

## DEVKIM KILINC

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### EDUCATION

Drexel University, School of Biomedical Engineering, Science and Health Systems, Philadelphia, PA, USA

PhD in Biomedical Engineering, 2008

Bogaziçi University, Institute of Biomedical Engineering, Istanbul, Turkey

MS in Biomedical Engineering, 2003

Bogaziçi University, Faculty of Engineering, Istanbul, Turkey

BS in Mechanical Engineering, 2001

### EMPLOYMENT

Bogaziçi Yazılım A.S., Istanbul, Turkey	CAD/CAM Engineer	2001-2003
Consultant for finite element analysis and motion analysis modules of Unigraphics software		
Drexel University, Philadelphia, PA, USA	Research and Teaching Assistant	2004-2008
Cellular Mechanics Lab, PI: Dr. Kenneth A. Barbee		
CNRS-UPMC, Paris, France	Post-doctoral Researcher	2008- current
Neurobiology of Adaptive Processes Lab, PI: Dr. Bernard Brugg		

### ADVANCED COURSES

'Virtual Institute Summer Session 2006' by the Greater Philadelphia Bioinformatics Alliance. Lectures and labs covered microarrays, genomics, proteomics, biostatistics and bio-molecular databases.

'IEEE-EMBS/ASME Workshop on Nanoscale Modeling and Measurement of Mechanical Properties of Cells and Proteins, 2006' at Drexel University. Practical work consisted of thermal tuning of AFM and molecular simulation of protein interactions.

'Eighth Annual Virtual Cell Short Course' by National Resource for Cell Analysis and Modeling (NRCAM) at University of Connecticut Health Center, June 11-13, 2007.

'Computational Methods for Spatially Realistic Microphysiological Simulations Workshop' by National Resource for Biomedical Supercomputing (NRBSC) at Pittsburgh Supercomputing Center, June 25-29, 2007.

### PUBLICATIONS

**Kilinc D.** "Shape Optimization of the Femoral Component of Cemented Hip Prosthesis Using Finite Element Analysis," MS Thesis, 2003.

**Kilinc D.** "Mechanisms and Prevention of Axonal Damage in Response to Mechanical Trauma to Cultured Neurons," PhD Thesis, 2008.

#### Journal papers

**Kilinc D,** G Gallo, and KA Barbee. 2008. Poloxamer 188 Blocks Mechanoporation-Induced Axonal Beading and Cytoskeletal Damage. *Experimental Neurology*, 212:422-430.

**Kilinc D,** G Gallo, and KA Barbee. 2009. An Interactive Image Processing and Analysis Algorithm for the Quantification of Axonal Beading. *Computer Methods and Programs in Biomedicine*, 95:62-71.

**Kilinc D,** G Gallo, and KA Barbee. Mechanical Membrane Injury Induces Axonal Beading through Localized Activation of Calpain. *Experimental Neurology*, accepted for publication DOI: 10.1016/j.expneurol.2009.07.014

**Kilinc D,** JM Peyrin, V Soubeyre, L Saias, JL Viovy, and B. Brugg. Wallerian-Like Degeneration of Central Neurons after Mass Axotomy in a Novel Three-Compartmental Microfluidic Chip. *In preparation*.

#### Conference papers

**Kilinc D,** G Gallo, and KA Barbee. "Effects of Shear Stress Injury on the Morphology and Structure of Cultured Chick Forebrain Neurons (in Turkish)," BIYOMUT: Proceedings of the Biomedical Engineering National Meeting, pp. 191-196, May 25-26, 2005, Bogazici University, Istanbul, Turkey.

**Kilinc, D,** G Gallo, and KA Barbee, "Poloxamer 188 Reduces Axonal Beading Following Mechanical Trauma to Cultured Neurons," EMBC07: Proceedings of the 29th IEEE EMBS Annual International Conference, pp. 5395-5398, Aug 23-26, 2007, Cité Internationale, Lyon, France.

Sasoglu, FM, **D Kilinc,** K Allen, and B Layton, "Towards a Method for Printing a Network of Chick Forebrain Neurons for Biosensor Applications," EMBC07: Proceedings of the 29th IEEE EMBS Annual International Conference, pp. 4092-4095, Aug 23-26, 2007, Cité Internationale, Lyon, France.

Sasoglu, FM, **D Kilinc**, K Allen, and B Layton, "Parallel Force Measurements in Cell Arrays," Proceedings of the ASME International Mechanical Engineering Congress and Exposition, November 11-15, 2007, Seattle, WA, USA.

Peyrin, JM, L Saias, P Gougis, S Magnifico, S Betuing, **D Kilinc**, JL Viovy and B Brugg, "Microfluidic Chips with 'Axon Diodes' for Directed Axonal Outgrowth and Reconstruction of Complex Live Neural Networks," MicroTAS 2008: Proceedings of the 12<sup>th</sup> International Conference on Miniaturized Systems for Chemistry and Life Sciences, pp. 1329-1331, Oct 12-16, 2008, San Diego, CA, USA

### **Platform presentations**

**Kilinc, D**, G Gallo, and KA Barbee. "Morphological Response of Cultured Chick Forebrain Neurons to Mechanical Injury," BMES Annual Fall Meeting, Oct 13-16, 2004, Philadelphia, PA, USA.

**Kilinc D**, G Gallo, and KA Barbee. "Effects of Shear Stress Injury on the Morphology and Structure of Cultured Chick Forebrain Neurons (in Turkish)," BIYOMUT: Biomedical Engineering National Meeting, May 25-26, 2005, Bogazici University, Istanbul, Turkey.

### **Poster presentations**

**Kilinc, D**, G Gallo, and KA Barbee. "Effects of Shear Stress Injury on the Morphology and Structure of Cultured Chick Forebrain Neurons," BMES Annual Fall Meeting, Sep 28 - Oct 1, 2005, Baltimore, MD, USA.

**Kilinc, D**, G Gallo, and KA Barbee, "Shear Stress Injury Induces Morphological and Structural Changes in Cultured Chick Forebrain Neurons," 24<sup>th</sup> Annual National Neurotrauma Symposium, July 7-9, 2006, St. Louis, MO, USA.

Barbee, KA, **D Kilinc**, G Serbest, J Horwitz, and G Gallo, "Cellular Mechanisms of Neural Injury and the Neuroprotective Effects of Poloxamer 188," 5<sup>th</sup> World Congress of Biomechanics, July 29 - Aug 4, 2006, Munich, Germany.

**Kilinc, D**, G Gallo, and KA Barbee, "Poloxamer 188 Prevents Axonal Beading after Mechanical Trauma to Cultured Neurons by Maintaining Membrane Permeability," 25<sup>th</sup> Annual National Neurotrauma Symposium, July 30 - Aug 1, 2007, Kansas City, MO, USA.

**Kilinc, D**, G Gallo, and KA Barbee, "Mechanically-induced Membrane Poration Causes Axonal Beading and Localized Cytoskeletal Damage via Calcium-dependent Calpain Activity," 6<sup>th</sup> FENS Forum, July 12-16, 2008, Geneva, Switzerland.

**Kilinc, D**, Peyrin JM, Saias L, Viovy JL and B Brugg, "Wallerian-Like Degeneration of Axotomized CNS Neurons in a Microfluidic Chip," 4<sup>th</sup> Meeting on the Molecular Mechanisms in Neurodegeneration, May 8-10, 2009, Milano, Italy.

**Kilinc, D**, Peyrin JM, Saias L, Viovy JL and B Brugg, "Wallerian-Like Degeneration of Axotomized CNS Neurons in a Microfluidic Chip," ESF-EMBO Symposium: Biological Surfaces and Interfaces, June 27 - July 2, 2009, Sant Feliu de Guixols, Spain.

### **HONORS AND AWARDS**

- Ranked in top 10 in the nation-wide secondary education entrance exam, Turkey, 1988.
- Ranked in top 100 in the nation-wide university entrance exam, Turkey, 1996.
- Ranked in top 100 in the nation-wide post-graduate education entrance exam, Turkey, 2001.
- Critical Research Fellow, Drexel University Synergy Grant, GRID award, 2005.
- Student travel grant for National Neurotrauma Society Annual Meeting, St. Louis, MO, USA, 2006.
- Research Fellow, Drexel University Neuroengineering Major Research Initiative, 2007-2008.
- Travel grant for ESF-EMBO Symposium on Biological Surfaces and Interfaces, Sant Feliu de Guixols, Spain, 2009.

### **PROFESSIONAL MEMBERSHIPS**

New York Academy of Science (since 2005); IEEE Engineering in Medicine and Biology (since 2005); National Neurotrauma Society (2006-2008); Turkish American Scientists and Scholars Association (2006-2008); Neuroscience Society of Turkey (since 2008).

### **LEADERSHIP POSITIONS**

Altinyurt Sports Club, Istanbul: Fencing team captain (1993-1998), board member (2001); Bogazici University Underwater Sports Club, Istanbul: Board member, scuba instructor (1999-2003); Derin Diving Magazin, Istanbul: Co-editor, writer (2000-current).

### **LANGUAGES**

English, German (basic), French (basic), Turkish (native).