Postdoctoral Researcher Position at UC Berkeley

A postdoctoral position is immediately available in the Brooks, Vazquez-Medina and Sudmant Labs, Department of Integrative Biology, University of California, Berkeley. The successful applicant will join an NIH-funded interdisciplinary team studying the underlying causes of metabolic inflexibility in aging. While the work will focus on studies in cells and laboratory rodents, another arm of the effort involves parallel studies on young and old, physically fit and unfit men and women. Hence, the successful candidate will work with his/her counterpart on humans in vivo and analyze tissues isolated from them.

Research in the laboratory is focused on the effects of aging, exercise, and exercise training on mitochondrial biogenesis, energetics and dynamics in striated muscle (cardiac, red, white, intermediate), white adipose tissue (WAT), and brain. The tools of physiology, biochemistry and molecular biology are being applied to the discovery, and mitigation of factors that lead to mitochondrial fragmentation and loss of metabolic flexibility in aging. This work involves studies on cells and tissues isolated from young and old wild type and transgenic mice and rats.

Key responsibilities

Animal work
- Animal handling, care and husbandry (basic rodent procedures: intravenous, intraperitoneal and subcutaneous injection, gavage, anesthesia, genotyping).
- Exercise testing and training, euthanasia, tissue sampling, tissue fragmentation, organelle isolation.

Cell work
- Culture of established cell lines and primary cells (isolation, maintenance, genetic manipulation and analysis of cell phenotype).
- Mitochondrial function assessment in intact cells and isolated preparations using Oroboros and Seahorse systems.
- ROS detection using genetically encoded sensors and HPLC.

Analytical work
- Histochemical analyses of tissues and cells by confocal microscopy, RT-qPCR, Western blotting, ELISA, RNA-seq
- Single Cell genomics (scRNAseq and multiomic profiling)
- Epigenetic modification of histones via lactylation, methylation, phosphorylation, acetylation, ubiquitylation, and sumoylation.

Other duties
- Support others conducting GC/MS and related technologies to determine metabolic flux rates and energy substrate partitioning in human subjects and lab animals.
- Equipment maintenance, ordering of supplies and maintenance of stock laboratory materials.
- Compliance with EH&S, ACUC and OLAC requirements.
- Data analysis and presentation at conferences, and publication in peer-reviewed journals.
- Training and mentoring undergraduate and graduate students in the laboratory.
- Assisting in the development of technical year-end reports.

Applicant Qualifications

PhD in physiology, biochemistry, biomedical science, or a related subject. The successful candidate will have experience conducting independent research with in vivo and cellular models and a solid, emerging record of research achievements. Previous experience with exercise physiology or mitochondrial biology is desirable.

For more information, please contact George A. Brooks gbrooks@berkeley.edu, or José Vázquez-Medina jpv-m@berkeley.edu