



Postdoc/Research Assistant positions: Development of Molecular Neuro-technologies

The Rockefeller University, New York, NY

Background

Over the last decade neuroscience has been revolutionizing our understanding of the brain. A major driver underlying this transformation has been the emergence of new optical technologies in combination with molecular and computational tools. Our lab is focused on the development and application of advanced neuro imaging technologies with applications for systems neuroscience.

What we do

We have pioneered optical techniques that allow near-simultaneous stimulation [1,2] and functional imaging of neuronal activity on the whole-brain level at single-cell level in small model organisms [3,4] and more recently in the more scattering rodent brain [5-7]. These tools allow us for the first time to address the underlying principle of some of the most fundamental question in neuroscience: How does the brain represent sensory inputs? How does the spatiotemporal dynamics of neuronal population across separated brain regions generate animal behavior? We are currently addressing some of these questions in larval zebrafish and in awake behaving rodents.

Positions

The development of our advanced neuroimaging technologies critically hinges on molecular tools and implemented genetic strategies in animal models that are co-developed with the new optical capabilities. We are currently looking for highly motivated and ambitious candidates at the Postdoctoral, Research Associate and/or Research Assistant level who are interested to take on challenging and high-risk, high reward projects at the **interface of molecular/synthetic biology, genetic engineering and imaging technology**.

Qualifications

- Highly motivated, ambitious, passionate and result oriented.
- PhD / Masters in **molecular biology, neuroscience, genetics, bio-engineering** or a related field.
- Education emphasis in **biochemistry**, biophysics or molecular biology would be desirable including previous lab experience with molecular biology and/or protein design, screening and some familiarity with structural biology would be highly desirable.
- Experience with one and more types of optical microscopy would be desired
- Previous experience with *in vivo* rodent work including **rodent surgery** would be preferred and familiarity with behavioral neuroscience would be desired.
- Must have enthusiasm for research, be detail oriented, dependable, have excellent verbal and written communication skills, self-motivated, a 'Whatever It Takes' attitude and thrive in a fast-paced environment and be able to work both independently and as part of a team.

The successful candidates will join the Laboratory of Neurotechnology and Biophysics and will be embedded in our network of active collaborations in the New York area and beyond which are supported by dedicated recent awards. Interested candidates should send their CV including publications, copy of transcripts as well as the contact information of two references to Prof. **Alipasha Vaziri** (vaziri@rockefeller.edu). For more information please visit our website www.vaziria.com or <http://www.rockefeller.edu/research/faculty/labheads/AlipashaVaziri/#content>

References

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4. Prevedel, R., et al., *Simultaneous whole-animal 3D imaging of neuronal activity using light-field microscopy*. **Nature Methods** **11**, 727 (2014).
5. Prevedel, R., et al., *Fast volumetric calcium imaging across multiple cortical layers using sculpted light*. **Nature Methods** **13**, 1021 (2016).
6. Nöbauer, T., et al., *Video rate volumetric Ca²⁺ imaging across cortex using seeded iterative demixing (SID) microscopy*. **Nature Methods** **14**, 811 (2017).
7. Skocek, O., et al., *High-speed volumetric imaging of neuronal activity in freely moving rodents*. **Nature Methods AOP**, doi: 10.1038/s41592-018-0008-0 (2018).