Sarah L. Perry

Chemical & Biomolecular Engineering, University of Illinois
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Education

Ph.D. – Chemical Engineering – University of Illinois, Advisor: Dr. Paul J.A. Kenis, (Expected: Spring 2010)
Title: *Microfluidic Platforms for In Meso Membrane Protein Crystallization*.
M.S. – Chemical Engineering – University of Arizona, Advisor: Dr. Anthony J. Muscat, 2005
Title: *Development of Novel Gas Phase Passivation Chemistries for Silicon Surfaces*.
B.S. – Chemical Engineering and Chemistry – University of Arizona, 2002 and 2003

Honors & Awards

Baxter Innovation Award 2009
AIChE Separations Division Graduate Student Award 2009
Ruth L. Kirschstein National Research Service Award (Predoctoral Fellowship, NIH) 2008 – 2010
IUCr Travel Award, Membrane Protein Crystallization Workshop (Brookhaven National Labs) 2008
NIH Roadmap Membrane Protein Production and Technologies Meeting Travel Award (La Jolla) 2007
Hanratty Travel Award (Chemical & Biomolecular Engineering, University of Illinois) 2007
List of Teachers Ranked as Excellent (University of Illinois) Spring 2007
Outstanding Poster Award: ACS Colloid Division – S.L. Perry, J.D. Tice, G.W. Roberts, and P.J.A. Kenis, *Microfluidic Platforms for Membrane Protein Crystallization*, ACS National Meeting, Chicago, 2007.
Travel Award, Graduate College (University of Illinois) 2007
Mavis Memorial Fund Scholarship for merit in Engineering research and education (University of Illinois) 2007
School of Chemical Sciences Award for Teaching Excellence (University of Illinois) 2007
University Fellowship Recipient (University of Illinois) 2005 – 2006
Intel Foundation/Semiconductor Research Corporation Master's Scholarship Recipient 2003 – 2005
National Science Foundation Graduate Research Fellowship Honorable Mention Recipient 2003
Highest Academic Distinction Award (College of Engineering, University of Arizona) 2002
2nd Place Graduate Student Research Showcase (University of Arizona) 2002
Tany Katherine Malask Memorial Scholarship (Chemical Engineering, University of Arizona) 2000-2002
Dean's List (University of Arizona) 1998-2003
Robert C. Byrd Memorial Scholarship (State of Oregon) 1998-2002
Lake Oswego Rotary Club Scholarship (Lake Oswego, OR) 1998
Baha'i Peace Scholarship (Lake Oswego, OR) 1998

Research Experience

University of Illinois Chemical & Biomolecular Engineering (Urbana, IL) Aug. 2005 – Present
University of Arizona Chemical & Environmental Engineering (Tucson, AZ) Jan. 2001 – Aug. 2005
Portland State University Research Intern (Portland, OR) Jun. – Aug. 1997

Teaching Experience

University of Illinois Chemical & Biomolecular Engineering (Urbana, IL)
Head Teaching Assistant – Thermodynamics, Honored on the "List of Teachers Ranked as Excellent," 2007
Teaching Assistant – Microchemical Systems, 2007
Teaching Assistant – Principles of Chemical Engineering, 2006
Guest Lecturer, *Microfluidic Platforms for Protein Crystallization*, Biochemical Engineering, 2008
Guest Lecturer, *Microchemical Systems for Protein Crystallization*, Microchemical Systems, 2007
Tutor – Undergraduate Chemical & Biomolecular Engineering, 2008 – 2009
Instructor – Graduate Academy for College Teaching, 2007 – 2008
Graduate Teaching Certificate, 2007
University of Arizona Chemical & Environmental Engineering (Tucson, AZ)
Developed surface science teaching website (http://muscat.chee.arizona.edu/) 2002 – 2005
Tutor – Undergraduate Chemical & Environmental Engineering, 2003 – 2005
Mansfeld Middle School Tutor (Tucson, AZ) Sept. 1998 – May 1999

Professional Work Experience

Micron Technology, Inc. (Boise, ID) Internship, Summer 2002
Intel Corporation (Aloha, OR) Internship, Summer 2001
Industrial Design and Construction (Portland, OR) Internship, May – Aug. 2000, Dec. 2000 – May 2001

Publications

S.L. Perry, J.J.L. Higdon, and P.J.A. Kenis, *Design Considerations for Microfluidic Devices*, (in preparation).

S. Talreja, S.L. Perry, S. Guha, P.J.A. Kenis, and C.F. Zukoski, *Determination of the Phase Diagram for Soluble and Membrane Proteins*, (in preparation).

S.L. Perry, J.D. Tice, G.W. Roberts, and P.J.A. Kenis, *Microfluidic Generation of Lipidic Mesophases for Membrane Protein Crystallization*, Crystal Growth & Design 2009, Vol. 9(6), 2566-2569.

Highlighted in: *Finding Crystallization Sweet Spots*, Chemical & Engineering News, Vol. 87(22), 22.

P.J.A. Kenis, J.D. Tice, S.L. Perry, G.W. Roberts, and S. Talreja, *Microfluidic Chips for Membrane Protein Crystallization*, Proc. µTAS, 2007, Vol. 1, 590-592.

Patent Applications

Microfluidic Device for Preparing Mixtures, P.J.A. Kenis., J.D. Tice, S.L. Perry, and G.W. Roberts, US Patent Application 12/177,828, filed July 2008.

Research Proposals

Microfluidic Membrane Protein Crystallization for High Resolution Proteomics, Ruth L. Kirschstein National Research Service Award (Predoctoral Fellowship, F31 EB008330) from the NIH, S.L. Perry (PI), P.J.A. Kenis and R.B. Gennis (Co-Sponsors), 2008 – 2010, $133K.

On Chip Crystallization and In-Situ X-ray Analysis of Membrane Proteins, (R01 GM086727) from the NIH, P.J.A. Kenis (PI), R.B. Gennis (Co-PI), S.L. Perry (Co-Author), 2009 – 2011, $1M.

Contributed Presentations

S.L. Perry, D.S. Khvostichenko, S. Guha, and P.J.A. Kenis (poster), *On-Chip X-ray Analysis and Mechanistic Studies of In-Meso Crystallization*, MX Frontiers at the One Micron Scale Workshop, Brookhaven National Laboratory, and NIH Roadmap Membrane Protein Production and Technologies Meeting, San Francisco, 2009.

S.L. Perry, G.W. Roberts, S. Talreja, J.D. Tice, R.B. Gennis, C.F. Zukoski, and P.J.A. Kenis (invited), *Microfluidic Platforms for Protein Crystallization*, NanoHour Seminar, University of Illinois, 2008.

S.L. Perry (invited), *Microfluidic Platforms for Protein Crystallization*, Practical Protein Crystallization Course, Uppsala University, 2008.

S.L. Perry, S. Talreja, G.W. Roberts, J.D. Tice, R.B. Gennis, C.F. Zukoski, and P.J.A. Kenis (invited), *Microfluidic Platforms for Membrane Protein Crystallization*, Crystallization: Focus on Membrane Proteins Course, Brookhaven National Laboratory, 2008.

S.L. Perry, G.W. Roberts, J.D. Tice, and P.J.A. Kenis (invited), *Microfluidic Platforms for Protein Crystallization*, National Synchrotron Light Source Seminar, Brookhaven National Laboratory, 2008.

S.L. Perry, G.W. Roberts, S. Talreja, J.D. Tice, C.F. Zukoski, and P.J.A. Kenis, *Microfluidic Platforms for Membrane Protein Crystallization*, AIChE National Meeting, Salt Lake City, 2007.

S.L. Perry, G.W. Roberts, S. Talreja, J.D. Tice, C.F. Zukoski, R.B. Gennis, and P.J.A. Kenis (poster), *Microfluidic Platforms for Membrane Protein Crystallization: Evaporation and In-Meso Approaches*, AIChE National Meeting, Salt Lake City, 2007.

S. L. Perry, G.W. Roberts, S. Talreja, J.D. Tice, C.F. Zukoski, R.B. Gennis, and P.J.A. Kenis (poster), *Microfluidic Platforms for Membrane Protein Crystallization*, NIH Roadmap: Membrane Protein Production & Technologies Meeting, La Jolla, 2007.

S.L. Perry, J.D. Tice, G.W. Roberts, and P.J.A. Kenis (poster), *Microfluidic Platforms for Membrane Protein Crystallization*, ACS National Meeting, Chicago, 2007.

S.L. Perry, and A.J. Muscat, *Gas Phase Methoxy-Passivation of Silicon Surfaces*, Sematech Wafer Cleaning and Surface Preparation Conference, Austin, 2005.

S.L. Perry, and A.J. Muscat, *Preparation of High Quality Si/SiO_2 Interfaces After Extended Exposure to Ambient Contamination Using Gas Phase Methoxy-Passivation*, AVS 6th International Conference on Microelectronics and Interfaces, Santa Clara, and NSF/SRC Engineering Research Center for Environmentally Benign Semiconductor Manufacturing Teleconference, 2005.

S.L. Perry, and A.J. Muscat (poster), *Gas Phase Methods for Alternative Passivation Layers on Monocrystalline Silicon*, NSF/SRC ERC for Environmentally Benign Semiconductor Manufacturing Annual Review, Tucson, 2005.

University Service

Graduate Student Advisory Council (Chemical & Biomolecular Engineering, University of Illinois) 2006 – 2009

College Teaching Effectiveness Network Steering Committee (CTEN) (University of Illinois) 2007 – 2008

Graduate Student Research Symposium (Chemical & Biomolecular Engineering, University of Illinois) 2006

Professional Affiliations

American Institute of Chemical Engineers, American Chemical Society, Society of Women Engineers, Omega Chi Epsilon Chemical Engineering Honorary, Tau Beta Pi Engineering Honorary, Order of the Engineer