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**EDUCATION:**

- 1995-2002 Ph.D., Program in Molecular Microbiology, Sackler School of Biomedical Sciences, Tufts University Medical School
- 1992-1994 B.A., Alfred University, Alfred, NY (Honors in Biology)
- 1990-1992 A.A., Alfred State College, Alfred, NY (Liberal Arts Math/Science)

**RESEARCH EXPERIENCE:**

- 2002-present Post-doctoral training in the laboratory of Dr. George O'Toole, Department of Microbiology and Immunology, Dartmouth Medical School.
- 1996-2002 Ph.D. thesis in laboratory of Dr. Dean Dawson, Department of Molecular Microbiology, Tufts University Sackler School of Biomedical Sciences.  
*Thesis title: "The role of Kar3p and its associated proteins, Cik1p and Vik1p, in meiosis I of Saccharomyces cerevisiae"*
- 1995-1996 Five, two-month laboratory rotations in the labs of Dean Dawson, Andrew Wright, Eddie Goldberg, Carol Kumamoto, and Brian Schaffhausen. Tufts Medical School.
- 1993-1994 Undergraduate research in the laboratory of Dr. Carl Shively, *Mutagenic effects of common herbicides*. Alfred University.

**AWARDS AND OTHER ACTIVITIES:**

- June 2004 Cold Spring Harbor Advanced Bacterial Genetics Course Participant
- May 2004 Dartmouth-Hitchcock Medical Center Department of Medicine Poster Prize Winner
- March 2004 Biofilm Consultant for Affinergy, Inc. Research Triangle Park, NC
- 2003-current Member of American Society of Microbiology
- 1998-2001 Yeast Genetics Consultant for CompleGen, Inc., Seattle, WA
- 1999 Laboratory Assistant- *Cold Spring Harbor Yeast Genetics Course*

### **TEACHING EXPERIENCE:**

- 2005 Guest Lecturer – Graduate Level Bacterial Physiology Course, Dartmouth College
- 2002-current Research mentor for Women in Science Program student, supervision of first year graduate student lab rotations (2).
- 1996-2000 Mentor for first year graduate student lab rotations (5).
- 1998, 1999, 2000 Tutor. Molecular Biology, Tufts University Medical School.
- 1998, 1999, 2000 Small Group Discussion Leader. Molecular Biology, Tufts University Medical School.
- 1998, 1999 Lead T.A. Molecular Biology, Tufts University Medical School.
- 1996, 1998 Laboratory Instructor. Medical Microbiology, Tufts University Medical School.
- 1995, 1997 Laboratory Instructor. Dental Microbiology, Tufts University Dental School.

### **PUBLICATIONS:**

- Kamieniecki, R. J., R. M. Shanks and D. S. Dawson, Slk19p is necessary to prevent separation of sister chromatids in meiosis I. *Curr Biol* 10: 1182-1190. Sept. 2000.
- Shanks, R.M., Kamieniecki, R.J., and D. S. Dawson, The Kar3-interacting protein, Cik1p Plays a Critical Role in Passage through Meiosis I in *Saccharomyces cerevisiae*. *Genetics* 159:939-951, Nov. 2001.
- Shanks, R. M., and D. S. Dawson, Analysis of Meiotic Checkpoints in Budding Yeast. *Recent Res. Devel. Cell Biol.* 1:57-69. 2003 *Review Article*
- Shanks, R. M., C. Bascom-Slack, and D. S. Dawson, Analysis of the *kar3* meiotic arrest in *S. cerevisiae*. *Cell Cycle* 3:363-371. Mar. 2004. *Cover Article*
- Zegans, M. E, R. M.Q. Shanks, and G. A. O'Toole, Bacterial Biofilms and Ocular Infections. *Ocular Surface.* 3:12-18 April 2005. *Review Article*
- Shanks, R. M., N. P. Donegan, M. L. Graber, S. A. Buckingham, M. E. Zegans, A. L. Cheung, and G. A. O'Toole, Heparin stimulates *S. aureus* biofilm formation. *Infection and Immunity* 73:4596-4606. Aug. 2005.
- Caiazza, N. C., Shanks, R. M. Q., and O'Toole G. Rhamnolipids modulate swarming motility patterns by *Pseudomonas aeruginosa*. *J. Bact.* 187 Nov. 2005 *in press*
- Shanks, R. M. Q., M. L. Graber, J. L. Sargent, R. Martinez, and G. A. O'Toole, Catheter lock solutions influence staphylococcal biofilm formation on abiotic surfaces. *Submitted to Nephrol Dial Transplant.*
- Shanks, R. M. Q., N. Caiazza, S. Hinsa, C. Toutain, and G. A. O'Toole, A Yeast-Based Molecular Tool Kit for Manipulation of Gram-Negative Bacterial Genes. *Submitted to Nature Methods*
- Shanks, R. M., and G. A. O'Toole, StcB contributes to *S. aureus* biofilm formation. *in progress*

### **ABSTRACTS:**

- Shanks, R. M. and Dawson, D. Mutation of *spo11* Bypasses the *kar3* Meiotic Arrest. Boston Area Graduate Student Meeting. 1996.
- Shanks, R. M. and Dawson, D. S. Characterization of the Meiotic Role of Cik1p in *Saccharomyces cerevisiae*. Gordon Conference on Meiosis. 1997.
- Shanks, R. M. and Dawson, D. S. The Genetic Basis of the *kar3* Meiotic Arrest. Gordon Conference on Meiosis. 1999.
- Shanks, R. M. and Dawson, D. S. The Meiotic Roles of Cik1p, Vik1p, and Kar3p. D.O.D Era of Hope Breast Cancer Meeting. 2002.
- Buckingham S. E., Shanks, R. M., and O'Toole G. A. Characterization of Gentamicin Resistance and Biofilm Formation Capability of *Staphylococcus aureus* Clinical Isolates. Women in Science Program (WISP) Symposium. 2003.
- Shanks, R. M. and O'Toole G. A. SasB Contributes to *S. aureus* Biofilm Formation. American Society of Microbiology Biofilms Meeting, 2003.
- Shanks, R. M., Graber, M., Buckingham, S., and O'Toole G. A. Sodium Heparin Stimulates *Staphylococcus aureus* Biofilm Formation. Dartmouth Medical Department of Medicine Research Symposium. 2004.
- Shanks, R. M., Graber, M. Buckingham, S., Zegans, M. and O'Toole, G. Sodium Heparin Stimulates *Staphylococcus aureus* Biofilm Formation. American Society of Nephrology Meeting, St. Louis, MO. 2004.
- Shanks, R. M., Graber, M., and O'Toole, G. Sodium Heparin Stimulates *S. aureus* Biofilm Formation on Abiotic Surfaces. Boston Bacterial Meeting. Cambridge, MA. 2005

### **TALKS:**

- Shanks, R. M. Antibiotics Stimulate *S. aureus* Biofilm Formation. Cystic Fibrosis Group Meeting. Dartmouth Medical School. 2003 and 2004.
- Shanks, R. M. SasB Contributes to *Staphylococcus aureus* Biofilm Formation. Molecular Pathogenesis Meeting, Waterville Valley, NH. February, 2004.
- Shanks, R. M. There are many ways to build a biofilm. Society of Industrial Microbiology Biofilms Meeting, Arlington, VA. April 2005
- Shanks, R. M. Biofilms as targets for antimicrobials. International Union of Microbiological Societies Meeting, San Francisco, CA. July 2005 Plenary Lecture

### **FUNDING**

- 2004-2005 NIH Post-doctoral fellowship NGA- 1 F32 GM66658-01A1. *Role of the sasAB Locus in S. aureus Biofilms.*
- 1999-2001 USDOD Breast Cancer Pre-doctoral fellowship # DAMD17-99-1-9412, *Identification of Checkpoint Genes Involved in the kar3 Cell Cycle Arrest.*

### **REFERENCES:**

George O'Toole Ph.D. [georgeo@dartmouth.edu](mailto:georgeo@dartmouth.edu)  
Dean Dawson, Ph.D. [dean.dawson@tufts.edu](mailto:dean.dawson@tufts.edu)  
Michael Zegans, M.D. [michael.e.zegans@dartmouth.edu](mailto:michael.e.zegans@dartmouth.edu)  
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