

# Jennifer L. Wightman

## Contact Information

---

Department of Mathematics and Statistics  
Coastal Carolina University  
P.O. Box 261954  
Conway, SC 29528

**Phone:** 843-349-6465  
**Fax:** 843-349-2344  
**Email:** wightman@coastal.edu  
**Web Page:** ww2.coastal.edu/wightman

## Education

---

**Ph.D., Rice University**, Houston, TX, January 2005

Major: Computational and Applied Mathematics

Thesis: *Approximation and Computation of the Solution to the Magnetosphere-Ionosphere Coupling Equation via a Mixed Formulation*

**M.A., Rice University**, Houston, TX, May 2002

Major: Computational and Applied Mathematics

**B.A., Southwestern University**, Georgetown, TX, May 1999

Major: Mathematics; Minor: Architecture; Graduated *magna cum laude*

## Teaching Experience

---

Coastal Carolina University, Conway, SC	Assistant Professor	2005–present
Rice University, Houston, TX	Part-time Instructor	Fall 2003, AY 2004–2005
Rice University, Houston, TX	Teaching Assistant	Fall 2000, Fall 2001

## Research Experience

---

Rice University, Houston, TX	Research Assistant	2000–2005
Los Alamos National Laboratory, NM	Graduate Research Assistant	July 2001, Summer 2002

## Research Interests and Skills

---

**Research Interests:** numerical solution of PDEs, finite element method, frames and wavelets, scientific computing.

**Platforms Used:** Unix, Windows, and Mac OS X.

**Programming Skills:** proficient in Fortran 90, HTML, Latex, Matlab; familiar with C++, Maple, Mathematica, MPI.

## Fellowships and Awards Received

---

2006–07 Project NExT Fellow

Phi Beta Kappa National Honor Society, inducted May 1999

Alpha Chi National Honor Society, inducted May 1998

National Merit Scholar, 1995

## Publications and Grant Proposals

---

- Chad R. Bhatti and Jennifer L. Wightman, “Optimal Process Parameters Under LINEX Loss Function With General Input Quality Characteristic”, *Quality and Quantity*, submitted September 2007.
- Petr Klouček, Danny C. Sorensen, and Jennifer L. Wightman, “The Approximation and Computation of a Basis of the Trace Space  $H^{1/2}$ ”, *Springer Journal of Scientific Computing*, vol. 31, num. 3, June 2007.
- “REU in Frames with Applications to Linear Coding and Graph Theory”; PI James Solazzo and Co-PI Jennifer Wightman; submitted August 2006, not funded.
- “Development of a course in Mathematical Modeling with MATLAB”, CCU Internal Grant with stipend for student assistant, funded Summer 2006.

## Conferences and Presentations

---

- MathFest, San Jose, CA, August 2006  
Attended Project NExT sessions.
- Joint Mathematics Meeting, New Orleans, LA, January 2007  
*Presentation*: “Introducing Mathematical Discussion in a Modeling Course with a Mythbusters Episode”
- MathFest, Knoxville, TN, August 2006  
Attended Project NExT sessions.
- Southeastern Section Meeting of the MAA, Auburn, AL, March 2006  
*Presentation*: “Using the Finite Element Approximation of Steklov Eigenfunctions to Solve the Laplace Equation Efficiently with Multiple Boundary Data”
- Joint Mathematics Meeting, San Antonio, TX, January 2006  
*Presentation*: “Using the Finite Element Approximation of Steklov Eigenfunctions to Solve the Laplace Equation Efficiently with Multiple Boundary Data”
- Joint Mathematics Meeting, Atlanta, GA, January 2005  
Attended the minicourse “Bridging the Gap Between Mathematics and the Physical Sciences” by T. Dray.
- Faculty Horizons, University of Maryland, Baltimore County, August 2004  
Conference funded by the NSF Advance Program and designed to promote women as successful tenure-track faculty members in science, technology, engineering, and mathematics fields.
- Joint Mathematics Meeting, Phoenix, AZ, January 2004  
Attended the minicourse “Getting Students Involved in Undergraduate Research” by J. Gallian and A. Higgins.
- Geospace Environment Modeling (GEM), Snowmass, CO, June 2000–2003  
*Posters*: “Rough Finite Element Solver for the Magnetosphere-Ionosphere Coupling Equation” in 2001 and “Coupling of Fluid and Kinetic Models in a One-Dimensional Domain” in 2002.
- International Conference on Plasma Physics (ICPP), Sydney, Australia, July 2002  
*Poster*: “Coupling of Fluid and Kinetic Models in a One-Dimensional Domain”
- Consortium in Space Weather Modeling (CISM), Boston University, August 2001

## Seminar Talks

---

- “Project NExT: New Experiences in Teaching”, CCU Department Seminar, September 7, 2007.
- “Revolutions in Mathematical History: From Zero to Infinity”, presented with Pi Mu Epsilon students A. Bettinger, A. Franklin, and T. Whitt at Celebration of Inquiry, a CCU internal conference, February 2007.
- “The Singular Value Decomposition and Image Compression”, CCU Department Seminar, November 2006.
- “Using Population Models to Investigate Changes in the U.S. Demographic Over the 21st Century”, presented with J. Solazzo and S. Webb at Celebration of Inquiry, a CCU internal conference, February 2006.
- “Analyzing Simple Truss Models Using Basic Linear Algebra”, CCU Department Seminar, September 2005.
- “Summary of the Faculty Horizons Workshop”, Graduate Student Seminar, September 2004.
- “A Finite Element Approximation for the RCM Coupling Equation”, Graduate Student Seminar, February 2004.
- “The Summer Internship Experience: Making the Most of Your Summer”, presented with A. Comas and A. Padula, Graduate Student Seminar, January 2003.

## Courses Taught

---

- College Algebra, 2 sections at Coastal Carolina University
- PreCalculus, 3 sections at Coastal Carolina University
- Calculus I, 1 section at Rice University, 3 sections at Coastal Carolina University
- Calculus II, 1 section at Rice University
- Modeling Using MATLAB (with lab), 2 sections at Coastal Carolina University
- Differential Equations, 3 sections at Coastal Carolina University
- Matrix Analysis, 1 section at Rice University
- Numerical Methods, 2 sections at Coastal Carolina University

## Professional Service

---

- University Core Curriculum Committee, Coastal Carolina University, Fall 2007
- Advisor for Mathematics Honor Society Pi Mu Epsilon, Coastal Carolina University, Fall 2006–present
- Academic Advising for Mathematics Majors and Minors, Coastal Carolina University, Fall 2005–present
- Webmaster for the Department of Mathematics and Statistics, Coastal Carolina University, Fall 2005–present
- Department Curriculum Committee, Coastal Carolina University, Fall 2005–present
- Department Computing Committee, Coastal Carolina University, Spring 2006–present
- External Member of Marine Science Search Committee, Coastal Carolina University, Spring 2007
- Lecturer Search Committee, Coastal Carolina University, Spring 2006

- Poster Judge at the Southeast Section Meeting of MAA and SIAM, Auburn University, March 2006
- Reader for the COMAP High School Modeling Contest, Francis Marion University, December 2005
- Graduate Representative on the Admissions Committee, Rice University, Spring 2002

## References

---

Dr. Petr Klouček	Texas Learning and Computational Center University of Houston kloucek@mac.com
Dr. Prashant Sangiry	Department of Mathematics and Statistics Coastal Carolina University sangirp@coastal.edu
Dr. James Solazzo	Department of Mathematics and Statistics Coastal Carolina University jsolazzo@coastal.edu
Dr. William W. Symes	Department of Computational and Applied Mathematics Rice University symes@caam.rice.edu
Dr. Richard A. Tapia	Department of Computational and Applied Mathematics Rice University rat@caam.rice.edu