CURRICULUM VITAE
HOA NGUYEN

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EMPLOYMENT

- **Assistant Professor,** Mathematics Department, Trinity University, August 2012 to present
- **Part-time Researcher,** Mathematics Department (UBM-IRBM), Trinity University, June 2012 to July 2012
    - Modeling the Cell Biology of the Heat Shock Response of Barley Aleurone Cells

  Collaborators: Dr. Mark Brodl (Biology Department) and undergraduate student Rachael Heineman (Math major), Trinity University
- **Postdoctoral Researcher,** Center for Computational Science, Tulane University, August 2008 to May 2012
    - Effects of small-scale fluid motion on planktonic organisms
    - Computational models of dinoflagellates swimming in a moving fluid
    - Dynamics of flexible fibers suspended in fluids
    - Fluid-structure interaction models of ciliary beating

  Advisor: Dr. Lisa Fauci, Tulane University

EDUCATION

- **Ph.D. in Computational and Applied Mathematics**, Florida State University, April 2008
    - **Dissertation Topic:** "Adaptive Anisotropic Meshes for Steady-State Convection-Dominated Problems"
    - **Advisor:** Dr. Max Gunzburger, Florida State University
- **Master's Degree in Applied Mathematics**, Florida State University, September 2004
- **B.S. in Mathematics and Computer Science** (Double Major with High Honors), Rutgers, The State University of New Jersey, May 2003
- **Undergraduate Student in Mathematics Education**, Ho Chi Minh City Pedagogical University, Vietnam, August 1997 – August 2000

AWARDS AND HONORS

- Travel Grant Award to attend the 7th International Congress on Industrial and Applied Mathematics - ICIAM 2011 in Vancouver, British Columbia, Canada (July 18 – 22, 2011), funded by SIAM.
- Award to present a poster at the 2009 Workshop for Young Researchers in Mathematical Biology, The Ohio State University, OH (August 24 – 26, 2009).
- Award to present a talk at the AWM Workshop in conjunction with the SIAM Annual Meeting, Denver, CO (July 6 – 10, 2009).
- Travel Grant Award to attend the 11th International Congress on Mathematical Education, Monterrey, Mexico (July 6 – 13, 2008), funded by the National Council of Teachers of Mathematics (NCTM) and the National Science Foundation (NSF)
- Graduate Tuition Scholarship (Spring 2008)
- Delores Auzenne Fellowship (2007 – 2008)
- Douglas Peterson Vietnamese Scholarship (2006 – 2007)
- Award to attend the Career Mentoring Workshop for women finishing their Ph.D.'s in mathematics, United States Military Academy, West Point, NY (August 19 – 21, 2007), funded by the MAA/Tensor Foundation and West Point
- University Teaching and Research Assistantship (June 2003 – May 2008)
- PIE (Program for Instructional Excellence) Certificate
- Certified Mentor in the Florida State University 2+2 Distance Learning Initiative

TEACHING INTERESTS

Calculus, mathematical modeling, numerical analysis, differential equations, linear algebra, finite element method, mesh generation, Voronoi diagrams

TEACHING AND MENTORING EXPERIENCE

Teaching website at Tulane *http://www.ccs.tulane.edu/~hnguye4/performance.html*

- ***Solo instructor in Calculus III*** (40 students), Mathematics Department, Tulane University, Fall 2011
- ***Solo instructor in Calculus III*** (22 students), Mathematics Department, Tulane University, Spring 2010
- ***Graduate student research mentoring*****,** Mathematics Department, Tulane University, Summer 2009 (http://www.ccs.tulane.edu/~vchellam/research.html)
- ***Solo instructor in Long Calculus I*** (72 students), Mathematics Department, Tulane University, Fall 2009

Teaching website at Florida State *http://people.sc.fsu.edu/~hnguyen/performance.html*

- ***Solo instructor in Calculus I*** (33 students), Mathematics Department, Florida State University, Fall 2007
- ***Solo instructor in Pre-calculus Algebra*** (35 students), Mathematics Department, Florida State University, Fall 2006
- ***Recitation instructor in Pre-calculus Algebra, Calculus for Business and Nonphysical Sciences***, Mathematics Department, Florida State University, Fall 2005, Fall 2006

Other teaching experience

- ***Peer Mentor in Pre-calculus Algebra*** *and* ***Calculus I*****,** Mathematics Department, Rutgers University, Fall 2002, Spring 2003
- ***Summer Internship to teach mathematics courses at local high schools in Vietnam*****,** Mathematics Department, Ho Chi Minh City Pedagogical University, Vietnam, June – July 2000

RESEARCH INTERESTS

- Adaptive mesh generation
- Computational fluid dynamics in mathematical biology

PUBLICATIONS

- H. Nguyen, J. Burkardt, M. Gunzburger, L. Ju, and Y. Saka; *Constrained CVT meshes and a comparison of triangular mesh generators*, Computational Geometry: Theory and Applications, 42, pp. 1-19, 2009.
- H. Nguyen, M. Gunzburger, J. Burkardt, and L. Ju; *Adaptive anisotropic meshing for steady convection-dominated problems*, Computer Methods in Applied Mechanics and Engineering, Vol. 198, Issues 37 – 40, pp. 2964-2981, 2009.
- H. Nguyen, R. Ortiz, R. Cortez, and L. Fauci; *The action of waving cylindrical rings in a viscous fluid*, Journal of Fluid Mechanics, 671, pp 574-586, 2011.
- H. Nguyen, L. Karp-Boss, P. Jumars, and L. Fauci; *Hydrodynamics of spines: a different spin,* Limnology & Oceanography: Fluids & Environments, Vol. 1, pp. 110-119, 2011.

INVITED/CONTRIBUTED TALKS

- "Using Spherical Centroidal Voronoi Tessellations as a Discretization Tool in the Immersed Boundary Method". ICIAM, Vancouver, British Columbia, Canada, July 18 – 22, 2011
- "Centroidal Voronoi Tessellations: Grids from Nature". Research Experiences for Undergraduates (Applied Mathematics and Biostatistics) from Mississippi State University, Tulane University, June 27, 2011

- "Computational work on plankton and dinoflagellates". The Louisiana Universities Marine Consortium (LUMCON), Chauvin, LA, May 14, 2010
- "Fluid Dynamics of Phytoplankton with Spines in Shear Flow". 62nd APS Division of Fluid Dynamics, Minneapolis, MN, November 22 – 24, 2009
- "Effects of small-scale fluid motion on planktonic organisms: how spines can affect fluid/cell interaction". AWM-SIAM Workshop, Denver, CO, July 6 – 7, 2009
- "Centroidal Voronoi Tessellations for Mesh Generation: From Uniform to Anisotropic Adaptive Triangulations". Tulane University Center for Computational Science Seminar Series, New Orleans, LA, April 29, 2008
- "Adaptive Algorithm for Steady-State Convection-Diffusion Equations". 32nd SIAM Southeastern-Atlantic Section Conference, University of Central Florida, FL, March 14 – 15, 2008
- "Dealing with Layers in the Solutions of Stationary Convection-Diffusion Equations". Career Mentoring Workshop for women finishing their Ph.D.'s in mathematics, United States Military Academy, West Point, NY, August 19 – 21, 2007
- "Adaptive Anisotropic Meshes for Steady-State Convection-Dominated Problems". 7th SIAM Conference on Computational Science and Engineering, Costa Mesa, CA, February 19 – 23, 2007
- "Estimating Probability Density from Numeric Samples". Joint meeting of the Southeast MAAA Section and the Southeast Atlantic SIAM Section, Auburn University, AL, March 31 – April 01, 2006
- "Constrained Centroidal Voronoi Tessellations for Meshing". 2005 annual meeting of SIAM, New Orleans, LA, July 11 – 15, 2005
- "Constrained Centroidal Voronoi Tessellations". 5th SIAM Conference on Computational Science and Engineering, Orlando, FL, February 12 – 15, 2005

INVITED POSTER PRESENTATIONS

- "Fluid dynamics of plankton and dinoflagellates". Workshop on Fluid Motion Driven by Immersed Structures, Toronto, Ontario, Canada, August 9 – 13, 2010
- "Fluid dynamics of the dinoflagellate transverse flagellum". Workshop on Fluid dynamics, Analysis, and Numerics 2010, Duke University, Durham, NC, June 28 – 30, 2010
- "Fluid Dynamics of the Dinoflagellate Transverse Flagellum". 2009 Workshop for Young Researchers in Mathematical Biology, Ohio State University, OH, August 24 – 26, 2009
- "Constrained Centroidal Voronoi Tessellations for Uniform Meshing". 2006 SCS Computational Xposition, Florida State University, FL

OTHER RESEARCH EXPERIENCE

- **Graduate Research in Computational and Applied Mathematics,** Florida State University (June 2003 – May 2008)
  - Research website: http://www.scs.fsu.edu/~nguyen/research.html
  - Research areas: Mesh Generation and Numerical Solution of Partial Differential Equations

- **DIMACS Research Experience for Undergraduates Program,** Rutgers University (June 2002 – August 2002)
  - Project website: http://dimax.rutgers.edu/~hnguyen/
  - Project title: Data Classification in High-dimensional Space

SERVICE

- Co-organizer for the Advanced-Graduate-Student Seminar of the Mathematics Department, Florida State University, Fall 2007

LANGUAGES

- Fluent in **English** and **Vietnamese**.

COMPUTER SKILLS

- Matlab, C, Fortran
- Microsoft Word, Powerpoint, Latex, HTML
- Windows, Linux, and Mac OS
- Amira, VisIT (visualization software), Simmetrix (mesh generation software)
- WebAssign (*James Stewart*, Calculus: Early Transcendentals), WileyPLUS (*Hughes-Hallett*, Applied Calculus) and TEC (Tools for Enriching Calculus)

PROFESSIONAL SOCIETIES

- American Physical Society – Division of Fluid Dynamics (APS - DFD)
- Society for Industrial and Applied Mathematics (SIAM)
- Pi Mu Epsilon (the honorary national mathematics society)
- Association for Women in Mathematics (AWM)