

Roger Thelwell, Ph.D.

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PROFESSIONAL PREPARATION

B.S., Mathematics, St. Mary's College of Maryland, 1991
M.S., Mathematics, Colorado State University, 2002.
Ph.D., Mathematics, Colorado State University, 2004.
Post doctoral fellow, Applied Mathematics, University of Washington, 2004-2006

APPOINTMENTS

Assistant Professor. Math Dept., James Madison University, 2007-present
Postdoctoral Fellow, Applied Math Dept., University of Washington, 2004-2006
IGERT Research Assistant. Math Dept., Colorado State University 2004
Research Assistant. Math Dept., Colorado State University, 2003
Research Assistant, Atmospheric Science Dept., Colorado State University, 1999
Teaching Assistant, Math Dept., Colorado State University, 1998-2004

PUBLICATIONS

- J. von Fischer and R. Thelwell, "In-situ recovery of methanotrophic measures in heterogeneous soils," in prep
- G. Butters, P. DuChateau and R. Thelwell "Rapid estimation of Van-Genuchten type soil parameters: analysis and application," to be submitted
- J. von Fischer, G. Butters, P. DuChateau, R. Thelwell and B. Stiller, "In situ measures of methane activity in upland soils", *J. Geophys. Res – Biogeosciences* (accepted, 2008)
- R. Thelwell, J. Carter and B. Deconinck "Instabilities of one-dimensional stationary solutions of the cubic nonlinear Schrodinger equation", *Journal of Physics A* 39 73-84 (2006)
- P. DuChateau, R. Thelwell and G. Butters "Analysis of an adjoint problem approach to the identification of an unknown diffusion coefficient", *Inverse Problems*, 20 601-625 (2004)
- Adjoint approach to parameter identification with application to the Richards Equation, doctoral dissertation, 2004

SYNERGISTIC ACTIVITIES

- CO-PI of Mathematical Association of America (MAA) National Research Experience for Undergraduates Program (NREUP) grant. Titled “Mentoring Minorities in Mathematics, Dynamical Systems and Chaos,” with funding of \$24,190.50. May-June 2008.
- Advised Ramesh Narasimhan, a graduate student in Applied Math at the University of Washington. He developed PIVOT, a Partial Differential Equation Visualization Tool, and presented this work at an international conference in Turkey. 2005-2006.
- Book Review of “Fourier Series” by R. Bhatia. SIAM Review v48, 2006.
- Involved in Nonlinear Waves Research group. Worked with Graduate and Undergraduate students while a Post-doc at the University of Washington. 2005-2006
- Developed and taught short course “MATLAB for Ecologists” for IGERT PRIMES project while at Colorado State University. The goal of the project was to foster collaboration between biologists, mathematicians and statisticians. 2004

Interdisciplinary Research and Teaching

- Collaborating with Samantha Prins (JMU) on a parameter sensitivity and tuning project in an ecological model (2008-present)
- Developed interdisciplinary projects in biology for Math 231-232 Integrated Calculus Sequence (2007-2008)
- Attended PIMS-MITACS-VIGRE summer graduate school on inverse problems at the University of Washington (2005)
- Collaborating with Joe von Fischer, a biologist at Colorado State University. Modeling methane flux in soil. (2005-present)
- Collaborating with Greg Butters, a soil physicist at Colorado State University. Developing techniques for the rapid recovery of soil parameters. (2003-present)
- Attended workshop on free surface water waves, Fields Institute, Toronto, Canada (2004)
- Research assistant in a Program for Interdisciplinary Mathematics, Ecology, and Statistics (PRIMES) at Colorado State University. This program was designed to address the challenges of studying complex ecological systems. (2004-2005)
- Attended 3rd annual Intermountain/Southwest conference on Industrial and Interdisciplinary Mathematics, Arizona State University (2004)
- Workshop participant in Data-Model Fusion, Colorado State University (2003)
- Workshop participant in “Dynamics and Bifurcation of Patterns in Dissipative Systems”, Colorado State University (2003)
- Attended Industrial Math Conference, Utah State University (2002)
- Workshop participant on Preservation of Stability under Discretization, Colorado State University (2002)
- Attended Red Raider Math and Biology Conference, Texas Tech University (2002)

Collaborators

Greg Butters (Colorado State University), John Carter (Seattle University), Bernard Deconinck (University of Washington), Paul DuChateau (Colorado State University), Joe von Fischer (Colorado State University)