

Sean M. Crowell

CONTACT INFORMATION	Department of Mathematics University of Oklahoma Norman, OK 73019	<i>Voice:</i> (405) 325-6711 <i>Fax:</i> (405) 325-7484 <i>E-mail:</i> scrowell@ou.edu <i>WWW:</i> math.ou.edu/~scrowell
CITIZENSHIP	USA	
RESEARCH INTERESTS	Data Assimilation, Numerical solution of Partial Differential Equations, Mathematical Modeling in the Geosciences, Stochastic Processes, Model Selection, Uncertainty and Model Error, Dynamical Systems	
EDUCATION	University of Oklahoma , Norman, OK USA PhD, <i>Mathematics</i> (expected graduation date: July 2010) <ul style="list-style-type: none">• Research Topic: Sedimentation Models and Data Assimilation• Advisor: Luther White• Coursework: numerical analysis, PDEs, mathematical modeling, stochastic differential equations, applied analysis M.S., <i>Mathematics</i> , August 2005 <ul style="list-style-type: none">• Advisor: John Albert• Coursework: statistics, applied analysis, dynamical systems University of Science and Arts of Oklahoma , Chickasha, OK USA B.S., <i>Mathematics</i> , 2003 <ul style="list-style-type: none">• Graduated <i>Magna cum Laude</i>• Senior paper on fuzzy and multi-valued logics	
RESEARCH EXPERIENCE	University of Oklahoma , <i>Graduate Research Assistant, Meteorology</i> May 2007 to present <ul style="list-style-type: none">• Comparison of traditional finite difference and high-order element based spectral methods in Numerical Weather Prediction• Two conference presentations and papers from this work <i>Forecast Bias Correction</i> (with S. Lakshmivarahan) Fall 2008 <ul style="list-style-type: none">• Implemented method for correction of parameter and initial condition errors in the presence of observations.• Presented paper at Joint Mathematics Meetings (AMS-MAA-SIAM), 2009 <i>Summer Engineering Intern (Office of Naval Research)</i> Summer 2004 <ul style="list-style-type: none">• Analyzed various surface wave models.• Analyzed the stability properties of a ship steering model.	
TEACHING EXPERIENCE	University of Oklahoma , <i>Teaching Assistant/Instructor</i> Fall 2003 to Spring 2007 <ul style="list-style-type: none">• Courses taught: Precalculus; Calculus I; Business Calculus	

Oklahoma City Community College,

Instructor

Summer 2005 to Present

Courses taught: Calculus I; Business Calculus I, II; Elementary Algebra; Geometry; Elementary Statistics

University of Central Oklahoma,

Instructor

Fall 2005

Courses taught: College Algebra; Math for General Education

TALKS

An Introduction to Data Assimilation: Least-Squares versus Maximum Likelihood Frameworks, OU SIAM Student Chapter Applied Math Seminar, Fall 2009

Finite Difference, Spectral Difference, and Discontinuous Galerkin Model Behavior for Advection Problems, ICOSAHOM 2009

Comparison of Traditional and Novel Discretization Methods for Advection Models in Numerical Weather Prediction, ICCS 2009

Numerical Methods for Partial Differential Equations: An Introduction, OU Graduate Student Seminar, Spring 2009

Detection and Correction of Forecast Bias Error, Joint Mathematics Meetings, 2009

Mathematics and Climate Change, OU SIAM Student Chapter Applied Math Seminar, Fall 2008

Fun with Numerics and Partial Differential Equations, OU SIAM Student Chapter Applied Math Seminar, Fall 2007

CONFERENCE PUBLICATIONS

Crowell, S., D. Williams, C. Mavriplis, L. Wicker. Comparison of Traditional and Novel Discretization Methods for Advection Models in Numerical Weather Prediction. ICCS 2009, Part II, LNCS 5545, pp. 263272, 2009.

CONFERENCES AND TRAININGS

High Order Methods for Numerical Weather Prediction, ICOSAHOM 2009
Atmospheric and Ocean Modeling Group, ICCS 2009
Polar Climate Modeling Minisymposium, Joint Mathematics Meetings, 2009
Mathematics and Climate Change Summer School, MSRI, 2008
Numerical Methods for Climate Models, ASP Summer Colloquium at NCAR, 2008
Mathematics and Climate Minisymposium, Joint Mathematics Meetings, 2008
WRF User Tutorial, NCAR, 2007

AWARDS

University of Oklahoma

- Second Century Scholarship, 2007
- Sturgis Scholarship, 2008-2009
- Richard V. Andree Memorial Scholarship, 2009

University of Science and Arts of Oklahoma

- Regents' Baccalaureate Scholarship, 1999-2003
- Hypatia Honor Society, 2002-2003

SERVICE

Founder and organizer of Science Cafe Norman.

Founder and organizer of the Student Applied Math Seminar.

Frequent volunteer for University of Oklahoma Mathematics outreach events.

Treasurer for Mathematics Graduate Student Association (2008-2009)

Volunteer for Women's Service and Family Resource Center in Chickasha, Oklahoma.