

April Edition

April 8, 2022

Volume 3, Issue 7

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 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 in addition to providing online alternatives to in-person activities.

Universal masking: JH Medicine is relaxing our indoor masking policy for vaccinated affiliates. Masks will remain required in classrooms, lab- and studio-based classes, and other spaces where instruction of university courses takes place.

Meetings/gatherings: Food service will be allowed at indoor events, and on-campus dining will return without capacity restrictions. Physical distancing should still be maintained where feasible. Remaining restrictions on off-campus business meals, which are currently limited to four people together, also will be lifted.

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

Calendar

March is:
National Autism Awareness Month and National Parkinson's Awareness Month

Department Events

April 8: Department Research Seminar at Noon

Brittni Moore

LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB [OR ZOOM](#)

April 22: Department Research Seminar at Noon

Ljubica Mihaljevic

LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB [OR ZOOM](#)

April 27: Research Seminar at Noon

Victor Faundez, MD

Professor

Department of Cell Biology
Emory University

"Cell Biology Discovery through Systems Biology of Rare Genetic Disorders"

LOCATION: WEST LECTURE HALL, GROUND FLOOR PCTB

April 29: Department DEI journal club at Noon (Hopefully in the STILE classroom)

Other Events

April 2: Start of Ramadan

April 2: Autism Awareness Day

April 10: Palm Sunday, National Siblings Day

April 11: National Pet Day

April 17: Easter Sunday

April 20: 420 Day

April 22: Earth Day

Physiology Newsletter

Biomedical Scholars Association students initiate Monthly Diversity Journal Club, highlight Dr. Jen Pluznick for Women's History Month

Brittni Moore, Pluznick Lab

3rd Year CMP Graduate Student



The Graduate Student Association (GSA) and Biomedical Scholars Association (BSA) have partnered together to create a Monthly Diversity Journal Club to celebrate racial/ethnic/and social groups historically marginalized. The overall purpose of this event is to highlight faculty Underrepresented in Science (UIS) and provide a platform to share personal experiences, as well as experiences in academia. The series began in February to honor and highlight Black History Month with Dr. Dionna Williams,

Assistant Professor of Molecular and Comparative Pathobiology. For the month of March-- Women's History Month-- one of CMP's very own was featured, Dr. Jennifer Pluznick. Dr. Pluznick presented work from her graduate school days, a paper titled "BK- {beta}1 subunit: immunolocalization in the mammalian connecting tubule and its role in the kaliuretic response to volume expansion." Along with her research, Dr. Pluznick shared her personal experiences as a woman in science, which garnered quite the interest from the graduate students who attended.

The Diversity Journal Club will continue with Dr. Tilak Ratnanther on April 5th at 11AM to highlight National Deaf History Month. Check your GSA and BSA emails for additional information! (And yes, it includes FREE food...)

Awards and Accomplishments

Brittni Moore, graduate student in the Pluznick Lab, was selected for an abstract-based oral presentation in the predoctoral category at the American Physiologist Society subcommittee: Black in Physiology virtual meeting. She won best oral presentation. And it was AWESOME! Congratulations Brittni!

At the recent Experimental Biology conference, Brittni was also an awardee for the Predoctoral Excellence in Renal Research Award in which she was 1 of 5 finalists to present her research at the Posters and Professors Reception. Go Brittni!

Dr. Larissa Shimoda won the Julius H. Comroe Jr. Distinguished Lectureship Award of the American Physiological Society Respiration Section at the Experimental Biology Conference. This award is given to an outstanding contributor to the disciplinary areas of physiology represented by the Respiration Section. The recipient is chosen by the Section as a representative of the best within the discipline. The lecturers also have a strong track record of service to APS and to the Section of Respiration. Wow! How cool is that?!



(Left to right) Shannon Niedermeyer, Larissa Shimoda, Xin (Vickie) Yun, and Manuella Andrade at the Experimental Biology conference in Philadelphia, PA. Dr. Shimoda holds her lectureship award by the Distinguished Lectures poster board. -Photo courtesy of Manuella Andrade

Mackenzie Kui and Manuella Ribas Andrade also presented posters at the Experimental Biology conference over the weekend. Dr. Jen Pluznick and Dr. Jiaojiao Xu had oral presentations at the conference.

Established in 2978, this year's Young Investigators' Day will be held **Thursday, April 14, 2022, at 3 p.m. in the Mountcastle Auditorium in-person**. Join **Nanami Senoo** of the Claypool lab and **Monish Makena** of the Rao lab in celebrating their postdoc awards. We'll hear presentations from awardees and you can attend the poster session and reception immediately following the program. Refreshments will be served.



April 25: DNA Day

April 26: Lesbian Visibility Day

April 29: Arbor Day

May 3: World Asthma Day

May the 4th be with you: Star Wars Day

May 5: Cinco de Mayo

May 6: National Nurses Day

PDCO Calendar

Newsletter Team

[Kelly Summers](#)

[Erica Avery](#)

[Monish Makena](#)

[Professor Rajini Rao](#)

Physiology Department

[Physiology Twitter @JHMIPhysiology](#)

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[Physiology Website](#)

Publications

MJ Ko’s thesis work has just been published in PNAS Nexus in the article entitled “[The endosomal pH regulator NHE9 is a driver of stemness in glioblastoma](#)”.

Glioblastoma is the most common brain tumor in adults with current standard care offering only marginal improvement in median survival from 12 to ~15 months. Underlying the inherent resistance to therapy and cancer recurrence is a population of brain tumor initiating cells (BTICs) with stem cell-like characteristics or “stemness” at the apex of tumor cell hierarchy. As a result, a novel, druggable therapeutic target of the BTICs is urgently needed to eliminate the source of resistance and recurrence of tumor. In the study published in PNAS Nexus, Dr. Rao’s lab discovered that endosomal Na⁺/H⁺ exchanger isoform 9 (NHE9) is a novel driver of stemness in glioblastoma by stabilizing multiple receptor tyrosine kinases (RTKs).

By using enriched BTICs derived from patient tumor samples in collaboration with a neurosurgeon, Dr. Alfredo Quiñones-Honjosa at Mayo Clinic, Ko et al. demonstrated that NHE9 is overexpressed in glioblastomas and alkalinizes the lumen of recycling endosomal compartment. Interestingly, this small increase in the endosomal pH was sufficient to play a pivotal role in pan-specific stabilization of multiple receptor tyrosine kinases such as PDGFR, IGF-1R, and InsulinR activating the downstream JAK2-STAT3 pathway. These cellular changes via endosomal pH alkalinization mediated by NHE9 were translated into phenotypic increase in self-renewal and tumorigenic capacity of BTICs in orthotopic xenograft mouse model. The first author of this paper, Dr. Ko mentioned that “Heterogenous expression of RTKs has been an issue in targeted therapies in glioblastoma. This work highlights the role of NHE9 as one of very few targets that can downregulate receptor tyrosine kinases in a receptor agnostic manner while diminishing stemness, opening a new avenue for potential therapies.” He thanked Dr. Rao for the empowering mentorship over the years and the funding sources, F31 NCI NRSA and T32 NTCR NRSA predoctoral fellowships.