

AMY B. ROSEN

State University of New York at Stony Brook
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EDUCATION

State University of New York at Stony Brook The Graduate School Stony Brook, New York	2004-present Ph.D. in Biomedical Engineering expected May 2007
State University of New York at Stony Brook School of Medicine Stony Brook, New York	2002-2004 M.D. expected May 2010
University of Pennsylvania School of Engineering and Applied Sciences Philadelphia, Pennsylvania	1998-2002 B.S.E in Bioengineering awarded <i>cum laude</i> May 2002

RESEARCH

Departments of Biomedical Engineering and of Physiology and Biophysics
State University of New York at Stony Brook, 2004-present
Advisors: Dr. Ira Cohen and Dr. Glenn Gaudette
Work towards doctoral degree. Research interests include: regenerative medicine, cardiac repair, cardiovascular physiology and pathology, stem cell biology, novel imaging techniques, quantitative image analysis, nanobiotechnology.

Institute for Medicine and Engineering
University of Pennsylvania, 1998-2002
Advisors: Dr. Brian Helmke and Dr. Peter Davies
Undergraduate research internship. Developed novel algorithms for quantitative analysis of subcellular biomechanics. Investigated mechanisms of atherosclerosis.

Department of Radiology
University of Pennsylvania, 2001-2002
Advisor: Dr. Leon Axel
Undergraduate Senior Design Project in Bioengineering. Developed numerical model of tagged MR images for quantitative measurement of myocardial deformation.

AWARDS AND HONORS

NIH Medical Scientist Training Program fellowship recipient
State University of New York at Stony Brook, 2002-present

Student Employee of the Year, Honorable Mention
State University of New York at Stony Brook, 2004-2005

Rose Award for Undergraduate Research
University of Pennsylvania, 2001-2002

Faculty Appreciation Award
School of Engineering and Applied Sciences, University of Pennsylvania, 2002

Dean's List
University of Pennsylvania, 2000-2001, 2001-2002

TEACHING EXPERIENCE

Guest Lecturer, ESG 201: Engineering and Society
State University of New York at Stony Brook, Fall 2006
Lecture topics: Diversification in the Workplace; Bioengineering Ethics

Co-instructor, WSE 242: Social Dimensions of Science
State University of New York at Stony Brook, Spring 2005, Spring 2006, Spring 2007
Lecture topics: James Watson and The Double Helix; Rosalind Franklin and DNA; Women in Academia; Ethics in Science and Engineering; Gender, Science and Identity; Public Understanding of Science; Government, Politics and Science; Women and Health Care Research; Vulnerable Populations and Health Care Research; Stem Cell Research; Religious and Ethical Perspectives on Stem Cell Research; Global Health Care and Social Responsibility; Contemporary Scientific Controversies: Fears and Funding

Course Coordinator, WSE 187: Introduction to Research
State University of New York at Stony Brook, Spring 2005, Spring 2006, Spring 2007
Coordinated laboratory rotations for freshmen women in the Women in Science and Engineering (WISE) program. Each student performed four six-week long rotations in a science, math or engineering laboratory.

Tutor, Bioengineering and Mathematics
University of Pennsylvania, 2001-2002
Paid position working as a private tutor for students taking introductory engineering and calculus courses.

LABORATORY MENTORSHIPS

Anjie Wall, undergraduate, Catholic University, 2001
Michael Jue, undergraduate, University of Pennsylvania, 2001

RELEVANT WORK EXPERIENCE

Graduate Assistant, Women in Science and Engineering Program
State University of New York at Stony Brook, 2004-present

Resident and Program Advisor, Women in Technology Program
University of Pennsylvania, 2001-2002

SERVICE

Co-leader, Public Health Interest Group

State University of New York at Stony Brook, 2003-2004

PROFESSIONAL DEVELOPMENT

Nanotechnology in Medicine Training Program, February 2006
 Foundation for Advanced Education in the Sciences at the National Institutes of Health

Biomedical Engineering Society, member, 2001-present

Society of Women Engineers, member, 1998-present

COMPUTER SKILLS

MATLAB, Image J (NIH Image), AxioVision, LabView, Adobe Photoshop, Microsoft Office

PUBLICATIONS—PEER REVIEWED ARTICLES

Rosen, A.B., Kelly, D.J., Schuldt, A.J.T., Lu, J., Potapova, I.A., Doronin, S.V., Robinson, R.B., Rosen, M.R., Brink, P.B., Gaudette, G.R., and Cohen, I.S. *Long term tracking of human mesenchymal stem cells loaded with quantum dots for quantitative in vivo 3-D fluorescence analysis*. Submitted, July 2006.

Helmke, B.P., **Rosen, A.B.**, and Davies, P.F. *Mapping mechanical strain of an endogenous cytoskeletal network in living endothelial cells*. *Biophysical Journal*. 84(4): 2691-9, 2003.

PUBLICATIONS—ABSTRACTS

A.B. Rosen, Kelly, D.J., Schuldt, A.J.T., Lu, J., Potapova, I.A., Doronin, S.V., Robinson, R.B., Rosen, M.R., Brink, P.R., Gaudette, G.R., and Cohen, I.S. *Quantitative 3-D reconstructions of quantum dot-loaded human mesenchymal stem cells injected into the rat ventricle in vivo*. Biomedical Engineering Society Meeting. Chicago, IL, 2006.

A.B. Rosen, Kelly, D.J., Schuldt, A.J.T., Lu, J., Potapova, I.A., Doronin, S.V., Robinson, R.B., Rosen, M.R., Brink, P.R., Gaudette, G.R., and Cohen, I.S. *Finding fluorescent needles in the cardiac haystack: reconstructing the three-dimensional distribution of human mesenchymal stem cells injected into the rat ventricle in vivo using quantum dot nanoparticles*. 3rd Annual Symposium of the American Heart Association Council on Basic Cardiovascular Sciences. Keystone, CO, 2006.

Potapova, I.A., Doronin, S.V., Kelly, D.J., **Rosen, A.B.**, Schuldt, A.J.T., Lu, Z., Guo, Y., Raptis, N.D., Towner, A.A., Robinson, R.B., Rosen, M.R., Brink, P.R., Gaudette, G.R., and Cohen, I.S. *Functional regeneration of the canine ventricle using adult human mesenchymal stem cells committed in vitro to a cardiac lineage*. 3rd Annual Symposium of the American Heart Association Council on Basic Cardiovascular Sciences. Keystone, CO, 2006.

B. P. Helmke, **A. B. Rosen**, K. Choi, and Peter F. Davies. *Shear Stress-Induced Strain Focusing in the Endothelial Cytoskeleton*. Biomedical Engineering Society Meeting. Houston, TX, 2002.

B. P. Helmke, **A. B. Rosen**, and P. F. Davies. *Measurement of Cytoskeletal Strain Field Induced by Shear Stress in Living Endothelial Cells*. Arteriosclerosis, Thrombosis and Vascular Biology Conference, American Heart Association. Arlington, VA, 2001.

Brian P. Helmke, **Amy B. Rosen**, David B. Thakker, Robert D. Goldman, and Peter F. Davies. *Spatiotemporal Organization of Cytoskeletal Strain Induced by External Fluid Mechanical Forces*. American Society of Mechanical Engineers Bioengineering Conference. Snowbird, UT, 2001.