

# Simons Foundation Support for Systems Biology at IAS

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Stanislas Leibler, a leading scientist working in theoretical and experimental biology, has been appointed to the Faculty of the Institute's School of Natural Sciences as part of a joint initiative with the Rockefeller University. Leibler, who joined the Institute as of April, will continue to hold his positions at Rockefeller as Gladys T. Perkin Professor and Head of the Laboratory of Living Matter.



*Stanislas Leibler*

“The quality and depth of Stan’s research and his influential experimental and theoretical work will contribute greatly to our work in systems biology,” said Director Peter Goddard. “This new initiative with the Rockefeller University will foster important and distinctive contributions to research in biology, and will enable us to expand greatly what we are doing in this field, helping the Institute to continue to train the next generation of life scientists.”

Leibler’s appointment engages the Institute and the Rockefeller University in a collaboration that will further quantitative and theoretical biology at both institutions. The initiative is being funded by a \$10 million gift from the Simons Foundation that will be divided equally between the two institutions and will support biologists, mathematicians, physicists, and computer scientists exploring quantitative and theoretical approaches to biological problems. As part of this collaboration, the Institute and Rockefeller will jointly appoint visiting professors and graduate and postdoctoral fellows, fund early stage high-risk projects, and develop joint seminars, workshops, and lectures, as well as a series of annual conferences.

“This unique initiative, which draws on the strength of both Rockefeller and the Institute, will open new doors to studying complex biological problems,” said Paul Nurse, President of the Rockefeller University. “By combining techniques from several different scientific disciplines, the effort will be well positioned to make breakthroughs in how we understand key processes of life and disease.”

Interested in the quantitative description of microbial systems, both on cellular and population levels, Leibler is developing the theoretical and experimental methods necessary for studying the collective behavior of biomolecules, cells, and organisms. Even the simplest of organisms, such as bacteria, are capable of processing information in a highly sophisticated manner, adapting to varying environments and evolving new functions. By selecting a number of basic questions about how simple genetic and biochemical networks function in bacteria, he and his laboratory colleagues are beginning to understand how individual components can give rise to complex, collective phenomena.

“I am delighted to join the Faculty of the School of Natural Sciences at the Institute,” said Leibler. “Both the Institute and the Rockefeller University are known for their scientific excellence and their deep attachment to academic freedom. I feel privileged to be given the opportunity to continue my research in these institutions and to participate in their new interdisciplinary initiative.”

Leibler studied physics first at the University of Warsaw and then at the University of Paris, where he earned a Ph.D. in theoretical physics in 1981 and a second doctorate in physics in 1984. He became a tenured Research Fellow at the Centre d’Etudes de Saclay in 1984, where he remained until 1992, and was a Visiting Research Associate at Cornell University from 1985 to 1987. Leibler moved to Princeton University in 1992 as a Professor in the Department of Physics, becoming a Professor in the Department of Molecular Biology in 1993. He was a Visiting Scientist at the European Molecular Biological Laboratories in Heidelberg, Germany, in 1997-98. From 2000 to 2001, Leibler was a Howard Hughes Medical Institute Investigator, and he came to Rockefeller in 2001, becoming a Tri-Institutional Professor at Weill Medical College of Cornell University and the Sloan-Kettering Institute for Cancer Research in 2003.

In addition to funding this initiative, the Simons Foundation has given a \$10 million challenge grant to add to the permanent endowment of the Simons Center for Systems Biology at the Institute, established in 2004 and named in recognition of major support from the foundation. Institute Trustee James H. Simons, Founder and President of Renaissance Technologies Corporation, and his wife Marilyn Hawrys Simons created the Simons Foundation in 1994 to support advanced research in science and mathematics. The Charles Simonyi Fund for Arts and Sciences, founded in 2003 by Charles Simonyi, Chairman of the Institute’s Board of Trustees, has provided \$1 million, the first gift to match the challenge. The challenge grant and matching gifts will enable the permanent endowment of the Simons Center for Systems Biology. Led by Arnold J. Levine, Professor in the School of Natural Sciences, the Simons Center fosters original theoretical research in systems biology as well as collaboration and interaction in the field. Major areas of study in the center include the genomic evolution and behavior of RNA viruses such as influenza, herpes, and human immunodeficiency viruses, and the molecular and cellular origins of cancer, autism, and other diseases.