CURRICULUM VITAE
ALAN SUSSMAN

DEPARTMENT OF COMPUTER SCIENCE
THE UNIVERSITY OF MARYLAND
COLLEGE PARK
MARCH 4, 2025

1 Personal Information

Professor, University of Maryland.
Computer Science Department and Institute for Advanced Computer Studies.
Appointed January, 2002.

1.1 Education

- Ph.D. in Computer Science
  Carnegie Mellon University, December 1991
  Dissertation title: Model-Driven Mapping of Computation onto Distributed Memory Parallel Computers
  Supervisors: Thomas Gross and H.T. Kung
- B.S.E. *magna cum laude* in Electrical Engineering and Computer Science
  Princeton University, June 1982

1.2 Employment

1/24 to present	Associate Chair, Undergraduate Education Computer Science Department University of Maryland, College Park
1/19 to present	Professor Computer Science Department University of Maryland, College Park
2/19 to 6/22	Program Director Office of Advanced Cyberinfrastructure Computer and Information Science and Engineering (CISE) Directorate National Science Foundation
7/12 to 12/18	Professor Computer Science Department and Institute for Advanced Computer Studies University of Maryland, College Park
7/12 to 12/17	Associate Chair, Undergraduate Education Computer Science Department University of Maryland, College Park

7/06 to 6/12	Associate Professor Computer Science Department and Institute for Advanced Computer Studies University of Maryland, College Park
1/02 to 6/06	Assistant Professor Computer Science Department and Institute for Advanced Computer Studies University of Maryland, College Park
7/97 to 12/01	Assistant Research Scientist Computer Science Department University of Maryland, College Park
10/99 to 10/01	Visiting Scientist Department of Pathology, Johns Hopkins University Medical Institutions
12/92 to 6/97	Research Associate Computer Science Department University of Maryland, College Park
10/91 to 12/92	Staff scientist Institute for Computer Applications in Science and Engineering (ICASE) NASA Langley Research Center
5/10 to 5/11	Consultant CDI Marine Co.
7/03	Consultant QSS, Inc.
6/01 to 5/04	Consultant Department of Biomedical Informatics, Ohio State University
6/00 to 12/00	Consultant SonicFusion, Inc.
11/95 to 11/97	Consultant Aerosoft, Inc.
10/94 to 2/97	Consultant CESDIS, NASA Goddard Space Flight Center
9/82 to 9/91	Research Assistant Carnegie Mellon University

2 Research, Scholarly, and Creative Activities

*Indicates a student or postdoc advised, co-advised, or directly supervised by Dr. Sussman.

2.1 Books Edited

1. S.K. Prasad, A. Gupta, A. Sussman, R. Vaidyanathan and C.C. Weems editors. "Topics in Parallel and Distributed Computing: From Concepts to the Classroom: Volume 3", Springer, 2025. To appear.

2. S.K. Prasad, A. Gupta, A.L. Rosenberg, A. Sussman and C.C. Weems editors. "Topics in Parallel and Distributed Computing: Enhancing the undergraduate curriculum: performance, concurrency, and programming on modern platforms", Springer, 2018.

3. S.K. Prasad, A. Gupta, A.L. Rosenberg, A. Sussman and C.C. Weems editors. "Topics in Parallel and Distributed Computing: Introducing Concurrency in Undergraduate Courses", Morgan Kaufman, 2015.

2.2 Chapters in Books

1. C. Chang*, T.M. Kurc, A. Sussman and J. Saltz. "Building Parallel Database Systems for Multidimensional Data", in *Scalable Input/Output: Achieving System Balance*, edited by D.A. Reed, MIT Press, 2003.

2. M.F. Wheeler, W. Lee, C.N. Dawson, D.C. Arnold, T. Kurc, M. Parashar, J. Saltz and A. Sussman. "Parallel Computing in Environment and Energy", in *Sourcebook for Parallel Computing*, edited by J. Dongarra, I. Foster, G. Fox, W. Gropp, K. Kennedy, L. Torczon and A. White, Morgan Kaufman Publishers, 2003.

3. R. Das, Y.-S. Hwang, J. Saltz and A. Sussman. "Runtime and Compiler Support for Irregular Computations", in *Compiler Optimizations for Scalable Parallel Systems*, Springer-Verlag Lecture Notes in Computer Science 1808, edited by S. Pande and D. Agrawal, 2001.

4. J. Saltz, G. Agrawal*, C. Chang*, R. Das, G. Edjlali*, P. Havlak, Y.-S. Hwang, B. Moon, R. Ponnusamy, S. Sharma, A. Sussman and M. Uysal. "Programming Irregular Applications: Runtime Support, Compilation and Tools", in *Advances in Computers*, Volume 45, Academic Press, 1997.

5. C. Chang*, A. Sussman and J. Saltz. "CHAOS++: A Runtime Library for Supporting Distributed Dynamic Data Structures", in *Parallel Programming Using C++*, edited by G.V. Wilson and P. Lu, MIT Press, 1996.

6. G. Agrawal*, G. Edjlali*, A. Sussman, J. Humphries* and J. Saltz. "Runtime Support for Programming in Adaptive Parallel Environments", in *Languages, Compilers and Run-Time Systems for Scalable Computers*, edited by B.K. Szymanski and B. Sinharoy, Kluwer Academic Publishers, 1995.

2.3 Articles in Refereed Journals

1. K. Mehta, B. Allen, M. Wolf, J. Logan, E. Suchyta, S. Singhal*, J.Y. Choi, K. Takahashi, K. Huck, I. Yakushin, A. Sussman, T. Munson, I. Foster, S. Klasky. "A Co-design Framework for Online Data Analysis and Reduction", *Concurrency and Computation: Practice and Experience*, 2021. Online at https://doi.org/10.1002/cpe.6519.

2. L. Pantowitz, A. Sharma, A. Carter, T. Kurc, A. Sussman,, and J. Saltz. "20 Years of Digital Pathology: An Overview of the Road Travelled, What is on the Horizon and the Emergence of Vendor-Neutral Archives", *Journal of Pathology Informatics*, Vol. 9, No. 1, 2018.

3. J.-S. Kim, B. Nam and A. Sussman. "Scalable and Effective Peer-to-Peer Desktop Grid System", *Cluster Computing*, Vol. 17, No. 4, December 2014.

4. J. Lee*, P. Keleher and A. Sussman. "Decentralized Multi-attribute Range Search for Resource Discovery and Load Balancing", *Journal of Supercomputing*, Vol. 68, No. 2, May 2014.

5. J. Lee*, P. Keleher and A. Sussman. "Exploiting Multi-core Nodes in Peer-to-Peer Grids", *Journal of Parallel and Distributed Computing*, Vol. 74, No. 4, April 2014.

6. I.-C. Yoon*, A. Sussman, A. Memon and A. Porter. "Testing Component Compatibility in Evolving Configurations", *Information and Software Technology*, Vol. 55, No. 2, February 2013.

7. B. Nam* and A. Sussman. "Analyzing Design Choices for Distributed Multidimensional Indexing", *Journal of Supercomputing*, Vol. 59, No. 3, March 2012.

8. B. Nam*, M. Shin, H. Andrade and A. Sussman. "Multiple Query Scheduling for Distributed Semantic Caches", *Journal of Parallel and Distributed Computing*, Vol. 70, No. 5, May 2010.

9. J.-S. Kim*, B. Nam*, P. Keleher, M. Marsh, B. Bhattacharjee and A. Sussman. "Trade-offs in Matching Jobs and Balancing Load for Distributed Desktop Grids", *Future Generation Computer Systems – International Journal of Grid Computing: Theory, Methods & Applications*, Vol. 24, No. 5, 2008.

10. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Active Semantic Caching to Optimize Multidimensional Data Analysis in Parallel and Distributed Environments", *Parallel Computing*, Vol. 33, Nos. 7–8, August 2007.

11. J.-S. Kim*, H. Andrade and A. Sussman. "Principles for Designing Data/Compute-Intensive Distributed Applications and Middleware Systems for Heterogeneous Environments", *Journal of Parallel and Distributed Computing*, Vol. 67, No. 7, July 2007.

12. A. Sussman. "Building Complex Coupled Physical Simulations on the Grid with InterComm", *Engineering with Computers* special issue on frameworks for scalable scientific and engineering applications, Vol. 22, 2007.

13. F. Bertrand, R. Bramley, D.E. Bernholdt, J.A. Kohl, A. Sussman, J.W. Larson, and K.B. Damevski. "Data Redistribution and Remote Method Invocation for Coupled Components", *Journal of Parallel and Distributed Computing*, Vol. 66, No. 7, July 2006.

14. T. Kurc, U. Çatalyürek, X. Zhang, J. Saltz, M. Peszynska, R. Martino, M. Wheeler, A. Sussman, C. Hansen, M. Sen, R. Seifoullaev, P. Stoffa, C. Torres-Verdin and M. Parashar. "A Simulation and Data Analysis System for Large Scale, Data-Driven Oil Reservoir Simulation Studies", *Concurrency and Computation: Practice and Experience*, Vol. 17, No. 11, September 2005.

15. C. Goodrich, A. Sussman, J. Lyon, M. Shay and P. Cassak. "The CISM Code Coupling Strategy", *Journal of Atmospheric and Solar-Terrestrial Physics*, Vol. 66, Nos. 15-16, 2004.

16. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Optimizing the Execution of Multiple Data Analysis Queries on Parallel and Distributed Environments", *IEEE Transactions on Parallel and Distributed Systems*, Vol. 15, No. 6, June 2004.

17. U. Çatalyürek, M.D. Beynon*, C. Chang*, T. Kurc, A. Sussman and J. Saltz. "The Virtual Microscope", *IEEE Transactions on Information Technology in Biomedicine*, Vol. 7, No. 4, December 2003.

18. H. Andrade*, M. Beynon*, C. Chang*, R. Ferreira*, U. Çatalyürek, T. Kurc, A. Sussman and J. Saltz. "Processing Large-Scale Multidimensional Data in Parallel and Distributed Environments", *Parallel Computing* special issue on Data Intensive Computing, Vol. 28, No. 5, May 2002.

19. M.D. Beynon*, T. Kurc, A. Sussman and J. Saltz. "Optimizing Execution of Component-based Applications using Group Instances", *Future Generation Computing Systems*, Vol. 18, No. 4, March 2002.

20. M.D. Beynon*, T. Kurc, U. Çatalyürek, C. Chang*, A. Sussman and J. Saltz. "Distributed Processing of Very Large Datasets with DataCutter", *Parallel Computing*, Vol. 27, No. 11, October 2001.

21. T. Kurc, U. Çatalyürek, C. Chang*, A. Sussman and J. Saltz. "Visualization of Large Datasets with the Active Data Repository", *IEEE Computer Graphics and Applications*, Vol. 21, No. 4, July/August 2001.

22. T. Kurc, M. Uysal, H. Eom, J. Hollingsworth, J. Saltz and A. Sussman. "Efficient Performance Prediction for Large-Scale Data-Intensive Applications", *International Journal of High Performance Computing Applications*, Vol. 14, No. 3, Fall 2000.

23. R. Ferreira*, T. Kurc, M. Beynon*, C. Chang*, A. Sussman and J. Saltz. "Object-relational Queries into Multi-dimensional Databases with the Active Data Repository", *Parallel Processing Letters*, Vol. 9, No. 2, 1999.

24. J. Saltz, A. Sussman, S. Graham, J. Demmel, S. Baden and J. Dongarra. "The High-Performance Computing Continuum: Programming Tools and Environments", *Communications of the ACM*, Vol. 41, No. 11, November 1998.

25. C. Chang*, A. Acharya, A. Sussman and J. Saltz. "T2: A Customizable Parallel Database for Multi-Dimensional Data", *ACM SIGMOD Record*, Vol. 27, No. 1, March 1998.

26. C. T. Shock, C. Chang*, B. Moon, A. Acharya, L. Davis, J. Saltz and A. Sussman. "The Design and Evaluation of a High-Performance Earth Science Database", *Parallel Computing*, Vol. 24, No. 1, January 1998.

27. G. Edjlali*, G. Agrawal*, A. Sussman, J. Humphries* and J. Saltz. "Runtime and Compiler Support for Programming in Adaptive Parallel Environments", *Scientific Programming*, January 1997.

28. G. Agrawal*, A. Sussman and J. Saltz. "An Integrated Runtime and Compile-Time Approach for Parallelizing Structured and Block Structured Applications", *IEEE Transactions on Parallel and Distributed Systems*, Vol. 6, No. 7, July 1995.

29. A. Sussman, J. Saltz, R. Das, S. Gupta, D. Mavriplis, R. Ponnusamy and K. Crowley. "PARTI Primitives for Unstructured and Block Structured Problems", *Computing Systems in Engineering*, Vol. 3, Nos. 1-4, Pergamon Press, 1992.

2.4 Articles in Refereed Conferences and Workshops

1. T.B. Rolinger* and A. Sussman. "Adaptive Prefetching for Fine-grain Communication in PGAS Programs", *Proceedings of the 38th International Parallel & Distributed Processing Symposium (IPDPS 2024)*, May 2024.

2. T.B. Rolinger* and A. Sussman. "Automatic Adaptive Prefetching for Fine-grain Communication in Chapel", *10th Annual Chapel Implementers and Users Workshop (CHIUW 2023)*, June 2023.

3. T. Rolinger*, C. Krieger and A. Sussman. "Compiler Optimization for Irregular Memory Access Patterns in PGAS Programs", *Proceedings of the 35th International Workshop on Languages and Compilers for Parallel Computing (LCPC 2022)*, October 2022.

4. W. Kim, C. Park, D. Kim, H. Park, Y. Choi, A. Sussman and B. Nam, "ListDB: Union of Write-Ahead Logs and Persistent SkipLists for Incremental Checkpointing on Persistent Memory", *Proceedings of 16th USENIX Symposium on Operating Systems Design and Implementation (OSDI 22)*, July 2022.

5. T.B. Rolinger* and A. Sussman. "Compiler Optimization for Irregular Memory Accesses in Chapel", *9th Annual Chapel Implementers and Users Workshop (CHIUW 2022)*, June 2022.

6. S. Ahn, H. Park, V.A. Bolea Sanchez, D. Hwang, W. Kim, A. Sussman and B. Nam. "VeloxDFS: Streaming Access to Distributed Datasets to Reduce Disk Seeks", *Proceedings of the 22nd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2022)*, May 2022.

7. T. Rolinger*, J. Craft, C.D. Krieger and A. Sussman. "Towards High Productivity and Performance for Irregular Applications in Chapel", *Proceedings of the 4th Annual Parallel Applications Workshop, Alternatives To MPI+X (PAW-ATM)*, November 2021.

8. S. Singhal*, A. Sussman, M. Wolf, K. Mehta and J. Choi. "DYFLOW: A Flexible Framework for Orchestrating Scientific Workflows on Supercomputers", *Proceedings of 14th International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, August 2021.

9. T. Rolinger*, C. Krieger and A. Sussman. "Runtime Optimizations for Irregular Applications in Chapel", *8th Annual Chapel Implementers and Users Workshop (CHIUW 2021)*, June 2021.

10. T. Rolinger*, C. Krieger and A. Sussman. "Optimizing Memory-Compute Colocation for Irregular Applications on a Migratory Thread Architecture", *Proceedings of the 35th International Parallel & Distributed Processing Symposium (IPDPS 2021)*, May 2021.

11. T. Rolinger*, C. Krieger and A. Sussman. "Optimizing Data Layouts for Irregular Applications on a Migratory Thread Architecture", *Proceedings of the 2019 IEEE/ACM Workshop on Memory Centric High Performance Computing (MCHPC)*, November 2019.

12. S. Singhal* and A. Sussman. "Adaptive Compression to Improve I/O Performance for Climate Simulations", *Proceedings of 2nd International Workshop on Data Reduction for Big Scientific Data (DRBSD-2)*, November 2017.

13. T. Long*, I.-C. Yoon, A. Porter, A. Memon and A. Sussman. "Coordinated Collaborative Testing of Shared Software Components", *Proceedings of IEEE International Conference on Software Testing, Verification and Validation (ICST)*, April 2016.

14. G. Jackson*, P. Keleher and A. Sussman. "A Ping Too Far: Real World Network Latency Measurement", *Proceedings of 1st Workshop on E-science ReseaRch leading tO negative Results (ERROR)*, September 2015.

15. S. Bhattacherjee*, A. Deshpande and A. Sussman. "PStore: An Efficient Storage Framework for Managing Scientific Data", *Proceedings of 26th International Conference on Scientific and Statistical Database Management (SSDBM)*, June 2014.

16. T. Long*, I.-C. Yoon, A. Sussman, A. Porter and A. Memon. "Enabling Collaborative Testing Across Shared Software Components", *Proceedings of 17th International ACM Sigsoft Symposium on Component-Based Software Engineering (CBSE)*, June 2014.

17. T. Long*, I.-C. Yoon, A. Sussman, A. Porter and A. Memon. "Scalable System Environment Caching and Sharing for Distributed Virtual Machines", *Proceedings of the 2014 High-Performance Grid and Cloud Computing Workshop (HPGC 2014)*, May 2014.

18. G. Jackson*, P. Keleher and A. Sussman. "Decentralized Scheduling and Load Balancing for Parallel Programs", *Proceedings of the 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2014)*, May 2014.

19. P. Tschirhart*, A. Sussman and E.H. Abed. "Using Participation Factors to Improve the Consistency and Accuracy of Prony Analysis for Voltage Stability Monitoring Applications", *Proceedings of the IEEE PES Conference on Innovative Smard Grid Technologies (ISGT)*, February 2014.

20. J.-S. Kim, B. Nam and A. Sussman. "Autonomic Load Balancing Mechanisms in the P2P Desktop Grid", *Proceedings of the 1st International Workshop on Autonomic Management of Grid and Cloud Computing (AMGCC'13)*, August 2013.

21. A. Balasubramanian*, A. Sussman and N. Sadeh. "Decentralized Preemptive Scheduling across Heterogeneous Multi-core Grid Resources", *Proceedings of the 17th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, May 2013.

22. F. Jiang and A. Sussman. "Reducing the Cost of Measuring Memory Hierarchy Communication Parameters", *Proceedings of the Multicore and GPU Programming Models, Languages and Compilers Workshop (PLC)*, May 2013.

23. T. Long*, I.-C. Yoon, A. Porter, A. Sussman and A. Memon. "Overlap and Synergy in Testing Software Components Across Loosely-Coupled Communities", *Proceedings of the 23rd IEEE International Symposium on Software Reliability Engineering (ISSRE 2012)*, November 2012.

24. J. Lee*, Y. Eom*, A. Sussman and B. Nam. "DEMB: Cache-Aware Distributed Query Scheduling", *Proceedings of 16th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, May 2012.

25. A. Sussman, N. Lo and T. Anderson. "Automatic System Characterization for a Parallelizing Compiler", *Proceedings of the IEEE Cluster 2011 Conference*, September 2011.

26. J. Lee*, P. Keleher and A. Sussman. "Supporting Computing Element Heterogeneity in P2P Grids", *Proceedings of the IEEE Cluster 2011 Conference*, September 2011.

27. S. Song*, P. Keleher and A. Sussman. "Searching for Bandwidth-Constrained Clusters", *Proceedings of 31st International Conference on Distributed Computing Systems (ICDCS 2011)*, June 2011.

28. I.-C. Yoon*, A. Sussman, A. Memon and A. Porter. "Towards Incremental Component Compatibility Testing", *Proceedings of 14th International ACM SIGSOFT Symposium on Component Based Software Engineering (CBSE-2011)*, June 2011.

29. G. Teodoro* and A. Sussman. "AARTS: Low Overhead Online Adaptive Auto-tuning", *Proceedings of ACM SIGPLAN 1st International Workshop on Adaptive Self-Tuning Computing Systems for the Exaflop Era (EXADAPT 2011)*, June 2011.

30. S. Song*, P. Keleher and A. Sussman. "Decentralized, Accurate, and Low-Cost Network Bandwidth Prediction", *Proceedings of 30th IEEE International Conference on Computer Communications (INFOCOM 2011)*, April 2011.

31. A. Memon, A. Porter and A. Sussman. "Community-Based, Collaborative Testing and Analysis", *Proceedings of FSE/SDP Workshop on the Future of Software Engineering Research (at FSE 2010)*, November 2010.

32. S. Song*, P. Keleher, B. Bhattacharjee and A. Sussman. "Decentralized Network Bandwidth Prediction", *Proceedings of the 24th International Symposium on Distributed Computing (DISC 2010)*, September 2010.

33. J. Lee*, P. Keleher and A. Sussman. "Decentralized Dynamic Scheduling across Heterogeneous Multi-core Desktop Grids", *Proceedings of the 19th International Heterogeneity in Computing Workshop (HCW2010)*, April 2010.

34. J. Lee*, P. Keleher and A. Sussman. "Decentralized Resource Management for Multi-core Desktop Grids", *Proceedings of the 24th International Parallel & Distributed Processing Symposium (IPDPS 2010)*, April 2010.

35. I.-C. Yoon*, A. Sussman, A. Memon and A. Porter. "Prioritizing Component Compatibility Tests via User Preferences", *Proceedings of the 25th IEEE Conference on Software Maintenance (ICSM 2009)*, September 2009.

36. J.-S. Kim*, B. Nam*, M. Marsh, P. Keleher, B. Bhattacharjee and A. Sussman. "Integrating Categorical Resource Types into a P2P Desktop Grid System", *Proceedings of the 9th IEEE/ACM International Conference on Grid Computing (GRID 2008)*, September 2008.

37. I.-C. Yoon*, A. Sussman, A. Memon and A. Porter. "Effective and Scalable Software Compatibility Testing", *Proceedings of the 2008 International Symposium on Software Testing and Analysis (ISSTA 2008)*, July 2008.

38. M. Marsh, J.-S. Kim*, B. Nam*, J. Lee*, S. Ratanasanya*, B. Bhattacharjee, P. Keleher, D. Richardson, D. Wellnitz and A. Sussman. "Matchmaking and Implementation Issues for a P2P Desktop Grid", *Proceedings of the 2008 NSF Next Generation Software Workshop*, April 2008.

39. I.-C. Yoon*, A. Sussman, A. Memon and A. Porter. "Direct-Dependency-based Software Compatibility Testing", *Proceedings of 22nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2007)*, November 2007.

40. J.-S. Kim*, P. Keleher, M. Marsh, B. Bhattacharjee and A. Sussman. "Using Content-Addressable Networks for Load Balancing in Desktop Grids", *Proceedings of the 16th IEEE International Symposium on High Performance Distributed Computing (HPDC-16)*, June 2007.

41. S.-C. Wu* and A. Sussman. "Taking Advantage of Collective Operation Semantics for Loosely Coupled Simulations", *Proceedings of the 21st International Parallel & Distributed Processing Symposium (IPDPS 2007)*, March 2007.

42. J.-S. Kim*, B. Nam*, M. Marsh, P. Keleher, B. Bhattacharjee, D.C. Richardson, D. Wellnitz and A. Sussman. "Creating a Robust Desktop Grid using Peer-to-Peer Services", *Proceedings of the 2007 NSF Next Generation Software Workshop*, March 2007.

43. B. Nam*, H. Andrade and A. Sussman. "Multiple Range Query Optimization with Distributed Cache Indexing", *Proceedings of SC06*, November 2006.

44. J.-S Kim*, B. Nam*, P. Keleher, M. Marsh, B. Bhattacharjee and A. Sussman. "Resource Discovery Techniques in Distributed Desktop Grid Environments", *Proceedings of the 7th IEEE/ACM International Conference on Grid Computing - GRID 2006*, September 2006. Best paper award.

45. E. Kim, J. Jang, S. Park, A. Sussman and J.S. Yoo. "Improving Resiliency Using Capacity-Aware Multicast Tree in P2P-Based Streaming Environments", *Proceedings of the 2006 International Conference on High Performance Computing and Communications (HPCC06)*, September 2006.

46. S. Saha*, and C.-J. Hsu, C.-C. Shen, A. Veeraraghavan, A. Sussman, S.S. Bhattacharyya and Rama Chellappa. "Model-Based OpenMP Implementation of a 3D Facial Pose Tracking System", *Proceedings of the Workshop on Parallel and Distributed Multimedia (PDM)*, August 2006.

47. E. H. Abed, N. S. Namachchivaya, T. J. Overbye, M. A. Pai, P. W. Sauer and A. Sussman. "Data-Driven Power System Operations", *Proceedings of Workshop on Dynamic Data Driven Application Systems (International Conference on Computational Science)*, May 2006.

48. B. Nam* and A. Sussman. "DiST: Fully Decentralized Indexing for Querying Distributed Multidimensional Datasets", *Proceedings of 20th International Parallel & Distributed Processing Symposium (IPDPS 2006)*, April 2006.

49. I.-C. Yoon*, A. Sussman and A. Porter. "And Away We Go: Understanding The Complexity of Launching Complex HPC Applications", *Proceedings of Second International Workshop on Software Engineering for High Performance Computing Systems and Applications*, June 2005.

50. K. Zhang*, H. Andrade*, L. Raschid and A. Sussman. "Query Planning for the Grid: Adapting to Dynamic Resource Availability", *Proceedings of Cluster Computing and Grid 2005 (CCGrid05)*, May 2005.

51. B. Nam* and A. Sussman. "Spatial Indexing of Distributed Multidimensional Datasets", *Proceedings of Cluster Computing and Grid 2005 (CCGrid05)*, May 2005.

52. J.-Y. Lee* and A. Sussman. "High Performance Communication Between Parallel Programs", *Proceedings of 2005 Joint Workshop on High-Performance Grid Computing and High-Level Parallel Programming Models (HIPS-HPGC 2005)*, April 2005.

53. J.-S. Kim*, H. Andrade* and A. Sussman. "Comparing the Performance of High-Level Middleware Systems in Shared and Distributed Memory Parallel Environments", *Proceedings of 19th International Parallel & Distributed Processing Symposium (IPDPS 2005)*, April 2005.

54. F. Bertrand, R. Bramley, K.B. Damevski, J.A. Kohl, D.E. Bernholdt, J.W. Larson and A. Sussman. "Data Redistribution and Remote Method Invocation in Parallel Component Architectures", *Proceedings of 19th International Parallel & Distributed Processing Symposium (IPDPS 2005)*, April 2005. Best paper (software) award.

55. S.-C. Wu* and A. Sussman. "Flexible Control of Data Transfers between Parallel Programs", *Proceedings of the Fifth International Workshop on Grid Computing - GRID 2004*, Nov. 2004.

56. A. Sussman and H. Andrade*. "Enabling Coupled Scientific Simulations on the Grid", *Proceedings of the PARA'04 Workshop on State-of-the-Art in Scientific Computing*, June 2004.

57. S. Aryangat* and H. Andrade* and A. Sussman. "Time and Space Optimization for Processing Groups of Multi-Dimensional Scientific Queries", *Proceedings of 18th Annual ACM International Conference on Supercomputing (ICS'04)*, June 2004.

58. B. Nam* and A. Sussman. "A Comparative Study of Spatial Indexing Techniques for Multidimensional Scientific Datasets", *Proceedings of the 16th International Conference on Scientific and Statistical Database Management (SSDBM 2004)*, June 2004.

59. H. Andrade*, S. Aryangat*, T. Kurc, J. Saltz, and A. Sussman. "Efficient Execution of Multi-Query Data Analysis Batches Using Compiler Optimization Strategies", *Proceedings of the 16th Workshop on Languages and Compilers for Parallel Computing*, Oct. 2003.

60. E. Borovikov*, A. Sussman, and L. Davis. "A High Performance Multi-Perspective Vision Studio", *Proceedings of 17th Annual ACM International Conference on Supercomputing*, June 2003.

61. J. Saltz, U. Çatalyürek, T. Kurc, M. Gray, S. Hastings, S. Langella, S. Narayanan, R. Martino, S. Bryant, M. Peszynska, M. Wheeler, A. Sussman, M. Beynon*, C. Hansen, D. Stredney and D. Sessama. "Driving Scientific Applications by Data in Distributed Environments", *Proceedings of Workshop on Dynamic Data Driven Application Systems (International Conference on Computational Science)*, June 2003.

62. B. Nam* and A. Sussman. "Improving Access to Multi-dimensional Self-describing Scientific Datasets", *Proceedings of CCGrid2003: IEEE International Symposium on Cluster Computing and the Grid*, May 2003.

63. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Decision Tree Construction for Data Mining on Clusters of Shared-Memory Multiprocessors", *Proceedings of International Workshop on High Performance Data Mining (HPDM'03)*, May 2003.

64. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Exploiting Functional Decomposition for Efficient Parallel Processing of Multiple Data Analysis Queries", *Proceedings of the 17th International Parallel & Distributed Processing Symposium (IPDPS 2003)*, April 2003.

65. M. Spencer, R. Ferreira, M. Beynon*, T. Kurc, U. Çatalyürek, A. Sussman and J. Saltz. "Executing Multiple Pipelined Data Analysis Operations in the Grid", *Proceedings of SC'02*, Nov. 2002.

66. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Active Proxy-G: Optimizing the Query Execution Process in the Grid", *Proceedings of SC'02*, Nov. 2002. Best student paper award.

67. H. Andrade*, T. Kurc, A. Sussman, E. Borovikov* and J. Saltz. "On Cache Replacement Policies for Servicing Mixed Data Intensive Query Workloads", *Proceedings of the Second Workshop on Caching, Coherence and Consistency (WC3'02)*, June 2002. Best paper award.

68. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Multiple Query Optimization for Data Analysis Applications on Clusters of SMPs", *Proceedings of CCGrid2002: IEEE International Symposium on Cluster Computing and the Grid*, May 2002.

69. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Scheduling Multiple Data Visualization Query Workloads on a Shared Memory Machine", *Proceedings of the Sixteenth International Parallel& Distributed Processing Symposium (IPDPS 2002)*, April 2002.

70. M.D. Beynon*, T. Kurc, U. Çatalyürek, A. Sussman and J. Saltz. "Efficient Manipulation of Large Datasets on Heterogeneous Storage Systems", *Proceedings of the 11th Heterogeneous Computing Workshop (HCW2002)*, April 2002.

71. H. Andrade*, T. Kurc, U. Çatalyürek, A. Sussman and J. Saltz. "Persistent Caching in a Multiple Query Optimization Framework", *Proceedings of the Sixth Workshop on Languages, Compilers and Run-time Systems for Scalable Computers*, March 2002.

72. H. Andrade*, T. Kurc, A. Sussman and J. Saltz. "Efficient Execution of Multiple Query Workloads in Data Analysis Applications", *Proceedings of SC'01*, Nov. 2001.

73. M. D. Beynon*, A. Sussman, U. Çatalyürek, T. Kurc and J. Saltz. "Performance Optimization for Data Intensive Grid Applications", *Proceedings of the Third Annual International Workshop on Active Middleware Services (AMS2001)*, Aug. 2001.

74. M. D. Beynon*, T. Kurc, A. Sussman and J. Saltz. "Optimizing Execution of Component-based Applications using Group Instances", *Proceedings of CCGrid2001: IEEE International Symposium on Cluster Computing and the Grid*, May 2001. Best Grid paper award.

75. E. Borovikov*, A, Sussman and L. Davis. "An Efficient System for Multi-Perspective Imaging and Volumetric Shape Analysis", *Proceedings of the Workshop on Parallel and Distributed Computing in Image Processing, Video Processing, and Multimedia (PDIVM'20001)*, April 2001.

76. C. Chang*, T. Kurc, A. Sussman and J. Saltz. "A Hypergraph-Based Workload Partitioning Strategy for Parallel Data Aggregation", *Proceedings of the Eleventh SIAM Conference on Parallel Processing for Scientific Computing*, March 2001.

77. C. Chang*, T. Kurc, A. Sussman and J. Saltz. "Optimizing Retrieval and Processing of Multi-dimensional Scientific Datasets", *Proceedings of the Third Merged IPPS/SPDP (14th International Parallel Processing Symposium & 11th Symposium on Parallel and Distributed Processing)*, May 2000.

78. M. Beynon* and T. Kurc and A. Sussman and J. Saltz. "Design of a Framework for Data-Intensive Wide-Area Applications", *Proceedings of the 9th Heterogeneous Computing Workshop (HCW2000)*, May 2000.

79. M.D. Beynon*, R. Ferreira*, T. Kurc, A. Sussman and J. Saltz. "DataCutter: Middleware for Filtering Very Large Scientific Datasets on Archival Storage Systems", *Proceedings of the Eighth Goddard Conference on Mass Storage Systems and Technologies/17th IEEE Symposium on Mass Storage Systems*, March 2000.

80. T.M. Kurc, C. Chang*, R. Ferreira*, A. Sussman and J. Saltz. "Querying Very Large Multi-dimensional Datasets in ADR", *Proceedings of SC'99*, Nov. 1999.

81. M. Beynon*, A. Sussman and J. Saltz. "Performance Impact of Proxies in Data Intensive Client-Server Parallel Applications", *Proceedings of the 1999 International Conference on Supercomputing (ICS'99)*, June 1999.

82. R. Ferreira*, A. Sussman and J. Saltz. "Database Methods for Efficient Manipulation of Very Large Datasets", *Proceedings of the 1999 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'99)*, June 1999.

83. C. Chang*, R. Ferreira*, A. Sussman and J. Saltz. "Infrastructure for Building Parallel Database Systems for Multi-dimensional Data", *Proceedings of the Second Merged IPPS/SPDP (13th International Parallel Processing Symposium & 10th Symposium on Parallel and Distributed Processing)*, April 1999.

84. T.M. Kurc, A. Sussman and J. Saltz. "Coupling Multiple Simulations via a High Performance Customizable Database System", *Proceedings of the Ninth SIAM Conference on Parallel Processing for Scientific Computing*, March 1999.

85. A. Afework*, M. Beynon*, S. Cho*, F. Bustamante*, A. Demarzo, R. Ferreira*, R. Miller, M. Silberman, J. Saltz, A. Sussman and H. Tsang*. "Digital Dynamic Telepathology - the Virtual Microscope", *Proceedings of the 1998 AMIA Fall Symposium*, Nov. 1998.

86. M. Uysal*, T. Kurc, A. Sussman and J. Saltz. "A Performance Prediction Framework for Data Intensive Applications on Large Scale Parallel Machines", *Proceedings of the Fourth Workshop on Languages, Compilers and Run-time Systems for Scalable Computers*, May 1998.

87. R. Ferreira*, B. Moon*, J. Humphries*, A. Sussman, J. Saltz, R. Miller and A. Demarzo. "The Virtual Microscope", *Proceedings of the 1997 AMIA Annual Fall Symposium*, Oct. 1997. Best application paper award.

88. C. Chang*, B. Moon*, A. Acharya, C. Shock, A. Sussman and J. Saltz. "Titan: A High Performance Remote-Sensing Database", *Proceedings of the 1997 International Conference on Data Engineering*, April 1997.

89. G. Edjlali*, A. Sussman and J. Saltz. "Interoperability of Data Parallel Runtime Libraries", *Proceedings of the Eleventh International Parallel Processing Symposium*, April 1997.

90. C. Chang*, A. Sussman and J. Saltz. "Scheduling in a High Performance Remote-Sensing Data Server", *Proceedings of the Eighth SIAM Conference on Parallel Processing for Scientific Computing*, March 1997.

91. C. T. Shock, C. Chang*, L. Davis, S. Goward, J. Saltz and A. Sussman. "A High Performance Image Database System for Remotely Sensed Imagery", *Proceedings of Euro-Par'96*, Aug. 1996.

92. M. Ranganathan*, A. Acharya, G. Edjlali*, A. Sussman and J. Saltz. "Runtime Coupling of Data-parallel Programs", *Proceedings of the 1996 International Conference on Supercomputing*, May 1996.

93. A. Acharya, M. Uysal, R. Bennett*, A. Mendelson*, M. Beynon*, J.K. Hollingsworth, J. Saltz and A. Sussman. "Tuning the Performance of I/O Intensive Parallel Applications", *Proceedings of the Fourth Annual Workshop on I/O in Parallel and Distributed Systems (IOPADS)*, May 1996.

94. M. Ranganathan*, A. Acharya, G. Edjlali*, A. Sussman and J. Saltz. "Flexible and Efficient Coupling of Data Parallel Programs", *Proceedings of Parallel Object-Oriented Methods and Applications (POOMA96)*, Feb. 1996.

95. C.T. Shock, C. Chang*, L. Davis, S. Goward, J. Saltz and A. Sussman. "A High Performance Image Database System for Remote Sensing", *Proceedings of the 24th AIPR Workshop on Tools and Techniques for Modeling and Simulation*, Oct. 1995.

96. G. Edjlali*, G. Agrawal*, A. Sussman and J. Saltz. "Data Parallel Programming in an Adaptive Environment", *Proceedings of the Ninth International Parallel Processing Symposium*, April 1995.

97. B. Moon, G. Patnaik, R. Bennett, D. Fyfe, A. Sussman, C. Douglas, J. Saltz and K. Kailasanath. "Runtime Support and Dynamic Load Balancing Strategies for Structured Adaptive Applications", *Proceedings of the Seventh SIAM Conference on Parallel Processing for Scientific Computing*, Feb. 1995.

98. R. Bennett*, K. Bryant*, A. Sussman, R. Das and J. Saltz. "Jovian: A Framework for Optimizing Parallel I/O", *Proceedings of the 1994 Scalable Parallel Libraries Conference*, Oct. 1994.

99. R. Parulekar*, L. Davis, R. Chellappa, J, Saltz, A. Sussman and J. Townshend. "High Performance Computing for Land Cover Dynamics", *Proceedings of the International Joint Conference on Pattern Recognition*, Sept. 1994.

100. G. Agrawal*, A. Sussman and J. Saltz. "Efficient Runtime Support for Parallelizing Block Structured Applications", *Proceedings of the Scalable High Performance Computing Conference (SHPCC-94)*, May 1994.

101. G. Agrawal*, A. Sussman and J. Saltz. "An Integrated Runtime and Compile-Time Approach for Parallelizing Structured and Block Structured Applications", *Proceedings of Supercomputing'93*, Nov. 1993. Best compiler paper award.

102. R. Das, Y.-S. Hwang, M. Uysal, J. Saltz and A. Sussman. "Applying the CHAOS/PARTI Library to Irregular Problems in Computational Chemistry and Computational Aerodynamics", *Proceedings of the 1993 Scalable Parallel Libraries Conference*, Oct. 1993.

103. Alan Sussman. "Model-Driven Mapping onto Distributed Memory Parallel Computers", *Proceedings of Supercomputing'92*, Nov. 1992.

104. Thomas Gross and Alan Sussman. "Mapping a single-assignment language onto the Warp systolic array", *Functional Programming Languages and Computer Architecture Proceedings*, edited by Gilles Kahn, Sept. 1987.

105. C.-Y. Chin, W.-T. Lin, J.-P. Hwang, S. Chu, G. Forman, R. Dunki-Jacobs, S. Karr, J. Mallick, H.T. Kung, A. Sussman, F.H. Hsu, T. Nishizawa. "A Dynamically Reconfigurable Interconnection Chip", *Proceedings of the IEEE International Solid-States Circuit Conference*, Feb. 1987.

106. F.H. Hsu, H.T. Kung, T. Nishizawa and A. Sussman. "Architecture of the Link and Interconnection Chip", *Proceedings of the 1985 Chapel Hill Conference on VLSI*, edited by Henry Fuchs, May 1985.

*Indicates a student or postdoc advised, co-advised, or directly supervised by Dr. Sussman.

2.5 Talks, Abstracts, Tutorials, and Other Professional Papers Presented

2.5.1 Invited Talks

- "Compiler Optimization for Irregular Memory Access Patterns in PGAS Programs", Missouri University of Science & Technology, November 2024.

- "Compiler Optimization for Irregular Memory Access Patterns in PGAS Programs", Texas A&M University, February 2023.

- "Early Career Panel" at USACM Thematic Conference on Uncertainty Quantification for Machine Learning Integrated Physics Modeling (UQ-MLIP), August 2022.
- "Dynamic, Adaptive Resource Management for Scientific Workflows", DRBSD-6: The 6th International Workshop on Data Analysis and Reduction for Big Scientific Data, at SC20, November 2020.
- Panel on "Best Practices for Virtual HPC Education and Training" at Seventh SC Workshop on Best Practices for HPC Training and Education at SC20, November 2020.
- "Effective Indexing of Distributed Multidimensional Scientific Datasets", NASA Goddard, December 2016
- "Compatibility Testing of Evolving Software Components", University of Delaware, November 2012.
- "Software Tools for Parallel Coupled Simulations", National Institute of Aerospace (NIA) Future Directions in CFD Research: A Modeling and Simulation Conference, August 2012.
- "Compatibility Testing of Evolving Software Components", Sichuan University, May 2012.
- "Scalable, Reliable Grid Computing using Peer-to-Peer Services", George Washington University, September 2010.
- "Decentralized and Scalable Resource Management for Desktop Grids", Sichuan University, August 2009.
- "Scalable, Reliable Desktop Grid Computing Using Peer-to-Peer Services", Indiana University, January 2008.
- "Robust Grid Computing Using Peer to Peer Services", NASA Advanced Information Systems Research Program Workshop, September 2006.
- "Building Coupled Parallel and Distributed Scientific Simulations", Petascale Computing and the Geosciences Workshop, San Diego Supercomputer Center, April 2006.
- "Enabling Coupled Scientific Simulations on the Grid", Lawrence Livermore National Laboratory, February 2006.
- "Effective Indexing of Distributed Multidimensional Scientific Datasets", SIAM Conference on Parallel Processing for Scientific Computing - Minisymposium on Parallel Dynamic Data Management Infrastructures for Scientific & Engineering Applications, February 2006.
- "Flexible Control over Inter-Component Data Transfers for Multiphysics Simulations", SIAM Conference on Parallel Processing for Scientific Computing - Minisymposium on Coupling Large-Scale Multi-Physics, February 2006.
- "Software Tools to Support Computational Science", University of Illinois, January 2006.
- "Building Coupled Parallel and Distributed Scientific Simulations", Howard University, Center for Applied High Performance Computing, July 2005
- "Enabling Coupled Scientific Simulations on the Grid", University of California, San Diego, June 2005
- "Building Coupled Parallel and Distributed Scientific Simulations", University of Tennessee, Knoxville, May 2005

- "Enabling Coupled Scientific Simulations on the Grid", Oak Ridge National Laboratory, May 2005
- "Enabling Coupled Scientific Simulations on the Grid", University of North Carolina, May 2005
- "Effective Indexing of Distributed Multidimensional Scientific Datasets", Carnegie Mellon University, March 2005
- "Enabling Coupled Scientific Simulations on the Grid", Northwestern University, February 2005
- "Enabling Coupled Scientific Simulations on the Grid", Argonne National Laboratory, February 2005
- "Building Complex Coupled Physical Simulations on the Grid with InterComm", SIAM Conference on Computational Science & Engineering - Minisymposium on Distributed Data Management Infrastructures for Scalable Computational Science and Engineering Applications, February 2005
- "Coupling Parallel Programs with InterComm", University of Delaware, May 2004
- "Coupling Parallel Programs via Meta-Chaos", Earth System Modeling Framework Components Workshop, Princeton GFDL, May 2003
- "Tools for Storing and Processing Large Scientific Datasets", Raytheon Science Data Centers Symposium, May 2003
- "Software Tools for Direct and Indirect Coupling of Multi-Resolution Parallel Codes", SIAM Annual meeting - Minisymposium on Multiphysics and Multiresolution Modeling in the Earth Sciences - July 2002
- "Storage, Retrieval and Processing of Scientific Datasets", Rutgers University, June 2002
- "Storing and Processing Multi-dimensional Scientific Datasets", University of Houston, May 2002
- "Performance Optimization of Component-based Data Intensive Applications", Lawrence Livermore National Laboratory, August 2001
- "Interoperability of Parallel Programs with Meta-Chaos", University of Texas, April 2000

2.5.2 Tutorials and Workshops

- *Modernizing the CS Introductory Sequence with Parallel and Distributed Computing (and some AI)*, ACM SIGCSE Technical Syposium Tutorial, 2025
- *Integrating Parallel and Distributed Computing in Early Computing Classes*, ACM SIGCSE Technical Symposium Workshop, 2019, 2023, 2024
- *Tools and System Support for Managing and Manipulating Large Scientific Datasets*, National Partnership for Advanced Computational Infrastructure (NPACI) All-Hands Meeting, 2001
- *System Support for Storage, Retrieval and Processing of Large Datasets*, SC'00
- *Very Large Dataset Access and Manipulation: Active Data Repository, DataCutter, and the Storage Resource Broker*, National Partnership for Advanced Computational Infrastructure (NPACI) All-Hands Meeting, 2000

2.5.3 Other Papers Presented

- Z. Song, Z. Zhang, and A. Sussman. "NetCDFaster: A Geospatial Cyberinfrastructure Enhancing Multi-Dimensional Scientific Datasets Access and Visualization Through Machine Learning Optimization", SC24 Research Poster, November 2024.
- S.K. Prasad, A. Gupta, K. Kant, A. Lumsdaine, D. Padua, Y. Robert, A. Rosenberg, A. Sussman and C. Weems. "Literacy for All in Parallel and Distributed Computing: Guidelines for an Undergraduate Core Curriculum", *CSI Journal of Computing*, Vol. 1, No. 2, 2012.
- S.K. Prasad, A. Gupta, K. Kant, A. Lumsdaine, D. Padua, Y. Robert, A. Rosenberg, A. Sussman, and C. Weems. "Toward a Core Undergraduate Curriculum in Parallel and Distributed Computing", Computer Education, Chinese Magazine, No. 6, June 2012.
- R. Oemke, M. Wiltberger, A. Sussman, W. Wang and N. Lo. "A TIME-GCM CAM Multi-executable Coupled Model Using ESMF And InterComm", *Sixth Symposium on Space Weather (at 89th American Meteorological Society Annual Meeting)*, January 2009.
- R. Oemke, M. Wiltberger, A. Sussman, W. Wang and N. Lo. "Using InterComm Enhanced ESMF to Couple TIME-GCM and CAM", *AGU Fall Meeting*, December 2008.
- C. DeLuca, A. Sussman and G. Toth. "Initial Results from the Integration of Earth and Space Frameworks", *Space Weather Workshop*, April 2007.
- T.L. Killeen, C. DeLuca, T. Gombosi, C. Goodrich, G. Toth, Q. Stout, A. Sussman and M. Hesse. "Integrated frameworks for Earth and space weather simulation", *Third Symposium on Space Weather, 86th American Meteorological Society Annual Meeting*, January 2006.
- H. Andrade, T. Kurc, A. Sussman and J. Saltz. "Multiple Query Optimization Support for the Virtual Microscope", *Archives of Pathology & Laboratory Medicine*, Vol. 126, July 2002.
- U. Çatalyürek, T. Kurc, A. Sussman and J. Saltz. "Improving the Performance and Functionality of the Virtual Microscope", *Archives of Pathology & Laboratory Medicine*, Vol. 125, No. 8, August 2001.
- M. Beynon, J. Saltz, M. Uysal and A. Sussman. Exploration, "Manipulation and Processing of Very Large Data Sets Using Filters", *Archives of Pathology & Laboratory Medicine*, Vol. 124, No. 6, June 2000.

2.6 Contracts and Grants

1. "Collaborative Research: Frameworks: Growing Open OnDemand: Leveraging Unified Community Knowledge (GOODLUCK)", Principal Investigator (Maryland, with PI Alan Chalker, Ohio State U., Dhruv Chakravorty, Texas A&M U.), September 2024 – August 2029, $834,691 (out of total $5,000,000).
2. "Collaborative Research: CyberTraining:Implementation:Medium:Modern Course Exemplars infused with Parallel and Distributed Computing for the Introductory Computing Course Sequence", Principal Investigator (Maryland, with PI Sushil Prasad, UT San Antonio, co-PIs Charles Weems, U. Massachusetts, R. Vaidyanathan, Louisiana State U., Gerald Gannod, Tennessee Technological U., David Bunde, Knox College), September 2023 – August 2026, $84,000 (out of total $1,000,000).

3. "CyberTraining: Preparing Instructors to Offer Experimental Courses in an Updated PDC Curriculum, and Broadening Participation", Principal Investigator (Maryland, with PI Charlies Weems, U. Massachusetts), August 2017 – July 2019, $42,740 (out of total $500,000).

4. "Developing a Parallel and Distributed Computing Concepts Curriculum Enhancement for the Computer Science Principles Course", Principal Investigator (Maryland, with PI Charles Weems, U. Massachusetts), September 2015 – August 2017, $59,599 (out of total $300,000).

5. "SC Conference Experiencing HPC for Undergraduates Program", *National Science Foundation*, Co-Principal Investigator, with J. Hollingsworth, July 2013 – December 2018, $166,990.

6. "Parallel and Distributed Computing Curriculum Development and Educational Resources", *National Science Foundation*, Principal Investigator (Maryland, with PI S. Prasad, Georgia State U., co-PIs Charles Weems, U. Massachusetts, A. Rosenberg, Northeastern U.), September 2012 – August 2015, $82,199 (out of total $1,454,956).

7. "Data Staging and Parallel Applications in Robust Desktop Grids", *National Science Foundation*, co-Principal Investigator (with PI P. Keleher, co-PI D. Richardson), September 2009 – August 2013, $475,000.

8. "Center for Integrated Space Weather Modeling", *National Science Foundation*, Principal Investigator (Maryland subcontract, with PI J. Hughes, Boston U.), August 2005 – July 2013, $806,930.

9. "AESOP: Adaptive Environment for Supercompiling with Optimized Parallelism", *DARPA*, co-Principal Investigator (with PIs G. Sullivan, J. Rosenberg, BAE Systems, D. August, Princeton U., R. Barua, U. Maryland, co-PIs R. Cleaveland, U. Maryland, S. Mahlke, U. Michigan), March 2009 – February 2013, $2,535,001 (Maryland subcontract, out of total $11,572,332).

10. "SciDAC Center for Technology for Advanced Scientific Component Software (TASCS)", *Department of Energy*, Principal Investigator (Maryland, with PI D. Bernholdt, Oak Ridge National Laboratory, co-PIs L. McInnes, Argonne National Laboratory, M. Govindaraju, Binghamton U., R. Bramley, Indiana U., G. Kumfert, Lawrence Livermore National Laboratory, C. Rasmussen, Los Alamos National Laboratory, J. Kohl, Oak Ridge National Laboratory, J. Nieplocha, Pacific Northwest National Laboratory, R. Armstrong, Sandia National Laboratory, S. Shasharina, Tech-X Corp., S. Parker, U. Utah), March 2007 – February 2012, $311,955 (Maryland subcontract).

11. "Creating a Robust Desktop Grid using Peer-to-Peer Services", *National Science Foundation*, Principal Investigator (co-PIs B. Bhattacharjee, P. Keleher, D. Richardson), July 2006 – June 2010, $365,700.

12. "Robust Grid Computing Using Peer to Peer Services", *NASA*, Principal Investigator (co-PIs B. Bhattacharjee, P. Keleher, D. Richardson, D. Wellnitz, U. Maryland), March 2006 – March 2010, $1,008,251.

13. "Data-Driven Power System Operations", *National Science Foundation*, Principal Investigator (co-PIs E. Abed, V. Subrahmanian, U. Maryland, P. Sauer, M.A. Pai, T. Overbye, N.S. Namachchivaya, U. Illinois), January 2006 – December 2010, $420,000.

14. "Integration of InterComm and the Earth System Modeling Framework", *University Corporation for Atmospheric Research (UCAR)*, March 2006 – December 2006, $40,000.

15. "Employing Peer-to-Peer Services for Robust Grid Computing", *National Science Foundation*, Principal Investigator (co-PIs B. Bhattacharjee, P. Keleher, D. Richardson, U. Maryland), September 2005 – August 2006, $60,000.

16. "Integrated Numerical Simulation of the Solar-Terrestrial Environment for the LWS Program", *NASA*, Principal Investigator (Maryland subcontract, with PI C. Goodrich, Boston U.), August 2002 – July 2006, $1,355,118.

17. "A Computational Framework to Support Integrated Simulations for the LWS Program", *NASA*, Principal Investigator (co-PI C. Goodrich), May 2002 – July 2003, $100,000.

18. "A Data Intense Challenge: The Instrumented Oil Field of the Future", *National Science Foundation*, Co-Principal Investigator (with PI M. Wheeler, U. Texas, co-PIs J. Saltz, Ohio State U., R. Stevens, Argonne National Laboratory, M. Parashar, Rutgers U.), October 2001 – September 2005, $2,150,000.

19. "National Partnership for Advanced Computational Infrastructure", *National Science Foundation*, Co-Principal Investigator (Maryland subcontract, PI S. Karin, UC San Diego), June 2001 – September 2004, $330,000.

20. "DataCutter: Software Support for Generating Data Products from Very Large Datasets", *Department of Energy Lawrence Livermore National Laboratory*, Principal Investigator (Maryland subcontract, co-PI J. Saltz, Ohio State U.), June 2001 – May 2004, $132,488.

21. "Compiler and Runtime Support for Data Intensive Computing", *National Science Foundation*, Co-Principal Investigator (PI J. Saltz, co-PI G. Agrawal), March 2000 – February 2004, $426,271.

22. "High Performance Systems for Shape and Action Modeling," National Science Foundation, co-PI (with PI L. Davis, co-PIs Y. Aloimonos, J. Hollingsworth, P. Keleher), September 1999 - August 2002, National Science Foundation, $1,096,011.

23. "Terascale Visualization: Delivering Interaction and Insight to the Desktop Through a Data Visualization Corridor", *Department of Energy Lawrence Livermore National Laboratory*, Co-Principal Investigator (PI J. Saltz), February 2000 – May 2001, $150,000.

24. "Performance Prediction and Modeling of Compute and Data Intensive Applications on Current and Future High Performance Architectures", *DARPA*, Co-Principal Investigator (PI J. Saltz, co-PI J. Hollingsworth), May 1997 – November 2000, $1,400,000.

2.7 Fellowships, Prizes and Awards

- IEEE Computer Society Golden Core, 2012
- IEEE Computer Society Meritorious Service Award, 2011
- Best paper - GRID 2006
- Best paper (software) - IPDPS 2005
- Best Paper (student) - SC2002
- Best Paper - WC3-2002
- Best Paper (Grid) - CCGrid 2001

- Best Paper (Application) - AMIA, 1997
- Best Paper (Compilers) - Supercomputing'93
- NSF Graduate Fellowship, 1982-5

2.8 Editorial Boards and Reviewing Activities for Learned Publications

- Associate Editor, IEEE Transactions on Parallel and Distributed Systems, 2020-present
- Subject Area Editor, Parallel Computing Journal, 2006-present
- Special Issue Editor, Journal of Parallel and Distributed Computing, on Teaching Parallel, Distributed and High-Performance Computing, 2025.
- Associate Editor, IEEE Transactions on Services Computing, 2014-2024
- Special Issue Editor, Computing in Science and Engineering, on Performance Portability for Advanced Architectures, September-October, 2021
- Associate Editor, Journal of Parallel and Distributed Computing, 2011-2017
- Editorial Board, Scientific Programming Journal, 2007-2014
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Computers
- IEEE Transactions on Software Engineering
- Journal of Parallel and Distributed Computing
- Parallel Computing Journal
- Concurrency and Computation: Practice and Experience
- Future Generation Computer Systems: Int. Journal of Grid Computing
- International Journal of Parallel Programming
- Computer Networks
- Scientific Programming
- Journal of Grid Computing
- Euro-Par, 1997, 2007, 2009
- Int. Conference on Parallel and Distributed Systems (ICPADS), 2005
- Int. Parallel & Distributed Processing Symposium (IPDPS), 2000-1, 2005
- Workshop On State-of-the-Art in Scientific Computing (PARA), 2004
- Int. Workshop on Grid Computing, 2001-3
- Int. Conference on Supercomputing (ICS), 1997, 2000

- Supercomputing, 1995, SC 2000-1
- SIGMETRICS, 1995, 2001
- Int. Parallel Processing Symposium (IPPS), 1995, 1998-9
- ACM Symposium on Principles and Practice of Parallel Programming (PPoPP), 1997
- Int. Conference on Parallel Architectures and Compilation Techniques (PACT), 1996
- Symposium on Frontiers of Massively Parallel Computation, 1996
- Symposium on Parallel & Distributed Processing (SPDP), 1995-6

2.9 Research Software and Patents

1. Rachet: Software testing infrastructure for performing software compatibility testing on a grid of client machines, using virtual machine technology. The tool allow software developers to automatically test component based software systems in a wide range of configurations.

2. P2PGrid: A system for reliably running computationally intensive user programs in a distributed environment, without any centralized control. The system allows users to share compute resources across adminstrative domains with minimal system management overhead, and low runtime costs.

3. InterComm: A toolkit for coupling multiple parallel and sequential programs, targeted at coupled simulation applications. Released on the Internet, and used in the NSF Center for Integrated Space Weather Modeling Science and Technology Center.

4. DataCutter: A programming environment and runtime system for implementing large scale data analysis applications on high performance distributed computing resources (the *Grid*). Released directly on the Internet and as part of the NSF National Middleware Initiative software suite, and previously through the NSF National Partnership for Advanced Computational Infrastructure (NPACI) NPackage software suite.

5. Active Data Repository: An object-oriented framework for efficiently executing scientific data analysis applications on parallel machines and workstation clusters. Released on the Internet and used at multiple academic and government laboratory sites for high-end visualization, image processing, medical image processing, and scientific data analysis.

6. Multiblock Parti: A runtime library for parallelizing scientific applications that employ regular and block structured meshes. The library has been released on the Internet and used by scientists at many sites, including NASA Langley and the Naval Research Laboratory, to parallelize their codes. The library has also been incorporated into the P++ and Overture development environments at Lawrence Livermore National Laboratory, which provide high level support for parallelizing Fortran95 style array operations for C++ and partial differential equation solvers that use overlapping meshes.

7. H.T. Kung, F.H. Hsu, A. Sussman, T. Nishizawa. *Programmable Interconnection Chip for Computer System Interconnection Modules*. U.S. Patent Number 4807183, February 1989.

3 Teaching and Advising

3.1 Courses

Semester	Course	Description
Fall 1994	CMSC 330	Organization of Programming Languages
Fall 1996	CMSC 330	Organization of Programming Languages
Spring 1998	CMCS 818S	Tools and Techniques for Very Large Scale Data Intensive Applications
Fall 1999	CMSC 330	Organization of Programming Languages
Spring 2000	CMSC 330	Organization of Programming Languages
Fall 2000	CMSC 330	Organization of Programming Languages
Spring 2001	CMSC 433	Programming Language Technologies and Paradigms
Fall 2001	CMSC 433	Programming Language Technologies and Paradigms
Spring 2002	CMSC 433	Programming Language Technologies and Paradigms
Fall 2002	CMSC 818S	Parallel and Distributed Data Intensive Computing
Spring 2003	CMSC 411	Computer Systems Architecture
Fall 2003	CMSC 411	Computer Systems Architecture
Spring 2004	CMSC 818S	Grid Computing
Fall 2004	CMSC 411	Computer Systems Architecture
Fall 2005	CMSC 714	High Performance Computing
Spring 2006	CMSC 411	Computer Systems Architecture
Fall 2006	CMSC 212	Introduction to Low-Level Programming Concepts
Spring 2007	CMSC 818S	Peer-to-Peer and Grid Computing
Fall 2007	CMSC 714	High Performance Computing
Fall 2008	CMSC 212	Introduction to Low-Level Programming Concepts
Spring 2009	CMSC 411	Computer Systems Architecture
Fall 2009	CMSC 313	Introduction to Computer Systems
Spring 2010	CMSC 714	High Performance Computing
Fall 2010	CMSC 216	Introduction to Computer Systems
Spring 2011	CMSC 818K	Peer-to-Peer, Grid and Cloud Computing
Fall 2011	CMSC 714	High Performance Computing
Spring 2012	CMSC 216	Introduction to Computer Systems
Fall 2012	CMSC 714	High Performance Computing
Spring 2014	CMSC 411	Computer Systems Architecture
Spring 2015	CMSC 714	High Performance Computing
Spring 2016	CMSC 216	Introduction to Computer Systems
Spring 2017	CMSC 714	High Performance Computing
Spring 2018	CMSC 216	Introduction to Computer Systems
Spring 2018	CMSC642/498K	Big Data Systems
Fall 2018	CMSC 714	High Performance Computing
Fall 2022	CMSC 714	High Performance Computing
Spring 2023	CMSC 416	Introduction to Parallel Computing
Fall 2023	CMSC 714	High Performance Computing
Spring 2024	CMSC389G	Special Topics in Computer Science; What to do After Landing a SWE Job
Summer 2024	CMSC335	Web Application Development with JavaScript
Fall 2024	CMSC 416	Introduction to Parallel Computing
Spring 2025	CMSC 714	High Performance Computing

3.2 Independent Study

Semester	Course	# students	Description
Fall 1999	CMSC 386	1	Experiential Learning
Spring 2000	CMSC 386	1	Experiential Learning
Fall 2001	CMSC 390	2	Honors Paper
Spring 2002	CMSC 899	1	Topics in High Performance Computing
Summer 2002	CMSC 498A	1	Special Problems
Fall 2002	CMSC 899	2	Topics in High Performance Computing
Spring 2003	CMSC 899	3	Topics in High Performance Computing
Fall 2003	CMSC 899	5	Topics in High Performance Computing
Spring 2004	CMSC 899	5	Topics in High Performance Computing
Fall 2004	CMSC 899	5	Topics in High Performance Computing
Spring 2005	CMSC 899	4	Topics in High Performance Computing
Fall 2005	CMSC 898/899	4	Topics in High Performance Computing
Spring 2006	CMSC 898/899	4	Topics in High Performance Computing
Fall 2006	CMSC 898/899	4	Topics in High Performance Computing
Spring 2007	CMSC 898/899	4	Topics in High Performance Computing
Fall 2007	CMSC 898/899	3	Topics in High Performance Computing
Spring 2008	CMSC 898/899	4	Topics in High Performance Computing
Fall 2008	CMSC 898/899	4	Topics in High Performance Computing
Spring 2009	CMSC 898/899	5	Topics in High Performance Computing
Fall 2009	CMSC 898/899	4	Topics in High Performance Computing
Fall 2009	CMSC 499	1	Independent Undergraduate Research
Spring 2010	CMSC 898/899	4	Topics in High Performance Computing
Fall 2010	CMSC 898/899	5	Topics in High Performance Computing
Fall 2010	CMSC 499	1	Independent Undergraduate Research
Spring 2011	CMSC 898/899	5	Topics in High Performance Computing
Fall 2011	CMSC 898/899	4	Topics in High Performance Computing
Spring 2012	CMSC 898/899	4	Topics in High Performance Computing
Fall 2012	CMSC 898/899	2	Topics in High Performance Computing
Spring 2013	CMSC 898/899	2	Topics in High Performance Computing
Fall 2013	CMSC 898/899	1	Topics in High Performance Computing
Spring 2014	CMSC 498	1	Independent Undergraduate Study
Spring 2014	CMSC 898/899	1	Topics in High Performance Computing
Summer 2014	CMSC 498	2	Independent Undergraduate Study
Fall 2014	CMSC 898/899	2	Topics in High Performance Computing
Spring 2015	CMSC 498	1	Independent Undergraduate Study
Spring 2015	CMSC 898/899	2	Topics in High Performance Computing
Fall 2015	CMSC 499	2	Independent Undergraduate Research
Fall 2015	CMSC 898/899	1	Topics in High Performance Computing
Spring 2016	CMSC 498	1	Independent Undergraduate Study
Spring 2016	CMSC 499	1	Independent Undergraduate Research
Spring 2018	CMSC 798	1	Topics in High Performance Computing
Summer 2018	CMSC 798	1	Topics in High Performance Computing
Fall 2018	CMSC 798	1	Topics in High Performance Computing
Fall 2018	CMSC 898	1	Topics in High Performance Computing
Spring 2019	CMSC 798	1	Topics in High Performance Computing

Spring 2019	CMSC 898	1	Topics in High Performance Computing
Fall 2019	CMSC 898	2	Topics in High Performance Computing
Spring 2020	CMSC 898	2	Topics in High Performance Computing
Fall 2020	CMSC 898	2	Topics in High Performance Computing
Fall 2020	CMSC 899	1	Topics in High Performance Computing
Spring 2021	CMSC 898	2	Topics in High Performance Computing
Spring 2021	CMSC 899	1	Topics in High Performance Computing
Fall 2021	CMSC 898	2	Topics in High Performance Computing
Fall 2021	CMSC 899	1	Topics in High Performance Computing
Spring 2022	CMSC 898	2	Topics in High Performance Computing
Spring 2022	CMSC 899	1	Topics in High Performance Computing
Fall 2022	CMSC 898	1	Topics in High Performance Computing
Fall 2022	CMSC 899	1	Topics in High Performance Computing
Spring 2023	CMSC 898	1	Topics in High Performance Computing
Spring 2023	CMSC 899	1	Topics in High Performance Computing
Spring 2024	CMSC 499	1	Independent Undergraduate Research
Spring 2024	CMSC 898	1	Topics in High Performance Computing
Fall 2024	CMSC 898	1	Topics in High Performance Computing
Spring 2025	CMSC 499	2	Independent Undergraduate Research
Spring 2025	CMSC 798	1	Topics in High Performance Computing
Spring 2025	CMSC 898	1	Topics in High Performance Computing

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3.3 Course and Curriculum Development

1. CMSC642/498K - Big Data Systems (2018). Create new course on models and systems for storing and processing large datasets. Course syllabus was originally designed by A. Deshpande. Created final course content, projects, etc., targeting both students in the masters certificate program in data science and advanced undergraduates. Models/systems targeted include relational, MapReduce frameworks, NoSQL systems, graph analytics, and data streaming.

2. CMSC 216 - Introduction to Computer Systems (2014-15). Redesign of the course to incorporate active and blended learning into the course curriculum, to increase student success. Funded by campus Teaching & Learning Transformation Center (TLTC) Elevate Fellows program, and done with instructors Nelson Padua-Perez, Larry Herman, Prof. Neil Spring and Prof. Pete Keleher.

3. NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing Core Topics for Undergraduates (2010-23). Member of committee designing curriculum guidelines for undergraduate computer science and computer engineering programs, to incorporate parallel and distributed computing as part of the core curriculum. Includes topic selections in algorithms, architecture, and programming, with related learning outcomes and multiple methods for incorporating topics into new and existing courses.

4. CMSC 216 - Introduction to Computer Systems (2009) - designed and implemented a new introductory computer systems course (the third course in the computer science intro sequence), that covers systems programming, computer organization, and C language programming topics, to prepare students for upper level computer systems and other courses

5. CMSC 714 - High Performance Computing (2005, 2007, 2010, 2011, 2022) - revised course content to accurately reflect current state of the art in high performance computing systems, including systems software, architecture/hardware and supercomputing applications

6. CMSC 818 - Topics in High Performance Computing (2002, 2004, 2007, 2011) - special topics course development in high performance parallel and distributed computing, including group programming projects

7. CMSC 411 - Computer Systems Architecture (2003-4) - adopted a new textbook, oriented course toward a more analytical, performance-based approach, added programming project to expose students to details of inner workings of part of a processor

8. CMSC 330 - Organization of Programming Languages (1999) - adopted new textbook and redesigned curriculum and programming projects to reflect modern programming practices, emphasizing scripting languages and object-oriented programming in Java

3.4 Advising: Research Advisor

3.4.1 Undergraduate

- Sergey Koren, 2001-2002 (Ph.D from U. Maryland)
- Roman Chertov, 2001-2002 (Ph.D from Purdue U.)
- Nick Clark, 2002
- Ryan Pijai, 2003
- David Bettis, 2003-2004 (M.S. from Purdue U.)
- Luis Sanchez, 2009
- Alexander Vanadio, 2009
- Tim Ousborne, 2010
- Scott Dellatorre, 2013-2014
- Yali Li, 2015
- JiaLi Huang, 2016
- Aryan Marwah, 2023-2024
- Rohan Parikh, 2025
- Mishti Relan, 2025

3.4.2 Masters

- Cassie Thomas, 2002
- Yu-lin Wen, 2002
- Tai Hu, 2003
- Suresh Aryangat, 2003-2004
- Sasan Dashtinezhad, 2003-2004
- Jae-Yong Lee, 2002-2004
- Kai Zhang (ECE), 2003-2005
- Hassan Afzal, 2007-2009
- Paul Tschirhart (ECE), 2009-2011
- Puneet Sharma, 2010-2011
- Xu Wang, 2013-2015
- Yi Mao, 2018-2019
- Harshit Soora, 2024-2025

3.4.3 Doctoral

- Henrique Andrade (joint with J. Saltz), 2002
  Thesis: *Multiple Query Optimization Support for Data Analysis Applications*, currently at Meta
- Eugene Borovikov (joint with L. Davis), 2003
  Thesis: *High Performance Visual Computing in Multi-Perspective Environments*, currently at Kitware
- Beomseok Nam, 2007
  Thesis: *Distributed Multidimensional Indexing for Scientific Data Analysis Applications*, currently at Sungkyunkwan University, Korea
- Shang-chieh Wu, 2008
  Thesis: *Flexible and Efficient Control of Data Transfers for Loosely Coupled Components*, currently at Apple
- Jik-Soo Kim, 2009
  Thesis: *Decentralized and Scalable Resource Management for Desktop Grids*, currently at Myongji University, Korea
- Il-Chul Yoon, 2010
  Thesis: *Compatibility Testing for Component-based Systems*, currently at University of Maryland
- Jaehwan Lee, 2012
  Thesis: *Decentralized Resource Orchestration for Heterogeneous Grids*, currently at Korea Aerospace University

- Sukhyun Song, 2012
  Thesis: *Decentralized Network Bandwidth Prediction and Node Search*, currently at Google
- Gary Jackson, 2015
  Thesis: *Parallel Computing with P2P Desktop Grids*, currently at Johns Hopkins University Applied Physics Laboratory
- Teng Long, 2015
  Thesis: *Collaborative Testing Across Shared Software Components*, currently at Apple
- Swati Singhal, 2022
  Thesis: *A Flexible Approach for Orchestrating Adaptive Scientific Workflows for Scalable Computing*, currently at Microsoft
- Thomas Rolinger, 2023
  Thesis: *Compiler Optimizations for Irregular Memory Access Patterns in the PGAS Programming Model*, currently at Laboratory for Physical Sciences
- Xiaolong Tian, current

3.4.4 Postdoctoral

- Henrique Andrade, 2003-2004
- Beomseok Nam, 2007
- George Teodoro, 2010-11
- Il-Chul Yoon, 2011

3.4.5 Visiting Faculty

- Dr. Peng Jian, Sichuan University, 2008
- Dr. Lei Zhang, Sichuan University, 2012

3.5 Advising: Ph.D. Committees

- Chialin Chang, 2001
- Kyung-dong Ryu, 2001
- Robert Bennett (ECE), 2001
- I-Hsin Chung, 2004
- Bryan Buck, 2004
- Mustafa Tikir, 2005
- Cemal Yilmaz, 2005
- Seungryul Choi, 2006

- Lorin Hochstein, 2006
- Vijay Gopalakrishnan, 2006
- Michael D. Black (ECE), 2007
- Taiga Nakamura, 2007
- Sean Leventhal (ECE), 2008
- Polyvios Pratakakis, 2008
- Wanli Liu (ECE), 2009
- Kyle Gustafson (Physics), 2009
- Konstantin Berlin, 2010
- Ruirui Gu (ECE), 2010
- Chris Ackermann, 2010
- Ananta Tiwari, 2011
- George Caragea, 2011
- Malina Kirn (AMSC), 2011
- Nick Rutar, 2011
- Christopher Miller, 2011
- Alexandros Tzannes, 2012
- Sergey Koren, 2012
- Elliott Cooper-Balis, 2012
- Shanchan Wu, 2012
- Hsiang-Huang Wu, 2013
- Aparna Kotha (ECE), 2013
- Tugrul Ince, 2013
- Nima Asadi, 2013
- Stephen Schwartz (Astronomy), 2013
- Bao Nguyen, 2013
- Derrick Wood, 2014
- Inseok Choi (ECE), 2014
- Geoff Stoker, 2014

- Ashwin Kumar Kayyoor, 2014
- James Lampton, 2014
- Kaustav Nandy, 2015
- Eric Raboin, 2015
- Paul Tschirhart (ECE), 2015
- Karla Saur, 2015
- Abdul Quamar, 2015
- Leslie Milton, 2015
- Minshu Zhao (ECE), 2015
- Bryan Robbins, 2016
- Caleb Serafy (ECE), 2016
- Fady Ghanim (ECE), 2016
- Kookjin Lee, 2017
- Zebao Gao, 2017
- Hua He, 2018
- Hui Miao, 2018
- Jinfeng Rao, 2018
- Souvik Bhattacherjee, 2018
- Hui Zhang, 2018
- Nick Gramsky, 2018
- Nuttiiya Seekhao (ECE), 2019
- Shang Li (ECE), 2019
- James Edwards, 2020
- Daniel Gerzhoy (ECE), 2021
- Mrinalgouda Patil (Aerospace Engineering), 2022
- Ravi Lumba (Aerospace Engineering), 2022
- Devesh Singh (ECE), 2022
- Ray Chen, 2023
- Timothy Dunlap (ECE), 2024

- Brennan Rudy (Music), 2024
- Richard Johnson, 2024
- Yehuda Katz, 2024
- Luyi Kang (ECE), current
- Paulo Arias (Aerospace Engineering), current
- Manasi Shingane, current
- Joy Kitson, current

3.6 Advising: M.S. Committees

- Adam Bazinet, 2009
- Benjamin Jimenez (Aerospace Eng.), 2012
- Yifan Zhou, 2013
- Paul Tschirhart (ECE), 2013
- Matias Marenchino, 2015
- Ben Landrum, 2024

4 Service

4.1 Professional

4.1.1 Unpaid reviewing activities for agencies

- Proposal reviewer, National Science Foundation, 1998-2025.
- Proposal and project reviewer, NASA, 2004-2009.
- Proposal and project reviewer, DOE, 2007-2023.
- NASA Heliophysics Data and Computing Working Group, 2002-2011.
  - advise NASA program managers on compute and data management policies for spacecraft instruments

4.1.2 Other non-University Panels and Positions

- Organizing and Program Committee, *NSF/TCPP Workshop on Parallel and Distributed Computing Education (EduPar), at IPDPS*, 2011-2025
- Posters Vice Chair, *SC24*, 2024
- Organizing and Program Committee, *Workshop on Parallel, Distributed, and High-Performance Computing in Undergraduate Curricula (EduHPC), at SC'XX*, 2013-24

- Program Committee, *Workshop on Education for High Performance Computing (EduHiPC), at HiPC*, 2018-19, 2022-2024
- Program Committee, *International Conference on Parallel Processing (ICPP)*, 2024
- Program Committee, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2024
- Program Committee, *International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, 2024
- Program Vice Chair (Multidisciplinary track), *International Conference on Parallel Processing (ICPP)*, 2023
- Program Committee, *IEEE International Conference on Big Data (IEEE BigData)*, 2023
- Program Vice Chair (Systems Software track), *International Parallel & Distributed Processing Symposium (IPDPS)*, 2020
- Workshops Committee, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2018-20
- Program Vice Chair, *International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)*, 2019
- Program Vice Chair (Storage Track), *IEEE International Conference on Networking, Architecture, and Storage (NAS)*, 2018
- Program Committee, *International Workshop on Software-Defined Data Communications and Storage (SDDCS), at ICDCS*, 2016-2018
- Executive Committee, Student Programs Chair, *SC17*, 2017
- Program Committee, *International Conference on High Performance Computing and Communications (HPCC)*, 2009, 2011, 2012, 2013, 2017
- Program Committee, Workshops Committee, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2017
- HPC Undergraduate Students Program Chair, *SC12, SC13, SC14, SC15, SC16*, 2012-16
- Workshops Committee, *SC15*, 2015
- Program Committee, *IEEE International Conference on Computational Science and Engineering (CSE)*, 2014, 2015
- Program Committee, *IEEE International Conference on Networking, Architecture, and Storage (NAS)*, 2014, 2015
- Program Committee, *International Conference on Supercomputing (ICS)*, 2004-2006, 2015
- Program Committee, *High Performance Big Data Cloud Computing (HPBC) workshop*, 2015
- Program Committee, *IEEE International Conference on Parallel Processing (ICPP)*, 1999, 2004, 2006, 2013-15

- General Chair, *IEEE 7th International Conference on Cloud Computing (CLOUD)*, 2014
- Program Chair, *IEEE 6th International Conference on Cloud Computing (CLOUD)*, 2013
- Posters Committee, *SC09*, *SC11*, *SC13*, 2009, 2011, 2013
- Program Committee, *International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, 2011, 2013
- Steering Commiteee, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2010-2012
- Program Vice Chair, *International Conference on High Performance Computing (HiPC)*, 2008, 2012
- Program Committee, *IEEE International Conference on Computational Science and Engineering*, 2012
- Program Committee, *International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD)*, 2009, 2011, 2012
- Program Committee, *International Conference on eScience*, 2012
- Program Committee, *International Conference on Grid Computing*, 2007-2012
- General Chair, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2011
- Program Committee, *SC03*, *SC04*, *SC08*, *SC10*, *SC11*
- Program Committee, *International Conference on High Performance Computing (HiPC)*, 2005, 2009-11
- Program Committee, *Workshop on Desktop Grids and Volunteer Computing Systems (PCGrid)*, 2007-2009, 2011
- General Vice Chair, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2010
- Storage Challenge Chair, *SC09, SC10*, 2009-2010
- Organizing and Program Committee, *Workshop on Component-Based High Performance Computing (CBHPC)*, 2007-2010
- Steering Committee, *Workshop on Challenges of Large Applications in Distributed Environments (CLADE)*, 2006-2010
- DOE Center for Simulation of Wave Interactions with MHD (SWIM) advisory board, 2007-2010
- Program Committee, *USENIX Conference on File and Storage Technologies (FAST'10)*, 2009
- Workshops Chair, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2004-2009
- Program Committee, *International Symposium on High Performance Distributed Computing (HPDC)*, 2009
- Program Committee, *International Symposium on Computer and Information Sciences (ISCIS 2009)*, 2009

- Posters Committee, *IEEE International Conference on Cluster Computing*, 2009
- Program Committee, *International Symposium on Grid Computing, High-Performance and Distributed Applications (GADA)*, 2006-2009
- Storage Challenge Committee, *SC06, SC07, SC08*, 2006-8
- Program Committee, *International Conference on Computational Science and Engineering*, 2008
- Program Committee, *High Performance Computing and Simulation Symposium*, 2008
- Organizing Committee, NSF Next Generation Systems Workshop, 2008
- Mid-Atlantic Crossroads (MAX) research advisory board, 2005-2008
- Program Committee, *IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA)*, 2006-2008
- Program Vice Chair, *International Conference on High Performance Computing and Communications (HPCC)*, 2006, 2007
- Program Committee, *International Conference on Parallel and Distributed Systems (ICPADS)*, 2007
- Program Committee, *High Performance Computing Symposium, Grand Challenges in Computer Simulation*, 2004-2007
- Posters Chair, *SC06*, 2006
- Program Committee, *International Conference on Distributed Computing Systems (ICDCS), 2006*
- Program Committee, *International Conference on Parallel and Distributed Computing and Networks (PDCN)*, 2006
- Program Vice Chair, *International Workshop on Grid Computing*, 2005
- Program Chair, *Workshop on Challenges of Large Applications in Distributed Environments (CLADE)*, 2005
- Program Committee, *Workshop on Challenges of Large Applications in Distributed Environments (CLADE)*, 2004
- Program Committee, *International Conference on Parallel and Distributed Computing Systems (PDCS)*, 2004
- Program Committee, *International Parallel & Distributed Processing Symposium (IPDPS)*, 2003
- Program Committee, *International Workshop on Grid Computing*, 2001-2003
- Tutorials Committee, *SC02*
- Program Committee, *Workshop on Languages, Compilers, and Run-time Systems for Scalable Computers(LCR)*, 2002
- Program Committee, *Conference on Advancing Pathology Informatics, Imaging and the Internet (APIII)*, 1999-2002
- Program Committee, *Workshop on Runtime Systems for Parallel Programming*, 1998-2000
- Program Committee, *Symposium on Frontiers of Massively Parallel Computation*, 1995

4.1.3 Departmental Service

- Department programs, curricula, & courses (PCC) representative, 2022-present
- Chair, faculty search committee, 2023
- Department Council, 2006-7, 2022-2023, 2024-2025
- Faculty recruiting, 2003-2025
- Graduate admissions, 2004-2025
- Chair, lecturer search committee, 2018
- Distinguished alumni award committee, 2018
- Teaching evaluation committee, 2018
- Undergraduate scholarships committee, 2012-18
- Chair, Computer Systems field committee, 2008-10, 2016-18
- CS chair search committee, 2017
- ECE/CS Program Liasion, 2012-17
- Department space committee, 2014-15
- Future Faculty Fellows committee, 2014
- Department planning committee, 2014
- Teaching awards committee, 2013
- Professorial faculty merit review committee, 2012
- Grad student review committee, 2010-12
- Undergraduate program revision committee, 2006-7
- Graduate program revision committee, 2006
- Introductory course committee, 2006-7
- Chair, retreat committee on revising graduate requirements, 2006
- Graduate student placement committee, chair, 2005-2006
- Graduate school workshop for undergraduates, 2003-2008
- Lab committee, 2000-2003

4.1.4 University Service

- Limited Submission Standing Review Committee (Division of Research), 2015-18
- Banneker/Key scholarship selection committee, 2012-17
- UMIACS Campus Senate representative, 2012-15
- University NSF data management committee, 2010-11
- CMPS high level computing committee, 2000

I certify this CV is accurate and complete – **March 4, 2025**

Alan Sussman