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 8K-beta[1] subunit: immunomodulation in the mammalian connecting tubule and its role in the kalluriastic 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. Ti-lak Ratnasinghe 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...)

Biomedical Scholars Association

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. Conroe 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?!
MI 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 NCTR NRSA predoctoral fellowships.