

Dad ROUX-MICHOLLET, Ph.D.
Post-doctoral researcher in Microbial Ecology & Environmental Studies

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CURRENT RESEARCH

Effects of dry and wet cycles on soil microbial community and soil processes in a California grassland

EDUCATION

- 2003-2007:** Ph.D. Student in Microbial Ecology – Claude Bernard University, Lyon (France)
Thesis: Effect of steam disinfection of agricultural soils on functional bacterial communities and environmental parameters; resistance, resilience and dynamic of colonization
- 2002-2003:** Master in Science in Microbial Ecology with honors – Claude Bernard University, Lyon (France)
*M.Sc. Thesis: Dynamics of *Escherichia coli* populations in stationary phase*
- 2000-2002:** Bachelor in Science in Population and Ecosystem Biology with honors – Claude Bernard University, Lyon (France)
- 1997-2000:** Biological Sciences Degree with honors – Technolac University, Chambéry (France)

RESEARCH EXPERIENCES

- Nov. 2007 – Sep. 2010** Assistant specialist, Institute for Computational Earth System Science, in collaboration with Trish Holden (Bren School of Environmental Science and Management) and Josh Schimel (Ecology, Environmental and Marine Biology), University of California Santa Barbara
- Sep. 2003 – April 2007** Ph.D. student, Microbial Ecology Laboratory, UMR CNRS 5557, Lyon (France)
Effects of steam soil disinfection on bacterial communities (A. Clays-Josserand)
Methods: Most Probable Number (MPN) technique on micro-plates, soil DNA extraction and genetic structure by PCR-DGGE, microbial activity using gas chromatography, statistical analysis
- Dec. 2005** Ph.D. student, Climate Soil & Environment, National Institute of Agronomic Research, Avignon (France)
Analysis of soil organic carbon (Y. Dudal)
Methods: Extraction of soluble organic matter in soil, quantification of DOC, spectrofluorimetry, infrared spectroscopy ATR
- Dec. 2002 – June 2003** Master student, Bacterial Chemistry Laboratory, UPR CNRS 9043, Marseille (France)
Growth of *Escherichia coli* in stationary phase (S. Dukan)
Methods: Culture-based microbiological techniques, separation of Viable But Non Cultivable (VBNC) bacteria by ultracentrifugation, radioactive labelling of active cells with methionine ³⁵S
- April 2002** Bachelors internship, Toxicology laboratory, National Veterinary School, Marcy l'Etoile (France)
Bioavailability of pollutants in water and sediments by measuring enzymatic activity of molluscs
- February 2001** Bachelors internship, Pierre Mendés France University, Grenoble (France)
Carried out protocols to measure the electric emissions of Mormyridae fish in order to study stochastic and ecological responses toward habitat and predator

PROFESSIONAL AFFILIATIONS

- 2008: International Society for Microbial Ecology (ISME)
2008, 2009: Soil Science Society of America (SSSA)
2009: Association Francophone d'Ecologie Microbienne (AFEM)

TEACHING AND MENTORING EXPERIENCE

2008 – 2010: Undergraduates supervisor, University of California Santa Barbara

Effect of multiple drying/wetting cycles on Soil Bio-available C and Microbial Community in a California Grassland

Effect of increasing drought on C mineralization in a California Grassland

2007: Teaching assistant, Faculty of Science and Technology of Lyon (Biological Engineering option Agronomy)

Lab class: Screening herbicides, detection of *Xanthomonas perlargonii* in plants, investigation of transgenic tobacco

Supervisor: Dr. Bernard Calvez

2006: Student instructor, Claude Bernard University of Lyon

Dynamics of colonization of heterotrophic bacteria and modification of organic matter following steam soil disinfection

2003 – 2004: Elementary school and junior high school lecturer

Water quality; Origin of Life; Origin of Humans

INTERNATIONAL CONFERENCES

D. Roux-Michollet, J. Schimel, T. Holden. **Assessing the Active Bacterial Community Composition in Response to Drying and Rewetting Stresses in a California Grassland Soil.** Soil Science Society of America Annual Meeting 2009, USA, Pittsburgh PA, November 2009.

D. Roux-Michollet, S. Xiang, J. Schimel, T. Holden. **Interactive Effects of Resources and Stress on Soil Microbial Communities and Processes.** Soil Science Society of America Joint Meeting 2008, USA, Houston TX, October 2008.

D. Roux-Michollet, S. Czarnes, X. Le Roux, C. Desmyter, B. Adam, C. Commeaux, N. Guillaumaud, A. Clays-Josserand. **Effects of Steam Disinfection on Community Structure, Size and Function of Key Bacterial Communities in an Agricultural Soil.** 11th International Symposium on Microbial Ecology (ISME 11), Vienna, Austria, August 2006.

D. Roux-Michollet, F. Poly, V. Degrange, A. Chataignon, C. Commeaux, A. Clays-Josserand. **Nitrite Reductase Genes (*nirK* and *nirS*) to Investigate Diversity of Denitrifying Bacteria in Soil with Denaturing Gradient Gel Electrophoresis.** 8th Bacterial Genetic and Ecology (Bageco 8), France, Lyon, June 2005.

PUBLICATIONS

D. Roux-Michollet, S. Czarnes, B. Adam, D. Berry, C. Commeaux, N. Guillaumaud, X. Le Roux and A. Clays-Josserand. **Effects of Steam Disinfection on Community Structure, Abundance and Activity of Heterotrophic Bacteria, Denitrifying and Nitrifying Bacteria in an Organic Farming Soil.** *Soil Biology and Biochemistry* (40), July 2008.

D. Roux-Michollet, Y. Dudal, L. Jocteur-Monrozier and S. Czarnes. **Steam treatment of surface soil: how does it affect water soluble organic matter, C mineralization and bacterial community composition?** *Biology and Fertility of Soils*.

D. Roux-Michollet, J. Schimel, T. Holden. **Pushing the limits for amplifying BrdU-labeled DNA encoding 16S rRNA: DNA polymerase as the determining factor.** *In revision for Journal of Microbiological Methods*.

D. Roux-Michollet, N. Fierer, P. Holden, J. Schimel. **Rapid Response of Active Bacterial Community under a Dry/Wet Cycle in California Grassland.** *In preparation for submission to Microbial Ecology*.

SKILLS

- Degree in animation and experience with children and teenagers (summer camps counselor)
- Volunteer in community services (ecosystem restoration, beach cleaning, homeless shelter activities...)
- Member of Non Profit Organizations (Bren School Sustainable Committee, Engineers without Borders, Fleole...)
- Experimental design, Soil Science, Ecosystem ecology
- Molecular biology, PCR-based microbial analyses
- Statistical Multivariate Analysis using Primer software

INTERESTS

Sports (surfing, snowboarding, hiking, karate, sailing, sky diving ...), Jazz, Chess and strategic games, Comic strips, Kites