



Postdoctoral Associate: Miniature High-Speed Multiphoton Imaging

Vaziri Laboratory of Neurotechnology and Biophysics
The Rockefeller University, New York, NY
<https://vaziri.rockefeller.edu/>

Job Description

The Laboratory of Neurotechnology and Biophysics (PI Alipasha Vaziri) is looking to recruit a Postdoctoral Associate to join our diverse and welcoming lab to work on an interdisciplinary project at the interface of optics and neuroscience.

Your Role

As part of an experienced team and a multi-lab collaborative environment, you will spearhead design, construction, and testing of a novel type of miniaturized imaging system. The project combines the Vaziri Lab's expertise in high-speed multiphoton methods with its track record in miniature imaging systems. You will work with senior members of the lab to conceptualize and design optical, mechanical, and computational aspects of the system. You will contribute to assembling and characterizing optical devices, and to recording and analyzing neuronal activity data. Your project will culminate in demonstrating the recording of the activity of thousands of neurons during naturalistic, free behavior and social interactions, in collaboration with our project partners at UCLA and other neurobiological beta-tester labs. Our technologies will be disseminated as open hard- and software, creating widespread visibility and empowering a world-wide user community to get their hands on these technologies.

Mentors and Environment

Tobias Nöbauer, PhD, is a Research Assistant Professor in the lab and will provide you with day-to-day mentorship, training, and guidance. He is committed to removing obstacles from your path, inspiring a meaningful, creative, and flexible work style, and loves sharing his own wide experience in tech, coding, designing, writing, and scientific research.

Alipasha Vaziri, PhD, is Professor and Head of Laboratory. An accomplished neurotechnologist and leader in the field of advanced functional neuroimaging, he will provide higher-level guidance and strategic advice to you and the team and will coordinate with our collaborators in recurring team discussions. He is committed to fostering your professional development by giving feedback and tapping into his rich scientific network.

The Vaziri Lab is an eclectic mix of people from across the globe with backgrounds in (quantum) physics, neuroscience, optical engineering, and more. We run a fully equipped, functioning and productive lab with ample resources and efficient infrastructure at your disposal.

Additional Information

- We will tailor your role to your experience level and preferences.
- We respect your work-life balance and are flexible in accommodating life events and practicalities that are important to you.
- The position and project are fully funded through an NIH BRAIN initiative award that runs for a total of four years, with the possibility to extend the position beyond the award duration.
- We encourage you to participate in relevant conferences to communicate your results, immerse yourself in the community, and nurture your network, especially also in exchange with our project partners and tester labs.
- The Rockefeller University offers a wide array of professional development resources, such as trainings, seminars, and networking opportunities, which you are encouraged to participate in.
- The Rockefeller University is an Equal Opportunity Employer with a policy that forbids discrimination in employment for protected characteristics. The Administration has an Affirmative Action Program to increase outreach to women, minorities, individuals with disabilities, and protected veterans.



Qualifications - Required

- A PhD in neuroscience, physics, electrical engineering, optical engineering, bioengineering, computer science, or a related field.
- Experimental hands-on experience with optics, opto-mechanics, and experiment control
- Software development and data science skills (Python, Matlab, ...)
- Experience with optical simulation (Zemax) and mechanical design software (e.g., Illustrator, SolidWorks)
- A sincere willingness to learn whatever this research journey may require, with in-depth training and support from your mentoring team and colleagues; A commitment to meaningful interdisciplinary communication, and motivation for doing creative science together with us.

Qualifications – Preferred

- Experience with one or more of the following is a plus: multiphoton or fluorescence microscopy (especially, in vivo), animal procedures (craniotomy surgery, virus delivery), optical and laser setups, neuroscience behavior experiments.
- Familiarity with controlling experiments using software (e.g., Arduino, NI-DAQ, etc.) is a plus.
- Familiarity with common optical and electro-mechanical systems (e.g., galvo scanners, piezos, etc.) and electrical test- and measurement equipment.

How to apply

Interested candidates should send their **CV** including **list of their publications** as well as the contact information of at least **two references** to vaziradmin@rockefeller.edu. Do not hesitate to shoot us an email with any questions at tnobauer@rockefeller.edu. For more information and to see our list of open positions, please visit our website at: <https://vaziri.rockefeller.edu/>