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ACADEMIC EXPERIENCE

Associate Professor. Department of Mathematics, Marshall University, April 28, 2006 to date.

Assistant Professor. Department of Mathematics, Marshall University, 2002 to 2006.

Mathematics Instructor. Hagerstown Community College, Hagerstown, MD. 1995 to 1996.

Teaching Assistant. Department of Mathematics, West Virginia University, 1993 to 1995 and 1999 to 2002.

EDUCATION

Ph.D., 2002. West Virginia University, Morgantown, WV. Dissertation: *Chebyshev Pseudospectral Methods for Conservation Laws with Source Terms and Applications to Multiphase Flow.*

M.S., 1995. West Virginia University, Morgantown, WV. Mathematics.

B.S., 1993 (1989). Shepherd University, Shepherdstown, WV. Mathematics (Business and Economics).

INDUSTRY/OTHER EXPERIENCE

Scientific Programmer/Analyst. Fuentez Systems Concepts, Martinsburg, WV. Contractor at U.S. Coast Guard Operations Systems Center (1996 to 1999). Lead Software Engineer on the Computer Assisted Search Planning ocean search and rescue project.

REFEREED PUBLICATIONS

Spectral Methods with Postprocessing for Numerical Hyperbolic Heat Transfer.

Numerical Heat Transfer A, 43, no. 7 (2003), p. 717-730.

Chebyshev Super Spectral Viscosity method for a Fluidized Bed Model. Journal of Computational Physics, 186/2, p. 630-651 (2003).**Chebyshev Super Spectral Viscosity method for a 2d Fluidized Bed Model.** International Journal for Numerical Methods in Fluids, vol. 42, p. 249-263 (2003).**The Spectral Signal Processing Suite.** ACM Transactions on Mathematical Software, vol. 29, no. 2, 2003, p. 1-23.**The Method of Characteristics with Applications to Conservation Laws.** Journal of Online Mathematics and Applications, Volume 3, 2003.**Adaptive Radial Basis Function Methods for Time Dependent PDEs.** Applied Numerical Mathematics, vol. 54, no. 1, p.79-94 (2005).**Integrated Multiquadric Radial Basis Function Approximation Methods.** Computers and Mathematics with Applications, vol. 51, no. 8, 2006, p. 1283-1296. (Invited paper for special issue on meshless methods)**DTV filtering as postprocessing for Pseudospectral Methods for Conservation Laws.** Numerical Algorithms, vol. 41, (2006), p. 17-33.**DTV filtering as postprocessing for Radial Basis Function Approximation Methods.** Computers and Mathematics with Applications, vol. 52, p. 1119-1130, 2006.**Chebyshev Interpolation: an interactive tour.** Journal of Online Mathematics and Applications, vol. 6, 2006.**A Study of Symmetric and Asymmetric RBF Collocation methods for Hyperbolic PDEs.** Numerical Methods for Partial Differential Equations, vol. 24, no. 2, p. 670 - 686, 2008.**A Pseudospectral Method with EDF Postprocessing for 2d Hyperbolic Heat Transfer.** Numerical Heat Transfer, Part B: Fundamentals, vol. 54, no. 1, 2008, p. 52-61.**The Matlab Postprocessing Toolkit.** ACM Transactions on Mathematical Software, vol. 37, no. 1, 2009.**Edge Detection Free Postprocessing for Pseudospectral Approximations.** Journal of Scientific Computing, vol. 51, no. 1, p. 49-61, 2009.**A Random Variable Shape Parameter Strategy for RBF Methods.** (with D. Sturgill) Engineering Analysis with Boundary Elements, vol. 33, p. 1239-1245, 2009.**Multiquadric RBF Approximation Methods for the Numerical Solution of PDEs.** (with E. J. Kansa) Tech Science Press. [Research monograph to be published in 2010].

FUNDING

- National Science Foundation Computational Mathematics basic research grant DMS-0609747, \$73,132. *Postprocessing High-Order Approximations of Discontinuous Functions: algorithms and software*. June 15, 2006 to May 31, 2009.
- West Virginia University Summer Research Grant, 2002.
- Marshall University Summer Research Grant: 2003, 2004, 2005, 2006, 2008, 2009.

TALKS AND PRESENTATIONS

- *Radial Basis Functions Methods for Time-Dependent PDEs: Adaptation and Approximation of Discontinuous Functions*. University of Delaware, Applied Mathematics Seminar. November 1, 2005.
- *Topics in Radial Basis Functions Methods for Time-Dependent PDEs*. Brown University, Scientific Computing Seminar. October 27, 2006
- *The Matlab Postprocessing Toolbox*. SIAM Annual Meeting poster session. July, 2008.
- *Postprocessing Pseudospectral and Radial Basis Function Approximation Methods*. The 33rd SIAM Southeastern-Atlantic Section Annual Meeting. April, 2009.

COURSES TAUGHT

- Numerical Partial Differential Equations (2)
- Numerical Linear Algebra (2)
- Numerical Analysis (7)
- Mathematical Software: Matlab and LaTeX (1)
- Honors Seminar - Problem Solving in Science and Engineering (1)
- Ordinary Differential Equations (3)
- Calculus 3 (1)
- Calculus 2 (3)
- Calculus 1 (6)
- College Algebra (12)
- Concepts and Applications of Mathematics (9)
- Individual Study - Numerical Ordinary Differential Equations (1)

TEACHING RELATED ACTIVITIES

- Direction of Master's Thesis - committee chair (3)
- Other Master's Thesis Committees served on (3)
- Senior Capstone projects advised (4)
- Sigma-Xi/NASA undergraduate projects directed (3)
- Undergraduate Research Day at the Capitol posters (2)
- Undergraduate Publications directed (2)
- Joint publications with students (1)
- Course Development
 - Numerical Partial Differential Equations
 - Honors Seminar (Problem Solving in Science and Engineering w/P. Saveliev)
 - Mathematical Software: Matlab and LaTeX

SERVICE

- Department of Mathematics - service
 - Executive Committee (2007 to date)
 - Teaching Assistant Mentor (2007 to date)
 - Mathematics Department Webmaster (2007 to date)
 - Scores Competition Exam Proctor (2007)
 - Math Field Day Exam Grader (2006)
 - Graduate Committee (2004 to 2006)
 - Publicity Committee (2004 to 2006)
 - Chair of Search Committee (2004/2005)
 - Course Committee, MTH 123/201 (2002/2004)
 - Governing Documents Development Committee (2002/2003)
- College of Science - service
 - Grants and Scholarships committee (2007 to date)
 - Web Development committee (2008 to date)

- Marshall University - service
 - Athletic Committee (2007/2008)
 - Journal Replacement Committee (2003/2004)
 - Faculty Senate (2008 to date)
 - Faculty Senate Executive Committee (2008 to date)
- Academic Community - service
 - Peer Review of Journal Articles (28) in journals including: SIAM Journal on Numerical Analysis, Numerical Algorithms, Computers and Mathematics with Applications, Journal of Computational and Applied Mathematics, International Journal for Numerical Methods in Fluids, Journal of Online Mathematics and Applications, Applied Numerical Mathematics.

HONORS AND AWARDS

- 2003-2004 Marshall University Distinguished Artists and Scholars Award.

COMPUTER EXPERIENCE

- Operating systems: Windows xx, Linux, and Unix.
- Languages: Java, C, C++, Fortran, Matlab, Python.
- Software: LaTeX.