Postdoctoral Position in Dr. Ann Miller’s Lab at the University of Michigan

cell biology • *Xenopus* extracts • reconstitution • Rho GTPases • cytoskeleton • synthetic biology

The Miller Lab is seeking excellent postdoctoral applicants for an exciting collaborative project that was recently **funded by the NSF/BBSRC**. We are investigating the mechanisms that orchestrate patterning of the cell cortex. The dynamics of the cortical cytoskeleton underlying the plasma membrane are controlled by Rho GTPases, which are locally activated in distinct patterns corresponding to different cellular processes including cytokinesis, cell migration, and wound healing. We have shown that cells can support sustained waves of dynamically-coupled Rho activity and actin assembly, which we termed “cortical excitability” ([Bement et al., *Nature Cell Biology*, 2015](http://dx.doi.org/10.1038/ncb3171)). We are now taking a multi-pronged approach including experiments in intact urchin and frog oocytes, experiments using novel semi-synthetic reconstituted system, and computational modeling in order to identify mechanisms underlying cortical excitability.

This postdoctoral project will be focused on reconstituting and manipulating cortical excitability *ex vivo* by combining a model cell membrane, where the lipid composition can be precisely controlled, with a model cytoplasm (*Xenopus laevis* oocyte or egg extracts), where natural or synthetic GEF-GAP pairs can be tested and other excitability players can be easily perturbed. This simplified *ex vivo* system will allow us to exert control over variables that may control excitability in ways that we cannot *in vivo*. In addition to their primary work in my lab, this postdoc will have the opportunity to interface with our outstanding team of collaborators on this funded project: Prof. Bill Bement, University of Wisconsin, Madison; Prof. Andrew Goryachev, University of Edinburgh, Scotland; and Prof. George von Dassow, Oregon Institute of Marine Biology.

My lab is currently composed of 1 postdoc, 3 graduate students, and 4 undergrads. The Miller Lab is located on the central campus of the University of Michigan in Ann Arbor, MI. We will be moving our lab to the brand new **Biological Sciences Building** in Spring 2018. The University of Michigan was recently ranked as the #1 public university in the US by **QS World University Rankings**, and Ann Arbor consistently ranks well in lists of America’s best cities to live in.

Please see my lab website for additional information: [http://sites.lsa.umich.edu/miller-lab/](http://sites.lsa.umich.edu/miller-lab/)

We are seeking accomplished applicants with the following qualifications to begin soon (i.e. within the next ~6 months):

- Motivated, creative, independent thinkers
- Excellent publication record with at least one first author paper
- Background in cell biology, biochemistry, and microscopy
- Ideally, experience working with *Xenopus*
- Recent Ph.D.

Interested applicants should send a cover letter and CV with the names of three References to Ann Miller: [annlm@umich.edu](mailto:annlm@umich.edu)