

Postdoctoral Fellow Search

Qualified applicants are invited to apply for one of several postdoctoral fellowships in experimental and theoretical biophysics at the National Science Foundation's "Center for the Physics of Living Cells" (CPLC) <http://www.cplc.illinois.edu> at the University of Illinois at Urbana-Champaign. Fellowships are available starting in May 2015, and will normally last a minimum of two years.

Mission

The mission of the CPLC is to catalyze new research directions in the study of the simplest living systems, connecting the microscopic physical-chemical reactions in the cell to the system-level properties. Through major advances in single-molecule manipulation techniques, live cell imaging, and mathematical as well as computational methods, we expect this combined endeavor to culminate in a truly quantitative physical picture for the fundamental processes at the core of life.

Job description

Research in the Center falls in four themes:

- (1) *Single-molecule biophysics at the molecular-cellular interface;*
- (2) *Maximizing information content of single cell experiments;*
- (3) *Collective dynamics: from cell-cell interaction to multicellular organisms ;*
- (4) *Increasing biological realism in theory and computation.*

Fellows will use state-of-the-art experimental and theoretical biophysical tools to accomplish these goals: optical tweezers, single-molecule and super-resolution fluorescence microscopy, fabrication of synthetic nanostructures, live cell imaging, chemical biology and genomic biology tools, classical and quantum mechanical molecular simulations, stochastic modeling, whole cell simulations, as well as the standard methods of molecular and cellular biology and genetics. Research will involve both the development and improvement of experimental and computational techniques and the application of these techniques to particular biological processes such as replication, transcription, translation, cell transport, cellular mechanics signaling, and motility. As projects are collaborative endeavors between several labs, the Fellows will have the opportunity to be jointly advised by two or more faculty members of the Center. Fellows will also be expected to participate in education and outreach activities of the Center.

Qualifications

Candidates for this postdoctoral position must have a Ph.D. in the physical sciences, life science, or related disciplines, and must be highly qualified in one of the experimental or theoretical areas. Excellent oral- and written-communication skills are required for this position.

The University of Illinois is an equal opportunity/affirmative action employer, and welcomes applications from minority and women candidates.

How to apply

Applications for this position (and other positions available in the Physics Department) may be submitted electronically via <https://my.physics.illinois.edu/submit/go.asp?id=840>, and should arrive no later than **December 1, 2014**. Applications received after the deadline may not be considered. These applications should include, in PDF format:

- (1) A cover letter
- (2) A curriculum vitae
- (3) A research statement not exceeding three pages, summarizing your past and ongoing research,
- (4) A publications list, including papers and preprints with their URLs. For any papers or preprints that are not readily available via the internet, applicants may wish to upload electronic copies via the "supporting document" channel.

In addition, applicants should provide contact information for three references from whom letters of recommendation will be requested. Questions can be directed to: director@cplc.illinois.edu.

**Taekjip Ha**

*Single-Molecule Techniques
Molecules in Genome Maintenance
Molecular Cell Mechanics*

**Alek Aksimentiev**

*Theoretical & Computational Biological Physics
DNA-protein systems, Molecular Motors,
Transmembrane transport, Biosensors*

**Yann Chemla**

*Study of Mechanical Processes in Biology
using Optical Tweezers and Fluorescence*

**Karin Dahmen**

*Soft Condensed Matter Physics
Nonequilibrium Dynamical Systems
Population Biology*

**Nigel Goldenfeld**

*Ecology and Evolution
Multi-Scale Pattern Formation
Collective Properties of Matter*

**Ido Golding**

*Decision making in living cells
using Simple Model Systems*

**Martin Gruebele**

*Protein and RNA Folding, Macro-
Molecular Dynamics in Living Cells,
Behavioral Dynamics*

**Seppe Kuehn**

*Quantitative Measurements of Ecological
and Evolutionary Dynamics*

**Klaus Schulten**

*Theoretical and Computational Biophysics
Molecular Dynamics and Modeling*

**Tom Kuhlman**

*Gene regulation and Evolution of Genome
Organization
Microfluidics and Quantitative Imaging*

**Zaida Luthey-Schulten**

*Energy Landscapes of Biological Molecules
Exploring the Evolution of Structure
Function/Folding*

**Sua Myong**

*Single-Molecule Fluorescence Detection of
Protein-Nucleic acid Interactions*

**Paul Selvin**

*Single-Molecule Fluorescence Methods
to study Molecular Motors, Ion Channels,
Nerves and Memory.*

**Stephen Sligar**

*Biological Oxidation, Nanoscale systems
for Human Therapeutics, Cell Migration*

**Jun Song**

*Integrative Genomics and Epigenomics
of Eukaryotic Gene Regulation*



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