

Daniel R. Smith
Associate Professor of Biology
Seattle University

Education

Ph.D. Microbiology, University of Minnesota, Mpls., MN 1996
B.S. Microbiology, University of Minnesota, Mpls., MN 1990

Employment and Professional Experience

Chair of Biology, Seattle University, 2007-2011
Associate Professor of Biology, 2004-Present, Seattle University
Assistant Professor of Biology, 1998-2004, Seattle University
Assistant Professor of Biology, 1997-1998, University of Minnesota, Morris, MN
Post Doctoral Associate, Dept. of Soil Science, University of Minnesota, St. Paul, 1996-1997

Current Areas Of Interest

Our lab is studying the role of extracellular polysaccharide and protein on social interactions in the developmental prokaryote *Myxococcus xanthus*. In particular, we are studying a protein that is associated with the extracellular fibrils of *M. xanthus* that is auto ADP-ribosylated. The lab is also actively studying competitive interactions and delineation of territories by different strains of myxobacteria using both genetic and biochemical analysis.

Synergistic Activities

American Society of Microbiology, Member
2010 Reviewer for "Microbiology: An Evolving Science"
Past Reviewer for Prescott, Harley, Klein "Microbiology" 5th Ed.
Past Reviewer for *Infection and Immunity*
M.J. Murdock Core Team for Funding Summer Research, 2008 Funded 2009-Present

Recent Scholarly Activity

Murdock Grant for Summer Undergraduate Research Award, 2012, \$9,900

"Using 16srRNA to Detect Bacterial Species Present in Window Sills" To be presented at Murdock Conference, November 2012, Student: Shelby Reiter

"Identifying Genes Involved in Strain Interactions Between Myxobacteria" To be presented at Murdock Conference, November 2012, Student: Tsehay Abebe

"Cell Signaling in Myxobacteria in the Presence of the ADP-Ribosylation Inhibitor 3-MBA" To be presented at Murdock Conference, November 2012, Student: Jacqui Bone

Murdock Grant for Summer Undergraduate Research Award, 2011, \$8,700

"Genes Involved in Strain Interactions in Myxobacteria" Murdock Conference, Seattle University November 2011, Student: Sai Somareddy

"Genes Involved in Strain Interactions in Myxobacteria" Regional Northwest ASM Meeting, November 2011, University of Washington, Student: Sai Somareddy, Published Abstract

Phosphatidylethanolamine Chemotactic Excitation in *Myxococcus xanthus* J. Bacteriol. 2002
184: 1678-1684

Previous Publications

- *Luu, Phuong and Daniel R. Smith, *Strain Interactions in Myxobacteria* Proceedings of the National Conference On Undergraduate Research (NCUR) 2005, Lexington, VA.
- “Effects of 3-Methoxybenzamide (3-MBA) on *Myxococcus xanthus* Motility, Colony Morphology, Cohesion and Development.” Investigators: Travis Bond*, Bill Pomeroy*, and Daniel R. Smith, **Abstract/Poster** Presentation at the North West Regional American Society of Microbiology August 8-10th 2003 University of British Columbia, Vancouver Canada.
- *Kertesz , Ruben and Daniel R. Smith, *Assessing the Safety and Feasibility of a Water Recycling System in the Household Bathroom*, Proceedings of the National Conference On Undergraduate Research (NCUR) 2003, University of Utah. March 13-15.
- *Ritchie, Tasha and Daniel R. Smith, *Attempts to Purify an Antimicrobial Compound From Myxococcus virescens Potentially Used in Territoriality*, Proceedings of the National Conference On Undergraduate Research (NCUR) 2003, University of Utah. March 13-15.
- *Nelson, Kevin, *Glenn Dulla and Daniel R. Smith. *Strain Interactions Under Vegetative Conditions*. **Abstract** in Myxo 2002 International Meeting of the Biology of the Myxobacteria Quebec, Canada, July 7-10, 2002, (pg. 29).
- *Sherman, Steve and Daniel R. Smith (2001) *The Use of TprK from Treponema pallidum as a Possible Vaccine for Syphilis*. Proceedings of the National Conference On Undergraduate Research (NCUR). University of Kentucky, March, 2001.
- *Nelson, Mary L., and Daniel R. Smith (2000) Studies of the Integral Fibrillar Proteins on *Myxococcus xanthus*. Proceedings of the National Conference On Undergraduate Research (NCUR) 2000. University of Montana, April 26-29, 2000. Missoula, Montana
- Smith, D. R., and Martin Dworkin (1997). A mutation that affects fibril protein, development, cohesion and gene expression in *Myxococcus xanthus*. *Microbiology* **143**: 3683-3692.
- Smith D. R., and Martin Dworkin (1994) Territorial interactions between two *Myxococcus* Species. *J. Bacteriol.* **176**: 1201-1205

General and Nursing Microbiology Lab Manuals

*Denotes Undergraduate

Previous Awards/Grants

Spring, 2005 MERCK Biology/Chemistry Collaboration Continuing Grant “Assaying for Bioactive Compounds Involved in Territoriality Between *Myxococcus xanthus* and *Myxococcus virescens*”

Summer 2003 Seattle University School of Science and Engineering Faculty Innovation Proposal: “Assaying for Beta-lactamases during Cell Contact-Mediated Territory Delineation In *Myxococcus xanthus*” \$5,000

Fall, 2001 Summer Faculty Fellowship: Regulation of Developmental Genes in *Myxococcus* Species Dependent On Strain Interactions (Received 11-15-01) \$4,000

Spring, 2001 Seattle University School of Science and Engineering Faculty Innovation Proposal: Role of ADP-ribosylation in the Social Behavior of *Myxococcus xanthus* \$4,000

December, 2000 Seattle University School of Science and Engineering Faculty Innovation Proposal: "Identifying Genes Involved in Cell Contact-Mediated Territory Delineation In *Myxococcus xanthus*" \$4,000

April, 2000 UNCF-MERCK Undergraduate Research Sponsorship \$25,000, \$10,000 to the Biology Dept.

February, 1999 M. J. Murdock Charitable Trust Grant, \$29,000 "The Role of Integral Fibril Protein IFP-1:31 in Fibril-mediated Social Behavior in the Soil Bacterium *Myxococcus xanthus*"

November, 1999 Summer Faculty Fellowship Research Grant Seattle University \$4,000 "Territoriality Studies in Species of *Myxococcus*"

Service

Student Acceptance Review Committee 2012-Present

Member of S&E Personnel Committee 2012-Present

Chair, Biology Department 2007-2011

Pre-Health Committee 2004-Present

Member of S&E Personnel Committee 2004-2007

Member of Academic Assembly Committee Spring, 2001-2004

Co-Chair Seattle University Undergraduate Research NCUR Coordinator Fall, 2000-2007

S&E Curriculum Committee Fall, 1998-Fall, 2003

Member of SU contingent at *Jesuit/Catholic Higher Education On the West Coast Symposium* Fall, 2002

Commencement Student Marshal 1999-Present