Suzanne M. Shontz, Ph.D.
Curriculum Vitae

Engineering Administration Department
The University of Kansas
1C Eaton Hall
Lawrence, KS 66045

Biosketch

Dr. Suzanne M. Shontz is an Associate Dean in the School of Engineering at the University of Kansas (KU); her portfolio has consisted of research, graduate programs, and online education. She is also a Professor in the Department of Electrical Engineering and Computer Science (EECS) and is affiliated with the Department of Mechanical Engineering, the Bioengineering Program (BIOE), and the Institute for Information Sciences (I2S). At KU, Prof. Shontz has served in various leadership roles of increased responsibility. She is currently the Director of the Mathematical Methods and Interdisciplinary Computing Center (MMICC) within I2S and the Founding Director of the Bachelor of Science in Applied Computing Program. Previously, she served as Director of Graduate Studies for BIOE. Prof. Shontz served as President of the University Senate from 2017-2018 and President of the Engineering Senate from 2019-2021. In Fall 2020, she was a Visiting Researcher at the Universita della Svizzera Italiana in Lugano, Switzerland. Prof. Shontz received her Ph.D. in applied mathematics from Cornell University in 2005. Prior to joining KU in 2014, she was on the faculty in the Department of Mathematics and Statistics at Mississippi State University and the Department of Computer Science and Engineering at Pennsylvania State University. Previously, she was a postdoc in the Department of Computer Science and Engineering at the University of Minnesota. Her research interests are in parallel scientific computing with an emphasis on the development of unstructured mesh and numerical optimization algorithms and their applications to computational medicine, materials, radar, acoustics, and other areas.

For her accomplishments as Associate Dean, Prof. Shontz was awarded the 2024 James Corones Award in Leadership, Community Building, and Communication from the Krell Institute. In 2021, she received the International Meshing Roundtable Fellow Award for a "distinguished record of research accomplishments in mesh generation and exceptional service in the meshing community". (The International Meshing Roundtable (IMR) is the premier conference in unstructured mesh generation.) She received a National Science Foundation (NSF) CAREER Award in 2011 for her research in parallel dynamic meshing algorithms, theory, and software for simulation-assisted medical interventions. She also received a prestigious 2011 NSF Presidential Early Career Award for Scientists and Engineers (NSF PECASE Award) for "exemplary research in computational and data-enabled science and engineering that bridges applied mathematics, computer science, and scientific applications, and for contributions to education, including new curricula and approaches that encourage diversity in this emerging field". She received the Young Alumnus Award from the University of Northern Iowa in 2017. Prof. Shontz has published approximately 65 journal, conference, and book chapter publications. She has given plenary talks at the 11th International Conference on Adaptive Modeling and Simulation in Gothenburg, Sweden in 2023, the 29th International Meshing Roundtable (a virtual event) in 2021, and the International Symposium for Isogeometric Analysis and Mesh Generation in Dalian, China in 2018. Her research has been supported by over $30M in funding from the NSF, the United States Army/Engineer and Research Development Center, the Office of Naval Research, the United States Navy, the Army Research Office, and others.

Prof. Shontz serves on the ASEE Engineering Research Council Board of Directors and as Secretary of the International Council on Industrial and Applied Mathematics (ICIAM). In 2019 and 2010, she served as Chair of the IMR. In 2019, she was a Co-Chair of the Society for Industrial and Applied Mathematics (SIAM) Computational Science and Engineering Conference.

Education

Cornell University

2005	Ph.D. in Applied Mathematics (Completed December 2004), College of Engineering
	Dissertation: *Numerical Methods for Problems with Moving Meshes*
	Stephen A. Vavasis, advisor
	Minors: Computer Science and Mathematics
2002	M.S. in Computer Science, College of Engineering
	M.S. in Applied Mathematics, College of Engineering

University of Northern Iowa

1999	B.A. in Mathematics (Summa cum laude), College of Natural Sciences
	B.S. in Chemistry (Summa cum laude), College of Natural Sciences
	Minor: Physics

Research Interests

Computational- and data-enabled science and engineering. More specifically, parallel scientific computing with a focus on unstructured mesh and numerical optimization methods and their applications to computational medicine, imaging sciences, electronic circuits, materials, radar, and acoustics.

Appointments

2014-present	**The University of Kansas**
	Associate Dean, School of Engineering (2022-present)
	Associate Dean for Graduate and Online Education (2025-present)
	Associate Dean for Research and Graduate Programs (2023-2025)
	Associate Dean for Research (2022-2023)
	Full Professor, Department of Electrical Engineering and Computer Science (2021-present),
	Founding Director, Bachelor of Science in Applied Computing Program (2020-present)
	Affiliated with the Department of Mechanical Engineering (2024-present)
	Affiliated with the Institute for Information Sciences (I2S) (2022-present), formerly the
	Information and Telecommunication Technology Center (ITTC) (2014-2022)
	Director, Mathematical Methods and Interdisciplinary Computing Center (2022-present)
	Affiliated with the Radar Systems Laboratory (I2S) (2020-present)
	Affiliated with the Bioengineering Program (2014-present)
	Director of Graduate Studies (2022-2022)
	Associate Professor, Department of Electrical Engineering and Computer Science (2014-2021)
2020-20	**Universita della Svizzera italiana (University of Lugano)**
	Visiting Researcher, Center for Computational Medicine in Cardiology and Institute for
	Computational Science. Sabbatical visitor in Fall 2020.
2006-17	**The Pennsylvania State University**
	Adjunct Associate Professor, School of Electrical Engineering and Computer Science,
	Computer Science and Engineering (2014-17)
	Adjunct Assistant Professor, Department of Computer Science and Engineering (2012-14)
	Assistant Professor, Department of Computer Science and Engineering (2006-12)
	Affiliated with the Computational Science Graduate Program (2006-12)
	Affiliated with the Institute for Cyberscience (2006-12)
2012-15	**Mississippi State University**
	Adjunct Associate Professor, Department of Computer Science and Engineering (2014-15)
	Assistant Professor, Department of Mathematics and Statistics (2012-14)
	Adjunct Assistant Professor, Department of Computer Science and Engineering (2012-14)

	Affiliated with the Center for Computational Sciences (2012-14)
	Affiliated with the Graduate Program in Computational Engineering (2012-14)
2009-09	**ASEE Contractor to Naval Research Laboratory**
	Office of Naval Research Summer Faculty Fellow
2004-06	**University of Minnesota**
	Postdoctoral Associate working with Yousef Saad, Computer Science and Engineering
1999-04	**Cornell University**
	NPSC Fellow working with Stephen A. Vavasis, Computer Science Department
2004	**Cornell University**
	Summer Research Assistant for Stephen A. Vavasis, Computer Science Department
2003	**Cornell University**
	Summer Research Assistant for Stephen A. Vavasis, Computer Science Department
2003	**Sandia National Laboratories**
	Summer research intern in the Computer Science Research Institute
2002	**Cornell University**
	Instructor for COM S 322: Introduction to Scientific Computation
2002	**Cornell University**
	Teaching assistant for COM S 322: Introduction to Scientific Computation
2001-02	**Argonne National Laboratory**
	Summer research intern in the Mathematics and Computer Science Division
1999-00	**Sandia National Laboratories**
	Summer research intern in the Computational Sciences and Mathematics Research Division

Administrative Experience

Associate Dean, School of Engineering (SoE), University of Kansas, 2022-presemt
    Associate Dean for Graduate and Online Education (2025-present)
    Associate Dean for Research and Graduate Programs (2023-2025)
    Associate Dean for Research (2022-2023)

Major Accomplishments:

- **Elected to the ASEE Engineering Research Council Board of Directors:** Am serving a 3-year term from June 23, 2025-June 22, 2028. Major activities include: coordination of the ERC's annual Research Leadership Institute and leadership of the McGraw Awards process.
- **Increased research expenditures:** SoE research expenditures for FY24 increased by approximately 79% in three years.
- **Provided mentorship to researchers at various levels:** Mentored undergraduate researchers through mid-career faculty on all aspects of research. The number of junior faculty who have received NSF CAREER and DOD YIP Awards has increased in the last two years. In addition, Gibum Kwon became the first SoE faculty member to receive an NSF PECASE Award while on the faculty.
- **Held research and innovation training events:** Organized an NSF proposal writing workshop and sessions on university-industry partnerships and commercialization of technologies.
- **Held research visioning events:** Promoted formation of new research teams around the themes of artificial intelligence; energy, sustainability, and the environment, and precision medicine.
- **Conducted internal funding competitions:** Ran the ASCEND Program (for mid-career faculty), Interdisciplinary Research Competition (faculty teams competed for postdoctoral researchers), and the General Research Fund Competition (KU Office of Research Program).
- **Supported cost-share requests:** Worked with faculty, departments, research centers, and the KU Office of Research to determine an appropriate cost-share package for SoE proposals.

- **Participated in events on workforce development, research, and tech transfer:** Represented research in visits by Panasonic and Integra Technologies and events involving the KU Transportation Research Center and the KU Center for Environmentally Beneficial Catalysis to facilitate faculty involvement.
- **Nominated faculty for KU research awards:** Mark Shiflett (C&PE) and Jie Han (CEAE) were awarded the Irvin Youngberg Award, a KU-Higuchi Research Award, and Huazhen Fang (ME) received a University Scholarly Achievement Award. I also successfully nominated faculty to attend NSF Engineering Research Visioning Alliance and NSF EPSCoR events, as well as national leadership events.
- **Enhanced visibility of faculty research:** Developed the Faculty Research Portfolio, commissioned a research video for the RISE (now the ASCEND) Program, and hosted a reception celebrating recent proposal successes.
- **Addressed research issues:** Worked with department chairs and shared service center staff to improve the purchasing process and travel reimbursements. Currently working with the Office of Research to improve post-award services.
- **Attended national workshop on industry-university partnerships for doctoral training:** Attended workshop at National Academies focused on developing such partnerships to fund doctoral students and developing industry-focused Ph.D. degrees.
- **Developed strategy for graduate student recruitment:** Develop an initial strategy for graduate student recruitment in collaboration with various stakeholders (e.g., graduate director, program coordinators, and center directors).
- **Conducted oversight of all aspects of the graduate programs:** Maintain oversight of graduate student recruiting, scholarships, admission, enrollment, retention, the qualifying exam, the comprehensive exam, project/thesis/dissertation defense, academic probation, and petitions.
- **Improved graduate student academic procedures:** Formalized process for handling graduate student petitions in the SoE.
- **Enhanced climate for graduate students:** Introduced social events (e.g., bowling and game night) and a commercialization event to improve graduate student retention.

Director, Mathematical Methods and Interdisciplinary Computing Center, Information Sciences Institute, University of Kansas, 2022-present

Major Accomplishments:

- **Oversaw creation of seminar series:** Led the establishment of a seminar series in our center.
- **Oversaw infrastructure purchase:** Collaborated with the director of another I2S center to purchase a GPU server for researchers in our centers.
- **Developed faculty research portfolio:** I led the creation of a faculty research portfolio which I use to encourage research collaborations and promote the center.

Founding Director, Bachelor of Science in Applied Computing Degree Program, Department of Electrical Engineering and Computer Science, University of Kansas, 2020-present

Major Accomplishments:

- **Oversaw addition of new track:** Collaborated with Economics faculty member and leadership in EECS to develop the curriculum for a new Economics track, ccurrently our most popular track.
- **Oversaw name change:** Based on student feedback regarding experience with employers, we decided to change the name of the program from the Bachelor of Science in Interdisciplinary Computing to the Bachelor of Science in Applied Computing.
- **Student advising:** Advised all students in the program prior to KU's centralization of advising. I meet with the students to offer them advice on internships, undergraduate research, graduate school, and careers.

- **Enhanced climate:** Improved climate for students in the program through the addition of a networking luncheon each semester.

Director of Graduate Studies, Bioengineering Graduate Program, University of Kansas, 2022

Major Accomplishments:

- **Ran the Bioengineering seminar series:** Selected speakers to showcase the research being conducted at the University of Kansas, University of Kansas Medical Center, and in the Midwest Region in diverse areas of Bioengineering research.
- **Oversaw the annual evaluation of the Ph.D. students:** Summarized feedback from leadership team in letters to Ph.D. students. Worked with student and advisor pairs in cases where student made limited or non-satisfactory progress to develop an improvement plan.
- **Oversaw the Ph.D. qualifying exam:** Summarized feedback from leadership team in letters to Ph.D. students.

Teaching

EECS 560: Data Structures (KU: FA15, FA17, SP19, FA19, SP20, SP21, SP22)

EECS 639: Introduction to Scientific Computing (KU: FA16, FA17, FA18, FA19, FA21, FA22, FA23, FA24, FA25)

EECS 700: Computer Modeling, Simulation, and Visualization (KU: FA14)

EECS 739: Parallel Scientific Computing (KU: SP15, SP16, SP17, SP19, SP21, SP23, SP25)

EECS 801: Graduate Directed Readings: Numerical PDEs and Meshing Techniques (KU: SP16)

EECS 868: Mathematical Optimization with Applications (KU: FA16, SP20, SP22)

MA 3113: Introduction to Linear Algebra (MSU: FA12, FA13)

MA 4313/6313: Numerical Analysis I (MSU: FA13)

MA 6990/8990: Special Topics in Math: Simulation Modeling (MSU: SP13)

MA 8443: Numerical Solutions of Partial Differential Equations I (MSU: FA12)

CMPSC/MATH 451: Numerical Computations (PSU: FA06 - 2, FA07, SP09, FA09, SP12 - 2)

CMPSC/MATH 455: Introduction to Numerical Analysis I (PSU: FA10)

CMPSC/MATH 456: Introduction to Numerical Analysis II (PSU: SP11)

CSE 555: Numerical Optimization Techniques (PSU: FA08, SP11)

CSE 598C: Meshing Techniques (PSU: SP08, SP10, FA11)

Postdoctoral Researchers

Former Postdoctoral Researchers

Dr. Maurin Lopez Varilla, Parallel dynamic mesh algorithms for biomedical simulations, September 2015-December 2016. Current position: Manufacturing Process Modeling Engineer, The Goodyear Tire & Rubber Company, Luxembourg.

Current Postdoctoral Researchers

Sumit Kumar, Parallel high-order mesh generation methods and PDE solvers for use in cardiac ablation simulations. Will be joining KU in early Fall 2025.

Students

Former Ph.D. Students

Mikala Heon, "Heterogeneity of Lymph Node Stromal Cells: Bridging the Gap Between Common Practice and New Understandings", Doctor of Philosophy, Bioengineering, (Co-advised with Eduardo Rosa-Molinar), University of Kansas, August 2025. Current position: TBD.

Lexi Simar, "Imaging Phantoms for Calibration and Performance Assessment for Multiscale Microscopy", Doctor of Philosophy, Bioengineering, (Co-advised with Eduardo Rosa-Molinar), University of Kansas, August 2025. Current position: TBD.

Fariba Mohammadi, "High-order Static and Dynamic Mesh Generation Algorithms for Use in Finite Element Modeling and Simulation", Doctor of Philosophy, Mechanical Engineering, (Co-advised with Ken Fischer), University of Kansas, December 2022. Current position: Research Fellow, Department of Biomedical Engineering, University of Michigan.

Mohit Prashanth, Ph.D. student in Aerospace Engineering, (Co-advised with Ray Taghavi, Department of Aerospace Engineering), University of Kansas, August 2019-December 2020.

Michael Stees, "Optimization-based Methods for High-Order Mesh Generation and Untangling", Doctor of Philosophy, Computer Science, University of Kansas, May 2020. Current position: Computer Scientist, Lawrence Livermore National Laboratory.

Thap Panitanarak, "Scalable Graph and Mesh Algorithms on Distributed-Memory Systems", Doctor of Philosophy, Computer Science and Engineering, (Co-advised with Kamesh Madduri), Penn State, August 2017. Current position: Lecturer, Department of Mathematics and Computer Science, Chulalongkorn University, Thailand.

Thomas Gebhardt, Ph.D. student in Mathematics, (Co-advised with Eric Van Vleck, Department of Mathematics), University of Kansas, January 2017-August 2017.

Hakran Kim, Ph.D. student in Computational Engineering, (Co-advised with Mark Horstemeyer, Department of Mechanical Engineering), Mississippi State, July 2013-January 2014.

Vidhya Krishnasamysaraswathy, Ph.D. student in Mathematical Sciences, Mississippi State, October 2012-August 2013.

Jibum Kim, "Optimization-based Meshing Techniques for Mesh Quality Improvement and Deformation", Doctor of Philosophy, Computer Science and Engineering, Penn State, December 2012. Current position: Professor, Department of Computer Science and Engineering, Incheon National University, South Korea.

Shankar Prasad Sastry, "Dynamic Meshing Techniques for Quality Improvement, Untangling, and Warping", Doctor of Philosophy, Computer Science and Engineering, Penn State, August 2012. Current position: Software Engineering, Google.

Jeonghyung Park, Ph.D. student in Computer Science and Engineering, Penn State, August 2009-June 2012. Current position: Samsung, South Korea.

Current Ph.D. Students

Lily Gray, Ph.D. student in Computer Science, University of Kansas, February 2024-

Christina Hymer, Ph.D. student in Bioengineering, University of Kansas, July 2022-

Mohammadmoein Moradi, Ph.D. student in Mechanical Engineering, University of Kansas, January 2018-

Former Masters Students

Jonathan Rogers, "Faster than Thought Error Detection: Using Machine Learning to Detect Errors in Brain Computer Interfaces", Master of Science, Computer Science, University of Kansas, August 2023. (Co-advised with Adam Rouse, Department of Neurosurgery, University of Kansas Medical Center). Current position: Ph.D. student in Computer Science, University of Kansas.

Will Kuenne, M.S. student in Bioengineering, University of Kansas, August-December 2022.

Brian Wentz, "An Integrated Image Processing and Meshing Pipeline for Cardiac Model Generation", Master of Science, Bioengineering, University of Kansas, May 2021. Current position: Consultant, Renaissance Infrastructure Consulting.

Lohith Nanuvala, M.S. student in Computer Science, University of Kansas, March 2015-May 2016.

Bijal Parikh, M.S. student in Computer Science, University of Kansas, March 2015-August 2015.

William Cordell, M.S. student in Mathematical Sciences, Mississippi State, January 2014-July 2014.

Ken Czuprynski, "Parallel Boundary Element Solutions of Block Circulant Linear Systems for Acoustic Radiation Problems with Rotationally Symmetric Boundary Surfaces", Master of Science, Computer Science and Engineering (Co-advised with John Fahnline, PSU Applied Research Laboratory), Penn State, May 2012. Current position: Assistant Research Professor, The Pennsylvania State University.

Dragos (Mihai) Nistor, "CPU- and GPU-based Triangular Surface Mesh Simplification", Master of Science, Computer Science and Engineering, Penn State, May 2012.

Nicholas Voshell, "Models for Applications and Cache Performance", Master of Engineering, Computer Science and Engineering, Penn State, December 2010. Current position: Senior Software Engineer, Meta.

Jeonghyung Park, "Derivative-Free Algorithms for Mesh Quality Improvement", Master of Science, Computer Science and Engineering, Penn State, August 2009. Current position: Samsung.

Former Undergraduate Students

Abir Haque, Supervision of research project on parallel mesh warping and CS honors research project on parallel numerical linear algebra, B.S. in Computer Science, University of Kansas, May 2025. Also an SoE Undergraduate Research Fellow. Current position: Ph.D. student in Computational Science and Engineering at Georgia Tech.

Taylor Slade, Supervision of research project on computational cardiology, B.S. in Interdisciplinary Computing - Biology, University of Kansas, May 2025. Also an SoE Undergraduate Research Fellow. Current position: Nursing student.

Suhaan Syed, Supervision of CS honors research project on biomechanical simulations of cardiac scar tissue, B.S. student in Computer Science, University of Kansas, May 2025. Also an SoE Undergraduate Research Fellow. Current position: TBD.

Leo Cabezas Amigo, Supervision of research project on parallel mesh quality improvement, B.S. student in Computer Engineering, University of Kansas, September 2024-May 2025. Also an SoE Undergrad Research Fellow.

Malek Kchaou, Supervision of research project on machine learning and classification of medical images, B.S. student in Computer Science, University of Kansas, January 2023-May 2025.

Isaac Lee, Supervision of research projects in numerical optimization and machine learning for medical image processing, B.S. in Computer Science and Minor in Mathematics, University of Kansas, May 2024. Current position: Software Development Engineer, Amazon.

Gabriella Kruger, Supervision of research project on cardiac mesh generation, B.S. in Interdisciplinary Computing - Biology and Minor in Psychology, University of Kansas, May 2024. Also a 2023 SoE Undergraduate Research Fellow. Current position: Analytical Associate Scientist, MilliporeSigma.

Henry Williams, Supervision of research project on cardiac mesh generation and visualization, B.S. in Computer Science, University of Kansas, May 2022. Current position: Software Developer, Tradebot.

Rodrigo Figueroa Justiniano, Supervision of research project on cardiac mesh generation, B.S. student in Computer Science and Mathematics, University of Kansas, January-September 2021.

Zachary Misic, Supervision of research project on cardiac mesh generation, B.S. Student in Interdisciplinary Computing - Biology Track, University of Kansas, January-April 2021.

Myra Dotzel, Supervision of research project on high-order triangular mesh quality metrics, B.S. in Computer Science and Mathematics, Minor: Visual Arts, University of Kansas, May 2021. Current position: Ph.D. student in Computer Science, Carnegie Mellon University.

Megana Chinalachaiagari, Supervision of research project on medical image processing, B.S. in
     Computer Science, University of Kansas, May 2020

Xinyun (Melody) Yu, Supervision of research project on derivative-free optimization algorithms
     for geometry optimization of molecules, B.S. in Computer Science and Mathematics,
     University of Kansas, May 2020

Keon Amini, Supervision of research project on biomedical image processing for mesh generation,
     B.S. student in Interdisciplinary Computing and Computer Engineering, University of
     Kansas, August 2016-October 2016. Current position: Senior Software Engineer, Vama.

Omar Alzubbi, Supervision of research project on segmentation and registration of brain images,
     B.S. in Neurobiology and Interdisciplinary Computing, University of Kansas, April 2015-
     December 2015. Current position: Software Engineer at Alight Solutions.

Ikaro Ruan Penha Costa, Supervision of research project on mesh generation for bridge design,
     B.S. in Civil Engineering (Federal University of Ceara), Brazil Scientific Mobility Program
     May 2015-July 2015. Current position: M.Sc. student in Computer Science, University of
     Manitoba, Canada.

Jessica Sayuri Tahara, Supervision of research project on automated image processing, B.S. in
     Computer Engineering (Universidade de Sorocaba), Brazil Scientific Mobility Program, May
     2015-July 2015. Current position: Hardware Engineer, Wants, Inc., Japan.

Rafael Brito De Sousa Veras, Supervision of research project on electronic circuit simulation, B.S. in
     Electrical Engineering (Universidade Cruzeiro do Sul), Brazil Scientific Mobility Program,
     May 2015-July 2015.

Matthew Judson, Supervision of research project on optimal mesh warping algorithms; Bachelor of
     Science, Mathematical Sciences, Mississippi State, May 2014.

Rajarshi Banerjee, Supervision of research project on parallel mesh algorithms; B.S. student in
     Computer Science, Mississippi State, February 2014-May 2014.

Dragos (Mihai) Nistor, "CPU- and GPU-based Triangular Surface Mesh Simplification", Bachelor of
     Science (with honors), Computer Science and Statistics, Penn State, May 2012; Recipient of
     PSU Undergraduate Summer Discovery Grant, Summer 2010.

Rachel Fuehrer, Supervision of Computing Research Experiences for Undergraduates (CREU)
     project; Bachelor of Science, Computational Mathematics, Penn State, May 2012.
     Current position: Survey Statistician, U.S. Census Bureau

Kyle Wray, Supervision of research project on the use of thin plate splines for cloth modeling in
     computer graphics, 2008-10, Bachelor of Science, Computer Science, Penn State, December
     2009. Current position: Director of Engineering, Robust AI.

Georga Slota, Supervision of honors project in CMPSC/Math 451, Numerical Computations,
     Penn State, 2009. Current position: Associate Professor, Department of Computer Science,
     Rensselaer Polytechnic Institute.

Patrick Kasting, "Model reduction and a performance evaluation of stiff ODE solvers for a
     photochemical model of the haze formation in the early atmosphere", Bachelor of Science,
     Computer Science (with honors), Penn State, May 2007.

Visiting Students

Zhihui Qi, Ph.D. student, Dalian University of Technology, Dalian, China, November 2024-October 2025.

Visiting Faculty

Dr. Sayaka Akioka, Meiji University, Tokyo, Japan, August 2017-March 2020.

Dr. Aruquia Barbosa Matos Peixoto, Centro Federal de Educacao Tecnologica Celso Suckow da Fonseca
     (CEFET/RJ), Rio de Janeiro, Brazil, March 2016-March 2017.

Research Support (Awarded)

08/01/22-07/31/27	**"Securing Our Worlds - Physical, Digital, Social"**; The University of Kansas Research Rising Program; $3,000,000; PI: Perry Alexander; Senior Personnel.
07/01/23-06/30/26	**"Collaborative Research: CDS&E: An Experimentally Validated, Interactive, Data-enabled Scientific Computing Platform for Cardiac Tissue Ablation and Monitoring"**; (with Linte, Kandlikar (RIT)); NSF CDS&E; KU budget: $283,686; KU PI.
07/01/23-06/30/26	**"REU supplement to NSF CDS&E Grant"**; NSF/EBMS; $12,600; PI.
03/29/21-09/30/25	**"Parallel High-order Curvilinear Mesh Generation Algorithms and Software for Use with Computational Mechanics Simulations"**; Advanced Simulation and Computing Program, Triad National Security, LLC. (This is a subcontract from Los Alamos National Laboratory which is managed by Triad.), $400,000; PI.
09/18/23-09/17/24	**"GPU and Fast Storage Infrastructure for Massively Parallel Scientific Computing and Reduced Order Modeling"**; (with Wang, Branicky, Huang, Huang, Laird, and Salandrino); AFOSR; $746,258; Co-PI.
09/15/21-09/14/24	**"Learning, Exploration, and Application for Prospective Engineering Students"**; Office of Naval Research; $951,803; PI: J. Spencer Clark (Kansas State University), Shawn Keshmiri (University of Kansas); Co-PI.
08/01/21-07/31/24	**"MRI: Acquisition of a High-Performance Computing Cluster for Science and Engineering Research at the University of Kansas"** (with Laird, Miao, and Thompson); NSF OAC; $687,060; Co-PI.
10/01/18-09/30/23	**"CDS&E: Collaborative Research: A Computational Framework for Reconstructing and Visualizing Myocardial Active Stresses"** (with Linte (RIT) and Otani (RIT)); NSF CDS&E; KU budget: $331,047; KU PI.
10/01/18-09/30/23	**"REU Supplement to NSF CDS&E Grant"**; NSF/OAC; $8,000; PI.
10/01/18-09/30/23	**"REU Supplement to NSF CDS&E Grant"**; NSF/OAC; $8,000; PI.
08/01/17-07/31/21	**"AF: Small: Collaborative Research: A Robust Framework for Overcoming the Tangled Mesh Problem"** (with Suresh (University of Wisconsin)); NSF CCF/AF; KU budget: $250,000; Lead PI and KU PI.
08/01/17-07/31/21	**"REU Supplement to NSF CCF Grant"**; NSF/CCF; $8,000; PI.
08/01/17-07/31/21	**"REU Supplement to NSF CCF Grant"**; NSF/CCF; $8,000; PI.
04/16/20-04/15/21	**"Graphics Processing Unit (GPU) Infrastructure for Massively Parallel Computing Research"** (with Michael Branicky, Weizhang Huang, Brian Laird, Alessandro Salandrino, and Z.J. Wang); ARO; $251,147. PI.
09/01/17-08/31/19	**"NSF Student and Postdoc Travel Grant for the 2017 International Meshing Roundtable (2017 IMR)"**; NSF/CCF; $19,990; PI.
09/01/16-08/31/17	**"Participant Support for the 2016 NSF CyberBridges Workshop"** (with Wang (RIT), Hacker (Purdue)); NSF/ACI; KU budget: $11,233; Co-PI.
08/24/15-08/24/17	**"Numerical Optimization Algorithms for Optimal Device Design"** KU New Faculty General Research Fund; $8,000. PI.
10/01/14-01/31/17	**"REU Supplement to NSF CAREER Award"**; NSF/ACI; $4,229; PI.
10/01/14-01/31/17	**"REU Supplement to NSF CAREER Award"**; NSF/ACI, $6,850, PI
02/15/11-01/31/17	**NSF CAREER Award: "CAREER: Parallel Dynamic Meshing Techniques for Simulation-Assisted Medical Interventions"**; NSF/ACI; $422,986; PI. (Transferred to KU in October 2014.)
2015-2016	**"Parallel Adaptive Mesh Refinement Algorithms for Use with Space-Time Applications"**; Big 12 Faculty Fellowship; $2,500. PI.

08/15/15-08/14/16 **"High Performance Computing and Visualization Infrastructure for Simultaneous Computing and Parallel Visualization Research"** (with Weizhang Huang, Brian Laird, James Miller, Alessandro Salandrino, Z.J. Wang, and Zhongquan Zheng); ARO; $511,937. PI.

07/01/15-06/30/16 **"Participant Support for the 2015 NSF CyberBridges Workshop"** (with Hacker (Purdue) and Wang (RIT)); NSF/ACI; KU budget: $32,757. Co-PI.

09/01/14-08/31/15 **"2014 NGA UARC Program"** (with Tutwiler, Baran, and Hough (PSU)); U.S. Navy; Total budget unknown; KU budget: $33,569. Researcher.

04/15/14-03/31/15 **"10th Mississippi State Conference on Differential Equations and Computational Simulations"** (with Lim (MSU), Goddard (Auburn University)); NSF/DMS, $35,000, Co-PI.

04/01/14-03/31/15 **"10th Mississippi State Conference on Differential Equations and Computational Simulations"** (with Lim); The Institute for Mathematics and Its Applications, $5,000, Co-PI.

03/14/14-02/28/15 **"Participant Support for the 2014 NSF CyberBridges Workshop"** (with Hacker (Purdue)); NSF/ACI; $99,282. PI.

09/30/13-07/31/14 **"CRES-GV Research Support"** (with King and numerous MSU faculty); US Army/ERDC; $9,995,571; Senior Personnel. (No longer part of grant as of August 1, 2014, since I am no longer at MSU. Actual project dates are 09/30/13 to 09/28/18.)

09/19/13-07/31/14 **"Military Engineering and Engineered Resilient Systems Software"** (with King and numerous MSU faculty); US Army/ERDC; $7,399,730; Senior Personnel. (No longer part of grant as of August 1, 2014, since I am no longer at MSU. Actual project dates are 09/19/13-09/18/14.)

05/06/13-04/30/14 **"Participant Support for the 2013 NSF CyberBridges Workshop: Developing the Next Generation of Cyberinfrastructure Faculty for Computational- and Data-enabled Science & Engineering"** (with Hacker (Purdue)); NSF/OCI; MSU budget: $58,110; Co-PI.

06/15/12-05/14/13 **"Participant Support for CyberBridges Workshop: Developing the Next Generation of Cyberinfrastructure Faculty for Computational and Data-Enabled Science and Engineering"** (with Hacker (Purdue); NSF/OCI; $94,843; PI. (Note: Raj Acharya became PI when Shontz moved to Mississippi State University; Shontz became co-PI and completed PI duties.)

08/15/07-07/31/12 **"CSR-SMA: Toward Model-Driven Multilevel Analysis and Optimization of Multicomponent Computer Systems"** (with Raghavan, Irwin, Kandemir, Li); NSF/CNS; $700,000; Co-PI.

07/01/08-06/30/12 **"MRI: Acquisition of a Scalable Instrument for Discovery Through Computing"** (with Raghavan, Chen, Hudson, Kandemir, Smith); NSF/OCI; $1,995,000; Senior Personnel

07/01/10-06/30/11 **"Participant Support for the 19th International Meshing Roundtable"** NSF/CCF; $22,018; PI.

06/03/09-08/12/09 **ONR Summer Faculty Fellowship**; Office of Naval Research; $14,000.

05/16/09-12/18/09 **"Computational Modeling, Simulation, and Validation of Blood Clot Entrapment by Inferior Vena Cava Filters"** (with Manning, Lynch, Medvitz); PSU/Institute for Cyberscience; $12,640; PI.

07/01/07-06/30/08 **"Trapping Blood Clots: Modeling and Simulation of Optimal Inferior Vena Cava Filters"** (with Lynch, Singer); PSU/Grace Woodward Foundation; $25,000; PI.

Educational Support

09/01/08-08/31/10   **"CPATH: CDP: Integrating Biology and Computing: Empowering Future Computer Engineers"** (with Narayanan, Acharya, Albert, Lesk, Irwin); NSF/CNS; $149,028; Senior Personnel.

Undergraduate Student Research Support (Student Initiated)

08/01/11-05/31/12   **"Development of an Experimentally-Validated Technique for Tracking Deformation of the Inferior Vena Cava"**; Undergraduate Students: Rachel Fuehrer (Computational Mathematics) and Ali Schwartz (Bioengineering); Faculty Advisors: S.M. Shontz (CSE), K.B. Manning (Bioengineering); CREU grant; Computing Research Association - Committee on the Status of Women in Computing Research; $9,000.

05/01/10-08/31/10   **"Effective Concurrent Mesh Transformation Algorithms"** Undergraduate Student: Dragos Mihai Nistor; Faculty Advisor: Suzanne M. Shontz; Undergraduate Summer Discovery Grant from Penn State; $2,500.

Honors

2024	James Corones Award for Leadership, Community Building, and Communication, Krell Institute
2021	International Meshing Roundtable Fellow Award
2021	School of Engineering Miller Professional Award for Service, University of Kansas
2017	University of Northern Iowa Young Alumnus Award
2016	Miller Scholar Award, University of Kansas (for research excellence, including a DURIP award for high-performance computing and visualization instrumentation)
2015	Big 12 Faculty Fellowship
2012-2013	Mississippi State College of Arts and Sciences Researcher of the Month (December 2012-January 2013)
2011	National Science Foundation Presidential Early Career Award (PECASE)
2011	National Science Foundation CAREER Award
2009	Office of Naval Research Summer Faculty Fellowship at Naval Research Laboratory
2007	Chosen by undergraduate student to be the Computer Engineering Faculty Marshall for the College of Engineering, Spring Commencement
2005-06	Minnesota Supercomputing Institute Research Scholarship
1999-04	National Physical Science Consortium (NPSC) Fellowship

Affiliations

Society for Industrial and Applied Mathematics (SIAM)
Association for Computing Machinery (ACM)
The Institute of Electrical and Electronics Engineers (IEEE)
American Society for Engineering Education (ASEE)

Publications

Note: Underlining is used to denote one of my students or postdoctoral researchers.

Books

Suzanne Shontz, Joaquim Peiro, and Ryan Viertel (editors), *Proceedings of the 28th International Meshing Roundtable*, Zenodo, p. 430, 2020.

Suzanne M. Shontz (editor), *Proceedings of the 19th International Meshing Roundtable*, Springer-Verlag, p. 510, 2010.

Refereed Book Chapters

Suzanne M. Shontz and David O. McLaurin, *Global optimization and adaptivity strategies for automated edge grid generation*, Invited submission to Mesh Generation and Adaptation: Cutting-Edge Techniques, Volume in Honour of Oubay Hassan's 60th Birthday, Springer Cham, SEMA-SIMAI Springer Series, p. 301-327, 2022.

Invited Book Chapters

Shankar P. Sastry, Jibum Kim, Suzanne M. Shontz, Brent Craven, Frank C. Lynch, Keefe B. Manning, and Thap Panitanarak, *Patient-specific model generation and simulation for pre-operative surgical guidance for pulmonary embolism treatment*, Invited submission to Image-Based Geometric Modeling and Mesh Generation, Springer, Lecture Notes in Computational Vision and Biomechanics, Volume 3, 223-249, 2013.

Jeonghyung Park, Suzanne M. Shontz, and Corina S. Drapaca, *A combined level set/mesh warping algorithm for tracking brain and cerebrospinal fluid evolution in hydrocephalic patients,* Invited submission to Image-based Modeling and Mesh Generation, Springer, Lecture Notes in Computational Vision and Biomechanics, Volume 3, 107-141, 2013.

Refereed Journal Publications

Chao Wang, Bowen Liu, Yuting Lin, Suzanne M. Shontz, Weizhang Huang, Ronald C. Chen, and Hao Gao, *TEAM: Triangular-mEsh Adaptive and Multiscale proton spot generation method*, Medical Physics, 51(10):7067-7079, August 2024.

Maurin Lopez, Suzanne M. Shontz, and Weizhang Huang, *A parallel variational mesh quality improvement method for tetrahedral meshes based on the MMPDE method*, Computer-Aided Design, 148:103242, July 2022.

Ulrich Rüde, Karen Willcox, Lois Curfman McInnes, Hans De Sterck, George Biros, Hans Bungartz, James Corones, Evin Cramer, James Crowley, Omar Ghattas, Max Gunzburger, Michael Hanke, Robert Harrison, Michael Heroux, Jan Hesthaven, Peter Jimack, Chris Johnson, Kirk E. Jordan, David E. Keyes, Rolf Krause, Vipin Kumar, Stefan Mayer, Juan Meza, Knut Martin Mørken, J. Tinsley Oden, Linda Petzold, Padma Raghavan, Suzanne M. Shontz, Anne Trefethen, Peter Turner, Vladimir Voevodin, Barbara Wohlmuth, and Carol S. Woodward, *Research and education in computational science and engineering*, SIAM Review, 60(3):707-754, August 2018. (Note: Only the first four authors are listed as authors; the additional authors are listed as "additional contributors". This is due to the limited amount of space available for listing each article on the back cover of the journal. All are to be considered authors of the article.)

Thap Panitanarak and Suzanne M. Shontz, *A parallel log barrier-based mesh warping algorithm for distributed memory machines*, Engineering with Computers, Springer Nature, 34(1):59-76, January 2018.

Kenneth I. Aycock, Robert L. Campbell, Keefe B. Manning, Shankar P. Sastry, Suzanne M. Shontz, Frank C. Lynch, and Brent A. Craven, *Erratum: "A computational method for predicting inferior vena cava filter performance on a patient-specific basis" [ASME J. Biomech. Eng., 2014, 136(8), p. 081003]*, Journal of Biomechanical Engineering, ASME, 137(11): 117001, October 2015.

Jibum Kim, Brian Miller, and Suzanne M. Shontz, *A hybrid mesh deformation algorithm using anisotropic PDEs and multiobjective mesh optimization*, Computers and Mathematics with Applications, Elsevier, 70(8):1830-1851, October 2015.

Shankar Prasad Sastry, Emre Kultursay, Suzanne M. Shontz, and Mahmut T. Kandemir, *Improved cache utilization and preconditioner efficiency through use of a space-filling curve mesh element- and vertex-reordering technique*, Invited submission to Engineering with Computers, Springer Nature, 30(4): 535-547, October 2014.

Shankar Prasad Sastry and Suzanne M. Shontz, *A parallel log-barrier method for mesh quality improvement and untangling*, Invited submission to Engineering with Computers, Springer Nature, 30(4): 503-515, October 2014.

Kenneth I. Aycock, Robert L. Campbell, Keefe B. Manning, Shankar P. Sastry, Suzanne M. Shontz, Frank C. Lynch, and Brent A. Craven, *A computational method for predicting inferior vena cava filter performance on a patient-specific basis*, Journal of Biomechanical Engineering, ASME, 136(8): 081003, August 2014.

Shankar Prasad Sastry, Suzanne M. Shontz, and Stephen A. Vavasis, *A log-barrier method for mesh quality improvement and untangling*, Invited submission to Engineering with Computers; Springer Nature, 30(3): 315-329, July 2014.

Jibum Kim, Thap Panitanarak, and Suzanne M. Shontz, *A multiobjective mesh optimization framework for mesh quality improvement and mesh untangling*, International Journal for Numerical Methods in Engineering, Wiley, 94(1):20-42, April 2013.

Petko Kitanov, Odile Marcotte, Wil Schilders, and Suzanne M. Shontz, *A vertex cut algorithm for model order reduction of parasitic resistive networks*, COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, Emerald Publishing, 31(6): 1850-1871, November 2012.

Jibum Kim, Shankar Prasad Sastry, and Suzanne M. Shontz, *A numerical investigation on the interplay amongst geometry, meshes, and linear algebra in the finite element solution of elliptic PDEs*. Invited submission, Engineering with Computers, Springer Nature, 28(4): 431-450, October 2012.

Shankar P. Sastry and Suzanne M. Shontz, *Performance characterization of nonlinear optimization methods for mesh quality improvement*. Invited submission, Engineering with Computers, Springer Nature, 28(3): 269-286, July 2012.

Suzanne M. Shontz and Stephen A. Vavasis, *A robust solution procedure for hyperelastic solids with large boundary deformation*. Engineering with Computers, Springer Nature, 28(2): 135-147, April 2012.

Suzanne M. Shontz, Stephen A. Vavasis, *Analysis of and workarounds for element reversal for a finite element-based algorithm for warping triangular and tetrahedral meshes*. BIT, Numerical Mathematics, Springer Nature, 50(4): 863-884, December 2010.

Yousef Saad, James R. Chelikowsky, and Suzanne M. Shontz, *Numerical methods for electronic structure calculations*, SIAM Review, 52(1): 3-54, March 2010.

Lori Diachin, Patrick Knupp, Todd Munson, and Suzanne M. Shontz, *A comparison of two optimization methods for mesh quality improvement*, Invited submission, Engineering with Computers, Springer Nature, 22(2): 61-74, May 2006.

Refereed Conference Publications

Abir Haque, Suzanne M. Shontz, and Xuemin Tu, *GPU-accelerated, mixed precision GMRES(m) with varied restarts*, Proc. of the 2025 IEEE High Performance Extreme Computing Conference, (HPEC '25), p. TBD, September 2025. **(Received Outstanding Student Paper Award)**

Abir Haque and Suzanne M. Shontz, *Parallelization of the finite element-based mesh warping algorithm using hybrid parallel programming*, Proc. of the 2025 SIAM International Meshing Roundtable Workshop, p. 140-153, March 2025.

Roshan Reddy Upendra, Richard Simon, Suzanne M. Shontz, and Cristian A. Linte, *Deformable image registration using vision transformers for cardiac motion estimation from cine cardiac MRI images*, Proc. of the 12th International Conference on Functional Imaging and Modeling of the Heart (FIMH 2023), Lecture Notes in Computer Science, vol. 13958, p. 375-383, June 2023.

Fariba Mohammadi, Suzanne M. Shontz, and Cristian A. Linte, *High-order cardiomyopathy human heart model and mesh generation*, Proc. of the 2021 Computing in Cardiology Conference, IEEE, 48, December 2021.

Roshan Reddy Upendra, S.M. Kamrul Hasan, Richard Simon, Brian Jamison Wentz, Suzanne M. Shontz, Michael S. Sacks, Cristian A. Linte, *Motion extraction of right ventricle from 4D cardiac cine MRI using a deep learning-based deformable registration framework*, Proc. of the 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) (EMBC 2021), p. 3795-3799, November 2021.

Fariba Mohammadi and Suzanne M. Shontz, *A direct method of generating quadratic curvilinear tetrahedral meshes using an advancing front approach*, Proc. of the 29th International Meshing Roundtable, Zenodo, p. 74-91, October 2021.

Roshan Reddy Upendra, Brian Jamison Wentz, Richard Simon, Suzanne M. Shontz, and Cristian A. Linte, *CNN-based cardiac motion extraction to generate deformable geometric left ventricle models from cine MRI*, Proc. of the 11th International Conference on Functional Imaging and Modeling of the Heart (FIMH 2021), Lecture Notes in Computer Science, Vol. 12738, p. 253-263, June 2021.

Christian Jones, Brandon Ravenscroft, James Vogel, Suzanne M. Shontz, Thomas Higgins, Kevin Wagner, Shannon Blunt, *Computationally efficient joint-domain clutter cancellation for waveform-agile radar*, Proc. of the 2021 IEEE Radar Conference (RadarConf21), IEEE, p. 1-6, May 2021. Christian Jones and Brandon Ravenscroft won 1st place in the Student Paper Competition at the conference.

Roshan Reddy Upendra, Brian Wentz, Suzanne M. Shontz, and Cristian A. Linte, *A convolutional neural network-based deformable image registration method for cardiac motion estimation from cine cardiac MR images*, Computing in Cardiology, IEEE, 47, p. 1-4, December 2020.

Mike Stees and Suzanne M. Shontz, *High-order mesh generation based on optimal affine combinations of nodal positions*, Spectral and High Order Methods for Partial Differential Equations, Proceedings of ICOSAHOM 2018, Lecture Notes in Computational Science and Engineering, Springer, vol. 134, p. 229-238, August 2020.

Fariba Mohammadi, Shusil Dangi, Suzanne M. Shontz, and Cristian A. Linte, *A direct high-order curvilinear triangular mesh generation method using an advancing front technique,* Proc, of the 2020 International Conference on Computational Science, Lecture Notes in Computer Science, Springer, vol. 12138, p. 72-85, June 2020.

Mike Stees, Myra Dotzel, and Suzanne M. Shontz, *Untangling high-order meshes based on signed angles*, Proceedings of the 28th International Meshing Roundtable, Zenodo, p. 267-282, February 2020.

Suzanne M. Shontz, Maurin A. Lopez Varilla, and Weizhang Huang, *A parallel variational mesh quality improvement method for tetrahedral meshes*, Proceedings of the 28th International Meshing Roundtable, Zenodo, p. 37-49, February 2020.

Niels F. Otani, Dylan Dang, Christopher Beam, Fariba Mohammadi, Brian Wentz, S.M. Kamrul Hasan, Suzanne M. Shontz, Karl Q. Schwarz, Sabu Thomas, and Cristian A. Linte, *Toward quantification and visualization of active stress waves for myocardial biomechanical function assessment*, Proceedings of the 2019 Computing in Cardiology Conference, IEEE, Vol. 46, p. 1-4, December 2019.

Mike Stees and Suzanne M. Shontz, *An angular approach to untangling high-order curvilinear triangular meshes*, Proceedings of the 27th International Meshing Roundtable, Lecture Notes in Computational Science and Engineering, vol. 127, Springer, p. 327-342, July 2019.

Mike Stees and Suzanne M. Shontz, *A high-order log barrier-based mesh generation and warping method*, Proceedings of the 26th International Meshing Roundtable, Procedia Engineering, Elsevier, Volume 203, p. 180-192, September 2017.

Niels F. Otani, Dylan Dang, Shusil Dangi, Mike Stees, Suzanne M. Shontz, and Cristian A. Linte, *Assessing cardiac tissue function via action potential wave imaging using cardiac displacement data*, Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS 2017: VipIMAGE 2017, Lecture Notes in Computational Vision and Biomechanics, Vol. 27, p. 903-912, October 2017.

Jibum Kim, David McLaurin, and Suzanne M. Shontz, *A 2D topology-adaptive mesh deformation framework for mesh warping*, Proceedings of the Fourth Tetrahedron Workshop on Grid Generation for Numerical Computations, New Challenges in Grid Generation and Adaptivity for Scientific Computing, SEMA SIMAI Springer Series, Volume 5, p. 261-279, 2015.

David McLaurin and Suzanne M. Shontz, *Automated edge grid generation based on arc-length optimization*, Proceedings of the 22nd International Meshing Roundtable, Springer, p. 385-403, 2014.

Suzanne M. Shontz and Dragos M. Nistor, *CPU-GPU algorithms for triangular surface mesh simplification*, Proceedings of the 21st International Meshing Roundtable, Springer-Verlag, p. 475-492, 2013.

Jeonghyung Park, Suzanne M. Shontz, and Corina S. Drapaca, *Automatic boundary evolution tracking via a combined level set method and mesh warping technique: Application to hydrocephalus*, MICCAI Workshop on Mesh Processing in Medical Image Analysis 2012, Springer-Verlag, Vol. 7599, p. 122-133, October 2012.

Kenneth D. Czuprynski, John Fahnline, and Suzanne M. Shontz, *Parallel boundary element solutions of block circulant linear systems for acoustic radiation problems with rotationally symmetric boundary surfaces*, Proceedings of the Internoise 2012/ASME NCAD Meeting, (i.e., the 41st International Congress and Exposition on Noise Control Engineering), ASME, August 2012.

Shankar P. Sastry, Suzanne M. Shontz, Stephen A. Vavasis, *A log-barrier method for mesh quality improvement*, Proceedings of the 20th International Meshing Roundtable, Springer-Verlag, p. 329-346, October 2011. Shankar's poster on this project won the Best Student Poster Award at IMR 2011.

Matthew L. Staten, Steve J. Owen, Suzanne M. Shontz, Andrew G. Salinger, Todd S. Coffey, *A comparison of mesh morphing methods for 3D shape optimization*, Proceedings of the 20th International Meshing Roundtable, Springer-Verlag, p. 293-312, October 2011.

Thap Panitanarak and Suzanne M. Shontz, *MDEC: MeTiS-based domain decomposition for parallel 2D mesh generation*, Proceedings of the 2011 International Conference on Computational Science, Procedia Computer Science, Elsevier, Volume 4, Issue 1, p. 302-311, June 2011.

Jeonghyung Park and Suzanne M. Shontz, *An alternating mesh quality metric scheme for efficient mesh quality improvement*, Proceedings of the 2011 International Conference on Computational Science, Procedia Computer Science, Elsevier, Volume 4, Issue 1, p. 292-301, June 2011.

Jibum Kim, Suzanne M. Shontz, *An improved shape matching algorithm for deformable objects using a global image feature*, Proceedings of the 6th International Symposium on Visual Computing (ISVC 2010), Springer-Verlag, Part III, Lecture Notes in Computer Science 6455, p. 119-128, November 2010.

Jibum Kim, Shankar P. Sastry, and Suzanne M. Shontz, *Efficient solution of elliptic partial differential equations via effective combination of mesh quality metrics, preconditioners, and sparse linear solvers*. Proceedings of the 19th International Meshing Roundtable Conference, Springer-Verlag, p. 103-120, October 2010.

Sanjukta Bhowmick, Suzanne M. Shontz, *Towards high-quality, untangled meshes via a force-directed graph embedding approach*. Proceedings of the 2010 International Conference on Computational Science, Procedia Computer Science, Elsevier, Volume 1, Issue 1, May 2010, p. 357-366.

Jeonghyung Park, Suzanne M. Shontz, *Two derivative-free optimization algorithms for mesh quality improvement*. Proceedings of the 2010 International Conference on Computational Science, Procedia Computer Science, Elsevier, Volume 1, Issue 1, May 2010, p. 387-396.

Nicholas Voshell, Suzanne Shontz, Lori Diachin, Patrick Knupp, Todd Munson, *A patch-based mesh optimization algorithm for partitioned meshes*, 9th International Workshop on State-of-the-Art in Scientific and Parallel Computing, 2008, Accepted October 2009.

Shankar Prasad Sastry and Suzanne M. Shontz, *A comparison of gradient- and Hessian-based optimization methods for tetrahedral mesh quality improvement*, in Proceedings of the 18th International Meshing Roundtable, Springer-Verlag, p. 631-648, October 2009.

Suzanne M. Shontz, Victoria E. Howle, and Patricia D. Hough, *Experience with approximations in the trust-region parallel direct search algorithm*, in Proceedings of the 2009 International Conference on Computational Science, Springer-Verlag, Lecture Notes in Computer Science, vol. 5544, p. 501-510, May 2009.

Suzanne M. Shontz and Patrick Knupp, *The effect of vertex reordering on 2D local mesh optimization efficiency*, in Proceedings of the 17th International Meshing Roundtable, Springer-Verlag, p. 107-124, October 2008.

Lori Diachin, Patrick Knupp, Todd Munson, and Suzanne M. Shontz, *A comparison of inexact Newton and coordinate descent mesh optimization techniques*, in Proceedings of the 13th International Meshing Roundtable, Sandia National Laboratories, p. 243-254, September 2004.

Suzanne M. Shontz and Stephen A. Vavasis, *A mesh warping algorithm based on weighted Laplacian smoothing*, in Proceedings of the 12th International Meshing Roundtable, Sandia National Laboratories, p. 147-158, September 2003.

Lori Freitag, Patrick Knupp, Todd Munson, and Suzanne M. Shontz, *A comparison of optimization software for mesh shape-quality improvement problems*, in Proceedings of the 11th International Meshing Roundtable, Sandia National Laboratories, p. 19-40, September 2002.

Nonrefereed Journal Publications

Suzanne M. Shontz, *Computing homoclinic bifurcations*, The Pentagon, Volume 60, Number 2, Spring 2001, p. 3-15.

Beth Koch, Suzanne M. Shontz, and Gary Spieler, *A is not for achievement*, The Pentagon, Volume 58, Number 2, Spring 1999, p. 14-22.

Suzanne M. Shontz, *Molecules and their symmetries: Determining the hybridization of a central atom using point groups*, The Pentagon, Volume 56, Number 2, Spring 1997, p. 38-46.

Nonrefereed Conference Publications

Michael Stees and Suzanne M. Shontz, *A Quadratic High-order Method for Mesh Generation Inspired by LBWARP*, Research Note of the 25th International Meshing Roundtable, 2016.

E. Lorin, R. Arteaga, G. Blanchet, A. Cournoyer, F. Fillion-Gourdeau, L. Gagnon, C. Le Bris, M.A. Porter, S. Shontz. *Optimization of the temporal pulse shape of laser pulses for ablation*, edited by H. Huang, E. Lorin, and O. Marcotte, in Proceedings of the Fourth Montreal Industrial Problem Solving Workshop: A CRM-Mprime Event, Center for Research in Mathematics, Universite de Montreal, Montreal, Quebec, Canada, March 2013.

R. Anderssen, P.G. Hjorth, A.S. Kane, P. Kitanov, K. Ladipo, O. Marcotte, B. Orser, W. Schilders, S.M. Shontz, W. Sun, and B.A. Wane. *Model order reduction for electronic circuits: Mathematical and physical approaches*, edited by P.G. Hjorth and S.M. Shontz, in Proceedings of the 2008 Fields-MITACS Industrial Problem-Solving Workshop, Fields Institute, University of Toronto, March 2009.

D. Aruliah, C. Bowman, G. Fan, R. Melnick, S. Shontz, S. Wang, and J. Zhu. *Nonlinear dimension reduction for microarray data (Small n and large p)*, edited by S. Shontz, in Proceedings of the 2006 Fields-MITACS Industrial Problem-Solving Workshop, Fields Institute, University of Toronto, November 2006.

Technical Reports

Jeonghyung Park, Patrick Knupp, and Suzanne M. Shontz, *Static vertex reordering schemes for local mesh quality improvement*, CSRI Summer Proceedings, Sandia National Laboratories, 2010.

Victoria E. Howle, Suzanne M. Shontz, and Patricia D. Hough, *Some parallel extensions to optimization methods in OPT++*, Sandia Technical Report SAND 2000-8877, October 2000.

Ph.D. Thesis

Suzanne Michelle Shontz, *Numerical Methods for Problems with Moving Meshes*, Ph.D. Thesis, Cornell University, December 2004.

Software

Note: <u>Underlining</u> is used to denote one of my students or postdoctoral researchers.

Serial dynamic meshing toolkit. Developed in collaboration with <u>Jibum Kim</u>, <u>Jeonghyung Park</u>, <u>Shankar Prasad Sastry</u>, and <u>Michael Stees</u> for my NSF CAREER grant, 2017.

Parallel dynamic meshing toolkit. Developed in collaboration with <u>Thap Panitanarak</u>, <u>Shankar Prasad Sastry</u>, and <u>Michael Stees</u> for my NSF CAREER grant, 2017.

FEMWARP: A finite element-based mesh warping algorithm. Developed in collaboration with Stephen Vavasis and published in our 2010 BIT, Numerical Mathematics paper. The software is in use by various researchers. Featured users of the software include: Dr. Gary Zientara, Associate Professor of Radiology at Brigham and Women's Hospital and Harvard Medical School (generation of dynamic abdomen and whole-body meshes); Drs. Matthew Staten, Senior Member of the Technical Staff at Sandia National Laboratories and Steve Owen, Principal Member of the Technical Staff at Sandia National Laboratories (generation of dynamic meshes for shape optimization).

Public Speaking

Invited Presentations (Selected)

August 2025	**AI4DE: 1st International Workshop on AI for Data Editing KDD 2025 Conference, Toronto, Canada** "An Unsupervised Deep Learning-Based Deformable Image Registration Method for Cardiac Motion Estimation from Cine Cardiac MRI Images"
July 2025	**Computational Science Seminar, Los Alamos National Laboratory Los Alamos, New Mexico** "Generation of High-Order, Patient-Specific Meshes for Biomedical Simulations"
June 2025	**12th International Conference on Adaptive Modeling and Simulation (ADMOS 2025), Barcelona, Spain** "Quadrilateral Mesh Untangling and Mesh Quality Improvement via Multiobjective Mesh Optimization"
June 2025	**Math2Product 2025 (M2P 2025), Valencia, Spain** "ParFEMWARP: A Parallel Mesh Warping Algorithm Based on Hybrid Parallel Programming"
May 2025	**11th International Conference on Coupled Problems in Science and Engineering (Coupled 2025), Villasimius, Italy** "Generation of Patient-Specific Meshes for Cardiovascular Simulations"
October 2024	**CAREER Writers' Workshop University of Kansas, Lawrence, Kansas** "CAREER Overview and Strategy Tips"
July 2024	**16th World Congress on Computational Mechanics, Vancouver, Canada** "Parallelization of the Finite Element-based Mesh Warping Algorithm Using Hybrid Parallel Programming"
July 2024	**Mathematics Colloquium, Mathematics and Statistics Department, Memorial University of Newfoundland, St. John's, Canada** "Generation of High-Order Meshes for Biomedical Simulations"

April 2024	**Mathematics Colloquium, Mathematics and Philosophy Department,** **Western Illinois University, Macomb, Illinois** "Generation of High-Order Meshes for Biomedical Simulations"
October 2023	**Advances in Computational Mechanics - A Conference Celebrating the** **80th Birthday of Prof. Thomas J.R. Hughes, Austin, TX** "Dynamic, High-Order Mesh Generation for Patient-Specific Biomedical Modeling"
October 2023	**CAREER Writers' Workshop** **University of Kansas, Lawrence, Kansas** "CAREER Overview and Strategy Tips"
October 2023	**Computing in Cardiology Conference 2023 (CinC 2023)** **Georgia Institute of Technology, Atlanta, GA** "Dynamic Personalized Cardiac Models via Coupling of Image Processing, Modeling, and Mechanics"
August 2023	**International Conference on Spectral and High-Order Methods** **(ICOSAHOM 2023), Yonsei University, Seoul, South Korea** "A Robust Finite Element-Based High-Order Mesh Warping Technique for Hyperelastic Solids"
June 2023	**Plenary Talk, 11th International Conference on Adaptive Modeling** **and Simulation (ADMOS 2023), Gothenburg, Sweden** "High-Order Mesh Generation and Warping for Biomedical Simulations"
June 2023	**11th International Conference on Adaptive Modeling and Simulation** **(ADMOS 2023), Gothenburg, Sweden** "Quadrilateral Mesh Untangling and Mesh Quality Improvement Via Multiobjective Mesh Optimization"
June 2023	**10th International Conference of Computational Methods for Coupled** **Problems in Science and Engineering (COUPLED 2023), Chania,** **Crete, Greece** "Dynamic Heart Models via Coupling of Image Processing and High-Order Mesh Warping"
April 2023	**22nd IACM Computational Fluids Conference (CFC 2023)** **Cannes, France** "High-Order Mesh Warping Using a Hyperelastic Material Model"
November 2022	**2022 IMECE International Mechanical Engineering Congress &** **Exposition (IMECE 2022), Columbus, Ohio** "High-Order Advancing Front Mesh Generation from Medical Images for Biomechanics Applications"
October 2022	**CAREER Writers' Workshop** **University of Kansas, Lawrence, Kansas** "CAREER Overview and Strategy Tips"
July 2022	**15th World Congress on Computational Mechanics, Yokohama, Japan** "Generation of Dynamic High-Order Patient-Specific Biomedical Meshes from Medical Images Using an Advancing Front Approach"
July 2022	**9th World Congress of Biomechanics, Taipei, Taiwan** "Cardiac Magnetic Resonance Image-Based Geometric Modeling and Mesh Generation for Cardiac Biomechanics Simulations"
June 2022	**8th European Congress on Computational Methods in Applied Sciences** **and Engineering, ECCOMAS Congress 2022, Oslo, Norway** "Multiobjective Optimization Algorithms for Untangling and Mesh Quality Improvement of Quadrilateral Meshes"

May 2022	**2022 ICMS Workshop on Adaptive Moving and Anisotropic Meshes for the Numerical Approximation of PDEs, International Centre for Mathematical Sciences, University of Edinburgh, Edinburgh, Scotland, United Kingdom**, "Optimization-Based Approaches for High-Order Mesh Generation and Warping"
March 2022	**Seminar, Geometry and Mesh Generation Lecture Series, Virtual Event, Siemens Digital Industries Software** "High-Order Mesh Generation Methods for Computational Mechanics Applications"
November 2021	**2021 IMECE International Mechanical Engineering Congress & Exposition (IMECE 2021), Virtual Event** "A Computational Pipeline for Generating Dynamic, High-Order, Patient-Specific Meshes in Cardiac Biomechanics Simulations"
September 2021	**2021 Conference on Mechanistic Machine Learning and Digital Twins for Computational Science, Engineering & Technology (MMLDT-CSET 2021), San Diego, California** "A Deep Learning-based Framework for the Development of Patient-specific Geometric Left Ventricle Myocardial Models from Cine Cardiac MR Images"
July 2021	**16th United States National Congress on Computational Mechanics (USNCCM16), Chicago, Illinois** "Cardiac Motion Estimation from Cardiac Cine MR Images Based on Deformable Image Registration and Mesh Warping"
July 2021	**Mathematical Sciences Summer Camp (for high school students), Rochester Institute of Technology, Rochester, New York** "Intro to Mesh Generation"
June 2021	**Plenary Talk, 2021 International Meshing Roundtable (2021 IMR) Virtual Event** "Patient-specific Mesh Generation for Cardiovascular Simulations"
June 2021	**10th International Conference on Adaptive Modeling and Simulation (ADMOS 2021), Gothenburg, Sweden** "Multiobjective Mesh Optimization on Quadrilateral Meshes"
June 2021	**IX International Conference on Coupled Problems in Science and Engineering, (COUPLED 2021), Chia Laguna, Italy** "Geometric Modeling and Meshing of the Cardiac Geometry for Coupled Problems"
March 2021	**2021 SIAM Conference on Computational Science and Engineering (SIAM CSE21), Fort Worth, Texas** "Overview of Patient-Specific Model and Mesh Generation from Medical Images"
January 2021	**14th World Congress on Computational Mechanics (WCCM 2020) and 2020 European Community on Computational Methods in Applied Sciences (ECCOMAS) Congress, Paris, France** "Optimization-based Approaches for High-order Mesh Generation" *Conference was rescheduled due to covid-19.*
December 2020	**FoMICS Winter School on Cardiac Simulations, Universita della Svizzera italiana, Lugano, Switzerland** "Mesh Generation for Computational Cardiology Simulations"
December 2020	**FoMICS Winter School on Cardiac Simulations, Universita della Svizzera italiana, Lugano, Switzerland** "Geometric Modeling for Computational Cardiology Simulations"
November 2020	**FoMICS-DADSI Seminar, Universita della Svizzera italiana Lugano, Switzerland** "An Overview on Space-Time Meshes"

October 2020	**FoMICS-DADSI Seminar, Universita della Svizzera italiana** **Lugano, Switzerland** "The Role of Optimization in Dynamic Mesh Generation"
October 2020	**FoMICS-DADSI Seminar, Universita della Svizzera italiana** **Lugano, Switzerland** "Introduction to Mesh Generation"
October 2020	**CAREER Writers' Workshop** **University of Kansas, Lawrence, Kansas** "CAREER Overview and Strategy Tips"
July 2020	**Mathematical Sciences Summer Camp (for high school students),** **Rochester Institute of Technology, Rochester, New York** "Intro to Mesh Generation"
February 2020	**Seminar, Center for Computational Biology, University of Kansas,** **Lawrence, Kansas** "Meshing Algorithms for Use in Cardiovascular Computational Simulations"
October 2019	**28th International Meshing Roundtable, Buffalo, New York** Short Course: "An Introduction to Moving Meshes"
August 2019	**Interdisciplinary International Conference on Applied Mathematics,** **Modeling, and Computational Science (AMMCS 2019), Waterloo,** **Ontario, Canada** "Towards High-Order Meshes of the Cardiac Anatomy"
July 2019	**15th U.S. National Congress on Computational Mechanics** **Austin, Texas** "Untangling High-Order Curvilinear Triangular Meshes via Signed Angles"
May 2019	**International Conference on Adaptive Modeling and Simulation** **(ADMOS 2019), El Campello, Alicante, Spain** "Untangling High-Order Curvilinear Triangles via an Angular Approach"
April 2019	**ACM Student Club** **University of Kansas, Lawrence, Kansas** "Medical Implants: Better Performance Through Computer Simulation"
March 2019	**Distinguished Seminar, Civil Engineering Department** **Texas Tech University, Lubbock, Texas** "Methods for Generation of High-Quality Meshes in Medicine and Engineering"
February 2019	**2019 SIAM Conference on Computational Science and Engineering** **(SIAM CSE19), Spokane, Washington** "A Vision for Research in Unstructured Mesh Generation"
February 2019	**NSF CAREER Writers' Workshop** **University of Kansas, Lawrence, Kansas** "CAREER Overview and Strategy Tips"
November 2018	**Mechanical Engineering Colloquium** **University of California - Santa Barbara, Santa Barbara, California** "High-order Curvilinear Mesh Generation and Parallel Mesh Warping for CFD Applications"
October 2018	**Guest Lecture, Mathematics Department** **Sri G.V.G. Visalakshi College for Women, Udumalpet, Tamilnadu, India** "Mesh Generation: Algorithms, Applications, and Opportunities"
August 2018	**Red Hot Research Event** **University of Kansas, Lawrence, Kansas** "Improving Patient Treatments with Computer-Assisted Medical Interventions"

August 2018	**Plenary Talk, International Symposium for Isogeometric Analysis and Mesh Generation (IGA & Meshing 2018), Dalian, China** "Mesh Warping Algorithms: From Dynamic Finite Element Simulations to High-Order Mesh Generation"
July 2018	**25th Domain Decomposition Conference (DD25)** **St. John's, Newfoundland, Canada** "A Parallel Variational Mesh Quality Improvement Method"
July 2018	**2018 International Conference on Spectral and High-order Methods (ICOSAHOM 18), London, United Kingdom** "Generating High-order Meshes for CFD Geometries Using an Optimization-based Approach"
June 2018	**2018 SIAM Imaging Science Conference** **Bologna, Italy** "High-order Curvilinear Tetrahedral Meshes of the Cardiac Anatomy"
May 2018	**Workshop on Adaptive Numerical Methods for PDEs with Applications** **Banff International Research Station, Banff, Canada** "A Parallel Variational Mesh Quality Improvement Method for Distributed Memory Machines"
April 2018	**2018 Midwest Numerical Analysis Days** **University of Kansas, Lawrence, Kansas** "A Novel Algorithm for High-Order Triangular and Tetrahedral Mesh Generation"
April 2018	**Mathematics Colloquium** **University of Southern Mississippi, Hattiesburg, Mississippi** "Mesh Warping Algorithms for Use in Dynamic Finite Element Simulations"
April 2018	**STEM Public Math Lecture** **University of Southern Mississippi, Hattiesburg, Mississippi** "Contemporary 3D Meshes for Use as Geometric Models in Movies to Medicine"
April 2018	**AWM Club Talk** **University of Southern Mississippi, Hattiesburg, Mississippi** "My Experiences as a Female Mathematician in Academia"
March 2018	**Engineering Professional Development Meeting** **School of Engineering, University of Kansas, Lawrence, Kansas** "Winning Strategies for Writing an NSF CAREER Proposal"
March 2018	**NSF CAREER Writers' Workshop** **University of Kansas, Lawrence, Kansas** "Winning Strategies for Writing an NSF CAREER Proposal"
December 2017	**Boeing Seminar (via WebEx)** "Shape Optimization for Optimal Unmanned Aircraft System Formation"
July 2017	**14th U.S. National Congress on Computational Mechanics** **Montreal, Quebec, Canada** "Use of the Fruchterman-Reingold Graph Embedding Algorithm to Untangle Hybrid Meshes"
June 2017	**8th International Conference on Adaptive Modeling and Simulation (ADMOS 2017), Verbania, Italy** "A Parallel Variational Mesh Quality Improvement Method"
June 2017	**MathLab Seminar, Scuole Internazionale Superiore di Studi Avanzati (SISSA University), Trieste, Italy** "Optimization-based Dynamic Mesh Algorithms for Use in Finite Element Simulations"

June 2017	**7th International Conference on Coupled Problems in Science and Engineering, Rhodes Island, Greece**
	"High-Order Tetrahedral Mesh Generation and Warping for Cardiac Simulations"
May 2017	**PDE and Applied Math Seminar, University of California - Davis Davis, California**
	"Dynamic and Adaptive Mesh Algorithms for Finite Element Simulations"
May 2017	**NSF CAREER Writers' Workshop, University of Kansas Lawrence, Kansas**
	"Winning Strategies for Writing and NSF CAREER Proposal"
April 2017	**19th International Conference on Finite Elements in Flow Problems (FEF 2017), Rome, Italy**
	"High-Order, Curvilinear Tetrahedral Mesh Generation via a Log-Barrier Deformation Approach"
March 2017	**2017 SIAM Computational Science and Engineering Conference, Atlanta, Georgia**
	"A Global Optimization and Adaptivity-based Algorithm for Automated Edge Grid Generation"
March 2017	**Engineering Professional Development Meeting School of Engineering, University of Kansas, Lawrence, Kansas**
	"Winning Strategies for Writing and NSF CAREER Proposal"
October 2016	**AWM Club Talk, Department of Mathematics, University of Kansas**
	"Medical Implants: Better Performance Through Mathematics"
October 2016	**Female Faculty in the School of Engineering, University of Kansas**
	"Reflections on the Denise Denton Academic Leaders Workshop", Joint presentation with Belinda Sturm
July 2016	**12th World Congress on Computational Mechanics (WCCM 2016) Seoul, South Korea**
	"A Parallel Log-Barrier Mesh Warping Algorithm Based on Sparse Linear Solvers for Systems with Multiple Right-Hand Sides"
July 2016	**Virtual Mesh Generation Seminar DOE National Security Campus, Managed by Honeywell, Kansas City Plant, Kansas City, Missouri**
	"Parallel Dynamic Mesh Generation Algorithms"
June 2016	**Numerical Analysis Seminar Department of Mathematics, Politecnico di Milano, Milano, Italy**
	"A Log-Barrier Method for Mesh Quality Improvement and Untangling"
June 2016	**5th European Seminar on Computing (ESCO 2016)**
	"An Iterative Method for Model Order Reduction of Parasitic Resistive Networks" Pilsen, Czech Republic
January 2016	**Center for Flow Research and Education Seminar Iowa State University, Ames, Iowa**
	"Patient-Specific Computational Fluid Dynamic Simulations for Predicting Inferior Vena Cava Filter Performance"
December 2015	**Computing and Information Science Ph.D. Program and Department of Biomedical Engineering Joint Seminar Rochester Institute of Technology, Rochester, New York**
	"Dynamic Meshing Algorithms for Use in Computational Simulations of Patient-Specific Medical Interventions"

November 2015	**Engineering Professional Development Meeting** **School of Engineering, University of Kansas, Lawrence, Kansas** "Winning Strategies for Writing and NSF CAREER Proposal"
August 2015	**2015 NSF CyberBridges Workshop** **Arlington, Virginia** "Improving Data Locality for Exascale Unstructured Numerical Codes"
July 2015	**13th U.S. National Congress for Computational Mechanics** **San Diego, California** "A Parallel Framework for Multiobjective Mesh Optimization"
July 2015	**Bioengineering Research Group Seminar** **Universidad of A Coruña, A Coruña, Spain** "Dynamic Meshing Algorithms for Use in Computational Simulations of Patient-Specific Medical Interventions"
July 2015	**9th European Solid Mechanics Conference** **Madrid, Spain** "A Generalized 2nd Order Linear Elliptic PDE Framework for Mesh Warping"
June 2015	**2015 AMMCS-CAIMS Congress** **Waterloo, Ontario, Canada** "Computational Simulations of the Onset and Treatment of Hydrocephalus in Infants and Mice Based on a Novel Mesh Warping Algorithm"
June 2015	**2015 PADAL Workshop** **Berkeley, California** "A Case for Runtime Support for Better Data Locality and Automatic Mapping of Unstructured Mesh Codes" (co-authored with Michael Stees)
June 2015	**International Conference on Adaptive Modeling and Simulation (ADMOS 2015), Nantes, France** "Prediction of Ventricular Boundary Evolution in Hydrocephalic Brain via a Combined Level Set and Adaptive Finite Element Mesh Warping Method"
April 2015	**Aerospace Engineering Colloquium** **University of Kansas, Lawrence, Kansas** "Parallel Dynamic Meshing Algorithms for Warping, Untangling, and Quality Improvement"
April 2015	**Engineering Professional Development Meeting** **School of Engineering, University of Kansas, Lawrence, Kansas** "Winning Strategies for Writing an NSF CAREER Proposal"
April 2015	**Department of Mathematics Colloquium** **University of Northern Iowa, Cedar Falls, Iowa** "Serial and Parallel Mesh Quality Improvement and Untangling Algorithms"
March 2015	**18th International Conference on Finite Element Methods for Flow Problems, Taipei, Taiwan** "A Parallel Log Barrier-Based Mesh Warping Method for Distributed Memory Machines"
March 2015	**Computational and Applied Mathematics Seminar, Mathematics Department, University of Kansas, Lawrence, Kansas** "Parallel Log Barrier Methods for Mesh Quality Improvement and Untangling"
February 2015	**Bioengineering Graduate Program Colloquium** **University of Kansas, Lawrence, Kansas** "A Computational Framework for Predicting Inferior Vena Cava Filter Performance on a Patient-Specific Basis"

November 2014	**Department of Computer Science Colloquium** **Old Dominion University, Norfolk, Virginia** "A Parallel Log Barrier Method for Mesh Quality Improvement and Untangling"
June 2014	**The 18th European Congress on Mathematics in Industry** **Taormina, Italy** "Patient-Specific Computational Fluid Dynamics Simulations for Predicting Inferior Vena Cava Filter Performance"
June 2014	**2014 NSF CyberBridges Workshop** **Arlington, Virginia** "Parallel Dynamic Meshing Techniques for Simulation-Assisted Medical Interventions" (Poster)
May 2014	**Numerical Analysis Seminar, Dept. of Computer Science and Engineering** **University of Minnesota, Minneapolis, Minnesota** "A Parallel Linear Solver for Block Circulant Linear Systems with Applications to Acoustics"
April 2014	**Biomechanics Working Group Seminar** **Mississippi State University, Mississippi State, Mississippi** "Patient-Specific Computational Fluid Dynamics Simulations for Predicting Inferior Vena Cava Filter Performance"
April 2014	**Special ECE Seminar, Institute for Bioengineering and Bioscience** **Georgia Institute of Technology, Atlanta, Georgia** "Patient-Specific Computational Fluid Dynamics Simulations for Predicting Inferior Vena Cava Filter Performance"
March 2014	**Office of Research and Economic Development** **Mississippi State University, Mississippi State, Mississippi** "Strategies for Writing a Winning NSF CAREER Proposal"
March 2014	**Math Club Talk** **Mississippi State University, Mississippi State, Mississippi** "Medical Implants: Better Performance Through Mathematics"
February 2014	**Electrical Engineering and Computer Science Department Colloquium** **University of Kansas, Lawrence, Kansas** "High Performance Scientific Computing Algorithms with Applications to Medicine, Electronic Circuits, and Acoustics"
February 2014	**SIAM Conference on Parallel Processing for Scientific Computing** **(SIAM PP14), Portland, Oregon** "A Parallel Log-Barrier Method for Mesh Quality Improvement and Untangling"
February 2014	**SIAM Conference on Parallel Processing for Scientific Computing** **(SIAM PP14), Portland, Oregon** "Overview of Parallel Mesh Generation and Optimization Methods" (Joint talk with Andrey Chernikov; also co-authored with Nikos Chrisochoides)
August 2013	**Applied Mathematics, Modeling, and Computational Science** **Conference (AMMCS 2013), Waterloo, Ontario, Canada** "A Machine Learning Tool for Automated Image Segmentation"
July 2013	**12th U.S. National Congress on Computational Mechanics** **(USNCCM12), Raleigh, North Carolina** "A Topology-Adaptive Level Set/Mesh Deformation Technique for Boundary Evolution Tracking: Applications to Brain Biomechanics"

July 2013	**2013 NSF CyberBridges Workshop** **Arlington, Virginia** "Parallel Dynamic Meshing Algorithms, Theory, and Software for Patient-Specific Medical Interventions" (Poster)
July 2013	**4th Workshop on Grid Generation for Numerical Computations (Tetrahedron IV Workshop), Verbania, Italy** *(1 out of 4 Americans invited to present their research)* "A Hybrid Mesh Deformation Algorithm Using Anisotropy and Multiobjective Mesh Optimization"
May 2013	**NSF CISE CAREER Proposal Writing Workshop** **Arlington, Texas** "Strategies for Writing a Winning NSF CISE CAREER Proposal"
February 2013	**Advances in Computational Mechanics, A Conference Celebrating the 70th Birthday of Thomas J.R. Hughes, San Diego, California** "A Log-Barrier Method for Mesh Quality Improvement and Untangling"
February 2013	**SIAM Conference on Computational Science and Engineering** **Boston, Massachusetts** "A Mesh Warping Framework for Tracking Brain Biomechanical Boundary Evolution"
December 2012	**NSF Advisory Committee for Cyberinfrastructure** **National Science Foundation Webinar** "NSF OCI CAREER Workshop" Joint talk with Thomas Hacker
November 2012	**Department of Computer and Information Technology** **Graduate Student Seminar, Purdue University, West Lafayette, Indiana** "An Image-Based, Parallel Dynamic Meshing Framework for Simulation-Assisted Medical Interventions"
November 2012	**Department of Computer Science and Engineering** **Graduate Student Seminar, Mississippi State University** **Mississippi State, Mississippi** "A Parallel Dynamic Meshing Framework for Simulation-Assisted Medical Inteventions"
September 2012	**Department of Industrial Engineering Seminar** **Mississippi State University, Mississippi State, Mississippi** "Optimization Techniques for Mesh Generation and Model Order Reduction"
September 2012	**Center for Computational Sciences Seminar** **Mississippi State University, Mississippi State, Mississippi** "Research Overview"
July 2012	**SIAM Annual Meeting, Minneapolis, Minnesota** "Patient-specific Mesh Generation for Improved Pulmonary Embolism Prevention"
June 2012	**NSF CyberBridges Workshop, Arlington, Virginia** "Parallel Dynamic Meshing Algorithms for Patient-Specific Medical Interventions" (Poster)
March 2012	**Mathematics, Statistics, and Physics Seminar** **Wichita State University, Wichita, Kansas** "A Dynamic Meshing Framework with Applications to Patient-Specific Medical Interventions"

March 2012	**Fariborz Maseeh Mathematics and Statistics Seminar** **Portland State University, Portland, Oregon** "A Dynamic Meshing Framework with Applications to Patient-Specific Medical Interventions"
March 2012	**Mathematics and Statistics Seminar** **Mississippi State University, Mississippi State, Mississippi** "A Dynamic Meshing Framework with Applications to Patient-Specific
March 2012	**Mathematics and Computer Science Seminar** **Clarkson University, Potsdam, New York** "A Dynamic Meshing Framework with Applications to Patient-Specific Medical Interventions"
February 2012	**Mathematics, Computer Science, and Radiology Seminar** **Emory University, Atlanta, Georgia** "An Image-Based, Parallel Dynamic Meshing Framework for Patient-Specific Medical Interventions"
January 2012	**Mathematics and Applied Mathematics Seminar** **Virginia Commonwealth University, Richmond, Virginia** "A Dynamic Meshing Framework with Applications to Patient-Specific Medical Interventions"
December 2011	**Mathematical Sciences/Operations Research Seminar** **Florida Institute of Technology, Melbourne, Florida** "A Dynamic Meshing Framework with Applications to Patient-Specific Medical Interventions"
April 2011	**Scientific Computing Seminar** **Brown University, Providence, Rhode Island** "Towards a Parallel Dynamic Meshing Framework"
March 2011	**SIAM Computational Science and Engineering Conference** **Reno, Nevada** "Vertex Reordering for Local Mesh Quality Improvement of Tetrahedral Meshes"
November 2010	**Computer Science Department** **University of Nebraska, Omaha, Nebraska** "Effective Anisotropic Mesh Generation for Finite Element Solution of Partial Differential Equations"
October 2010	**Electrical Engineering and Computer Science Department** **University of Tennessee, Knoxville, Tennessee** "Meshing Techniques for Numerical Solution of Partial Differential Equations and Shape Matching"
September 2010	3rd **Workshop on Grid Generation for Numerical Computations (Tetrahedron III Workshop)** **Swansea University, Swansea, Wales, United Kingdom** *(1 out of 5 Americans invited to present their research)* "Towards an Improved Understanding of the Connections Between Geometry Discretization, Anisotropic Mesh Quality Improvement, and the Numerical Solution of Elliptic PDEs"
August 2010	**DARPA Grid II Workshop** **Washington, D.C.** "Parallel Streaming Progressive Meshes"
June 2010	16th **U.S. National Congress of Theoretical and Applied Mechanics** **State College, Pennsylvania**

	"Insight on the Correlation Between Geometry, Mesh Quality Improvement, and Elliptic PDE Solution"
April 2010	**SIAM Student Chapter**
	The Pennsylvania State University, University Park, Pennsylvania
	"Derivative-Free Optimization Algorithms for Mesh Quality Improvement"
January 2010	**Social, Life, and Engineering Sciences Imaging Center**
	The Pennsylvania State University, University Park, Pennsylvania
	"Biomedical Mesh Generation Techniques for Cardiovascular Applications"
March 2009	**SIAM Computational Science and Engineering Conference, (SIAM CSE09), Miami, Florida**
	"Efficiency of Static Vertex Reordering Schemes for Local Mesh Optimization"
July 2008	**REU Program, Mathematics and Statistics Department**
	James Madison University, Harrisonburg, Virginia
	"Mesh Warping Algorithms with Applications to Cardiology"
July 2008	**REU Program, Mathematics and Statistics Department**
	James Madison University, Harrisonburg, Virginia
	"A Patch-based Mesh Smoothing Algorithm"
May 2008	**9th International Workshop on State-of-the-Art in Scientific and Parallel Computing, Trondheim, Norway**
	"A Patch-Based Mesh Optimization Algorithm for Partitioned Meshes"
May 2008	**SIAM Optimization Conference, (SIAM OP08) Boston, Massachusetts**
	"Experience with Gradient-Based Optimization Methods in Electronic Structure Calculations"
April 2008	**Computational Visualization Center**
	Institute for Computational Engineering and Sciences
	University of Texas, Austin, Texas
	"A Comparison of Vertex Relocation Strategies for Mesh Quality Improvement"
March 2008	**SIAM Parallel Processing for Scientific Computing Conference, (SIAM PP08), Atlanta, Georgia**
	"Parallel Mesh Quality Improvement Techniques for Blood Clot Entrapment"
March 2008	**Garfield Thomas Water Tunnel Seminar**
	Applied Research Laboratory, The Pennsylvania State University, University Park, Pennsylvania
	"The Development of an Efficient Geometric Mesh Quality Improvement Method via Vertex Reordering and Elemental Patches"
September 2007	**Science Today Seminar**
	State University of New York (SUNY) Oswego, Oswego, New York
	"Generation and Adaptation of Computational Meshes for Biomedical Applications"
April 2007	**Industrial Engineering Seminar**
	The Pennsylvania State University, University Park, Pennsylvania
	"Experience with Approximations in the TRPDS Algorithm"
April 2007	**PDE and Applied PDE Seminar**
	The Pennsylvania State University, Altoona, Pennsylvania
	"M4: Mesh Smoothing, Mesh Node Reordering, and Mesh Warping for Medical Applications"
March 2007	**Institute for Computational Science Seminar**
	The Pennsylvania State University, University Park, Pennsylvania
	"Mesh Warping Techniques with Applications to Cardiology and Nonlinear Elasticity"

March 2007	**Industrial and Professional Advisory Committee Presentation**
	The Pennsylvania State University, University Park, Pennsylvania
	"Optimal Meshes with Applications to Graphics and Bioengineering"
February 2007	**SIAM Computational Science and Engineering Conference**
	Costa Mesa, California
	"The Effect of Node Reordering on 2D Local Mesh Smoothing Efficiency with Application to Mesh Warping"
September 2006	**Computational and Applied Mathematics Colloquium**
	The Pennsylvania State University, University Park, Pennsylvania
	"Optimization Techniques for Mesh Warping and Nonlinear Elasticity"
March 2006	**Colloquium, Mathematical Sciences Department**
	Rensselaer Polytechnic Institute, Troy, New York
	"Optimization Techniques for Mesh Warping and the Geometry of Materials"
February 2006	**Colloquium, Mathematical Sciences Department**
	George Mason University, Fairfax, Virginia
	"Optimization Techniques for Mesh Warping and the Geometry of Materials"
February 2006	**Colloquium, Mathematics Department**
	University of Northern Iowa, Cedar Falls, Iowa
	"Optimization Techniques for Mesh Warping and the Geometry of Materials"
February 2006	**Colloquium, Computer Science and Engineering Department**
	The Pennsylvania State University, University Park, Pennsylvania
	"Optimization Techniques for Mesh Warping and the Geometry of Materials"
February 2006	**Jr. Colloquium, Mathematics Department**
	University of Minnesota, Minneapolis, Minnesota
	"Optimization Techniques for Mesh Warping and the Geometry of Materials"
February 2006	**Colloquium, Mathematics and Statistics Department**
	University of Maryland - Baltimore County, Baltimore, Maryland
	"Numerical Methods for Problems in Electronic Structure Calculations"
December 2005	**Colloquium, Mathematics Department**
	University of Iowa, Iowa City, Iowa
	"Numerical Methods for Problems in Electronic Structure Calculations"
December 2005	**Numerical Analysis Seminar, Mathematics Department**
	University of Iowa, Iowa City, Iowa
	"A Tetrahedral Meshing Warping Algorithm with Applications to Cardiology"
April 2005	**Colloquium, Mathematics Department**
	University of Northern Iowa, Cedar Falls, Iowa
	"Algorithms for Mesh Warping with Applications to Cardiology"
April 2004	**Numerical Analysis Seminar, Computer Science and Engineering Department, University of Minnesota, Minneapolis, Minnesota**
	"Algorithms for Mesh Warping with Applications to Cardiology"
April 2004	**Numerical Analysis Seminar, Applied Physics and Applied Mathematics Department, Columbia University, New York, New York**
	"Algorithms for Mesh Warping with Applications to Cardiology"
March 2004	**SCOREC Seminar, Scientific Computation Research Center**
	Rensselaer Polytechnic Institute, Troy, New York
	"Algorithms for Mesh Warping with Applications to Cardiology"
March 2004	**Mathematical Sciences Seminar, Center for Applied Mathematics**
	Cornell University, Ithaca, New York
	"Algorithms for Mesh Warping with Applications to Cardiology"

March 2004	**Colloquium, College of Engineering** **Virginia Polytechnic Institute and State University, Blacksburg, Virginia** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2004	**Colloquium, Mathematics and Statistics Department** **Miami University, Oxford, Ohio** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2004	**Colloquium, Mathematics Department** **Western Illinois University, Macomb, Illinois** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2004	**Colloquium, Mathematics and Statistics Department** **Texas Tech University, Lubbock, Texas** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2004	**Research Seminar** **Sandia National Laboratories, Albuquerque, New Mexico** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2004	**Numerical Analysis Seminar, Courant Institute** **New York University, New York, New York** "Algorithms for Mesh Warping with Applications to Cardiology"
January 2004	**Applied and Computational Mathematics Seminar** **The Pennsylvania State University, University Park, Pennsylvania** "Algorithms for Mesh Warping with Applications to Cardiology"
January 2004	**Seminar, Center for Cardiovascular Bioinformatics and Modeling** **Johns Hopkins University, Baltimore, Maryland** "Algorithms for Mesh Warping with Applications to Cardiology"
February 2003	**SIAM Computational Science and Engineering Conference** **San Diego, California** "A Mesh Warping Algorithm Based on Weighted Laplacian Smoothing"

Other Presentations (Selected)

September 2025	**International Council on Industrial and Applied Mathematics (ICIAM)** **Workhop on Industrial and Applied Mathematics** "ParFEMWARP: A Parallel Dynamic Meshing Algorithm Based on Hybrid Parallel Programming"
August 2023	**International Council on Industrial and Applied Mathematics Congress** **(ICIAM 2023), Waseda University, Tokyo, Japan** "Multiobjective Mesh Optimization Algorithms for Quadrilateral Meshes"
September 2022	**International Council on Industrial and Applied Mathematics** **Workshop on Industrial and Applied Mathematics, University of** **Strathcylde, Glasgow, United Kingdom** "A Finite Element-Based High-Order Mesh Warping Technique for Hyperelastic Materials"
February 2022	**SIAM International Meshing Roundtable 2022 Workshop, Virtual Event** "A Parallel Variational Mesh Quality Improvement Method for Tetrahedral Meshes Based on the MMPDE Mesh Method"
July 2021	**International Conference on Spectral and High Order Methods** **(ICOSAHOM 2020/2021), Vienna, Austria** "A Direct Method of Generating High-order Tetrahedral Meshes Using an Advancing Front Approach"
June 2020	**2020 International Conference on Computational Science** **(ICCS 2020), Amsterdam, Netherlands**

"A Direct High-order Curvilinear Triangular Mesh Generation Method Using an Advancing Front Technique"
Conference cancelled due to covid-19.

October 2019   **28th International Meshing Roundtable**
Buffalo, New York
"A Parallel Variational Method for Mesh Quality Improvement Method for Tetrahedral Meshes"

September 2017   **26th International Meshing Roundtable**
Barcelona, Spain
"A High-Order Log Barrier-Based Mesh Generation and Warping Method"

October 2015   **5th ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VipIMAGE 2015)**
Tenerife, Canary Islands, Spain
"Automated Image Segmentation Based on Multiobjective Optimization"

October 2014   **10th Mississippi State Conference on Differential Equations and Computational Simulations, Mississippi State, Mississippi**
"Determination of the Optimal Anisotropic PDE in a Hybrid Mesh Deformation Algorithm"

July 2014   **11th World Congress on Computational Mechanics**
Barcelona, Spain
"A 2D Topology-Adaptive Mesh Deformation Framework for Mesh Warping"

October 2013   **22nd International Meshing Roundtable**
Lake Buena Vista, Florida
"Automated edge grid generation based on arc-length optimization"

October 2012   **21st International Meshing Roundtable**
San Jose, California
"CPU-GPU Algorithms for Triangular Surface Mesh Simplification"

October 2012   **9th UAB-MSU Conference on Differential Equations and Computational Simulations, Mississippi State, Mississippi**
"A Space-Filling Curve Mesh Element- and Vertex-Reordering Technique for Efficient Multicore Finite Element Simulations"

October 2012   **2012 MICCAI MeshMed Workshop**
Nice, France
"Automatic Boundary Evolution Tracking via a Combined Level Set and Mesh Warping Technique: Application to Hydrocephalus"
(Poster)

February 2012   **SIAM Conference on Parallel Processing for Scientific Computing, (SIAM PP12), Savannah, Georgia**
"Streaming GPU-Based Triangular Surface Mesh Compression"

June 2011   **2011 International Conference on Computational Science**
Singapore
"MDEC: MeTiS-based Domain Decomposition for Parallel 2D Mesh Generation"

June 2011   **2011 International Conference on Computational Science**
Singapore
"An Alternating Mesh Quality Metric Scheme for Efficient Mesh Quality Improvement"

November 2010   **2010 International Symposium on Visual Computing**
Las Vegas, Nevada
"An Improved Shape Matching Algorithm for Deformable Objects Using a Global Image Feature" (Poster Presentation)

July 2010	**SIAM Annual Meeting**
	Pittsburgh, Pennsylvania
	"Static Vertex Reordering Schemes for Local Mesh Quality Improvement"
June 2010	**2010 International Conference on Computational Science**
	Amsterdam, The Netherlands
	"Towards High-quality, Untangled Meshes via a Force-directed Graph Embedding Approach"
June 2010	**2010 International Conference on Computational Science**
	Amsterdam, The Netherlands
	"Two Derivative-free Optimization Algorithms for Mesh Quality Improvement"
October 2009	**SIAM Workshop on Combinatorial Scientific Computing**
	Seaside, California
	"Obtaining High-Quality Untangled Meshes Through Force-Directed Graph Embedding"
	Poster Presentation: Presented by Sanjukta Bhowmick
October 2009	18th **International Meshing Roundtable**
	Salt Lake City, Utah
	"A Comparison of Gradient- and Hessian-Based Optimization Methods for Tetrahedral Mesh Quality Improvement"
July 2009	10th **U.S. National Congress on Computational Mechanics**
	Columbus, Ohio
	"An Investigation into Efficient Local Tetrahedral Mesh Quality Improvement Methods for Various Shape Quality Metrics"]
May 2009	**2009 International Conference on Computational Science**
	Baton Rouge, Louisiana
	"Experience with Approximations in the Trust-Region Parallel Direct Search Algorithm"
October 2008	17th **International Meshing Roundtable**
	Pittsburgh, Pennsylvania
	"The Effect of Vertex Reordering on 2D Local Mesh Optimization Efficiency"
August 2008	**Fields-MITACS Industrial Problem-Solving Workshop**
	Fields Institute, University of Toronto, Toronto, Ontario, Canada
	"NXP Semiconductor Problem: Model Order Reduction"
	Joint talk with Ortho Flint
May 2007	**Bio and Medical Informatics Retreat**
	The Pennsylvania State University, University Park, Pennsylvania
	"Advanced Virtual Environments for Biomedical Applications"
February 2007	**SIAM Computational Science and Engineering Conference**
	Costa Mesa, California
	"Optimization of the Geometry of Materials"
November 2006	**Finite Element Circus**
	State College, Pennsylvania
	"A Robust Solution Procedure for Hyperelastic Solids with Large Boundary Deformation"
August 2006	**Fields-MITACS Industrial Problem-Solving Workshop**
	Fields Institute, University of Toronto, Toronto, Ontario, Canada
	"Nonlinear Dimension Reduction for Microarray Data (Small n and Large p)"
	Joint talk with Steven Wang
July 2006	**World Congress on Computational Mechanics**
	Los Angeles, California

	"A Robust Solution Procedure for Hyperelastic Solids with Large Boundary Deformation"
October 2005	**Technology Forum, Department of Computer Science and Engineering University of Minnesota, Minneapolis, Minnesota** Poster Presentation: "New Developments in Numerical Methods for Electronic Structure Calculations" (with Yunkai Zhou)
September 2005	**Numerical Analysis Seminar, Department of Computer Science and Engineering, University of Minnesota, Minneapolis, Minnesota** "Efficient Geometry Optimization of Molecular Clusters"
July 2005	**Institute for the Theory of Advanced Materials in Information Technology Workshop University of Minnesota, Minneapolis, Minnesota** "Efficient Geometry Optimization of Molecular Clusters"
May 2005	**Midwest Numerical Analysis Days University of Iowa, Iowa City, Iowa** "A Linear Weighted Laplacian Smoothing Framework for Warping Tetrahedral Meshes"
February 2005	**SIAM Conference on Computational Science and Engineering, (SIAM CSE05), Orlando, Florida** "A Linear Weighted Laplacian Smoothing Framework for Warping Tetrahedral Meshes"
November 2004	**Numerical Analysis Seminar Department of Computer Science and Engineering University of Minnesota, Minneapolis, Minnesota** "Numerical Methods for Problems with Moving Meshes"
September 2004	**Ph.D. Thesis Defense, Center for Applied Mathematics Cornell University, Ithaca, New York** "Numerical Methods for Problems with Moving Meshes"
February 2004	**SIAM Parallel Processing for Scientific Computing Conference (SIAM PP04), San Francisco, California** "Using Approximation Models in Simulation-based Optimization"
November 2003	**Applied Math Days Rensselaer Polytechnic Institute, Troy, New York** "A Mesh Warping Algorithm Based on Weighted Laplacian Smoothing"
September 2003	**Plenary Session, 12th International Meshing Roundtable Santa Fe, New Mexico** "A Mesh Warping Algorithm Based on Weighted Laplacian Smoothing"
February 2002	**Cornell Day at United Technologies Research Center Hartford, Connecticut** "A Mesh Warping Algorithm Based on Weighted Laplacian Smoothing"
February 2001	**Mathematical Sciences Graduate Student Seminar Cornell University, Ithaca, New York** "Women and Graduate School: Improving the Experience and Success of Female Students"
October 2000	**First Annual Applied Mathematics Days Rensselaer Polytechnic Institute, Troy, New York** "Parallel Optimization Using Approximation Models"
September 2000	**Mathematical Sciences Graduate Student Seminar Cornell University, Ithaca, New York** "Parallel Optimization Using Approximation Models"

August 2000	**Computational Sciences and Mathematics Research Group Seminar**
	Sandia National Laboratories, Livermore, California
	"Parallel Optimization Using Approximation Models"
August 2000	**Student Research Symposium**
	Sandia National Laboratories, Livermore, California
	"Parallel Optimization Using Approximation Models"
August 1999	**Computational Sciences and Mathematics Research Group Seminar**
	Sandia National Laboratories, Livermore, Callifornia
	"Some Parallel Extensions to Optimization Methods in OPT++"

Workshop Participation

2025	Participant, National Workshop on the Formation of Industry-University Partnerships for Doctoral Training, National Academies, Washington, D.C.
2025	Panelist, AI4DE: 1st International Workshop on AI for Data Editing, KDD 2025, Toronto, Canada
2025	Participant, American Society for Engineering Education Research Leadership Institute, Alexandria, Virginia
2024	Participant, National Institute for Informatics Shonan Seminar No. 201, Deep Tissue Mining: A Roadmap to Enable the Curation, Analysis, and Visualization of Petabyte-Scale Whole-Organ Multiplex 3D Tissue Images, Shonan Village Center, Japan
2024	Participant, American Society for Engineering Education Research Leadership Institute, Arlington, Virginia
2023	Participant, American Society for Engineering Education Research Leadership Institute, Arlington, Virginia
2022	Participant, American Institute for Medical and Biological Engineering Leadership Symposium: Diversifying Paths to Academic Leadership, Virtual Event
2016	Invited Participant, Denise Denton Emerging Leaders Workshop 2016, Madison, Wisconsin
2016	Invited Participant, NSF CyberBridges Workshop, Rochester, New York
2015	Invited Participant, PADAL Workshop, Berkeley, California
2015	Invited Participant, NSF CyberBridges Workshop, Arlington, Virginia
2014	Invited Participant, NSF CyberBridges Workshop, Arlington, Virginia
2013	Invited Participant, NSF CyberBridges Workshop, Arlington, Virginia
2012	Invited Participant, NSF CyberBridges Workshop, Arlington, Virginia
2011	Invited Academic Expert, Fourth Montreal Industrial Problem Solving Workshop, Montreal, Quebec, Canada
2010	Invited Participant, DARPA 2nd GRID Workshop, Washington, D.C.
2008	Invited Academic Expert, Fields-Mitacs Industrial Problem Solving Workshop, Fields Institute, University of Toronto, Toronto, Ontario, Canada
2006	Invited Academic Expert, Fields-Mitacs Industrial Problem Solving Workshop, Fields Institute, University of Toronto, Toronto, Ontario, Canada

Service to the Profession and Professional Activities

Officer Positions

2022-27	Secretary, International Council on Industrial and Applied Mathematics (ICIAM)
2019-20	Vice Chair, Computational Science and Engineering Activity Group, Society for Industrial and Applied Mathematics
2017-18	Program Director, Computational Science and Engineering Activity Group, Society for Industrial and Applied Mathematics

2015-16   Secretary, Computational Science and Engineering Activity Group, Society for Industrial and Applied Mathematics

Editor Positions

2016-24   Academic Editor, Mathematical Problems in Engineering
2020-22   Guest Co-Editor, Computer-Aided Design
2014-15   Associate Editor, De Gruyter Open, Book Series on Medicine
2015   Guest Co-Editor, Electronic Journal of Differential Equations
2013   Guest Co-Editor, Engineering with Computers
2013   Guest Co-Editor, Electronic Journal of Differential Equations
2011   Guest Co-Editor, Engineering with Computers

Conference Committees/Organization

2024-   Member, ECCOMAS-IACM ADMOS Advisory Committee
2023-26   Member, ACM Gordon Bell Prize Committee
2019-26   Member, International Meshing Roundtable Steering Committee
2025   Member, Program Committee, 2025 Shape Modeling International Conference (SMI 2025) Hangzou, China
2025   Member, Program Committee, 17th International Conference on Geometric Design and Processing (GMP 2025), St. Louis, MO
2025   Organizer, Minisymposium on Emerging Technologies and Applications in High Performance Computing for Research and Innovation, 2025 Math 2 Product Conference (M2P 2025), Valencia, Spain
2025   Co-organizer, Minisymposium on Mesh Adaptation, Deformation, and Optimization: Methods and Applications, 12th International Conference on Adaptive Modeling and Simulation (ADMOS 2025), Barcelona, Spain
2025   Co-organizer, Minisymposium on Coupling Image Processing and Computational Modeling and Simulation for Biomedical Applications, 11th International Conference on Coupled Problems in Science and Engineering (COUPLED 2025), Villasimius, Sardinia, Italy
2024-25   Chair, International Meshing Roundtable Steering Committee
2024   Member, Program Committee, 16th International Conference on Geometric Modeling and Processing (GMP 2024), Qingdao, China
2024   Member, Technical Program Committee, 10th International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2024), Barcelona, Spain
2024   Speaker, Diversity Panel, SIAM Conference on Parallel Processing for Scientific Computing / SIAM International Meshing Roundtable Workshop, Baltimore, Maryland
2023-24   SIAM Representative, Joint Mathematics Meetings Program Committee, American Mathematical Society
2022-24   Member, SIAM Committee on the Joint Mathematics Meetings
2023   Chair, SIAM Committee on the Joint Mathematics Meetings
2023   Member, Program Committee, 15th International Conference on Geometric Modeling and Processing (GMP 2023), Genova, Italy
2023   Member, Technical Program Committee, 2023 International Conference on Parallel Computing (ICPP 2023), Multidisciplinary Track, Salt Lake City, Utah
2023   Member, Technical Program Committee, 9th International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2023), Venice, Italy
2023   Member, Scientific Committee, 10th International Conference on Coupled Problems in Science and Engineering (COUPLED 2023), Chania, Crete, Greece
2023   Publicity Chair, Parallel and Distributed Scientific Computing and Engineering Workshop (PDSEC '23), held in conjunction with the 37th (IEEE) International Parallel and Distributed Processing Symposium (IPDPS 2023), St. Petersburg, Florida

2023	Reviewer, International Congress on Industrial and Applied Mathematics (ICIAM) 2023
2023	Co-organizer, Minisymposium on Coupling Image Processing and Computational Modeling for Biomedical Applications, 10th International Conference on Coupled Problems in Science and Engineering (COUPLED 2023), Chania, Crete, Greece
2023	Co-organizer, Minisymposium on Recent Developments in Methods and Applications for Mesh Adaptation, 11th International Conference on Adaptive Modeling and Simulation (ADMOS 2023), Gothenburg, Sweden
2022	Member, Program Committee, 2022 Platform for Advanced Scientific Computing Conference (PASC 2022), Engineering Area, Basel, Switzerland
2022	Member, Program Committee, 11th International Numerical Geometry, Grid Generation, and Scientific Computing Conference (NUMGRID 2022), Moscow, Russia
2022	Member, Program Committee, 2022 IEEE International Parallel and Distributed Processing Symposium (IPDPS 2022), Experiments Track, Lyon, France
2022	Member, Program Committee, International Conference on Parallel Processing (ICPP 2022), Applications Track, Bordeaux, France
2022	Member, Program Committee, 2022 IEEE Cluster Conference, Applications, Algorithms, and Libraries Track, Heidelberg, Germany
2022	Member, Program Committee, 16th International Conference on Geometric Modeling and Processing (GMP 2022), Okinawa, Japan
2022	Member, Technical Program Committee, 8th International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2022), Barcelona, Spain
2022	Publicity Chair, Parallel and Distributed Scientific Computing and Engineering Workshop (PDSEC '22), held in conjunction with the 36th (IEEE) International Parallel and Distributed Processing Symposium (IPDPS 2022), Lyon, France
2022	Member, Research Posters Committee, 2022 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 22), Dallas, Texas
2022	Reviewer, 2022 Great Plains Biomechanics and Human Movement Variability Conferences, Omaha, Nebraska
2021	Member, Program Committee, 28th IEEE International Conference on High Performance Computing, Data, & Analytics (HiPC 2021), Algorithms Track, Bangalore, India
2021	Member, Program Committee, International Conference on Parallel Processing (ICPP 2021), Applications Track, Chicago, Illinois
2021	Member, Test of Time Award Committee, 2021 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 21), St. Louis, Missouri
2021	Member, Workshops Committee, 2021 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 21), St. Louis, Missouri
2021	Member, Research Posters Committee, 2021 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 21), St. Louis, Missouri
2021	Publicity Chair, Parallel and Distributed Scientific Computing and Engineering Workshop (PDSEC '21), held in conjunction with the 35th (IEEE) International Parallel and Distributed Processing Symposium (IPDPS 2021), Portland, Oregon
2021	Member, Program Committee, 2021 IEEE Cluster Conference, Applications, Algorithms, and Libraries Track, Portland, Oregon
2021	Member, Program Committee, 15th International Conference on Geometric Modeling and Processing (GMP 2021), Plzen, Czech Republic
2021	Member, Technical Program Committee, 7th International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2021), Porto, Portugal
2021	Co-organizer, Minisymposium on Mesh Generation for Coupled Problems, 9th International Conference on Coupled Problems in Science and Engineering (COUPLED 2021), Chia Laguna, Italy

2021	Co-organizer, Minisymposium on Mesh Adaptation, 2021 International Conference on Adaptive Modeling and Simulation (ADMOS 2021), Gothenburg, Sweden
2021	Co-organizer, Minisymposium on Imaging, Meshing, and Modeling of Biomedical Problems, SIAM Conference on Computational Science and Engineering (SIAM CSE21), Fort Worth, Texas
2020	Co-organizer, Virtual Winter School on Cardiac Simulations, Universita della Svizzera italiana, Lugano, Switzerland
2020	Member, Test of Time Award Committee, 2020 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 20), Atlanta, Georgia
2020	Member, Research Posters Committee, 2020 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 20), Atlanta, Georgia
2020	Publicity Chair, Parallel and Distributed Scientific Computing and Engineering Workshop (PDSEC '20), held in conjunction with the 34th (IEEE) International Parallel and Distributed Processing Symposium (IPDPS 2020), New Orleans, Louisiana
2020	Member, Technical Program Committee, 6th International Conference on Big Data, Small Data, Linked Data and Open Data (ALLDATA 2020), Lisbon, Portugal
2020	Member, Technical Program Committee, Applications Track, 2020 International Conference on Parallel Programming (ICPP 2020), Paris, France
2020	Member, Program Committee, 14th International Conference on Geometric Modeling and Processing (GMP 2020), Okinawa, Japan
2019	Co-Chair, SIAM Conference on Computational Science and Engineering (SIAM CSE19), Spokane, Washington
2019	Chair, 28th International Meshing Roundtable, Buffalo, New York
2019	Co-Chair, Technical Program Committee, Applications Track, 2019 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 19), Denver, Colorado
2019	Member, Program Committee, 2019 IEEE Cluster Conference, Applications, Algorithms, and Libraries Track, Albuquerque, New Mexico
2019	Member, Program Committee, 2019 International Conference on Parallel Programming (ICPP 2019), Applications Track, Kyoto, Japan
2019	Member, Program Committee, 13th International Conference on Geometric Modeling and Processing (GMP 2019), Vancouver, Canada
2019	Member, Program Committee, 7th ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VipIMAGE 2019), Porto, Portugal
2019	Member, Program Committee, 5th International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA 2019), Valencia, Spain
2019	Publicity Chair, Parallel and Distributed Scientific and Engineering Computing Workshop (PDSEC '19), held in conjunction with the 33rd IEEE International Parallel and Distributed Processing Symposium (IPDPS 2019), Rio de Janeiro, Brazil
2019	Member, Posters Committee, 2019 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 19), Denver, Colorado
2019	Co-organizer, Minisymposium on Advanced Methods and Applications in Mesh Adaptation, 2019 International Conference on Adaptive Modeling and Simulation (ADMOS 2019), Alicante, Spain
2019	Co-organizer, Minisymposium on Advances in Unstructured Mesh Algorithms and Their Applications, SIAM Conference on Computational Science and Engineering (SIAM CSE19), Spokane, Washington
2019	Judge, Poster Session, SIAM Conference on Computational Science and Engineering, (SIAM CSE19), Spokane, Washington

2018	Member, Program Committee, 9th International Conference on Numerical Geometry, Grid Generation, and Scientific Computing (NUMGRID-2018/VORONOI-150), Moscow, Russia
2018	Member, Program Committee, International Symposium on Isogeometric Analysis and Meshing (IGA & Mesh 2018), Dalian, China
2018	Member, Program Committee, 27th International Meshing Roundtable, Albuquerque, New Mexico
2018	Member, Program Committee, 12th International Conference on Geometric Modeling and Processing (GMP 2018), Aachen, Germany
2018	Member, Program Committee, IEEE Cluster 2018 Conference, Belfast, United Kingdom
2018	Member, Program Committee, 4th International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA 2018), Athens, Greece
2018	Organizer, Minisymposium on Parallel Methods for PDE-based Mesh Generation and Adaptation, 25th International Domain Decomposition Conference (DD25), St. John's, Newfoundland, Canada
2018	Co-organizer, Minisymopsium on Imaging, Modeling, Visualization and Biomedical Computing, 2018 SIAM Imaging Science Conference (SIAM IS18), Bologna, Italy
2018	Participant, Science Cafe, American Physical Society Conference for Undergraduate Women in Physics (CUWiP), Lawrence, Kansas
2017	Member, Program Committee, 2017 International Meshing Roundtable, Barcelona, Spain
2017	Member, Program Committee, Applications Track, 2017 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 17), Denver, Colorado
2017	Subreviewer, 23rd International European Conference on Parallel and Distributed Computing, (EURO-PAR 17), Santiago de Compostela, Spain
2017	Member, Program Committee, 11th International Conference on Geometric Modeling and Processing (GMP 2017), Xiamen, China
2017	Member, Program Committee, 2017 IEEE International Parallel and Distributed Processing Symposium (IPDPS 2017), Software Track, Orlando, Florida
2017	Member, Global Organizing Committee, 2017 Interdisciplinary International Conference on Applied Mathematics, Modeling and Computational Science (AMMCS 2017), Waterloo, Ontario, Canada
2017	Member, Program Committee, IEEE Cluster 2017, Track on Applications, Algorithms, and Libraries, Honolulu, Hawaii
2017	Member, Program Committee, 6th ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VipIMAGE 2017), Porto, Portugal
2017	Member, Program Committee, The 8th International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING 2017), Athens, Greece
2017	Member, Program Committee, 3rd International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA 2017), Venice, Italy
2017	Member, Program Committee, Workshop on Education for High-Performance Computing, (EduHPC-17), Denver, Colorado
2017	Co-organizer, Minisymposium on Mesh Generation and Mesh Adaptivity: Methods and Applications, 2017 International Conference on Adaptive Modeling and Simulation (ADMOS 2017), Verbania, Italy
2017	Co-organizer, Minisymposium on Geometry Modeling, Mesh Generation and Adaptation FEF 2017, Rome, Italy
2017	Co-organizer, Minisymposium on Recent Advances in Unstructured Mesh Algorithms and Their Applications, SIAM Computational Science and Engineering Conference (SIAM CSE17), Atlanta, Georgia

2017	Judge, Poster Session, SIAM Conference on Computational Science and Engineering (SIAM CSE17), Atlanta, Georgia
2017	Co-Organizer, Student Career Panel, SIAM Conference on Computational Science and Engineering (SIAM CSE17), Atlanta, Georgia
2016	Co-Chair, 2016 NSF CyberBridges Workshop (CISE/ACI), Rochester, NY
2016	Member, Program Committee, 8th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2016), HPC on Cloud Track, Luxembourg
2016	Member, Program Committee, Workshop on Education for High-Performance Computing, (EduHPC-16), Salt Lake City, Utah
2016	Member, Program Committee, 28th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2016), Los Angeles, California
2016	Member, Program Committee, Technology Track, XSEDE16 Conference, Miami, Florida
2016	Co-organizer, Minisymposium on Model Order Reduction Algorithms for High Performance Computers and Their Applications, 5th European Seminar on Computing (ESCO 2016), Pilsen, Czech Republic
2016	Member, Program Committee, 2nd International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA 2016), Lisbon, Portugal
2016	Member, Program Committee, Applications Track, 2016 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 16), Salt Lake City, Utah
2016	Member, Program Committee, 10th International Conference on Geometric Modeling and Processing (GMP 2016), San Antonio, Texas
2015	Member, Program Committee, Workshop on Education for High-Performance Computing (EduHPC-15), Austin, Texas
2015	Member, Program Committee, Technology Track, XSEDE15 Conference, St. Louis, Missouri
2015	Member, Tutorials Committee, XSEDE 15 Conference, St. Louis, Missouri
2015	Member, Program Committee, 7th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2015), HPC on Cloud Track, Vancouver, Canada
2015	Member, Program Committee, Applications Area, 2015 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC15), Austin, Texas
2015	Co-Chair, 2015 NSF CyberBridges Workshop (CISE/ACI), Arlington, Virginia
2015	Co-organizer, Minisymposium on Modeling and Simulation in Medicine and Biology, CAIMS-AMMCS 2015 Congress, Waterloo, Ontario, Canada
2015	Member, Program Committee, 9th International Conference on Geometric Modeling and Processing (GMP 2015), Lugano, Switzerland
2015	Member, Program Committee, 1st International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA 2015), Barcelona, Spain
2015	Member, Program Committee, 5th ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VipIMAGE 2015), Tenerife, Canary Islands, Spain
2015	Co-organizer, Minisymposium on Geometric Modeling and Mesh Generation for Finite Element Applications and Isogeometric Analysis, 18th International Conference on Finite Elements in Flow Problems (FEF 2015), Taipei, Taiwan
2014	Panelist, Professional Development Session, 23rd International Meshing Roundtable London, United Kingdom
2014	Co-Chair, 2014 NSF CyberBridges Workshop (CISE/ACI), Arlington, Virginia
2014	Program Vice Chair, 10th Mississippi State Conference on Differential Equations and Computational Simulations, Mississippi State, Mississippi
2014	Member, Program Committee, 2014 International Conference on Big Data (IEEE BigData 2014), Anchorage, Alaska

2014	Member, Program Committee, 2014 CompIMAGE Conference, Pittsburgh, Pennsylvania
2014	Member, Program Committee, 2014 XSEDE Conference, Technology Track, Atlanta, Georgia
2014	Member, Program Committee, 6th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2014), HPC on Cloud Track, Singapore
2014	Member, Program Committee, 10th IEEE International Conference on e-Science, Workshop of Works in Progress, Guaruja-SP, Brazil
2014	Co-organizer, Minisymposium on Recent Advances in Parallel Meshing Algorithms, SIAM Parallel Processing for Scientific Computing Conference (SIAM PP14), Portland, Oregon
2014	Judge, EPSCoR Science Fair, Mississippi State University, Mississippi
2013	Co-Chair, 2013 NSF CyberBridges Workshop (CISE/ACI), Arlington, Virginia
2013	Co-organizer, Minisymposium on Modeling and Computational Methods for Mathematical Biology and Medicine, AMMCS 2013, Waterloo, Ontario, Canada
2013	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships
2013	Member, Program Committee, 5th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2013), Program Committee, HPC on Cloud Track, Bristol, United Kingdom
2013	Member, Program Committee, MICCAI Workshop on Mesh Processing in Medical Image Analysis 2013 (MeshMed 2013), Nagoya, Japan
2013	Member, Program Committee, 2013 International Conference on Big Data (IEEE BigData 2013), Silicon Valley, California
2013	Member, Program Committee, XSEDE13 Conference, Technology Track, San Diego, California
2013	Member, Program Committee, 13th IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid 2013), Delft, The Netherlands, Applications and Experiences Track
2012	Member, Local Organizing Committee, 9th UAB-MSU Conference on Differential Equations and Computational Simulations, Starkville, Mississippi
2012	Co-Chair and Co-Founder, NSF CyberBridges Workshop (OCI), Arlington, Virginia
2012	Member, Program Committee, MICCAI Workshop on Mesh Processing in Medical Image Analysis 2012 (MeshMed 2012), Nice, France
2012	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships
2012	Member, Grace Hopper Conference Panels, Workshops, and Papers Committee
2012	Member, Program Committee, 8th IEEE International Conference on eScience (eScience 2012), Algorithms and Applications Track, Chicago, Illinois
2012	Member, IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2012), Program Committee, HPC on Cloud Track, Taipei, Taiwan
2012	Co-organizer, Professional Development Evening, SIAM Annual Meeting (SIAM AN12), Minneapolis, Minnesota
2012	Co-organizer, Minisymposium on Recent Advances in Biomedical Modeling, Simulation, and Visualization, SIAM Annual Meeting (SIAM AN12), Minneapolis, Minnesota
2011	Panelist, Professional Development Session, 20th International Meshing Roundtable, Paris, France
2011	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships
2011	Member, Grace Hopper Conference Panels and Workshops Committee
2011	Co-organizer, Minisymposium on Recent Advances in Mesh Generation and Mesh Quality Improvement, SIAM Conference on Computational Science and Engineering (SIAM CSE11), Reno, Nevada
2011	Co-organizer, Minisymposium on Efficient Model Order Reduction Using Graph Theory and Numerical Linear Algebra, SIAM Conference on Computational Science and Engineering (SIAM CSE11), Reno, Nevada
2010	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships

2010	Panelist, Professional Development Evening, SIAM Annual Meeting (SIAM AN10), Pittsburgh, Pennsylvania
2010	Co-Organizer, Professional Development Evening, SIAM Annual Meeting (SIAM AN10), Pittsburgh, Pennsylvania
2010	Conference Chair, 19th International Meshing Roundtable, Chattanooga, Tennessee
2009	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships
2009	Co-Organizer, Professional Development Evening, SIAM Annual Meeting (SIAM AN09), Denver, Colorado
2009	Doctoral Showcase Committee, 2009 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 09), Portland, Oregon
2009	Co-organizer, Minisymposium on Mesh Quality Measurement and Improvement: An Overview of Recent Techniques, SIAM Conference on Computational Science and Engineering (SIAM CSE09), Miami, Florida
2009	Program Committee, 18th International Meshing Roundtable, Salt Lake City, Utah
2008	Organizer, Minisymposium on Parallel Mesh Techniques for Medical Imaging SIAM Conference on Parallel Processing for Scientific Computing (SIAM PP08), Atlanta, Georgia
2008	Reviewer, Grace Hopper Celebration of Women in Computing Scholarships
2007	Member, Poster Committee, 2007 ACM/IEEE International Conference for High Performance Computing, Networking, Storage and Analysis (SC 07), Reno, Nevada
2006	Member, Grace Hopper Conference Committee on Presentations, Panels, and Workshops, San Diego, California

Journal, Conference, and Book Chapter Refereeing

Journals: ACM Crossroads Magazine, ACM Transactions on Mathematical Software, Advances in Engineering Software, AIAA Journal, Algorithms, Applied Numerical Mathematics, ASME Journal of Computer and Information Science and Engineering, Cluster Computing, Communications in Nonlinear Science and Numerical Simulation, Computational Materials Science, Computer Aided Design, Computer Aided Geometric Design, Computer Methods in Applied Mechanics and Engineering, Computer Physics Communications, Computers and Mathematics with Applications, Electronic Journal on Differential Equations, Engineering Computations, Engineering with Computers, Environmental Engineering Science, Expert Systems with Applications, IEEE Access, International Journal for Numerical Methods in Engineering, Journal of Chemical Physics, Journal of Computational and Applied Mathematics, Journal of Computational Physics, Journal of Computational Science, Journal of Computational Science Education, Journal of Mechanical Engineering Science, Journal of Parallel and Distributed Computing, Journal of Structural Engineering, Mathematics and Computers in Simulation, Numerical Algorithms Parallel Computing, PLOS ONE, SIAM Journal on Numerical Analysis, SIAM Journal on Scientific Computing, SIAM Review, Springer Nature Applied Sciences

Conferences: ACM/IEEE Supercomputing Conference (SC); CDER/TCPP Workshop on Education for High-Performance Computing (EduHPC); ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing (VipIMAGE); IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing (CCGrid); IEEE BigData Conference; IEEE Cluster Conference; IEEE Computer Graphics and Applications; IEEE Conference on Cloud Computing Technology and Science (CloudCom); IEEE International Conference on eScience (eScience); IEEE International Conference on High Performance Computing, Data, and Analytics (HiPC); IEEE International Parallel and Distributed Processing Symposium (IPDPS); International Conference and Exhibition on Computer Graphics and Interactive Techniques (SIGGRAPH); International Conference on Big Data, Small Data, Linked Data, and Open Data (ALLDATA); International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD

COMPUTING); International Conference on Geometric Modeling and Processing (GMP); International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI); International Conference on Numerical Geometry, Grid Generation, and Scientific Computing (NUMGRID/VORONOI); International Conference on Parallel Processing (ICPP); International European Conference on Parallel and Distributed Computing (EURO-PAR); International Meshing Roundtable; International Symposium on Computational Modeling of Objects Represented in Images: Fundamentals, Methods, and Applications (CompIMAGE); International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD); MICCAI Workshop on Mesh Processing in Medical Image Analysis (MeshMed); Shape Modeling International Conference (SMI); Workshop on Grid Generation for Numerical Computations (Tetrahedron Workshop); XSEDE Conference

Book Proposals: Cambridge Books

Book Chapters:

Mesh Generation and Adaptation: Cutting-Edge Techniques, Volume in Honour of Oubay Hassan's 60th Birthday, SEMA-SIMAI Springer Series, Springer Nature
Physics of Liquid Matter: Modern Problems

Proposal Reviewing

2025	Reviewer, NSF ENG
2025	Reviewer, DOE CSGF
2024	Reviewer, DOE CSGF
2024	Reviewer, NSF CISE
2024	Reviewer, NSF ENG
2024	Reviewer, NSF Foundation-wide
2023	Reviewer, DOE Energy Earthshots
2023	Reviewer, DOE CSGF
2023	Reviewer, NSF CISE
2023	Reviewer, NSF ENG
2023	Reviewer, NSF Foundation-wide
2022	Committee of Visitors, NSF Foundation-wide
2022	Panelist, NSF CISE
2022	Adhoc Reviewer, Oak Ridge Associated Universities
2021	Panelist, DOE ASCR
2021	Panelist, NSF CISE AND ENG
2021	Panelist, NSF CISE
2020	Panelist, DOE ASCR and FES
2020	Ad-hoc Reviewer, DOE ASCR
2020	Panelist, NSF CISE
2019	Member, Site Visit Team, NSF ENG
2019	Panelist, NSF CISE
2018	Ad-hoc Reviewer, DOE ASCR
2018	Member, Site Visit Team, NSF ENG
2018	Panelist, NSF CISE
2017	Member, Site Visit Team, NSF ENG
2017	Member, Reverse Site Visit Team, NSF ENG and NSF CISE
2017	Ad-Hoc Reviewer, DOE ASCR
2017	Ad-Hoc Reviewer, DOE ASCR and FES
2017	Panelist, NSF CISE
2017	Panelist, NSF EHR

2017	Ad-Hoc Reviewer, NSF ENG
2016	Panelist, Department of Defense
2016	Panelist, NSF CISE
2016	Panelist, NSF DGE
2016	Ad-Hoc Reviewer, NSF ENG
2015	Ad-Hoc Reviewer, NSF CISE
2015	Panelist, Department of Defense
2015	Reviewer, Czech Science Foundation, Czech Republic
2014	Ad-Hoc Reviewer, Skolkovo Institute of Science and Technology
2014	Panelist and Ad-Hoc Reviewer, National Science Foundation
2013	Reviewer, Air Force Office of Scientific Research
2013	Panelist, Skolkovo Institute of Science and Technology
2013	Reviewer, Qatar National Research Fund
2013	Panelist, Air Force Summer Faculty Fellowship Program
2013	Panelist, NSF DGE, Washington, DC
2013	Reviewer, Institute for Mathematics and its Applications
2012	Reviewer, Czech Science Foundation, Czech Republic
2012	Reviewer, King Fahd University of Petroleum and Minerals, Saudi Arabia
2012	Panelist, Department of Defense, Arlington, VA
2012	Panelist, NSF DGE, Washington, DC
2011	Reviewer, King Fahd University of Petroleum and Minerals, Saudi Arabia
2011	Panelist, NSF OCI Panels, Arlington, VA
2011	Chair, Department of Defense Panel, National Harbor, MD
2011	Panelist, NSF DGE Panel, National Harbor, MD
2010	Reviewer, Superior Council of the National Fund for Scientific and Technological Development (FONDECYT), Chile
2010	Panelist, CUBIT External Review Panel (CUBIT is a mesh generation software package developed by Sandia National Laboratories)
2010	Panelist, NSF MPS Panel, Arlington, VA
2010	Panelist, Department of Defense, Arlington, VA
2010	Panelist, NSF DGE, Arlington, VA
2009	Panelist, CUBIT External Review Panel
2009	Panelist, Department of Defense, Arlington, VA
2009	Panelist, NSF DGE, Arlington, VA
2008	Panelist, Department of Defense, Arlington, VA
2007	Panelist, NSF CISE, Arlington, VA
2007	Panelist, Department of Defense, Arlington, VA

Ph.D. Committees (External)

2022-23	Member, Ph.D. Committee of Bhagyashree Prabhune, Department of Mechanical Engineering, University of Wisconsin - Madison
2022-23	Member, Ph.D. Committee of Roshan Upendra, Center for Imaging Science, Rochester Institute of Technology
2022	Member, Ph.D. Jury of Sacha El Aouad, Numerical Mathematics, Supercomputing, and Data, Mines ParisTech, France
2021	Member, Ph.D. Jury of Gabriel Manzinali, Numerical Mechanics and Materials, Mines ParisTech, France

External Reviews

2022	External Reviewer, Institute for Advanced Computational Science, Stonybrook University

Mentoring

2024	Mentor, SIAM Virtual Resume Workshop
2005-17	Mentor, Association for Women in Mathematics Mentor Network
2015	Mentor, Mentor/Protege Program, 2015 Supercomputing Conference
2014	Mentor, Mentor/Protege Program, 2014 Supercomputing Conference
2012	Mentor, AWM Graduate Student Poster Session, SIAM Annual Meeting
2009	Mentor, Mentor/Protege Program, 2009 Supercomputing Conference

Other

2009-	Visiting Lecturer, SIAM
2025-28	Member, ASEE Engineering Research Council Board of Directors
2025-26	Member, Best Paper Prize Committee, Supercomputing Activity Group, SIAM
2024-24	Chair, SIAM Committee on SIAM Activity Groups (SIAGs), SIAM
2022-24	Member, SIAM Committee on SIAM Activity Groups (SIAGs), SIAM
2020-21	Chair, Best Paper Prize Committee, Computational Science and Engineering Activity Group, SIAM
2020	Member, Nominating Committee, Computational Science and Engineering Activity Group, SIAM
2012	Chair, Professional Development Evening Working Group, SIAM
2011	Member, Professional Development Evening Working Group, SIAM
2010	Chair, Professional Development Evening Working Group, SIAM
2009	Member, Professional Development Evening Working Group, SIAM

The University of Kansas Service Activities

Service to the University

2025-	Member, Research Insights Stakeholder Focus Group, KU Office of Research
2023-	Member, Faculty Liaisons Group
2022-	Director, Mathematical Methods and Interdisciplinary Computing Center, Institute for Information Sciences
2024-27	Member, KU Office of Research Review Panel in Physical Science and Engineering
2022-27	Member, Steering Committee, Big Data for Drug Discovery Project, University of Kansas Research Rising Program, PI: Michael Wolfe
2022-25	Member, Faculty Affairs Liaisons Group
2025	Moderator and Panelist, NSF CAREER Winners' Panel, NSF CAREER Writer's Workshop
2023	Interviewer, Self Program Interview Day
2023	Moderator, NSF CAREER Winners' Panel, NSF CAREER Writer's Workshop
2022-23	Chair, Center for Remote Sensing of Integrated Systems (CReSIS) Five-Year Review Committee
2022-23	Stakeholder Focus Group for the Graduate Infrastructure (Funnel) Project
2022	Member, KU Diversity, Equity, Inclusion, and Belonging Steering Committee
2021-22	Co-Chair, HPC Subcommittee, KU Research Technology Working Group
2021-22	Member, KU Research Technology Working Group
2021-22	Member, KUCR Working Group on Diversity, Equity, Inclusion, and Belonging
2021-22	Member, University Committee on Sabbatical Leaves
2021-22	Member, University Senate Planning and Resources Committee
2021-22	Participant, Senior Administrative Fellows Program

2021-22	Reviewer, KUCR Preproposals
2021	Member, Information and Telecommunication Technology Center (ITTC) Five-Year Review Committee
2021	Panelist, NSF CAREER Winners' Panel, NSF CAREER Writer's Workshop
2020-21	Member, Faculty Academic Data Advisory Committee
2018-21	Member, University Senate Judicial Board
2020	Panelist, Previous CAREER Winners Panel Discussion, CAREER Writer's Workshop
2018-19	Member, Research Computing Strategic Planning Team
2019	Member, Associate Vice Chancellor for Research Search Committee
2019	Member, Center for Research Computing Director Search Committee
2019	Member, Library Faculty Awards Committee
2019	Member, Research Metrics Committee
2019	Member, Faculty Rights Board (Spring 2019 only)
2019	Member, NSF CAREER Panel, NSF CAREER Writers' Workshop
2018-19	Member, Vice Chancellor of Research Search Committee
2018-19	Member, Astronomy and Astrophysics Faculty Search Committee, Department of Physics and Astronomy
2016-19	Member, University Senate (elected)
2016-19	Member, Faculty Senate (elected)
2018	Chancellor's Marshal, Spring Commencement
2017-18	University Senate President (elected)
2017-18	Member, Faculty Rights Board (FacEx representative)
2017-18	Member, University Senate Judicial Board (FacEx representative)
2017-18	Member, Chief Information Officer Search Committee
2017-18	Member, Astronomy and Astrophysics Faculty Search Committee, Department of Physics and Astronomy
2017-18	Member, University Governance Staff Search Committee
2016-18	Member, Cluster Owner Subcommittee, Executive Advisory Committee for KU High Performance Computing
2016-18	Member, Faculty Senate Executive Committee (FacEx) (elected)
2016-18	Member, University Senate Executive Committee (SenEx) (elected)
2015-18	Member, Executive Advisory Committee for KU High Performance Computing
2016-17	University Senate President Elect (elected)
2016-17	Member, FacEx Appeals Committee (appointed)

Service to the School of Engineering

2025-	Associate Dean for Graduate and Online Education
2024-25	Chair, Search Committee, Research Development Specialist
2023-25	Associate Dean for Research and Graduate Programs
2024	Chair, Search Committee, Program Coordinator for Research Support and Graduate Recruiting
2024	Chair, Selection Committee, Outstanding Research Awards for Graduate Students
2024	Chair, Selection Committee, KU Miller Award for Research
2022-24	High School Summer Camp on Artificial Intelligence: Mathematics, Computer Science, Self-Driving Cars, and Unmanned Aerial Vehicle Flight Testing
2022-23	Associate Dean for Research
2022-23	Chair, Search Committee, Program Coordinator for Graduate Recruiting and Research
2023	Member, School of Engineering Dean Search Committee
2023	Member, Selection Committee, Outstanding Research Awards for Graduate Students
2023	Chair, Selection Committee, KU Miller Award for Research
2022	Member, Selection Committee, KU Miller Service Award

2018-21	Executive Committee, Engineering Senate
2021	President, Executive Committee, Engineering Senate (Spring 2021) (elected)
2020	Member, Associate Dean for Academic Affairs Search Committee
2019-20	President, Executive Committee, Engineering Senate (elected)
2018-19	Secretary, Executive Committee, Engineering Senate (elected)
2019	Middle School Summer Camp: Imagination to Creation, Computer Modeling and 3D Printing
2019	Middle School Summer Camp: 3D Design and Manufacture of Medical Devices
2015-18	Engineering Senate Committee on Academic Standards
2017	Faculty Marshal, Spring Commencement
2017	Judge, SELF Program Interview Day for Prospective KU Freshmen
2016	Panelist, Society of Women in Design Panel
2016	Co-Author, Multidisciplinary Scientific Computing with Applications Cluster Hire Proposal
2014	Presentation, Society of Women Engineers Mini-Conference

Membership on Graduate Student Committees

Kyrian Adimora, Computer Science, Ph.D. Dissertation Committee
Meshari Alhazmi, Chemical Engineering, Ph.D. Dissertation Committee
Taylor Bader, Bioengineering, Ph.D. Dissertation Committee
Justin Clough, Aerospace Engineering, Ph.D. Dissertation Committee
Takeshi Fujimoto, Aerospace Engineering, Ph.D. Dissertation Committee
Brody Gatza, Aerospace Engineering, Ph.D. Dissertation Committee
Derek Grove, Physics, Ph.D. Dissertation Committee
Kurt Hamblin, Astronomy, Ph.D. Dissertation Committee
Ali Mohaghegh, Aerospace Engineering, Ph.D. Dissertation Committee
Belinda Okomeng, Bioengineering, Ph.D. Dissertation Committee
Anup Pandey, Aerospace Engineering, Ph.D. Dissertation Committee
Adam Podgorny, Computer Science, Ph.D. Dissertation Committee
Motiur Rahman, Aerospace Engineering, Ph.D. Dissertation Committee
Scott Rosa, Aerospace Engineering, Ph.D. Dissertation Committee
Hao Xuan, Computer Science, Ph.D. Dissertation Committee
Noah Cain, Aerospace Engineering, M.S. Thesis Committee
Wei Hsien (Willy) Lee, Bionengineering, Ph.D., January 2025
Abraham Pascoe, Mathematics, Ph.D., May 2024
Michael Sitarz, Physics, Ph.D., May 2024
Hady Refaat Zaky Gendy Benyamen, Aerospace Engineering, Ph.D., December 2023
Christian Jones, Electrical Engineering, Ph.D., December 2023
Sal Kafayat Rahmani, Aerospace Engineering, Ph.D., December 2023
Jeremy Ims, Aerospace Engineering, Ph.D., December 2022
Nolan Norton, Bioengineering, Ph.D., December 2021
Eduardo Jourdan de Araujo Jorge Filho, Aerospace Engineering, Ph.D., May 2021
Yuyu Wang, Physics, Ph.D., May 2020
Keita Todoroki, Physics, Ph.D., April 2020
Mohammad Alhawwary, Aerospace Engineering, Ph.D., April 2020
Emily Caitlyn (Cate) Wisdom, Bioengineering, Ph.D., December 2019
Dain Vermaak, Computer Science, Ph.D., May 2019
Avary Kolasinski, Mathematics, Ph.D., May 2019
Feilin Jia, Aerospace Engineering, Ph.D., May 2019
Lance Frazier, Bioengineering, Ph.D., March 2019

Kyle Boone, Bioengineering, Ph.D., August 2018

Nesar Ramachandra, Physics, Ph.D., July 2018

Mark Grebe, Computer Science, Ph.D., April 2018

Chenyuan Zhao, Electrical Engineering, Ph.D. Comprehensive Exam Committee, moved to
      Virginia Tech, August 2017

Michael Sitarz, Physics, M.S., May 2024

Alice Chen, Computer Science, M.S., August 2023

Sandhya Kandaswamy, Computer Science, M.S., December 2022

In Kyu Lee, Bioengineering, M.S., July 2022

Likitha Vemulapalli, Computer Science, M.S., November 2021

Chiranjeevi Pippalla, Computer Science, M.S., May 2021

Dhwani Pandya, Computer Science, M.S., December 2019

Casey Sader, Computer Science, M.S., June 2019

Sushil Pratap Bharati, Electrical Engineering, M.S., May 2018

Ravali Ginjupalli, Computer Science, M.S., June 2017

Melanie Weilert, Bioengineering, M.S., May 2017

Sergio Enrique Leon Cuen, Computer Science, M.S., August 2016

Lance Frazier, Bioengineering, M.S., May 2016

Kris Von Ahnen, Computer Science, M.S., December 2015

Membership on Undergraduate Student Committees

Ethan Ward, Computer Science, B.S. with Honors, May 2018

Service to the Department of Electrical Engineering and Computer Science

2024-	Faculty Advisor, KU Supercomputing Club
2021-	Faculty Mentor, Hongyang Sun
2020-	Founding Director, Bachelor of Science in Applied Computing (formerly Interdisciplinary Computing) Program
2017-	Member, Promotion and Tenure Committee
2023	Member, Broadening Participation in Computing Plan Committee
2022-23	Member, Cybersecurity Faculty Search Committee
2020-23	Member, Accreditation Committee (Interdisciplinary Computing and Computer Science Representative)
2017-23	Faculty Mentor, Cuncong Zhong (except Fall 2020 due to sabbatical)
2016-23	Member, Qualifying Examination Committee
2015-22	Advising, Undergraduate Interdisciplinary Computing, Computer Science, and Computer Engineering Majors
2020	Member, Computer Science Hiring Plan Committee
2019-20	Chair, Machine Learning Faculty Search Committee
2018-20	Chair, Faculty Awards Committee
2018-19	Faculty Mentor, Matthew Moore
2017-18	Member, Theoretical Computer Science Faculty Search Committee
2016-17	Chair, Committee on Restructuring the Computer Science M.S. Degree
2016-17	Member, Static Analysis Faculty Search Committee
2015	Committee Chair, Creation of Computational Science and Engineering Focus Area
2014-15	Member, Bioinformatics Faculty Search Committee

Service to the Bioengineering Program

2019-	Member, Biomedical Engineering Degree Planning Team
2018-	Director, Computational Bioengineering Track
2022	Director, Graduate Studies

2020-23	Member, Qualifying Examination Committee
2018	Member, Director of Bioengineering Search Committee
2017-18	Member, Bioengineering Certificate Oversight Committee
2015-18	Co-Director, Biomechanics and Neural Engineering Track
2014-18	Member, Graduate Admissions Committee
2014-18	Member, Qualifying Examination Committee

Mississippi State University Service Activities

Service to the High Performance Computing Collaboratory

2013-14	Member, HPC^2 Computer User Group (Center for Computational Sciences Representative)

Service to the Department of Mathematics and Statistics

2013-14	Member, Colloquium Committee
2012-14	Member, Computing and Technology Committee
2012-14	Member, Graduate Student Recruitment Committee
2012-14	Member, Numerical Analysis Course Committee

Membership on Graduate Student Committees

Joseph Ferguson, Mathematical Sciences, Ph.D. student

Service to the College of Engineering

2014	Outreach talks on computational biomedical science for the Mississippi State Bagley College of Engineering Summer Engineering Academies. Talks for the Engineering for Everyone Camp (rising 10-12 grade students) and the BATMEN Camp (middle school boys)

The Pennsylvania State University Service Activities

Service to the Colleges of Engineering/Science/Information Science & Technology

Membership on Graduate Student Committees

Yasharth Bhartiya, Mechanical Engineering, Ph.D., May 2011
Anirban Chatterjee, Computer Science and Engineering, Ph.D. December 2011
Alexandre Jolibois, Acoustics, Ph.D. Comprehensive Exam, July 2011
Sue Kase, Information Sciences and Technology, Ph.D. December 2008
Gunseop Lee, Computer Science and Engineering, Ph.D. Comprehensive Exam, December 2011
Jeffrey Magedanz, Nuclear Engineering, Ph.D., December 2013
Junseok Oh, Civil Engineering, Ph.D. December 2009
Inghmar Rauschert, Computer Science and Engineering, Ph.D. Comprehensive Exam, July 2009
Varun Reddy, Bioengineering, Ph.D. Comprehensive Exam, September 2009
Jiakou Wang, Mathematics, Ph.D. August 2007
Ning Yang, Bioengineering, Ph.D. December 2009
Xin Yang, Computer Science and Engineering, Ph.D. December 2007
Kun Zhou, Mathematics, Ph.D., May 2012
Matthew Baran, Mathematics, M.S. May 2012
Kelly Fermoyle, Computer Science and Engineering, M.S. December 2010
Daniel Kwon, Civil Engineering, M.S. August 2009

Service to the College of Engineering

2012	Penn State Society of Women Engineers Stayover Dinner (Prospective Female Students)
2012	Engineering Undergraduate Council Engineering Week Event

2011   Pre First Year (PREF) Outreach Effort focusing on computational biomedical science, scientific visualization, and bioengineering for entering PSU freshmen minority students; developed workshop in conjunction with Penn State Visualization Group and Department of Bioengineering

2008   College of Engineering WEPO Welcome Dinner (Female Freshmen)

2007   Engineering Center, General advisor to all Computer Science and Computer Engineering students at the Freshman/Sophomore Level, Fall 2007

2007   College of Engineering WEPO Welcome Dinner (Female Freshmen)

2007   Panelist, Clare Boothe Luce Fellowship Luncheon

2006   Presenter, College of Engineering, Graduate Cohort Workshop

Service to the Department of Computer Science and Engineering

2011-12   Member, Climate/Social and Faculty Development Committee

2007-12   Advisor to 7-14 undergraduate Computer Science/Computer Engineering majors

2006-12   Member, Scientific Computing/Numerical Analysis Qualifying Exam Committee

2010-11   Member, IT Committee

2010-11   Chair, Scientific Computing/Numerical Analysis Qualifying Exam Committee

2006-11   Member, Climate and Social Committee

2009-10   Member, Faculty Development and Teaching Issues Committee

2009-10   Member, IT and Lab Evaluation Committee

2009-10   Chair, Climate/Social Committee

2006-10   Member, Graduate Committee

2008-09   Colloquium Chair

2007-08   Chair, Scientific Computing/Numerical Analysis Qualifying Exam Committee (3 semesters)

2006-07   Member, English Proficiency Exam Committee