Job Title:

Postdoctoral Research Fellow

Employer:

University of Rochester School of Medicine & Dentistry

Principal Investigator:

Keith Nehrke/Gail VW Johnson

Contact:

gail_johnsonvoll@urmc.rochester.edu

Description:

A postdoctoral position is available in the Nehrke (https://www.nehrkelab.com/) and Johnson (https://www.urmc.rochester.edu/labs/gail-johnson.aspx) laboratories at the University of Rochester School of Medicine and Dentistry to study how site-specific, Alzheimer's disease (AD)-relevant posttranslational modifications (PTMs) of tau exert toxic effects through their impact on mitochondrial quality control pathways. This position is funded through a multi-PI R01 NIH grant. This collaborative project utilizes both *C. elegans* and mammalian model systems to: (1) determine the impact of AD relevant tau PTMs on mitochondrial stress responses and how this influences healthy aging of neurons, (2) test whether tau with AD relevant PTMs alters mitophagy and whether changes in mitophagy contribute to phenotypic severity, (3) address whether enhancing mitochondrial quality control pathways is a viable therapeutic avenue. This will be accomplished by using optogenetics to reversibly induce mitophagy or to accelerate lysosomal acidification in model systems expressing AD relevant forms of tau followed by neuronal health measures, and (4) address whether age-dependent neurodegeneration or changes in mitochondrial quality control pathways persist after toxic tau clearance, we will tag the transgenic tau proteins with an auxin-inducible degron (AID). These studies have already resulted in a strong publication (PMID: 33168053). It is expected that the successful applicant will initially be involved in using the *C. elegans* model system for these studies, however as the project progresses investigations will be extended into mammalian primary neuron systems. In the future, our studies will also include the use of mouse models to fully understand how tau with AD-relevant PTMs impact mitochondrial function and neuron health in the context of aging.

Requirements:

A PhD in neuroscience or a relevant field is preferable, and the candidate must be eligible for employment in the U.S. Candidates are required to have at least one first author publication and be independently motivated with excellent written and oral communication skills. URMC has a 5 year limit on post-doctoral tenure and preference will be given to recent graduates. Interested applicants should submit (1) a cover letter with (2) a brief summary of research interests, (3) a complete curriculum vitae, and (4) contact information of three references to Gail Johnson (gail_johnsonvoll@urmc.rochester.edu).

Timeline: Review of applications will begin immediately, and will continue until the position is filled.

The University of Rochester, an Equal Opportunity Employer, has a strong commitment to diversity and actively encourages applications from candidates from groups underrepresented in higher education.