Curriculum Vitae

Yanzhao Cao

Department of Math & Stat.,Auburn University
Auburn, AL 36849

EDUCATION:

	Virginia Tech,	Ph.D. Mathematics
		Thesis advisor: Max D. Gunzburger
	Jilin University,	M.S. Mathematics
		Research area: Numerical analysis for PDEs
	Jilin University, (China)	B.S. Mathematics
		Major: Computational Mathematics

PROFESSIONAL EXPERIENCE:

8/08 - present	Associate Professor, Auburn University
8/96 - 7/08	Assistant and Associate Professor, Florida A& M University
8/2000 - present	Affiliated faculty, School of Computational Sciences, Florida State University
9/86 - 6/91	Lecturer, Heilongjiang University, China

RESEARCH INTEREST:

Numerical Solutions for PDEs and Stochastic PDEs
Numerical Solutions for Integral Equations
Computational Methods in Optimal Control of Fluid Flow; Shape Optimization
Optimal Control Under Uncertainty

CURRENTLY FUNDED RESEARCH PROJECTS:

National Science Foundation (Principal Investigator), Analysis and numerical solutions for stochastic Stokes equations, 2006-2009, ($89,000).
National Science Foundation (Principal Investigator), CMG Collaborative Research: Multiphysics and multiscale modeling of karst aquifers, 2006-2009, ($146,702)
AFOSR (co-Principal Investigator), 2007-2010, ($110,000)

EDITORIAL BOARD:

Associate editor – ***SIAM Journal on Numerical Analysis.***

STUDENTS ADVISED AND DIRECTED:

Undergraduate students:

- Directed numerous undergraduate students' senior research papers.
- Celtric Campbell, REU research, " Ito's calculus and its application to financial derivatives " (2004).
- Ratonya Campton, FL-GA alliance program summer research,"Optimizing treatment for two-strain tuberculosis mathematical model" (2006).
- Cheryl Melton Yusama Mack, Duwayne Jackson, Summer research (2007).

Graduate students and post doctoral associates:

- Song Chen, (graduate student, 2008-)
- Dr. Zeng Chen (co-directed with M. Gunzburger, currently a tenure track assistant professor at Southern New Orleans University).
- Dr. Lin Yin (post doctoral associate, 2005-2006).
- Dr. Bin Wu (post doctoral associate, 2007-2008)
- Gradlyn Scott, Peng Wang (graduate student summer,2007).

REVIEWING AND REFEREEING EXPERIENCE:

Reviewer: **Panelist**, DOE proposals on uncertainty quantification (2008).
Research proposal, Qatar National Science Foundation (2007).
Research proposal, Air Force Office for Scientific Research (2006).
Calculus text book by Anton.
Mathematical Review

Referee:
Journal of Computational Physics
SIAM Journal on Numerical Analysis
SIAM Journal on Control and Optimization
Advances in Computational Mathematics
Applied Numerical Mathematics
Journal of Integral Equations and Applications
Communications in Pure and Applied Analysis
Communications in Computational Physics
Computing
Electronic Journal of Differential Equations
Numerical Methods for Partial Differential Equations
Applied Mathematics and Applications
Discrete and Continuous Dynamical Systems- Series B

SELECTED COMMITTEE SERVICES:
Director, Industrial Mathematics Seminar (2001-2006).
Chair, Master Program Committee (2006–2008).
Member, College Curriculum committee (2006–2008).
Member, University Education Committee (2004-2005).

INVITED TALKS:

On convergence of spectral generalized polynomial chaos expansions, *Applied Mathematics Seminar*, Michigan State University, December, 2008.

Sparse collocation method for stochastic Fredholm equations of second kind, *Minisymposium on Algorithms and Analysis in Uncertainty Quantification*, SIAM Annual Meeting, San Diego, July, 2008.

Fast collocation method for stochastic boundary integral equations, *International Conference on Applied Mathematics: Modeling, Analysis and Computation*, City University of Hong Kong, June 1-5, 2008.

Numerical solutions for partial differential equations under uncertainty, Mathematics Colloquium, Michigan Tech, January, 2008.

On numerical solutions for nonlinear stochastic partial differential equations, *Applied Mathematics Seminar*, Las Vegas, October, 2007.

On numerical solutions for stochastic partial differential equations, *Computational Research Seminar*, Clemson, May, 2007.

Finite element method for stochastic Stokes equations, *Mini-symposium, SIAM Conference on Computational Science & Engineering* , March, 2007.

Uncertainty quantification and applications, *Mathematics Colloquium*, University of Louisiana at Lafayette, October, 2006.

On numerical solutions for stochastic parabolic partial differential equations, *Minisymposium, SIAM Annual Meeting*, Boston, July, 2006.

Stochastic differential equations and their numerical solutions, *lecture series*, Ajou University, South Korea, June, 2006.

Rate of convergence of polynomial chaos expansions and its applications, *International Conference on Scientific Computing*, Beijing, China, June, 2006.

Finite element method for a class of nonlinear stochastic elliptic partial differential equations, *Workshop on Stochastic Differential Equations*, Florida State University, March, 2006.

Stochastic partial differential equations with white noise forcing term, *Seminar*, Virginia Tech, February, 2006.

On optimal control problems under uncertainty, *minisymposium, SIAM Annual Meeting*, New Orleans, 2005.

Numerical solutions for partial differential equations with random coefficients, *SIAM conference on Scientific Computing*, Orlando, Florida, March, 2005.

An efficient Monte Carlo simulation method and its applications to optimal control problems, *Workshop on Emerging Methodologies and Applications in Numerical PDEs*, Florida State University, March, 2004.

Reduction of noise radiation using optimal control method, *Conference On Applied Mathematics*, Dover, Delaware, 2004.

Singularity preserving method for a class of integral equations with singular kernels, *Seminar*, Michigan State University, November, 2002.

Numerical solutions for exact control problems, Seminar, North Dakota State University, 2001.

Numerical solutions for a class of Fredholm integral equations, *Regional NAM Annual Meeting*, Bowie, Maryland, 2001.

Numerical solutions for a class of Volterra integral equations, *Regional NAM Annual Meeting,* Huntsville, Alabama, 2000.

Numerical solutions of exact control problems governed by parabolic partial differential equations, *Conference on Optimal Control: Theory, Algorithms, and Applications*, Gainesville, Florida, 1997.

AWARD:

SIAM Best Student Paper in Session Award, Clemson, 1996.