NEAT LAB NanoEngineering for Advanced Theranostics

Open Positions in the NEAT Lab at Purdue University

The NanoEngineering for Advanced Theranostics (NEAT) Laboratory, led by PI Dr. Jessica Hsu (starting January 2026), is seeking highly motivated and creative **postdoctoral fellows** and **visiting scholars** to join a research program that integrates molecular imaging and nanomedicine, leveraging their complementary strengths to improve disease outcomes. Our overall approach is to identify unmet clinical needs, devise innovative solutions, and collaborate with multidisciplinary experts to implement and iteratively refine each strategy, thereby maximizing both scientific impact and translational potential.

Responsibilities:

- Design multifunctional nanoplatforms (organic, inorganic, hybrid) for image-guided (PET/SPECT, CT, MRI, optical, etc.) therapeutic applications (radiotherapy, immunotherapy, phototherapy, etc.).
- Investigate mechanisms at the nano-bio interface to better modulate immune responses, the tumor microenvironment, and other biological processes.
- Conduct preclinical studies using in vivo disease models (cancer, inflammation, organ injury, etc.) and new alternative methodologies (advanced biological models, etc.) to assess safety and efficacy.
- Expand research projects with original ideas and mentor graduate/undergraduate students.
- Prepare manuscripts, present findings at conferences, and actively pursue extramural funding.

Qualifications:

- Ph.D. in Bioengineering, Materials Science, Chemistry, Pharmaceutical Sciences, or a related discipline, with a demonstrated track record of research publications.
- Familiarity in bio/nanomaterial synthesis, bioimaging, drug delivery, radiochemistry, and/or molecular biology techniques is preferred.
- Experience working with radioisotopes and small animal models is desirable.
- Excellent written and verbal communication skills and the ability to work both independently and collaboratively as part of a team.

Contact: Interested applicants should send a CV and cover letter describing current and future research interests to: jchsu@purdue.edu. Review will begin immediately and continue until the position is filled.

About the PI: Dr. Jessica Hsu received her Ph.D. in Bioengineering from the University of Pennsylvania in 2021 and completed her postdoctoral training at the University of Wisconsin-Madison in 2025. She will join the School of Health Sciences at Purdue University as an Assistant Professor in January 2026. She has authored >50 peer-reviewed publications (>2500 citations, h-index: 24) in leading journals including *Advanced Functional Materials*, *Chemistry of Materials*, and *Nature Reviews Methods Primers*. Her research has been recognized with numerous honors, including the NSF Graduate Research Fellowship, Brody Family Postdoctoral Fellowship, and WMIC WIMIN Scholar Awards. She has also served as a guest editor for two special issues and as a reviewer for >15 journals and conferences. Dr. Hsu is deeply committed to creating a diverse, collaborative, and dynamic lab that prioritizes teaching and mentoring to empower all members to achieve excellence in research. More details can be found via https://hhs.purdue.edu/hsu-neatlab/.

About the environment: The School of Health Sciences at Purdue University offers nationally recognized research and education programs in areas of Biomedical Health, Radiological Health (Medical/Health Physics), Environmental and Occupational Health, and Toxicology (https://hhs.purdue.edu/hsci/). Purdue University provides many shared facilities and postdoctoral training resources including support for grant writing and career advancement (https://www.purdue.edu/gradschool/postdoctoral-studies/index.php). Collaborative opportunities exist with various clinical departments at Indiana University School of Medicine.