

JEREMY J. RICH

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EDUCATION

- 2003 Ph.D. Soil Science, Oregon State University
Thesis: Community composition and activities of denitrifying bacteria in soils
- 1998 M.S. Microbiology, University of Maine
Thesis: Carbon monoxide consumption and production by microorganisms associated with wetland plant roots and sediments
- 1996 B.S. Natural Science, University of Wisconsin–Madison

RESEARCH EXPERIENCE

- Jan/06-present **Postdoctoral Research Associate, Marine Microbial Biogeochemistry**, Dept. of Geosciences, Princeton University; Advised by Dr. Bess B. Ward
Investigating anaerobic ammonium oxidation (anammox) in marine ecosystems
- Jan/04-Dec/05 **Postdoctoral Research Fellow, NSF Microbial Biology Fellowship**, Dept. of Geosciences, Princeton University; Advised by Dr. Bess B. Ward
Quantified anammox using ¹⁵N-isotope techniques in Chesapeake Bay sediments and in oxygen minimum zones in the Arabian Sea and Pacific Ocean
- Jul/03-Dec/03 **Postdoctoral Research Associate, Soil Microbiology**, Dept. of Crop and Soil Science, Oregon State University; Advised by Dr. David D. Myrold
Detected nitrous oxide reductase (*nosZ*) mRNA in *Pseudomonas stutzeri* using reverse transcriptase-polymerase chain reaction (RT-PCR)
- Sep/98-Jun/03 **Graduate Research Assistant, Soil Microbial Ecology**, Dept. of Crop and Soil Science, Oregon State University; Advised by Dr. David D. Myrold
Used molecular, biogeochemical, and culture-based techniques to characterize the diversity and functioning of denitrifying bacteria in soils
- Sep/96-Jul/98 **Graduate Research Assistant, Microbial Ecology**, Dept. of Microbiology, University of Maine; Advised by Dr. Gary M. King
Analyzed the kinetics and physiology of carbon monoxide-oxidizing bacteria in freshwater wetlands
- Sep/95-May/96 **Independent Study, Soil Microbiology**, Department of Soil Science, University of Wisconsin–Madison; Advised by Dr. William J. Hickey
Detected methane-oxidizing bacteria using 16S rRNA probes

TEACHING EXPERIENCE

- 2006 Instructor, Environmental Science, Princeton University
Instructor of writing intensive precept discussion sections
- 2001 Guest lecturer, Microbial Ecology, Oregon State University
Enabled class participation through interactive lectures
- 1999 Teaching Assistant, Soil Science Laboratory, Oregon State University
Prepared mini-lectures, supervised exercises, and wrote quizzes

PUBLICATIONS

- In prep **Rich, J. J.**, A. Devol, B. Chang, and B. B. Ward. Anaerobic ammonium oxidizing (anammox) activity in Peruvian margin sediments.
- In prep Tuit, C. B., J. Moffett, A. Jayakumar, S. W. Naqvi, **J. J. Rich**, and B. B. Ward. Influence of copper availability on marine denitrification.
- In prep **Rich, J. J.** and B. B. Ward. Anaerobic ammonium oxidizing (anammox) activity in the oxygen minimum zone of the Peruvian upwelling system.
- In review **Rich, J. J.**, O. R. Dale, B. Song, and B. B. Ward. Anaerobic ammonium oxidation (anammox) in Chesapeake Bay sediments. *Microbial Ecology*.
- 2006 Boyle, S. A., **J. J. Rich**, P. J. Bottomley, K. Cromack, Jr., and D. D. Myrold. Reciprocal transfer effects on denitrifying community composition and activity at forest and meadow sites in the Cascade Mountains of Oregon. *Soil Biology and Biochemistry* 38:870-878.
- 2004 Bottomley, P. J., A. E. Taylor, S. A. Boyle, S. K. McMahon, **J. J. Rich**, K. Cromack, Jr., and D. D. Myrold. Responses of nitrification and ammonia-oxidizing bacteria to reciprocal transfers of soil between adjacent coniferous forest and meadow vegetation in the Cascade Mountains of Oregon. *Microbial Ecology* 48:500-508.
- 2004 **Rich, J. J.** and D. D. Myrold. Community composition and activity of denitrifying bacteria from adjacent agricultural soil, riparian soil, and creek sediment in Oregon, USA. *Soil Biology and Biochemistry* 36:1431-1441.
- 2003 **Rich, J. J.**, R. S. Heichen, P. J. Bottomley, K. Cromack, Jr., D. D. Myrold. Community composition and functioning of denitrifying bacteria from adjacent meadow and forest soils. *Applied and Environmental Microbiology* 69:5974-5982.
- 1999 **Rich, J. J.** and G. M. King. Carbon monoxide consumption and production by wetland peats. *FEMS Microbiology Ecology* 28:215-224.
- 1998 **Rich, J. J.** and G. M. King. Carbon monoxide oxidation by bacteria associated with the roots of freshwater macrophytes. *Applied and Environmental Microbiology* 64:4939-4943.

HONORS/AWARDS/GRANTS

- 2004-2005 National Science Foundation, Postdoctoral Fellowship in Microbial Biology, Exploring Anammox in Marine Sediments (\$100,000)
- 2003 American Society for Microbiology, Student Member Travel Grant (\$500)
- 2001 Excellence in Presentation of a Paper, *Soil Science Society of America*, General Meeting, "H. J. Andrews Microbial Observatory: Soil Nitrogen Cycling Processes along Meadow-Forest Gradients," (poster)

HONORS/AWARDS/GRANTS (CONTINUED)

- 1999-2001 Oregon State University, Agricultural Research Foundation, Bacteria in Agricultural and Riparian Soil; David Myrold (PI), Jeremy Rich, (Co-PI), and Nancy Posavatz (Co-PI) (\$7,500)
- 1998 American Society for Microbiology, Student Member Travel Grant (\$500)
- 1998 University of Maine Alumni Association, Academic Travel Grant (\$150)
- 1995-1996 Ag-Lime Academic Scholarship, University of Wisconsin–Madison (\$1,200)
- 1995 National Science Foundation, Research Experience for Undergraduates Fellowship, H. J. Andrews Experimental Forest, Oregon State University

INVITED PRESENTATIONS

- Aug/06 Anaerobic Ammonium Oxidation (Anammox) Activity in Estuarine and Marine Sediments, *Woods Hole Oceanographic Institution*, Woods Hole, Massachusetts
- April/06 Denitrifying Bacteria in Soils and Anaerobic Ammonium Oxidation (Anammox) in Sediments; Departments of Molecular Biosciences and Ecology & Evolutionary Biology, *University of Kansas, Lawrence*
- Mar/06 Denitrifying Bacteria in Soils and Anaerobic Ammonium Oxidation (Anammox) in Sediments; Dept. of Biological Sciences, *University of South Carolina, Columbia*
- Nov/05 Insights into the Nitrogen Cycle: Microbial Communities in Soils and Anammox in Sediments; Dept. of Biological Sciences, *Kent State University*
- Oct/05 Insights into Nitrogen Removal Processes: Microbial Communities in Soils and Anammox in Sediments; Institute for Marine and Coastal Studies, *The State University of New Jersey, Rutgers*
- Sep/05 Insights into Nitrogen Removal Processes: Microbial Communities in Soils and Anammox in Sediments; Dept. of Natural Resources and Dept. of Microbiology, *University of New Hampshire*
- Apr/04 Community Composition and Activity of Denitrifying Bacteria in Soils; Dept. of Microbiology, *Århus University, Århus, Denmark*; Institute of Biology, *University of Southern Denmark, Odense, Denmark*; School of Biological Sciences, *Queen Mary University of London, London, England*
- Sep/03 Sampling Strategies: The Challenge of Commonness and Rarity; *National Science Foundation*, Microbial Observatories Workshop, Washington D.C.
- Aug/03 Community Composition and Functioning of Denitrifying Bacteria in Soils; *American Society for Microbiology*, Regional Meeting, Vancouver, British Columbia, Canada
- Mar/03 Nitrogen Cycling in Soil Ecosystems; Workshop on Alternative Pathways of N Transformations, *Göteborg University, Kristineberg Marine Research Station, Fiskebäckskil, Sweden*

PROFESSIONAL MEETING PRESENTATIONS

- 2007 Anaerobic Ammonium Oxidation (Anammox) Activity in Peru Margin Sediments; Poster Session, *American Society for Microbiology*, Toronto, Canada
- 2007 Anaerobic Ammonium Oxidation (Anammox) Activity in the Oxygen Minimum Zone of the Peru Upwelling System; Poster Session, *American Society for Limnology and Oceanography, Aquatic Sciences Meeting*, Sante Fe, New Mexico
- 2005 Anaerobic Ammonium Oxidation (Anammox) Activity in Chesapeake Bay Sediments; Oral Paper, *American Society for Limnology and Oceanography, Summer Meeting*, Santiago de Compostela, Spain
- 2005 Anaerobic Ammonium Oxidation (Anammox) Activity in Chesapeake Bay Sediments; Poster Session, *American Society for Microbiology*, General Meeting, Atlanta, Georgia
- 2004 Community Composition and Activity of Denitrifying Bacteria in Adjacent Agricultural Soil, Riparian Soil, and Creek Sediment; Oral Paper, *Ecological Society of America*, General Meeting, Portland, Oregon
- 2003 Molecular Diversity and Functioning of Denitrifying Bacteria in Soils Across Meadow-Forest Boundaries; Poster Session, *American Society for Microbiology*, General Meeting, Washington D.C.
- 2002 Genetic Diversity and Functioning of Denitrifying Bacteria in Soils; Oral Paper, *Ecological Society of America*, General Meeting, Tucson, Arizona
- 2001 H. J. Andrews Microbial Observatory: Soil Nitrogen Cycling Processes Along Meadow-Forest Gradients; Poster Session, *Soil Science Society of America*, General Meeting, Charlotte, North Carolina
- 2000 Nitrous Oxide Reductase Gene (*nosZ*) Profiles of Denitrifying Bacteria in Riparian Soils; Poster Session, *American Society for Microbiology*, General Meeting, Los Angeles, California
- 1998 Carbon Monoxide Oxidation by Bacteria Associated with Freshwater Macrophytes; Poster Session, *American Society for Microbiology*, General Meeting, Atlanta, Georgia

UNIVERSITY AND COMMUNITY SERVICE

- 2005 Briefed the Honorable Dr. John Marburger, III (*Science Advisor to the President of the United States*) on Nutrient Loading in Coastal Ecosystems, Princeton Environmental Institute, *Princeton University*
- 2005 Judged at the New York City Science and Engineering High School Fair, New York Academy of Sciences Expo, City College of New York
- 2002 Served on Seminar Committee, which included organizing seminars and hosting speakers, Oregon State University
- 2000 Served on Faculty Search Committee, which included review of applications and participation in interviews, Oregon State University

REFERENCES

- Dr. Bess B. Ward (*Postdoctoral advisor*), Professor, Department of Geosciences, Princeton University, Guyot Hall, Princeton, NJ 08544
609-258-5150 (ph); 609-258-0796 (fax), bbw@princeton.edu
- Dr. David D. Myrold (*Ph.D. advisor*), Professor and Associate Head, Department of Crop and Soil Science, Oregon State University, 3017 Ag. & Life Sci. Bldg., Corvallis, OR 97331
541-737-5737 (ph), 541-737-5725 (fax), David.Myrold@oregonstate.edu
- Dr. Peter J. Bottomley (*Collaborator and Ph.D. committee*), Professor, Department of Microbiology, Oregon State University, 220 Nash Hall, Corvallis, OR 97331
541-737-1844 (ph), 541-737-0496 (fax), Peter.Bottomley@oregonstate.edu
- Dr. Gary M. King (*M.S. advisor*), Professor of Microbiology, Oceanography, and Marine Studies, University of Maine, Darling Marine Center, Walpole, ME 04573
207-563-3146 ext. 207 (ph), 207-563-3119 (fax), gking@maine.edu