BIOLS SEMINAR SERIES

北京生命科学研究院精品讲座

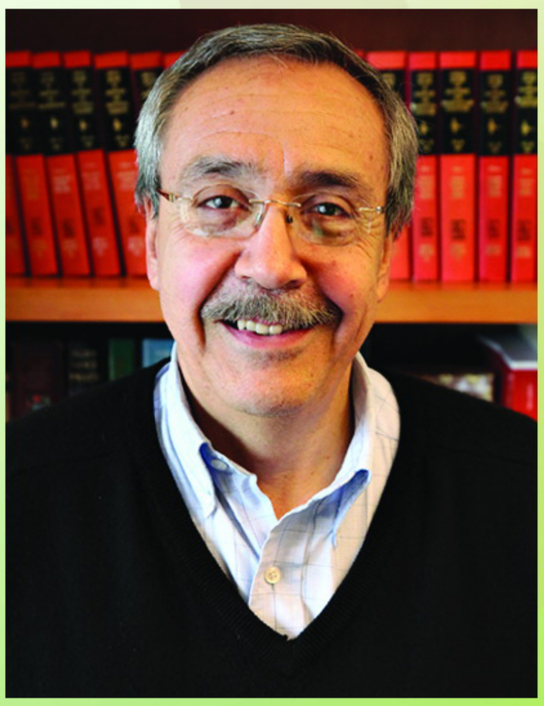
报告时间：2013年8月24日（星期六）下午15:00

报告地点：中国科学院生物物理研究所图书馆报告厅

报告题目：Division of Labor and Coordination Among the Subunits of a Viral Ring ATPase.

报 告 人：Carlos J. Bustamante. Professor. Department of Physics, University of California, Berkeley, CA. Howard Hughes Medical Institute Investigator.

欢迎广大科研人员和研究生光临！



Prof. Bustamante received his B.S. in 1973 from Universidad Peruana Cayatano Heredia; M.S. in 1975 from Universidad Nacional Mayor de San Marcos; Ph.D. in 1981 from the University of California at Berkeley. At present, he is the Professor of Molecular & Cell Biology and Physics, Departments of Physics, Chemistry, BioPhysics, and Molecular & Cell Biology, University of California, Berkeley. He was named an investigator for Howard Hughes Medical Institute in 2000 and elected member of the National Academy of Science in 2002. He is also the member of American Association for the Advancement of Science, American Chemical Society and American Physical Society, etc. Prof. Bustamante published more than 260 research articles on top-level journals, including 40 papers published on *Nature*, *Science* and *Cell*.

Prof. Bustamante's laboratory is involved in the development of novel methods of single molecule manipulation and detection (such as Optical Tweezers and Single Molecule Fluorescence microscopy) and their application to study the behavior of DNA-binding molecular motors and the mechanical unfolding of globular proteins and RNA's. In addition they use the Scanning Force Microscope (SFM) to investigate the structure of chromatin and the global structure of protein-nucleic acid complexes relevant to the molecular mechanisms of control of transcription in prokaryotes.

Key Publications:

2012. High Degree of Coordination and Division of Labor Among Subunits in a Homomeric Ring ATPase. ***Cell*** 151, 1017-1028

2012. Nucleosomal Elements That Control the Topography of the Barrier to Transcription. ***Cell*** 151, 738-749

2011. The Ribosome Modulates Nascent Protein Folding. ***Science*** 334, 1723-1727

2011. Single-Base Pair Unwinding and Asynchronous RNA Release by the Hepatitis C Virus NS3 Helicase. ***Science*** 33, 1746-1749

2011. The ribosome uses two active mechanisms to unwind messenger RNA during translation. ***Nature*** 475, 118-121

2011. ClpX(P) Generates Mechanical Force to Unfold and Translocate Its Protein Substrates. ***Cell*** 145, 459-469

2011. Revisiting the Central Dogma One Molecule at a Time. ***Cell*** 144, 480-491

2010. The folding cooperativity of a protein is controlled by its chain topology. ***Nature*** 465, 637-640

2009. Substrate Interactions and Promiscuity in a Viral DNA packaging Motor. ***Nature*** 461, 669-673

2009. Nucleosomal Fluctuations Govern in the Transcription Dynamics of RNA Polymeras II. ***Science*** 325: 1172926

2009. Intersubunit coordination in a homomeric ring ATPase. ***Nature*** 457, 446-450

2008. Following translation by single ribosomes one codon at a time. ***Nature*** 452, 598-603 (cover article).

2007. Backtracking determines the force sensitivity of RNAP II in a factor-dependent manner. ***Nature*** 446, 820-823

2006. DNA overwinds when stretched. ***Nature*** 442, 836-839

2006. Mechanochemical analysis of DNA gyrase using rotor bead tracking. ***Nature*** 439, 100-104.

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