Tenure Track/Tenure Investigator Positions
in Systems Immunology and Infectious Disease Modeling

The National Institute of Allergy and Infectious Diseases (NIAID), Division of Intramural Research (DIR) is seeking several outstanding individuals for its new Program in Systems Immunology and Infectious Disease Modeling (PSIIM).

Modern technology allows the analysis of immune responses and host-pathogen interactions at multiple levels - from intracellular signaling networks, to individual cell behavior, to the functioning of a tissue, organ, and even the whole organism. The challenge is not only to collect large amounts of data, but also to organize it in a manner that enhances our understanding of how the immune system operates or how pathogens affect their hosts. To do this, we need to develop detailed quantitative models that can be used to predict the behavior of a complex biological system. These models can help to explain the mechanisms underlying physiological and pathological responses to infection or vaccination, which can then be exploited to design better therapies or vaccines.

Achieving this goal requires an interdisciplinary effort, and to this end the PSIIM will be organized as an integrated team of scientists and support staff with expertise in computational biology, bioinformatics, proteomics, cell biology, immunology, and infectious diseases, rather than as a group of independent laboratories. These teams will have access to the latest technology for gene-expression profiling, high-content screening of RNAi libraries for the discovery of pathway components, imaging tools, cores for the genetic manipulation of animals and for proteomic analysis, and a substantial computer infrastructure. BSL-3 facilities for working with high priority pathogens will also be available.

The PSIIM is now recruiting for tenure-track or tenure level team leader appointments in three key areas:

Computational Biology: The incumbent will lead a group focused on the development and improvement of software tools for multiscale modeling and simulation that can be used by the PSIIM as well as by biologists interested in subjects other than immunity or infectious diseases. The ideal candidate will have a strong background in mathematics, physics, and computer programming, and a clear desire and ability to interact with and support the efforts of biologists. A demonstrated ability to generate computer software tools for biological modeling will be a strong plus.

Molecular/Cell Biology: The incumbent will lead a group involved in the design, implementation, and interpretation of screening efforts to identify and determine the interactions among the components in signaling networks that could then be modeled using the software generated by the computational biology team or obtained from other sources. Discovery tools such as gene arrays, high content image-based screens using RNAi methods, various protein-protein hybrid screening methodologies, and optical imaging are expected to be key elements in the efforts of this group. A strong background in basic cell biology and molecular biology with experience in analysis of protein-protein interactions, signaling, and/or gene regulation is required. Expertise in large-scale screening is highly desirable.

Infectious Diseases: The incumbent will be responsible for developing novel approaches to systems-wide analysis of the interaction of infectious agents and their hosts. These may include the use of gene expression signatures, the production of gene modified animals, the development of methods for in vivo testing of the predictions of models, and the use of sophisticated imaging and other tools for probing the interaction of pathogens and host cells in vitro. A strong background in viral and/or bacterial infectious diseases and cell and molecular biology are necessary; training in the immunology of infectious diseases and substantial bioinformatics experience are highly desirable.

These positions and the research activities they conduct are fully funded by the intramural research program of NIH. Each team leader is expected to build a working group consisting of postdoctoral fellows, staff scientists, technicians, and students. The team leaders will work with the program director to help set the goals for the PSIIM and to determine how best to reach these goals as an integrated group. To ensure appropriate career trajectories for those joining the PSIIM team, the NIH has modified its tenure policies to encourage and account for contributions made in such a team science setting. Applicants should be seeking a difficult challenge in which creativity, technical expertise, and a strong desire to achieve in a team environment are critical for success.

Interested candidates may contact Dr. Ronald Germain, Program Director, PSIIM, DIR, NIAID at 301/496-1904 or email (rgermain@niaid.nih.gov) for additional information about these positions.

To apply, submit your curriculum vitae, bibliography, and detailed statement of how you can contribute to the success of the PSIIM program to: Felicia Braunstein at braunstein@niaid.nih.gov. In addition, three letters of reference must be sent directly from the referee to Dr. Robert Homan, Chair, NIAID Search Committee, c/o Ms. Felicia Braunstein, DIR Committee Management Team Lead, 10 Center Drive, MSC 1356, Building 10, Room 4A31, Bethesda, Maryland 20892-1356. Completed applications MUST be received by February 16, 2007 for computational biology, March 16, 2007 for molecular/cell biology, as well as for infectious diseases. Please refer to ad #012 for computational biology, #013 for Molecular/Cell Biology and #014 for infectious disease on all correspondence. Further information on these positions and guidance on submitting your application are available at: http://healthresearch.niaid.nih.gov. For more information about NIAID systems biology program, please visit http://www.nih.gov/catalyst/2006/06.09.01/page1.html