



The Institute for Genomic Biology at the University of Illinois at Urbana-Champaign offers a number of postdoctoral fellowships for talented young scholars. IGB Fellows spend two to three years doing collaborative and independent research in one of several research themes at the Institute. Visit www.igb.illinois.edu/fellows for more information about the Institute, the research themes, and application procedures. The closing date for all positions is December 18, 2009. Fellows will be announced by February 15, 2010.

MOLECULAR BIOENGINEERING OF BIOMASS CONVERSION

We seek an individual with experience in metabolic engineering of industrially significant microbes (e.g. yeast, fiber-degrading bacteria, clostridia) for production of biofuels from biomass feedstocks. The ideal candidate will have expertise in modern molecular biology techniques, whole genome shuffling, DNA microarrays, proteomic and metabolic tools, transposon mutagenesis and high-throughput screening methods, to maximize the production of bioproducts and biofuels. (Hans Blaschek, Theme Leader)

BIOCOMPLEXITY

We seek a quantitative scientist with interests in evolution, systems biology, and ecosystem dynamics, and expertise in statistical physics as applied to biology. The successful candidate will join a multi-disciplinary group exploring collective effects in biology. Projects include the evolution of translation, the role of horizontal gene transfer in communities of microbes and phages, and the systems biology of cells and ecosystems. (Nigel Goldenfeld, Theme Leader)

REGENERATIVE BIOLOGY & TISSUE ENGINEERING

The Fellow will be involved in one or more of our multidisciplinary projects related to regenerative biology and harnessing the potential of adult/embryonic stem cells for tissue engineering applications. Of particular interest is leveraging theme expertise in biomaterials fabrication, drug delivery systems, microfluidics-based *in vitro* experimental platforms, and *in vivo* evolutionary biology and regeneration medicine studies. The ideal candidate will have experience in one or more areas of (stem) cell biology, induced pluripotent cell technology, biomaterials, microfluidics, and/or tissue engineering. (Paul Kenis, Theme Leader)

GENOMIC ECOLOGY OF GLOBAL CHANGE

The Fellow will be involved in a cross-disciplinary project investigating how changes in networks of genes affect ecosystem metabolism when challenged by elements of global change, including elevated atmospheric carbon dioxide and ozone, increased drought, and altered interactions with insect herbivores and plant pathogens. The ideal candidate will have a strong background in plant biology and a record of expertise in molecular biology, genomic ecology, physiology or modeling of gene networks or ecosystem function. The ability to work creatively and productively in a highly interdisciplinary and collaborative environment is essential. (Don Ort, Theme Leader)

ENERGY BIOSCIENCES INSTITUTE

The Energy Biosciences Institute (EBI) is an externally funded Theme within the IGB. It is the largest academia collaboration to date, currently receiving \$500 million over the next ten years and focusing on the development of second-generation biofuels intended to significantly slow the rate of global climate change. Its research ranges from systems biology of fermentative organisms to quantification of ecosystem services provided by new sustainable biofuel crops. The full range of research can be seen at www.energybiosciencesinstitute.org. We seek an outstanding candidate across these areas interested in applying genomic biology to understanding and developing opportunities for improving sustainable biofuel production. Research can be at any point in the supply chain from improving feedstocks and their environmental sustainability to producing fuel. The appointee will work in an inter-disciplinary laboratory of over 100 exceptional colleagues focused on this challenge. The appointment would also involve collaboration with our partners: UC Berkeley and BP. (Steve Ng, Theme Leader)

MINING MICROBIAL GENOMES FOR NOVEL ANTIBIOTICS

The Fellow will be involved in a multi-disciplinary project aimed at the discovery, design, and development of phosphonic acid antibiotics. The ideal candidate will have a proven record of expertise in the general area of microbially produced natural products, with specific expertise in one of several disciplines. We are interested in candidates with previous experience in bacterial metabolism, bacterial genetics, molecular biology, biochemistry, enzyme evolution, metabolic engineering, organic synthesis, mass spectroscopy, bioinformatics and metagenomics. (Bill Metcalf, Theme Leader)

PRECISION PROTEOMICS

We seek an individual to develop next-generation technologies at the intersection of mass spectrometry and chemical biology. The successful Fellow will have advanced training in mass spectrometry of proteins (with emphasis on "Top Down" techniques and tandem mass spectrometry of high-mass ions), associated proteomics software, capillary separations, and cell culture. The Fellow will work in an interdisciplinary fashion with expert labs in single molecule fluorescence, natural products discovery, and high-throughput screening for anti-cancer compounds. (Neil Kelleher, Theme Leader)

GENOMICS OF NEURAL AND BEHAVIORAL PLASTICITY

We seek a biologist with strong bioinformatics skills and training in one or more of the following areas: evolutionary biology, neuroscience, animal behavior, molecular biology, or genomics. Applicants with expertise in both biology and bioinformatics will be strongly preferred. The successful candidate will join a multi-disciplinary team that is using genomics to identify both conserved and novel mechanisms of neural and behavioral plasticity in diverse animal systems. Fellows are expected to conduct research that contributes to the development of the theme's goals by integrating components from theme members' individual research programs. (Gene Robinson, Theme Leader)

HOST-MICROBE SYSTEMS

The Fellow will be responsible for developing DNA isolation, microbial isolation, 16S rRNA gene library construction and other metagenomic analysis techniques for surveying microbial content of the human and nonhuman primate vaginal and intestinal microbiomes. Additional responsibilities will include the development of microarray and other molecular biology techniques to examine microbial, metabolic, and immunologic contents, and performing analyses using bioinformatics and other computational and analytical methods. The ideal candidate will have a strong background in microbiology, biochemistry, or a related field with experience and expertise in molecular microbial ecology and bioinformatics and/or biostatistics. (Brenda Wilson, Theme Leader)

BUSINESS, ECONOMICS, AND LAW OF GENOMIC BIOLOGY

We seek an individual with training in economics, business, law, or strategy and with an interest in technology entrepreneurship, technology industries, and biotechnology. The Fellow will join a multi-disciplinary group that includes business, law, and technology experts; agricultural economics faculty; and personnel from the campus Office of Technology Management. Our theme is exploring issues in university-industry technology transfer, industry evolution, intellectual property protection, the competitive and cooperative dynamics for both entrepreneurial start-ups and existing corporations, the impact that globalization of biotechnology has on the evolution of industry, and the position of U.S. firms in the global marketplace. (Jay Kesan, Theme Leader)