

Curriculum Vitae

Beth A. Plale

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EDUCATION

Postdoctoral Fellow, Georgia Institute of Technology (Georgia Tech), Center for Experimental Research in Computer Systems (CERCS), 2001.

Ph.D., State University of New York (SUNY) Binghamton Dissertation: *Software System for On-line Detection of Constraints in Safety Critical Systems*. Chairs: Sudhir Aggarwal, SUNY and Karsten Schwan, Georgia Tech, Jan 1998.

M.S. Computer Information Science, Thesis: *Object Oriented System for Image Rendering*. Advisor: Frank Friedman. Temple University, 1992

M.B.A., Masters of Business Administration, University of La Verne, California, 1986

B.S. Computer Science, University of Southern Mississippi. Minor in Mathematics. 1984

PROFESSIONAL

Jul 2007 – present: *Associate Dean of Research*, School of Informatics, Indiana University.

2006 – present: *Founder and Director*, *Center for Data and Search Informatics*, School of Informatics, Indiana University.

Apr 2006 – present: *Associate Professor* with tenure, Department of Computer Science and School of Informatics, Indiana University.

Aug 2001 – Apr 2006: *Assistant Professor*, Department of Computer Science, Indiana University

Jan 1998 – Aug 2001: *Postdoctoral Fellow*, Georgia Institute of Technology, Advisor: Karsten Schwan.

Jun 1996 – Dec 1997: *Research Assistant*, College of Computing, Georgia Institute of Technology.

Sep 1994 – May 1996: *Adjunct Instructor*, Georgia Perimeter College.

1991 – 1994: *Research Assistant* Department of Computer Science, State University of New York at Binghamton and *Adjunct Instructor* for Continuing Education Department.

1989 – 1991: *Teaching Assistant*, Department of Computer and Information Science, Temple University.

1986 – 1989: *Lead Software Engineer*, GTE Federal Systems, Westlake Village, CA. Intelligence tracking and reporting system for U.S. Air Force.

1984 – 1986: *Programmer*, Vitro Corporation, Oxnard, CA. Real time weapons control system for U.S. Navy.

Visiting Appointments:

Aug – Oct 2003: *Visiting Scientist*, University of Edinburgh, Scotland. Host: Malcolm Atkinson.

TEACHING

University courses: developed 3 (marked with *), taught 13.

1. * *I590/B669: Topics in Data and Search Informatics*, Introductory graduate course to concepts of data provenance, data indexing, case based reasoning, metadata models, and visualization. Indiana University, Fall 2008
2. * *CSCI B534 Distributed Systems*, Foundations of distributed computing including models, consistency, global time, architectures. Organized university sponsored performance evaluation of virtual machines on two hardware platforms. Another year, I sponsored several teams to participate in an HP sponsored competition on course-wear for handheld devices. Indiana University, Spring 2009, Spring 2007, Spring 2005, Spring 2003.
3. *CSCI P436 Introduction to Operating Systems*, Indiana University, Fall 2007, Fall 2002, Fall 2003
4. *CSCI B669: e-Science Tools and Technology*, Indiana University, Fall 2006. With Dennis Gannon.
5. *CSCI B438 Fundamentals of Networking*. Indiana University, Computer networking, TCP stack. Taught Spring 2004, Spring 2005
6. * *CSCI B649 Topics in Systems: Systems Support for Wide Area Applications*, Indiana University, Fall 2001
7. *CS4210 Advanced Operating Systems*, Georgia Institute of Technology (2001-2002)
8. *Fortran for Scientists and Engineers*, Georgia Perimeter College, Fall 1995, Spring 1996
9. *Introduction to Pascal*, Georgia Perimeter College, Fall 1995, Spring 1996
10. * *Introduction to Visual Basic*, Advanced Placement course taught at North Springs High School, Sandy Springs, GA. Fall, 1995
11. *Visual Basic for Professionals*, Georgia Perimeter College, continuing education course, Spring 1996
12. C Programming and the UNIX operating system, off-site continuing education, SUNY Binghamton, Spring 1994
13. C Programming and the UNIX operating system, graduate course, SUNY Binghamton, Summer 1994

RESEARCH SUPERVISION

PhD Advisor to 9 IU students.

Current PhDs (6):

1. Heejoon Chae (Sep 06 -)
2. Jeff Cox (Sep 07 -)
3. Eran Chinthaka, Sep 08 -)
4. Chathura Herath (Sep 08 -)
5. Scott Jensen (Sep 04 -)
6. Yiming Sun (Sep 04 -)
7. Girish Subramanian (Sep 08 -)

Graduated PhDs (3):

1. Ying Liu Sep 02 – May 07, PhD May 2007. “Query Optimization for Distributed Stream Processing”, now researcher at Cisco.
2. Yogesh Simmhan, Sep 03 – Dec 07, PhD Dec 2007. “Provenance Framework in Support of Data Quality Estimation”. Now at Microsoft Research.
3. Nithya Vijayakumar Jan 02 – Aug 07, PhD Dec 2007. Data Management in Distributed Stream Processing Systems, now researcher at Cisco.

Master’s Research/Thesis Advisor to (9) students; Ning Liu (’07) went to ESRI; Aparna Venkatraman (’08) hired into Cummins; Vinay Pandey (’07) is at Goldman Sachs; Ryan Baula (’05) went to Focus Technologies LLC; Charlie Moad (’05) took job at IUPUI Advanced Visualization Lab; Craig Jacobs (’05) hired into Colorado Time Systems; Poornima Venkatakrishnan (’04) went to Palm One; Nithya Sivaraman (’04) started at Microsoft; Deepti Kodeboyina (’04) took position at Argonne National Lab.

Undergraduate Advisor to (2) students: You-Wei Cheah (’08) now PhD student at IU, AJ Ragusa (’07) now at the IU Network Operations Center and working on a graduate degree.

Postdoctoral Supervisor to 2 researchers

Bin Cao, Jun 08 – present.

Sangmi Lee Pallickara, - Jul 05 - Aug 07 now researcher for Polar Grid project at Indiana University

DISTINCTIONS

Executive Advisory Board of the Bureau of Social Science Research, 2008-
Open Grid Forum Steering Committee, 2005-2007
Senior Member, Association of Computing Machinery (ACM) 2006
DOE Early Career Award, 2004
Temple University Graduate School Fellowship, 1990

GRANTS, CONTRACTS, and GIFTS (27)

1. Pervasive Technology Institute, with B. Wheeler, C. Stewart, G. Fox and F. Cate; Lilly Endowment, \$15,000,000, 1/01/2009 – 12/31/2014

2. Cyberinfrastructure Software: Availability, Persistence, and Support Workshop, with B. Wheeler, et al., National Science Foundation, \$131,691, 6/1/2008 – 5/31/2009.
3. Knowledge Discovery through Provenance Collection, Representation, and Use in the Lilly Science Grid (LSG), with D. Groth and University of Manchester, UK, Eli Lilly Corp., \$120,000, 03/01/2008 – 01/31/2009.
4. SDCI Data: New Toolkit for Provenance Collection, Publishing, and Use, with D. Leake and Y. Simmhan. National Science Foundation, NSF 07-503, \$432,954, 9/1/2007-8/31/2009
5. SDCI NMI: Improvement: Open Grid Computing Environments Software for Science Gateways with G. Fox, D. Gannon, M. Pierce, and N. Wilkins-Diehr. National Science Foundation, NSF 07-503, \$1,698,347, 7/1/2007-6/30/2010
6. CSR CSI: An Adaptive Programming Framework for Data and Event Driven Computation, with Dennis Gannon, National Science Foundation, NSF 07-504, \$300,000, 8/1/2007-7/31/2009
7. Remote Digital Signatures and Signature Logging: A Proposal to Develop a Tool to Increase the Productivity of Physicians, MPRI, \$8,953, 3/1/2007-8/31/2008
8. Center for Research on Multicore Computing (CRMC), with G. Fox, Microsoft, \$749,996, 7/1/2006 - 6/30/2009
9. Visual Search Tools using Existing Toolkits in LEAD, with S. Pallickara, NSF Research Experiences for Undergraduates (REU) associated with NSF ITR LEAD, \$14,000, 06/01/2006 – 05/31/2007.
10. Chemical Informatics Cyberinfrastructure with G. Wiggins, G. Fox, M. Baik, D. Gannon, R. Bramley, J. Huffman, M. Pierce, National Institutes of Health, \$731,750, 9/23/2005 - 7/31/2007.
11. Science of Search: Data, Analytics, and Architectures Center (DSAAC), National Science Industry/University Cooperative Research Program Planning Grant, \$10,000, 8/15/2006 - 7/31/2007
12. Distinguished Lecture Series (2005-2006), with K. Connelly and Butler University, DePauw University, Rose-Hulman Institute of Technology, Computing Research Association CRA-W, \$10,000.
13. MRI: Acquisition of a High-Speed, High Capacity Storage System to Support Scientific Computing: the Data Capacitor, with C. Stewart, R. Bramley, T. Hacker, and C. Pilachowski, 9/04/05 – 8/31/08, \$1,999,981.
14. DIALOGUE - Data Integration Applications: Linking Organisations to Gain Understanding and Experience”, with Malcolm Atkinson, University of Edinburgh, Joel Statz, Ohio State, Peter Brezeny, University of Vienna; Engineering and Physical Sciences Research Council (EPSRC), United Kingdom, 1/02/05 – 0/01/07
15. Expanding Science by Unified Access to Radar Data and Algorithms, Microsoft Research Equipment Grant, \$35,000 + \$53,000, 9/01/2004 – 1/31/2007
16. DOE Early Career: Time-based Data Streams: Fundamental Concepts for Data Resource for Streams, Department of Energy, 9/01/04 - 8/31/07, \$298,343

17. An Itanium Environment for Grid-Based Data Mining, with D. Groth, Hewlett Packard Philanthropy and Education Equipment Grant, 9/01/04 - 9/01/05, \$60,000
18. "ITR Collaborative Research: Linked Environments for Atmospheric Discovery (LEAD)" with D. Gannon, Oklahoma University, University of Alabama Huntsville, UCAR, NCSA, University of North Carolina Chapel Hill, Howard, Colorado State University, Millersville, National Science Foundation, 10/01/03 - 9/31/08, total approx. \$11,000,000. IU portion \$1.9M.
19. Scientific Portals Expedition, NCSA/Univ. of Illinois (subcontract from National Science Foundation), 10/01/03 - 3/31/05, \$200,000
20. Collaborative Proposal: Middleware for Grid Portal Development, with D. Gannon, M. Pierce, and G. Fox, National Science Foundation, 9/01/03 - 8/31/06, \$868,803
21. A Research Infrastructure for Collaborative, High-Performance Grid Applications, with D. Wise, A. Lumsdaine, G. Fox, R. Bramley, NSF, 9/1/02 - 8/31/07, \$1,311,875 plus match of \$803,709
22. Crane-IU-Purdue Knowledge Projection for Fleet Maintenance" with R. Bramley, G. Fox, D. Leake, and D. F. McMullen, National Science Foundation, 6/15/02 - 9/27/05, \$500,000
23. Middleware Technology to Support Science Portals: A Gateway to the Grid, with D. Gannon, Department of Energy, 1/01/01 - 7/31/07, \$1,045,141
24. ITR/SY Collaborative Research: A Unified Relational Approach to Grid Information Services, with P. Dinda, National Science Foundation, 9/15/01 - 8/31/05 IU portion \$234,702
25. Dynamic Querying of Large-scale Streaming Data, NCSA/University of Illinois (subcontract from National Science Foundation), \$62,000, 10/01 - 09/02.
26. Applying Database Techniques to Management of Large Data Flows in Interactive Scientific Simulations, National Science Foundation POWRE, \$75,005, 1999 - 2000.
27. Profiling the Performance of SMP Servers, with Karsten Schwan, Intel Corporation, \$32,000, 1998.

PUBLICATIONS

Refereed Conference and Workshop Papers (31)

1. Vijayakumar, N. N. and B. Plale, Tracking stream provenance in complex event processing systems for workflow-driven computing. *Second Int'l Workshop on Event-driven Architecture, Processing, and Systems (EDA-PS'07)*, in conjunction with *VLDB'07*. Vienna, Austria, September 2007
2. Vijayakumar, N. N. and B. Plale, Prediction of Missing Events in Sensor Data Streams Using Kalman Filters, *1st Int'l Workshop on Knowledge Discovery from Sensor Data*, in conjunction with *ACM 13th Int'l Conference on Knowledge Discovery and Data Mining*, San Jose, California, August 2007.
3. Sun, Y., Scott Jensen, Sangmi Lee Pallickara, and Beth Plale, Personal Workspace for Large-scale Data-driven Computational Experimentation, *7th IEEE/ACM International Conference on Grid Computing (Grid'06)*, Barcelona Spain, September 2006. (18% acceptance)

4. Liu, Y., N. N. Vijayakumar, and B. Plale, Stream Processing in Data-driven Computational Science *7th IEEE/ACM International Conference on Grid Computing (Grid'06)*, Barcelona Spain, September 2006. (18% acceptance)
5. Simmhan, Y., B. Plale, and D. Gannon, A Framework for Collecting Provenance in Data-Centric Scientific Workflows, *IEEE Conference on Web Services (ICWS'06)*, September 2006. (18% acceptance)
6. Liu, Y. and B. Plale, Multi-model Based Optimization for Stream Query Processing, *KSI Eighteenth International Conference on Software Engineering and Knowledge Engineering (SEKE'06)*, San Francisco, July 2006.
7. Liu, Y. and B. Plale, Query Optimization for Distributed Data Streams, *ISCA 15th International Conference on Software Engineering and Data Engineering (SEDE'06)*, Los Angeles, July 2006.
8. Pallickara, S. and B. Plale, Enabling End-to-End Trustworthiness in Data-Oriented Scientific Computing, *Workshop on Web Services-based Grid Applications (WGSA'06) in conjunction with International Conference on Parallel Processing (ICPP-06)*, Columbus, Ohio, August 2006.
9. Jensen, S., B. Plale, S. L. Pallickara and Y. Sun, A Hybrid XML-Relational Grid Metadata Catalog, *Workshop on Web Services-based Grid Applications (WGSA'06) in conjunction with International Conference on Parallel Processing (ICPP-06)*, August 2006.
10. Vijayakumar, N., Beth Plale, Rahul Ramachandran, and Xiang Li, Dynamic Filtering and Mining Triggers in Mesoscale Meteorology Forecasting, *IEEE International Geoscience and Remote Sensing Symposium (IGARSS'06)*, Denver, CO, August 2006.
11. Simmhan, Y., Beth Plale, Dennis Gannon, A Performance Evaluation of the Karma Provenance Framework for Scientific Workflows, *International Provenance and Annotation Workshop (IPAW'06)*, May 2006.
12. Vijayakumar, N., and Plale, B., Towards Low Overhead Provenance Tracking in Near Real-Time Stream Filtering, *International Provenance and Annotation Workshop (IPAW'06)*, May 2006.
13. Simmhan, Y., Plale, B., Gannon, D., Marru, S., [A Framework for Collecting Provenance in Data-Centric Scientific Workflows](#), *IEEE Workshop on Workflow and Data Flow for Scientific Applications (SciFlow06) in conjunction with ICDE*, Atlanta, GA, April 2006.
14. Pallickara, S. L., B. Plale, S. Jensen, and Y. Sun 2005. Structure, sharing, and preservation of scientific experiment data, *IEEE 3rd International Workshop on Challenges of Large Applications in Distributed Environments (CLADE'05)*, Research Triangle Park, North Carolina, July 2005.
15. Pallickara, S. L., B. Plale, S. Jensen, Y. Sun 2005. Monitoring Access to Stateful Resources in Grid Environments, *IEEE International Conference on Services Computing (SCC'05)*, IEEE Computer Society Press, Orlando, Florida July 2005.
16. Plale, B. and N. Vijayakumar 2005. Evaluation of Rate-based Adaptivity in Joining Asynchronous Data Streams, *Proceedings of ACM/IEEE 19th International Parallel and Distributed Processing Symposium (IPDPS)*, IEEE Computer Society Press, p. 69b, <http://dx.doi.org/10.1109/IPDPS.2005.205>, April 2005.
17. Plale, B., C. Jacobs, S. Jensen, Y. Liu, C. Moad, R. Parab, and P. Vaidya 2004. Understanding Grid Resource Information Management through a Synthetic Database Benchmark/Workload, *Proceedings of 4th*

IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid2004), Chicago, Illinois, April 2004.

18. Plale, B. 2004. Using Global Snapshots to Access Data Streams on the Grid, *Proceedings of 2nd European Across Grids Conference (AxGrids) published as Lecture Notes in Computer Science*, Springer-Verlag GmbH, Vol. 3165, pp. 191-201, 2004.

19. Kodeboyina, D. and B. Plale 2003. Experiences with OGSA-DAI: Portlet Access and Benchmark, *Global Grid Forum Workshop on Designing and Building Grid Services*, Chicago, Illinois, http://www-unix.mcs.anl.gov/~keahey/DBGS/DBGS_files/dbgs_papers/kodeboyina.pdf September 2003.

20. Plale, B., G. Turner, and A. Sharma 2002. Real Time Response to Streaming Data on Linux Clusters, *Proceedings of 3rd International Conference on Linux Clusters: the HPC Revolution*, Linux Clusters Institute, <http://www.linuxclustersinstitute.org/Linux-HPC-Revolution/Archive/2002techpapers.html>, October 2002.

21. Plale, B., Leveraging Runtime Knowledge about Event Rates to Improve Memory Utilization in Wide Area Data Stream Filtering 2002. *Proceedings of 11th IEEE International Symposium on High Performance Distributed Computing (HPDC)*, IEEE Computer Society, Washington, DC, p. 171, <http://dx.doi.org/10.1109/IPDPS.2001.925038> 2002.

22. Plale, B., P. Dinda, and G. von Laszewski 2002. Key Concepts and Services of a Grid Information Service, *Proceedings of 15th ISCA International Parallel and Distributed Computing Systems (PDCS'02)*, International Society for Computers and their Applications, Cary, North Carolina, pp. 437-442, 2002.

23. Plale, B., P. Widener and K. Schwan 2001. Taking the Step from Metadata to Communication Middleware in Computational Data Streams, *Proceedings of 10th Heterogeneous Computing Workshop*, April 2001, IEEE Computer Society Press, Washington, DC, p. 20085b <http://dx.doi.org/10.1109/IPDPS.2001.925038>, 2001.

24. Plale, B. and Schwan, K. 2001. Optimizations Enabled by Relational Data Model View to Querying Data Streams, *Proceedings of the 15th International Parallel and Distributed Processing Symposium (IPDPS)*, IEEE Computer Society Press, Washington, DC, p. 10022a <http://dx.doi.org/10.1109/IPDPS.2001.924953>, 2001.

25. Plale, B. and K. Schwan 2000. dQUOB: Managing Large Data Flows by Dynamic Embedded Queries, *Proceedings of IEEE High Performance Distributed Computing (HPDC'00)*, IEEE Computer Society Press, Washington DC, p. 263 <http://dx.doi.org/10.1109/HPDC.2000.868658>, 2000. Extended version available as Georgia Institute of Technology Technical Report GIT-TR-00-07.

26. Plale, B., G. Eisenhauer, L. K. Daley, P. Widener, and K. Schwan 2000. Fast Heterogeneous Binary Data Interchange for Event-based Monitoring, *ISCA International Conference on Parallel and Distributed Computing Systems (PDCS)*, August 2000.

27. Oleson, V., K. Schwan, G. Eisenhauer, B. Plale, C. Pu and D. Amin 2000. Operational Information Systems - An Example from the Airline Industry, *Proceedings of 1st Workshop on Industrial Experiences with Systems Software (WIESS)*, USENIX Advanced Computing Systems Association, October 2000.

28. Plale, B. and K. Schwan, K. 1999. Run-time Detection in Parallel and Distributed Systems: Application to Safety-Critical Systems, *19th IEEE International Conference on Distributed Computing Systems (ICDCS)*, IEEE Computer Society Press, p. 0163, <http://dx.doi.org/10.1109/ICDCS.1999.776517>, 1999.

29. Schroeder (Plale), B., S. Aggarwal, S. and K. Schwan, K. 1997. Software Approach to Hazard Detection Using On-line Analysis of Safety Constraints, *16th IEEE Symposium on Reliable Distributed Systems (SRDS)*, IEEE Computer Society Press, October, pp. 80, <http://dx.doi.org/10.1109/RELDIS.1997.632801>, 1997.

30. Eisenhauer, G., B. Plale-Schroeder, K. Schwan, V. Martin, and J. Vetter 1997. DataExchange: High Performance Communications in Distributed Laboratories, *IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS)*, October 1997.

31. Eisenhauer, G., B. Plale-Schroeder and K. Schwan 1996. "From Interactive High Performance Programs to Distributed Laboratories: A Research Agenda", *IEEE SPDP'96 Workshop on Program Visualization and Instrumentation*, October 1996.

Referred Journal Articles (12)

32. Simmhan, Y., S. L. Pallickara, N. N. Vijayakumar, and B. Plale, Data Management in Dynamic Environment-driven Computational Science in *IFIP International Federation for Information Processing, Volume 239, Grid-Based Problem Solving Environments*, P.W. Gaffney and J.C.T. Pool, Eds, Springer Boston, pp. 317-333, 2007.

33. Gannon, D., B. Plale, M. Christie, Y. Huang, S. Jensen, N. Liu, S. Marru, S. L. Pallickara, S. Perera, S. Shirasuna, Y. Simmhan, A. Slominski, Y. Sun, N. Vijayakumar, Building Grid Portals for e-Science: A Service Oriented Architecture, *High Performance Computing and Grids in Action*, IOS Press - Amsterdam, Lucio Grandinetti editor, 2007

34. Gannon, D., B. Plale, S. Marru, G. Kandaswamy, Y. Simmhan, S. Shirasuna Dynamic, Adaptive Workflows for Mesoscale Meteorology, *Workflows for e-Science: Scientific Workflows for Grids*, Taylor, I.J.; Deelman, E.; Gannon, D.B.; Shields, M. (Eds.) Springer, Jan. 2007, pp. 129-145.

35. Simmhan, Y. L., B. Plale, and D. Gannon 2005. A Survey of Data Provenance in e-Science, *ACM SIGMOD Record*, ACM Press, Vol. 34, No. 3, pp. 31-36.

36. Plale, B., D. Gannon, Y. Huang, G. Kandaswamy, S. Lee Pallickara, and A. Slominski 2005. Cooperating Services for Managing Data Driven Computational Experimentation, *IEEE Computing in Science and Engineering*, IEEE Press, Vol. 7, No. 5, pp. 34-43.

37. Plale, B., D. Gannon, J. Alameda, B. Wilhelmson, S. Hampton, A. Rossi, and K. Droegemeier 2005. Active Management of Scientific Data, *IEEE Internet Computing special issue on Internet Access to Scientific Data*, IEEE Computer Science Press, Vol. 9, No. 1, pp. 27-34.

38. Plale, B. 2004. Framework for Bringing Data Streams to the Grid, *Scientific Programming*, IOS Press, Amsterdam, Vol. 12, No. 4, pp. 213-223.

39. Plale, B. and K. Schwan 2003. Dynamic Querying of Event Streams with the dQUOB System, *IEEE Transactions of Parallel and Distributed Systems*, IEEE Computer Science Press, Vol. 14, No. 3, pp. 422-432.

40. Plale, B., V. Elling, G. Eisenhauer, K. Schwan, D. King, and V. Martin 1999. Realizing Distributed Computational Laboratories, *International Journal of Parallel and Distributed Systems and Networks*, International Association of Science and Technology for Development (IASTED) Press, Vol. 2, No. 3.

41. Plale, B., G. Eisenhauer, K. Schwan, J. Heiner, V. Martin, and J. Vetter 1998. From Interactive Applications to Distributed Laboratories, *IEEE Concurrency*, IEEE Computer Society Press, Vol. 6, No. 2, pp. 78-90.

42. Eisenhauer, G., B. Plale, K. Schwan 1998. DataExchange: High Performance Communications in Distributed Laboratories, *Journal of Parallel Computing*, Elsevier, Vol. 24, Issues 12-13, pp. 1713-1733.
43. Schroeder (Plale), B. 1995. On-line Monitoring: A Tutorial, *Computer*, IEEE Computer Science Press, Vol. 28, No. 6, pp. 72-78.

Invited Conference and Workshop Papers

44. Ramakrishnan, L., Y. Simmhan, and B. Plale, Realization of Dynamically Adaptive Weather Analysis and Forecasting in LEAD: Four Years Down the Road, *Dynamic Data-Driven Application Systems Workshop, at International Conference on Computational Science (ICCS)*, Beijing, China, May 27-30, 2007.
45. Gannon, D., B. Plale, M. Christie, L. Fang, Y. Huang, S. Jensen, G. Kandaswamy, S. Marru, S. Lee Pallickara, S. Shirasuna, Y. Simmhan, A. Slominski, and Y. Sun, Service Oriented Architectures for Science Gateways on Grid Systems, International Conference on Service Oriented Computing 2005, B. Benatallah, F. Casati, P. Traverso (Eds.), LNCS 3826, pp. 21-32, 2005. Springer-Verlag Berlin Heidelberg 2005.
46. Plale, B., Gannon, D., Reed, D., Graves, S., Droegemeier, K., Wilhelmson, B., and Ramamurthy, M. 2005. Towards Dynamically Adaptive Weather Analysis and Forecasting in LEAD, *Proceedings of Computational Science - ICCS Workshop on Dynamic Data Driven Applications*, Lecture Notes in Computer Science No. 3515, Part II, Springer-Verlag GmbH, pp. 624 – 631.
47. Droegemeier, K. K., V. Chandrasekar, R. Clark, D. Gannon, S. Graves, E. Joseph, M. Ramamurthy, R. Wilhelmson, K. Brewster, B. Domenico, T. Leyton, V. Morris, D. Murray, B. Plale, R. Ramachandran, D. Reed, J. Rushing, D. Weber, A. Wilson, M. Xue, S. Yalda 2005. Linked Environments for Atmospheric Discovery (LEAD): Architecture, Technology Roadmap and Deployment Strategy, *21st Conf. on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology*, http://ams.confex.com/ams/Annual2005/techprogram/paper_86256.htm, January 2005.
48. Gannon, D., J. Alameda, O. Chipara, M. Christie, V. Dukle, L. Fang, M. Farellee, G. Fox, S. Hampton, G. Kandaswamy, D. Kodeboyina, C. Moad, M. Pierce, B. Plale, A. Rossi, Y. Simmhan, A. Sarangi, A. Slominski, S. Shirasuna, T. Thomas 2005. Building Grid Portal Applications from a Web-Service Component Architecture, *Proceedings of the IEEE*, IEEE Press, Vol. 93, No. 3, pp. 551-563.
49. Droegemeier, K., V. Chandrasekar, R. Clark, D. Gannon, S. Graves, E. Joseph, M. Ramamurthy, R. Wilhelmson, K. Brewster, B. Domenico, T. Leyton, V. Morris, D. Murray, B. Plale, R. Ramachandran, D. Reed, J. Rushing, D. Weber, A. Wilson, M. Xue, S. Yalda 2004. Linked Environments for Atmospheric Discovery (LEAD): A Cyberinfrastructure for Mesoscale Meteorology Research and Education, *20th Conf. on Interactive Information Processing Systems for Meteorology, Oceanography, and Hydrology*, http://ams.confex.com/ams/84Annual/techprogram/paper_69563.htm, January 2004.

Refereed Posters

50. Liu, Y, B. Plale, and N. Vijayakumar 2005. Poster Abstract: Distributed Query Planner in the Calder System, *14th IEEE International Symposium on High Performance Distributed Computing (HPDC)*, Research Triangle, North Carolina, July 2005.

51. Vijayakumar, N., Y. Liu, and B. Plale 2005. Poster Abstract: Calder: Enabling Grid Access to Data Streams, *14th IEEE International Symposium on High Performance Distributed Computing (HPDC)*, Research Triangle, North Carolina, July 2005.

52. Dinda, P. and B. Plale, 2003. Poster Abstract: A Unified Relational Approach to Grid Information Services, *23rd International Conference on Distributed Computing Systems (ICDCS)*, <http://www.cse.msu.edu/icdcs>, May 2003.

53. Plale, B., C. Jacobs, Y. Liu, C. Moad, R. Parab, P. Vaidya, and N. Vijaykumar 2003. Poster: Understanding Grid Resource Information Management through a Synthetic Database Benchmark/Workload, *International Conference on High Performance Computing (HiPC)*, Hyderabad, India, December 2003.

54. Isert, C., King, Schwan, K., Plale, B., and Eisenhauer, G. 1999. Poster: Steering Data Streams in Distributed Computational Laboratories, *19th IEEE International Symposium on High Performance Distributed Computing (HPDC)*, IEEE Computer Science Press, August 1999.

55. Plale, B. and Schwan, K. 1998. Poster: Multi-level Steering in Distributed Laboratories, *Proceedings of SIGMETRICS Symposium on Parallel and Distributed Tools*, ACM Press, August, p. 162, 1998.

Technical Reports and Other Unrefereed Works

56. Aparna Venkatraman, Vinay Pandey, Beth Plale, and Shing-Shong Shei, 2007. Benchmarking Effort of Virtual Machines on Multicore Machines, *Indiana University Computer Science Technical Report TR-654*.

57. Xin Xiang and Beth Plale, 2007. Performance Evaluation of MySQL 5.0 and Berkeley DB XML as a Grid Resource Information Manager (GRIM) with a Benchmark/Workload, *Indiana University Computer Science Technical Report TR-645*.

58. Simmhan, Y., B. Plale, and D. Gannon 2005. A Survey of Data Provenance Techniques, *Indiana University Computer Science Technical Report TR-618*.

59. Vijayakumar, N. and B. Plale 2005. dQUOBEC Event Channel Communication System, *Indiana University Computer Science Technical Report TR-614*.

60. Liu, Y. B. Plale, and N. Vijayakumar 2005. Realization of GGF DAIS Data Service Interface for Grid Access to Data Streams, *Indiana University Computer Science Technical Report TR-613*.

61. Vijayakumar, N. and B. Plale 2004. RS-Algo: an Algorithm for Improved Memory Utilization in Continuous Query System under Asynchronous Data Streams, *Indiana University Computer Science Technical Report TR-601*.

62. Moad, C. and B. Plale 2004. Portal Access to Parallel Visualization of Scientific Data on the Grid, *Indiana University Computer Science Technical Report TR-593*.

63. Ying Liu and Beth Plale 2003. Survey of Publish-Subscribe Event Systems, *Indiana University Computer Science Technical Report TR-574*.

64. Gannon, D., G. Fox, M. Pierce, B. Plale, G. von Laszewski, C. Severance, J. Hardin, J. Alameda, M. Thomas, J. Boisseau 2003. Grid Portals: A Scientist's Access Point for Grid Services, *GGF Community Practice document, working draft 1*.

65. Plale, B., C. Jacobs, Y. Liu, C. Moad, R. Parab, and P. Vaidya 2003. Benchmark Details of Synthetic Database Benchmark/Workload for Grid Resource Information, *Indiana University Computer Science Technical Report TR-583*.
66. Vaidya, P. and B. Plale 2003. Benchmark Evaluation of Xindice as a Grid Information Server, *Indiana University Computer Science Technical Report TR-585*.
67. Plale, B. 2001. Performance Impact of Streaming Doppler Radar Data on Geospatial Visualization System, *Georgia Institute of Technology Technical Report GIT-CC-01-07*.
68. Plale, B. and K. Schwan 2000. dQUOB: Managing Large Data Flows Using Dynamic Embedded Queries, *Georgia Institute of Technology Technical Report GIT-CC-00-07*.
69. Schroeder (Plale), B. and K. Schwan 1997. Language Issues in Hazard Detection Using Queries, *Georgia Institute of Technology Technical Report GIT-CC-97-36*.
70. Schroeder (Plale), B., S. Aggarwal, and K. Schwan 1997. Software Approach to Hazard Detection Using On-line Analysis of Safety Constraints, *Georgia Institute of Technology Technical Report GIT-CC-97-01*.

INVITED TALKS

Keynote and Plenary talks:

Research instrumentation for cyberinfrastructure, data-intensive computing and weather forecasting, Invited talk. NSF Workshop on Instrumentation Needs of Computer and Information Science Engineering, Snowbird, Utah, July 2008.

Opening the Gates to Data Driven Computational Science through Cyberinfrastructure, Indiana University Office of Women's Affairs Distinguished Lecture Series, May 2006

Invited Talks (excluding conference paper talks):

Beyond LEAD: Impact, Education, and Future Plans, *Supercomputing '08*, Austin, TX, Nov 2008.

Provenance of Digital Scientific Data, *Supercomputing '08*, Austin, TX, Nov 2008.

Improving data capture in science discovery cyberinfrastructure to enable educational outcomes, *Learning Sciences Professional Seminar, School of Education*, Indiana University, Nov 2007.

Data Management, Metadata, and Search in Workflow-driven Computational (e-) Science, invited talk *Renmin University*, Beijing, China, May 2007.

“Metadata Catalogs and Stream Processing: Key Cyberinfrastructure for Data Driven Computational Science”, *University of Houston Computer Science Department Colloquia Series*, Apr 2006.

Transforming the Sensing and Prediction of Intense Local Weather Through Dynamic Adaptation, *NSF Dynamic Data Driven Application Systems (DDDAS) Workshop*, Jan 19-20, 2006.

SERVICE

Boards

Executive Committee NCSA Alliance, 2003-2004
Steering Committee, Open Grid Forum 2005-2007
Bureau of Social Science Research, Indiana University

Membership

Institute of Electrical and Electronics Engineers (IEEE)
Senior Member, Association of Computing Machinery (ACM)

Planning Committee, National Forum for Geosciences Information Technology (FGIT), 2005
Co-lead, NCSA Alliance Scientific Portal Expedition, 2003-2005
Chair, Global Grid Forum NOMCOM, 2004
Co-Chair Global Grid Forum (GGF) Relational Grid Information Systems Group, 2001-2002
Co-Organizer Indiana Women in Computing (inWIC) 2006
Co-Organizer Central Indiana Celebration of Women in Computing (CICWIC) 2004
Program committee Vice Chair 2006 IEEE/ACM International Conference on Grid Computing (Grid06)

Program committees

Int'l Conference for High Performance Computing and Communications (SC07) 2007
2007 Semantic Scientific Knowledge Integration, AAI/SSS Workshop
IEEE Int'l Conference on Information Reuse and Integration 2008
Second Int'l Workshop on Event-driven Architecture, Processing and Systems (EDA-PS'07)
3rd IEEE Int'l Conference on e-Science and Grid Computing 2007

7th IEEE Int'l Symposium on Cluster Computing and the Grid (CCGrid) 2007
IEEE/ACM International Parallel and Distributed Processing Symposium (IPDPS) 2006
Int'l Conference for High Performance Computing and Communications (SC06)
IEEE/ACM Int'l Parallel and Distributed Processing Symposium (IPDPS) 2005
IEEE High Performance Distributed Computing (HPDC) 2002
IEEE Heterogeneous Computing Workshop (HCW) 2002

Session chair

Int'l Conference on Data Engineering (ICDE), Atlanta, GA 2006
IEEE/ACM Int'l Conference on Grid Computing (Grid06) 2006
IEEE High Performance Distributed Computing (HPDC) 2002
ICSA Parallel and Distributed Computing Systems (PDCS) 2002
ICSA Parallel and Distributed Computing Systems (PDCS) 2000

Technical panel reviewer

National Science Foundation
Department of Energy
Department of Homeland Security

External Reviewer

Concurrency and Computation: Practice and Experience.
IEEE Transactions on Parallel and Distributed Processing
Journal of Grid Computing
Future Generation Computer Systems – Elsevier
IEEE Transactions on Knowledge Engineering
ACM Transactions on Database Systems

University Service

University IP Council	2008-09
University Conflict of Interest Committee	2008-09
School of Informatics Dean Search Committee	2006-07
Indiana University Office of Women's Affairs Women in Science Program faculty advisor	2006-07
Midwest Crossroads Alliance for Graduate Education and the Professoriate (AGEP) faculty advisor	2006-07
Faculty Research Support Program review panel member	Spr 2006
Faculty Research Support Program review panel member	Fall 2006
Faculty Research Support Program review panel member	Spr 2005
Restricted and Classified Task Force member	2005-06
University IT search committee for Director of Systems	2005-06
University IT search committee for Director of Applications	2005-06

School Service

Associate Dean of Research	Aug 07 - present
Structure Task Force	Fall 2008
Diversity committee co-chair	2005 – 06
Policy Committee	2005 – 06
School Structure Committee	2005 – 06
Director Center for Data and Search Informatics	2007 – present

Department Service

Founder and faculty advisor Women In Computing @ IU	2002-present
Hiring Committee	2008-09
Ph.D. Qualifiers Committee (chair or member)	2002, 2003, 2004, 2005, 2006, 2007, 2008
Hiring Committee	2004-05
Faculty Advisory Committee	2002-03
Student Computer Systems Seminar	2001-06

PERSONAL

Citizenship: US

Beth A. Plale CV, January 2009

Gender: Female