

## Call for postdoctoral applicants for GEMS: Genomics and Eco-Evolution of Multi-Scale Symbiosis

Multiple postdoctoral positions are available in GEMS, a newly-announced NSF Biological Integration Institute located across three Midwest universities: the University of Illinois at Urbana-Champaign, Indiana University, and University of Chicago. GEMS is led by a diverse set of faculty from many home departments and specialties, focusing on integrating molecular and organismal biology. Research will focus on eco-evolutionary feedbacks of mobile microbial symbionts. Three core research themes frame the studies being initiated in GEMS:

**Theme 1: *Symbiosis dynamics and discovery*** — We characterize diversity of phenotypes and genotypes in symbioses — including nested genetic elements, microbes, plants, and animals — as well as additional interacting genomes that have not yet been recognized.

**Theme 2: *Rules of engagement*** — We add the determinants of host–symbiont specificity and define the molecular basis of extended phenotypes to create a multilevel feedback model to explain the structure of natural variation observed in Theme 1. We establish predictive ecological and evolutionary models based on molecular characterization of the establishment of and ongoing intracellular interactions during symbiosis.

**Theme 3: *Symbioses as engines of rapid adaptation – eco-evolutionary feedbacks*** — We identify the feedback responses within symbioses to changes in the community. We develop multiscale models to describe the impacts of nested symbiosis on community dynamics and ecosystem responses to environmental change.

We are looking for a cohort of highly motivated postdocs to work together on molecular interactions and their evolutionary and ecological impacts across a range of organisms (bacteria, viruses, plants, bees) and using integrative approaches from molecular biology, ecology, evolution, theory, genomics, and computation. Postdocs **MUST** be co-advised by multiple faculty mentors and are encouraged to work across our three partner institutions in addition to integrating across lab groups and disciplines within and outside of biology.

***GEMS postdoctoral fellowship:*** In addition to hiring postdocs into particular project objectives that are already funded through GEMS, we will award **one independent GEMS postdoctoral fellowship annually**, which will come with research funds in addition to salary and benefits. To be considered for the GEMS postdoc, please contact one or more GEMS faculty members. You will work with your mentor to develop a one-page proposal related to your common interests in the eco-evolution of multi-scale symbioses. Applicants will be evaluated based on their record as well as the potential for their proposed project to diversify GEMS research questions and techniques and integrate across disciplines within and outside of biology (including education) as well as across institutions.

Strong candidates for all positions will also possess the following attributes:

- Evidence of past experience in completing projects (papers published, in press, or submitted)?
- Creativity, independence, and the desire to learn new things.
- Experience strengthening written and oral communication skills including one or more of the following: published papers, talks, grants, outreach activity, teaching.
- Commitment to education, outreach, and diversifying biological research.

All candidates must have received a Ph.D. in a relevant field. Positions are available for at least 2 years, with the first year as a probationary period, and will include a competitive salary and full benefits. Rolling deadlines (submit anytime) are standard, but review of applicants for the independent GEMS postdoc competition will occur annually after the November 1 deadline. Start dates are flexible. Applications should include a curriculum vitae, the names and contact information for three references, and a brief cover letter describing the candidate's interests and identifying potential GEMS faculty mentors (link to website here?). All materials should be submitted via email to [gemsymbiosis@life.illinois.edu](mailto:gemsymbiosis@life.illinois.edu) using the subject line "postdoc inquiry".

Indiana University, University of Illinois, University of Chicago, and participant labs are committed to building a supportive workplace for scientists of all races, ethnicities, genders, and sexual orientations to thrive.

Further information about GEMS and the participating labs here:  
[www.symbiosis.illinois.edu](http://www.symbiosis.illinois.edu)

Feel free to contact potential postdoc advisors directly, and/or direct any questions to [gemsymbiosis@life.illinois.edu](mailto:gemsymbiosis@life.illinois.edu).