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EDUCATION:

Ph.D. Clemson University, Computer Science, 5/1994
M.S., Clemson University, Computer Science, 12/1991
M.S., Bob Jones University, Educational Administration, 8/1988
B.S., Bob Jones University, Mathematics, Minor: Physics, 5/1986

EMPLOYMENT:

Department of Computer Science and Engineering,
University of Nevada, Reno, Nevada 89557

7/2007 - present Professor
7/2000 - 6/2007 Associate Professor
8/1994 - 6/2000 Assistant Professor

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3/2015-present Affiliated Faculty, Division of Earth and Ecosystem Sciences
9/2009-6/2011 Affiliated Faculty, Division of Hydrologic Sciences
7/2007-9/2008 Interim Senior Director, Center for Advanced Visualization,
Computation, and Modeling (CAVCaM)
7/2004-9/2009 Affiliated Faculty, Division of Atmospheric Sciences

8/1988 - 5/1994: Department of Computer Science,
Clemson University, Clemson, South Carolina 29634
Graduate Student Teaching Assistantship,
CCCS Research Assistantship
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8/1986 - 5/1988: Department of Computer Science,
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Graduate Student Teaching Assistantship

PUBLICATIONS:

Journals:

- Juli Petereit, Sebastian Smith, Frederick C. Harris Jr., and Karen A. Schlauch “petal: Co-expression network modelling in R” *BMC Systems Biology* Vol 10 (Suppl 2), paper 51 (15 pages) DOI 10.1186/s12918-016-0298-8
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- E. Michael Nussbaum, Marissa C. Owens, Gale M. Sinatra, Abeera P. Rehmat, Jacqueline Cordova, Sajjad Ahmad, Frederick C. Harris, Jr., and Sergiu M. Dascalu “Losing the Lake: Simulations to Promote Gains in Student Knowledge & Interest About Climate Change,” *International Journal of Environmental and Science Education*, Vol 10, No 6, pg 789-811, December 2015.
- Ivan Gibbs, Frederick C. Harris, Jr, and Sergiu M. Dascalu “A Separation-Based UI Architecture with a DSL for Role Specialization,” *Journal of Systems and Software*, Vol 101 pp 69-85, March 2015.
- Frederick C. Harris, Jr. “Editor’s Note: March 2015”, *International Journal of Computers and Their Applications*, Vol 22, No 1, pg 1, March 2015.
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- Roger V. Hoang, Devyani Tanna, Laurence C. Jayet Bray, Sergiu M. Dascalu, and Frederick C. Harris, Jr. “A Novel CPU/GPU Simulation Environment for Large-Scale Biologically Realistic Neural Modeling”, *Frontiers in Neuroinformatics*, Vol 7, No 19, October 2013.
- Damien Ennis, Ann Medaille, Theodore Lambert, Richard Kelley, and Frederick C. Harris, Jr. “A Comparison of Academic Libraries: An Analysis Using a Self-Organizing Map”, *Performance Measurement and Metrics*, Vol 14, No 2, pp 118-131.
- Alexander Jones, Justin Cardoza, Denver J. Liu, Laurence C. Jayet Bray, Bobby Bryant, Sergiu M. Dascalu, Sushil J. Louis, and Frederick C. Harris, Jr. “A Software Package for Visualizing Complex, Distributed Neural Networks”, *BMC Neuroscience*, 2013, 14(Suppl 1):158.

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Refereed Conferences:

- Jessica Smith, Lee Barford, Sergiu M. Dascalu, and Frederick C. Jr. Harris, Jr., “Highly Parallel Implementation of Forest Fire Propagation Models on the GPU” **Best Paper Finalist**, in *Proceedings of the 2016 International Conference on High Performance Computing and Simulations (HPCS 2016)* July 18-22, 2016, Innsbruck, Austria.
- Eric Klukovich, Mehmet Hadi Gunes, Lee Barford, and Frederick C. Jr. Harris, Jr., “Accelerating BFS Shortest Paths Calculations Using CUDA for Internet Topology Measurements” in *Proceedings of the 2016 International Conference on High Performance Computing and Simulations (HPCS 2016)*, July 18-22, 2016, Innsbruck, Austria.

- Angela Chan, Alexander Gamino, Frederick C. Jr. Harris, Jr., and Sergiu Dascalu, “Integration of Assistive Technologies into 3D Simulations: An Exploratory Study,” in *Proceedings of the 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- Christine Johnson, Lee Barford, Sergiu M. Dascalu, and Frederick C. Jr. Harris, Jr., “CUDA Implementation of Computer Go Game Tree Search,” in *Proceedings of the 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- Matthew VanCompernelle, Lee Barford, Frederick C. Jr. Harris, Jr., “Maximum Clique Solver using Bisets on GPUs,” in *Proceedings of the 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- Raja H. Singh, Lee Barford, Frederick C. Jr. Harris, Jr., “Accelerating the Critical Line Algorithm for Portfolio Optimization Using GPUs,” in *Proceedings of the 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- Andy Olson, Dwight Egbert, Mircea Nicolescu, Harrison Stanton, Raul Rojas, and Frederick C. Jr. Harris, Jr., “Smoke Detection Prescreening in Sequential Images,” in *Proceedings of the 2016 ISCA International Conference on Computers and Their Applications (CATA 2016)*, April 4-6, 2016, Las Vegas, DC.
- Thomas Kelley, Thomas Rushton, Yantao Shen, Sergiu Dascalu, and Frederick C. Jr. Harris, Jr., “Neocortical Virtual Robot,” in *Proceedings of the 2016 ISCA International Conference on Computers and Their Applications (CATA 2016)* April 4-6, 2016, Las Vegas, DC.
- Juli Petereit, Frederick C. Jr. Harris, and Karen Schlauch, “A Novel Co-Expression Network Modeling System,” in *Proceedings of the 2015 IEEE International Conference on Bioinformatics and Biomedicine (IEEE BIBM 2015)*, November 9-12, 2015, Washington, DC.
- Andrew M. Olson, Dwight D. Egbert, Frederick C. Harris, Jr., “UNR Sim: A Simulated Computer for Computer Engineering Education,” in *Proceedings of the 28th International Conference on Computer Applications in Industry and Engineering (CAINE 2015)* October 12-14, San Diego, CA.
- Nolan Burfield, Hardy Thrower, Brandon Worl, Sergiu Dascalu, and Frederick Harris, Jr. “Submit: An Online Submission Platform for Computer Science Courses,” in *Proceedings of the 28th International Conference on Computer Applications in Industry and Engineering (CAINE 2015)*, October 12-14, San Diego, CA.
- Likhitha Ravi, Sergiu M. Dascalu, Frederick C. Harris, Jr., “GUI-Enhanced Activity Diagrams with Application to the Design of AVISTED,” in *Proceedings of the 24th International Conference on Software Engineering and Data Engineering (SEDE 2015)*, October 12-14, San Diego, CA.
- Rui Wu, Sergiu M. Dascalu, Frederick C. Harris, Jr., “Environment for Datasets Processing and Visualization Using SciDB,” in *Proceedings of the 24th International Conference on Software Engineering and Data Engineering (SEDE 2015)*, October 12-14, San Diego, CA.
- Moinul Hossain, Sergiu M. Dascalu, Frederick C. Harris, Jr., “A Software Environment for Watershed Modeling,” in *Proceedings of the 24th International Conference on Software Engineering and Data Engineering (SEDE 2015)*, October 12-14, San Diego, CA.

- Vinh D. Le, Melanie M. Neff, Royal V. Stewart Richard Kelley, Eric Fritzinger, Sergiu M. Dascalu, Frederick C. Harris, Jr. “Microservice-based Architecture for the NRDC”, in *Proceedings of the 13th IEEE International Conference on Industrial Informatics (INDIN 2015)*, July 22-24, Cambridge, UK.
- Chase D. Carthen, Thomas J. Rushton, Christine M. Johnson, Aaron Hesson, Daniel Nielson, Bryan Worrell, John W. Anderson, Roger Lew, Nicholas R. Wood, Matthew Ziegler Donna M. Delparte, W. Joel Johansen, Sergiu M. Dascalu, and Frederick C. Harris, Jr., “Design of a Virtual Watershed Client for the WC-WAVE Project”, in *Proceedings of The 2015 International Conference on Collaboration Technologies and Systems (CTS-2015)*, June 1-5, Atlanta, GA.
- Torbjorn Loken, Sergiu M. Dascalu, and Frederick C. Harris, Jr., “GPU Based Sound Simulation and Visualization”, in *Proceedings of The 2015 International Conference on Information Technology: New Generations (ITNG 2015)*, pp 692-697, April 13-15, 2015, Las Vegas, NV.
- Likhitha Ravi, Sergiu M. Dascalu, Frederick C. Harris, Jr., John Mejia, and Nouredine Belkhatir, “VISTED: A Visualization Toolset for Enviromental Data,” in *Proceedings of The 2015 International Conference on Computers and Their Application (CATA 2015)*, pp 335-342, March 9-11, 2015, Honolulu, HI.
- Angela Chan, Juan Quiroz, Sergiu M. Dascalu, and Frederick C. Harris, Jr. “An Overview of Brain Computer Interfaces”, in *Proceedings of The 2015 International Conference on Computers and Their Application (CATA 2015)*, pp 327-334, March 9-11, 2015, Honolulu, HI.
- Lisa Palathingal, Sergiu M. Dascalu, Frederick C. Harris, Jr., and Yaakov Varol “A Brief Survey of Data Curation Literature”, in *Proceedings of The 2015 International Conference on Computers and Their Application (CATA 2015)*, pp 419-424, March 9-11, 2015, Honolulu, HI.
- Rui Wu, Lisa Palathingal, Sergiu M. Dascalu, and Frederick C. Harris, Jr. “Concentration Reminder: Distraction and Drowsiness Detection for Computer Users”, in *Proceedings of The 2015 International Conference on Computers and Their Application (CATA 2015)*, pp 113-118, March 9-11, 2015, Honolulu, HI.
- C. M. Thibeault, F.C. Harris, Jr., and P.A. Tebbe, “Modeling particle diffusion in laminar tube flow with spectral collocation”, in *Proceedings of The 2015 International Conference on Computers and Their Application (CATA 2015)*, pp 51-56, March 9-11, 2015, Honolulu, HI.
- Gareth Ferneyhough, Corey Thibeault, Sergiu M. Dascalu, and Frederick C. Harris, Jr. “ModFossa: A Python Library for Ion Channel Modeling”, in *Proceedings of The 2015 International Conference on Bioinformatics and Computational Biology (BICOB 2015)*, pp 111-118, March 9-11, 2015, Honolulu, HI.
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- Edson O. Almachar, Alexander M. Falconi, Katie A. Gilgen, Devyani Tanna, Nathan M. Jordan, Roger V. Hoang, Sergiu M. Dascalu, Laurence C. Jayet Bray, Frederick C Harris, Jr., “Design and Implementation of a Repository Service and Reporting Interface for the NCS”, in *Proceedings of The 2014 International Conference on Software Engineering and Data Engineering (SEDE 2014)*, October 13-15, 2014, New Orleans, LA.

- Jakub Berlinski Marlon D. Chavez, Cameron Rowe, Nathan M. Jordan, Devyani Tanna, Roger V. Hoang, Sergiu M. Dascalu, Laurence C. Jayet Bray, Frederick C Harris, Jr., “NeoCortical Builder: A Web Based Front End for NCS”, in *Proceedings of The 2014 International Conference on Computer Applications in Industry and Engineering (CAINE 2014)*, October 13-15, 2014, New Orleans, LA.
- Sergiu Dascalu, Frederick C Harris, Jr., Michael McMahon Jr., Eric Fritzinger, Scotty Strachan, Richard Kelley, “An Overview of the Nevada Climate Change Portal”, in *Proceedings of The 7th International Congress on Environmental Modelling and Software (iEMSs 2014)* , June 15-19, 2014, San Diego, CA.
- Ershad Sharifahmadian, Yoonsuk Choi, Shahram Latifi, Sergiu Dascalu, Frederick C. Harris, “Wavelet-based Compression of Multichannel Climate Data”, in *Proceedings of SPIE Conference on Sensing Technology and its Applications, Part of Satellite Data Compression, Communications, and Processing X*, May, 2014, Baltimore, MD. Vol 9124, pp. B1-B6
- Corey M. Thibeault, Frederick C. Harris, Jr., Narayan Srinivasa “A Virtual Environment Framework for Embedding Neural Models”, in *Proceedings of The 2014 International Conference on Computer and Their Applications (CATA 2014)*, March 24-26, 2014, Las Vegas, NV.
- Corey M. Thibeault, Frederick C. Harris, Jr., Narayan Srinivasa “Embodied modeling with spiking neural networks for neuromorphic hardware: a simulation study”, in *Proceedings of The 2013 International Conference on Computer Applications in Industry and Engineering (CAINE 2013)*, pp 3-10, **Best Paper Runner-up**, September 25-27, 2013, Los Angeles, CA.
- Justin E. Cardoza, Alexander K. Jones, Denver J. Liu, Roger V. Hoang, Devyani Tanna, Laurence C. Jayet Bray, Sergiu M. Dascalu, and Frederick C. Harris, Jr. “Design and Implementation of a Graphical Visualization Tool for NCS”, in *Proceedings of The 2013 International Conference on Software Engineering and Data Engineering (SEDE 2013)*, September 25-27, 2013, Los Angeles, CA.
- Ivan Gibbs, Eric Fritzinger, Sergiu M. Dascalu, Frederick C Harris, Jr., Yantao Shen “A Workflow Job Manager for the Nevada Climate Change Portal”, in *Proceedings of The 2013 International Conference on Collaboration Technologies and Systems (CTS 2013)* May 20-24, 2013, San Diego, CA.
- Jigarkumar Patel, Sergiu M. Dascalu, Frederick C Harris, Jr. “Runtime Generation of Data Processors on Local User Computers”, in *Proceedings of The 2013 International Conference on Collaboration Technologies and Systems (CTS 2013)* May 20-24, 2013, San Diego, CA.
- Rakhi Motwani, Mukesh Motwani, Frederick C Harris, Jr. “Uniform and Efficient Exploration of State Space using Kinodynamic Sampling-based Planners” in *Proceedings of The International Workshop on Computational Kinematics 2013 (CK2013)* May 12-15, 2013, Barcelona, Spain.
- Torbjorn Loken, Lee Barford, Frederick C Harris, Jr. “Massively Parallel Jitter Measurement from Deep Memory Digital Waveforms”, in *Proceedings of the 2013 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)*, May 6-9, 2013, Minneapolis, MN
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- Joseph M Vesco, Frederick C Harris, Jr., Sergiu M Dascalu, Del Jackson, Josh E Baker “Semi-Automated Analysis Software for a Novel Biochemistry Assay”, in *Proceedings of the 10th International Conference on Information Technology: New Generations (ITNG 2013)* April 15-17, 2013, Las Vegas, NV
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- Chad Feller, Karen Schlauchm and Frederick C Harris, Jr., “An Introduction to Proactive Server Preservation in an HPC Environment”, in *Proceedings of the 2012 ISCA International Conference on Advanced Computing and Communication (ACC 2012)*, pp. 51-57, June 27-29, 2012 Los Angeles, CA.
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- E. Courtenay Wilson, Frederick C. Harris, Jr., and Phillip H. Goodman, “A Large-Scale Biologically Realistic Cortical Simulator” in *Proceedings of SC2001* November 12-16, 2001, Denver, Colorado.
- M. Sami Fadali, L. LaForge, and F. Harris, Jr., “Linear Time Computation of QFT Feasible Regions” in A. Chung, editor, *Proceedings of Computers and their Applications in Industry and Engineering (CAINE ’01)*, November 27-29, 2001, Las Vegas, NV, pp. 23-28,
- Nancy LaTourrette, Yaakov Varol, and Frederick C. Harris, Jr., “Empowerment to Success: The Class Structure in an Honors Engineering Course,” in *Proceedings of Frontiers in Education 2001 (FIE 2001)* October 10-13, 2001. Reno, NV,
- E. Courtenay Wilson, Phillip H. Goodman, and Frederick C. Harris, Jr., “Implementation of a Biologically Realistic Parallel Neocortical-Neural Network Simulator,” in *Proceedings of the Tenth SIAM Conf. on Parallel Process. for Sci. Comp.* March 12-14, 2001. Portsmouth, Virginia,
- Benjamin Lucchesi, Nerissa Oberlander, Frederick C. Harris, Jr., and Pierre Mousset-Jones, “Surface Mine Truck Safety Training: Scenario Setup for a VR Driving Simulator.” in Q. Yang, editor, *Proceedings of the 12th International Conference on Computer Applications in Industry and Engineering (CAINE ’99)*, November 4-6, 1999, Atlanta, GA, pp. 62-65.
- Damien Ennis, Benjamin Lucchesi, Nerissa Oberlander, Keith Wesolowski, Frederick C. Harris, Jr., and Pierre Mousset-Jones, “Surface Mine Truck Safety Training: A VR Approach to Pre-Operational Vehicle Inspection,” in Kadri Dagelen, editor, *Proceedings of APCOM ’99: Computer Applications in the Minerals Industries 28th International Symposium*, Colorado School of Mines, Golden, CO, October 20-22, 1999, pp. 811–818.
- Jane Niehues-Brooks and Frederick C. Harris, Jr., “Automated Digital Image Analysis of Video Ice Crystal Data.” in R. Y. Lee, editor, *Proceedings of the ISCA 14th International Conference on Computers and Their Applications*, April 7-9, 1999, Cancun, Mexico, pp. 91–94.
- Igor Golovkin, Roberto C. Mancini, and Frederick C. Harris, Jr., “Parallelization of Non-Equilibrium Radiation Transport Code.” in Bruce Hendrickson, Katherine A. Yelick, Christian H. Bischof, Iain S. Duff, Alan S. Edelman, George A. Geist, Michael T. Heath, Michael A. Heroux, Chuck Koelbel, Robert S. Schrieber, Richard F. Sincovec, and Mary F. Wheeler, editors, *Proceedings of The Ninth SIAM Conf. on Parallel Process. for Sci. Comp.*, San Antonio, TX, March 22-24, 1999.
- Frederick C. Harris, Jr. and Carl G. Looney, “Strategies for Effective Group Project-Based Courses.” in Brendan J. O’Toole, editor, *Proceedings of the 1999 ASEE-PSW Conference*, Las Vegas, NV, March 19-20, 1999. pp 59-66.

- Frederick C. Harris, Jr. and Cynthia R. Harris, “A Proposed Algorithm for Calculating the Minimum Crossing Number of a Graph,” In Yousef Alavi and Ronald L. Graham and Allen J. Schwenk, editors, *Proceedings of the Eighth International Conference on Graph Theory, Combinatorics, Algorithms and Applications*, Western Michigan University, Kalamazoo, MI, June 3-7, 1996. pp 469-478, Vol II. (1998).
- Umid Tadjiev and Frederick C. Harris, Jr., “Parallel Computation of the Minimum Crossing Number of a Graph”, In Michael Heath and Virginia Torczon and Greg Astfalk and Petter E. BJORSTAD and Alan H. Karp and Charles H. Koebel and Vipin Kumar and Robert F. Lucas and Layne T. Watson and David E. Womble, editors, *Proceedings of The Eighth SIAM Conf. on Parallel Process. for Sci. Comp.*, Minneapolis, MN, March 14-17, 1997.
- Marat Zhaksilikov, and Frederick C. Harris, Jr. “Global Parallelization of Genetic Algorithms: Comparison of Implementations,” In F.C. Harris, Jr., editor, *Proceedings of the ISCA, 5th International Conference on Intelligent Systems (IS '96)*, Reno, Nevada, June 19-21, 1996, pp. 40 – 44.
- Joseph Jones, and Frederick C. Harris, Jr. “A Genetic Algorithm for the Steiner Minimal Tree Problem,” In F.C. Harris, Jr., editor, *Proceedings of the ISCA, 5th International Conference on Intelligent Systems (IS '96)*, Reno, Nevada, June 19-21, 1996, pp. 35 – 39.
- Jerri Hines, John T. Thorpe, Kenneth B. Winiecki, Jr. and Frederick C. Harris, Jr., “Solving Quadratic Assignment Problems With Parallel Genetic Algorithms,” In S. Louis, editor, *Proc. Fourth Golden West International Conference on Intelligent Systems – GWIC-IV*, San Francisco, California, June 12-14, 1995, pp. 11 – 15.
- Frederick C. Harris, Jr., “Parallel Computation of Steiner Minimal Trees,” In David H. Bailey and Petter E. BJORSTAD and John R. Gilbert and Michael V. Mascagni and Robert S. Schreiber and Horst D. Simon and Virginia J. Torczan and Layne T. Watson, editors, *Proc. 7th SIAM Conf. on Parallel Process. for Sci. Comput.*, San Francisco, California, February, 1995, pp. 267 – 272.
- Robert Geist, Darrell Suggs, Robert Reynolds, Shardul Divatia, Fred Harris, Evan Foster, and Priyadarshan Kolte, “Disk Performance Enhancement through Markov-based Cylinder Remapping,” In Cherri M. Pancake and Douglas S. Reeves, editors, *Proc. ACM Southeast Regional Conf.*, Raleigh, North Carolina, April, 1992, pp. 23-28. (*Highest-rated Paper*)

Technical Papers:

- Frederick C. Harris, Jr., “Parallel Computation of Steiner Minimal Trees,” Ph.D. dissertation, Department of Computer Science, Clemson University, Clemson, SC 29634, May 1994.
- Frederick C. Harris, Jr., “Data Diversity: A Search for Direction,” Master’s Thesis, Department of Computer Science, Clemson University, Clemson, SC, December 1991.

CONFERENCE PRESENTATIONS:

- “Accelerating BFS Shortest Paths Calculations Using CUDA for Internet Topology Measurements” *The 2016 International Conference on High Performance Computing and Simulations (HPCS 2016)*, July 18-22, 2016, Innsbruck, Austria.
- “CUDA Implementation of Computer Go Game Tree Search ‘’, *The 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.

- “Maximum Clique Solver using Bitsets on GPUs”, *The 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- “Accelerating the Critical Line Algorithm for Portfolio Optimization Using GPUs”, *The 2016 International Conference on Information Technology: New Generations (ITNG 2016)*, April 18-20, 2016, Las Vegas, NV.
- “Smoke Detection Prescreening in Sequential Images”, *The 2016 ISCA International Conference on Computers and Their Applications (CATA 2016)*, April 4-6, 2016, Las Vegas, DC.
- “Neocortical Virtual Robot”, *The 2016 ISCA International Conference on Computers and Their Applications (CATA 2016)*, April 4-6, 2016, Las Vegas, DC.
- “GPU Based Sound Simulation and Visualization”, *The 2015 International Conference on Information Technology: New Generations (ITNG 2015)*, April 13-15, 2015, Las Vegas, NV.
- “Modeling particle diffusion in laminar tube flow with spectral collocation”, *The 2015 International Conference on Computers and Their Application (CATA 2015)*, March 9-11, 2015, Honolulu, HI.
- “ModFossa: A Python Library for Ion Channel Modeling”, *The 2015 International Conference on Bioinformatics and Computational Biology (BICOB 2015)*, March 9-11, 2015, Honolulu, HI.
- “Design and Implementation of a Repository Service and Reporting Interface for the NCS”, *The 2014 International Conference on Software Engineering and Data Engineering (SEDE 2014)*, October 13-15, 2014, New Orleans, LA.
- “NeoCortical Builder: A Web Based Front End for NCS”, *The 2014 International Conference on Computer Applications in Industry and Engineering (CAINE 2014)*, October 13-15, 2014, New Orleans, LA.
- “A Virtual Environment Framework for Embedding Neural Models”, *The 2014 International Conference on Computer and Their Applications (CATA 2014)*, March 24-26, 2014, Las Vegas, NV.
- “NCS: A Novel CPU/GPU Simulation Environment for Large-Scale Biologically Realistic Neural Modeling”, *Neural Information Processing Systems (NIPS 2013)*, South Shore, Lake Tahoe, CA (December 6, 2013).
- “Embodied modeling with spiking neural networks for neuromorphic hardware: a simulation study,” *The 2013 International Conference on Computer Applications in Industry and Engineering (CAINE 2013)* September 25-27, 2013, Los Angeles, CA. **Best Paper Runner-up**
- “Design and Implementation of a Graphical Visualization Tool for NCS,” *The 2013 International Conference on Software Engineering and Data Engineering (SEDE 2013)* September 25-27, 2013, Los Angeles, CA.
- “Workflow Job Manager for the Nevada Climate Change Portal,” *The 2013 International Conference on Collaboration Technologies and Systems (CTS 2013)* May 20-24, 2013, San Diego, CA.
- “Runtime Generation of Data Processors on Local User Computers,” *The 2013 International Conference on Collaboration Technologies and Systems (CTS 2013)* May 20-24, 2013, San Diego, CA.

- “Semi-Automated Analysis Software for a Novel Biochemistry Assay,” *The 10th International Conference on Information Technology: New Generations (ITNG 2013)* April 15-17, 2013, Las Vegas, NV
- “An Introduction to Proactive Server Preservation in an HPC Environment,” *ISCA’s Advanced Computing and Communication (ACC 2012)* June 27-29, 2012 Los Angeles, CA
- “A Novel Multi-GPU Neural Simulator,” *ISCA’s Bioinformatics and Computational Biology (BICoB 2011)* March 23-25, 2011, New Orleans, LA
- “A Unique Instrumentation System Design for Measuring Forces on a Rotating Shaft,” *ISCA’s Computers And Their Applications (CATA 2010)*, March 24-26, 2010, Honolulu, HI. **Best Paper Award.**
- “Ringermute: An audio data mining toolkit,” *ISCA’s Computers And Their Applications (CATA 2010)*, March 24-26, 2010, Honolulu, HI.
- “An Inexpensive Terrain Awareness and Warning System for Small Aircraft,” *ISCA’s Computer Applications in Industry and Engineering (CAINE 2008)*. Honolulu, HI, November 12-14, 2008.
- “Managing Data and Computational Complexity for Immersive Wildfire Visualization,” *High Performance Computing Systems (HPCS ’07)* Prague, Czech, June 4-6, 2007.
- “Volumetric Visualization Methods for Atmospheric Model Data in an Immersive Virtual Environment,” *High Performance Computing Systems (HPCS ’07)* Prague, Czech, June 4-6, 2007.
- “DiRT - Dust in Real-Time: The Specification Process,” *The 2005 International Conference on Software Engineering Research and Practice (SERP ’05)*, June 27-30, 2005, Las Vegas, NV.
- “A Framework for Reuse and Parallelization of Large-Scale Scientific Simulation Code,” The 4th International Workshop on System/Software Architectures, June 27-30, 2005, Las Vegas, NV.
- “A Generic Queuing System for Computationally Intensive Problems.” *35th Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, March 3-12, 2004, Florida Atlantic University, Boca Raton, FL.
- “A Large-Scale Biologically Realistic Cortical Simulator” *SC 2001* November 12-16, 2001, Denver, CO.
- “Linear Time Computation of QFT Feasible Regions” *Computers and their Applications in Industry and Engineering (CAINE ’01)* November 27-29, 2001, Las Vegas, NV.
- “A Low-Cost Algorithm for Multicast Routing in Computer Networks,” *31st Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, March 13-17, 2000, Florida Atlantic University, Boca Raton, FL.
- “Virtual Reality in Mine Safety Training”, 1999 Training Resources Applied to Mining Conference (TRAM), October 12-13, 1999, National Mine Health and Safety Academy, Beaver, WV.
- “Virtual Reality in Mine Safety Training”, 1999 National Mine Instructors Seminar, October 13-14, 1999, National Mine Health and Safety Academy, Beaver, WV.

- “Surface Mine Truck Safety Training.” *30th Institute on Mining, Health, Safety, and Research* August 9-13, 1999, Salt Lake City, UT.
- “Virtual Reality and Mine Safety Training.” *The 1999 Spring Great Basin Trainers Association Conference*, May 13-14, 1999, Round Mountain, NV.
- “Parallelization of Non-Equilibrium Radiation Transport Code.” *The Ninth SIAM Conf. on Parallel Process. for Sci. Comp.*, March 22-24, 1999, Adam’s Mark San Antonio-Riverwalk Hotel, San Antonio, TX.
- “Strategies for Effective Group Project-Based Courses.” *The 1999 ASEE-PSW Conference*, March 19-20, 1999, Harrah’s, Las Vegas, NV.
- “Parallel Computation of the Minimum Crossing Number of a Graph”, *The Eighth SIAM Conf. on Parallel Process. for Sci. Comp.*, March 14-17, 1997, Hyatt Regency Minneapolis on Nicollet Mall Hotel, Minneapolis, MN.
- “Steiner Minimal Trees: Their Computational Past, Present, and Future,” *11th Midwestern Conference on Combinatorics, Cryptography, and Computing*, Oct 31 - Nov 2, 1996, The University of Nevada, Las Vegas, Las Vegas, NV.
- “A Genetic Algorithm for the Steiner Minimal Tree Problem,” *5th International Conference on Intelligent Systems (IS ’96)*, June 19-21, 1996, The Flamingo Hilton Hotel, Reno, Nevada.
- “A Proposed Algorithm for Calculating the Minimum Crossing Number of a Graph,” *Eighth Quadrennial International Conference on Graph Theory, Combinatorics, Algorithms and Application*, June 3-7, 1996, Western Michigan University, Kalamazoo, MI.
- “Solving Quadratic Assignment Problems Through Parallel Genetic Algorithms,” *Golden West International Conference on Intelligent Systems – (GWIC-IV)*, June 12-14, 1995, Sir Francis Drake Hotel, San Francisco, California.
- “An Introduction to Steiner Minimal Trees on Grids,” *26th Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, March 6-10, 1995, Florida Atlantic University, Boca Raton, FL.
- “Parallel Computation of Steiner Minimal Trees,” *7th SIAM Conference on Parallel Processing for Scientific Computing*, February 15-17, 1995, The Hotel Nikko, San Francisco, CA.
- “An Initial Characterization of Steiner Minimal Trees on Grids,” *7th Cumberland Conference on Graph Theory and Computing*, May 10-13, 1994, The University of Alabama in Huntsville, Huntsville, AL.
- “A Stochastic Optimization Algorithm for Steiner Minimal Trees,” *25th Southeastern International Conference on Combinatorics, Graph Theory, and Computing*, March 7-11, 1994, Florida Atlantic University, Boca Raton, FL.
- “Parallel Solutions for Minimizing Network Connection Distances,” *CCCS 4th Annual Conference*, November 11-12, 1993, Clemson University, Clemson, SC, *Second Place, Paper Competition*.
- “New and Improved Results for the Rectilinear Minimal Crossing Problem,” *6th Cumberland Conference on Graph Theory and Computing*, May 17-19, 1993, Rhodes College, Memphis, TN.

INVITED PRESENTATIONS:

- “Building a Robot’s Brain: Decision making in an artificial environment,” Society for Neuroscience Reno Research Conference, November 14, 2015
- “Building a Robot’s Brain: Decision making in an artificial environment,” Wagner Conference, Reno, NV December 10, 2015
- “Forest Fire Simulation and Visualization,” University of Idaho, April 17, 2014
- “The Future of Computer Science,” Utah State University, March 23, 2012
- “Computer Applications and the Research they Drive,” ICCBALI 2011 Keynote Address, March 3, 2011, Ghaziabad, Uttar Pradesh, India
- “Neo Cortical Simulation: Hardware, Software and Future Directions,” ITNG 2009 Keynote Address, April 27, 2009, Las Vegas, NV
- “Advanced Computation and Visualization,” *Nevada KEEP Seminar* February 27, 2007
- “Neo Cortical Simulation: Software Design and Future Directions,” *INCF Workshop on Large-scale Modeling of the Nervous System* Karolinska Institute, Stockholm, Sweden, December 12, 2006
- “Cool Science, Cool Places, Cool Things,” *Northern Nevada Math Council: Math and Science Mini-Conference* Reno, NV, October 13, 2006
- “Advanced Computation and Immersive Visualization” Junior Science Humanities Symposium for Western Nevada and Northern California. Reno, NV, March 9-11, 2006
- “Advanced Computation and Visualization” Honors Program Lecture Series, University of Nevada, Reno, September 28, 2005.
- “Advanced Computation and Visualization” Computational Science Workshop Reno, NV, June 19-25, 2005.
- “Cool Science, Cool Places, Cool Things,” *Nevada KEEP Seminar* March 15, 2005
- “Cool Science, Cool Places, Cool Things” *Nevada Regional Science Bowl* Las Vegas, NV February 11-12, 2005.
- “Cluster Computing and Beyond” *2002 Government Information Technology Conference* Carson City, NV, October 16, 2002.

FUNDED PROPOSALS:

- *The Solar Energy-Water-Environment Nexus in Nevada*
Senior Personnel and UNR CO-PI with Gayle Dana (PI), Sergiu Dascalu (Co-PI-UNR), Jacimaria Batista (Co-PI-UNLV), Markus Berli (Co-PI-DRI), and Robert F Boehm (Co-PI-UNLV)
NSF, August 1, 2013 - July 31, 2018
\$20,000,000

- *Collaborative Research: The Western Consortium for Watershed Analysis, Visualization, and Exploration (WC-WAVE)*
 Co-PI and Tri-State Visualization Component Lead with Gayle Dana (NV-PI), William Michener (NM-PI), Peter Goodwin (ID-PI), Sajjad Ahmad (NV Co-PI), Thomas Jackman (NV Co-PI)
 NSF, July 1, 2013 - June 30, 2017,
 \$6,000,000
- *Project Synapse*,
 DARPA/HRL,
 PI with Phillip H. Goodman
 Phase 0: \$203,086 November 4, 2008 - September 6, 2009
 Phase 1: \$175,095 September 7, 2009 - March 28, 2011,
- *Cyberinfrastructure Development for the Western Consortium of Idaho, Nevada, and New Mexico*,
 Tri-State CI Component Lead and UNR PI - with Gayle Dana (PI-NV), William Michner (Co-PI-NM), Greg Bohach (Co-PI-ID),
 NSF, October 1, 2009 - June 30, 2013,
 \$6,000,000
- *Cortical Microcircuit Dynamics*
 PI with Phillip H. Goodman and Sergiu Dascalu
 ONR, October 1, 2009-March 30, 2013.
 \$827,466.00.
- *Nevada Infrastructure for Climate Change Science, Education, and Outreach*,
 Senior Personnel and CI Steering Committee Member with Gayle Dana (PI), Tom Pichote (UNLV Co-PI), Nick Lancaster (DRI Co-PI), Scott Mensing (UNR Co-PI)
 NSF, September 1, 2008 - August 30, 2013,
 \$15,000,000
- *Exploring Planetary Surfaces: Earth, Moon, and Mars*,
 NASA EPSCoR,
 CO-PI with Chris Fritzen (PI), Wendy Calvin, Nick Lancaster, Henry Sun, Sergiu Dascalu, Scott Bassett,
 NASA, September 1, 2007 - August 31, 2010,
 \$1,500,000
- *Parallel Beowulf Computing Phase IV*
 DURIP 2007
 CO-PI with Phillip H. Goodman (PI)
 Office of Naval Research, June 1, 2007 - May 30, 2008
 \$287,000.00
- *Cortical Microcircuit Dynamics*
 CO-PI with Phillip H. Goodman (PI)
 ONR, October 1, 2006-September 30, 2009.
 \$877,000.00.
- *Scientific Visualization*
 PI
 NSF EPSCoR, November 1, 2005 - January 31, 2006
 \$16,110.00

- *Immersive Visualization*
 Senior Personnel at DRI
 DoD-STTC, July 1, 2004 - June 30, 2010
 \$8,200,477.00
- *Development of a Nationally Competitive Program in Computer Vision Technologies for Effective Human-Computer Interaction in Virtual Environments,*
 CO-PI with George Bebis(PI), Angelo Yfantis, and Peter Stubberud
 NASA, September 1, 2004 - August 31, 2006.
 \$520,892.00
- *Modeling the Effect of Mountainous Terrain on Stratospheric/Tropospheric Exchange, Atmospheric Chemistry, Deposition and Water Quality,*
 CO-PI with William Stockwell(PI), Gayle Dana, Vanda Grubisic, Darko Koracin, and John Lewis
 NASA, September 1, 2004 - August 31, 2006.
 \$496,170.00
- Brain Simulation
 PI, Sun Microsystems September 10, 2004
 \$101,189.00
- Parallel Beowulf Computing Phase III
 DURIP 2004
 CO-PI with Phillip H. Goodman(PI)
 Office of Naval Research, June 1, 2004 - May 30, 2005
 \$250,000.00
- *Models of Cortical Microcircuit Dynamics,*
 CO-PI with Phillip H. Goodman(PI)
 ONR, July 1, 2003-June 30, 2006.
 \$660,000.00
- Parallel Beowulf Computing Phase II
 DURIP 2002
 CO-PI with Phillip H. Goodman(PI)
 Office of Naval Research, June 1, 2002 - May 30, 2003
 \$240,952.00
- *Advanced Computing in the Environmental Sciences,*
 CO-PI with Vanda Grubisic(PI), Ania Panorska, David Benson, Doug Boyle, Gayle Dana, Giles Marion, Jichun Li, Joe McConnell, Kelly Redmond, Kenneth McGwire, Peter Barber, Regina Tempel, Lyle Pritchett, Angkul Kongmunvattana, Ahmed Hassan
 NSF, January 1, 2002 - December 31, 2004.
 \$3,500,000.00.
- *Development of a Nationally Competitive Program in Computer Vision Technologies for Effective Human-Computer Interaction in Virtual Environments,*
 CO-PI with George Bebis(PI), Angelo Yfantis, and Peter Stubberud
 NASA, October 1, 2001 - September 30, 2004.
 \$1,148,940
- *Modeling the Effect of Mountainous Terrain on Stratospheric/Tropospheric Exchange, Atmospheric Chemistry, Deposition and Water Quality,*

CO-PI with William Stockwell(PI), Gayle Dana, Vanda Grubisic, Darko Koracin, and John Lewis

NASA, October 1, 2001 - September 30, 2004.

\$1,094,412

- Parallel Beowulf Computing Phase I
DURIP 2001
CO-PI with Phillip H. Goodman(PI) and Sushil Louis
Office of Naval Research, March 1, 2001 - February 28, 2002
\$265,000.00
- *Cortical Microcircuit Dynamics*
CO-PI with Phil Goodman(PI), Henrey Markram, and Sushil Louis
Office of Naval Research, April 1, 2000 - May 31, 2003.
\$541,325
- *Development of a Mine Truck Driving Simulator Program for Accident prevention*
CO-PI with Pierre Mousset-Jones(PI)
Nevada Division of Industrial Relations, Newmont Gold Co., and Echo Bay Minerals Co. Oct
2,1996 - Set 30, 1998.
\$19,200
- *Instructional Enhancement Grant,*
with S. Louis, R. Langsner, and Y. Varol
Academic Affairs, University of Nevada, Reno, June 1996 - June 1997.
\$2,472.

TEACHING EXPERIENCE:

Introduction to Computer Science
Computer Applications
Computer Science I
Computer Science II
Introduction to PASCAL Programming
Introduction to BASIC Programming
Introduction to C Programming
Introduction to MODULA-II Programming
Programming Methodology
Computer Systems Laboratory: C and Unix
Data Structures
Programming Languages
Compiler Construction
Parallel Computation
Computer System Administration
Computer Graphics
Topics: Programming Contest
Topics: Biomedical Computing
Topics: Programming Languages
Compilers and Translators
Parallel and Distributed Processing
Seminar: Advanced Graphics
Topics: Advanced Graphics

Topics: Parallel Computing

ACADEMIC SUPERVISION:

Doctoral Degree - Those Finished:

- **Damien Ennis**
“Using Pre- and Post-Process Labeling Techniques for Cluster Analysis”,
Ph.D., Computer Science and Engineering, University of Nevada, Reno, NV. December, 2014.
- **Roger V. Hoang**
“An Extensible Component-based Approach to Simulation Systems on Heterogeneous Clusters”,
Ph.D., Computer Science and Engineering, University of Nevada, Reno, NV. May, 2014.
- **Corey M. Thibeault**
Co-Advised with Dr. Narayan Srinivasa (HRL)
“Computational Neuroscience: Theory, Development and Applications in Modeling the Basal Ganglia,”
Ph.D. Biomedical Engineering, University of Nevada, Reno,
December, 2012.
- **Mukesh Motwani**
“Third Generation 3D Watermarking: Applied Computational Intelligence Techniques,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
August, 2011.
- **Adrienne E. Breland**
Co-Advised with Dr. Karen Schlauch (UNR-Bioinformatics)
“A Fast-Graph Approach to Modeling Similarity of Whole Genomes,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
August 2011.
- **Laurence Christine Jayet Bray**
Co-Advised with Dr. Philip H. Goodman (UNSoM)
“A Circuit-Level Model of Hippocampal, Entorhinal and Prefrontal Dynamics Underlying Rodent Maze Navigational Learning,”
Ph.D. Biomedical Engineering Program, University of Nevada, Reno,
December 2010.
- **Rakhi Motwani**
“A Voice-Based Biometric Watermarking Scheme For Digital Rights Management of 3D Mesh Models,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
May 2010
- **Bei Yuan**
Co-Advised with Dr. Eelke Folmer (UNR-CSE)
“Towards Generalized Accessibility of Video Games for the Visually Impaired,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
May 2009.
- **Sara Nasser**
“Fuzzy Sequence Classification and Assembly of Environmental Genomes,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
May 2007

- **Beifang Yi**
“A Framework for a Sign Language Interfacing System,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
May 2006
- **Judith R. Fredrickson**
“On the Crossing Number of Complete Graphs,”
Ph.D. Computer Science and Engineering, University of Nevada, Reno,
May 2006

Doctoral Students currently under Supervision:

- **Yan Yan**
Computer Science and Engineering, University of Nevada, Reno,
Expected Graduation: May 2017.
- **James Frye**
Computer Science and Engineering, University of Nevada, Reno,
Expected Graduation May 2017.
- **Joel Fredrickson**
Computer Science and Engineering, University of Nevada, Reno,
Expected Graduation: May 2017.
- **Rui Wu**
Computer Science and Engineering, University of Nevada, Reno,
Expected Graduation: May 2018.

Masters Degree - Those Finished:

- **Cameraon Jason Rowe**
“A Web Based Application for Model Creation and Output Visualization with the NCS Brain Simulator,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2016.
- **Marlon Daniel Chavez**
“HeartMate: A Competitive and Motivational Fitness Application for iOS Devices,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2016.
- **Chase Dwayne Carthen**
“Rewind: A Music Transcription Method,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2016.
- **Jessica Elizabeth Smith**
“vFireLib: A Forest Fire Simulation Library Implemented on the GPU,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2016.
- **Rui Wu**
“Environment for Large Data Processing and Visualization Using MongoDB,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, December 2015. *Co-advised with Dr. Sergiu Dascalu*
- **Christine Johnson**
“A Centralized Service for Accessing the NCS Brain Simulator Through a Web Interface,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, December 2015.

- **Joshua Hegie**
 “A Parallel Application for Tree Selection in the Steiner Minimal Tree Problem,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, August 2015.
- **Erin S. Keith**
 “Optimizing Local Least Squares Regression for Short Term Wind Prediction,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, August 2015.
- **Thomas J. Kelly**
 “Neocortical Virtual Robot: A Framework to Allow Simulated Brains to Interact With a Virtual Reality Environment”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2015
- **William C. Kurt**
 “Talks in Maths: Visualizing Repetition in Text and the Fractal Nature of Lyrical Verse”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, August 2014
- **Devyani Tanna**
 “NCS: Neuron Models, User Interface, and Modeling”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, August 2014
- **Nathan Michael Jordan**
 “HTTP-based Solutions to The Extension of the NCS Brain Simulator”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2014
- **Torbjorn Loken**
 “A Comparison of Massively Parallel Programming Models Through Applications in Sound Propagation and Jitter Measurement”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2014
- **Derek Eiler**
 “The Cooperative Defense Overlay Network: A Collaborative Automated Threat Information Sharing Framework for a Safer Internet”, MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2014
- **Gareth B. Ferneyhough**
 “A Python Library for Ion Channel Modeling,” MS Computer Science and Engineering Department of Computer Science and Engineering, University of Nevada, Reno, May 2013.
- **Corey M Thibeault**
 “Applications in Neurorobotics,” MS Computer Engineering Department of Computer Science and Engineering, University of Nevada, Reno, December 2012.
- **Aarti K. Dhone**
 “A Video Library Management Software Toolkit for the Nevada Climate Change Portal,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, August 2012 *Co-advised with Dr. Sergiu Dascalu*
- **Chad E. Feller**
 “Beyond Monitoring: Proactive Server Preservation in an HPC Environment,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, May 2012.

- **Joseph M. Vesco**
“Semi-Automated Analysis Software for a Novel Biochemistry Assay,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, December 2011.
- **Victor Ivanov**
“VIVA: A Survey management Toolkit,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, August 2011. *Co-Advised with Dr. Sergiu M. Dascalu*
- **Cody J. White**
“Out-of-Core Data Management for Planetary Terrain,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, May 2011.
- **Joseph D. Mahsman**
“Projective Grid Mapping for Planetary Terrain,” MS Computer Science Department of Computer Science and Engineering, University of Nevada, Reno, December 2010.
- **Michael E. Levrington**
“The Five Step Programming Process,” MS Computer Science, University of Nevada, Reno, December 2010.
- **Eugene O. Essa**
“ACAT: ABET Course Assessment Tool,” MS Computer Science, University of Nevada, Reno, May 2010. *Co-Advised with Dr. Sergiu M. Dascalu*
- **Matthew Sgambati**
“Immersive Visualization and Analysis of Ground Penetrating Radar Data,” MS Computer Science, University of Nevada, Reno, May 2010. *Co-Advised with Dr. Daniel S. Coming*
- **Roger V. Hoang**
“Wildfire Simulation on the GPU,” MS Computer Science, University of Nevada, Reno, December 2008
- **David T. Brown**
“Identification of Tree Locations in Geographic Images,” MS Computer Engineering, University of Nevada, Reno, December 2008
- **Jeremy W. Murray**
“Conversion of Thin Surface Solids to BSP Solid Sets: with Visualization and Simulation Applications,” MS Computer Science, University of Nevada, Reno, August 2008.
- **Michael J. Smith**
“Sandstorm: A Dynamic Multi-contextual GPU-based Particle System using Vector Fields for Particle Propagation,” MS Computer Science, University of Nevada, Reno, May 2008
- **John R. Kearney**
“A Unique Instrumentation System Design for Measuring Forces on a Rotating Shaft,” MS Computer Engineering, University of Nevada, Reno, May 2008
- **Jesse D. Phillips**
“Scripted Artificially Intelligent Basic Online Tactical Simulation,” MS Computer Science, University of Nevada, Reno, May 2008
- **Adrienne E. Breland**
“A Supervised Strain Classifier,” MS Computer Science, University of Nevada, Reno, May 2008

- **John L. Kenyon**
“CHIMP The C/C++ Hybrid Imperative Meta-Programmer,” MS Computer Science, University of Nevada, Reno, May 2008
- **Milind A. Zirpe**
“RAIN and NCS5 Benchmarks,” MS Computer Science, University of Nevada, Reno, December 2007.
- **Michael P. Dye**
“Vesuvius: Interactive Atmospheric Visualization in a Virtual Environment,” MS Computer Science, University of Nevada, Reno, December 2007.
- **William E. Brandstetter III**
“Multi-Resolution Deformation in Out-of-Core Terrain Rendering,” MS Computer Science, University of Nevada, Reno, December 2007.
- **Michael A. Penick**
“VFIRE: Virtual Fire in Realistic Environments A Framework for Wildfire Visualization in Immersive Environments,” MS Computer Science, University of Nevada, Reno, May 2007.
- **Linda Humphrey**
“Efficient Generation of Minimal Graphs Using Independent Path Analysis,” MS Computer Engineering, University of Nevada, Reno, December 2006.
- **Qunming Peng**
“Brainstem: A NeoCortical Simulator Interface for Robotic Studies,” MS Computer Science, University of Nevada, Reno, December 2006.
- **Joseph Richard Jaquish**
“Terrain Analyzing in a Virtual Environment with Real-Time Native Shape Creation,” MS Computer Science, University of Nevada, Reno, December 2005.
- **Marcel Andrew Levy**
“Ringermute: An audio data mining toolkit,” MS Computer Science, University of Nevada, Reno, August 2005.
- **Jeffery Alan Stuart**
“A Unified Approach for Cross-Platform Software Development,” MS Computer Science, University of Nevada, Reno, August 2005.
- **James G. King**
“Brain Communication Server: A Dynamic Data Transferal System for A Parallel Brain Simulator,” MS Computer Science, University of Nevada, Reno, May 2005.
- **Rich Drewes**
“Brainlab: a toolkit to aid in the design, simulation, and analysis of spiking neural networks with the NCS environment,” MS Computer Science, University of Nevada, Reno, May 2005.
- **Scott Crow**
“Evolution of the Graphical Processing Unit,” MS Computer Science, University of Nevada, Reno, May 2005.
- **Bei Yuan**
“A Generic Queuing System and Time Saving Region Restrictions for Calculating the Crossing Number of K_n ,” MS Computer Science, University of Nevada, Reno, August 2004.
- **Brian Westphal**
“The Redwood Programming Environment,” MS Computer Science, University of Nevada, Reno, August 2004.

- **James Frye**
“Parallel Optimization of a NeoCortical Simulation Program,” MS Computer Science, University of Nevada, Reno, December 2003.
- **Sean Martin**
“A Parallel Queuing System for Computationally Intensive Problems on Medium to Large Beowulf Clusters,” MS Computer Engineering, University of Nevada, Reno, December 2003.
- **Juan Carlos Macera**
“Design and Implementation of a Hierarchical Robotic System: a Platform for Artificial Intelligence Investigation,” MS Computer Engineering, University of Nevada, Reno, December 2003.
- **Beifang Yi**
“Virtual Hand: a HCI Testbed for Computer Vision Research on the Human Hand,” MS Computer Engineering, University of Nevada, Reno, August 2003.
- **Wenwu Chen**
“Parallel Computation, Pattern Recognition, and Scientific Visualization,” MS Computer Engineering, University of Nevada, Reno, August 2003.
- **Kishor Waikul**
“Implementation of the Integrated Courseware Manager for Computer Science,” MS Computer Science, University of Nevada, Reno, May 2003.
- **Alina Solovyova-Vincent**
“Parallel Implementation of the Inversion of Polynomial Matrices,” MS Computer Science, University of Nevada, Reno, May 2003.
- **Mukesh Motwani**
“Robust 3D Head Pose Classification using Wavelets,” MS Computer Engineering, University of Nevada, Reno, May 2003.
- **Benjamin J. Lucchesi**
“A Parallel Linear Octree Collision Detection Algorithm,” MS Computer Science, University of Nevada, Reno, May 2002.
- **E. Courtenay Wilson**
“Parallel Implementation of a Biologically Correct Neo-Cortical Neural Network Simulator,” MS Computer Engineering, University of Nevada, Reno, August 2001.
- **Mohammed Islam**
“Implementation of Interactive Course Web Site,” MS Computer Science, University of Nevada, Reno, August 2000.
- **Lu-Chun Liao**
“Large Scale Software Transitions: A Case Study of the Second Half of MFIRE,” MS Computer Science, University of Nevada, Reno, August 2000.
- **Lingjiang Cheng**
“Large Scale Software Transitions: A Case Study of the First Half of MFIRE,” MS Computer Science, University of Nevada, Reno, May 2000.
- **Damien Ennis**
“A Computer Analysis of Hit Frequency for a Complex Video Gaming Machine,” MS Computer Science, University of Nevada, Reno, May 2000.
- **Ulvi Cetin**
“A Foundation for On-Line Course Ware,” MS Computer Science, University of Nevada, Reno, May 2000.

- **Umid Tadjiev**
“Parallel computation and graphical visualization of the minimum crossing number of a graph,” MS Computer Science, University of Nevada, Reno, August 1998.
- **Guo-Liang Sun**
“Image Maker,” MS Computer Science, University of Nevada, Reno, May 1998.
- **Jane A. Niehues-Brooks**
“Automated Digital Image Analysis of Video Ice Crystal Data,” MS Computer Science, University of Nevada, Reno, December 1997.
- **Marat Zhaksilikov**
“Parallel Genetic Algorithms: A Survey and Comparative Study,” MS Computer Science, University of Nevada, Reno, May 1997.
- **Pingyan Tan**
“A Lowcost Algorithm for Dynamic Multicast Routing in Computer Networks,” MS Computer Science, University of Nevada, Reno, December 1995.

Post Doctoral Scholar Supervision:

- **Laurence Jayet Bray**
Brain Computation Lab:
January 2011 - June 2013
- **Adrienne Breland**
High Performance Computation and Visualization Lab:
August 2011 - June 2012
- **Rakhi Motwani**
High Performance Computation and Visualization Lab:
May 2010 - December 2010

AWARDS:

Teaching Awards:

- May 2016 Senior Scholar Mentor, College of Engineering, University of Nevada, Reno
- May 2016 Honors Program Convocation, Graduate Mentor, University of Nevada, Reno
- December 2015 Senior Scholar Mentor, College of Engineering, University of Nevada, Reno
- December 2014 Honors Program Convocation, Graduate Mentor, University of Nevada, Reno
- May 2013 Senior Scholar Mentor, College of Engineering, University of Nevada, Reno
- May 2013 Honors Program Convocation, Graduate Mentor, University of Nevada, Reno
- May 2007 Honors Program Cording Ceremony, Graduate Mentor, University of Nevada, Reno
- May 2006 Honors Program Cording Ceremony, Graduate Mentor, University of Nevada, Reno

- Nominee, Nevada Regents Distinguished Teaching Award, 2005
- Fall 2005 Honors Program Cording Ceremony, Graduate Mentor, University of Nevada, Reno
- F. Donald Tibbitts University Distinguished Teacher Award, University of Nevada, Reno, May 11, 2005
- Who's Who Among America's Teachers, 9th edition, 2005.
- Runner-up, F. Donald Tibbitts University Distinguished Teacher Award, University of Nevada, Reno, May 12, 2004
- Fall 2003 Senior Scholar Mentor, College of Engineering, University of Nevada, Reno
- Who's Who Among America's Teachers, 7th edition, 2002.
- Who's Who Among America's Teachers, 6th edition, 2000.
- Runner-up, F. Donald Tibbitts University Distinguished Teacher Award, University of Nevada, Reno, May 12, 1999
- Nominee, Nevada Regents Academic Advising Award, 1999.
- Who's Who Among America's Teachers, 5th edition, 1998.
- Who's Who Among America's Teachers, 4th edition, 1996.
- Outstanding Graduate Teaching Assistant, College of Sciences, Clemson University, April 3, 1993
- Outstanding Graduate Teaching Assistant, Department of Computer Science, Clemson University, April 3, 1993

Research Awards:

- Best Paper Award Runner-Up, 26th International Conference on Computers and Their Applications in Industry and Engineering, (CAINE-2013), Los Angeles, CA, March 2013.
- Best Paper Award, 25th International Conference on Computers and Their Applications, (CATA-2010), New Orleans, LA, March 2010.
- Best Paper Award, 21st International Conference on Computers and Their Applications in Industry and Engineering, (CAINE-2008), Honolulu, HI, March 2008.
- Best Paper Award, 21st International Conference on Computers and Their Applications, (CATA-2006), Seattle, WA, March 2006.
- Best Paper Award, Information Systems Development Session, (SCI 2003) July, 2003, Orlando, FL.
- Second Place, Paper Competition, *CCCS 4th Annual Conference*, Clemson University, Clemson, SC, Nov 11-12, 1993
- CCCS Research Assistantship, Clemson University, August 1993
- Highest rated paper, ACM 30th Southeast Conference, North Carolina State University, Raleigh, NC April 8–10, 1992
- NASA Research Assistantship, Clemson University, August 1989
- Dept. of Defense Research Assistantship, Clemson University, May 1989

Other Awards:

- Sabbatical, University of Nevada, July 2007 - June 2008.

- Nevada Honor Court Inductee University of Nevada, Reno, June 23, 2005
- Upsilon Pi Epsilon membership, Computer Science Honor Society, Clemson University, November 1990
- Graduate Assistant Excellence Award, Bob Jones University, April 1988
- Bank of America Achievement Award in Science and Mathematics, August 1982
- Who's Who Among American High School Students, 1982
- Who's Who Among American High School Students, 1981

OTHER PROFESSIONAL ACTIVITIES:

Editor in Chief:

- International Journal of Computers and Their Applications
January 2013-present

Board of Directors:

- International Society for Computers and Their Applications
January 2010-present
Vice President: January 2010-December 2013

Editorial Board:

- ISRN Computer Graphics
January 2012-2013

Special Issue Guest Editor:

- IEEE Transactions on Autonomous Mental Development
Vol 4, No 3, September 2012.
With Jeffrey L. Krichmar, Hava T. Siegelmann, and Hiroaki Wagatsuma
- International Journal of Computers and Their Applications,
Vol 18, No 4, December 2011.

Referee for journals:

- Computer Engineering Research
- Computers and Graphics
- Discrete Mathematics
- Frontiers in Computational Neuroscience
- IBM Journal of Research and Development
- IEEE Computer
- IEEE Transactions on Education
- IEEE Transactions on Evolutionary Computation
- IEEE Transactions on Reliability
- IEEE Transactions on Software Engineering and Methodology
- IEEE Transactions on Visualization and Computer Graphics
- Information Processing Letters
- Intelligent Automation and Soft Computing

- Iranian Journal of Electrical and Computer Engineering
- ISRN Computer Graphics
- Neural Networks
- Networks
- PLoS ONE
- Science of Computer Programming
- Supercomputing
- Systems and Software
- Visual Communication and Image Representation

Program Committee member for annual conferences:

- 31st International Conference on Computers and Their Applications (CATA-2016),
- The Sixth International Conference on Internet Technologies and Applications 2015 (ITA 2015)
- 30th International Conference on Computers and Their Applications (CATA-2015),
- The Third International Conference on Communications, Computation, Networks and Technologies (INNOV 2015)
- 29th International Conference on Computers and Their Applications (CATA-2014),
- 23rd International Conference on Software Engineering and Data Engineering (SEDE 2014),
- The Third International Conference on Communications, Computation, Networks and Technologies (INNOV 2014)
- ISCA's 3rd International Conference on Advanced Computing and Communication, (ACC 2013)
- 28th International Conference on Computers and Their Applications (CATA-2013),
- The Second International Conference on Communications, Computation, Networks and Technologies (INNOV 2013)
- Workshop on Collaboration in Virtual Environments (CoVE-2013) at CTS-2013 (Co-Organizer with Dr. Sergiu Dascalu)
- 22nd International Conference on Software Engineering and Data Engineering (SEDE 2013),
- The First International Conference on Communications, Computation, Networks and Technologies (INNOV 2012)
- Workshop on Collaboration in Virtual Environments (CoVE-2012) at CTS-2012 (Co-Organizer with Dr. Sergiu Dascalu)
- The 11th International Workshop on System/Software Architectures (IWSSA 2012)
- 21st International Conference on Software Engineering and Data Engineering (SEDE 2012),
- 27th International Conference on Computers and Their Applications (CATA-2012),
- The 10th International Workshop on System/Software Architectures (IWSSA 2011)
- Sixth International Conference on Software Engineering Advances (ICSEA 2011),
- 20th International Conference on Software Engineering and Data Engineering (SEDE 2011),

- 26th International Conference on Computers and Their Applications (CATA-2011),
- Fourth International Conference on Internet Technologies and Applications (ITA 11),
- International Conference on Business Applications and Legal Issues (ICBALI-2011)
- The Fourth International Conference on Advances in Computer-Human Interaction, (ACHI 2011),
- The Third International Conference on Advances in Computer-Human Interaction, (ACHI 2010),
- 25th International Conference on Computers and Their Applications (CATA-2010),
- 19th International Conference on Software Engineering and Data Engineering (SEDE 2010),
- Visual Environments, Languages, and Tools for Software Engineering (VELT-SE)
- International Workshop on Visual Languages and Computing (VLC 2009): Special Session on Visual Languages and Environments in Software Engineering (VLE-SE)
- 18th International Conference on Software Engineering and Data Engineering (SEDE 2009),
- The Second International Conference on Advances in Computer-Human Interaction, (ACHI 2009),
- 24th International Conference on Computers and Their Applications (CATA-2009),
- Information Technology: New Generations, ITNG 2009: Special Session on Human Computer Interaction
- Information Technology: New Generations, ITNG 2009: Special Session on Software Engineering
- Internet Technologies and Applications 2009 (ITA 2009)
- 17th International Conference on Software Engineering and Data Engineering (SEDE 2008), June 30 - July 2, 2008, Omni Hotel, Los Angeles.
- The First International Conference on Advances in Computer-Human Interaction, (ACHI 2008), February 10-15, 2008 - St. Luce, Martinique
- The Third International Conference on Internet and Web Applications and Services (ICIW 2008), June 8-13, 2008 - Athens, Greece
- 23rd International Conference on Computers and Their Applications (CATA-2008), April 9-11, 2008, Hyatt Regency Cancun, Cancun, Mexico.
- Workshop on Software Specification and Modeling (ITNG-2008), Las Vegas, NV, April 7-9, 2008
- IEEE Virtual Reality (IEEE VR 2008), March 8-14, 2008, Reno, NV. Local Arrangements Co-Chair.
- 6th International Workshop on System/Software Architectures (IWSSA 2007)
- 17th International Conference on Software Engineering and Data Engineering (SEDE 2007), Las Vegas, July 2007
- Workshop on Software Specification and Modeling (ITNG-2007), Las Vegas, NV, April 2-4, 2007
- ISCA's 19th Computer Applications in Industry and Engineering (CAINE '06)
- 5th International Workshop on System/Software Architectures (IWSSA 2006)
- International Conference on Entertainment Systems and Applications (ENSY-2006)

- ISCA's 18th Computer Applications in Industry and Engineering (CAINE '05) November 9-11, 2005.
- 4th International Workshop on System/Software Architectures (IWSSA '05)
- Software Engineering Research and Practice (SERP '05)
- Software Engineering Research and Practice (SERP '04)
- Golden West International Conference on Intelligent Systems (GWIC IV) June 12 - 14, 1995. Sir Francis Drake Hotel, San Francisco, CA

Special Session Organizer:

- From Neuroscience to Robotics and Human-Computer Interfaces, A Special Session in memory of Philip Goodman, Part of the 2011 International Joint Conference on Neural Networks (IJCNN) July 31-Aug 5, 2011, San Jose, CA. With Jeffrey L. Krichmar, and Hava T. Siegelmann
- High Performance Information Retrieval and Visualization: Algorithms and Applications, part of The 2007 High Performance Computing & Simulation (HPCS'07) Conference, June 4 - 6, 2007, Prague, Czech Republic

Conference General Chair:

- 25th International Conference on Software Engineering and Data Engineering (SEDE 2016),
- 24th International Conference on Software Engineering and Data Engineering (SEDE 2015),

Program Chair and Proceedings Editor:

- ISCA's 2nd International Conference on Advanced Computing and Communication, (ACC 2012) June 27-29, 2012, Omni, Los Angeles, CA
- ISCA's 23rd International Conference on Computer Applications in Industry and Engineering, (CAINE '10) November 12-14, 2010, Imperial Palace, Las Vegas, NV.
- ISCA's 21st International Conference on Computer Applications in Industry and Engineering, (CAINE '08) November 12-14, 2008, Sheraton Beachcomber, Honolulu, Hawaii.
- ISCA's 5th International Conference on Intelligent Systems (IS '96), June 19-21, 1996. Flamingo Hilton Hotel, Reno, Nevada.

Proceedings Associate Editor:

- Software Engineering Research and Practice (SERP '05)
June 27-30, 2005. Monte Carlo Resort, Las Vegas, NV
- Software Engineering Research and Practice (SERP '04)
June 21-24, 2004. Monte Carlo Resort, Las Vegas, NV

Referee, annual conferences:

- 9th International Conference on Industrial Informatics (IEEE INDIN 2011)
- IEEE Virtual Reality 2011
- IEEE Virtual Reality 2010
- International Conference on Internet and Web Applications and Services (ICIW'06)
- International Conference on Computational Intelligence for Modeling, Control and Automation (CIMCA 2005)

- International Conference on Computers and Their Applications (CATA '05)
- The Fifth International Conference on Computer Science and Informatics, February 27 - March 3, 2000.
- 1999 Annual Meeting of the ASEE Pacific Southwest Section.

Reviewer for book publishers:

- Addison Wesley Longman.
- Prentice Hall, Simon & Schuster Education Group.
- Computer Science Press, an imprint of W.H. Freeman and Company.
- DC Heath Publishing Co.
- Scott Jones, Inc. Publishers

Consultant to industry:

- IGT, Reno, NV, 1995-96
- Micro Pro International, Redwood City, CA, 1986-1992

Service, Current

- **Member, Department of Computer Science and Engineering Personnel Committee**
University of Nevada, 2007-present
- **Member, Faculty Senate**
University of Nevada, 2000-2003, 2014-present
Chair Elect: 2015-2016
Chair: 2016-2017
- **Member, President's Council**
University of Nevada, 2016-2017
- **Member, Neuroscience Program Graduate Committee**
University of Nevada, 2014-present
- **Program Evaluator**
CAC, ABET, 2011-present

Service, Past

- Departmental:
 - **Member, Department of Computer Science and Engineering Faculty Evaluation/Merit Committee**
University of Nevada, 1996-1998, 1999-2001, 2005-2007, 2015-2016
 - **Member, Department of Computer Science and Engineering Web Committee**
University of Nevada, 2013-2014
Chair 2013-2014
 - **Member, Department of Computer Science and Engineering Facilities Committee**
University of Nevada, 1995-1997, 2002-2007
 - **Member, Department of Computer Science and Engineering Graduate Committee**
University of Nevada, 2008-2009

- **Coordinator, Computer Science Colloquium Series**
University of Nevada, 1994-95
- **Member, Department of Computer Science and Engineering Undergraduate Committee**
University of Nevada, 1996-2007, 2008-2010, 2011-2013
Chair 1997-2007, 2011-2013
- **Member, Department of Computer Science and Engineering Space Committee**
University of Nevada, 2014-2015
- **Member, Department of Computer Science and Engineering Faculty Search Committee**
University of Nevada, 1999, 2000, 2000, 2001, 2002, 2002, 2003, 2003, 2006, 2013, 2013, 2013, 2014, 2014, 2015, 2015
Chair 1999, 2000, 2000, 2001, 2002, 2002, 2003, 2003, 2006,
- College:
 - **Member, College of Engineering Personnel Committee**
University of Nevada, 2003-2006, 2009-2012, 2014-2016
Chair 2009-2012, 2015-2016
 - **Member, CoE Differential Fees Committee**
University of Nevada, 2013-2014
 - **Member, College of Engineering Bylaws Committee**
University of Nevada, 2010-2012
Chair 2010-2012
 - **Member, College of Engineering Building Committee**
University of Nevada, 2009-2010
 - **Member, College of Engineering Curriculum Committee**
University of Nevada, 1997-2004, 2006-2007
 - **Member, College of Engineering Banquet Committee**
University of Nevada, 1994-2001
 - **Chair, College of Engineering Search Committee**
University of Nevada, 2000, 2012,
 - **Member, Task Force on Work and Family**
University of Nevada, 1997
 - **Member, College of Engineering Committee for the Engineering Center for Secondary Learning**
University of Nevada, 1996-1997
 - **Member, College of Engineering Space Committee**
University of Nevada, 1995-1997
 - **Member, Faculty Library Committee**
University of Nevada, 1995-96
 - **Member of the College of Engineering Computer Systems Advisory Board**
University of Nevada, 1994-95
- University:
 - **Academic Leadership Council**
University of Nevada, 2015-2016
 - **Member, Campus Affairs Committee**
University of Nevada, 2015-2016

- **Member, Facilitates Resources Committee**
University of Nevada, 2015-2016
- **Member, Program Review Committee**
University of Nevada, 2015-2016
- **Research and Grants Committee**
University of Nevada, 2015-2016
- **Member, Proposed UNCE, CABNR, AES Administrative Consolidation Review Committee**
University of Nevada, 2015-2016
- **Member, Research Affairs Council**
University of Nevada, 2014-2015
- **Member, CIO Search Committee**
University of Nevada, 2013, 2015
- **Member, Research Grid Steering Committee**
University of Nevada, 2006-2013
Chair 2006-2013
- **Member, Morale Task Force**
University of Nevada, 2005-2006
- **Member, Excellence in Teaching Program Advisory Board**
University of Nevada, 1999-2003
- **Member, Faculty Senate Nominating Committee**
University of Nevada, 2001, 2002, 2003.
- **Member, Distinguished Teaching Assistant Award Committee**
University of Nevada, 2005-2010
- Other:
 - **Member, INBRE Bioinformatics Steering Committee**
Nevada System of Higher Education, 2006-2009
Chair 2006-2009
 - **Member, Internal UCCSN Advisory Board for Advanced Computing in the Environmental Sciences**
2002-2006
 - **Member, Board of Trustees**
Northwest Baptist Seminary, Tacoma, WA, 1998-2002
Secretary of the Board 1999-2002

Member: ACM (Senior Member), ISCA (Senior Member)