Year Grad student, Claypool lab**

Everyone you will ever meet knows something you don’t. I first heard this sentiment from Bill Nye the Science Guy in college. When I really began thinking about what this meant and integrated it into my interactions, I realized how it enhanced my human experience. In undergrad at a smaller NJ state school, I might have been considered the smartest and most successful in my major and in my lab. It would be easy to believe I knew more than my peers, but it is self-limiting to believe that always getting the highest test scores meant others couldn’t help expand on my knowledge. Respecting others’ capabilities and understanding their own set of unique experiences could supplement mine is what ultimately made me grow exponentially, as a scientist and as a human being.

Enter Juliana Marquez, the freshman undergraduate who joined our lab during the pandemic. Juliana is uncommonly bright, dedicated, and curious. I see a lot of myself in her— I too as a woman, as someone who looks so young and small, was often underestimated and disregarded by implicit bias, just plain misogyny, or people who felt insecure or threatened by others who shine bright. Juliana is a student at Johns Hopkins, a big research institution with plenty of esteemed graduate students and postdocs in the department to interact with daily, none of which I had as an undergrad. I imagine that’s a lot for a freshman to jump into, but she tackles everything head-on, even if I can see it’s hard. Moreover, she didn’t have lab classes in-person yet in college due to COVID-19 and our lab was the extent of her engaging in in-person learning on-campus for much of the pandemic.

When we agreed I’d be her mentor, I anticipated this would mean a lot of training and teaching on my part—and yes, it has been, but I was pleasantly surprised by how much she’s taught me. It’s like talking to a 19-year-old version of Erica and understanding myself and the world better because of it. I’m confident she’ll learn the lessons I learned the hard way faster than me. I see someone mature for her age, and I know she’ll see through the gaslighting or bullying of others as the insecurities they reflect deep down. She won’t let anyone problematic— peers, strangers, or even professors— dull her shine. And I shouldn’t have either. Listening to her, I realize how much I let other people walk all over me and I can’t believe I internalized the

lies they told me about myself. I can’t believe I ignored my boundaries and needs and tried to just make other people happy because I didn’t think I deserved good things. Juliana is someone optimistic and enthusiastic, something refreshing as a sixth-year PhD student. Through her, I’ve also been able to see other perspectives I’ve never experienced or felt, growing up in another country, and having learned how to navigate communication around it.

My advice to the reader from what I’ve learned is to never underestimate how much anyone, at any age, gender, country of origin, or education level is capable of or how much they’ll end up teaching you, especially about things that are not your strengths. My father often shares how he is one of only six students from his high school who never took biology. It’s been apparent, especially during the pandemic, he knows little about the topic and misunderstands a lot from the spread of misinformation. However, I can’t begin to understand his mastery of things like computer and electrical engineering, technology, cars, tools etc. either and he’s the first person I call when I have a problem.

I see Juliana really stepping up to the plate when our lab treats her as a peer and integrates and includes her in our lab culture and we’re all the better for it. I am grateful she is accepted, encouraged, and respected here. That’s the whole point of department journal clubs

and seminars— to make others feel safe speaking up and encouraging junior researchers scientific thought process. It should be a safe space free of judgement, mansplaining, or patronizing.

Anyone farther in their career who might ever dismiss others in their lives is missing out and keeping themselves from growing. Thinking any group of people, including undergrads, “don’t know anything” is ignorant and pretentious. Real scientists who are hungry for knowledge and looking to expand their understanding of the world around us would seek to know others’ skillsets and lessons and be eager to listen and learn, without pause. People like Juliana who will value everyone around her, no matter who they are, will ultimately far surpass toxic people she’ll encounter during her life. She will live up to her potential. If everyone you will ever meet knows something you don’t, finding out what that is requires humility and respect. We all have implicit bias whether we like it or not—we don’t like to admit it, but that’s why it’s called “implicit.” It takes active reflection, acceptance of our own faults, and many experiences to move past some of that bias. I encourage you to take the opportunity to provide space for what others have to offer if you only let them.

“Everyone you will ever meet knows something you don’t.”

## Awards and Accomplishments

Ljubica was awarded a 2022 Travel Award to present her abstract at the Biophysical Society Annual Meeting to be held February 19-23, in San Francisco. Congratulations LJ!

## Publications

### Manuscripts

Two new papers from Paul Welling’s lab were published recently:

In [Doxycycline Changes the Transcriptome Profile of mIMCD3 Renal Epithelial Cells](#) published in *Frontiers in Physiology*, Dr. Welling’s lab evaluated the doxycycline (DOX) effects on the transcriptome of renal epithelial cell model, mIMCD3 cells in the absence and presence of DOX (3 or 6 days), and genome-wide transcriptome profiles were assessed using RNA-Seq. They found DOX significantly altered the transcriptome profile, changing the abundance of 1,549 transcripts at 3 days and 2,643 transcripts at 6 days. Within 3 days of treatment, DOX significantly decreased the expression of multiple signaling pathways (ERK, cAMP, and Notch) that are associated with cell proliferation and differentiation. Genes associated with cell cycle progression were subsequently downregulated in cells treated with DOX for 6 days, as were genes involved in cellular immune response processes and several cytokines and chemokines, correlating with remarkable repression of genes encoding cell proliferation markers. These results provide new insight into responses of renal epithelial cells to DOX and provide an atlas to guide future interpretation of studies using the DOX-inducible gene expression system.

In [Insights into Salt Handling and Blood Pressure](#) published in the New England Journal of Medicine, Dr. Ellison and Dr. Welling review how sodium is regulated within the body. Although high salt intake has previously been associated with high blood pressure, this association has been shown to be highly variable, with individuals consuming high salt diets without adverse effects on blood pressure. Highlighted is a recent large, randomized trial which showed that consuming 25% potassium chloride, rather than the typical 100% sodium chloride, reduced blood pressure, rates of stroke, major cardiovascular events, and death from any cause. Additionally, recent studies have emphasized the roles of sodium storage and the immune



system in maintaining sodium balance. Overall, further understanding of the complex interplay between dietary salt, sodium homeostasis, and renal and the vascular systems is needed to develop more effective public health measures for combatting hypertension.