



MOUNT SINAI  
SCHOOL OF  
MEDICINE

# The Tenth Irving L. Schwartz Lectureship in Structural and Chemical Biology



## The Tenth Irving L. Schwartz Lectureship IN STRUCTURAL & CHEMICAL BIOLOGY

**Klaus Schulten, Ph.D.**

Swanlund Professor of Physics,  
University of Illinois Urbana-Champaign

**“Discoveries Through  
the Computational Microscope”**

Thursday, October 14, 2010  
2:00 PM

Icahn Medical Institute Building  
Goldwurm Auditorium

*Reception to follow the lecture*

Mount Sinai School of Medicine  
Department of Structural and Chemical Biology  
One Gustave L. Levy Place  
1425 Madison Avenue  
New York, New York 10029  
Tel. 212-659-8647



### **Irving L. Schwartz, M.D.**

was recruited by the Trustees of the Mount Sinai Hospital in 1964 to devote himself to the launching of the Mount Sinai School of Medicine. Now Emeritus, he was the first Dean of the Mount Sinai Graduate School of Biological Sciences, the founding Chairman of the

Department of Physiology & Biophysics (currently the Department of Structural and Chemical Biology) and the Lamport Distinguished Professor.

Dr. Schwartz's interests in biomedical research and education were far reaching, addressing fundamental problems of body fluid regulation, secretory phenomena and neurophysiology. His work, originally in whole animal and organ Physiology, evolved over the years to the cellular organellar, and ultimately to the molecular level. He had a major interest in the function of neurohypophyseal and other peptides. His studies on peptides ranged from bedside observations, to biochemical mechanisms of action, to the definition of the three dimensional structure of such molecules in solution as well as in the crystalline state. The work of his group on the molecular conformation of hormones in solution pioneered-structure function analysis based on the tertiary structure of molecules.



### **Klaus Schulten, Ph.D.**

After his studies of Physics in Munster, Germany, Klaus Schulten received his Ph.D. from Harvard University in 1974. He is now Swanlund Professor of Physics and is also affiliated with the Department of Chemistry as well as with the Center for

Biophysics and Computational Biology. Professor Schulten is a full-time faculty member in the Beckman Institute of Advanced Science and Technology and directs the Theoretical and Computational Biophysics Group at the University of Illinois in Urbana-Champaign, IL.

His professional interests include theoretical physics and theoretical biology: utilizing physical theory and computing to model organisms across many levels of organization – from molecules to cells to networks. The research is driven by problems in molecular biophysics such as solving the structure and function of supramolecular systems in the living cell, like recognition and regulation of DNA by proteins, unraveling the molecular basis of the mechanical properties of cells, and the development of non-equilibrium statistical mechanical descriptions and efficient computing tools for structural biology.

Over the course of his career Dr. Schulten has supervised more than 80 graduate students and 55 postdocs. He has collaborated with over 80 scientists from various countries.

His lab develops and distributes innovative software tools that are used by thousands of researchers and students worldwide to explore biomolecular systems – VMD, a molecular dynamics graphics program for PCs and workstations; NAMD, scalable molecular dynamics for clusters and supercomputers; BioCoRE, a web-based collaborative biological research environment.

Honors and awards: Award in Computational Biology 2008; Humboldt Award of the German Humboldt Foundation (2004); University of Illinois Scholar (1996); Fellow of the American Physical Society (1993); Nernst Prize of the Physical Chemistry Society of Germany (1981).

In Honor of

IRVING L. SCHWARTZ

*Scientist, scholar, teacher, physician*

A supporter of excellence in research and teaching and a source of encouragement and inspiration to his colleagues and students.

#### Previous Schwartz Lecturers

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|------|--|
| 1993 | Albert J. Hudspeth, M.D., Ph.D.<br><i>University of Texas-Southwestern Medical Center</i>  |
| 1995 | Charles F. Stevens, M.D., Ph.D.<br><i>The Salk Institute</i>   |
| 1998 | Wayne L. Hubbell, M.D., Ph.D.<br><i>University of California at Los Angeles</i>  |
| 2000 | Richard N. Bergman, Ph.D.<br><i>University of Southern California</i>  |
| 2005 | Stephen C. Harrison, Ph.D.<br><i>Harvard Medical School</i>  |
| 2006 | Roger D. Kornberg, Ph.D.*<br><i>Stanford University</i><br><i>* The Nobel Prize in Chemistry 2006</i>  |
| 2007 | Kurt Wüthrich, Ph.D.*<br><i>The ETH Zürich</i><br><i>The Scripps Research Institute</i><br><i>* The Nobel Prize in Chemistry 2002</i>                |
| 2008 | Stuart L. Schreiber, Ph.D.<br><i>Harvard University</i><br><i>The Broad Institute of Harvard &amp; MIT</i><br><i>Howard Hughes Medical Institute</i> |
| 2009 | Michael G. Rosenfeld, M.D.<br><i>University of California, San Diego</i><br><i>Howard Hughes Medical Institute</i>                                   |