

# Stacey Elizabeth Chastain

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## EDUCATION

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| <b>Doctorate</b> , Mathematics, University of Florida<br>Admitted to Candidacy, Dec 1997 | May 2000 |
| <b>Master of Science</b> , Mathematics, University of Florida                            | May 1995 |
| <b>Bachelor of Science</b> , Mathematics, University of Florida                          | May 1993 |

## RESEARCH INTERESTS

### Partial Differential Equations

- Geometric Flows: Existence, uniqueness and regularity of harmonic maps and H-systems.
- PDE Based Image Processing: Analysis and implementation of image processing models used for image enhancement and edge detection. These models involve various tools such as anisotropic diffusion and neural networks.

## PRESENTATIONS and PROFESSIONAL ACTIVITIES

- *Diffusion Tensor and Continuous Approach of Neural Networks in Image Restoration*, talk to be given at the Joint Mathematics Meeting, Washington, DC, Jan 2000.
- *The Existence and Behavior of Singularities of Solutions to the Flow of H-Systems*, talk given at the Southeastern Regional Conference on Differential Equations, Richmond, VA, Oct 1999.
- Industrial Mathematics Modeling Workshop for Graduate Students Participant, Center for Research in Scientific Computation, Raleigh, NC, July 1999.
- *The Existence of Solutions to the Flow of H-Systems*, talk given at the 4th Mississippi State Conference on Differential Equations, Mississippi State University, May 1999.
- *TA Empowerment: Establishing Appropriate Authority in the Classroom*, an invited group presentation at 6th National Conference on the Education and Employment of Graduate Teaching Assistants, Minneapolis, MN, Nov 1997.
- *Making Math Courses Interesting for Non-Math Majors*, an invited talk at the University of Florida Teaching Assistants' Training Session, Office of Instructional Resources, Aug 1996.
- Regular speaker in the University of Florida PDE Working Seminar, Jan 1996–present.

## PAPERS

- *The Existence and Behavior of Singularities of Solutions to the Flow of H-systems*, with Y. Chen, submitted to the Transactions of the American Mathematical Society.
- *Diffusion Tensor and Continuous Approach of Neural Networks in Image Restoration*, with Y. Chen, submitted to Journal of Visual Communication and Image Representation.

## HONORS

- UF Graduate School - Maurice T. Coffin Holmes Endowed Scholar, Summer 1999.
- UF President's Recognition for Outstanding Contributions to the University, April 1999.
- Member of Golden Key National Honor Society

## TEACHING EXPERIENCE

- **Graduate Teaching Assistant, University of Florida** Aug 1993–present  
**Department of Mathematics**

Responsible for all course duties including creating course policy, writing lesson plans and conducting discussions and lectures. Matlab, Maple and the TI-85 calculator were sometimes used as tools in teaching. Lecture sizes range from 15 to 200 students.

## COURSES TAUGHT

Mathematics for Elementary School Teachers	Differential Equations
Fundamentals of Mathematics	Calculus I
College Algebra	Calculus II
Trigonometry	Calculus III
Precalculus	

## TEACHING AWARDS

- Teaching Leadership Award (National Award), Nov 1997.
- UF Graduate Student Teaching Award (University-wide Award), April 1996.
- UF Mathematics Department Certificate of Excellence in Teaching, March 1996.
- UF Mathematics Department Certificate of Merit in Teaching, March 1995.

## UNIVERSITY SERVICE

- Student Representative to the UF Math Department Graduate Committee, Fall 1999.
- UF Graduate Student Senator, 1998–1999.
- Charter Member of Association of Graduate Student Organizations, Aug 1998.
- Treasurer of the UF Graduate Student Council, 1997-1998.
- UF Graduate Student Research Forum and Orientation Committee Members, 1997-1999.
- *Classroom Empowerment* group facilitator at the University of Florida Teaching Assistants' Training Session, Office of Instructional Resources, Aug 1997 and Aug. 1998.
- Mathematics Department Representative of the UF Grad Student Council, May 1995–Aug 1997.
- Graduate Computer Committee Volunteer for the UF Math Department, Aug 1996 - Aug 1998.
- American Mathematical Society Member, Association for Women in Mathematics Member, and UF Noetherian Ring Member.

## PROGRAMMING ENVIRONMENTS and LANGUAGES

IBM-PC	UNIX	MS-DOS	C
Fortran	T <sub>E</sub> X	Matlab	Maple