

Postdoctoral Fellow in Programmable Exosome Engineering for Focused Ultrasound–Guided Brain Drug Delivery

The Laboratory for NeuroControl and Monitoring (<https://www.huangneurolab.org/>), led by Dr. Zhimin Huang, Assistant Professor in the Department of Neurological Surgery at the University of Pittsburgh, is seeking a highly motivated Postdoctoral Fellow to join our growing research team.

About the Lab

Dr. Zhimin Huang joined the University of Pittsburgh in 2025 following postdoctoral training in Bioengineering at Rice University. His research focuses on developing noninvasive molecular technologies for controlling, monitoring, and treating diseases of the brain. His research has been supported by the PhRMA Foundation Faculty Starter Grant and the National Institute of Biomedical Imaging and Bioengineering (NIBIB).

The Huang Lab integrates focused ultrasound, gene therapy, protein engineering, synthetic biology, exosome engineering, and computational biology to develop next-generation tools for targeted drug delivery, molecular sensing, and precision therapeutics. Our long-term goal is to enable safe, noninvasive, and programmable therapies for neurological disorders and cancer.

Located within the University of Pittsburgh School of Medicine, the lab collaborates extensively with researchers across the University of Pittsburgh and UPMC, providing trainees with access to a highly interdisciplinary and collaborative research environment.

Research Project

Ultrasound-Guided Exosome Engineering for Noninvasive Drug Delivery: Supported by an NIBIB Trailblazer Award, this project aims to develop programmable exosome platforms for focused ultrasound-guided, site-specific drug delivery to the brain. The successful candidate will work at the interface of focused ultrasound, exosome engineering, synthetic biology, and gene therapy to advance next-generation noninvasive therapeutics.

Qualifications

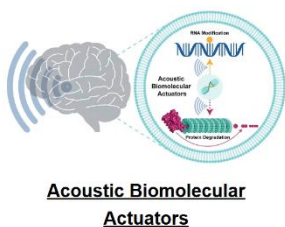
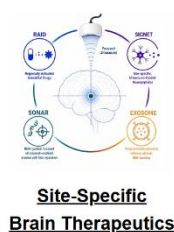
- A Ph.D. in Bioengineering, Biomedical Engineering, Neuroscience, Synthetic Biology, Chemical Biology, or a related field.
- At least one first-author peer-reviewed research publication.
- Experience in one or more of the following areas is preferred:
 - Exosome biology, engineering, or extracellular vesicle–based therapeutics
 - Focused ultrasound technologies for biomedical research or translational applications

Expectations

- Conduct independent, high-quality research and publish in leading scientific journals.
- Collaborate effectively within an interdisciplinary research team.
- Contribute to grant writing and mentor graduate and undergraduate trainees.
- Present research findings at national and international scientific conferences.

Why Join Pitt and the Huang Lab?

The University of Pittsburgh School of Medicine is consistently ranked among the top NIH-funded medical schools in the United States, and its Department of Neurological Surgery is a national leader in neurosurgery and translational neuroscience. The Huang Lab offers a collaborative and interdisciplinary research environment with close interactions among experts in bioengineering, neurotechnology, synthetic biology, gene therapy, and neuroscience across Pitt and UPMC. Trainees receive individualized mentorship in research, scientific writing, grant applications, and career development. The postdoctoral position is fully funded according to NIH NRSA guidelines (starting at approximately \$63,480 per year, depending on experience). Pittsburgh combines a world-class biomedical research ecosystem with an affordable cost of living, vibrant academic and biotechnology communities, outstanding healthcare systems, and an exceptional quality of life.



How to Apply

Interested candidates should email the following materials to Dr. Zhimin Huang (huangz@pitt.edu):

- 1) Curriculum Vitae
- 2) Brief statement of research interests
- 3) Contact information for three references

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

We welcome applicants from diverse backgrounds and are committed to fostering an inclusive, collaborative, and supportive research environment.