Hyeona Lim

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EDUCATION:

- **Ph.D., 2001, Applied Mathematics** Michigan State University
- **M.S., 2000, Materials Science and Mechanics** Michigan State University
- **M.S., 1994, Mathematics** Yonsei University, Seoul, Korea
- **B.S., 1992, Mathematics,** *summa cum laude* Kyung Hee University, Seoul, Korea

POSITIONS:

- **Associate Director, July, 2011 - to date, Center for Computational Sciences** Mississippi State University
- **Associate Professor, August, 2010 - to date, Department of Mathematics and Statistics** Mississippi State University
- **International Scolar, January, 2013 - July, 2013, Department of Mathematics** Kyung Hee University, Seoul, Korea
- **Assistant Professor, August, 2003 - August, 2010, Department of Mathematics and Statistics** Mississippi State University
- **Postdoctoral Associate, August, 2001 - August, 2003, Department of Mathematics** Michigan State University

RESEARCH AREAS:

- Numerical Analysis, Scientific Computation
- Image Processing, Wave Propagation, Materials Science, Inverse Problems

PUBLICATION:

- (A. B. Misra, E. Lockhart, and H. Lim) *Total variation based denoising methods for speckle noisy images*, accepted, INVOLVE, a journal of mathematics (2016)
- (A. B. Misra and H. Lim) *Nonlocal speckle denoising model based on non-linear partial differential equations*, Information Systems Design and Intelligent Applications, (2015) pp 165-176
- (H. Rhee, M. T. Tucker, W. R. Whittington, M. Horstemeyer, and H. Lim) *Structure-property Responses of Bio-inspired Synthetic Foams at Low and High Strain Rates*, Science and Engineering of Composite Materials, **22**, No.4 (2015) pp. 365-373
- (H. Jeong, S. Lee, Y. Lee, & H. Lim) *Peres-Wootters measurement for three nonorthogonal states*, International Journal of Theoretical Physics, **53**, No.3, (2014) pp. 807-814
- (A. B. Misra and H. Lim) *Nonlocal total variation based speckle denoising model*, Proceedings of the 4th International Conference on Signal and Image Processing 2012 (ICSIP 2012) Lecture Notes in Electrical Engineering, vol. 221, pp 517-527, 2013
- (R. Damiens, H. Rhee, Y. Hwang, S. J. Park, Y. Hammi, H. Lim, and M. F. Horstemeyer) *Compressive behavior of a turtle's shell: Experiment, modeling, and simulation*, Journal of the Mechanical Behavior of Biomedical Materials, **6** (2012) pp. 106-112
- (I. Banicescu, H. Lim, R. Carino, and S. Kim) *A Parameter Study of a Hybrid Laplacian Mean-Curvature Flow Denoising Model*, Journal of Supercomputing, **57** (2011) pp. 339-356
- (H. Rhee, M. F. Horstemeyer, Y. Hwang, H. Lim, H. El Kadiri, and W. Trim) *A Study on the Structure and Mechanical Behavior of the Terrapene Carolina Carapace: a Pathway to Design Bio-inspired Synthetic Composites*, Materials Science and Engineering C, **29** (2009) pp. 2333-2339
- (S. Kim and H. Lim) *Fourth-order Partial Differential Equations for Effective Image Denoising*, Electronic Journal of Differential Equations, **17** (2009) pp. 107-121

- (H. Lim and T. N. Williams) *A Non-standard Anisotropic Diffusion for Speckle Noise Removal*, Journal of Systemics, Cybernetics and Informatics, **5**, No.2, (2007) pp. 12-17
- (S. Kim and H. Lim) *High-Order Schemes for Acoustic Waveform Simulation*, Applied Numerical Mathematics, **57**, No.4 (2007) pp. 402-414
- (S. Kim and H. Lim) *A Non-convex Diffusion Model for Simultaneous Image Denoising and Edge Enhancement*, Electronic Journal of Differential Equations, **15** (2007) pp. 175-192
- (H. Lim, S. Kim, and J. Douglas, Jr.) *Numerical Methods for Viscous and Nonviscous Wave Equations*, Applied Numerical Mathematics, **57**, No.2 (2007) pp. 194-212
- (H. Lim) *Inverse Conductivity from Full Boundary Measurements at Low Frequencies*, Proceedings of 2006 UK Conference on Science, Technology, and Entrepreneurship, CD-Rom, 2006
- (S. Kim and H. Lim) *A Traveltime-based Absorbing Boundary Condition and Fourth-order Implicit Procedures for the Simulation of Acoustics*, WSEAS Transactions on Mathematics, **5**, No.5 (2006) pp. 451-458
- (S. Kim and H. Lim) *Method of Background Subtraction for Medical Image Segmentation*, Proceedings of the 3rd International Conference on Cybernetics and Information Technologies, Systems and Applications, vol. 1, pp. 87-91, 2006
- (H. Lim and T. N. Williams) *A Non-standard Anisotropic Diffusion for Edge-preserving Noise Removal*, Proceedings of the 3rd International Conference on Cybernetics and Information Technologies, Systems and Applications, vol. 1, pp. 92-96, 2006
- (R. Carino, I. Banicescu, H. Lim, N. Williams, and S. Kim) *Simulation of a Hybrid Model for Image Denoising*, Proceedings of the 20th International Parallel and Distributed Processing Symposium, 2006, CD-Rom
- (S. Kim and H. Lim) *Hybrid Level Set Segmentation for Medical Imagery*, Proceedings of the 2005 IEEE Nuclear Science Symposium & Medical Imaging Conference, pp. 1790-1794
- (S. Kim, H. Lim, D. Kim, and M. Tynan) *Subject Modularization, and Research Projects with High School Students on Mathematical Image Processing*, Proceedings of the 2005 IASTED International Conference on Education and Technology, pp. 247-252
- (J. Douglas Jr., S. Kim, and H. Lim) *An Improved Alternating-Direction Method for a Viscous Wave Equation*, Contemporary Mathematics, **329** (2003) pp. 99-104
- (H. Lim) *Time Discretization of Transition Layer Dynamics in one-dimensional Viscoelastic Systems*, SIAM Journal on Mathematical Analysis, **34**, No.3 (2002) pp. 573-594
- (Y. Chung, Z. Lavicza, H. Lim, D. Malonza, M. Song, and N. Tarfulea) *The Design of a Microactuator*, Mathematical Modeling in Industry-IMA Summer Program for Graduate Students, IMA Preprint #1752-6, 2001

GRANTS, HONORS, AND AWARDS:

- (PI: R. King, Co-PIs: M. Hamilton, H. Lim, and T. C. Falls) *T3: ROM Design Space-Advancing Design Space Exploration Through Surrogate Modeling*, DOD-ERDC, awarded, April 28, 2017 – April 27, 2020, $1,684,515
- (PI: L. Williams, Co-PI: H. Lim) *Structural Differences of the Paddlefish (Polyodon spathula) Rostrum*, DOD-ERDC, awarded, September 1, 2016 – August 31, 2017, $84,666
- (PI: M. Horstmeyer, Co-PIs: Y. Hammi and H. Lim) *WD-63, HPC Modeling and Definition of Blast Environment and Loads on Surfaces*, DOD-ERDC, awarded, January 13, 2016 – January 12, 2017, $394,494.86
- (PI: L. Wang, Co-PIs: L. Bian, M. Marufuzzaman, and H. Lim) *WD-59, Big Data Analytics*, DOD-ERDC, awarded, Novermber 1, 2015 – October 30, 2016, $273,697.77
- (PI: H. Lim, Co-PIs: R. Prabhu, L. Williams, J. Liao, S. Zhang, and M. Kang at Seoul National University, Korea) *Image Analysis in Bio-inspired Materials Design (IABMD)*, International Institute, Mississippi State University, International Working Group Grant Program, awarded, 2015-2016, $5,000
- (PI: Y. Hammi, Co-PIs: P. Gullett, M. Horstemeyer, and H. Lim) *Statement of Work (SOW) for Fragmentation Modeling*, US Army ERDC, awarded, July 1, 2015 – July 30, 2016, $233,045

- (PI: L. Williams, Co-PIs: J. Liao, R. Prabhu, H. Lim, and H. Rhee) *Computational Research for Engineering and Science Ground Vehicles (CRES-GV): Task #4 Virtual Soldier Model for Occupant Centric Design*, US Army ERDC, awarded, April 1, 2013 – March 31, 2016, $191,246
- (PI: H. Lim, Co-PIs: J. Goddard II and S. Shontz) *The Tenth Mississippi State Conference on Differential Equations and Computational Simulations*, NSF-DMS, awarded, August 1, 2014 – September 30, 2015, $35,000
- (PI: H. Lim, Co-PI: S. Shontz) *Tenth Mississippi State Conference on Differential Equations and Computational Simulations*, Institute for Mathematics and its Applications, awarded, 2014, $5,000
- (PI: H. Lim, Co-PIs: R. Prabhu, L. Williams, J. Liao, H. Rhee, and M. Horstemeyer) *Image Processing in Bio-inspired Materials Design (IPBMD) Group*, Office of Research and Economic Development, Mississippi State University, Cross College Research Program, awarded, 2011-2012, 2013-2014, $4,000
- (PI: H. Lim, Co-PIs: A. Perkins, M. Berg, W. Herd, S. Eksioglu, D. Mlsna, S. Oppenheimer, S-G Kim, and H. Rhee) *Cross-disciplinary Undergraduate Research and Education (CURE) Group*, Office of Research and Economic Development, Mississippi State University, Cross College Research Program, awarded, 2011-2012, 2013-2014, $4,000
- (PI: S.G. Kim, Co-PIs: R. Clay, T. Hollis, M. Novotny, Senior Personnel: M. Berg, S. Gwaltney, N. Hammer, Y. Hong, J. Leszczynski, D. Li, H. Lim, O. Myers, M. Neidig, H. Rathnayake, R. Reddy, C. Webster, D. Wipf, and J. Ye) *MRSEC: Materials Research Center for Sustainable Energy Technology*, NSF-DMR, declined, July 1, 2014 – June 30, 2020, $21,517,003
- *International Scholar*, Kyung Hee University, Seoul, Korea, January, 2013 – July, 2013
- (PI: H. Lim, Co-PIs: Roy Koomullil and Jerome Goddard II) *The Ninth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, NSF-DMS, awarded, August 1, 2012 – September 30, 2013, $35,000
- (PI: H. Lim, Co-PI: R. Shivaji) *Ninth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, Institute for Mathematics and its Applications, awarded, 2011, $5,000
- (PI: Seong-Gon Kim, Co-PIs: Mark Novotny, Torsten Clay, Yaroslv Koshka, Steve Gwaltney, Jagdish Singh, Ratnasingham Shivaji, and Hyeona Lim) *Magnetic Materials for Nanoelectronics (MMN) Research Group*, Office of Research and Economic Development & Center for Computational Sciences, Mississippi State University, Cross-disciplinary Research Facilitation Grant Program, awarded, 2010-2011, $3,200
- (PI: H. Lim, Co-PI: R. Shivaji, Senior Personnel: X. Yang and H. Zhang) *REU Site Project: REU in Applied Mathematics and Biostatistics*, NSF-DMS, awarded, September 1, 2009 – August 31, 2012, $200,000
- Teacher Recognition Award: National Society of Black Engineers and the IMAGE program, Mississippi State University, Mississippi State, MS, 2006, 2007, 2010 & 2011
- (PI: H. Lim, Co-PI: R. Shivaji) *Eighth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, Institute for Mathematics and its Applications, awarded, 2009, $4,000
- (PI: H. Lim, Co-PI: R. Shivaji) *Eighth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, NSF-DMS, awarded, March 1, 2009 – February 28, 2010, $35,000
- (PI: H. Lim, Co-PI: R. Shivaji) *Seventh Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, Institute for Mathematics and its Applications, awarded, 2007, $5,000
- (PI: H. Lim, Co-PI: R. Shivaji) *Seventh Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, NSF-DMS, awarded, August 15, 2007 – August 14, 2008, $32,000
- (PI: H. Lim, Co-PI: S. Kim) *PDE-based Image Restoration and Segmentation and Their Applications to Medical Imagery*, NSF-DMS, awarded, July 1, 2006 – June 30, 2009, $135,042
- NSF-AWM Travel Grant Award: 2006 SIAM Conference on Imaging Science, Minneapolis, MN, May 15-17, 2006, $1,500
- (PI: H. Lim, Co-PI: R. Shivaji) *Sixth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, Institute for Mathematics and its Applications, awarded, 2005, $4,000
- (PI: H. Lim, Co-PI: R. Shivaji) *Sixth Mississippi State - UAB Conference on Differential Equations and Computational Simulations*, NSF-DMS, awarded, March 15, 2005 – March 14, 2006, $20,000
- 2004-05 Project NExT (New Experiences in Teaching) fellowship, MAA, 2004
- Travel award $1,000, Faculty Research Orientation Workshop, Mississippi State University, MS, 2003

- AWM support to attend the AWM workshop in conjunction with 2001 SIAM Annual Meeting, San Diego, CA, July 9-13, 2001
- Thesis Completion Fellowship, Mathematics, Michigan State University, MI, Spring, 2001
- IMA support to attend the IMA summer program on Mathematical Modeling in Industry-A Workshop for Graduate Students, Minneapolis, MN, July 19-28, 2000
- SIAM Student Travel Award: 2000 SIAM Annual Meeting, San Juan, Puerto Rico, July 10-14, 2000
- Graduate Student Fellowship, Material Science and Mechanics, Michigan State University, MI, 1998
- *Summa cum laude*, Kyung Hee University, Seoul, Korea 1992
- Certificate for Mathematics Education in high school, 1992

CONFERENCES AND PRESENTATIONS:

- *Minimum Curvature Method for Surface Reconstruction*, CAM Seminar, Mississippi State University, October 28, 2016
- *Image Processing Methods for Biomedical and Geoscience Applications*, Helen Barton Lecture, Department of Mathematics and Statistics, University of North Carolina at Greensboro, Greensboro, NC, March 16, 2016
- 2015 UK Conference on Science, Technology, and Entrepreneurship, Atlanta, GA, July 29 - August 1, 2015 (Invited talk: *Non-local Total Variation Minimization for Speckle Image Denoising*, Hyeona Lim and Arundhati Bagchi Misra, July 30)
- The IMA Participating Institute Council and Industrial Advisory Board Annual Meeting, Minneapolis, MN, April 19, 2015
- The 10th Mississippi State Conference on Differential Equations & Computational Simulations, Mississippi State University, October 23-25, 2014
- 2013 UK Conference on Science, Technology, and Entrepreneurship, East Rutherford, NJ, August 7-11, 2013 (Invited talk: *Speckle Image Denoising Algorithms based on Total Variation Minimization*, Hyeona Lim, Ethan Lockhart, and Arundhati Bagchi Misra, August 9)
- *Image Processing*, Special seminar, Department of Mathematics, Kyung Hee University, Seoul, Korea, May 28, 2013
- *Total Variation based Denoising Methods for Speckle Noisy Images*, Colloquium talk, Department of Mathematics, Kyung Hee University, Seoul, Korea, January 11, 2013
- *Speckle Image Denoising Methods based on Total Variation Minimization*, Colloquium talk, Department of Mathematics and Statistics, University of North Carolina at Greensboro, Greensboro, NC, December 10, 2012
- The 9th Mississippi State - UAB Conference on Differential Equations & Computational Simulations, Mississippi State University, October 4-6, 2012 (Contributed Paper Session: *Nonlocal speckle denoising model based on non-linear partial differential equations*, Arundhati Bagchi Misra, Hyeona Lim, October 5)
- 2012 Annual Meeting of the Michigan MAA and MichMATYC, Saginaw Valley State University, University Center, MI, May 4-5, 2012 (Contributed Paper Session: *Modified Chambolle Method for Speckle Image Denoising*, Arundhati Bagchi Misra, Hyeona Lim, Ethan Lockhart, May 4)
- Research Experiences for Teachers Workshop, Mississippi State University, Mississippi State, MS, February 4, 2012 (Invited Talk: *Research Presentation and High School Research Project Proposal of the Image Processing Group*, Arundhati Bagchi Misra, Hyeona Lim, February 4)
- 2012 Joint Mathematics Meetings, Boston, MA, January 4-7, 2012 (Contributed Paper Session: *Modified Chambolle Method for Speckle Image Denoising*, Ethan Lockhart, Arundhati Bagchi Misra, Hyeona Lim, January 5)
- The 7th Annual UNCG Regional Mathematics and Statistics Conference, Greensboro, NC, November 5, 2011 (Contributed Paper Session: *Modified Chambolle Method for Speckle Image Denoising*, Ethan Lockhart, Arundhati Bagchi Misra, Hyeona Lim, November 5)
- 2011 UK Conference on Science, Technology, and Entrepreneurship, Park City, UT, August 10-14, 2011
- Differential Equations Weekend Conference, Mississippi State University, Mississippi State, MS, May 7, 2011

- Nebraska Conference for Undergraduate Women in Mathematics, University of Nebraska-Lincoln, Lincoln, NE, January 28 - 30, 2011 (Contributed Paper Session: *Edge-Enhancing Speckle Denoising for Ultrasound Images*, John Corring, Helene Duke, Arundhati Bagchi Misra, Hyeona Lim, January 29)
- 2011 Joint Mathematics Meetings, New Orleans, LA, January 6-9, 2011 (Contributed Paper Session: *Edge-Enhancing Speckle Denoising for Ultrasound Images*, John Corring, Helene Duke, Arundhati Bagchi Misra, Hyeona Lim, January 9)
- The Northeast Section of the MAA - 2011 Fall Section Meeting, Providence College, Providence, RI, November 19-20, 2010 (Contributed Paper Session: *Edge-Enhancing Ultrasound Images Speckle Denoising*, John Corring, Helene Duke, Arundhati Bagchi Misra, Hyeona Lim, November 19)
- *High-order Models for Image Restoration and Segmentation*, Colloquium talk, Department of Mathematics, Kyung Hee University, Seoul, Korea, December 30, 2009
- Workshop on Computational Science and Engineering, Yonsei University, Seoul, Korea, December 18, 2009 (Invited talk: *Numerical methods for image restoration and segmentation*, December 18)
- Joint Meeting of the Korean Mathematical Society and the American Mathematical Society, Ewha Womans University, Seoul, Korea, December 16-20, 2009 (Special session on Computer Science and Engineering session: *High-order Models for Image Denoising and it's Applications*, December 17)
- Differential Equations Weekend Conference, University of Memphis, Memphis, TN, November 7, 2009
- Eighth Mississippi State - UAB Conference on Differential Equations & Computational Simulations, Mississippi State University, May 7-9, 2009
- *Numerical Methods on the Image Processing Problems*, Invited Lecture, Department of Mathematics, Kyung Hee University, Seoul, Korea, December 13, 2006
- *Lectures on Mathematics and Materials Science*, Invited Lectures, Center for Advanced Vehicular Systems, Mississippi State University, Mississippi State, MS, September 14 & 28, 2006
- 2006 UK Conference on Science, Technology, and Entrepreneurship, Teaneck, NJ, August 10-13, 2006 (Contributed Paper Session: *Inverse Conductivity from Full Boundary Measurements at Low Frequencies*, August 12)
- The 3rd International Conference on Cybernetics and Information Technologies, Systems and Applications, Orlando, FL, July 20-23, 2006 (Contributed Paper Session: *A Non-Standard Anisotropic Diffusion for Edge-Preserving Noise Removal*, July 23)
- 2006 SIAM Conference on Imaging Science, Minneapolis, MN, May 15-17, 2006 (Poster Session: *Non-Convex Diffusion and Texture-Free Residual Parametrization for Image Denoising and Edge Enhancement*, May 15)
- Differential Equations Weekend Conference, University of Memphis, Memphis, TN, April 29, 2006
- IMA Workshop: New Mathematics and Algorithms for 3-D Image Analysis, Minneapolis, MN, January 9-12, 2006 (Poster Session: *Method of Background Subtraction for Medical Image Segmentation*, January 9)
- Project NExT Workshop: 2005 MAA Mathfest, Albuquerque, NM, August 3-6, 2005
- *Numerical Methods for Image Processing*, Special Lecture, Undergraduate Research in Applied Mathematics, Summer REU at Mississippi State University, Mississippi State, MS, July 27, 2005
- Sixth Mississippi State - UAB Conference on Differential Equations & Computational Simulations, Mississippi State University, May 13-14, 2005
- IMA Workshop: Career Options for Women in Mathematical Sciences, Minneapolis, MN, February 4-5, 2005 (Poster Session: *On Efficient High-Order Schemes for Acoustic Waveform Simulation*, February 4)
- 2005 AMS Joint Mathematics Meetings, Atlanta, GA, January 5-8, 2005 (Project NExT/Young Mathematician's Network Poster Session: *High-Order Schemes for Acoustic Waveform Simulation*, January 6 and Contributed Paper Session: *Fourth-Order Implicit Scheme for Acoustic Waves*, January 8)
- 24th Southeastern-Atlantic Regional Conference on Differential Equations, University of Chattanooga, Chattanooga, TN, October 22-23, 2004 (Contributed Paper Session: *High-Order Schemes for Acoustic Waveform Simulation*, October 23)
- Project NExT Workshop: 2004 MAA Mathfest, Providence, RI, August 9- 14, 2004
- Differential Equations Weekend Conference, Mississippi State University, Mississippi State, MS, February 21, 2004
- *An Alternating Direction Implicit Method for Acoustic Waves and Microscale Heat transfer*, Engineering Research Center Colloquium, Mississippi State University, Mississippi State, MS, October 30, 2003

- 23rd Southeastern-Atlantic Regional Conference on Differential Equations, Kennesaw State University, Kennesaw, GA, October 17-18, 2003 (Contributed Paper Session: *Numerical Methods for Viscous and Nonviscous Wave Equations*, October 17)
- Workshop: Image Processing and Computational Methods, University of Kentucky, Lexington, KY, March 21-23, 2003
- *Improved Accuracy for Locally One-Dimensional Time-Stepping Methods for Several Transient Problems*, Colloquium, Department of Mathematical Sciences, University of Kentucky, Lexington, KY, November 19, 2002
- *Alternating Direction Implicit Methods for Viscous Wave Equations, Colloquium*, Department of Computer Science, University of Kentucky, Lexington, KY, February 1, 2002
- IMA Workshop: Dynamical Systems in Celestial Mechanics and Climate Dynamics, Minneapolis, MN, October 29 - November 2, 2001
- MSRI Introductory Workshop in Inverse Problems and Integral Geometry, Berkeley, CA, August 13-24, 2001 . IMA 2001 Summer Program: Geometric Methods in Inverse Problems and PDE Control, Minneapolis, MN, July 16-27, 2001
- 2001 SIAM Annual Meeting, San Diego, CA, July 9-13, 2001 (AWM Graduate Student Poster Session: *Transition Layer Dynamics of Viscoelastic System using the Time Discretization Method*, July 10 and Contributed Paper Session: *Time Discretization for Transition Layer Dynamics of a Viscoelastic System*, July 11)
- 2001 AMS Joint Mathematics Meetings, New Orleans, LA, January 9-14, 2001 (Contributed Paper Session on Applied Mathematics: *Transition Layer Dynamics of Viscoelastic System using the Time Discretization Method*, January 10 and Special Session on Partial Differential Equations and Geometric Implications: *Transition Layer Dynamics of Viscoelastic System using the Time Discretization Method*, January 13)
- IMA summer program on Mathematical Modeling in Industry-A Workshop for Graduate Students, Minneapolis, MN, July 19-28, 2000
- 2000 SIAM Annual Meeting, San Juan, Puerto Rico, July 10-14, 2000 (SIAM Graduate Student Poster Session: *Transition Layer Dynamics of one-dimensional Viscoelastic System in Time Discretization Method*, July 11)
- 2000 AMS Joint Mathematics Meetings, Washington, D.C. January 19-22, 2000

SYNERGISTIC ACTIVITIES:

- Main Organizer, 10th Mississippi State Conference on Differential Equations & Computational Simulations, Mississippi State University, October 23-25, 2014
- Associate Director, Center for Computational Sciences (CCS), Mississippi State University, 2011-to date
- Main Organizer, 9th Mississippi State - UAB Conference on Differential Equations & Computational Simulations, Mississippi State University, October 4-6, 2012
- Program director, 2010 & 2011 Summer NSF Research Experiences for Undergraduates in Applied Mathematics and Biostatistics, Mississippi State University, May 31- August 7, 2010 & May 31 - August 6, 2011
- Organizing Committee, Differential Equations Weekend, Mississippi State University, May 7, 2011
- Main Editor, Proceedings of 6th, 7th, 8th, 9th, & 10th Mississippi State - UAB Conference on Differential Equations & Computational Simulations by Electronic Journal of Differential Equations, 2005, 2007, 2009, 2012, & 2014
- Program co-chair, 6th, 7th, & 8th Mississippi State - UAB Conference on Differential Equations & Computational Simulations (Mississippi State University, May 13-14, 2005, University of Alabama at Birmingham, November 1-3, 2007, & Mississippi State University, May 7-9, 2009)
- Organizer, Center for Computational Sciences (CCS)/Center for Advanced Vehicular Systems (CAVS) Joint Forum on Materials Science, August 2006 - May, 2007
- Center for Computational Sciences (CCS) member, Mississippi State University, 2006-to date

- Organizing Committee, Differential Equations Weekend, Mississippi State University, February 21, 2004

DIRECTED UNDERGRADUATE RESEARCH PROJECTS:

- Kalifa Stringfield (Mississippi State University), *Mathematical Image Denosiing*, Undergraduate Research Project, August 16, 2017 - to date
- Troy Viger (Mississippi State University), *Efficient and Robust Nonlocal-means Denoising Methods for Biomedical Images*, Undergraduate Research Project, October 1, 2015 - to date
- Ethan Lockhart (North Carolina State University), *Efficient Total Variation Minimization for Speckle Image Denoising*, REU Project, May 31-August 6, 2011
- John Tims (Mississippi State University), *Non-local means filtering methods for Image Denoising*, Directed Individual Study, January 8-May 1, 2011
- John Corring (University of Southern Mississippi), *Edge-Enhancing Speckle Denoising for Ultrasound Images*, REU Project, May 31-August 7, 2010
- Helene Duke (Providence College), *Edge-Enhancing Speckle Denoising for Ultrasound Images*, REU Project, May 31-August 7, 2010
- David Schweitzer (Mississippi State University), *Total Variation Image Denoising*, Directed Individual Study, August 16-December 1, 2009

DIRECTED MASTER'S RESEARCH PROJECTS (All from Mississippi State University):

- Matt Judson, *Efficient Nonlocal Means Image Denoising Methods*, Master's Degree Project, August 16, 2015 - to date
- David Schweitzer, *Non-local Means Image Denoising*, Directed Individual Study, August 16-December 1, 2012
- Nicole McGee, *Image Processing Methods*, Directed Individual Study, August 16-December 1, 2010
- Umut Kaya, *Total Variation Model for Image Denoising*, Master's Project, June 24, 2008
- Jennifer Bell, *Internal State Variables Analysis on Materials Images*, Master's Research Project with Center for Advanced Vehicular Systems, August 16, 2006 - May 1, 2007
- Joel Oakley, *Signal Segmentation and Restoration based on Partial Differential Equations*, Master's Degree Project, July 13, 2006

DIRECTED PH.D. STUDENT'S THESIS:

- Chartese Jones (co-advising with Dr. Xu Zhang), Department of Mathematics and Statistics, Mississippi State University, 2017 - to date
- Arundhati Bagchi Misra, Department of Mathematics and Statistics, Mississippi State University, 2008 - 2012
- Younghae Lee, Department of Mathematics, Kyung Hee University, Korea, 2012 - 2013
- Bruce Priddy, Department of Mathematics and Statistics, Mississippi State University, 2006 - 2007
- Thomas Neil Williams, Department of Mathematics and Statistics, Mississippi State University, 2004 - 2006