CURRICULUM VITAE

SUSAN DARLING URBAN
Emeritus Professor
Arizona State University
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EDUCATION

Ph.D.   Computer Science, University of Louisiana at Lafayette, Lafayette, Louisiana, September 1987.
Dissertation: *Constraint Analysis for the Design of Semantic Database Update Operations*
Advisor: Lois M. L. Delcambre
M.S.   Computer Science, University of Louisiana at Lafayette, Lafayette, Louisiana, August 1980.
B.S.   Computer Science, University of Louisiana at Lafayette, Lafayette, Louisiana, December 1976, Graduated with Highest Distinction.

TEACHING AND RESEARCH INTERESTS

Distributed Data Management; Active/Reactive Behavior in Distributed Environments; Complex Event Processing; Data Consistency and Recovery for Service Composition

ACADEMIC EXPERIENCE

2011-2015   Professor, Department of Industrial Engineering, Edward E. Whitacre Jr. College of Engineering, Texas Tech University.

2008-2011   Professor, Department of Computer Science, Edward E. Whitacre Jr. College of Engineering, Texas Tech University.

2008-present   Emeritus Professor, School of Computing and Augmented Intelligence, Ira A. Fulton School of Engineering, Arizona State University.

2001-2007   Professor, School of Computing and Informatics, Ira A. Fulton School of Engineering, Arizona State University.

1994-2001   Associate Professor, Department of Computer Science and Engineering, Ira A. Fulton School of Engineering, Arizona State University.

1989-1994   Assistant Professor, Department of Computer Science and Engineering, Ira A. Fulton School of Engineering, Arizona State University.

1987-1989   Assistant Professor, Electrical and Computer Engineering Department, College of Engineering, University of Miami, Florida.

1986-1987   Research Assistant, Center for Advanced Computer Studies, University of Louisiana at Lafayette.

1984-1985	Part-time Instructor, Computer Science Department, University of Louisiana at Lafayette.
1983-1984	Teaching Assistant, Computer Science Department, University of Louisiana at Lafayette.

INDUSTRY EXPERIENCE

1980-1983	Programmer Analyst, Southern Flow Inc., Lafayette, Louisiana.
1978-1980	Information Analyst, Division of Systems & Computer Services, Medical College of Georgia, Augusta, Georgia.

LEADERSHIP DEVELOPMENT

Graduate of the HERS (Higher Education Resource Services) Institute, University of Denver, 2008. HERS is an intensive leadership and management development program for faculty and administrators in higher education. See http://www.hersnet.org/

JOURNAL EDITORSHIP POSITIONS

Member of the Editorial Board: *Journal of Data Semantics*, Esteban Zimanyi, Editor-in-Chief, August 2011 – present.

Member of the Editorial Board: *Journal of Computing and Information Science in Engineering*, Jami J. Shah, Editor-in-Chief, July 2000 – 2006.

Guest Co-Editor with Ravi Rangan, *Journal of Computing and Information Science in Engineering, Special Issue: From Engineering Information Management to Product Lifecycle Management,* Jami J. Shah, Editor-in-Chief, Dec. 2004.

Guest Co-Editor, with Elisa Bertino*: IEEE Transactions on Knowledge and Data Engineering: Special Issue on Best Papers from the 14th International Conference on Data Engineering*, vol. 12, no. 1, 2000.

Guest Co-Editor, with Elisa Bertino and Elke Rundensteiner, *Theory and Practice of Object Systems: Special Issue Based on the 14th International Conference on Data Engineering*, vol. 5, no. 3 1999.

Member of the Editorial Board: *IEEE Transactions on Knowledge and Data Engineering*, Benjamin Wah, Editor-in-Chief, 1991 to 1995.

Guest Co-Editor, with Forouzan Golshani and Suzanne Dietrich: *International Journal of Integrated Computer-Aided Engineering*, Special Issue on Intelligent Information Systems, vol. 1, no. 4, 1994, pp. 265-277.

Guest Co-Editor, with Elisa Bertino: *Computing Systems Journal, Special Issue on Heterogeneous Database Systems*, vol. 6, no. 3, 1993.

BOOKS AND MONOGRAPHS

Catherine Ricardo, Susan D. Urban, and Karen Davis, *Databases Illuminated*, Fourth Edition, Jones and Bartlett, 2022.

Catherine Ricardo and Susan D. Urban, *Databases Illuminated*, Third Edition, Jones and Bartlett, 2017.

Suzanne W. Dietrich and Susan D. Urban, *Fundamentals of Object Databases: Object-Oriented and Object-Relational Design*, in *Synthesis Lectures on Data Management*, Tamer Ozsu (editor), Morgan-Claypool, http://www.morganclaypool.com/toc/dtm/1/1, 2011.

Suzanne W. Dietrich and Susan D. Urban, *An Advanced Course in Database Systems: Beyond Relational Databases*, Prentice Hall, 2005.

BOOK CHAPTERS (For all publications that follow, students advised are shown in bold)

12.   Susan D. Urban, **Le Gao**, **Rajiv Shrestha**, **Yang Xiao**, **Zev Friedman**, **Jonathan Rodriguez**, "The Assurance Point Model for Consistency and Recovery in Service Composition," *Innovations, Standards, and Practices of Web Services: Emerging Research Topics*, IGI Global, 2012, pp. 250-287.

11.   Susan D. Urban, **Le Gao**, **Rajiv Shrestha**, and **Andrew Courter**, "The Dynamics of Process Modeling: New Directions for the Use of Events and Rules in Service-Oriented Computing," *The Evolution of Conceptual Modeling: From a Historical Perspective towards the Future of Conceptual Modeling*, R. Kaschek and L. Delcambre (editors), Lecture Notes in Computer Science 6520, pp. 205-224, Springer, Heidelberg, 2011.

10.   Susan D. Urban and Suzanne W. Dietrich, "Object Identity," *Encyclopedia of Database Systems*, Tamer Ozsu and Ling Liu (Editors in Chief), Springer, 2009, pp. 1935-1936.

9.   Susan D. Urban and Suzanne W. Dietrich, "Object Data Models," *Encyclopedia of Database Systems*, Tamer Ozsu and Ling Liu (Editors in Chief), Springer, 2009, pp. 1929-1935.

8.   Mary Jo Bitner, Stephen Brown, Michael Goul, and Susan D. Urban, "Services Science Journey: Foundations, Progress, Challenges," in *Service Science, Management and Engineering*, Bill Hefley and Wendy Murphy (editors), Springer, 2008, pp. 227-233. A collection of papers from the *IBM Research Services Science, Management, and Engineering Conference: Education for the 21st Century*, Palisades, New York, October, 2006. (http://www.almaden.ibm.com/asr/summit/).

7.   Susan D. Urban, "Database Models," *Encyclopedia of Electrical and Electronics Engineering*, John G. Webster (editor), John Wiley & Sons, Inc., updated revision of (3) below for the online version, http://www.mrw.interscience.wiley.com/emrw/9780471346081/home, 2007.

6.   Susan D. Urban, Suzanne Dietrich, Amy Sundermier, Yinghui Na, **Ying Jin**, **Sunitha Kamphampati**, "Active Declarative Integration Rules for Developing Distributed Electronic Commerce Applications," *Handbook of Electronic Commerce in Business and Society*, R. Watson, P. Lowry, and J. Cherrington (editors), 2002, pp. 395-421.

5   Susan D. Urban, Suzanne W. Dietrich, **Pablo Tapia**, "Mapping UML Diagrams to Object-Relational Schemas in Oracle 8," *Succeeding with Object Databases*, J. Wiley Publishers, A. Chaudri and R. Zicari (editors), September 2000, pp. 29-51.

4.   Jami. J. Shah, S. Rangaswamy, S. Qureshi, and Susan D. Urban, "Design History System: Data Models and Prototype Implementation," *Knowledge Intensive CAD*, Kluwer Publishing, November, 1999, pp. 91-114.

3.   Susan D. Urban, "Database Models," *Encyclopedia of Electrical and Electronics Engineering*, John G. Webster (editor), John Wiley & Sons, Inc., vol. 4, 1999, pp. 604-629.

2.   Suzanne Dietrich, Saeed Raghabi, **Deborah Krahling**, and Susan D. Urban, "On Acquiring OODBMS Technology: An Industry Perspective and A Case Study Comparison of Versant and Objectivity/DB," in *Object Databases in Practice*, M. Loomis and A. Chaudhuri (eds.), Prentice-Hall, 1998, pp. 193-209.

1.   Susan D. Urban and Billy B. L. Lim, "An Intelligent Framework for Active Support of Database Semantics," in *Advances in Databases and Artificial Intelligence*, vol. 1, JAI Press, Lois M. L. Delcambre and Fred Petry (Editors), 1995, pp. 167-208, reprint of journal publication 5.

REFEREED JOURNAL PUBLICATIONS

37.   **Le Gao**, Susan D. Urban, **Jonathan Rodriguez,** and **Abhijit Warkhade**, "Formal Specification of the Assurance Point Web Service Composition Model," *International Journal of Cooperative Information Systems*, vol. 23, no. 4, Fall 2014, 50 p, http://dx.doi.org/10.1142/S0218843014500075.

36.   **Yang Xiao** and Susan D. Urban, "Using Rules and Data Dependencies for the Recovery of Concurrent Processes in a Service-Oriented Environment," *IEEE Transactions on Services Computing*, vol. 5, no. 1, 2012, pp. 59-71.

35.   **Le Gao**, Susan D. Urban, and **Janani Ramachandran**, "A Survey of Transactional Issues for Web Service Composition and Recovery," *International Journal of Web and Grid Services*, vol. 7, no. 4, 2011, pp. 331-356.

34.   Susan D. Urban, **Ziao Liu**, and **Le Gao**, "Decentralized Communication for Data Dependency Analysis Among Process Execution Agents," *International Journal of Web Services Research*, vol. 8, no. 4, 2011, pp. 1-28.

33.   Susan D. Urban, **Yang Xiao**, **Luther Blake**, and Suzanne W. Dietrich, "Monitoring Data Dependencies in Concurrent Process Execution through Delta-Enabled Grid Services," *International Journal of Web and Grid Services*, vol. 5, no. 1, 2009, pp. 85-106.

32.   **Yang Xiao** and Susan D. Urban, "The DeltaGrid Service Composition and Recovery Model," *International Journal of Web Services Research*, vol. 6, no. 3, 2009, pp. 35-66.

31.   **Yang Xiao** and Susan D. Urban, "Process Dependencies and Process Interference Rules for Analyzing the Impact of Failure in a Service Composition Environment," Invited and extended version of conference paper 61 in the *Journal of Information Science and Technology* (vol. 5, no. 2, pp. 21-45) as a special issue on selected papers from the *10th International Conference on*

Business Information Systems (April 2007, Poznan, Poland), 2008. Only three out of 49 papers were selected to appear in the special issue.

30. Suzanne W. Dietrich, Susan D. Urban, and Susan Haag, "Developing Advanced Courses for Undergraduates: A Case Study in Databases," *IEEE Transactions on Education*, vol. 51, no. 1, February, 2008, pp. 138-144.

29. **Ying Jin**, Susan D. Urban, and Suzanne W. Dietrich, "A Concurrent Rule Scheduling Algorithm for Active Rules," *Data and Knowledge Engineering*, vol. 60, no. 1, March, 2007, pp. 530-546.

28. Suzanne W. Dietrich, Rohini Patil, Amy Sundermier, and Susan Urban, "Component Adaptation for Event-Based Application Integration using Active Rules," *Journal of Systems and Software*, vol. 79, no. 12, December 2006, pp. 1725-1734.

27. **Ying Jin**, Susan D. Urban, and Suzanne W. Dietrich, "Extending the OBJECTIVE Benchmark for Evaluation of Active Rules in a Distributed Component Integration Environment," *Journal of Database Management*, vol. 17, no. 4, Oct-Dec, 2006, pp. 47-69.

26. **Ying Jin**, Susan D. Urban, Suzanne W. Dietrich, Amy Sundermier, "An Integration Rule Processing Algorithm and Execution Environment for Distributed Component Integration," vol. 30, *Informatica*, 2006, pp. 193-212.

25. Susan D. Urban, **Taoufik Ben Abdellatif**, Suzanne W. Dietrich, Amy Sundermier, "Delta Abstractions: A Technique for Managing Database States in Active Rule Processing, *IEEE Transactions on Knowledge and Data Engineering*, 2003, pp. 597-612.

24. **Juan Lavariega** and Susan D. Urban, "An Object Algebra Approach for Multidatabase Query Decomposition in Donaji," *Distributed and Parallel Databases*, vol. 12, 2002, pp. 27-71.

23. Suzanne W. Dietrich, Susan D. Urban, Amy Sundermier, Yinghui Na, **Ying Jin**, **Sunitha Kambhampati**, "A Language and Framework for Supporting an Active Approach to Component-Based Software Integration," *Informatica*, vol. 25, 2001, pp. 443-454.

22. Susan D. Urban, Suzanne Dietrich, **Akash Saxena**, and Amy Sundermier, "Interconnection of Distributed Components: An Overview of Current Middleware Solutions," *Journal of Computing and Information Science in Engineering*, J. Shah (Editor), March 2001, pp. 23-31.

21. Susan D. Urban, **Michael Tjahjadi**, Jami J. Shah, "A Case Study in Mapping Conceptual Designs to Object-Relational Schemas," *Theory and Practice of Object Systems* section of *Concurrency: Practice and Experience*, vol. 12, 2000, pp. 1-45.

20. Andreas Spanias, Susan Urban, Argyris Constantinou, Maya Tampi, Axel Clausen, **Xiaopeng Zhang**, Jeff Foutz and Georgios Stylianou, "Development and Evaluation of a Web-Based Signal and Speech Processing Laboratory for Distance Learning," *Computers in Education Journal*, vol. X, April June 2000, pp. 21-25.

19. Susan D. Urban, **Ling Fu**, Jami J. Shah, "The Implementation and Evaluation of the Use of CORBA in an Engineering Design Application," *Software: Practice and Experience*, vol. 29, no. 14, 1999, pp. 1313-1338.

18.   Susan D. Urban, **Kalyan Ayyaswamy**, **Ling Fu**, Jami J. Shah, Jian Liang, "The Integrated Product Data Environment: Data Sharing Between Diverse Applications in Engineering Design," *International Journal of Computer Integrated Manufacturing*, vol. 12, no. 6, 1999, pp. 525-540.

17.   Jian Liang, Jami Shah, Roshan D'Souza, Susan D. Urban, **Kalyan Ayyaswamy**," Synthesis of Consolidated Data Schema for Engineering Analysis from Multiple STEP Application Protocols," *Computer-Aided Design*, vol. 31, 1999, pp. 429-447.

16.   Susan D. Urban, **Michael Tschudi**, Suzanne Dietrich, **Anton Karadimce**, "Active Rule Termination Analysis: An Implementation and Evaluation of the Refined Triggering Graph Method," *Journal of Intelligent Information Systems*, vol. 12, no. 1, 1999, pp. 27-60.

15.   Suzanne W. Dietrich and Susan D. Urban, "A Cooperative Learning Approach to Database Group Projects: Integrating Theory and Practice," *IEEE Transactions on Education*, Electronic Publication http://wmm.coe.ttu.edu/ieee_trans_ed/nov98/begin.htm, CD-ROM Directory 06, November 1998, 11 pp.

14.   Susan D. Urban, **Anton P. Karadimce**, Suzanne W. Dietrich, Taoufik Ben Abdellatif, and Rene Chan, "CDOL: A Comprehensive Declarative Object Language," *Data and Knowledge Engineering*, vol. 22, 1997, pp. 67-111.

13.   **Alexander Jaehne**, Susan D. Urban, and Suzanne W. Dietrich, "PEARD: A Prototype Environment for Active Rule Debugging," *Journal of Intelligent Information Systems*, Special Issue on Active Database Systems, J. Widom and S. Chakravarthy (editors), vol. 7, no. 2, 1996, pp. 111-128.

12.   Susan D. Urban, Jami J. Shah, **Hong Liu**, **Prasad Ravi**, and Mary Rogers, "The Shared Design Manager: A Flexible Approach to Interoperability in Engineering Design," *Journal of Integrated Computer-Aided Engineering,* vol. 3, no. 3, 1996, pp. 158-177.

11.   Jami J. Shah, **Dae K. Jeon**, Susan D. Urban, Plamen Bliznakov, and Mary Rogers, "Database Infrastructure for Supporting Engineering Design Histories," *Journal of Computer-Aided Design*, vol. 28, no. 5, 1996, pp. 347-360.

10.   Susan D. Urban and **Taoufik Ben Abdellatif**, "Object-Oriented Query Language Access to Relational Databases: A Semantic Framework for Query Translation," *Journal of Systems Integration*, vol. 5, 1995, pp. 123-156.

9.   Susan D. Urban and **Anne M. Wang**, "The Design of a Constraint/Rule Language for an Object-Oriented Data Model," *Journal of Systems and Software*, vol. 28, no. 3, 1995, pp. 203-224.

8.   Susan D. Urban, Jami J. Shah, Mary Rogers, **Dae K. Jeon**, **Prasad Ravi**, and Plamen Bliznakov, "A Heterogeneous, Active Database Architecture for Engineering Data Management," *Journal of Computer Integrated Manufacturing*, vol. 7, no. 5, 1994, pp. 276-293.

7.   Susan D. Urban, **Chiung-hsun C. Lai**, and **Sanjay Saxena**, "The Design and Translation of ORL: An Object Retrieval Language," *Journal of Systems and Software*, vol. 24, no. 2, February 1994, pp. 187-206.

6. Forouzan Golshani, Suzanne Dietrich, and Susan D. Urban, "Intelligent Information Systems," *International Journal of Integrated Computer-Aided Engineering*, vol. 1, no. 4, 1994, pp. 265-277.

5. Susan D. Urban and Billy B. L. Lim, "An Intelligent Framework for Active Support of Database Semantics," *International Journal of Expert Systems*, vol. 6, no. 1, 1993, pp. 1-38.

4. Susan D. Urban, Jami J. Shah and Mary Rogers, "Engineering Data Management: Achieving Integration Through Database Technology," *Computing and Control Engineering Journal*, vol. 4, no. 3, June 1993, pp. 119-126.

3. Susan D. Urban and **Mario Desiderio**, "CONTEXT: A Constraint Explanation Tool," *Data and Knowledge Engineering Journal*, North Holland Publishers, vol. 8, 1992, pp. 153-183.

2. Susan D. Urban and Lois M. L. Delcambre, "Constraint Analysis: Identifying Design Alternatives for Operations on Complex Objects," *IEEE Transactions on Knowledge and Data Engineering*, vol. 2, no. 4, December 1990, pp. 391-400.

1. Susan D. Urban, Joseph E. Urban, and Wayne D. Dominick, "Utilizing an Executable Specification Language for an Information System," *IEEE Transactions on Software Engineering*, vol. SE-11, no. 7, July 1985, pp. 598-605. Invited revision of conference publication 2.

REFEREED CONFERENCE PUBLICATIONS

73. **Emily Featherston**, Mohan Sridharan, Susan D. Urban, Joseph E. Urban, "DOROTHY: Enhancing Bidirectional Communication between a 3D Programming Interface and Mobile Robots," *Proceedings of the Twenty-Eighth {AAAI} Conference on Artificial Intelligence* as part of the *Fifth Symposium on Educational Advances in Artificial Intelligence (EAAI)*, Quebec, City, Canada, July, 2014, pp. 3031-3036.

72. **Samujjwal Bhandari** and Susan D. Urban, "Conjunction, Sequence, and Interval Relations in Event Stream Processing," *Workshop on Advances in Programming Languages, Proceedings of the Federated Conferences on Computer Science and Information Systems*, Krakow, Poland, September, 2013, IEEE Explore, pp. 1539-1544.

71. **David South**, **Shiloh Huff**, **Stephanie Graham**, **Sarah Rainge**, **Austin Ray**, **Kevin Thomas**, **Sabyne Peeler**, **Mary Shuman**, Mohan Sridharan, Susan D. Urban, and Joseph E. Urban, "DOROTHY: Integrating Graphical Programming with Robotics to Stimulate Interest in Computing Careers," *Proceedings of the 2013 Alice Symposium,* Durham, NC, June, 2013.

70. Urban, S., Urban, J., Patterson, P., Marcy, W., Mengel, S. The Software and Systems Engineering Masters Program at Texas Tech University: A Computer Science and Industrial Engineering Collaborative Effort, to appear in the *2012 Proceedings of the American Society for Engineering Education 2012 Annual Conference*, June, 2012.

69. **Gao, L**., Urban, S., **Friedman, Z**., **Rodriguez, J**. Extending the Assurance Point (AP) Approach to Process Recovery for Use with Flow Groups, *Proceedings of the First International Workshop on Workflow Models, Systems, Services, and Applications in the Cloud*, Shanghai, China, May, 2012, pp. 2201-2210.

68. Susan D. Urban, **Andrew Courter**, **Le Gao**, and **Mary Shuman**, "Supporting Data Consistency in Concurrent Process Execution with Assurance Points and Invariants," Rule-Based Modeling and Computing on the Semantic Web, F. Olken, M. Palmirani, D. Sottara (Eds.): RuleML 2011 - America, LNCS 7018, pp. 140-154. ***Best Paper Award***.

67. **Foruhar Ali Shiva** and Susan D. Urban, "On Applying Temporal Database Concepts to Event Queries," Rule-Based Modeling and Computing on the Semantic Web, F. Olken, M. Palmirani, D. Sottara (Eds.): RuleML 2011 - America, LNCS 7018, pp. 171-178.

66. Susan D. Urban, **Le Gao**, **Rajiv Shrestha**, and **Andrew Courter**, "Achieving Recovery in Service Composition with Assurance Points and Integration Rules," *Proceedings of the Cooperative Information Systems Conference* (Crete, Greece) as part of *On the Move (OTM) 2010*, Part 1, Lecture Notes in Computer Science 6426, Springer, Heidelberg, pp. 428-437.

65. Susan D. Urban, **Ziao Liu**, and **Le Gao**, "Data Dependency Analysis for Concurrent Process Execution," *Proceedings of the 2009 Middleware for Web Services Workshop*, Auckland, New Zealand, September, 2009, pp. 74-83, http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=5331971&isYear=2009

64. **Yang Xiao** and Susan D. Urban, "Using Data Dependencies to Support the Recovery of Concurrent Processes in a Service Composition Environment," *Proceedings of the Cooperative Information Systems Conference (COOPIS)*, Monterrey, Mexico, November, 2008, pp. 139-156.

63. Gerald C. Gannod, Janet E. Burge, and Susan D. Urban, "Issues in the Design of Flexible and Dynamic Service-Oriented Systems," *Proceedings of the International Workshop on Systems Development in SOA Environments*, May 2007, Minneapolis, Minnesota.

62. **Yang Xiao** and Susan D. Urban, "Process Dependencies and Process Interference Rules for Analyzing the Impact of Failure in a Service Composition Environment," *Proceedings of the 10th International Conference on Business Information Systems*, April 2007, Poznan, Poland, pp. 67-81.

61. **Yang Xiao**, Susan D. Urban, and **Ning Liao**, "The DeltaGrid Abstract Execution Model: Service Composition and Process Interference Handling," *Proceedings of the International Conference on Conceptual Modeling (ER 2006)*, Tucson, Arizona, November 2006, pp. 40-53.

60. **Yang Xiao**, Susan D. Urban, and Suzanne W. Dietrich, "A Process History Capture System for Analysis of Data Dependencies in Concurrent Process Execution," *Proceedings of the Second International Workshop on Data Engineering in E-Commerce and Services*, San Francisco, California, June 2006, pp. 152-166.

59. Susan D. Urban, **Ingrid Biswas**, Suzanne W. Dietrich, "Filtering Features for a Composite Event Definition Language," *Proceedings of the International Symposium on Applications and the Internet*, Phoenix, Arizona, January 2006, pp. 86-89.

58. Mary Jo Bitner, Stephen Brown, Michael Goul, and Susan D. Urban, "Services Science Journey: Foundations, Progress, Challenges," *Proceedings of the IBM Research Services Science, Management, and Engineering Conference: Education for the 21st Century*, Palisades, New York, October, 2006. (http://www.almaden.ibm.com/asr/summit/).

57. **Hua Ma**, Susan D. Urban, **Yang Xiao**, Suzanne W. Dietrich, "GridPML: A Process Modeling Language and History Capture Systems for Grid Service Composition," *Proceedings of the International Conference on e-Business Engineering*, Beijing, China, October, 2005, pp. 433-440.

56. Susan D. Urban, **Vikram Vasantha**, and Suzanne Dietrich, "A Prototype for Integration of Web Services into the IRules Approach to Component Integration," *Proceedings of the International Conference on Enterprise Information Systems*, Miami, Florida, May 2005, pp. 3-10.

55. Suzanne W. Dietrich, Susan D. Urban, **Hua Ma**, **Yang Xiao** and **Shama Patel**, "Exploring XML for Data Exchange in the Context of an Undergraduate Database Curriculum," *Proceedings of the ACM SIGCSE International Conference on Computer Science Education*, St. Louis, Missouri, February, 2005, pp. 53-57.

54. Susan D. Urban, **Sunitha Kambhampati**, Suzanne Dietrich, **Ying Jin**, Amy Sundermier, "An Event Processing System for Rule-Based Component Integration," *Proceedings of the International Conference on Enterprise Information Systems*, Porto, Portugal, April, 2004. pp. 312-319.

53. Susan D. Urban and Suzanne W. Dietrich, "Using UML Class Diagrams for a Comparative Analysis of Relational, Object-Oriented, and Object-Relational Database Mappings," *Proceedings of the ACM SIGCSE International Conference on Computer Science Education*, Reno, Nevada, February 2003, pp. 21-25.

52. **Ying Jin**, Susan D. Urban, Amy Sundermier, Suzanne W. Dietrich, An Execution and Transaction Model for Active, Rule-Based Component Integration, *Proceedings of the Engineering and Deployment of Cooperative Information Systems*, Beijing, China, September 2002, pp. 403-417.

51. **Ying Jin**, Susan D. Urban, and Suzanne W. Dietrich, "An Architecture and Execution Environment for Component Integration Rules, In Kotlarsky, Hinze (Editors): *Proceedings of the 9th Doctoral Consortium at the CAiSE*02*, Toronto, Ontario, Canada, 27-28 May 2002, published as Technical Report No B 02-13, Institute of Computer Science, Freie Universität Berlin, May 2002 (http://www.inf.fu-berlin.de/inst/pubs/tr-b-02-13.abstract.html).

50. Suzanne W. Dietrich, Susan D. Urban, and **Ion Kyriakides**, "JDBC Demonstration Courseware Using Servlets and Java Server Pages," *Proceedings of the ACM SIGCSE International Conference on Computer Science Education*, Covington, Kentucky, February 2002, pp. 266-270.

49. Susan D. Urban, **Akash Saxena**, Suzanne W. Dietrich, and Amy Sundermier, "An Evaluation of Distributed Computing Options for the Integration of Black-Box Software Components," *Proceedings of the Third International Workshop on Advanced Issues of E-Commerce and Web-based Information Systems*, San Jose, California, June 2001, pp. 100-109.

48. Susan D. Urban, Suzanne Dietrich, Yinghui Na, **Ying Jin**, Amy Sundermier, and **Akash Saxena**, "The IRules Project: Using Active Rules for the Integration of Distributed Software Components," *Proceedings of the 9th IFIP Working Conference on Database Semantics: Semantic Issues in E-Commerce Systems*, Hong Kong, April 2001, pp. 265-286.

47. Susan D. Urban and Suzanne W. Dietrich, "Advanced Database Concepts for Undergraduates: Experience with Teaching a Second Course," *Proceedings of the ACM SIGCSE International*

Conference on Computer Science Education, Charlotte, North Carolina, February 2001, pp. 357-361.

46.   Dietrich, S. W., Suceava, D. Cherukuri, C., and Urban S. D., "A Reusable Graphical Interface for Manipulating Object-Oriented Databases using Java and XML," *Proceedings of the ACM SIGCSE International Conference on Computer Science Education*, Charlotte, North Carolina, February 2001, pp 362-366.

45.   Andreas Spanias, Susan Urban, Argyris Constantinou, Maya Tampi, Axel Clausen, **Xiaopeng Zhang**, Jeff Foutz and Georgios Stylianou, "Development and Evaluation of a Web-Based Signal and Speech Processing Laboratory for Distance Learning," *Proceedings of the IEEE International Conference on Acoustics Speech and Signal Processing*, vol. VI, Instanbul, Turkey, June 2000, pp. 3534-3537.

44.   Andreas Spanias, Susan Urban, Argyris Constantinou, Maya Tampi, Axel Clausen, **Xiaopeng Zhang**, Jeff Foutz and Georgios Stylianou, "A Virtual Digital Signal Processing Laboratory, *Proceedings of the International Conference on Simulation and Multimedia in Engineering Education*, San Diego, California, January 2000, pp. 196-201.

43.   **Taoufik Ben Abdellatif**, Hon Wai Rene Chan, Suzanne W. Dietrich, Babu Siddabathuni, Amy Sundermier, and Susan D. Urban, "Meta-Data Components in Support of an Active Deductive Object-Oriented Database System," *Proceedings of the 3rd IEEE Meta-Data Conference*, Bethesda, Maryland, On-line publication: http://computer.org/conferen/proceed/meta/1999/, paper #16, 1999.

42.   Babu Siddabathuni, Suzanne W. Dietrich, and Susan D. Urban, "An AQUA-based Intermediate Language for Evaluating an Active Deductive Object-Oriented Language," *Proceedings of the 1st International Workshop on Practical Aspects of Declarative Languages*, San Antonio, Texas, January 1999, pp. 163-177.

40.   Jami J. Shah, S. Rangaswamy, Sohail Qureshi, Susan Urban, "Formal Ontologies and Representation of Design Processes and Rationale: A Step Towards Intelligent CAE", *Proceedings of the IFIP WG 5.2 Conference*, Tokyo, Japan, 1998, pp 161-194.

40.   Henri Naccache, Timothy Lindquist, and Susan D. Urban, "A Framework and Reusable Tools for Developing Interactive Course Web Sites," *Proceedings of the Frontiers in Education Conference*, Tempe, Arizona, November 1998, pp. 85-89.

39.   **Juan Lavariega** and Susan D. Urban, "Donaji: A Semantic Architecture for Multidatabase Systems," *Proceedings of the Workshop in Intelligent Information Integration*, England, August 1998, pp. 39-54.

38.   **Lorena Gomez** and Susan D. Urban, "Integrity Constraint Enforcement in a Multidatabase Using Distributed Active Rules," *Proceedings of the IFIP WG 11.5 Working Conference on Integrity and Control in Information Systems*, Warrenton, Virginia, November 1998, pp. 19-40.

37.   Sohail Qureshi, Jami J. Shah, K. Sunderarajan, Susan D. Urban, Ed Harter, Claudio Parazzoli, and Tom Bluhm, "A Framework for Providing an Integrated View of Electromechanical Product Design," *Proceedings of the Information, Graphics, Visualization, and Usability Conference*, Atlanta, Georgia, May, 1997.

36. Amy Sundermier, **Taoufik Ben Abdellatif**, Suzanne W. Dietrich, and Susan D. Urban, "Object Deltas in an Active Database Development Environment," *Proceedings of the International Conference on Deductive and Object-Oriented Databases*, in *Lecture Notes in Computer Science*, No. 1341, Switzerland, December 1997, pp. 211-228.

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34. Sohail M Qureshi, Jami J. Shah, Susan D. Urban, Ed Harter, Claudio Parazzoli, Tom Bluhm, "Integrated Model to Support Archival of Design Process History Databases," *Proceedings of the ASME 1997 Design Engineering Technical Conferences*, Sacramento, California, September 1997, 14 p., CD-ROM index no. DETC97/DTM-3876.

33. **Michael K. Tschudi**, Susan D. Urban, Suzanne W. Dietrich, and **Anton P. Karadimce**, "An Implementation and Evaluation of the Refined Triggering Graph Method for Active Rule Termination Analysis," *Proceedings of the 3rd International Workshop on Rules in Databases*, in *Lecture Notes in Computer Science*, No. 1312, Springer-Verlag, Skovde, Sweden, June 1997, pp 133-148.

32. Hon Wai Rene Chan, Suzanne W. Dietrich, Susan D. Urban, "On Control Flow Testing of Active Rules in a Declarative Object-Oriented Framework," *Proceedings of the 3rd International Workshop on Rules in Databases*, in *Lecture Notes in Computer Science*, No. 1312, Springer-Verlag, Skovde, Sweden, June 1997, pp 165-180.

31. Susan D. Urban and Suzanne W. Dietrich, "Integrating the Practical Use of a Database Product Into a Theoretical Curriculum," *Proceedings of the ACM Conference on Computer Science Education*, San Jose, California, February 1997, pp. 121-125.

30. Plamen Bliznakov, Jami Shah, and Susan D. Urban, "Integration Infrastructure to Support Concurrence and Cooperation in Engineering Design," *Proceedings of the 1996 ASME Design Engineering Technologies Conferences: Engineering Information Management Symposium*, August, Irvine, California, 1996, 10 p., CD-ROM index no. 96-DETC/EIM-1420. Received the Best Paper Award.

29. **Daniel Callen** and Susan D. Urban, "Consolidation of Query Results in a Multidatabase Environment: An Object-Oriented Approach," *Proceedings of the IEEE Computer Society Computer Software and Applications Conference*, Seoul, Korea, August 1996, pp. 367-372.

28. **Dae K. Jeon**, Susan D. Urban, Jami J. Shah, **Hong Liu**, Plamen Bliznakov, and Mary Rogers, "Metadata Extensions to an Object-Oriented Data Model for the Dynamic Capture of Engineering Design Histories," *Proceedings of the IFIP TC-2 Working Conference on Database Semantics (DS-6)*, Stone Mountain, GA, May 1995, Chapman and Hall, London, 1996, pp. 573-600.

27. **Anton P. Karadimce** and Susan D. Urban, "Refined Triggering Graphs: A Logic-Based Approach to Termination Analysis in an Active Object-Oriented Database," *Proceedings of the Twelfth International Conference on Data Engineering*, New Orleans, Louisiana, February 1996, pp. 384-391.

26. Suzanne W. Dietrich and Susan D. Urban, "Database Theory in Practice: Learning From Cooperative Group Projects," *Proceedings of the ACM SIGCSE 1996 Technical Symposium*, Philadelphia, Pennsylvania, February 1996, pp. 112-116.

25. Plamen Bliznakov, Jami J. Shah, **Dae K. Jeon**, and Susan D. Urban, "Design Information System Infrastructure to Support Collaborative Design in a Large Organization," *Proceedings of the ASME Design Automation Conference,* Boston, Massachusetts, September 1995, pp. 1-8.

24. Susan D. Urban, Jami J. Shah, and **Prasad Ravi**, "Interoperability in a Heterogeneous Environment for Engineering Design," *Proceedings of the Eighteenth Annual International Computer Software and Applications Conference*, Taipei, Taiwan, November 1994, pp. 387-394.

23. Susan D. Urban and **Taoufik Ben Abdellatif**, "An Object-Oriented Interface to Relational Databases in a Heterogeneous Database Environment," *Proceedings of the IEEE Computer Society 1994 Distributed Computing Systems Conference*, Poznan, Poland, June 1994, pp. 387-395.

22. **Anton P. Karadimce** and Susan D. Urban, "Conditional Term Rewriting as a Formal Basis for Analysis of Active Database Rules," *Proceedings of the IEEE Computer Society Fourth International Workshop on Research Issues in Data Engineering: Active Database Systems*, Houston, Texas, February 1994, pp. 156-162.

21. **Dae K. Jeon**, Susan D. Urban, and Jami J. Shah, "Process Modeling Aspects of a Design History Data Model," *Proceedings of the ASME 1994 Software Systems in Engineering Symposium*, January 1994, pp. 209-218.

20. Jami J. Shah, Susan D. Urban, and **Siva Raghapathy**, "Bi-Directional Communication Between Synergetic Design Systems," *Proceedings of the IFIP TC5 Working Group 5.2 /5.3 Conference Towards World Class Manufacturing*, Phoenix, Arizona, October, 1993, M. Wozny and G. Olling (Editors), Elsevier Publishers, 1994, pp. 275-297.

19. Jami J. Shah, Plamen Bliznakov, and Susan D. Urban, "Development of a Machine Understandable Design Process Representation Language," *Proceedings of the ASME Design Theory Conference*, Albuquerque, New Mexico, September 1993, pp. 15-24.

18. Susan D. Urban and Suzanne W. Dietrich, "A Deductive, Object-Oriented Model as a Formal Framework for Active Database Environments," *Proceedings of the Workshop on Combining Declarative and Object-Oriented Databases*, Washington, D.C., May 1993, pp. 101-110.

17. Susan D. Urban, Jami J. Shah, and Mary Rogers, "An Overview of the ASU Engineering Database Project: Interoperability in Engineering Design," *Proceedings of the 3rd International Workshop on Research Issues in Data Engineering: Interoperability in Multidatabase Systems*, Vienna, Austria, April 1993, pp. 73-76.

16. **Anton Karadimce** and Susan D. Urban, "CDOL: A Declarative Platform for Developing OODB Applications," *Proceedings of the IEEE Twelfth International Phoenix Conference on Computers and Communications*, Tempe, Arizona, March 1993, pp. 224-230.

15. **Anton Karadimce** and Susan D. Urban, "A Framework for Declarative Update and Constraint Maintenance in Object-Oriented Databases," *Proceedings of the Ninth International Conference on Data Engineering*, Vienna, Austria, April, 1993, pp. 391-398.

14. Susan D. Urban, **Chiung-hsun Chen Lai**, and **Sanjay Saxena**, "ORL: An Object Retrieval Language Interface to an Object Algebra," *Proceedings of the Sixteenth Annual International Computer Software and Applications Conference*, Chicago, Illinois, September 1992, pp. 176-181.

13. Jami J. Shah, Susan D. Urban, **Siva P. Raghupathy**, and Mary T. Rogers, "Synergistic Design Systems," *Proceedings of the ASME Computers in Engineering Conference*, San Francisco, California, August 1992, pp. 283-290.

12. Susan D. Urban, **Mario Desiderio**, and Lois M. L. Delcambre, "Explanation Trees in CONTEXT: A Constraint Explanation Tool," *Proceedings of the Eleventh International Phoenix Conference on Computers and Communications*, March 1992, Scottsdale, Arizona, pp 364-371.

11. Susan D. Urban and **Kimberly Chalmers**, "An Investigation of the View Update Problem for Object-Oriented Views," *Proceedings of the Eleventh International Phoenix Conference on Computers and Communications,* March 1992, Scottsdale, Arizona, pp 156-163.

10. Susan D. Urban, **Anton Karadimce**, and **Ravi Nannapaneni**, "The Implementation and Evaluation of Integrity Maintenance Rules in an Object-Oriented Database," *Proceedings of the Eighth International Conference on Data Engineering*, February 1992, Tempe, Arizona, pp. 565-572.

9. Lois M. L. Delcambre, Billy B. L. Lim, and Susan D. Urban, "Object-Centered Constraints," *Proceedings of the Seventh International Conference on Data Engineering*, April 1991, Kobe, Japan, pp. 368-377.

8. Susan D. Urban and **Mario Desiderio**, "Translating Constraints to Rules in CONTEXT: A Constraint Explanation Tool," *Proceedings of the IFIP Working Conference on Database Semantics. Object-Oriented Databases: Analysis, Design and Construction*, Windermere, United Kingdom, July 1990. Published by North-Holland, R. A. Meersman, S. Khosla, and W. Kent (Eds.), 1991, pp. 373-392.

7. Susan D. Urban, "ALICE: An Assertion Language for Integrity Constraint Expression," *Proceedings of the Thirteenth International Annual Computer Software and Applications Conference*, Orlando, Florida, September 1989, pp. 292-299.

6. Susan D. Urban and Lois M. L. Delcambre, "Constraint Analysis for Specifying Perspectives of Class Objects," *Proceedings of the Fifth International Conference on Data Engineering*, Los Angeles, California, February 1989, pp. 10-17.

5. Susan D. Urban and Lois M. L. Delcambre, "Constraint Analysis: A Tool for Explaining the Semantics of Complex Objects," *Proceedings of the Second International Workshop on Object-Oriented Database Systems*, Bad Munster am Stein, West Germany, September 1988, in *Lecture Notes in Computer Science*, Goos, G. and Hartmanis, J. (Eds.), Springer-Verlag, vol. 334, pp. 156-160.

4. Susan D. Urban and Lois M. L. Delcambre, "Perspectives of a Semantic Schema," *Proceedings of the Third International Conference on Data Engineering,* Los Angeles, California, February 1987, pp. 485-492.

3. Susan D. Urban and Lois M.L. Delcambre, "An Analysis of the Structural, Dynamic, and Temporal Aspects of Semantic Data Models," *Proceedings of the Second International Conference on Data Engineering*, Los Angeles, California, February 1986, pp. 382-389.

2. Susan D. Urban, Joseph E. Urban and Wayne D. Dominick, "Utilizing an Executable Specification Language for an Information System," *Proceedings of the First International Conference on Data Engineering*, Los Angeles, California, April 1984, pp. 348-355. Invited revision appears as journal publication 1.

1. Richard E. Pogue and Susan D. Urban, "Authoring Systems - Not Programming Languages," *Proceedings of the Annual Conference of the Association for the Development of Computer-Based Instructional Systems*, Atlanta, Georgia, March 1981.

PUBLICATIONS REFEREED ON ABSTRACT

2. **Anton Karadimce** and Susan D. Urban, "Diagnosing Anomalous Rule Behavior in Deductive, Databases with Integrity Maintenance Production Rules," *Proceedings of the Third International Workshop on Foundations of Models and Languages for Data and Objects,* Aigen, Austria, September, 1991, pp. 77-102.

1. Susan D. Urban, "A Semantic Framework for Heterogeneous Database Environments," *Proceedings of the First International Workshop on Interoperability in Multidatabase Systems,* Kyoto, Japan, April 1991, pp. 156-163.

INVITED PUBLICATIONS

3. **Juan Lavariega** and Susan D. Urban, "Global Object Identification in the Donaji Multidatabase Environment, *Proceedings of the Fourth International Business Information Systems Conference*, Poznan, Poland, April, 2000, pp. 147-171.

2. Suzanne W. Dietrich, Susan D. Urban, John V. Harrison, and **Anton P. Karadimce**, "A DOOD Ranch at ASU: Integrating Active, Deductive, and Object Oriented Databases," *Data Engineering Bulletin, Special Issue on Active Database Systems*, vol. 15, no. 1-4, December, 1992, pp. 40-43.

1. Susan D. Urban and **Jian Wu**, "Resolving Semantic Heterogeneity Through the Explicit Representation of Data Model Semantics," *ACM SIGMOD RECORD: Special Issue on Semantic Issues in Multidatabase Systems*, December 1991, vol. 20, no. 4, pp. 55-58.

UNREFEREED PUBLICATIONS

17. Susan D. Urban, Suzanne W. Dietrich, and Yi Chen, "An XML Framework for Integrating Continuous Queries, Composite Event Detection, and Database Condition Monitoring for Multiple Data Streams," Dagstuhl Online Proceedings of the Event Processing Seminar, http://drops.dagstuhl.de/portals/index.php?semnr=07191 May 6-11, 2007.

16. Susan D. Urban, "Services Science, Management, and Engineering: A Computing Perspective," Essay, *Workshop on Education for Service Innovation*, April, 2006, National Academy of

Engineering, Sponsored by NSF, U.S. Department of Commerce, and IBM Research. (http://www.almaden.ibm.com/asr/SSME/esi/index.shtml).

15. Susan D. Urban and Suzanne W. Dietrich, "Active Declarative Integration Rules For Developing Distributed Multi-tiered Applications," Project Report, *NSF 2002 Information and Data Management Workshop*, Arlington, Virginia, May 2002 (http://www.cs.umbc.edu/idm02/).

14. Susan D. Urban and Suzanne W. Dietrich, "Active Declarative Integration Rules For Developing Distributed Multi-tiered Applications," Project Report, *NSF 2001 Information and Data Management Workshop*, Fort Worth, Texas, April 2001 (http://itlab.uta.edu/idm01/).

13. Susan D. Urban and Suzanne W. Dietrich, "Active Declarative Integration Rules For Developing Distributed Multi-tiered Applications," Project Report, *NSF 2000 Information and Data Management Workshop*, Chicago, Illinois, March 2000 (http://boston.cwru.edu/idm00/PIReports.htm).

12. Nick Belkin and Susan D. Urban, "Languages, Data Models, and Application Models," *1999 NSF Information and Data Management Workshop: Research Agenda for the 21st Century*, Los Angeles, California, March 1999 (http://www.cs.ucla.edu/csd/IDM99/FinalReports).

11. Susan D. Urban and Suzanne Dietrich, "A Development Environment for Active Database Systems: Testing and Analysis of Active Database Rules," Project Report, *NSF 1999 Information and Data Management Workshop: Research Agenda for the 21st Century*, Los Angeles, California, March 1999. (http://www.cs.ucla.edu/csd/IDM99/IDM99Proceedings.htm).

10. Susan D. Urban and Suzanne Dietrich, "A Development Environment for Active Database Systems: Testing and Analysis of Active Database Rules," Project Report, *NSF 1998 Information and Data Management Workshop*, Washington, D. C., March 1998. (http://www.cs.pitt.edu/~panos/idm98).

9. Susan D. Urban, Suzanne W. Dietrich, and Forouzan Golshani, "Database Research at Arizona State University," *ACM SIGMOD RECORD*, March 1996, vol. 25, no. 1, March 1996, pp. 99-104.

8. Jami J. Shah, Susan D. Urban, Plamen Bliznakov, **Dae Jeon**, and Mary Rogers, "Design Histories: Representing the Design Process in a Database," *Proceedings of the 1995 NSF Design and Manufacturing Systems Grantees Workshop*, San Diego, California, January 1995, pp. 559-560.

7. Jami J. Shah and Susan D. Urban, "Design Histories: Representing the Design Process in a Database," *Proceedings of the 1994 NSF Design and Manufacturing Systems Grantees Workshop*, Cambridge, Massachusetts, January 1994, pp. 101-102.

6. Susan D. Urban and Jami J. Shah, "A Heterogeneous Database Architecture for Integration in Engineering Design," *Proceedings of the 1994 NSF Design and Manufacturing Systems Grantees Workshop*, Cambridge, Massachusetts, January 1994, pp. 731-732.

5. Susan D. Urban and Jami J. Shah, "Infrastructure for Integrated, Heterogeneous Engineering Databases and Design Histories," *Proceedings of the NSF Scientific Databases Projects: AAAS Workshop on Advances in Data Management for the Scientist and Engineer*, Boston, Massachusetts, February 1993, pp. 41-46.

4.   Susan D. Urban and Jami J. Shah, "Interoperability Research Issues for Heterogeneous Engineering Design Data," *Proceedings of the 1993 NSF Design and Manufacturing Systems Grantees Workshop*, Charlotte, North Carolina, January 1993, pp. 1843-1846.

3.   Jami J. Shah and Susan D. Urban, "Functional Requirements for Capturing Design Histories," *Proceedings of the 1993 NSF Design and Manufacturing Systems Grantees Workshop*, Charlotte, North Carolina, January 1993, pp. 1831-1836.

2.   Forouzan Golshani, Suzanne Dietrich, and Susan D. Urban, "Current Trends in Databases," *Proceedings of the Bull Users Society Conference,* Phoenix, Arizona, May 1991, pp. 362-366.

1.   Susan D. Urban and Lois M. L. Delcambre, "Automated Support for the Explanation of Constraints in Object-Oriented Design," *Computer-Aided Software Engineering Workshop Advanced Working Papers*, Boston, Massachusetts, July 1988, pp. 27/30-27/35.

TECHNICAL REPORTS

8.   Susan D. Urban, Amy Unruh, Gale Martin, and Marian Nodine*, Expressing Composite Events in InfoSleuth*, Microelectronics and Computer Technology Corporation, Technical Report #MCC-INSL-131-98, December 1998.

7   Jami J. Shah and Susan D. Urban, *Integrated Product Data Environment: Final Report*, Technical Report # DAL/RaDEO/98-05, Department of Mechanical and Aerospace Engineering, Arizona State University, October 1998.

6.   Susan D. Urban, **Kalyan Ayyaswamy**, **Ling Fu**, **Rajiv Kaki**, Jami Shah, Jian Liang, Ed Harter, Tom Bluhm, and Brett Hartman, *Technical Guide to the Integrated Product Data Environment*, RaDEO Project Technical Report, Department of Computer Science and Engineering, Arizona State University, August 1998.

5.   **Rajiv Kaki**, Susan D. Urban, and **Kalyan Ayyaswamy**, *A Guide to the Use of the Domain Access Interface of the Integrated Product Data Environment*, RaDEO Project Technical Report, Department of Computer Science and Engineering, Arizona State University, August 1998.

4.   Susan D. Urban, Jami J. Shah, **Juan Lavariega**, **Michael Tjahjadi**, and Jian Liang*, IPDE Prototype 1B: SDM System Specifications*, RaDEO Project Technical Report, Department of Computer Science and Engineering, Arizona State University, March 1997, 52 p.

3.   Jami J. Shah, Susan D. Urban, Mary T. Rogers, Plamen Bliznakov, **Dae K. Jeon, Siva Raghupathy**, Govind Balakrishnan, and **Prasad Ravi**, *Infrastructure for Integrated, Heterogeneous Engineering Databases and Design Histories*, Year One Progress Report of NSF Grant No. 9117143, Technical Report No. MAE/DAC/93-1.

2.   Andreas Heuer, Gunter Saake, Catriel Beeri, and Susan D. Urban, *Formal Aspects of Object Base Dynamics*, Dagstuhl Seminar Report no. 9317, April, 1993.

1.   Susan D. Urban, **Mario Desiderio**, **Shashi Seth**, and **Goulin Deng**, *The Feasibility of Applying Constraint Analysis to Commercial Object-Oriented Database Systems*, Final Report, Florida

High Technology and Industry Council, Grant No. 578SB03, Electrical and Computer Engineering Department, University of Miami, July 1989, 35 p.

EXTERNAL RESEARCH GRANTS

National Science Foundation, "REU Site: Research Experiences for Undergraduates in Cybersecurity, Robotics, and Software Engineering," Principal Investigator: Susan D. Urban, Co-Principal Investigator: Joseph E. Urban, Mohan Sridharan, and Yong Chen, Grant No. CNS-1263183, $357,338, 2013, 3 year award.

National Science Foundation, "An Innovative Interdisciplinary Cybersecurity Education Program for Protecting Critical Infrastructure," Principal Investigator: Joseph E. Urban, Co-Principal Investigators: Susan D. Urban, Vittal Rao, Sunho Lim, and Qing Hui, Grant No. DUE-1241735, $299,966, 2012, 3 year award.

National Science Foundation, "MRI – Development of Real Time Simulator for Smart Grid Systems Integrated with Distributed Renewable Energy Sources," Principal Investigator: Vittal Rao, Co-Principal Investigators: Susan Urban, Qing Hui, and Stephen Bayne, Senior Personnel: Michael Giesselmann, Changzhi Li, Bijoy Ghosh, Clyde Martin, Michael Shin, Sunho Lim, and Michael Gilberson, Grant No. ECCS-1040161, $415,000 plus $177,900 institutional cost share, 2010, 3 year award.

National Science Foundation, "REU Site: Research Experience for Undergraduates in Software Engineering and Service Composition," Principal Investigator: Susan D. Urban, Co-Principal Investigators: Michael Shin and Mohan Sridharan, Grant No. CNS-1005212, $356,583, May 1, 2010, 3 year award.

National Science Foundation, "SRS: A Decentralized and Rule-Based Approach to Data Dependency Analysis and Failure Recovery in Service-Oriented Environments," Principal Investigator: Susan D. Urban, Grant No. CCF-0820152, $328,331, June, 2008, 3 year award. REU Supplement in 2008 for $11,250. REU Supplement in 2010 for $15,000.

National Science Foundation, "Advanced Database Concepts for Undergraduates," Principal Investigator: Suzanne W. Dietrich, Co-Principal Investigator: Susan D. Urban, Grant No. DUE-9980417, $209,999, January 2000, 3 year award.

National Science Foundation, "Active Declarative Rules for Developing Distributed Multi-Tiered Applications," Principal Investigator: Susan D. Urban, Co-Principal Investigator: Suzanne W. Dietrich, Grant No. IIS-9978217, $435,000, October 1999, 3 year award.

Defense Advanced Research Projects Agency, "Integrated Product Data Environment," Principal Investigator: Jami J. Shah, Co-Principal Investigator: Susan D. Urban, Subcontractor to Boeing Defense and Space Group, Project Agreement No. 96001, $531,429, June 1996, 2 year award.

National Science Foundation, "A Development Environment for Active Database Systems: Testing and Analysis of Active Database Rules," Principal Investigator: Susan D. Urban, Co-Principal Investigator: Suzanne W. Dietrich, Grant No. IRI-9410993, $280,000, June 1995, 3 year award.

National Science Foundation, Education and Human Resources Program, "Database Laboratory Instruction for Undergraduates: A Cooperative Learning Approach," Principal Investigator:

Suzanne W. Dietrich, Co-Principal Investigator: Susan D. Urban, Grant No. DUE-9451489, $105,117, July 1994, 3 year award.

Bull Worldwide Information Systems, "An Object-Oriented Interface for Interconnection of Relational Databases," Principal Investigator: Susan D. Urban, CRT 4446, $12,531, January 1992, 1 year award.

National Science Foundation, Scientific Databases Program, "Infrastructure for Integrated, Heterogeneous Engineering Databases and Design Histories," Principal Investigator: Jami J. Shah, Co-Principal Investigator: Susan D. Urban, Grant No. IRI-9117143, $254,294, January 1992, 3 year award. REU Supplement in 1994 for $12,438.

National Science Foundation, Research Opportunities for Women Program, Career Advancement Award, "An Investigation of Cyclic Rule Behavior in Integrity Maintenance Rules," Principal Investigator: Susan D. Urban, Grant No. IRI-9109195, $56,191, September 1991, 1 year award.

Florida High Technology and Industry Council, "Object-Oriented Systems: Integrating Languages and Database Systems," Principal Investigator: Susan D. Urban, Grant No. 578SB03, $19,625, University of Miami, January 1989, 1 year award.

National Science Foundation, Research Initiation Grant, "The Active Use of Constraints in the Design of Object-Oriented Database Applications," Principal Investigator: Susan D. Urban, Grant No. IRI-8810640, $69,772, University of Miami, July 1988. Transferred to Arizona State University as Grant No. IRI-8996260, August, 1989, 2 year award.

INDUSTRY GIFTS

Microsoft Research Content and Curriculum Program, "Incorporating Object-Oriented and Web-Based Features of Microsoft SQL Server (Yukon) into an Advanced Database Course for Undergraduates," Unrestricted Gift, $30,000, Jan. 16, 2004 – Dec 15, 2004.

Microsoft Research, "Advanced DB Concepts and .NET," Principal Investigator: Suzanne W. Dietrich, Co-Principal Investigator: Susan D. Urban, Unrestricted gift to support investigation of ADO.NET and ASP.NET for use in advanced undergraduate database education, $20,000, June 2002.

Microsoft Corporation, "Databases and the Web: Using Microsoft SQL Server and Visual InterDev," Principal Investigator: Suzanne W. Dietrich, Co-Principal Investigator: Susan D. Urban, Unrestricted gift to support development of an advanced undergraduate database course, $15,000, July 1999.

INTERNAL RESEARCH GRANTS AND AWARDS

Arizona State University, TRIPS Award supporting travel to NSF in Arlington, VA and to the Workshop on Service Innovation (sponsored by NSF, U.S. Department of Commerce, and IBM Research) at the National Academy of Engineering in Washington, D.C., $1164, April, 2006.

Arizona State University, Center for Research on Education in Science, Mathematics, Engineering, and Technology, "Databases and the Web: Using Microsoft SQL Server and Visual InterDev," Principal Investigator: Suzanne Dietrich, Co-Principal Investigator: Susan D. Urban, $3000, Fall 1999.

Arizona State University, Department of Computer Science and Engineering, "Active Distributed Processing Environments: Applications in the Development of Virtual Engineering Integration Environments," Principal Investigator: Susan D. Urban, $8484, January 1999, 6 month award.

Arizona State University, Subcommittee on Multidisciplinary Initiatives, "Multidisciplinary Research on the Next Generation Multimedia Technologies for Interactive Distributed Learning," Principal Investigator: Andreas Spanias plus 13 Co-Investigators (including S. Urban), $150,000, January 1997, 3 year award.

Arizona State University, Aerospace Research Center, AlliedSignal Seed Project, "Engineering Design Databases: Integrating Heterogeneous Components," Principal Investigator: Susan D. Urban, $8,000, September 1991, 1 year award.

Arizona State University, TRIPS Award supporting travel to Software Engineering Research Consortium Summer Workshop (Tampa, FL), $544, August 1991.

Arizona State University, TRIPS Award supporting travel to U. S. West (Denver, CO), $611, January, 1991.

Arizona State University, Research Assistantship Award, "Transaction Processing in Active Database Systems," $12,667, July, 1990, 1 year award.

Arizona State University, Faculty Grant in AID Award, "Investigating Rules and Transactions in Active Database Management Systems," $3,000, January, 1990, 1 year award.

University of Miami, General Research Support Award, $2000, November 1987, 1 year award.

University of Miami, Research Initiation Grant, $2700, October 1987, 1 year award.

TUTORIALS AND WORKSHOPS

Susan D. Urban, *Advanced Data Modeling for Designing Relational, Object-Relational and Object-Oriented Database Applications*, A three-day course presented at the Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM) in Monterrey, Mexico, July, 2006.

Suzanne W. Dietrich and Susan D. Urban, Organized a Birds-of-a-Feather Session, entitled *Database Education: Where are we now?* at the *ACM SIGCSE Conference on Computer Science Education,* Norfolk, Virginia, February 2004.

Susan D. Urban and Suzanne W. Dietrich, *A Database Perspective of UML Class Diagrams*, a full-day tutorial presented at the *ACM SIGCSE International Conference on Computer Science Education*, Covington, Kentucky, February 2002.

Susan D. Urban, *Distributed Heterogeneous Database Systems*, a full-day tutorial presented at the *IEEE International Computer Software and Applications Conference*, Taipei, Taiwan, November 1994.

INVITED PRESENTATIONS

27.   "How to Run a Successful REU Site Program," NSF Showcase, *ACM SIGCSE Conference*, Raleigh, NC, March, 2012.

26.   "Monitoring Data Dependencies to Support Recovery in Concurrent Process Execution," Keynote Address, presented at the *Thirteenth International EDOC Conference*, Auckland, New Zealand, September, 2009.

25.   "Monitoring Data Dependencies to Support Recovery in Concurrent Process Execution," Department Seminar, presented at Texas Tech University, Department of Computer Science, March 2009.

24.   "Monitoring Data Dependencies to Support Recovery in Concurrent Process Execution," Invited Seminar, presented at the University of West Florida, Department of Computer Science, February, 2009.

23.   "A Vision for Event Processing Technology in 2018: Roadmap for Research Directions," Keynote Address presented at the *EPTS Fourth Event Processing Symposium*, Stamford, Connecticut, September, 2008.

22.   "Research Directions for the Specification, Semantics, and Optimization of a Stream Composite Event Definition Language for Distributed Event Stream Processing," presented at the *EPTS Fourth Event Processing Symposium*, Stamford, Connecticut, September, 2008.

21.   "A Historical View of Conceptual Modeling: From ER to UML to OWL and Beyond," presented at the *Evolution of Conceptual Modeling Seminar*, Dagstuhl, Germany, April 27-30, 2008.

20.   "An Overview of the DeltaGrid Project: A Transactional Framework for Recovery of Concurrent Process Execution in a Service Composition Environment," Presented at the Poznan University of Economics, Poznan, Poland, April, 2007.

19.   "An Overview of the DeltaGrid Project: Using Delta-Enabled Grid Services to Analyze Data Dependencies and Semantic Correctness in the Recovery of Concurrent Process Execution," Presented at the Instituto Tecnologico y de Estudios Superiores de Monterrey in Monterrey, Mexico, January, 2007.

18.   "The Design and Implementation of Delta-Enabled Grid Services," Presented at the Instituto Tecnologico y de Estudios Superiores de Monterrey in Monterrey, Mexico, January, 2007.

17.   "The Enterprise Computing Initiative at ASU," Presented at the Industrial Engineering Graduate Research Seminar, Arizona State University, November, 2004.

16.   "The Enterprise Computing Initiative at ASU," Presented at the ASU/Industry Kickoff Meeting for the Enterprise Computing Consortium, Arizona State University, November, 2004.

15.   "Research Plan for Enterprise Computing at ASU: Science-Based Enterprise Computing for Large-Scale, Transaction-Based Systems," Presented at American Express, Phoenix, September, 2004.

14.   "The Enterprise Computing Initiative at ASU," Presented at Arizona State University (meeting with American Express), August, 2004.

13.   "Active Declarative Integration Rules for Developing Distributed Multi-Tiered Applications," Presented to the Information Systems Department at ITESM, Monterrey, Mexico, October, 2003.

12   Presented a lecture from CSE 494DB to an undergraduate class in the Information Systems Department at ITESM, Monterrey, Mexico. The lecture was presented through the ITESM Virtual University and broadcast to Mexico City, October, 2003.

11.   Presented a lecture from CSE 494DB to a graduate class in the Information Systems Department at ITESM, Monterrey, Mexico, October, 2003.

10.   "Active Declarative Integration Rules for Developing Distributed Multi-Tiered Applications," Presented to the Center for Advancing Business Through Information Technology, W. P. Carey College of Business, Arizona State University, November, 2003.

9.   "The Implementation and Evaluation of the Use of CORBA in an Engineering Design Application," Engineering Distributed Objects Workshop, Los Angeles, California, May 1999.

8.   Panel Member in a Press Conference on the Object-Oriented Features of Oracle 8, held at Oracle Corporation, Redwood Shores, California, June 1997.

7   "Object/Relational Technology in Support of an Engineering Data Repository," presented at the Object-Relational Summit, Boston, Massachusetts, sponsored by Miller Freeman Publishers, August 1997.

6.   "Active Database Systems: Analysis, Testing, and Debugging Issues for Active Database Rules," presented at the Center for Advanced Computer Studies, University of Louisiana at Lafayette, February 1996.

5.   "A Deductive, Object-Oriented Model as a Formal Framework for Active Database Environments," presented at the 1993 Dagstuhl Workshop Formal Aspects of Object Base Dynamics, Schloss Dagstuhl, Germany, April 1993.

4.   "Constraint Analysis: An Intelligent Framework for Active Support of Database Semantics," presented at ATT Bell Laboratories, Morristown, New Jersey, November, 1992.

3.   "Constraint Analysis: An Intelligent Framework for Active Support of Database Semantics," presented at Bell Communications Research, Piscataway, New Jersey, November, 1992.

2.   "Engineering Database Research at Arizona State University: Infrastructure for Integrated Heterogeneous Engineering Databases and Design Histories," presented at the National Institute of Standards and Technology, Gaithersburg, Maryland, August 1992.

1.	"The Active Use of Constraints in the Design of Object-Oriented Database Applications," presented at Purdue University, Computer Science Department, West Lafayette, Indiana, October 8, 1990.

TECHNICAL COMMITTEES

Founding Member of the Event Processing Technical Society (EPTS) (http://www.ep-ts.com) and member of the EPTS Use Case Development Committee, 2008-present.

CONFERENCE ACTIVITIES (Leadership positions shown in bold.)

Conference:	International Conference on Distributed Event-Based Systems
Activity:	**General Co-Chair,** 2013
	Member of Steering Committee, 2013-present.

Conference:	International Conference on Information Integration and Web-Based Applications & Services
Activity:	Member of Program Committee, 2011-present.

Conference:	International Conference on Conceptual Modeling (ER 2011)
Activity:	Member of Program Committee, 2011.

Conference:	International Conference on Objects and Databases (ICOODB)
Activity:	Member of Program Committee, 2010

Conference:	International Conference on Cooperative Information Systems
Activity:	Member of Program Committee, 1997, 2003-2005, 2007-present.

Conference:	International Conference on Ontologies, Databases, and Applications of Semantics (ODBASE)
Activity:	Member of Program Committee, 2009-2010.

Conference:	International Conference on Web Information Systems Engineering
Activity:	**Tutorial Chair**, 2009

Conference:	International Workshop in Conceptual Modeling (CoMol ER)
Activity:	Member of Program Committee, 2009

Conference:	Dagstuhl Seminar in the Evolution of Conceptual Modeling
Activity:	Seminar Participant, April, 2008

Conference:	Dagstuhl Seminar on Event Processing
Activity:	Seminar Participant, May 2007.

Conference:	International Conference on Business Information Systems
Activity:	Member of Program Committee, 2007.

Conference:	International Workshop on Event-Driven Architectures, Processing, and Systems
Activity:	Member of Program Committee, 2006.

Conference:	International Workshop on Data Engineering in E-Commerce and Services
Activity:	Member of Program Committee, 2006-2007.
Conference:	IEEE Joint Conference on E-Commerce (CEC) Technology and Enterprise Computing, E-Commerce and E-Services (EEE)
Activity:	Member of Program Committee, 2006-2007.
Conference:	International Conference on e-Business Engineering
Activity:	Member of Program Committee, 2005-present.
Conference:	ACM SIGCSE Conference (Special Interest Group on Computer Science Education)
Activity:	Member of Program Committee, 2000-present; Session Chair, 1985.
Conference:	International Conference on Database and Expert Systems Applications
Activity:	Member of Program Committee, 2000-2005
Conference:	Industrial Engineering Research Conference
Activity:	Panel Member, *Concurrent Information Base Technology for Production Systems Engineering Integration in Electronic Commerce*, 1999.
Conference:	NSF Information and Data Management Workshop
Activity:	**Co-Chair of Languages, Data Models, and Application Models Discussion Group, Los Angeles, 1999.**
Conference:	International Workshop on Information Technologies for Electronic Commerce
Activity:	Member of Program Committee, 1999.
Conference:	IFIP TC-2 Working Conference on Database Semantics (DS-7)
Activity:	Member of Program Committee, 1997.
Conference:	International Conference on Information and Knowledge Management
Activity:	Member of Program Committee, 1996.
Conference:	International Workshop on Advanced Transaction Models and Architectures
Activity:	Member of Program Committee, 1996.
Conference:	International Workshop on Object-Oriented Real-Time Dependable Systems
Activity:	Member of Program Committee, 1996.
Conference:	International Conference on Data and Knowledge Systems for Manufacturing and Engineering
Activity:	Member of Program Committee, 1996.
Conference:	IEEE International Conference on Computer Software and Applications
Activity:	Member of Program Committee, 1996; **Vice Chair, 1995**; Panel Chair, 1994.
Conference:	ACM SIGMOD Conference (Special Interest Group on the Management of Data)
Activity:	Exhibits Chair, 1994.
Conference:	International Symposium on Object-Oriented Methodologies and Systems

Activity:	**Program Co-Chair, 1994**.

Conference:	First International Conference on Intelligent and Cooperative Information Systems
Activity:	Member of Program Committee, 1993.

Conference:	IEEE Computer Society International Workshop on Research Issues in Data Engineering
Activity:	Member of Program Committee, 1994; **General Co-Chair, 1993.**

Conference:	Dagstuhl Workshop on Formal Aspects of Object-Based Dynamics
Activity:	**Member of Organizing Committee, 1993**.

Conference:	IEEE Computer Society International Conference on Data Engineering
Activity:	Member of Program Committee, 1985-1992, 1994-1998, 2001; **Program Co-Chair, 1998**; **Vice-Chair of Program Committee, 1992**; Session Chair, 1990; Session Chair, 1991.

Conference:	Workshop on Multimedia Information Systems
Activity:	Treasurer, 1992.

Conference:	IEEE International Phoenix Conference on Computers and Communications
Activity:	**Track Chair**, 1992; Member of Program Committee, 1990-1992; Session Chair, 1990-1991.

Conference:	IEEE Computer Society International Conference on Databases, Parallel Architecture's and Applications.
Activity:	Member of Program Committee, 1990.

Conference:	IEEE Computer Society International Conference on Distributed Computing Systems
Activity:	Treasurer, 1993; Session Chair, 1991.

Conference:	IEEE Computer Society International Conference on Ada Applications and Environments
Activity:	Member of Program Committee, 1984.

Conference:	ACM Computer Science Conference
Activity:	Session Chair, 1985.

FEDERALLY-FUNDED INDUSTRY WORKSHOPS

Faculty Development Workshop: Advanced Database Concepts for Undergraduates, a workshop to prepare faculty at other universities for the use of course material developed as part of NSF Grant DUE-9980417, Attended by 10 faculty members from universities in the U.S. and Mexico, July 2002, organized by Suzanne Dietrich and Susan Urban.
http://www.eas.asu.edu/~cse494db/workshops/workshop2002/.

Online Workshop for Advanced Database Concepts for Undergraduates, an industry workshop for receiving feedback on a course being developed as part of NSF Grant DUE-9980417, Arizona State

University, August 2001, organized by Suzanne Dietrich and Susan Urban.
http://www.eas.asu.edu/~cse494db/workshops/workshop2001/8_13_2001.html.

Advanced Database Concepts for Undergraduates, an industry workshop for receiving feedback on a course being developed as part of NSF Grant DUE-9980417, Arizona State University, July 2000, organized by Suzanne Dietrich and Susan Urban.
http://www.eas.asu.edu/~cse494db/workshops/7_26_2000.html.

PANEL PARTICIPATION

REU Summer Program Logistics. Moderator : Gene Fiorini. Panelists : Susan D. Urban, Niels da Vitoria Lobo, Ryan Kastner, Brendan Mumey, NSF REU PI Workshop, Arlington, VA, March 2014.

Diversity and Recruitment. Moderator : Gene Fiorini. Panelists : Susan D. Urban, Pamela Abshire, Miguel Labrador, Jon Youn, NSF REU PI Workshop, Monterey, CA, February, 2012.

Top Issues in Providing Successful Undergraduate Research Experiences. Moderator : Jacob Furst, Panelists : Hans-Peter Bischof, Daniela Racu, Susan D. Urban. Presented at the 42nd ACM Technical Symposium on Computer Science Education, Dallas, Texas, March 9-12, 2011.

INDUSTRY RELATIONS

Member, Microsoft Research University Relations Advisory Board, Jan.-Dec. 2003.

SABBATICAL LEAVE

Spring, 2007. My sabbatical involved visits to American Express, the Poznan University of Economics in Poznan, Poland, and the Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM) in Monterrey, Mexico. I investigated semantic web technologies for the taxonomic description of data, research directions for dataspaces, the integration of event and stream processing, and agent technologies for access to distributed information. At ITESM, I also explored possibilities for collaboration between ASU and ITESM on curriculum issues.

Fall 1998. Microelectronics and Computer Corporation, Austin, Texas. I worked on the InfoSleuth project designing a composite event language and detection facility that makes use of agent technology in a distributed environment for the monitoring of complex events involving data mining activities. Collaborators at MCC were Amy Unruh, Gale Martin, and Marian Nodine.

REFEREE ACTIVITIES

VLDB Journal
ACM Transactions on Database Systems
IEEE Transactions on Knowledge and Data Engineering
      Member of Review Committee for Retention of the Editor-in-Chief, January, 2002.
IEEE Transactions on Software Engineering
IEEE Transactions on Services Computing
IEEE Computer

IEEE Internet Computing Magazine
Parallel and Distributed Databases
Journal of Systems and Software
Computer Communications Journal
Information Systems Journal
Data and Knowledge Engineering Journal
International Journal of Software Engineering and Knowledge Engineering
ASME/ACM Journal of Computer and Information Science in Engineering
INFORMS Journal of Computing
National Science Foundation Panel Review Participation: 1992, 1994-1995, 1999, 2007, 2009

PROFESSIONAL SOCIETY MEMBERSHIPS

American Society for Engineering Education, 2010-present.
IEEE Computer Society, 1980-present.
Association for Computing Machinery, 1975-present.
American Society of Mechanical Engineers, 2000-2006.

HONORS AND AWARDS

Inducted into the Golden Key Honour Society as an Honorary Member, 2010.
Featured as an expert on object-oriented database systems on ODBMS.ORG, an object-oriented database
    management systems resource portal for education and research, http://www.odbms.org, Roberto
    Zicari (organizer), September, 2005
Arizona State University, Certificate of Honor for Outstanding Achievement and Contribution Towards
    Advancing the Status of Women, Commission on the Status of Women, April, 2003.
Arizona State University, Department of Computer Science and Engineering, Faculty Teaching Award,
    August 2001.
University of Louisiana, Lafayette, The Center for Advanced Computer Studies, Outstanding
    Leadership Award, 1996.
IEEE Computer Society Certificate of Appreciation, 1996 (for service as an editor of *IEEE Transactions
    on Knowledge and Data Engineering*).
Best Paper Award, Plamen Bliznakov, Jami Shah, and Susan D. Urban, "Integration Infrastructure to
    Support Concurrence and Collaboration in Engineering Design," *ASME 1996 Design Engineering
    Technical Conferences and Computers in Engineering Conference*, August, 1996.
Best Presentation Award, for presentation of a paper at the *IEEE Eleventh International Phoenix
    Conference on Computers and Communications*, March, 1992.
Member, Phi Kappa Phi Honor Society, Member since 1976.
Who's Who in the South and Southwest, 1982.
Outstanding Young Women of America, 1981.

UNIVERSITY SERVICE

Texas Tech University, University-level Committees.
    Member, Graduate Program Review Committee, Review of the Department of Human
        Development and Family Studies, Spring 2015.
    Member, Task Force for Undergraduate Research, 2011.

Texas Tech University, College-level Committees, Edward E. Whitacre Jr. College of Engineering
  Member, Derr Professorship Review Committee, Spring 2014.
  Member, Research Awards Committee, 2011-2013.
  Chair, Grade Appeal Committee, 2011.
  Advisor for the Society of Women Engineers Student Chapter, 2008-2011.
  Member, Committee to develop a minor in International Engineering, 2009.
  Member, College Promotion and Tenure Committee, 2009-2011, 2012-2013.

Texas Tech University. Department-level Committees, Department of Industrial Engineering
  Member, Strategic Planning Committee, 2014-present.
  Faculty Advisor, Undergraduate Program Committee, 2013-present.
  Member, Faculty Workload Committee, 2013-2014.
  Member, Department Chair Recruitment Committee, 2012-2013.
  Member, Undergraduate Program Committee, 2011-present.
  Member, Graduate Program Committee, 2011-2014.

Texas Tech University, Department-level Committees, Department of Computer Science
  Member, Promotion and Tenure Committee, 2008-2010.
  Member, Research Task Force, 2009-2010.
  Chair, Research Task Force, 2008-2009.
  Member, Department Review Committee, 2008-2009.
  Chair, Department Review Committee, 2009-2010.

Arizona Sate University, University-level Committees.
  Member, University Tenure and Promotion Committee, Spring 2003, Spring 2004.
  Faculty Mentor, ASU Faculty Development Program, 2004-2006.

Arizona State University, College-level Committees, Ira A. Fulton School of Engineering:
  Member, Ad-hoc Dean's Advisory Committee for revising the School Guidelines for promotion and tenure, Spring 2006.
  Member, Committee of Review, 1999-2006.
  Chair, Dean's Advisory Personnel Committee, 2005-2006.
  Member, Search Committee, Department of Industrial Engineering, Information Systems Position, 2005/2006.
  Member, Dean's Advisory Personnel Committee, 1996-1998, 2004-2005, 2007.
  Member, Affirmative Action Committee, 1992-1994.
  Member, Research Council, 1992.
  Member, Search Committee for Associate Dean for Research and Graduate Programs, 1992.
  Member, Panel Discussion sponsored by CEAS Senate and Diversity Committee, Female Faculty Lives in CEAS, March 6, 2002.
  CSE contact for the ASU/Conacyt Fellowship Program, 2004-2007.

Foundation Coalition Activities:
  Contributor to the *Foundation Coalition Active/Cooperative Learning: Best Practices in Engineering Education* project, 2001. I participated in a taped interview about my work with active learning in the classroom. The project has produced a CD and web site (**http://clte.asu.edu/active**) that features the transcripts and video clips of the ASU faculty that were interviewed

Arizona State University, Department-level Committees, Department of Computer Science and Engineering:

Department Publicity Liaison, 2004-2007.
Faculty Advisor, Women in Computer Science, 2002-2004.
Chair, EC2000 Technical Area for Database Systems, 2000-2006.
Member, Department Personnel Committee, 2001-2002.
Chair, Faculty Recruitment Committee, 1996-1997.
Member, Faculty Recruitment Committee, 1990-1994, 1997-1998.
Chair, Executive Committee, 1994-1996, 1999-2000.
Member, Executive Committee, 2000-2001.
Chair, Teaching Assistantship Committee, 1995-1996.
Member, Graduate Admissions Committee 1989-1990, 2000-2001.
Member, Graduate Programs Committee, 1990-1996, Fall 2002.

University of Miami:
Member, Women's Advisory Committee, 1987-1989
Member, Faculty Advisor, IEEE Computer Society Student Chapter, 1988-1989

STUDENTS SUPERVISED

Dissertations (completed)

Samujjwal Bhandari, *A Language and Architecture for Adaptive Event Pattern Detection*, Texas Tech University, Fall 2013, 308 p.

Foruhar Shiva, *Application of a Temporal Database Framework for Processing Event Queries*, Arizona State University, Fall 2012, 175 p.

Le Gao, *A Robust Web Service Composition Model with Decentralized Data Dependency Analysis and Rule-Based Failure Recovery Capability*, Texas Tech University, Fall 2012, 234 p.

Yang Xiao, *Using Deltas to Analyze Data Dependencies and Semantic Correctness in the Recovery of Concurrent Process Execution,* Arizona State University, Fall 2006, 238 p.

Ying Jin, *An Architecture and Execution Environment for Component Integration Rules*, Arizona State University, Spring 2004, 135 p.

Lorena Gomez Martinez, *An Active Approach to Constraint Maintenance in a Multidatabase Environment*, Arizona State University, Fall 2002, 267 p.

Taoufik Ben Adbellatif, *An Architecture for Active Database Systems Supporting Static and Dynamic Analysis of Active Rules Through Evolving Database States*, Arizona State University, Fall 1999, 375 p.

Juan Lavariega, *Object Query Processing in a Multidatabase Environment: Integrating Structural and Operational Approaches*, Arizona State University, Fall 1999, 321 p.

Anton Karadimce, *Termination and Confluence Analysis in an Active Object-Oriented Database,* Arizona State University, Spring 1997, 400 p.

Master of Science Theses (completed)

Lakshmi Sindhuri Juturu, *Applying Big Data Analytics on Integrated Cybersecurity Datasets*, Texas Tech University, Spring 2015, pp. 63

Andrew Courter, *Supporting Data Consistency in Concurrent Process Execution with Assurance Points and Invariants*, Texas Tech University, Fall 2010, p. 66.

Rajiv Shrestha, *Using Assurance Points and Integration Rules for Recovery in Service Composition*, Texas Tech University, Spring 2010, p. 96.

Ziao Liu, *Decentralized Data Dependency Analysis for Concurrent Process Execution*, Texas Tech University, Fall 2009, p. 63.

Vidya Gopalan, *Simulation and Evaluation of an Object-Oriented Condition Evaluator for Process Interference Rules*, Arizona State University, Summer 2008, p. 79.

Jayashri Padmanabhan, *A Stream-Based Composite Event Detection Language*, Arizona State University, Fall 2007, p. 149.

Luther Blake, *The Design and Implementation of Delta-Enabled Grid Services*, Arizona State University, Spring 2006, p 83.

Hua Ma, *The Design and Implementation of the GridPML: A Process Modeling Language for the DeltaGrid,* Arizona State University, Summer 2005, p. 109.

Ingrid Biswas, *A Composite Event Definition Language and Detection System for the Integration Rules Environment,* Arizona State University, Spring 2005, p. 116.

Vikram Vasantha Kumar, *A Prototype for Integration Of Web Services Into The IRules Approach To Component Integration*, Arizona State University, Fall 2004, 109 p.

Sunitha Kamphampati, *An Event Service for a Rule-Based Approach to Component Integration*, Arizona State University, Spring 2003, 91 p.

Akash Saxena, *An Evaluation of Distributed Architectures for the Integration of Black-Box Software Components*, Arizona State University, Fall 2000, 131 p.

Kalyan Ayyaswamy, *The Design and Implementation of a CORBA-Based Rule Engine for Multidatabase Constraint Maintenance*, Arizona State University, Summer, 1999, 95 p.

Ling Fu, *The Implementation and Evaluation of the Use of CORBA in an Engineering Design Application*, Arizona State University, Summer 1998, 87 p.

Michael Tjahjadi*, Mapping the EXPRESS Conceptual Modeling Language to an Object-Relational Schema*, Arizona State University, Summer 1997, 161 p.

Michael Tschudi, *An Evaluation of Static Rule Analysis Techniques for Active Database Environments*, Arizona State University, Spring 1997, 154 p.

Alexander Jaehne, *A Prototype of a Run-Time Debugging Environment for Active Database Rules*, Arizona State University, Summer 1995, 117 p.

Daniel Callen, *Consolidation of Query Results Through an Object-Oriented Interface to Relational Databases in a Multidatabase Environment*, Arizona State University, Spring 1995, 178 p.

Hong Liu, *The Design, Implementation, and Evaluation of a Database System for Capturing Design Histories*, Arizona State University, Fall 1994, 84 p.

Taoufik Ben Abdellatif, *An Object-Oriented Query Language Interface to Relational Databases in a Multidatabase Environment*, Arizona State University, Spring 1994, 145 p.

Sanjay Saxena, *A Set-Oriented Query Subsystem for an Object-Oriented Database System*, Arizona State University, Fall 1991, 121 p.

Ravi Nannapaneni, *An Implementation of Integrity Maintenance Rules in an Object-Oriented Database*, Arizona State University, Summer 1991, 114 p.

Anne Mufen Wang, *The Design of a Generalized Constraint/Rule Language for Active Database Systems*, Arizona State University, Summer 1991, 106 p.

Shane Lai, *A Query Language Interface to an Object Algebra*, Arizona State University, Spring 1991, 83 p.

Kim Chalmers, *An Investigation of the View Update Problem in Object-Oriented Database Systems*, Arizona State University, Fall 1990.

Mario Desideiro, *A Constraint Explanation Tool for Object-Oriented Data Modeling*, University of Miami, Arizona State University, Spring 1990, 100 p.

Master of Science (Project Option, Texas Tech University, completed)

Abhijit Warkhade, *A Workflow for Testing the Assurance Point Model Execution Engine*, Summer 2012.

Kedar Hippalgaonkar, *An Initial Framework for Intrusion Detection in Zigbee Networks*, Summer 2012.

Michael Johnson, *Vendor Neutral Cross Cloud Platforms for Vendor Neural Mobile Applications*, Spring 2011.

Gaurav Joshi, *Source Generator and Input Module for Cirrus: Design and Implementation*, Spring 2010.

Master of Computer Science Project Reports (Arizona State University)

Andreas Christoforides, *A Survey of Standards and Specifications for Designing Flexible and Dynamic Web Service Orchestrations*, Summer 2007.

Karthikkumar Iyengar, *Map Conversion Using XML Map Format*, Spring 2007.

Ning Liao, *The Extended GridPML Design and Implementation*, Fall 2005.

Ty Truong, *Developing Exercise Solutions for An Advanced Course in Database Systems: Beyond Relational Databases*, Fall 2004.

Yonghyuk Kim, *Design and Development of a Web Page for an Advanced Course in Database Systems: Beyond Relational Databases*, Fall 2003.

Shama Patel, *The Object Database Generator*, Spring 2003.

Shruti Selvaraj, *Enhancements to the JCISE (eLane) Journal Review System: Database Conversion and Report Generation*, Summer 2002.

Nilan Yang, *An Implementation of an Oracle Portal Interface to an Object-Relational Database Application*, Spring 2002.

Shilpi Ahuja, *Exploring Web Access to an Object-Oriented Database Using Java Server Pages Technology*, Spring 2002.

Yoko Watanabe, *A Demonstration of Advanced Features of Objectivity/DB: Clustering, Indexing, and Object Associations*, Fall 2001.

Anish Shah, *JCISE (eLane) Project: Online Paper Submission and Review Management System*, Fall 2001.

Mei Zheng, *A Demonstration of Relational Database Features using Oracle 8i*, Fall 2001.

Mathangi Ranganathan, *A Servlet Implementation of an Online Publication Server Database*, Spring 2001.

Zhihong Wu, *An Implementation of an On-Line Shopping Database Application Using Java Server Pages Technology*, Fall 2000.

Ruchika Abbi, *Oracle Distributed Database Features*, Spring 2000.

Leena Janardaran, *A Distributed Object Computing Example Using Oracle 8i and CORBA*, Spring 2000.

Xiaohong Zhang, *An On-Line Gradebook System for the MIDL Server*, Fall 1999.

Siham Abdel-Nabby, *An On-Line Publication Server Database for the Web,* Fall 1999.

Laskhmi Narasimhaswamy*, Design and Development of a Graphical Interface for an Active Rule Debugging System*, Fall 1998.

Gouri Mantri, *Experience with a Database Conversion Process*, Fall 1998.

Rajiv Kaki, *An Oracle 8 Implementation of the Hollywood Database Using the Object-Relational Paradigm*, Fall 1998.

Ashesh Shah, *Implementation of a Database for Meta-Data to Support Distributed Query Processing*, Summer 1998.

Zhihong Zhou, *The Design and Implementation of an MS Access Database for a High School Alumni Management Application*, Summer 1998.

Sean Healy, *A CORBA Implementation of a Multidatabase Framework to Support Distributed Rule Processing*, Fall 1997.

Naman Nair, *Microsoft Access Implementation of a Conference Review Database,* Fall 1997.

Anup Sekhar, *CORBA Implementation of Multidatabase Framework to Support Distributed Query Processing,* Spring 1997.

Deb Krahling, *An Investigation of the Objectivity Object-Oriented Database System*, Spring 1997.

David Phillips, *An Investigation of Network Communication Issues in a Multidatabase Environment*, Fall 1995.

An Tung, *Database Application Development Using Microsoft Access: A Computer Science Admissions Database*, Summer 1995.

Scott Church, *Student Scheduling and Tracking Database Developed for the Arizona Association of   Community Health Centers*, Spring 1995.

Walter Espinoza, *Use of the ODE Object Database and Environment*, Spring 1995.

Guangyu Shu, *An Investigation of Sybase SQL Server*, Summer 1994.

Barry Schader, *Use of the EOS Object Storage Manager*, Spring 1994.

Anupama Arya, *A Schema Translator to Map an EXPRESS Database to an Object-Oriented Database*, Fall 1993.

Prasad Ravi, *Building a Communications Framework for Integrated Engineering Product Data*, Fall 1993.

Araya Choutgrajank, *An Object-Oriented Interface to Relational Databases: Developing a Test Environment to Support Query Translation in Heterogeneous Database Environments*, Spring 1993.

Ta-Jung Wu, *Schema Translation Into Express as an Extended Feature in a Graphical Interface*, Spring 1993.

Wai-Fung Chow, *A Graphical Interface for Semantic Schema Design*, Spring 1993.

Siva Raghupathy, I*ntegrating Engineering Product Data: A Distributed Object-Oriented Database Approach*, Spring 1993.

Hsin-ju Pan, *An X Window Interface to an ONTOS Object-Oriented Database Application*, Fall 1992.

Wei-hua Lin, *Implementing a Database Application Using the ONTOS Object-Oriented Database System*, Summer 1992.

Sudha Balakrishnam, *Developing a Meta Database to Support Query Translation in a Heterogeneous Database Environment*, Summer 1992.

Jian Wu, *An Initial Framework for Query Processing in a Heterogeneous Database Environment*, Fall 1991.

Anant Raman, *Object-Oriented Database Management Systems: A Comparison Between Relational Extensions and the Object-Oriented Approach*, Spring 1991.

COURSES TAUGHT (at Texas Tech University)
IE 5344: Statistical Data Analysis
IE 4385/5385: Cyber Attacks (co-developed with J. Urban)
IE 4380/5380: Information Systems Engineering (developed)
IE 4384/5384: Security for Systems and Software (co-developed with J. Urban)
IE 4382/5382: Cybersecurity for Information Systems (co-developed J. Urban)
IE 1385: Computing Principles for Systems and Industrial Engineers (co-developed with J. Urban)
CS 5356: Advanced Database Management Systems
CS 5331: Distributed Data Management (developed)
CS 4354: Concepts of Database Systems

COURSES TAUGHT (at Arizona State University)
CSE 410: File Systems Concepts
CSE 412: Database Systems Concepts
CSE 510: Advanced Database Systems (co-developed with S. Dietrich)
CSE 512: Distributed Database Systems (revised)
CSE 514: Object-Oriented Database Systems (developed).
CSE 414: Advanced Database Systems for Undergraduates (co-developed with S. Dietrich)
CSE 591: Service-Oriented Computing (developed)

COURSES TAUGHT (at University of Miami)
EEN 117: Pascal Programming
EEN 422: Programming in Ada
EEN 521: Operating Systems
EEN 523: Database Systems Concepts
EEN 592: Object-Oriented Database Systems (developed)