DIEGO A. VARGAS

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EDUCATION

Boston University, Boston — *Sep. 2013 - Present*
PhD program Biomedical engineering (expected graduation May 2015)

Boston University, Boston — *Sep. 2010 – Jan. 2014*
M.S. Biomedical Engineering

University of Texas, Austin — *Jan. 2006 - May 2009*
B.S. Biomedical Engineering

RESEARCH INTERESTS

biophysics, modeling of biological systems (spatiotemporal dynamical systems), mechanotransduction, cell mechanics, collective cell migration, cell-cell adhesion, cancer biology, protein-protein interactions, single-molecule force spectroscopy, statistical mechanics, molecular dynamics, computational modeling

Teaching Experience

Teacher Assistant (TA) for Martin Steffen, PhD. — *Sep. 2011 – May 2012*
Department of Biomedical Engineering, Boston University.
Wrote homework assignments and exams and held office
hours for sophomore course: Principles of Molecular Cell Biology and Biotechnology.

Research Assistant for Muhammad Zaman, PhD. — *Jan. 2008 – May 2009*
Department of Biomedical Engineering, University of Texas at Austin.
Studied mechanical behavior of protein molecules through Steered
Molecular Dynamics computer simulations.

Teacher Assistant (TA) for Wolfgang Frey, PhD. — *Jan. 2009 – May 2009*
Department of Biomedical Engineering, University of Texas at Austin.
Conducted weekly discussion sections, graded homework, and held office
hours for freshmen course: Foundations of Biomedical Engineering.

SKILLS

Computational

- Programming experience in C/C++, MATLAB, and Mathematica
- Familiar with Linux terminal commands and cluster computing
- Experience with Solidworks 3D design program
- Experience with NAMD and VMD molecular dynamics programs

Cell biology and Microscopy

- Proficient in cell culture
- Trained in biochemical techniques such as Western blotting and immunoprecipitation
- Experience with confocal microscopy and live cell imaging

Languages

- Fluent in Spanish and English
- Conversational German and Portuguese

PUBLICATIONS

Computational modeling of stem cell migration: a mini review. [Liu, X., D. A. Vargas, D. Lü, Y. Zhang, M. H. Zaman, and M. Long] *Cell and Molecular Bioengineering,* 7:196-204 (2014).

Computational model to probe cellular mechanics during epithelial-mesenchymal transition. [Vargas, D. A., O. Bates, and M. H. Zaman]*Cells Tissues Organs*, 197: 435-444 (2013).

Computational model for migration of a cell cluster in three-dimensional matrices. [Vargas, D. A. and M. H. Zaman] *Annals of Biomedical Engineering*, 39: 2068-2079 (2011).

Serine at phosphorylation site regulates the mechanical and structural behavior of fascin. [Vargas, D. A. and M. H. Zaman] *Cellular and Molecular Bioengineering*, 2: 504-513 (2009).

POSTERS AND PRESENTATIONS

Vargas, D. A. and M. H. Zaman. Modeling oral cancer and cell migration to discover new targets for cancer therapeutics. Invited speaker, Government College University, Lahore, Pakistan. Presentation, March 29, 2013.

Vargas, D. A. and M. H. Zaman. Modeling oral cancer to discover new targets for cancer therapeutics. Policy and Ethics in Science and Technology Conference. Islamabad, Pakistan. Presentation, March 26, 2013.

Vargas, D. A., M. A. Kukuruzinska, and M. H. Zaman. Characterizing dynamics of the canonical Wnt pathway to quantify the effect of protein N-glycosylation by DPAGT1 in intercellular adhesions. Galveston, TX. Poster, February 3-8, 2013.

Vargas, D. A., O. Bates, and M. H. Zaman. Agent-based cell migration model for the study of cancer progression. BMES 2012 Conference. Atlanta, GA. Poster, October 25, 2012.

HONORS

- NIH Fellow (Cross Translational Nanotechnology in Cancer Training grant), Boston University (2012)
- NIH Fellow (Quantitative Biology and Physiology Training Grant), Boston University (2011)
- Honorable Mention for the 2011 NSF Graduate Research Fellowship Program (2011)
- Graduated with Highest Honors (*summa cum laude*) from the University of Texas at Austin (2009)