

Kristen M. DeAngelis

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EDUCATION and PROFESSIONAL EXPERIENCE

Seaborg Postdoctoral Fellow, Lawrence Berkeley National Lab, October 1, 2007 to present

Research in the Earth Sciences Division in collaboration with Terry Hazen: tropical forest soils as reservoir for new biofuels-decomposing microorganisms; with Margaret Torn: microbial controls of carbon sequestration in soil; and with Gary Andersen: human microbiome.

Woods Hole Summer Course in Microbial Diversity, Teaching Assistant, June 4 - Aug 3, 2007

In charge of running the molecular biology lab and teaching DNA extraction techniques, phylogenetic identification and classification, use of the arb database tool as well as other phylogenetic tools, tree-building techniques, and batch eukaryotic fermentation reactions.

Postdoctoral researcher at the University of California, Berkeley, Jan 1 - June 10, 2006

With Drs. Whendee Silver and Mary Firestone, investigation into the role of fluctuating reduction-oxidation cycles to control microbial community structure and function, with special emphasis on iron cycling and methanogenesis.

University of California, Berkeley, PhD Microbiology, December 19 2006

Advisors: Mary Firestone and Steven Lindow. Advanced to Candidacy May 2002.

Title "Microbial community ecology and bacterial quorum sensing and as control points in rhizosphere nitrogen cycling."

Coursework

- General Microbiology, Soil Microbiology, Environmental Microbiology
- Analysis of Environmental Data, Perl for Bioinformatics
- Biogeochemistry, Nitrogen Stable Isotopes, Microbial Ecology

Woods Hole Summer Course in Microbial Diversity, student, June 12-August 1, 2003

Instruction in isolation, characterization, and identification of bacteria and archaea in the environment, with emphasis on metabolic adaptability, environmental effects, and community interactions.

Harvard University, B.A. Biology, 1997

Coursework included molecular and cellular biology, evolutionary and organismic biology, organic chemistry, philosophy of biology, psychobiology, and multivariable calculus

HONORS AND AWARDS

Best Student Paper, Soil Ecology Section, Ecological Society of America Meeting, August 2006

Raymond W. Sarber Award, American Society of Microbiology, May 2006

Outstanding Contribution, Roche Scientific Diagnostics, 1998

Faculty of Arts and Science Scholar, Harvard University, 1994

GRANTS AND FELLOWSHIPS

National Science Foundation Doctoral Dissertation Improvement Grant, 2004
Environmental Protection Agency Science-to-Achieve-Results (EPA STAR) Fellowship, 2003
Sigma Xi Grants-in-Aid Research Award, 2002
UC Berkeley Department of Plant and Microbial Biology Travel Grant, 2002

PROFESSIONAL SERVICE

Berkeley Science Review Journal – sciencereview.berkeley.edu

2004-2006 Contributor

2003-2004 Editor and Contributor

UC Berkeley Microbiology Student Group – pmb.berkeley.edu/~bacteria

2000-2006. Annual Microbiology Interdepartmental Student Symposium Committee

2000-2006. Microbiology Student Group: Chair (2002); Vice-Chair (2003)

PUBLICATIONS in PRESS

Templer P, Pett-Ridge J, **DeAngelis KM**, Firestone MK, Silver W. Plant and microbial controls on nitrogen retention and loss in Puerto Rican forest soils. Ecology, in press.

PUBLICATIONS in PREP

DeAngelis KM, Lindow SE and Firestone MK. Quorum sensing as a control point in rhizosphere nitrogen cycling.

DeAngelis KM, Lindow SE and Firestone MK. Dynamic microbial community composition in the rhizosphere by 16S rDNA TRFLP and high-density 16S rDNA phylochip.

DeAngelis KM, Silver W, Thompson AW, Firestone MK. Specific microbial populations thrive under fluctuating redox conditions in tropical soils.

PUBLICATIONS

Hawkes CV, **DeAngelis KM**, and Firestone MK. 2007. Root Interactions with Microbial Communities and Processes. *In The Rhizosphere: an Ecological Perspective*. Julie L. Whitbeck and Zoe Cardon, eds. Academic Press, Inc., San Diego CA.

DeAngelis KM, Firestone MK and Lindow SE. Sensitive whole-cell biosensor suitable for detecting a variety of N-acyl homoserine lactones in intact rhizosphere microbial communities. Applied and Environmental Microbiology, 2007 v73(11): 3724-3727.

DeAngelis KM, Ji P, Firestone MK, Lindow SE. 2005. Construction of a Novel Bacterial Sensor for the Detection of Nitrate Availability in the Rhizosphere. Applied and Environmental Microbiology, vol 71 (12): 8537-8547

Nichols MN, **DeAngelis K**, Keck J, Berger JM. 1999. Structure and function of an Archaeal Topoisomerase VI subunit with homology to the meiotic recombination factor Spo11. The EMBO Journal, v. 18, n.21 6177-6188.

Rifai N, Iannotti E, **DeAngelis K**, Law T. 1998. Analytical and clinical performance of a homogeneous enzymatic LDL-Cholesterol assay compared with the Ultracentrifugation-Dextran Sulfate-Mg++ method. Clinical Chemistry 44:6, 1242-1250.

Law T, Arslanian S, Iannotti E, **DeAngelis K**, Rifai N. 1998. Departments of Laboratory Medicine and Pathology, Children's Hospital and Harvard Medical School, Boston MA. Analytical Performance of the Roche Direct HDL-Cholesterol Assay compared with the Ultracentrifugation-Dextran Sulfate-Mg++Method. *Clinical Chemistry Suppl* 44:6, A77

RESEARCH PRESENTATIONS and POSTERS

DeAngelis KM, Lindow SE and Firestone MK. "The Rhizosphere: Microbial community structure and function as control points for nitrogen cycling." ESA talk in Organized Oral Session Carbon, Nitrogen and Water fluxes in the Rhizosphere, Aug 2006.

DeAngelis KM, Lindow SE and Firestone MK. "The Rhizosphere: Microbial community structure and function as control points for nitrogen cycling." ISME poster, Vienna, Austria, Aug 2006.

DeAngelis KM, Firestone MK, and Lindow SE. "Quorum sensing as a control point in rhizosphere nitrogen transformations." ASM poster, Orlando FL, May 2006.

DeAngelis K, Firestone MK, Lindow SE. Quorum sensing in the rhizosphere: quantitative and qualitative effects on bacterial community. Poster, International Society of Microbial Ecology, Cancun Mexico, Aug 2004

DeAngelis K, Firestone MK. Effects of Soil Microbial Community Composition on Nitrogen Cycling Dynamics in Rhizosphere Soil. Invited symposium: "Emerging Perspectives on the Feedbacks between Plant and Soil Communities" at Ecological Society of America, Tucson, Arizona, Aug 2002.

DeAngelis K. Quorum sensing in the Rhizosphere: Effects on Nitrogen Mineralization and Plant Nitrogen Availability. UC Berkeley Biogeochemistry Seminar Series Apr 2002.

DeAngelis K, Schwartz E, Firestone MK, Wan J, Tokunaga T, Joyner D, and Hazen T. Microbial Community Composition and Chromium Transport in Clay Sediment. Poster at UC Berkeley Annual Microbiology Symposium 2001.

DeAngelis K, Nichols MN, Keck J, Berger JM. Structure and function of an Archaeal Topoisomerase VI subunit with homology to the meiotic recombination factor Spo11. Poster presented at UC Berkeley Biochemistry and Molecular Biology Meeting 2000.

TEACHING

2008 Spring. Guest Lecturer, Microbial communications in nature. ESPM 131, Soil Microbial Ecology with Prof. Celine Palud

Mentor to undergraduate and honors thesis research

2006 Summer & Fall: Hieu Pham, "Community dynamics of archaea in mesophilic rhizosphere soil."

2004-05 Academic year: Cynthia C. Cox, "Seasonal and plant-variation in phyllosphere bacterial communities."

2002 Summer: Helen Ha, "Rhizosphere microbial community analysis by culturing."

2006 Spring. Guest Lecturer, Microbial communications in nature. ESPM 131, Soil Microbial Ecology with Profs. Mary K. Firestone and Tom Bruns

2005 August to December. Advisor for undergraduate honors thesis research, Cynthia Cox. Topic: Comparative analysis of leaf-surface microbial communities using T-RFLP 16S rRNA fingerprinting method of directly extracted versus cultured bacteria

2003 Fall. Reader for MCB 112 (cross-listed in PMB): General Microbiology

2003 Spring. Guest Lecturer, Overview of genetics and physiology of Bacteria. Industrial Design "Biomimicry" at the California College of Arts and Crafts, San Francisco, CA with Professor Sue Redding.

2002 Fall. Graduate Student Instructor, MCB 112 (cross-listed in PMB): General Microbiology

2002 Fall. Guest Lecturer. The Nitrogen Cycle: Dissimilatory and Assimilatory Processes. MCB 112, General Microbiology with Professor Antje Hofmeister

2001 Fall. Graduate Student Instructor, Biology 1B: Evolution, Ecology and Plant Biology with Professors Glenys Thomson, Todd Dawson, and Carla D'Antonio

RESEARCH EXPERIENCE

Graduate Student, UC Berkeley, Aug 2000 - present

Research Technician, James Berger Lab, UC Berkeley, Oct 1998 - Jun 2000

Research Technician, Children's Hospital Boston, Clinical Chemistry, Jun 1997 - Aug 1998

Research Assistant, Harvard Medical School, Devel. & Molecular Neurobiol., May - Sept 1998

PROFESSIONAL SOCIETIES

American Society for Microbiology

Ecological Society of America

International Society for Microbial Ecology