

Curriculum Vitae

Carlos J. Bustamante

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Department of Physics, University of California, Berkeley, CA

Education

- 1973 B.S. Universidad Peruana Cayetano Heredia, Biology
1975 M.S. Universidad Nacional Mayor de San Marcos, Biochemistry
1981 Ph.D. University of California, Berkeley, Biophysics, Advisor: Ignacio Tinoco

Post-doctoral Training

- 1975-1976 Fulbright Commission and Institute of International Education Fellow
1976-1981 Research Assistant, University of California, Berkeley
1981-1982 Postdoctoral Fellow, Lawrence Berkeley Laboratory, University of California, Berkeley

Academic Administration

- 1982-1986 Assistant Professor, Department of Chemistry, University of New Mexico, Albuquerque, NM
1986-1989 Associate Professor, Department of Chemistry, University of New Mexico
1989-1990 Professor of Chemistry, Department of Chemistry, University of New Mexico, Albuquerque, NM
1991-1998 Professor of Chemistry, Department of Chemistry, University of Oregon, Eugene, OR
1998- present Professor of Molecular and Cell Biology, Professor of Physics, Professor of Chemistry, University of California, Berkeley, CA
2005-2012 Luis Alvarez Chair of Experimental Physics
2012- present Raymond and Beverly Sackler Chair of Biophysics

Honors

- 1984 Searle Scholar
1985 Alfred P. Sloan Fellow
2001 Honorary Professor, Universidad Nacional Mayor de San Marcos, Lima, Peru
2002 Doctor *Honoris Causa* by the Universidad Nacional de Ingenieria, Lima, Peru
2003 Doctor *Honoris Causa* by the Universidad Peruana Cayetano Heredia, Peru
2004 Hans Neurath Prize of the Protein Society
2004 National Science Prize of Peru: Southern Peru Copper Corporation Prize
2010 Honorary Member of the Spanish Biophysical Society
2012 Vilcek Prize
2012 Doctor Honoris Causa from the Universidad Nacional Mayor de San Marcos, Lima, Peru
2012 Doctor Honoris Causa from the Universidad Peruana Ricardo Palma, Lima, Peru

- 2012 The Raymond and Beverly Sackler International Prize in Biophysics
- 2013 Elected Member of the Chilean Academy of Science
- 2013 Doctor *Honoris Causa* by Jiaotong University, China

Appointments

- 1991-1998 Member of the Institute of Molecular Biology
- 1994-1998 Howard Hughes Medical Institute Investigator
- 1997 - 2000 Member of the Science Advisory Board of the Searle Scholars Program
- 1998 - present Director, Advance Microscopies Department, Physical Biosciences Division, LBNL
- 2000 - present Howard Hughes Medical Institute Investigator
- 2001 - 2003 Member of the Science Advisory Committee of the Burroughs-Wellcome Fund
- 2002 - present Elected member of the National Academy of Science
- 2003 - 2013 Member of the Board of Directors of the Burroughs-Wellcome Fund

Select Publications

- Karunakaran, A, Politzer, A, Kaplan, A, Moffitt, J.R., Chemla, Y.R., Grimes, S, Jardine, P, Anderson, D, & Bustamante, C. "Substrate Interactions and Promiscuity in a Viral DNA packaging Motor", *Nature* **461**, 669-673 (2009).
- Shank, E., Cecconi, E., Dill, J., Marqusee, S., & Bustamante, C., "The folding cooperativity of a protein is controlled by its chain topology", *Nature* **465**, 637-640 (2010).
- Bustamante, C., Cheng, W., & Mejia, Y., "Revisiting the Central Dogma One Molecule at a Time", *Cell* **144**, 480-491 (2011).
- Maillard, R.A., Chistol, G., Sen, M., Righini, M., Tan, J., Kaiser, C.M., Hodges, C., Martin, A., & Bustamante, C., "ClpX(P) Generates Mechanical Force to Unfold and Translocate Its Protein Substrates" *Cell* **145**, 459-469 (2011).
- Qu, X., Wen, J.D., Lancaster, L., Noller, H.F., Bustamante, C., & Tinoco, I. Jr., "The ribosome uses two active mechanisms to unwind messenger RNA during translation", *Nature* **475**, 118-121 (2011).
- Cheng, W., Arunajadai, S.G., Moffitt, J., Tinoco, I. Jr., & Bustamante, C., "Single-Base Pair Unwinding and Asynchronous RNA Release by the Hepatitis C Virus NS3 Helicase" *Science*, **33**, 1746-1749 (2011).
- Kaiser, C. M., Goldman, D.M., Chodera, J.D., Tinoco, I. Jr., & Bustamante, C., "The Ribosome Modulates Nascent Protein Folding", *Science* **334**, 1723-1727 (2011).
- L. Bintu, T. Ishibashi, M. Dangkulwanich, Y-Yi, Wu, L. Lubkowska, M. Kashlev & C. Bustamante, "Nucleosomal Elements That Control the Topography of the Barrier to Transcription" *Cell* **151**, 738-749 (2012).
- Chistol, G., Liu, S., Hetherington, C. L., Moffitt, J. R., Grimes, S., Jardine, P. J., & Bustamante, C., "High Degree of Coordination and Division of Labor Among Subunits in a Homomeric Ring ATPase", *Cell* **151**, 1017-1028 (2012).
- Dangkulwanich, L., Ishibashi, T., Liu, S., Kireeva, M.L., Lubkowska, L., Kashlev, M., & Bustamante, C. "Complete dissection of transcription elongation reveals slow translocation of RNA polymerase II in a linear ratchet mechanism," *eLife*, 2:e00971, (2013).