

# Claudio Berti

## *Curriculum Vitae*

### PERSONAL INFORMATION

Department of Molecular Biophysics and Physiology  
Rush University Medical Center  
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Born in Ravenna (Italy), February 14<sup>th</sup>, 1981  
Citizenship: Italy

### ACADEMIC POSITIONS

- 2013 – present **Instructor/Research Fellow**, *Department of Molecular Biophysics and Physiology, Rush University Medical Center, Chicago, IL, U.S.A.* Home: <http://www.phys.rush.edu/>.
- 2011 – 2013 **Instructor/Research Fellow**, *ARCES (Advanced Research Center on Electronic Systems for Information and Communication Technologies E. De Castro) and University of Bologna, Bologna, Italy.* Home: <http://www.arces.unibo.it>.

### EDUCATION

- 2008 – 2011 **PhD in Information Technology**, *ARCES (Advanced Research Center on Electronic Systems for Information and Communication Technologies E. De Castro) and University of Bologna, Bologna, Italy.* Home: <http://www.arces.unibo.it>.
- PHD THESIS
- title *Numerical simulation of ion transport through ion channels and solid-state nanopores*
- supervisor Professor Claudio Fiegna
- description Development of a numerical simulator to predict conductance of biological protein channels and synthetic nanopores with Brownian Dynamics approach
- 2004 – 2007 **Master Degree in Electronic Engineering**, *II Faculty of Electronic Engineering, University of Bologna, Cesena, Italy.* Home: <http://www.ing2.unibo.it>.
- Mark: 106 out of 110
- MASTER THESIS
- title *Numerical simulation of ion channels*
- supervisor Professor Claudio Fiegna
- description Development of a simulator of ion channels with Brownian Dynamics approach

2000 – 2004 **Bachelor Degree in Computer Engineering**, *Faculty of Information Engineering*, University of Bologna, Bologna, Italy. Home: <http://www.ing.unibo.it>.  
Mark: 101 out of 110  
BACHELOR THESIS  
title *XMI as UML diagrams description*  
supervisor Professor Antonio Natali  
description Study of XMI language as UML diagrams description in XML language

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## TEACHING EXPERIENCE

- 2010 – 2011
- Electronic devices, part II, Master Degree in Electronic Engineering, *II Faculty of Electronic Engineering*, University of Bologna, Cesena, Italy
- 2009 – 2010
- Electronic devices, part II, Master Degree in Electronic Engineering, *II Faculty of Electronic Engineering*, University of Bologna, Cesena, Italy
  - Tutor of Analog Electronics, Bachelor Degree in Electronic Engineering, *II Faculty of Electronic Engineering*, University of Bologna, Cesena, Italy
- 2008 – 2009
- Tutor of Analog Electronics, Bachelor Degree in Electronic Engineering, *II Faculty of Electronic Engineering*, University of Bologna, Cesena, Italy

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## PUBLICATIONS AND CONFERENCES

- 2013
- **C. Berti, D. Gillespie, D. Boda, B. Eisenberg, and C. Fiegna** *Brownian Dynamics Study of Current and Selectivity of Calcium Channels*. Proceedings of the Biophysical Society Meeting 2013, Philadelphia, PA, U.S.A.
- 2012
- **C. Berti, D. Gillespie, J. P. Bardhan, B. Eisenberg and C. Fiegna** *Comparison of three-dimensional Poisson solution methods for particle-based simulation and inhomogeneous dielectrics*. Phys. Rev. E 86, 011912 (2012). doi:10.1103/PhysRevE.86.011912. [link](#)
  - **C. Berti, D. Gillespie, B. Eisenberg and C. Fiegna** *Particle-based simulation of charge transport in discrete-charge nano-scale systems: the electrostatic problem*. Nanoscale Research Letters, 7:135 (2012). doi:10.1186/1556-276X-7-135. [link](#)
  - **C. Berti, S. Furini, D. Gillespie, D. Boda, B. Eisenberg, and C. Fiegna** *Brownian Dynamics Simulation of Calcium Channels*. Proceedings of the Biophysical Society Meeting 2012, San Diego, CA, U.S.A.
- 2011
- **C. Berti, S. Furini, E. Sangiorgi and C. Fiegna** *Brownian Dynamics Simulation of Ion Channels Embedded in Silicon Membranes for Sensor Applications*. Proceedings of Ultimate Integration on Silicon (ULIS) 2011 Conference, Cork, Ireland. [link](#)
  - **C. Berti, D. Gillespie, B. Eisenberg and C. Fiegna** *Particle-based simulation of electrical transport in discrete-charge nanoscale systems: the electrostatic problem*. Proceedings of IEEE International NanoElectronics Conference (INEC) 2011, Taiwan. [link](#)
  - **C. Berti, D. Gillespie, B. Eisenberg, S. Furini and C. Fiegna** *A novel Brownian-Dynamics algorithm for the simulation of ion conduction through membrane pores*. Proceedings of the Biophysical Society Meeting 2011, Baltimore, MD, U.S.A.

2009

- **C. Berti, S. Furini, S. Cavalcanti, E. Sangiorgi and C. Fiegna** *Particle-based simulation of conductance of solid-state nanopores and ion channels*. Proceedings of IEEE Simulation of Semiconductor Processes and Devices (SISPAD) 2009 Conference, San Diego, CA, U.S.A., 5290189. [link](#)
- **C. Berti, C. Fiegna and E. Sangiorgi** *Simulation of conductance of voltage-gated ion channels and solid-state nanopores*. Proceedings of Future Trends in Microelectronics (FTM) 2009 Conference, Villasimius, Italy.

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## NATIONAL AND INTERNATIONAL AWARDS

- 2011 **Student Travel Award**, *Biophysical Society 55<sup>th</sup> Annual Meeting.*, March 5-9, 2011, Baltimore, MD, U.S.A. Home: <http://www.phys.rush.edu/>.

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## SCIENTIFIC ACTIVITIES

- 2010 **Visiting Student**, *Laboratory of Robert S. Eisenberg, Department of Molecular Biophysics and Physiology, Rush University Medical Center.*, Chicago, IL, U.S.A. Home: <http://www.phys.rush.edu/>.

- 2010 – present **Member of Biophysical Society**, Home: <http://www.biophysics.org/>.

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## SCIENTIFIC INTERESTS

- Biophysics - Ion transport through membrane pores
- Bioinformatics
- Computational chemistry
- Numerical Analysis

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## UPDATED

December 13, 2013