BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Jimena L. Davis	Mathematical Statistician
eRA COMMONS USER NAME	

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Clemson University, Clemson, SC	B.S.	1999-2003	Mathematical Sciences
North Carolina State University, Raleigh, NC	M.S.	2003-2005	Applied Mathematics
North Carolina State University, Raleigh, NC	Ph.D.	2005-2008	Computational Mathematics
NCCT, US EPA, Research Triangle Park, NC		2008-	Uncertainty Analysis and Risk Assessment

A. POSITIONS and HONORS

Research and Professional Experience:

2008-Present Cross ORD Postdoctoral Fellow, National Center for Computational Toxicology, US EPA, RTP, NC (Mentors: Woodrow Setzer and Rogelio Tornero-Velez)

2003-2008 Research Assistant, Department of Mathematics, North Carolina State University, Raleigh, NC (Advisor: H.T. Banks)

2006 Student Intern, Computational Biology Department, Sandia National Laboratories, Albuquerque, NM (Advisor: Elebeoba E. May)

2002 Participant, Research Experience for Undergraduates in Computational Number Theory and Combinatorics, Clemson University, Clemson, SC

Professional Societies and Affiliations:

2003-present Member, Society of Industrial and Applied Mathematics

2003-present Member, American Mathematical Society

Honors and Awards:

2004 – 2008 Department of Energy Computational Science Graduate Student Fellowship, North Carolina State University, Raleigh, NC

2006 & 2007 Association for the Concerns of African American Graduate Students Academic Achievement Award – College of Physical and Mathematical Sciences, North Carolina State University, Raleigh, NC

2003 – 2004 Statistical and Applied Mathematical Sciences Institute Fellowship, North Carolina State University, Raleigh, NC

2003 – 2004 Mathematics Department Fellowship, North Carolina State University, Raleigh, NC

2003 Faculty Scholarship Award, Clemson University, Clemson, SC

2003 *summa cum laude* Graduate, Clemson University, Clemson, SC

2002 & 2003 Beta Kappa Chapter of Phi Sigma Pi Scholarship Award, Clemson University, Clemson, SC

2001 – 2003 Multicultural Achievement Award, Clemson University, Clemson, SC

2001 – 2003 Susan & Harry Frampton Scholarship,
Clemson University, Clemson, SC
2000 Mathematical Sciences Freshman Award,
Clemson University, Clemson, SC
1999 – 2003 Palmetto Fellows Scholarship,
Clemson University, Clemson, SC
1999 – 2003 Coca-Cola Clemson Scholarship,
Clemson University, Clemson, SC

B. SELECTED PUBLICATIONS

Banks H.T., Davis J.L., and Hu S., "Comparison of Fokker-Planck Model and Growth Rate Distribution Model in Modeling Growth Uncertainty," *in preparation*

Banks H.T., Davis J.L., Ernstberger S.L., Hu S., Artimovich E., Dhar A.K., and Browdy C.L., "Estimation of Growth Rate Distributions in Size-Structured Shrimp Populations," *in preparation*

Davis J.L., "Uncertainty Quantification in the Estimation of Probability Distributions on Parameters in Size-Structured Populations," Ph.D. Dissertation (2008)

Banks H.T., Davis J.L., Ernstberger S.L., Hu S., Artimovich E., Dhar A.K., and Browdy C.L., "Comparison of Probabilistic and Stochastic Formulations in Modeling Growth Uncertainty and Variability," CRSC Tech. Rpt. CRSC-TR08-03, North Carolina State University, February 2008; Journal of Biological Dynamics, *to appear*

Banks H.T. and Davis J.L., "Quantifying Uncertainty in the Estimation of Probability Distributions," Mathematical Biosciences and Engineering, *to appear*

Banks H.T. and Davis J.L., "Quantifying Uncertainty in the Estimation of Probability Distributions with Confidence Bands," CRSC Tech. Rpt. CRSC-TR07-21, North Carolina State University, December 2007

Banks H.T. and Davis J.L., "A Comparison of Approximation Methods for the Estimation of Probability Distributions on Parameters," CRSC Tech. Rpt. CRSC-TR05-38, North Carolina State University, October 2005; Applied Numerical Mathematics, Volume 57, pages 753 – 777 (2007)

Calkin N., Davis J., James K., Perez E., and Swannack C., "Computing the Integer Partition Function," Mathematics of Computation, Volume 76, pages 1619 – 1638 (2007)

Davis J., Fricks J., Macabea J., Stroud L., White G., and Wong A., "Evaluating a Physiologically Based Pharmacokinetic Model Proposed for Use in Risk Assessment," *2003 Industrial Mathematics Modeling Workshop for Graduate Students,* CRSC Tech. Rpt. CRSC-TR04-07, North Carolina State University, March 2004

C. SELECTED PRESENTATIONS

"Quantifying Uncertainty in the Estimation of Probability Distributions on Parameters," SIAM 2008 Annual Meeting Graduate Student Workshop on Diversity, San Diego, CA, July 2008 (oral presentation)

"Quantifying Uncertainty in the Estimation of Probability Distributions," Department of Energy Computational Science Graduate Fellows' Annual Conference, Washington, DC, June 2008 (oral presentation)

"Estimation of Probability Distributions on Parameters in Size-Structured Populations," North Carolina State Mathematics Department Graduate Recruitment Weekend, Raleigh, NC, February 2008 (oral presentation)

"Uncertainty Quantification in the Estimation of Probability Distributions on Parameters," Applied Mathematics Graduate Student Seminar, Raleigh, NC, January 2008 (oral presentation)

"A Comparison of Approximation Methods for the Estimation of Probability Distributions on Parameters," Infinite Possibilities Conference, Raleigh, NC, November 2007 (oral presentation)

"Using Confidence Bands to Quantify Uncertainty in the Estimation of Probability Distributions," Atlantic Coast Conference on Mathematics in the Life and Biological Sciences, Blacksburg, VA, May 2007 (oral presentation)

"A Study of Computational Approaches for Parameter Estimation in the *Escherichia coli K-12* Central Metabolic System," 2006 Student Symposium, Sandia National Laboratories, Albuquerque, NM, August 2006 (oral presentation)

"A Computational and Statistical Comparison of Approximation Methods for the Estimation of Probability

Distributions on Parameters," Department of Energy Computational Science Graduate Fellows' Annual Conference, Washington, DC, June 2006 (poster presentation)

"Comparison of Two Approximation Methods in the Estimation of Growth Rate Distributions in Size-Structured Mosquitofish Populations," SIAM-SEAS Conference, Charleston, SC, March 2005 (oral presentation)

"Distributions of Growth Rates in Size-Structured Mosquitofish Population Models," Journees Jeunes, Paris, France, March 2004 (oral presentation)

D. WORKSHOPS

Genomes to Global Health: Modeling of Infectious Diseases, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, September 2004

SAMSI/CRSC Undergraduate Workshop, North Carolina State University, Raleigh, NC, June 2004

Mathematics Meets Biology: Epidemics, Data Fitting, and Chaos, MAA Prep Workshop, University of Louisiana at Lafayette, Lafayette, LA, May 2004

Data Mining and Machine Learning, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, September 2003

2003 Industrial Mathematics Modeling Workshop for Graduate Students, Center for Research in Scientific Computation, North Carolina State University, Raleigh, NC, July 2003