**Andreas C. Aristotelous, Ph.D.** **September 11, 2017**

CONTACT INFORMATION

105 Bill of Rights Ln
Downingtown, PA 19335
Faculty Webpage

865-293-7782
aaristotel@wcupa.edu

RESEARCH INTERESTS

- Numerical analysis, numerical Partial Differential Equations (PDE), discontinuous Galerkin (DG) finite element (FE) theory and implementation, error estimates, fast solvers theory and implementation based on multigrid
- Mathematical modeling, mathematical biology, spatiotemporal modeling, hybrid discrete systems, evolutionary games using hybrid discrete systems, agent based modeling, tissue engineering modeling, cancer modeling, dorsal closure modeling, biofilm modeling
- Scientific computing, efficient algorithm design and implementation, adaptive meshing, computational fluid dynamics (CFD)

PROFILE OF EXPERTISE

- Experience in NSF Grant writing acquired at postdoctoral and current appointment. (**Recently awarded NSF grant see grant section for details**)
- Completed extensive coursework in Applied Mathematics, Mathematics, Probability and Computing
- Background in operation research acquired at master's level
- Proven computer coding, programming knowledge, supported by hands-on experience
- Self-motivated and offer the drive and ability to conduct research and work on interdisciplinary group projects that require the expertise of an Applied Mathematician and Computational Scientist
- Involved in undergraduate and graduate student research, in previous and current post
- Currently mentoring two graduate students on two research projects
- Drive for academic program development (experience acquired at current appointment: developed a new graduate course in "Finite Elements"and restructured the existing numerical courses to create the numerical analysis 1,2 series, developed a minor degree program in computational science and a research seminar in computational science and applied mathematics)
- Service to the University and the Department: Member of the faculty hiring committee for the 2016 geometry topology search, member of the department computer cluster committee, elected in the undergraduate curriculum committee etc.
- Involved in education and research outreach programs
- Extensive teaching experience obtained during graduate and postdoctoral appointments and during current appointment

COURSES TAUGHT OR QUALIFIED TO TEACH

- Numerical analysis, numerical PDE, numerical linear algebra, FE, DG-FE, Applied Analysis (undergraduate), Mathematical modeling (in ecology, biology and industry) using ODE and PDE and elements from dynamical systems, ODE, Applied PDE, CFD (undergraduate), Linear Algebra, Advanced Calculus, Calculus Series (willing to teach/develop any other course).

PROFESIONAL EXPERIENCE

**Associate Professor (Tenure-Track)** August 2015 to Present
Department of Mathematics
West Chester University, West Chester, PA
Duties Include:

- Teaching
- Research
- Service

- Active Involvement in the newly developed Applied Mathematics Masters Program

**Research Assistant Professor (*appointment was for* $2+1$*years*)** August 2014 to July 2015
Department of Mathematics
Temple University, Philadelphia, PA
Mentor: Isaac Klapper, Ph.D.
Duties:
- Conducting research:
  - In collaboration with Professors Isaac Klapper, Yury Grabovsky at Temple and the biofilm group at the Center of Biofilm Engineering in Montana on NIH funded project
  - On other new and ongoing independent and collaborative projects
- Teaching:
  - Differential equations with computer lab Math 3046 (full responsibility), Spring 2015
- Participating in the department's activities and presenting in research seminars

**Visiting Assistant Professor** August 2011 to July 2014
Department of Mathematics
Duke University, Durham, NC
Mentor: Richard Durrett, Ph.D.
- Conducting research:
  - In collaboration with Professor Richard Durrett partially supported by his NIH grant.
  - In collaboration with Professor Stephanos Venakides
- Teaching:
  - Multivariable calculus for economists MTH 202, Spring 2014
  - Multivariable calculus MTH 212, Fall 2012
  - Handle all aspects of course management, including lesson and lecture planning
  - Creating, administering and grading examinations
  - Holding office hours and assisting students with questions
  - Assigning final grades
- Participating in the department's activities and presenting in research seminars

**Postdoctoral Fellow** (joint with Duke Mathematics Department) August 2011 to August 2013
Statistical and Applied Mathematical Sciences Institute (SAMSI)
Research Triangle Park, NC
Academic Mentor: Mansoor A. Haider, Ph.D.
Administrative Mentor: Ezra Miller, Ph.D.
- Institutes thematic year (2011-2012) on Uncertainty Quantification (UQ)
- Conducting research supported by NSF grant to SAMSI:
  - In collaboration with Professor Mansoor Haider of NCSU
- Service:
  - Attending and helping in the organization of various SAMSI research and educational outreach workshops on UQ
  - Giving lectures at research oriented working groups derived from the UQ workshops
  - Attending and presenting talks at the Institute's seminars and Colloquial
  - Serving as working group (WG) webmaster for the stochastic to deterministic and back WG:
    - WG duties involve handling group memberships, arranging Webex meetings, and maintaining the working group's web page
- Student Mentoring:
  - Interdisciplinary Workshop for Undergraduate Students, SAMSI, May 14-18 2012
  - Faculty mentor for the Industrial Math/Stat Modeling (IMSM) Workshop for Graduate Students, July 16-24 2012

**Teaching Associate** August 2004 to August 2011
Department of Mathematics
The University of Tennessee, Knoxville, TN
Duties:
- Teaching Basic Calculus, College Algebra, Algebraic Reasoning, Calculus I & II and Precalculus to undergraduate students
- Handling all aspects of course management, including lesson and lecture planning

- Creating, administering and grading examinations
- Holding office hours and assisting students with questions
- Assigning final grades
- Undergraduate Mentoring:
  - Participating as a teaching assistant in the NSF funded research for undergraduates program at the University of Tennessee in summer 2008

**Teaching Assistant** August 2001 to August 2004
Department of Mathematical Sciences
Florida Institute of Technology, Melbourne, FL
Duties:
- Teaching recitations to undergraduates for the entire sequence of Calculus, Differential Equations and Linear Algebra
- Handling the following aspects of course management: recitation lecture planning, grading examinations
- Holding office hours and assisting students with questions

**Second Lieutenant (artillery corp)** July 1995 to September 1997
Cyprus National Guard, Cyprus
Duties:
- Training soldiers and teaching various topics of military nature
- Directing and collaborating with groups composed of hundreds of units of various expertise

## Professional Affiliations

American Mathematical Society
Society for Industrial and Applied Mathematics
Society for Mathematical Biology

## Education

**The University of Tennessee**, Knoxville, TN

Ph.D., Mathematics, August 2011

- Dissertation Title: *Adaptive Discontinuous Galerkin Finite Element Methods for a Diffuse Interface Model of Biological Growth*
- Advisors: Ohannes A. Karakashian, Ph.D. and Steven M. Wise, Ph.D.
- Minor at the Ph.D. level: Interdisciplinary Graduate Minor in Computational Science (IGMCS)

**Florida Institute of Technology**, Melbourne, FL

M.S., Applied Mathematics, May 2003

**University of Cyprus**, Nicosia, Cyprus

B.S., Mathematics, July 2001

- Emphasis in Applied Mathematics

**Greek Artillery School**, Nea Peramos Attikis, Greece

Military Diploma, December 1995

## NSF Grant Proposals

1. As only PI: DMS 1720226 - Programs: computational mathematics & mathematical Biology (Duration: July 1st, 2017 – June 30, 2020)
   Title: Computational Methods for Heterogeneous Soft Living Materials.
   Continuing grant: Currently awarded $65,351.00, award expected to total $100,115.00 dollars.
   *Status:* **Awarded**.
   *Comment: This is not an RUI.*

2. As co-PI (*PI was Professor Isaac Klapper, since my position at Temple was not permitting to serve as PI*): DMS - computational mathematics (December 15, 2014) Computational Methods for Soft Living Materials. *Status* Not Approved.

## Internal Grant Proposals

1. As PI: CSM Graduate Assistantship Proposal. *Status* **Approved** on June 27 2017. I was awarded funds for the partial support of one GA (Mr. Benjamin Plumridge) for the academic year 2017-18. The student will work on topics related to numerical solution of partial differential equations. Testing various schemes for the NLS equation and also will continue his work on developing computational model for dorsal closure

2. As PI: CAS Graduate Assistantship Proposal (April 15, 2016) I have proposed three different possible project: a) Modeling Dorsal Closure, b) Investigating Biofilm Growth Instability, c) Theoretical analysis of the numerical solution of a 2D incompressible flow in the vorticity stream-function formulation using high-order discontinuous Galerkin method within the DG-derivatives framework. *Status* **Approved**. I was awarded funds for the partial support of two master level students for the academic year 2016-17. One of the students is working on project (a) and the second on project (b).

## Publications

1. A. C. Aristotelous, Grabovsky, Y. & Klapper, I. (2017) Heterogeneity Formation Within Biofilm Systems. *European Journal of Appied Mathematics* **submitted, in review**.

2. A. C. Aristotelous & N. C. Papanicolaou (2017) A Numerical Study of Biofilm Growth in a Microgravity Environment. *AMiTaNS 2017 Proceedings Published by American Institute of Physics (AIP)* **to appear**.

3. Daniel P. Kiehart, Janice M. Crawford, Andreas C. Aristotelous, Stephanos Venakides & Glenn S. Edwards (2017) Cell Sheet Morphogenesis: Dorsal Closure in Drosophila Melanogaster as a Model System. *Annual Review of Cellular and Developmental Biology* **submitted, in review**.

4. Aristotelous, A. C. & Papanicolaou, N. C. (2016) A Discontinuous Galerkin Method for Unsteady Two-dimensional Convective Flows. *American Institute of Physics (AIP)* Conference Proceedings, **1773**, 110002.

5. Papanicolaou, N. C. & Aristotelous, A. C. (2015) High-Order Discontinuous Galerkin Methods for Coupled Thermoconvective Flows under Gravity Modulation. *American Institute of Physics (AIP)* Conference Proceedings, **1684**, 090010.

6. Aristotelous, A. C., Klapper, I., Grabovsky, Y., Pabst, B., Pitts, B. & Stewart, P. S. (2015) Diffusive Transport Through Host-Biofilm Systems. *Phys. Rev. E*, **92-2**, 022703.

7. Aristotelous, A. C., Karakashian, O. A. & Wise, S. M. (2015) Adaptive, Second-Order in Time, Primitive-Variable Discontinuous Galerkin Schemes for a Cahn-Hilliard Equation with a Mass Source. *IMA J. Numer. Anal.* **35-3**, 1167–1198.

8. Aristotelous, A. C. & Durrett, R. (2014) Fingering in Stochastic Growth Models. *Experimental Mathematics*, **23-4**, 465–474

9. Aristotelous, A. C. & Haider, M. A. (2014) Evaluation of Diffusive Transport and Cellular Uptake of Nutrients in Tissue Engineered Constructs using a Hybrid Discrete Model. *Processes: Special Issue "Design of bioreactor systems for tissue engineering"* **2-2**, 333–344.

10. Aristotelous, A. C. & Durrett, R. (2014) Chemical Evolutionary Games. *Theoretical Population Biology*, **93**, 1–13.

11. Aristotelous, A. C. & Haider, M. A. (2014) Use of Hybrid Discrete Cellular Models for Identification of Macroscopic Nutrient Loss in Reaction-Diffusion Models of Tissues. *Int. J. Numer. Meth. Biomed. Engng.*, **30-8**,767–780.

12. Aristotelous, A. C., Karakashian, O. A. & Wise, S. M. (2013) A Mixed Discontinuous Galerkin, Convex Splitting Scheme for a Modified Cahn-Hilliard Equation and an Efficient Nonlinear Multigrid Solver. *DCDS-B*, **18-9**, 2211–2238.

13. Aristotelous, A. C. (2011) Adaptive Discontinuous Galerkin Finite Element Methods for a Diffuse Interface Model of Biological Growth. *PhD Thesis*, The University of Tennessee, U.S.A.

**Referee Reviewer**

- Journal of Scientific Computing (JOMP)
- Journal of Computational Physics (JCP)
- Journal of Computational and Applied Mathematics (J. Comput. Appl. Math.)
- International Journal for Numerical Methods in Engineering (Int. J. Numer. Meth. Engng) (*Certificate:* 29 June 2017 **awarded** a certificate for my services in IJMNE for 2016)
- International Journal of Computer Mathematics (IJCM)
- Australasian Physical & Engineering Sciences in Medicine (APES)

**Present and Past Research Projects**

With Professor Isaac Klapper, TEMPLE and Center of Biofilm Engineering (CBE):

- Study of oxygen transport and uptake through layers comprised of multiple biofilm colonies by using hybrid discrete continuous (HDC) models.
- Also we are working in determining how biofilm spatial heterogeneity affects flux of substrate. In particular, we suggest that denser biomass encourages increased substrate flux – substrate levels are further reduced for increased biomaterial which increases substrate gradients which leads to increased flux. Thus a flux-driven heterogeneity instability might be expected for a system for which growth rate is an increasing function of substrate usage. (*see submitted paper*)
- Working on understanding the effects neutrophil-predation on biofilm in the above system

With Assistant Professor Thomas Lewis UNC Greensboro:

- We introduce a high-order discontinuous Galerkin method for two dimensional incompressible flow in the vorticity stream-function formulation using the recently developed (by the collaborator) DG-derivatives framework. We strive to theoretically show the stability of our explicit in time scheme with a non-periodic vorticity boundary condition, a part where other authors were unable to obtain a stability estimate. Also we strive to demonstrate the extension of our formulation in 3-D
- We are also working in developing an efficient algorithm for the implementation of our method

With Associate Professor Nectarios Papanicolaou University of Nicosia, Cyprus:

- In a previous work [AMiTaNS15] we developed a High-Order Symmetric Interior Penalty (SIP) Discontinuous Galerkin (DG) Finite Element Method (FEM) to investigate convective flows in a rectangular cavity subject to gravity modulation. We expanded the framework to two spatial dimensions in [AMiTaNS16].
- We are working in modeling the effects of gravity in biofilm growth. (*see relevant poster presentation and publication*)

With Professors Stephanos Venakides, DUKE:

- Working on numerical solution to the semiclassical limit focusing Schrödinger equation for small Planck constant

With Professors Stephanos Venakides, Daniel Kiehart, Glenn Edwards and the Kiehart lab, DUKE:

- Developing individual based models to investigate the various different mechanisms governing the dorsal closure in the drosophila embryo by using information coming from experimental observations
- Working on review publications on various aspects of modeling dorsal closure

With Professors Ohannes Karakashian and Steven Wise, UTk:

- Working on topics related to my NSF grant.
- Developing *a-posteriori* error estimate for the Schrödinger equation with cubic nonlinearity
- Discontinuous Galerkin Finite Element methods for the numerical solution of various Cahn-Hilliard type equations
- Work involves development, convergence analysis (error estimates) and implementation of numerical schemes in primitive variable and mixed formulations, utilizing adaptive mesh refinement and fast linear and nonlinear system solvers

With Professor Richard Durrett, (while at DUKE):

- Developing stochastic spatial models of Hybrid discrete and cellular automata lattice based type to study the evolution of species under competition with aim to understand the differences arising from the modeling approaches
- Utilizing stochastic hybrid discrete cellular automata models to study the mechanism leading to fingering behavior in modeling tumor growth

With Professor Mansoor Haider, NCSU (at SAMSI):

- Developing reaction diffusion models incorporating cell effects via a volume fraction and models incorporating cell effects explicitly via the use of off lattice hybrid discrete systems to establish constitutive relations regarding nutrient uptake and transport in tissue
- Using hybrid discrete systems to study the impact of cell arrangement and nutrient absorption rates on nutrient access in cartilage tissue engineered constructs

**Ph.D. Work**

- My dissertation concentrates on the application of adaptive Discontinuous Galerkin Finite Element (DGFE) methods for the numerical solution of biomedical problems and in particular on Cahn-Hilliard type equations as models for brain cancer tumors. My PhD research was partially funded through my PhD adviser's NSF grant (DMS-0811314-Karakashian)

**IGMCS Minor Project Description, (course CS594, spring 2009)**

- Worked on an individual project involving parallel implementation of various numerical integration methods. I have developed and implemented parallel codes, for various composite rules (Trapezium, Simpson, Midpoint) and Gaussian Quadrature, and have compared my results with their serial versions in one and two dimensions. I have demonstrated amongst other results scalability of the algorithms

**Mini Symposia Organized and Sessions Chaired**

- SIAM Conference on Analysis of PDE, Baltimore, MD, Dec 9, 2017
  Duties: Chair of the CP3 Numerical Methods session

- AMS Sectional Meeting, North Carolina State University, Nov12-13, 2016
  Organizer of a mini symposium with Dr. Thomas Lewis of UNCG
  Mini Symposium Title: Advances in Numerical Methods for Partial Differential Equations
  Duties: Organizer and Sessions Chair

- SMB 2013 Annual Meeting, Arizona State University, June 10-13, 2013
  Organizer of a mini symposium
  Mini Symposium Title: Hybrid Models and Methodologies for Tissues with Active Biological Constituents
  Duties: Organizer and Session Chair

- SIAM 2012 Annual Meeting, Minneapolis, July 9-11, 2012
  Duties: Chair of the numerical PDE III session

**Invited Talks**

- University of North Carolina, Greensboro
  Colloquium, May 10, 2017
  Talk Title: Numerical Solution of Diffuse Interface Models

- The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, July 1 - July 5, 2016, Orlando, Florida, USA
  Special Session Title: Applications of mathematical modeling in developmental and cell biology
  Talk Title: Modeling Dorsal Closure

- Haverford & Bryn Mawr joint Math Colloquium, Bryn Mawr College, PA, December 7, 2015
  Talk Title: Modeling Heterogenous Biofilms

- SMB 2015 Annual Meeting, Georgia State University, Atlanta, July 2, 2015
  Mini Symposium Title: Modeling and Simulation of the Biomechanics of Heterogeneous Biofilms
  Talk Title: Modeling Heterogenous Biofilms

- SMB 2015 Annual Meeting, Georgia State University, Atlanta, June 30, 2015
  Mini Symposium Title: Multiscale Models of Biophysical and Biomechanical Effects in Soft Tissue
  Talk Title: Hybrid Discrete Models of Biofilm Growth

- University of Alabama, Huntsville, AL
  AMS Meeting: Special session on " Recent Advances in Numerical Methods for Nonlinear Partial Differential Equations, IV", March 29 2015
  Talk Title: Discontinuous Galerkin Methods for Generalized Cahn-Hilliard Equations

- East Carolina University, Greenville, NC
  Mathematics Seminar, March 16 2015
  Talk Title: Discontinuous Galerkin Finite Elements for Cahn-Hilliard Models and Hybrid Discrete Systems

- West Chester University, West Chester, PA
  Mathematics Seminar, February 19 2015
  Talk Title: Discontinuous Galerkin Finite Elements for Cahn-Hilliard Type Models

- University of North Carolina, Greensboro, NC
  AMS Meeting: Special session on "Discontinuous Galerkin Finite Element Methods", November 2014
  Talk Title: Second Order in Time, Adaptive Discontinuous Galerkin Methods for a Cahn-Hilliard Equation with a Mass Source

- University of Tennessee, Knoxville, TN
  AMS Meeting: Minisymposium on "Discontinuous Galerkin Finite Element Methods for Partial Differential Equations", March 2014
  Talk Title: Second Order in Time, Adaptive Discontinuous Galerkin Methods for a Cahn-Hilliard Equation with a Mass Source

- Courant Institute of Mathematical Sciences, New York University, New York, NY
  Seminar, March 2014
  Talk Title: Discontinuous Galerkin Finite Element Schemes for Cahn-Hilliard Type Models and Hybrid Discrete Systems

- George Washington University, Washington DC
  Applied Mathematics Seminar, January 2014
  Talk Title: Discontinuous Galerkin Finite Element Methods for Cahn-Hilliard Type Models

- University of North Carolina, Greensboro
  Applied Mathematics Seminar, Nov 2013
  Talk Title: Discontinuous Galerkin Methods for the Modified Cahn-Hilliard Equation

- SAMSI, North Carolina, January 2011
  Talk Title: Towards an adaptive Discontinuous Galerkin Finite Element method for a brain tumor model

## Selected Contributed Talks

- SIAM Conference on Analysis of PDE, Baltimore, MD, Dec 9-12, 2017
  Talk Title: Discontinuous Galerkin Finite Element Methods for the Solution of Diffuse Interface Models

- WCUPA, Applied Mathematics and Computational Science Seminar, PA, Feb 15, 2017
  Talk Title: Diffuse Interface Models and their Numerical Solution

- West Chester University Mathematics Colloquium, West Chester, PA, December 2, 2015
  Talk Title: Modeling Heterogenous Biofilms
- Applied Mathematics and Scientific Computing Seminar, Temple University, Philadelphia, September 10 2014
  Talk Title: Discontinuous Galerkin Finite Element Methods for Cahn-Hilliard Type Models
- Joint Mathematics Meetings, Baltimore, MD, January 2014
  Talk Title: Discontinuous Galerkin Methods for a Modified Cahn-Hilliard Equation and a Diffuse Interface Model of Tumor Growth
- SEARCDE 2013, The University of Tennessee, Knoxville, September 21-22 2013
  Talk Title: Discontinuous Galerkin Methods for the Modified Cahn-Hilliard Equation
- SMB 2013 Annual Meeting, Arizona State University, Tempe, June 10-13, 2013
  Talk Title: Methodologies for Bridging Cell and Tissue Scale Models for Nutrient Transport and Uptake in Articular Cartilage
- SAMSI, Postdoctoral Fellow Seminar, March 2013
  Talk Title: Methodologies for Bridging Cell and Tissue Scale Models for Nutrient Transport and Uptake in Articular Cartilage
- SIAM 2012 Annual Meeting, Minneapolis, July 9-11, 2012
  Talk Title: Multigrid, Adaptive Discontinuous Galerkin Methods for the Cahn-Hilliard Equation and Diffuse Interface Model of Tumor Growth
- SAMSI, Postdoctoral Fellow Seminar, April 2012
  Talk Title: Bridging Cell and Tissue Scale Models for Nutrient Diffusion and Uptake in Articular Cartilage
- SAMSI, Undergraduate Workshop, February 24-25, 2012
  Talk Title: From Richardson's Model to Cancer Growth Simulation
- SAMSI, Postdoctoral Fellow Seminar, November 2011
  Talk Title: Towards A Multiscale Agent Based Cartilage Regeneration Model
- University of Tennessee, Applied Mathematics Seminar, November 2009
  Talk Title: The Partition of Unity Method, by Babuska and Melenk (1997)
- University of Tennessee, Applied Mathematics Seminar, November 2008
  Talk Title: Nitsche's Penalty Method, (original paper in German) by Nitsche J. (1971)

## Poster Presentations

- SIAM MPE 2016 Philadelphia, PA, September 30 - October 2, 2016
  Poster Presentation: A Numerical Study of Biofilm Growth in a Microgravity Environment
  Was one of the winners of the poster prize competition.
- SIAM SEAS 2013 The University of Tennessee Knoxville and Oak Ridge National Lab, March 22-24 2013
  Poster Presentation: Second Order in Time, Primitive Variable Adaptive Discontinuous Galerkin Methods for a Modified Cahn-Hilliard Equation

- SIAM Conference on Life Sciences (LS12), San Diego, August 7-10, 2012
  Poster Title: Bridging Cell and Tissue Scale Models for Nutrient Diffusion and Uptake in Articular Cartilage

- The 2012 John H.Barrett Lectures, The University of Tennessee, Knoxville, May 9-11 2012
  *Recent Developments in Discontinuous Galerkin Finite Element Methods for Partial Differential Equation*
  Poster Title: Mixed Discontinuous Galerkin Scheme for a Modified Cahn-Hilliard Equation

## Conference and Workshops Participation

- Center for Biofilm Engineering, Bozeman, Montana, July 14–17, 2014
  Biofilm Meeting

- SAMSI, North Carolina, March 22-23, 2012
  UQ: Models with Complex and Uncertain Domains

- SAMSI, North Carolina, November 9-10, 2011
  High Dimensional Approximation for Uncertainty Quantification

- SAMSI, North Carolina, October 3-5, 2011
  Scientific Problems for the Smart Grid

- SAMSI, North Carolina, September 21-23, 2011
  UQ: Geosciences Applications Opening Workshop

- SAMSI, North Carolina, September 19-21, 2011
  UQ: Engineering and Renewable Energy Opening Workshop

- SAMSI, North Carolina, September 7-10, 2011
  UQ: Methodology Opening Workshop

- NIMBioS, Tennessee, January 19-21, 2011
  Investigative workshop: Solid Tumor Modeling

- Joint Mathematics Meeting, New Orleans LA, January 6-9, 2011

- Finite Element Circus, The University of Tennessee, October 16, 2009

## Education and Research Outreach Workshops Contribution

- Recommended my current graduate student Mr. Benjamin Plumridge for the prestigious Industrial Math/Stat Modeling Workshop for Graduate Students: July 16-26, 2017
  Held in SAS Hall on the campus of North Carolina State University
  Status: Accepted and participated

- WCU, West Chester, PA, April 12, 2017
  Annual Integration Bee
  Duty: Assisted the organization and served as Judge

- NCSU, North Carolina, July 16-24, 2012
  Industrial Math/Stat Modeling Workshop for Graduate Students
  Project Title: Multi-Constraint Path Planning for a Network of Autonomous Robots
  Problem Presenter: John Peach, MIT Lincoln Laboratory
  Duty: Faculty Mentor

- SAMSI, North Carolina, May 14-18 2012
  Interdisciplinary Workshop for Undergraduate Students
  Lecture Title: Ordinary Differential Equations
  Duties: Mentoring and Organization/Preparation

- SAMSI, North Carolina, October 28-29, 2011
  Undergraduate Workshop
  Lecture Title: Introduction to Matlab

SAMSI Working Group Presentations

- Random Walks and Partial Differential Equations, October 6, 2011
- Random Walks and Partial Differential Equations:
  Laplace's Equation and Green's Function, December, 1, 2011

Computer Skills

- C, FORTRAN
- UNIX shell scripting, GNU make
- MATLAB, MATHEMATICA, MAPLE
- CLAPACK, BLAS, CSPARSE, DEAL II
- Familiarity with MPI (during completion of IGMCS)
- LaTeX (Text editing and presentation using BEAMER), Microsoft Office

Languages

- English, Greek (Native Speaker)