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Education

- PhD, Computer Science, University of Louisiana at Lafayette, 1987.
- M.S., Computer Science, University of Louisiana at Lafayette, 1985.
- B.S., Mathematics, Illinois State University, 1981.

Employment History

- 2003– *Professor*, Department of Electrical Engineering and Computing Systems, University of Cincinnati, Cincinnati, OH.
- 2000–03 *Associate Professor*, Department of Electrical & Computer Engineering and Computer Science, University of Cincinnati, Cincinnati, OH.
- 1987–00 *Assistant Professor* (tenured 9/93), Department of Electrical & Computer Engineering and Computer Science, University of Cincinnati, Cincinnati, OH.
- 1982–87 *Research Assistant*, The Center for Advanced Computer Studies, University of Southwestern Louisiana, Lafayette, LA.
- 1982 *Teaching Assistant*, Department of Computer Science, University of Southwestern Louisiana, Lafayette, LA.
- 1981–82 *Computer Programmer*, Bob White Computing and Software, Bloomington, Illinois.
- 1980–81 *Computer Programmer*, Union Insurance Group, Bloomington, Illinois.

Current Research Interests

I am working in High Performance Computing, Data Science, Parallel and Distributed Simulation, Embedded Systems, and Point-of-Care medical devices. I have been working with Random and Approximate Methods to improve the performance of *Topological Data Analysis* (TDA), specifically persistent homology. These studies have focused on partitioning and parallelism to decompose the problem into a collection of subparts that can be processed in parallel. Because the TDA algorithms have exponential complexity in both time and space, decomposition and partitioning the data into regional subspaces has dramatic impact on the overall performance. In *Big Data Clustering*, I have been working to combine random projection hashing with locality sensitive hashing to implement high-performance, distributed *privacy preserving data mining*. The projection and hashing approach permits us to perform clustering on distributed data sets by

exchanging only hash keys between the distributed nodes. The hash keys are produced by destructive transforms so that the original data in the distributed network remains fully protected. We are promoting these techniques to enable clustering and nearest neighbor search across HIPAA protected medical databases. In addition, I have been working extensively for many years to advance the field of *Parallel and Distributed Simulation* (PDES) using the Time Warp mechanism. Most recently we have been studying the design of solutions for the pending event set problem for high performance simulation on multi-core and many-core platforms. I have initiated studies to extract profile data from discrete event simulation models to obtain quantitative data that I plan to use to focus my algorithm development for parallel simulation. Finally, I am working with the local BioSensors group and College of Medicine to develop point-of-care medical devices to assist patient diagnosis, treatment, and monitoring.

Teaching Experience

1. Graduate courses on High Performance Distributed Computing, Parallel Discrete Event-Driven Simulation, Parallel Processing, Computer Architecture, SIMD/MIMD Multiprocessors, and Formal Semantic Models of Computer Languages.
2. Undergraduate courses on Computer System Organization, Assembler Language Programming, and Compiler Theory.

Patents

- US Patent #7,605,842, “Vehicular Optical Communications System,” October 20, 2009 (inventors: P. A. Wilsey, D. E. Martin, D. S. Dieckman, and R. F. Beyette, Jr.).
- US Patent #7,359,438, “Optical communications imager,” April 15, 2008 (inventors: R. F. Beyette, Jr., D. S. Dieckman, D. E. Martin, and P. A. Wilsey).
- US Patent #7,282,691, “Method for determining wavelengths of light incident on a photodetector,” October 16, 2007 (inventors: P. A. Wilsey, R. F. Beyette, Jr., and C. J. Fearing).
- US Patent #6,321,376, “Apparatus and method for semi-automated generation and application of language conformity tests,” November 20, 2001 (inventors: J. C. Willis, R. N. Newshutz, and P. A. Wilsey).

Publications

Book and Book Chapters

1. Nael B. Abu-Ghazaleh and Philip A. Wilsey, “Managing Control Asynchrony on SIMD Machines — A Survey,” *Advances in Computers*, Academic Press, M. Zelkowitz (ed), Volume 49, 239–302, 1999.
2. Kothanda Umamageswaran, Sheetanshu L. Pandey, and P. A. Wilsey, *Formal Semantics and Proof Techniques for Optimizing VHDL Models*, Kluwer Academic Publishers, Boston, MA, 1999. (ISBN 0-7923-8375-3).

3. Philip A. Wilsey, "Modeling, Analysis and Simulation of Computer and Telecommunication Systems," *Encyclopedia of Computer Science and Technology*, Marcel Dekker, A. Kent and J. G. Williams (eds), Volume 41, 147–160, 1999.
4. Philip A. Wilsey, Ranga Vemuri, Peter J. Ashenden, and Norman Mause, "Programmed Monitoring and Digital System Simulation," *Current Issues in Electronic Modeling*, Volume 8: Hardware/Software Co-Design and Co-Verification, 145–162, December 1996.
5. Philip A. Wilsey, Norman Mause, and Peter J. Ashenden, "Abstract Data Types and the Digital System Description and Simulation Environments," *Current Issues in Electronic Modeling*, Volume 5: Hardware Component Modeling, 33–53, March 1996.
6. Philip A. Wilsey, "Developing a Formal Semantic Definition of VHDL," in *VHDL for Simulation, Synthesis and Formal Proofs of Hardware*, J. Mermet (ed), Kluwer Academic Publishers, 245–256, 1992.

Refereed Journal

1. Doug Weber, Sounak Gupta, Philip A. Wilsey, Nael Abu-Ghazaleh, and Dmitry Ponomarev, "Time Warp Simulation on Multi-core Processors and Clusters," *SIMULATION: Transactions of The Society for Modeling and Simulation International*, (submitted).
2. Patrick P. Putnam, Philip A. Wilsey, and Ge Zhang, "QTLsimMT: Multi-threaded Forward Time Population Genetic Simulators," *BMC Bioinformatics*, (submitted).
3. Patrick P. Putnam, Ge Zhang, and Philip A. Wilsey, "Clotho: addressing the scalability of Forward Time Population Genetic Simulation," *BMC Bioinformatics*, **16**:191, June 10, 2015.
4. Patrick P. Putnam, Ge Zhang, and Philip A. Wilsey, "A Comparison Study of Succinct Data Structures for use in GWAS," *BMC Bioinformatics*, **14**:369, December 21, 2013.
5. Patrick P. Putnam, Philip A. Wilsey, and Karthik Vadambacheri Manian, "Core Frequency Adjustment to Optimize Time Warp on Many-Core Processors," *Simulation Modelling Practice and Theory*, 55–64, Volume 28, November 2012.
6. Dmitry A. Gorodetsky and Philip A. Wilsey, "Advantages of Modal Decomposition for Efficient Scaling of Parallel FDTD Computations," *International Journal of Numerical Modeling: Electronic Networks, Devices, and Fields*, Feb 2011.
7. Fred R. Beyette Jr., Blane Booher, Jamey Drennan, Lee Carraher, Josh Butler, Peggy S. Bowman, Joe F. Clark, and Philip A. Wilsey, "Device for Quantification of Bilirubin in Cerebral Spinal Fluid," *IEEE Transactions on Biomedical Engineering*, 58 (3), 773–776, March 2011.
8. D. B. Pettigrew, C. J. Morgan, R. Brian Anderson, Philip A. Wilsey, and Charles Kuntz, IV, "Virtual Pre-Operative Measurement and Surgical Manipulation of Sagittal Spinal Alignment using a Novel Research and Education Software Program," *Neurosurgical Focus*, Vol 28, No 3, 565–570, March 2010.

9. Malolan Chetlur and Philip A. Wilsey, "Local Fossil Identification in Time Warp Simulations," *Journal of Simulation and Process Modelling (IJSPM)*, Volume 5, Number 2, 95–103, 2009.
10. Malolan Chetlur and Philip A. Wilsey, "Causality Information and Proactive Cancellation Mechanisms," *Concurrency and Computation: Practice and Experience*, Volume 21, Issue 11, 1483–1503, August 2009.
11. Dhananjai M. Rao and Philip A. Wilsey, "Predicting Performance of Resolution Changes in Parallel Simulations," *SCS Transactions: Simulation Journal*, Volume 84, Number 10/11, 535–555, Oct/Nov, 2008.
12. Douglas R. Hickey, Chris J. Fearing, Fred R. Beyette, Jr., and Philip A. Wilsey, "Characterization of the PHOCi(TM) Data Integrated Video Sensor Technology," *Analog Integrated Circuits and Signal Processing*, 61–69, 2007.
13. Dmitry A. Gorodetsky and Philip A. Wilsey, "Generation of 3-D finite-difference time-domain macromodels for faster simulation," *International Journal of RF and Microwave Computer-Aided Engineering*, 326–334, 2007.
14. Dhananjai M. Rao and Philip A. Wilsey, "Accelerating ATM Simulations using Dynamic Component Substitution (DCS)" *SCS Transactions: Simulation Journal*, Volume 82, Number 4, 235–253, 2006.
15. Dhananjai M. Rao and Philip A. Wilsey, "An Active Networks Simulation Environment," *SCS Transactions: Simulation Journal*, Volume 78, Number 7, 447–460, 2002.
16. Dhananjai M. Rao and Philip A. Wilsey, "An Ultra-large Scale Simulation Framework," *Journal of Parallel and Distributed Computing*, Volume 62, 1670–1693, 2002.
17. Dale E. Martin, Radharamanan Radhakrishnan, Dhananjai M. Rao, Malolan Chetlur, Krishnan Subramani, and Philip A. Wilsey, "Analysis and Simulation of Mixed-Technology VLSI Systems," *Journal of Parallel and Distributed Computing*, Volume 62, Number 3, 468–493, March 2002.
18. Peter Frey, Radharamanan Radhakrishnan, Harold W. Carter, Perry Alexander, and Philip A. Wilsey, "A Formal Specification and Verification Framework for Time Warp based Parallel Simulation," *IEEE Transactions on Software Engineering*, Volume 28, Number 1, 58–78, January 2002.
19. Vijay Balakrishnan, Radharamanan Radhakrishnan, Dhananjai M. Rao, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, "A Performance and Scalability Analysis Framework for Parallel Discrete Event Simulators," *Simulation Practice and Theory*, Volume 8, 529–553, 2001.
20. Swaminathan Subramanian, Dhananjai M. Rao, and Philip A. Wilsey, "Applying Multilevel Partitioning to Parallel Logic Simulation," *Parallel and Distributed Computing Practices*, Volume 4, Number 1, 37–59, March 2001.
21. Nael B. Abu-Ghazaleh and Philip A. Wilsey, "The Shared Control Parallel Architecture Model," *Journal of Parallel and Distributed Computing*, Volume 61, Number 6, 767–783, June 2001.

22. Dhananjai M. Rao, Radharamanan Radhakrishnan, and Philip A. Wilsey, “Web-based Network Analysis and Design,” *ACM Transactions on Modeling and Computer Simulation*, Volume 10, Number 1, 18–38, January 2000.
23. Peter J. Ashenden and Philip A. Wilsey, “Principles for Language Extensions to VHDL to Support High-Level Modeling,” *VLSI Design*. Volume 10, Number 2, 217–236, 1999.
24. Peter J. Ashenden and Philip A. Wilsey, “Protected Shared Variables in VHDL: IEEE Std 1076a,” *IEEE Design and Test of Computers*, Volume 16, Number 4, 74–83, October–December 1999.
25. Sheetanshu L. Pandey, Kothanda Umamageswaran, and Philip A. Wilsey, “VHDL Semantics and Validating Transformations,” *IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems*, Volume 18, Number 7, 936–955, July 1999.
26. Raghunandan Rajan, Radharamanan Radhakrishnan, and Philip A. Wilsey, “Dynamic Cancellation: Selecting Time Warp Cancellation Strategies at Runtime,” *VLSI Design*, Volume 9, Number 3, 237–251, 1999.
27. Nael B. Abu-Ghazaleh and Philip A. Wilsey, “Models for Control Unit Synchronization on Shared Control Architectures,” *Journal of Parallel and Distributed Computing*, Volume 52, Number 1, 69–81, July 1998.
28. Peter J. Ashenden, Philip A. Wilsey, and Dale E. Martin, “SUAVE: Extending VHDL to Improve Modeling Support,” *IEEE Design and Test of Computers*, Volume 15, Number 2, 34–44, April–June 1998.
29. Kothanda Umamageswaran, Krishnan Subramani, Philip A. Wilsey, and P. Alexander, “Formal Verification and Empirical Analysis of Rollback Relaxation,” *Journal of Systems Architecture* (formerly published as *Microprocessing and Microprogramming: the Euromicro Journal*), Volume 44, 473–495, 1998
30. Nael B. Abu-Ghazaleh, Philip A. Wilsey, Xianzhi Fan, and Debra A. Hensgen, “Synthesizing Variable Instruction Issue Interpreters for Implementing Functional Parallelism on SIMD Computers,” *IEEE Transactions on Parallel and Distributed Systems*, Volume 8, Number 4, 412–423, April 1997.
31. Nael B. Abu-Ghazaleh and Philip A. Wilsey, “Variable Instruction Scheduling for MIMD Interpretation on Pipelined SIMD Machines and for Compositional Instruction Sets,” *Concurrency—Practice and Experience*, Volume 9, Number 1, 21–39, January 1997.
32. Avinash C. Palaniswamy and Philip A. Wilsey, “Parameterized Time Warp (PTW): An Integrated Adaptive Solution to Optimistic PDES,” *Journal of Parallel and Distributed Computing*, Volume 37, Number 2, 134–145, September 1996.
33. Christopher H. Young and Philip A. Wilsey, “A Distributed Method to Bound Rollback Lengths for Fossil Collection in Time Warp Simulators,” *Information Processing Letters*, Volume 59, Number 4, 191–196, August 1996.

34. Xianzhi Fan, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, “On the Complexity of Scheduling MIMD Operations for SIMD Interpretation,” *Journal of Parallel and Distributed Computing*, Volume 29, Number 1, 91–95, August 1995.
35. Philip A. Wilsey and Subrata Dasgupta, “A Formal Model of Computer Architectures for Digital System Design Environments,” *IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems*, Volume 9, Number 5, 473–486, May 1990.
36. Subrata Dasgupta, Philip A. Wilsey, and Juha Heinanen, “Axiomatic Specifications in Firmware Development Systems,” *IEEE Software*, Volume 3, Number 4, 49–58, July 1986.

Refereed Conference

1. Anindya Moitra, Nick Malott, and Philip A. Wilsey, “Cluster-based Data Reduction for Persistent Homology,” *IEEE International Conference on Big Data*, December 2018. (submitted).
2. Patrick Crawford, Peter D. Barnes Jr., Stephan J. Eidenbenz, and Philip A. Wilsey, “Sampling Simulation Model Profile Data for Analysis,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2018)*, May 2018.
3. Patrick Crawford, Stephan J. Eidenbenz, Peter D. Barnes Jr., and Philip A. Wilsey, “Some Properties of Communication Behaviors in Discrete-Event Simulation Models,” *Proceedings of the 2017 Winter Simulation Conference*, December 2017. (invited).
4. Sounak Gupta and Philip A. Wilsey, “Quantitative Driven Optimization of a Time Warp Kernel,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2017)*, May 2017.
5. Barry Williams, Dmitry Ponomarev, Nael Abu-Ghazaleh, and Philip A. Wilsey, “Performance Characterization of Parallel Discrete Event Simulation on Knights Landing Processor,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2017)*, May 2017.
6. Lee A. Carraher, Philip A. Wilsey, Anindya Moitra, and Sayantan Dey, “Random Projection Clustering on Streaming Data,” *IEEE ICDM Workshop on High Dimensional Data Mining (HDM '16)*, December 2016.
7. Jacob Franklin, Samuel Wenke, Sadiq Quasem, Lee A. Carraher, and Philip A. Wilsey, “streamingRPHash: Random Projection Clustering of High-Dimensional Data in a MapReduce Framework,” *IEEE Cluster 2016*, September 2016. (2-page poster).
8. Philip A. Wilsey, “Some Properties of Events Executed in Discrete-Event Simulation Models,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2016)*, May 2016. <http://dx.doi.org/10.1145/2901378.2901400>
9. Lee A. Carraher, Philip A. Wilsey, Anindya Moitra, and Sayantan Dey, “Multi-probe random projection clustering to secure very large distributed datasets”, *2015 IEEE International Conference on Big Data (Big Data)*, 1891–1900 Oct, 2015. <http://dx.doi.org/10.1109/BigData.2015.7363964>

10. Joshua Hay and Philip A. Wilsey, “Experiments with Hardware-based Transactional Memory in Parallel Simulation,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2015)*, June 2015. <http://dx.doi.org/10.1145/2769458.2769462>
11. A. J. Alt and Philip A. Wilsey, “Profile Driven Partitioning of Parallel Simulation Models,” *Proceedings of the 2014 Winter Simulation Conference*, December 2014.
12. William A. Magato and Philip A. Wilsey, “llamaOS: A Solution for Virtualized High Performance Computing Clusters,” *Workshop on Parallel and Distributed Scientific and Engineering Computing*, May 2014.
13. Sounak Gupta and Philip A. Wilsey, “Lock-Free Pending Event Set Management in Time Warp,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2014)*, May 2014. <http://dx.doi.org/10.1145/2601381.2601393>
14. Vivnesh Subbian, Philip A. Wilsey, and Fred R. Beyette Jr. “Heuristic evaluation of user interface for point-of-care diagnosis and rehabilitation of mild Traumatic Brain Injury,” *Conference on Neural Engineering (NER), 2013 6th International IEEE/EMBS*, pp. 1250–1253. IEEE, 2013.
15. Vignesh Subbian, Fred R. Beyette Jr., and Philip A. Wilsey, “Development and Evaluation of Hardware for Point-of-Care Assessment of Upper-limb Motor Performance,” *35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, July 2013.
16. Tom Dickman, Sounak Gupta, and Philip A. Wilsey, “Event Pool Structures for PDES on Many-Core Beowulf Clusters,” *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS 2013)*, May 2013.
17. Lee Carraher, Philip A. Wilsey, and Fred Annexstein, “A GPGPU Algorithm for c-Approximate r-Nearest Neighbor Search in High Dimensions,” *International Workshop on High Performance Data Intensive Computing (HPDIC 2013)*, May 2013.
18. Ryan Child and Philip A. Wilsey, “Using DVFS to Optimize Time Warp Simulations,” *Proceedings of the 2012 Winter Simulation Conference*, December 2012.
19. Vignesh Subbian, Fred R. Beyette Jr., and Philip A. Wilsey, “Design and Usability of a Medical Computing System for Diagnosis of Mild Traumatic Brain Injury,” *34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Sept 2012.
20. Ryan Child and Philip A. Wilsey, “Dynamically Adjusting Core Frequencies to Accelerate Time Warp Simulations in Many-Core Processors,” *26th Workshop on Principles of Advanced and Distributed Simulation (PADS 2012)*, July 2012.
21. Karthik Vadambacheri Manian and Philip A. Wilsey, “Distributed Simulation on a Many-Core Processor,” *The Third International Conference on Advances in System Simulation (SIMUL 2011)*, Oct 2011.

22. Edward C. Herrmann, Prudhvi Janga, and Philip A. Wilsey, "Pre-computing Function Results in Multi-Core and Many-Core Processors," *The Second International Workshop on Parallel Software Tools and Tool Infrastructures (PSTI 2011)*, Sept 2011.
23. Fred R. Beyette Jr., Blaine Booher, James Drennan, Lee Carraher, Josh Butler, Peggy Bowman, Joseph F. Clark, and Philip A. Wilsey, "Development of a Point-Of-Care Device for the Quantification of Bilirubin in Cerebral Spinal Fluid," *32nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, 915-8, Sept 2010.
24. Chandra K. Kuchi and Philip A. Wilsey, "Multi-View and Pause-View in a Second Life Client," *2010 International Symposium on Collaborative Technologies and Systems (CTS 2010)*, May 2010.
25. M-J Kim, J-Y Lee, H-Y Chang, S-J Cho, Y. Park, and Philip A. Wilsey, "Design and Performance Evaluation of Binary Code Packing for Protecting Embedded Software against Reverse Engineering," *Proceedings of the 13th IEEE International Symposium on Object/component/service-oriented Real-time distributed computing*, May 2010.
26. Edward C. Herrmann and Philip A. Wilsey, "Threaded Dynamic Memory Management in Many-Core Processors," *Proceedings of the 2010 International Workshop on Multi-Core Computing Systems (MuCoCoS 2010)*, 931–936, February 2010.
27. R. Brian Anderson, Mike Borowczak, and Philip A. Wilsey, "The Use of Device Simulation in Development of USB Storage Devices," *Proc. of the 41th Annual Simulation Symposium*, 220-226, April 2008.
28. Malolan Chetlur and Philip A. Wilsey, "Working Set Based Scheduling in Time Warp Simulations," *Proc. of the 40th Annual Simulation Symposium*, 221–230, April 2007.
29. Malolan Chetlur and Philip A. Wilsey, "Causality Information and Fossil Collection in Time Warp Simulations," *Proceedings of the 2006 Winter Simulation Conference*, 987–994, December 2006.
30. Dhananjai M. Rao and Philip A. Wilsey, "Applying Parallel, Dynamic-Resolution Simulations to Accelerate VLSI Power Estimation," *Proceedings of the 2006 Winter Simulation Conference*, 694–702, December 2006.
31. Malolan Chetlur and Philip A. Wilsey, "Causality and Proactive Cancellation," *10th IEEE/ACM International Symposium on Distributed Simulation (DS-RT 2006)*, 193–200, October 2006.
32. Dhananjai M. Rao and Philip A. Wilsey, "Predicting Performance of Resolution Changes in Parallel Simulations," *20th Workshop on Principles of Advanced and Distributed Simulation (PADS 2006)*, 45–54, May 2006.
33. Douglas R. Hickey, Philip A. Wilsey, Robert J. Hoekstra, Eric R. Keiter, Scott A. Hutchinson, and Thomas V. Russo, "Mixed-Signal Simulation with the Simbus Backplane," *Proc. of the 39th Annual Simulation Symposium*, 223–229 April 2006.

34. Dmitry A. Gorodetsky and Philip A. Wilsey, "Reducing the setup time of a one-step FDTD method," *International Conference on Parallel and Distributed Processing Techniques and Applications*, 431–436, 2006.
35. Dmitry A. Gorodetsky and Philip A. Wilsey, "Interfacing multiple macromodels constructed with the FDTD method," *IEEE Northeast Workshop on Circuits and Systems*, 293–296, June 2006.
36. Dmitry A. Gorodetsky and Philip A. Wilsey, "Rapid evaluation of macromodel response with the FDTD method," *International Conference on Scientific Computing*, 267–271, 2006.
37. Dmitry A. Gorodetsky and Philip A. Wilsey, "Innovative approaches to parallelizing finite-difference time-domain computations," *IEEE Workshop on Direct and Inverse Problems in Electrodynamics*, 43–47, Sept 2005.
38. Dhananjai M. Rao and Philip A. Wilsey, "Accelerating Spatially Explicit Simulations of Spread of Lyme Disease," *Proc. of the 38th Annual Simulation Symposium*, 251–258, April 2005.
39. Dale E. Martin, Philip A. Wilsey, Robert J. Hoekstra, Eric R. Keiter, Scott A. Hutchinson, Thomas V. Russo, and Lon J. Waters, "Scheduling Optimization on the Simbus Backplane," *Proc. of the 37th Annual Simulation Symposium*, 231–237, April 2004.
40. Dale E. Martin, Philip A. Wilsey, Robert J. Hoekstra, Eric R. Keiter, Scott A. Hutchinson, Thomas V. Russo, and Lon J. Waters, "Redesigning the WARPED Simulation Kernel for Analysis and Application Development," *Proc. of the 36th Annual Simulation Symposium*, 216–223, April 2003.
41. Dhananjai M. Rao and Philip A. Wilsey, "Performance Prediction of Dynamic Component Substitutions," *Proceedings of the 2002 Winter Simulation Conference*, 816–824, December 2002.
42. Radharamanan Radhakrishnan and Philip A. Wilsey, "Software Control Systems for Parallel Simulation," *16th Workshop on Parallel and Distributed Simulation (PADS 2002)*, 135–142, May 2002.
43. Dale E. Martin, Philip A. Wilsey, Robert J. Hoekstra, Eric R. Keiter, Scott A. Hutchinson, and Lon J. Waters, "Integrating Multiple Parallel Simulation Engines for Mixed-Technology Parallel Simulation", *Proc. of the 35th Annual Simulation Symposium*, 45–52, April 2002.
44. Nael B. Abu-Ghazaleh and Philip A. Wilsey, "On the Organization of Concurrent Interpreters," *Second Workshop on Massively Parallel Processing (WMPP '02)*, April 2002.
45. K. K. Rangan, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, "A Distributed Multiple-SIMD Intelligent Memory," *2001 International Conference on Parallel Processing (ICPP)*, 507–516, September 2001.
46. J. Dahl, Malolan Chetlur, and Philip A. Wilsey, "Event List Management In Distributed Simulation," *European Parallel Computing Conference (Euro-Par '01)*, 466–475, August 2001.
47. Dhananjai M. Rao and Philip A. Wilsey, "Multi-Resolution Network Simulations Using Dynamic Component Substitution," *Proceedings of the Ninth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2001)*, August 2001.

48. Malolan Chetlur and Philip A. Wilsey, "Causality Representation and Cancellation Mechanism in Time Warp Simulations," *15th Workshop on Parallel and Distributed Simulation (PADS 2001)*, 165–172, May 2001.
49. Krishna K. Rangan, Nilesh Pisolkar, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, "PPIM-SIM: An Efficient Simulator for a Parallel Processor in Memory," *Proc. of the 34th Annual Simulation Symposium*, 117–124, April 2001.
50. Dhananjai M. Rao and Philip A. Wilsey, "Modeling and Simulation of Active Networks," *Proc. of the 34th Annual Simulation Symposium*, 177–184, April 2001.
51. Krishna K. Rangan, Nilesh Pisolkar, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, "Architectural Support for Data-Intensive Applications," *Workshop on Massively Parallel Processing (WMPP '01)*, April 2001.
52. Dhananjai M. Rao, Harold W. Carter, and Philip A. Wilsey, "Optimizing Costs of Web-based Modeling and Simulation," *International Workshop on Internet Computing and E-Commerce (ICEC'01)*, April 2001.
53. Dhananjai M. Rao and Philip A. Wilsey, "Dynamic Component Substitution in Web-Based Simulation," *Proceedings of the 2000 Winter Simulation Conference*, 1840–1848, December 2000.
54. Dhananjai M. Rao and Philip A. Wilsey, "Parallel Co-simulation of Conventional and Active Networks," *Proceedings of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2000)*, 291–298, August 2000.
55. P. Frey, Radharamanan Radhakrishnan, Harold W. Carter, and Philip A. Wilsey, "Parallel Mixed-Technology Simulation," *14th Workshop on Parallel and Distributed Simulation (PADS 2000)*, 7–14, May 2000.
56. Swaminathan Subramanian, Dhananjai M. Rao, and Philip A. Wilsey, "Study of a Multilevel Approach to Partitioning for Parallel Logic Simulation," *International Parallel and Distributed Processing Symposium (IPDPS 2000)*, 833–838, May 2000.
57. Dhananjai M. Rao, V. Chernyakhovsky, and Philip A. Wilsey, "WESE: A Web-based Environment for Systems Engineering," *2000 International Conference On Web-Based Modeling & Simulation (WEBSIM 2000)*, January 2000.
58. Philip A. Wilsey, "Web-Based Analysis and Distributed IP," *Proceedings of the 1999 Winter Simulation Conference*, P. A. Farrington, H. B. Nembhard, D. T. Sturrock, and G. W. Evans (eds), 1445–1453, December 1999.
59. Dhananjai M. Rao, and Philip A. Wilsey, "An Object Oriented Framework for Parallel Simulation of Ultra-large Communication Networks," *The Third International Symposium on Computing in Object-Oriented Parallel Environments (ISCOPE '99)*, (LNCS 1732), S. Matsuoka, R. R. Oldehoeft, and M. Tholburn (eds), 37–48, December 1999.

60. Radharamanan Radhakrishnan and Philip A. Wilsey, “Ruminations on the Implications of Multi-Resolution Modeling on DIS/HLA,” *Third International Workshop on Distributed Interactive Simulation and Real Time Applications* (DIS-RT ’99), October 1999.
61. Dhananjai M. Rao and Philip A. Wilsey, “Simulation of Ultra-large Communication Networks,” *Proceedings of the Seventh International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems* (MASCOTS ’99), 112–119, October 1999.
62. Girindra D. Sharma, Nael B. Abu-Ghazaleh, Umesh Kumar V. Rajasekaran, and Philip A. Wilsey, “Optimizing Message Delivery in Asynchronous Distributed Applications,” *European Parallel Computing Conference* (Euro-Par ’99), (LNCS 1685), P Amestoy *et al* (eds), 1204–1208, September 1999.
63. Girindra D. Sharma, Radharamanan Radhakrishnan, Umesh Kumar V. Rajasekaran, Nael B. Abu-Ghazaleh, and Philip A. Wilsey, “Time Warp Simulation on Clumps,” *13th Workshop on Parallel and Distributed Simulation* (PADS ’99), 174–181, May 1999.
64. Christopher H. Young, Radharamanan Radhakrishnan, and Philip A. Wilsey, “Optimism: Not Just for Event Execution Anymore,” *13th Workshop on Parallel and Distributed Simulation* (PADS ’99), 136–143, May 1999.
65. Victoria Chernyakhovsky, Peter Frey, Radharamanan Radhakrishnan, Philip A. Wilsey, Perry Alexander, and Harold W. Carter, “A Formal Framework for Specifying and Verifying Time Warp Optimizations,” *Workshop on Formal Methods for Parallel Programming: Theory and Applications*, (LNCS 1586), J. Rolim *et al* (eds), 1228–1242, April 1999.
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49. Philip A. Wilsey, Ranga Vemuri, and Norman Mause, "Instrumenting the Digital System Simulation Environment" *Proc. of the 1993 Western Simulation Multiconference on Simulation in Engineering Education*, 224–229, January 1993.
50. D. Charley, Debra A. Hensgen, T. McBrayer, Philip A. Wilsey, and M. Ankola, "High Speed Communication for Simulation of Large VHDL Models," *Proc. of the Fall 1992 VHDL Int. Users' Forum*, 212–216, October 1992.
51. Thomas J. McBrayer, David Charley, Philip A. Wilsey, and Debra A. Hensgen, "A Parallel, Optimistically Synchronized VHDL Simulator Executing on a Network of Workstations," *Proc. of the Fall 1992 VHDL Int. Users' Forum*, 218–222, October 1992.
52. Philip A. Wilsey and Avinash C. Palaniswamy, "Rollback Relaxation," Tech. Rept. TR 135–2–92–ECE, Dept. of Electrical & Computer Engineering, University of Cincinnati, February 1992.
53. Philip A. Wilsey, "Book Review of *The Art of Computer Systems Performance Analysis Techniques for Experimental Design, Measurement, Simulation, and Modeling*, by R. Jain," *International Journal in Computer Simulation*, Volume 1, Number 4, pg 427, 1991.
54. Philip A. Wilsey, Debra A. Hensgen, Charles E. Slusher, Nael B. Abu-Ghazaleh, and David Y. Hollinden, "Exploiting SIMD Computers for Mutant Program Execution," Tech. Rept. TR 133–11–91–ECE, Dept. of Electrical & Computer Engineering, University of Cincinnati, November 1991.
55. P. Chawla and P.A. Wilsey, "Synchronizing Distributed VHDL Simulation," Tech. Rept. TR 131–4–91–ECE, Dept. of Electrical & Computer Engineering, University of Cincinnati, April 1991.
56. Philip A. Wilsey and Subrata Dasgupta, "Compiling Axiomatic Descriptions for Imperative Execution," Tech. Rept. TR87–5–1, The Center for Advanced Computer Studies, University of Southwestern Louisiana, July 1987.

57. Philip A. Wilsey, Mike T. Wright, Subrata Dasgupta, Juha Heinanen, and J. Wang, "An S*M Execution Environment," Tech. Rept. TR87-3-1, The Center for Advanced Computer Studies, University of Southwestern Louisiana, February 1987.

Awards

- CEAS Distinguished Research Award, College of Engineering and Applied Science, 2018.
- Eta Kappa Nu, Outstanding Professor of the Year, Dept. of Electrical and Computer Engineering, 2012–2013.
- William H. Middendorf Research Excellence Award, Dept. of Electrical & Computer Engineering and Computer Science, 1995–96.
- Distinguished Progress in Teaching Excellence Award, Dept. of Electrical and Computer Engineering, 1987–88.

Honors

- Listed in Dictionary of International Biography, 1999.
- Listed in Who's Who in America, 1999–2009.
- Listed in Who's Who in Science and Engineering, 1994–2009.
- Listed in Who's Who in the World, 1998–2009.
- Listed in Who's Who in American Education, 2004–2007.
- Listed in International Who's Who of Information Technology, 1999.
- Listed in Who's Who in the Midwest, 1994–95, 95–96, 97–98.
- Listed in Who's Who in the Media and Communications, 1998–99.
- Listed in Who's Who in Finance and Industry, 1997–98, 98–99.
- Listed in 5000 Personalities of the World, 1996.

Activities

Professional Activities

1. Referee for *Computer Languages* 2001, *ACM Transactions on Design Automation of Electronic Systems* (1999), *ACM Transactions on Modeling and Computer Simulation (TOMACS)* (1996–98, 2001,

2005, 2006, 2013-2018), *IEEE Computer* (1987-98), *IEEE Journal on Selected Areas in Communications* (2000), *IEEE Parallel and Distributed Technology* (1992, 1994, 1995), *IEEE Software* (1985-89), *IEEE Transactions on Computers* (1990-94,2000-01), *IEEE Transactions on Computer Aided Design* (2001), *IEEE Transactions on Software Engineering* (1996), *IEEE Transactions on Parallel and Distributed Systems* (1995, 1996, 2010-2018), *International Journal in Computer Simulation* (1990-96), *Journal of Computer & Software Engineering* (1994), *Journal of Parallel and Distributed Computing* (JPDC) (1992, 1994-96, 1999, 2000, 2005, 2006), *Transactions of The Society for Computer Simulation* (1995-97, 2000-2017), *VLSI Design* (1992, 1995, 1996), Annual Simulation Symposia (1992-06), Annual Workshop on Microprogramming and Microarchitecture (1990-93), Annual International Conference on Parallel Processing (ICPP) (1989, 1990, 1995), Annual Workshop on Microprogramming (1986-1987), GLOBECOM '95, Hawaii International Conference on System Sciences (HICSS) (1992, 1996, 1998), IEEE Symposium on Parallel and Distributed Processing (SPDP) (1995), International Parallel Processing Symposium (IPPS) (1994-99), International Symposium on Computer Architecture (1992), International Symposia on Computer Hardware Description Languages (1986), ISMM International Conference on Parallel and Distributed Computing and Systems (1992, 1995), Winter Simulation Conference (1994, 1996), Workshop on Parallel and Distributed Simulation (PADS) (1994-15), and World Congress on Systems Simulation, Conference on Parallel & Distributed Simulation (1997).

2. Member, CSAB evaluation teams (1998-2003).
3. Reviewer of grant proposals: NSF (1991,1994,2000,2001); NSF Panelist 2001, 2002.
4. Opponent, PhD theses: M. Liljenstam, Royal Institute of Technology (2000). External reviewer, PhD theses: X. Yadong, Nanyang Technological University (2017); A. Pellegrini, University of Roma (2014); J. Jin, Nanyang Technological University (2014); L. Li, McGill University (2008); A. Santoro, University of Rome (2002); P. Ashenden, University of Adelaide (1997); H. Avril, McGill University (1996); R. Singh, Wright State University (1996-97).
5. Book Reviewer for *Wiley* (2006), *Addison-Wesley* (2000), *Kluwer Academic Publishers* (1997), *McGraw-Hill, Inc* (1993-1996, 2008), *West Educational Publishing* (1993, 1994), *Morgan Kaufmann* (1991, 1992, 1994, 1996), and *Prentice Hall* (1990).
6. Editor-in-Chief: *IEEE Potentials Magazine*, 1999-03; Guest Editor: Special Issue of *ACM Transactions on Modeling and Computer Simulation*, 2018; Area Editor: *Transactions of the Society for Modeling and Simulation International*, 2003-; Associate Editor: *IEEE Access*, 2013-2016; *International Journal of Simulation and Process Modeling (IJSPM)* 2004-; *Transactions of the Society for Modeling and Simulation International*, 2001-2003; *IEEE Potentials Magazine*, 1992-99, 03-10; Member, Editorial Advisory Board, *VLSI Design*, Gordon and Breach Science Publishers, 1993-2002.
7. IEEE Committees: Publications Products and Services Board (1999-2002); Regional Activities Board (non-voting) (1999-2002); and Student Activities Committee (1999-2002).
8. Steering Committees: Chair, Workshop on Parallel and Distributed Simulation (PADS), 2000-2003.

9. Keynotes: PhD Colloquium, ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS), 2017.
10. General Chair: Workshop on Parallel and Distributed Simulation (PADS), 2002 (Co-Chair); The 29th Annual Simulation Symposium, 1996; The International Conference on Electronic Hardware Description Languages (ICEHDL), 1995; The International Conference on Simulation and Hardware Description Languages, 1994. Associate General Chair: The SCS Winter Simulation Multiconference, (1993, 1994);
11. Program Chair: ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS), 2001, 2003 (Co-Chair), 2017 (Co-Chair); Workshop on Massively Parallel Processing (WMPP), 2001-2002, 2003-2004 (Co-Chair); Workshop on Distributed Simulation and Real-Time Applications (DS-RT), 2001 (Co-Chair); International Conference On Web-Based Modeling & Simulation, WEBSIM 2000; MASCOTS '98 (Co-Chair); Fall 1997 VHDL International Users' Forum, 1997; The 26th Annual Simulation Symposium, 1993; The 25th Annual Simulation Symposium, 1992.
12. Tutorials Chair: MASCOTS 2001.
13. Track Coordinator: Advanced Tutorials, WSC 2014 (w/ Helen D. Karatza), 2015, and 2017.
14. Program Committees: International Conference on Simulation Tools and Techniques (SIMULTOOLS), 2017; International Conference on System Simulation (AsiaSim), 2013; International Conference on Embedded and Multimedia Computing (EMC) 2012-14; International Conference on Advances in System Simulation (SIMUL) 2012-17; International Conference on Simulation and Modeling Methodologies, Technologies, and Applications (SIMULTECH) 2011-18; Distributed and Parallel Systems Track of IEEE AINA (2011); Parallel Computing (ParCo) 2005; Modeling and Simulation of Multi-Agent Systems (AAMAS 04); Symposium on Distributed Simulation and Real Time Applications DS-RT (formerly DIS-RT) (2004-17); Communications Networks and Distributed Systems Modeling and Simulation Conference (2002); International Performance, Computing and Communications Conference (2002); International Conference on Grand Challenges for Modeling and Simulation (2002); Asian-Pacific Symposium on Cluster Computing (2000); International Conference On Web-Based Modeling & Simulation, WEBSIM (1999-2000); MASCOTS, (1998-2001); VLSI Design '98; World Congress on Systems Simulation, Conference on Parallel & Distributed Simulation (1997); Workshop on Parallel and Distributed Simulation (PADS), (1996-18); Spring VHDL Int. Users' Forum, (1994, 1995, 1998); Fall VHDL Int. Users' Forum, (1993, 1995, 1997, 1998); Annual Simulation Symposia, (1992-97, 2000-07); Annual Workshop on Microprogramming and Microarchitecture (1990, 1991).
15. Session Chair: SIMUL 2011; ICPP 2011; International Conference On Web-Based Modeling & Simulation, WEBSIM 1999; Distributed Interactive Simulation and Real-Time Applications, 1997; Workshop on Parallel and Distributed Simulation (PADS), (1993, 1996, 1998, 2006, 2008, 2013, 2016); Winter Simulation Conference, 1994; Annual Simulation Symposia, (1992, 1994-97, 2004-07); 23rd Annual Workshop on Microprogramming and Microarchitecture (MICRO-23), 1990.
16. Panels: Winter Simulation Conference (Moderator), 2002; International Conference On Web-Based Modeling & Simulation, 1999; Distributed Interactive Simulation and Real-Time Applications, 1997;

- VIUF, Durham, NC, Oct. 1996 (moderator); Workshop on Parallel and Distributed Simulation (PADS), Lake Placid, NY, 1995; SIGCSE, Washington, D.C., Feb. 1990.
17. Lecture/Seminars: Iowa State University, Ames IA, February 2002; University of Connecticut, Storrs CT, November 2001; University of Texas, Dallas TX, May 2001; University of Georgia, Athens, GA, March 2000; University of Kansas, Lawrence, KS, March 2000; University of Louisville, Louisville, KY, October 1998; Honeywell, Minneapolis, MN, August 1998; Washington University, St Louis, MO, September 1997; University of Missouri at Rolla, Rolla, MO, September 1997; CMU, Pittsburgh, PA, March 1995; SUNY at Buffalo, Buffalo, NY, March 1995; University of Missouri at Rolla, Rolla, MO, September 1994; Technical University of Munich, Munich Germany, September 1994; Ohio Advanced Technology Center, Dayton, OH, June 1994; University of Minnesota, Minneapolis/St. Paul MN, January 1994; IBM, Rochester, MN, January 1994; MasPar Computer Corp., Sunnyvale, CA, Jan. 1992; Columbus State Community College, Columbus, OH, Nov. 1988; University of Cincinnati, Cincinnati, OH, Jan. 1988; University of Cincinnati, Cincinnati, OH, June 1987; Marquette University, Milwaukee, WI, May 1987; Colorado State University, Fort Collins, CO, April 1987.
 18. Member, IEEE Cincinnati Section Executive Committee (2005–).
 19. Society Memberships: Association for Computing Machinery (ACM) (1982–2009): ACM Special Interest Group on Microprogramming (SIGMICRO), ACM Special Interest Group on Computer Architecture (SIGARCH), ACM Special Interest Group on Programming Languages (SIGPLAN), ACM Special Interest Group on Design Automation (SIGDA); IEEE (Member 1982–98, Senior Member 98–): IEEE Computer Society; American Association for the Advancement of Science (AAAS) (1990–96); Design Automation Standards Committee (DASC) (1996–2008); Issues Screening and Analysis Committee (ISAC) (1997–2008); VHDL Parallel Simulation Working Group (1995–2007); Object-Oriented VHDL Study Group (1996–2004).

Academic Committees

1. Participant, Effective Teaching Institute (93-94).
2. Chair (2016–2017)/Member (2013–2016), Reappointment, Promotion, and Tenure, College of Engineering and Applied Science (2013-2017); Alternate Member, Reappointment, Promotion, and Tenure, College of Engineering and Applied Science (2011-2012); Member, All-University Graduate Faculty, University of Cincinnati (1991–); Member, Science & Engineering Research Building Planning Committee, University of Cincinnati (1990–93); Member, Information Technology Academic Advisory Committee, University of Cincinnati (1990–98); Member, Instructional Computing Sub-Committee, University of Cincinnati (1989).
3. Member, Graduate Center for Computing Disciplines (GCCD), University of Cincinnati (1988–90); Member, Hardware/Software Committee, Graduate Center for Computing Disciplines, University of Cincinnati (1988–90).

4. Member, Academic Standards Committee, College of Engineering and Applied Science, University of Cincinnati (2005–); Member, Committee to Establish the Academy of Engineering Scholars, College of Engineering, University of Cincinnati (1989); Member, Computer Director Search Committee, College of Engineering, University of Cincinnati (1989); Member, College of Engineering Computer Committee, University of Cincinnati (1988–1989); Member, College of Engineering Awards Committee, University of Cincinnati (1988, 1989).
5. Coordinator, Computer Engineering (2010–2013), School of Electric and Computing Systems, University of Cincinnati.
6. Coordinator, Experimental Systems Group (01/03–2016), Member, VLSI Design Group (01/03–), School of Electric and Computing Systems (formerly Dept of Electrical and Computer Engineering & Computer Science), University of Cincinnati.
7. Co-Director, Center for Digital Systems Engineering, Department of Electrical and Computer Engineering, University of Cincinnati (1988–1989).
8. Group Leader, Computer Systems Design Group, Department of Electrical and Computer Engineering, University of Cincinnati (1989–93).
9. Director, Departmental Computer Operations, Department of Electrical and Computer Engineering, University of Cincinnati (1988–1989).
10. Faculty Advisor, IEEE, Department of Electrical and Computer Engineering & Computer Science, University of Cincinnati (1998–).
11. Faculty Advisor, Eta Kappa Nu, Department of Electrical and Computer Engineering, University of Cincinnati (1987–91; 2017–).
12. Member, Computer Engineering Faculty Advisors for class of 2003, Department of Electrical and Computer Engineering & Computer Science, University of Cincinnati (1999–03); Member, Faculty Search Committee, Department of Electrical and Computer Engineering & Computer Science, University of Cincinnati (1998–99); Member, Faculty Search Committee, Computer Engineering, Department of Electrical and Computer Engineering, University of Cincinnati (1996–97); Member, Evaluating Real World Impact of Research, Department of Electrical and Computer Engineering, University of Cincinnati (1995); Member, Graduate Student Awards Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1992); Member, Undergraduate Awards Selection, Department of Electrical and Computer Engineering, University of Cincinnati (1991); Member, Dept Head Review Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1990); Member, Academic Leave Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1990); Member, Mission/Vision Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1989–90); Member, Ad Hoc CS & ECE Merger Feasibility Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1989–90); Member, Departmental Awards Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1989, 1997); Chairman, Departmental Local Area Networking Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1988);

Chairman, System Administrator Search Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1988); Member, Faculty Search Committee, Computer Systems Design Group, Department of Electrical and Computer Engineering, University of Cincinnati (1987–96); Member, Graduate Computer Engineering Curriculum Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1987–02); Member, Undergraduate Computer Engineering Curriculum Committee, Department of Electrical and Computer Engineering, University of Cincinnati (1987–);

13. Member, Graduate Council, University of Southwestern Louisiana, (1986–1987); Member, Student Appeals Committee (Graduate School), University of Southwestern Louisiana, (1986–1987).

Community Service

1. Member 2004–2006, (Member-at-Large 2004–2005, Treasurer 2005–2006) Board of Trustees, Carpenters Creek Civic Association.
2. Editor 2003–2005, Newsletter, Carpenters Creek Civic Association.
3. Member 1998–2000, (Secretary 1998–1999, Vice-President 1999–2000) Board of Trustees, Carpenters Creek Civic Association.

Research Grants

1. Principal Investigator, “CSR:Small:Improving Parallel Simulation through Quantitative Analysis of Discrete-Event Simulation Models,” National Science Foundation, 08/2018—7/2021, \$499,970. (under review).
2. Principal Investigator, “III:Small:Accelerating Persistent Homology by Data Reduction,” National Science Foundation, 08/2018—7/2021, \$499,970. (under review).
3. Principal Investigator, “SI2-SSE: Scalable Big Data Clustering by Random Projection Hashing,” National Science Foundation, 9/2014–8/2019, \$498,127.
4. Co-Principle Investigator, “Parallel Discrete Event Simulation on Emerging High-performance Multi-core Clusters,” subcontracting UC-Riverside to the Air Force Office of Scientific Research, 10/2015–09/2019, \$299,824.
5. Co-Investigator, “Validation and Demonstration of Point-of-Care Sensor for Multi-Metal Exposure Assessment,” National Institutes of Health, 3/15–2/17, \$425,000 with I. Papautsky (PI).
6. Principal Investigator, “Studies to Minimize Failures in Embedded Systems Software,” L-3 Fuzing and Ordnance Systems, 9/2011–9/2014, \$312,587, (with Co-Investigator C. Purdy).
7. Principal Investigator, “CSR: Small: Collaborative Research: Combining Static Analysis and Dynamic Run-time Optimizations for Parallel Discrete Event Simulation in Many-Core Environments,” National Science Foundation, 8/2009–7/2014, \$166,911, collaborative project with SUNY@Binghamton.
8. Co-Investigator, “Point of Care Center for Emerging Neurotechnologies (POC-CENT),” National Institutes of Health, 7/2007–6/2014, \$9,363,719, with R. F. Beyette Jr. (PI).
9. Co-Investigator, “BEKIN: Mechanical Device Development to Assist in Assessing Neuralgic Health,” NIH/POC-CENT, 7/2012–6/2013, \$223,519, with R. F. Beyette Jr. (PI).
10. Co-Investigator, “Arrayed Volatile Organic Sensors: System-Level Proof of Concept,” Air Force Research Labs, 8/2012–7/2013, \$103,000, with J. Heikenfeld (PI), I. Papautsky, and R. F. Beyette Jr.
11. Principal Investigator, “College Themed Door Chime,” HeathCo, LLC (a subsidiary of The Duchossios Group), 2/1/2012–7/31/2012, \$47,000.
12. Co- Investigator (7/1/10-6/30/11; Co-PI 7/1/11-6/30/13), “Novel Portable Stroke Diagnosis/Monitoring with Electrical Impedance Spectroscopy,” NIH/POC-CENT, 2010–2013, \$251,000, with R. F. Beyette Jr. (PI), collaborative project with Massachusetts General Hospital (M. Lev, PI).
13. Principal Investigator, “Hardware and Software Solutions to Support Photometric Analysis of Human CSF,” NIH/POC-CENT, 2007–2010, \$836,186, with R. F. Beyette Jr. (Co-PI).
14. Co-Investigator, “An Infrastructure for Research In Data Management, Processing, Sensing, and Visualization,” Wright State University (WCI), 2006–2008, \$449,986 (responsible for \$98,236), with H. Carter (PI). (equipment grant).

15. Co-Investigator, “Acquisition of Research Instrumentation for Electronic Systems Emulation, Prototyping and Testing,” National Science Foundation, 2004–2007, \$280,085, with R. Vemuri (PI), H. Carter, K. Tomko, W-B. Jone, C. Purdy, and R. F. Beyette.
16. Co-Principal Investigator, “Collaborative Research: Parallel Reduced Order Modeling with In-Situ Error Mitigation and Performance Optimization,” National Science Foundation, 7/1/03–06/30/04, \$61,830, with K. Tomko (PI).
17. Principal Investigator, “Improving Efficiency of Simulations using Dynamic Component Substitution”, Ohio Board of Regents, 2002–2003, \$22,500.
18. Principal Investigator, “Study of Dynamic Component Substitution”, Ohio Board of Regents, 2001–2002, \$19,200.
19. Co-Investigator, “Mixed Signal Modeling for System Level Simulation,” Joint AFRL/DAGSI Research Program, 2001–2003, \$398,113, (R. Vemuri, PI).
20. Principal Investigator, “Distributed Simulation of Mixed-Technology for Joint Battlespace Infosphere,” Air Force, 2000–2002, \$50,000.
21. Principal Investigator, “Control-Parallel Data-Parallel Computer,” Ohio Board of Regents, 1998–2000, \$34,797. (joint award with Kent State University, total award \$79,594).
22. Principal Investigator, “Technology & Software for Semi-Automated, High-Fidelity Validation of VHDL-Related Tools,” Air Force (Wright Laboratory), 1996–99, \$301,020. (joint award with FTL Systems, Inc., total award \$634,830).
23. Co-Principal Investigator, “A Verification Environment for High Assurance Network Performance Prediction,” DARPA, 1996–2000, \$929,009, with P. Alexander.
24. Principal Investigator, “Standard Analyzer of VHDL Applications for Next-Generation Technology (SAVANT),” Air Force (Wright Laboratory), 1995–1998, \$436,351. (an SBIR with extensions subcontracted to UC from MTL Systems, Inc., total award \$1.4M).
25. Principal Investigator, “Data Paths for MIMD Interpretation,” UC Research Challenge, 1994–1995, \$37,099.
26. Principal Investigator, “A Formal Model of Digital Systems Compatible with VHDL,” ARPA, 1993–1997, \$361,948.
27. Co-Investigator, “QUEST II: Integrated Simulation, Synthesis and ATPG of Large Scale VHDL Descriptions,” ARPA, 1993–1998, \$2,700,000. (H. Carter, PI).
28. Co-Principal Investigator, “Distributed Simulation of VHDL,” MTL Systems, Inc, Dayton, OH (subcontracting an SBIR from the Air-Force), 1993–1995, \$250,000, with D. Hensgen and H. Carter.
29. Co-Investigator, “Ultra-High-Speed Acceleration of Digital Systems Simulation, Synthesis, and Test Vector Generation,” DARPA, 1989–1993, \$2,600,000. (H. Carter, PI).

30. Co-Principal Investigator, "Simulation of VHDL Design and Prototype Software on Multiple Silicon Graphics Workstations," Air-Force, 1991–1992, \$74,603, with D. Hensgen.
31. Principal Investigator, "Computational Aspects of Design Verification," SUN Microsystems Inc., 1991–1993, \$107,650. (equipment grant).
32. Principal Investigator, "Ada Compiler Evaluation: A Quantitative Analysis," University Research Council, University of Cincinnati, 1990-91, \$8,553.
33. Principal Investigator, "Ada Compiler Evaluation for Embedded Controller Applications," General Electric Corporation, 1989–1990, \$44,137
34. Principal Investigator, "Reasoning About Computer Architectures with Interval Temporal Logic," Battelle, 1989, \$18,000. (equipment grant).
35. Principal Investigator, "Tools and Techniques for Automating the Computer System Design Process," University Research Council, University of Cincinnati, 1988–1989, \$2,300.
36. Principal Investigator, "Program Verification with Temporal Logic," Herman Schneider Laboratory, University of Cincinnati, 1987-1988, \$1,850.