

## Amanda Keck Criner

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CONTACT INFORMATION	Cox Hall 509 C Center for Research in Scientific Computation Department of Mathematics North Carolina State University	<i>Phone:</i> (919) 515-2386 <i>E-mail:</i> akcriner@ncsu.edu
RESEARCH INTERESTS	Nondestructive evaluation of porous and composite materials, finite element methods, homogenization theory, parameter estimation, and statistical methods	
EDUCATION	<b>North Carolina State University</b> , Raleigh, North Carolina Ph.D. Student, Applied Mathematics (expected graduation date: Summer 2011) Dissertation Topic: "Thermal interrogation of porous materials" Advisor: H. T. Banks  <b>University of Maine</b> , Orono, Maine B.A. Mathematics and Microbiology, December, 2006 Advisor: David E. Hiebeler	
PUBLICATIONS	H.T. Banks, D. Cioranescu, A.K. Criner, and W.P. Winfree, Modeling the flash-heat experiment on porous domains, Tech. Rep. CRSC-TR10-06, Center for Research in Scientific Computation, North Carolina State University, Raleigh, NC, May, 2010; <i>Quarterly of Applied Mathematics</i> , to appear.  H.T. Banks, B. Boudreaux, A.K. Criner, K. Foster, C. Uttal, T. Vogel, and W.P. Winfree, Thermal based damage detection in porous materials, <i>Inverse Problems in Science and Engineering</i> , 18(2010).  David E. Hiebeler and Amanda Keck Criner, Partially mixed household epidemiological model with clustered resistant individuals, <i>Physical Review E</i> , 75(2007).	
PRESENTATIONS	Parameter estimation for the heat equation on perforated domains, 30th Southeastern-Atlantic Regional Conference on Differential Equations, Virginia Polytechnic Institute and State University, October, 2010.  Parameter estimation for the heat equation on perforated domains, Applied Mathematics Graduate Student Seminar, North Carolina State University, September, 2010.  Modeling thermal based damage detection in porous materials, SIAM Conference on Mathematical Aspects of Materials Science, May, 2010.  Modeling the flash-heat experiment in porous domains with homogenization, Applied Mathematics Graduate Student Seminar, North Carolina State University, February, 2010.  Thermal interrogation of porous materials, Applied Mathematics Graduate Student Seminar, North Carolina State University, January, 2009.  Internet epidemiology, Nebraska Conference for Undergraduate Women in Mathematics, February, 2005.	
ACADEMIC EXPERIENCE	<b>North Carolina State University</b> , Raleigh, North Carolina <i>NSF-Research Training Grant Research Assistant</i> <b>Fall 2008 - present</b> Project: Thermal nondestructive evaluation of porous materials	

Advisor: H. T. Banks  
Collaborators: W. P. Winfree (NASA Langley Research Center), and  
D. Cioranescu (Université Pierre et Marie Curie)

*NSF-REU Graduate Assistant* **Summer 2008**  
Project: Thermal interrogation of porous materials  
Advisor: H. T. Banks  
Collaborators: W. P. Winfree, B. Boudreaux, K. Foster, C. Uttal, and  
T. Vogel

*Teaching Assistant* **Fall 2007 - Spring 2008**

*NSF-REG Participant* **Summer 2007**  
Project: Stochastic models of KSV infection  
Advisor: H. T. Banks  
Collaborator: G. Kepler (Center for Research in Scientific Computation,  
North Carolina State University)

*Student Research Assistant* **Fall 2005**  
Project: Internet epidemiology  
Advisor: D. E. Hiebeler (University of Maine)

*NSF-REU Participant* **Summer 2005**  
Project: Epidemiology as Related to the Phylogenetic Analysis of the  
Evolution of the Influenza Virus  
Advisors: Linda Gao and Ariel Cintrón-Arias

#### AWARDS

NCSU Provost Fellowship, 2007-2008

Theodore and Dorothy Whitehouse Scholarship, 2005

First prize for seniors, University of Maine Math Competition, 2005

Second prize for sophomores and juniors, University of Maine Math Competition, 2004

Dalhousie University Entrance Scholarship, 2002-2003

#### COMPUTER SKILLS

- MatLab: experience programming finite element methods, parameter estimation with statistical analysis, and Markov Chain models
- Latex