

# Lois Marie Lundberg Delcambre

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## EDUCATION

Ph.D. Computer Science, University of Southwestern Louisiana<sup>1</sup>, Lafayette, Louisiana, December 1982.

M.S. Mathematics, Mathematical Sciences Program, Clemson University, Clemson, South Carolina, May 1974.

B.S. Mathematics, with a minor in Computer Science, University of Southwestern Louisiana<sup>1</sup>, Lafayette, Louisiana, May 1972.

## ACADEMIC and RESEARCH EXPERIENCE

09/04 to present Professor, Computer Science Department, Portland State University

07/01 to 09/04 Professor, Computer Science and Engineering Department, OGI School of Science & Engineering, Oregon Health & Science University<sup>2</sup>

07/97 to 06/01 Professor, Computer Science and Engineering Department, Oregon Graduate Institute of Science & Technology<sup>2</sup>

07/96 to 03/00 Associate Chair for Education, Computer Science and Engineering  
and Department, first at OGI, then at the OGI School of Science & Engineering,  
07/02 to 09/04 Oregon Health & Science University<sup>2</sup>

01/93 to 09/04 Pacific Northwest National Laboratory Affiliate Staff Scientist, Richland, Washington, working in the area of scientific data management for environmental sciences, molecular sciences, and related areas.

04/00 to 12/00 Professor in residence (on sabbatical from the Oregon Graduate Institute of Science and Technology) at Cenquest, Inc., a company specializing in high-quality, graduate, asynchronous, distance learning classes.

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<sup>1</sup> The University of Southwestern Louisiana changed its name to the University of Louisiana, Lafayette in 1999.

<sup>2</sup> On July 1, 2001, the Oregon Graduate Institute of Science and Technology (OGI) (an independent, graduate-only university) merged with the then Oregon Health Sciences University (OHSU). OGI became the School of Science and Engineering within the Oregon Health & Science University (OHSU).

- 05/93 to 12/99 Director, Data-Intensive Systems Center (DISC)  
 01/00 to 12/01 Associate Director Data-Intensive Systems Center (DISC)  
 DISC was an industrial membership program with faculty: Crispin Cowan, Lois Delcambre, David Maier, Dylan McNamee, David Steere, and Jonathan Walpole (of OGI), and Joseph Albert, Jim Binkley, Warren Harrison, Jingke Li, Sarah Mocas, and Leonard Shapiro (of Portland State University). Leonard Shapiro and Lois Delcambre directed the activities of the center to serve the needs of its industrial members: Regence Blue Cross/Blue Shield of Oregon, Intel Corporation, Sequent Computer Systems, and Sharp Labs. The industrial members paid an annual membership fee of \$25,000.
- 01/93 to 06/97 Associate Professor, Computer Science and Engineering Department, Oregon Graduate Institute of Science and Technology.
- 08/88 to 12/92 Associate Director for Research, University of Southwestern Louisiana,<sup>1</sup> Apparel Computer Integrated Manufacturing Center (A-CIM Center).
- 08/92 to 12/92 Professor of Engineering, College of Engineering, University of Southwestern Louisiana<sup>1</sup>, to pursue collaborative research and funding opportunities in the College of Engineering.
- 08/87 to 12/92 Associate Professor of Computer Science, The Center for Advanced Computer Studies (CACCS), College of Sciences, University of Southwestern Louisiana<sup>1</sup>.
- 01/83 to 07/87 Assistant Professor, The Center for Advanced Computer Studies, University of Southwestern Louisiana<sup>1</sup>.
- 12/73 to 02/79 Instructor, Department of Mathematical Sciences and Department of Computer Science, Clemson University, Clemson, South Carolina.

## **PROFESSIONAL EXPERIENCE**

- 12/94 to 12/01 Short Course Development and Delivery, Portland, OR. Developed a variety of one day and five day courses on database design, database management systems (with Leonard Shapiro), object-oriented modeling (with Earl Ecklund, Jr.), XML (with Dave Maier) and other topics. Courses have been offered on-site at various industrial sites, including Intel Corporation, Sequent Computer Systems, Blue Cross/Blue Shield of Oregon, Northwest Natural Gas Company, ADP Dealer Services, Informix, and Integrated Measurement Systems.
- 02/79 to 06/79 Consultant to the Division of Information Systems Development, Clemson University, Clemson, South Carolina. Performed design, supervisory, and administrative functions for the development of MMIS, the Medicaid Management Information System for the State of South Carolina Department of Social Services.
- 12/73 to 02/79 System Design and Software Development Manager, Division of Information Systems Development, Clemson University, Clemson, South Carolina. .

Administrator for contracts with S.C. Department of Social Services funded at the level of \$900,000/year. Responsible for technical design and implementation of large, interactive software systems with an IDMS database. Supervised approximately twenty full time and part time employees.

## **GRANTS and CONTRACTS AWARDED** (my role in the project is listed first)

09/12-08/14 PI, NSF, Information and Intelligent Systems Division, "Eager: Quick Draw Semantics", 1250340.

09/09-08/11 Co-PI (with Leonard Shapiro, Professor of Computer Science, PI), "EAGER: Full Disclosure of Data Preparation and Use in Retrospective Studies, 0954268.

09/09-08/11 PI at PSU (with Judith Logan, MD, Oregon Health & Sciences University), "Exploiting the User Interface for Data Integration in Effectiveness Research", 1R21LM009550-01A1.

09/08-08/12 PI NSF, Information and Intelligent Systems Division, III-CTX-Small: Exploiting domain expertise to enhance information retrieval," 0812260.

REU Supplement, awarded August 2009.

REU Supplement, awarded August 2012.

09/08-08/12 PI at PSU (with Lillian Cassel, PI and overall Project Director at Villanova; Ed Fox PI at Virginia Tech; Rick Furuta, PI at Texas A&M, Greg Hislop, PI at Drexel University; Peter Brusilovsky, PI at Univ. of Pittsburgh), NSF, National SMETE Digital Library (NSDL) Program, Division of Undergraduate Education, "Collaborative Project: Ensemble: Enriching Communities and Collections to Support Education in Computing," 0840668.

Supplement, awarded August 2012.

08/06-01/08 Co-PI at PSU (with David Maier Co-PI at PSU) (with Judith Cushing, PI at The Evergreen State College), NSF, Information and Intelligent Systems Division, "SGER: From Measurement to Management: Evidence-Based Practice in Natural Resource Management," 0639588.

08/07-06/08 Co-PI (David Maier, PI), DARPA, (as a subcontract through Lockheed), Information Integration Seedling.

02/06-02/09 Principal Investigator February 2006 – February 2009, with David Maier, NSF Information and Intelligent Systems Division, "Adapting Information using Superimposed Structures", 0534762.

11/05-11/06 Collaborator (with Judith Logan, MD, OHSU). Collins Medical Trust, "Integration of Clinical Data from Diverse Sources: a "Lazy" Data Integration Approach."

06/05-012/06 Project Director and Principal Investigator, with Marianne Lykke Nielsen (Royal School of Library and Information Science, Denmark), Mathew Weaver, and Timothy Tolle, NSF Digital Government Program, "Accelerated Indexing in a Domain-specific Digital Library, a Small Grant for Exploratory Research. 0514238

10/04-09/06 Project Director and Principal Investigator with David Maier, Edward Fox (Va. Tech), and Lillian Cassel (Villanova), "Collaborative Project: Superimposed Tools for Active Arrangement and Elaboration of Educational Resources," National SMETE Digital Library Program, NSF Award Number 0511050. (original project number: 0435496; project number at Villanova: 0435059).

08/00-03/05 Project Director and Principal Investigator with David Maier, Fred Phillips, Nicole Steckler, Marianne Koch, and Patty Toccalino, "Harvesting Information to Sustain our Forest, National Science Foundation," Digital Government Program, Federal Government Partner: USDA Forest Service, Tim Tolle, Co-Project Director (in-kind support), NSF Award Number EIA 99-83518.

Serendipity, Supplement, funded August 2001.

REU Supplement funded March 2002.

Technology Transfer Supplement funded April 2003.

01/99-08/03 Principal Investigator with Paul Gorman, M.D. (Department of Medical Informatics & Clinical Epidemiology, OHSU) and David Maier, "Tracking Footprints Through an Information Space," National Science Foundation, NSF Award Number II-98-17492.

Supplement funded March 2002 – Aug. 2003.

06/02-09/02 Co-PI, with Dave Maier and Wu-chang Feng (Project Director). "Monitoring Network Traffic using Database-Style Stream Queries," Network Data Transformation and Analysis Program, ARDA, The Advanced Research and Development Activity (ARDA) is an Intelligence Community (IC) center for conducting advanced research and development related to information technology (IT) information stored, transmitted, or manipulated by electronic means)

01/02-10/02 Senior Personnel, with Judy Cushing (Project Director), Nalini Nadkarni, and Dave Maier. "BDEI: Spatial Data Infrastructure for Ecological Research" (Planning Grant), NSF Biodiversity,

03/02-12/02 Co-PI, with Nicole Steckler (Project Director) and Marianne Koch, "Organizational Facilitators and Inhibitors to Information-Sharing Across Federal Agency Boundaries", NSF Digital Government Program, USDA Forest Service as active partner with Tim Tolle as primary point-of-contact. NSF Award Number 0204796.

07/00-06/03 Principal Investigator with Crispin Cowan (Project Director) and David Maier, "Autonomix: Component, Network and System Autonomy," Defense Advanced Research Projects Administration.

09/96-08/99 Principal Investigator with David Maier, Crispin, Cowan, Ling Liu, Calton Pu, Andrew Black, Charles Consel, Jonathon Walpole, "Heterodyne: A Regenerative Receiver for Incremental Specialization Technology," Defense Advanced Research Projects Administration.

09/93-06/00 Organizer of the Data-Intensive Systems Colloquia Series, Sponsored by the Oregon Center for Advanced Technology Education, awarded annually in September.

10/96-09/97 Principal Investigator with Judy Cushing, Nalini Nadkarni (Project Director), David Maier, "Information Modeling for Forest Canopy Research," National Science Foundation.

7/96-12/97 Principal Investigator with Holly Jimison (Co-Project Director), Misha Pavel (Co-Project Director), Todd Leen, Hynek Hermansky, David Maier, Jonathon Walpole, and faculty at the Oregon Health Sciences University, Information Technology for Coordinated Long Term Care, Department of Energy.

04/96-06/97 Master of Software Engineering Council, Program format and curriculum development. Oregon Joint Graduate Schools of Engineering.

07/95-06/98 Principal Investigator with Philip R. Cohen and David Maier (Lead Principal Investigators), Sharon Oviatt, Calton Pu. Bringing standing orders to an agent architecture. Office of Naval Research.

07/95-06/96 Principal Investigator and Project Director with David Maier, Content-Based Navigation on the National Information Infrastructure, National Science Foundation, NSF Award Number IRI-9502084.

04/94-09/94 Principal Investigator with David Maier, Database Design for the Deep Microbiology Project within the Subsurface Science Project at Pacific Northwest National Labs, Department of Energy.

05/94-12/94 Principal Investigator, Demand-Activated Manufacturing Architecture, American Textiles (AMTEX) Project, Task 1, Conceptual Modeling of the Textile Industry, Pacific Northwest National Labs, Department of Energy.

Principal Investigator, with David Maier, Len Shapiro, Tim Sheard, Performance Improvements for HEIS: the Hanford Environmental Information System, Pacific Northwest National Laboratories, Department of Energy.

07/93-06/94 Principal Investigator with David Maier and Len Shapiro, Performance Modeling at the Conceptual Modeling Level for Database Applications, Pacific Power and Light (\$20,000) and OACIS.

02/93-09/95 Principal Investigator, Pursuit of Collaborative Opportunities with the Computer Sciences Department, Pacific Northwest National Laboratories (PNNL). Research projects include: Vertical Information Management within Environmental Information Technology systems and Semantic Data Modeling in the context of the Environmental & Molecular Science Laboratory (EMSL) computer system. Funded by the Department of Energy (through PNNL).

09/92-08/93 Principal Investigator, with Theo Williams, Research Scientist, A-CIM Center, Dennis Moreau and Larry Albright, Assistant Profs., Computer Science Department, Tony Maida, Asst. Prof., CACS, A Virtual Reality Framework for Manufacturing Plant Design. Funded by the Department of Commerce.

09/92-08/93 Associate Director for Research of the A-CIM Center, Project Director is Stan Smith, Professor, Mechanical Engineering, Flexible Robotic Gripper with Microactuator Control with application in apparel manufacturing. Funded by the Department of Commerce.

09/92-08/93 Associate Director for Research at the A-CIM Center, Project Director is Larry Albright, Asst. Prof., Computer Science, Standard for Representation of 3-D Body Measurement. Funded by the Department of Commerce.

07/92-06/94 Principal Investigator, with Stan Smith, Professor, Mechanical Eng., Jenn-Tsai Huang, Asst. Prof, Mechanical Engineering, Theo Williams, Research Scientist, A-CIM Center, Manufacturing Technology Program, Apparel CIM (Phase II). Funded by the Department of Defense, Defense Logistics Agency.

07/92-06-95 Project Director and Principal Investigator, with Dennis Moreau, Assistant Prof., CMPS, and Lissa Pollacia, Assistant Prof., CMPS, NSU, Computer Integrated Manufacturing using Object Flow. Funded by the Louisiana Educational Quality Support Fund, a competitive grant program funded by lottery revenue open to all educational institutions in Louisiana.

07/92 Project Director, with Gordon Brooks, Head, School of Art and Architecture, Young Im, Assistant Professor, Human Resources, and Lucy Lissard, Assistant Professor, Human Resources, Color workstations to support 3-D modeling packages. Funded by the Louisiana Educational Quality Support Fund, a competitive grant program funded by lottery revenue open to all educational institutions in Louisiana.

07/92 Associate Director for Research at the A-CIM Center, Project Director/Principal Investigator is Jenn-Tsai Huang Assistant Professor, Mechanical Engineering, CIM Board Development Laboratory. Funded by the Louisiana Educational Quality Support Fund, a competitive grant program funded by lottery revenue open to all educational institutions in Louisiana.

11/91 Travel Award, The Distinguished Visitor to Northeast Louisiana University Honorarium. Funded by the Louisiana Consortium on Computer Science and Engineering, Two-Way Exchange Program.

4/92 Travel Award, Visit Leicester Polytechnic University, Oxford University, Hull University, and the Shoe and Allied Trade Research Alliance. Funded by the Louisiana Consortium on Computer Science and Engineering, International Laboratory Visitation Program.

07/91-06/93 Principal Investigator, with Larry Albright, Asst. Professor, CMPS, Knowledge Representation of Human Expertise in Apparel Manufacturing Systems. Funded by the Louisiana Educational Quality Support Fund, a competitive grant program funded by lottery revenue open to all educational institutions in Louisiana.

07/91 Principal Investigator, with Patrick Landry, Instructor, CACS, Enhancement (Equipment), Local Area Network Technology for the Apparel CIM Laboratory. Funded by the Louisiana Educational Quality Support Fund, a competitive grant program funded by lottery revenue open to all educational institutions in Louisiana.

04/91-10/91 Project Director, with Stanford Smith, Prof. Mechanical Eng., Manufacturing Technology Program, Apparel CIM (Phase I). Funded by the Department of Defense, Defense Logistics Agency.

05/90-04/92 Project Director/Principal Investigator, with Steve Landry, Associate Professor, CACS and Subrata Dasgupta, Professor, CACS, Expert System Technology for Satellite Systems. Funded by the Air Force SBIR (Phase II), With Orbital Systems, Ltd.

07/88-12/93 Associate Director for Research, baseline funding for the USL Apparel CIM Center. Funded by the State of Louisiana, Direct Appropriation.

02/89-01/91 Project Director and Principal Investigator, Near Term Simulation for Apparel Manufacturing Subcontract with Clemson University. Funded by the Department of Defense, Defense Logistics Agency.

08/88-01/89 Principal Investigator, with Steve Landry, Associate Prof., CACS, Expert System Technology for Satellite Systems. Funded by the Air Force SBIR (Phase I), With Orbital Systems Ltd.

01/84-02/85 Principal Investigator, with Steve Landry, Assistant Prof., CACS, and Cathy Linn, Assistant Professor, CACS, The Distributed Execution Analysis Suite. Funded by the RCA Corporation.

03/83-12/83 Co-Principal Investigator, with Bruce D. Shriver, Prof., CACS, Steve Landry, Assistant Professor, CACS, & Cathy Linn, Assistant Professor, CACS, Initial investigation into DEA-Suite. Funded by the RCA Corporation.

## **PUBLICATIONS (books, journals, and chapters in books)**

Marianne Lykke, Susan Price, Lois M. L. Delcambre: How doctors search: A study of query behaviour and the impact on search results. *Inf. Process. Manage.* 48(6): 1151-1170 (2012)

Sudarshan Murthy, David Maier, Lois Delcambre, "Cloaking Data to Ease View Creation, Query Expression, and Query Execution", in *Conceptual Modeling and its Theoretical Foundations: Essays Dedicated to Bernhard Thalheim on the Occasion of his 60<sup>th</sup> Birthday*, Lecture Notes in Computer Science, Volume 7620, Springer, 2012 (Thalheim Festschrift), DOI: pp. 173-189.

James F. Terwilliger, Rafael J. Fernandez-Moctezuma, Lois M. L. Delcambre, David Maier, "Support for Schema Evolution in Data Stream Management Systems", *Journal of Universal Computer Science*, Vol. 16, No. 20, pp. 3043-3072.

Roland Kaschek and Lois Delcambre (editors), *The Evolution of Conceptual Modeling From a Historical Perspective towards the Future of Conceptual Modeling*, Lecture Notes in Computer Science, Volume 6520, Springer, 2011, DOI: 10.1007/978-3-642-17505-3.

Manfred A. Jeusfeld, Lois M. L. Delcambre, Tok Wang Ling (editors): *Conceptual Modeling - ER 2011*, 30th International Conference, ER 2011, Brussels, Belgium, October 31 - November 3, 2011. Proceedings Springer 2011

*Journal on Data Semantics XIV*, Lois M. L. Delcambre (editor), Springer, 2009.

"Using Semantic Components to Search for Domain-Specific Documents: An Evaluation from the System Perspective and the User Perspective," Susan L. Price, Marianne Lykke Nielsen, Lois M. L. Delcambre, Peter Vedsted, Jeremy Steinhauer, Information Systems, *Inf.*

*Systems*, Volume 34, Issue 8, invited as an extended version of the best papers from the 16<sup>th</sup> ACM Conference on Information Knowledge and Management (CIKM 2007), Elsevier, December 2009, pp. 724-752, ISSN 03036-4379

“Querying through a user interface,” James F. Terwilliger, Lois M.L. Delcambre and Judith Logan, *Data & Knowledge Engineering*, Volume 63, Issue 3, December 2007, Pages 774-794, One of the four best papers presented at the 25th International Conference on Conceptual Modeling (ER 2006), David W. Embley, Antoni Olivé, and Peter Chen (editors).

Judith Bayard Cushing, Nalini Nadkarni, Michael Finch, Anne Fiala, Emerson R. Murphy-Hill, Lois M. L. Delcambre, David Maier: Component-based end-user database design for ecologists. *J. Intell. Inf. Syst.* 29(1): 7-24 (2007).

"Supporting Domain-Specific Digital Libraries in Government: Two Case Studies," Mathew Weaver, Lois M. L. Delcambre, Marianne Lykke Nielsen, Susan Price, David Maier, Timothy Tolle.in Hsinchun Chen, Lawrence Brandt, Valerie Gregg, Roland Traummüller, Sharon Dawes, Eduard Hovy, Ann Macintosh, Catherine A. Larson, eds. *Digital Government: Advanced Research and Case Studies*. (2007) New York: Springer.

“Using the uni-level description (ULD) to support data-model interoperability”, by Shawn Bowers and Lois Delcambre, *Data and Knowledge Engineering*, Elsevier Press, Volume 59, Issue 3, Pages 509-792, Dec. 2006.

“Digital Government Research in the Academia”, by Lois Delcambre and Genevieve Giuliano, *IEEE Computer*, 38(12), Dec. 2005.

“Knowledge Management: A Re-assessment and Case,” by Lois Delcambre, Fred Phillips and Mathew Weaver, *Knowledge, Technology & Policy*, 17(3), Fall 2004.

“On modeling conformance for flexible transformation over data models,” S. Bowers, L. Delcambre, in *Knowledge Transformation for the Semantic Web*, Volume 95 of the Frontiers in Artificial Intelligence and Applications Series, IOS Press, Amsterdam, 2003.

“Harvesting Information to Sustain Forests,” L. Delcambre, T. Tolle, et al., *Comm. of the ACM*, 46(1), January 2003, pp. 38-39.

“A Generic Representation for Exploiting Model-Based Information,” S. Bowers, L. Delcambre, *ETAI Journal*, 2001, Linköping Electronic Articles in Computer and Information Science, ISSN 1401-9841, Vol. 5, Section D (2001), pp. 1-34.  
<http://www.ida.liu.se/ext/epa/ej/etai/2001/019/epapage.html>

“Bundles: Meeting Clinical Information Needs,” Joan Ash, Paul Gorman, Mary Lavelle, Jason Lyman, Lois Delcambre, David Maier, Shawn Bowers, and Mathew Weaver. *Bulletin of the Medical Library Association (BMLA)*, Volume 89, Number 3, 2001, pp 294-296.

“Following Experts at Work in their Own Information Spaces: Using Observational Methods to Develop Tools for the Digital Library,” P. Gorman, M. Lavelle, L. Delcambre, D. Maier, *Journal of the American Society of Information Science and Technology*, Nov. 2002 Volume 53, Number 14.

- "A Behaviorally Driven Approach to Object-Oriented Analysis and Design with Object-Oriented Data Modeling," L. Delcambre, and E. Ecklund, chapter in Object-Oriented Data Modeling, M. Papazoglou, S. Spaccapietra, and Z. Tari (editors), MIT Press, 2000, pp. 21-40.
- "Bundles in the wild: Managing information to solve problems and maintain situation awareness," P. Gorman, J. Ash, M. Lavelle, J. Lyman, L. Delcambre, D. Maier, Library Trends 2000; 49(2):266-289.
- "Models for Superimposed Information. With D. Maier, Workshop on Conceptual Models for the WWW in conjunction with the International Conference on Conceptual Modeling, (ER '99), November, 1999, Paris, France, Lecture Notes in Computer Science 1727, Springer Verlag, 1999, pp 264-280.
- "Breaking the Database out of the Box: Models for Superimposed Information," L. Delcambre, chapter in Conceptual Modeling: Current Issues and Future Directions, P. Chen, J. Akoka, H. Kangassalo, and B. Thalheim (editors), Lecture Notes in Computer Science, No. 1565, Springer-Verlag, 1999.
- "Multi-Path Reasoning in a Database", D. Navabi and L. Delcambre, Journal of Intelligent Information Systems, Kluwer Academic Publishers, 8, pp. 245-266, 1997.
- "Structured Maps: Modeling Explicit Semantics over a Universe of Information", L. Delcambre, D. Maier, R. Reddy, and L. Anderson, Journal of Digital Libraries, Vol. 1, No. 1, 1997.
- "The Object Flow Model for Discrete Event Simulation", L. F. Pollacia and L. Delcambre, International Journal in Computer Simulation, Vol. 5, No. 4, Ablex Publishing Corp., 1995.
- Advances in Databases and Artificial Intelligence, Petry, F. and Delcambre, L. (co-editors), JAI Press, 1995.
- "The Object Flow Model for Discrete Event Simulation Modeling", Pollacia, L. and Delcambre, L., IEEE Monograph Series, G. W. Zobrist (ed.), (book chapter), IEEE Press, 1995.
- "A Denotational Approach to Object-Oriented Query Language Definition", Davis, K.C. and Delcambre, L., Proc. of the International Workshop on the Specifications of Database Systems, July, 1991, Glasgow, Scotland, published by Springer-Verlag, 1992.
- "A Classifier for Object-Oriented Schema and Query Processing", Davis, K.C. and Delcambre, L., in Progress in Object-Oriented Database Systems, Ablex Publishing Corporation, 1994.
- "VLSI Implementation of a Systolic Database Machine for Relational Algebra and Hashing", Elleithy, K., Bayoumi, M., and Delcambre, L., INTEGRATION, The VLSI Journal, 1991, pp. 169-190.
- "Automatic Validation of Object-Oriented Database Structures", Delcambre, L. and Davis, K.C., Object-Oriented Databases, Nahouraii, E. and Petry, F. (eds.), IEEE Computer Society Press, 1991, reprinted from 1989 IEEE Data Engineering Conference.
- "Constraint Analysis: A Design Process for Specifying Operations on Objects", Urban, S.D. and Delcambre, L., IEEE Trans. on Knowledge and Data Engineering, IEEE Computer Society Press, December 1990.

“The Formal Foundation for the Design and Validation of Object-Oriented Schemas”, Delcambre, L. and Davis, K.C., accepted (with revisions), Information Systems, Pergamon Press.

“Pattern Match Reduction for the Relational Production Language in the USL MMDBS”, Delcambre, L., Waramahaputi, J., and Etheredge, J., SIGMOD Record, ACM Press, Vol. 18, No. 3, Sept. 1989.

“RPL: An Expert System Language with Query Power”, Delcambre, L., IEEE Expert, Vol. 3, No. 4, Winter 1989.

“SIMNETMAN: An Expert System Workstation for Designing Rule-Based Network Management Systems”, Zhan, W.D., Thanawastien, S., and Delcambre, L. IEEE Network, September 1988.

“The Relational Production Language: An Expert System Language for Relational Databases”, Delcambre, L. and James N. Etheredge, Expert Database Systems, L. Kerschberg (ed.), Benjamin-Cummings, 1989 .

“Constraint Analysis: A Tool for Explaining the Semantics of Complex Objects”, S. D. Urban and Delcambre, L., Proc. of the 2<sup>nd</sup> International Workshop on Object-Oriented Database Systems, Oct. 1988, Bad Munster am Stein-Ebernburg, Germany, Lecture Notes in Computer Science, No. 334, Springer-Verlag.

“A Flexible Model for Studying the Execution of Dataflow Programs in Distributed Systems”, Delcambre, L. and Bruce D. Shriver, Interfaces in Computing, Vol. 3, No. 3, July 1985.

Dataflow Support for Communicating Asynchronous Processes in a Local Area Network, Delcambre, L., Ph.D. Dissertation, University of Southwestern Louisiana<sup>1</sup>, Lafayette LA, December 1982, Dissertation Advisor, Dr. Bruce D. Shriver.

## **PUBLICATIONS (refereed conferences)**

Christoph Schütz, Lois M. L. Delcambre, Michael Schrefl: Multilevel Business Artifacts. Business Process Management Workshops 2012: 304-315

Christoph Schütz, Michael Schrefl, Lois M. L. Delcambre: Multilevel business process modeling: motivation, approach, design issues, and applications. PIKM 2012: 91-94.

Scott Britell, Lois M. L. Delcambre: Mapping Semantic Widgets to Web-Based, Domain-Specific Collections. ER 2012: 204-213.

Scott Britell, Lois M. L. Delcambre, Lillian N. Cassel, Edward A. Fox, Richard Furuta: Enhancing Digital Libraries and Portals with Canonical Structures for Complex Objects. TPDL 2012: 420-425.

Lykke, Marianne ; Price, Susan L. ; Delcambre, Lois L. M. “How doctors apply semantic components to specify search in work-related information retrieval.” In: Facets of Knowledge Organization: Proceedings of the ISKO UK Biennial Conference, 4th-5th July 2011, London. Emerald Group Publishing Limited, 2012. p. 119-129.

- L. Shapiro, T. Hayes, L. Delcambre, W. Harrison and B. Massey, Requirements for a Next Generation Personal File Manager, In *Workshop on Personal Information Management, in CSCW*, Seattle, WA, 2012, [http://pimworkshop.org/2012/pdf/shapiro\\_2012\\_requirements.pdf](http://pimworkshop.org/2012/pdf/shapiro_2012_requirements.pdf) (online proceedings only).
- T. Hayes, L. Delcambre and L. Shapiro, Barriers to Information Hand-off in Personal-scale Data Analysis, In *Workshop on Personal Information Management, in CSCW*, Seattle, WA, 2012, [http://http://pimworkshop.org/2012/pdf/shapiro\\_2012\\_barriers.pdf](http://http://pimworkshop.org/2012/pdf/shapiro_2012_barriers.pdf) (online proceedings only).
- Monika Akbar, Weiguo Fan, Clifford A. Shaffer, Yinlin Chen, Lillian N. Cassel, Lois M. L. Delcambre, Daniel D. Garcia, Gregory W. Hislop, Frank M. Shipman III, Richard Furuta, B. Stephen Carpenter II, Hao-wei Hsieh, Bob Siegfried, Edward A. Fox: Digital Library 2.0 for Educational Resources. TPD 2011: 89-100.
- Delcambre, Lois, Archer, David, Price, S., Britell, S., Murthy, U., Fox, E., Cassel, L., Superimposing a Strandmap over Lectures and Textbook Content (in a Database class), Proc. of the Consortium for Computing Sciences in Colleges, Northwestern Region, 13<sup>th</sup> Annual Conference, Richland, WA, Oct. 2011.
- Monika Akbar, Weiguo Fan, Lillian N. Cassel, Lois M. L. Delcambre, Clifford A. Shaffer, Edward A. Fox, Yinlin Chen: How educators find educational resources online. ITiCSE 2011: 367 (refereed poster)
- Uma Murthy, Lin Tzy Li, Eric Hallerman, Edward A. Fox, Manuel A. Pérez-Quñones, Lois M. L. Delcambre, Ricardo da Silva Torres: Use of subimages in fish species identification: a qualitative study. JCDL 2011: 185-194
- Steinhauer, J., Delcambre, L. M. L., Maier, D., Lykke, M. and Tran, V. H., Tags in Domain-Specific Sites - New Information?, *Proceedings of the 10th Annual Joint Conference on Digital Libraries*, Ottawa, CA, (2011), 109-112.
- Monika Akbar, Weiguo Fan, Clifford A. Shaffer, Yinlin Chen, Lillian N. Cassel, Lois M. L. Delcambre, Daniel D. Garcia, Gregory W. Hislop, Frank M. Shipman III, Richard Furuta, B. Stephen Carpenter II, Hao-wei Hsieh, Bob Siegfried, Edward A. Fox: Digital Library 2.0 for Educational Resources. TPD 2011: 89-100
- S. Britell, J.G. Buckmaster, J. R. Logan, L. M. L. Delcambre, V. Kapoor, Providing Domain Analysts with Natural Schemas to Enable Clinical Research, (abstract only) in the Proc. of the 2011 AMIA Summit on Clinical Research Informatics, San Francisco, CA, March 2011, nominated as one of the best papers in the conference.
- James F. Terwilliger, Lois M. L. Delcambre, Judith Logan, David Maier, David W. Archer, Jeremy Steinhauer, Scott Britell, Enabling revisitation of fine-grained clinical information, Proc. of the 1st ACM International Health Informatics Symposium, Arlington, VA, Nov. 2010.
- James Terwilliger, Lois M. L. Delcambre, David Maier, Scott Britell, "Virtualizing Databases: Channels for Updatable and Evolvable Transforms," Proc. of the 36<sup>th</sup> Int'l Conference on Very Large Databases PVLDB 3(1), Singapore, Sept. 2010, pp. 309-319

- James F. Terwilliger, Lois M. L. Delcambre, Judith R. Logan, David Maier, David W. Archer, Jeremy Steinhauer and Scott Britell: Enabling the Revisitation of Fine-Grained, Clinical Information, Proc. of 1st ACM International Health Informatics Symposium, 2010.
- J. Logan, L. Delcambre, S. Britell, V. Kapoor, J. Buckmaster, "Representing Multi-Database Study Schemas for Reusability," in the Proc. of 2010 AMIA (American Medical Informatics Association) Summit on Clinical Research Informatics Paper, San Francisco, CA, March 2010.
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“Superimposing Spatial Enrichments in Traditional Information”, Lois Delcambre, David Maier, Mathew Weaver, Leonard Shapiro, Judith Bayard Cushing, International Workshop on Next Generation Geospatial Information, Cambridge (Boston), Massachusetts. October 2003.

“The Uni-Level Description: A Uniform Framework for Representing Information in Multiple Data Models,” Shawn Bowers and Lois Delcambre, Proc. of the 22<sup>nd</sup> International Conference on Conceptual Modeling (ER 2003), Chicago, Illinois, October 2003, best paper nominee.

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- “Using Controlled Vocabularies as a Knowledge Base for Natural Resource Managers,” Tim Tolle, Patty Toccalino, Lois Delcambre, Julian Norman, Fred Phillips, David Maier, Proc. of the National Conference on Digital Government Research, May 2002, Los Angeles, CA, pp. 355-361.
- “Examining Information-Sharing across Federal Agency Boundaries,” Marianne Koch, Nicole Steckler, Lois Delcambre, Proc. of the National Conference on Digital Government Research, May 2002, Los Angeles, CA, pp. 419-422.
- “Enriching Documents in an Information Portal using Superimposed Schematics,” Shawn Bowers, Lois Delcambre, David Maier, Proc. of the National Conference on Digital Government Research, May 2002, Los Angeles, CA, pp. 493-498.
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- “Representing and Transforming Model-Based Information, Shawn Bowers and Lois Delcambre, Proc. of the Semantic Web Workshop 2000, held in conjunction with the European Conference on Digital Libraries (ECDL) 2000, Lisbon, Portugal, September 2000, pp. 5-18.
- “Applying Adaptation Spaces to Support Quality of Service and Survivability,” Shawn Bowers, Lois Delcambre, David Maier, Crispin Cowan, Perry Wagle, Dylan McNamee, Anne-Francoise Le Meur, and Heather Hinton. In Proc. of the DARPA Information Survivability Conference and Exposition, pp. 1271-1286, January 2000.
- “SAM: Security Adaptation Manager,” Heather M. Hinton, Crispin Cowan, Lois Delcambre, Shawn Bowers, in Proc. of the Annual Computer Security Applications Conference (ACSAC), Phoenix, AZ, Dec. 1999.
- “Models for Superimposed Information,” Lois Delcambre and David Maier, Workshop on Conceptual Modeling for the WWW, in conjunction with the 1999 International Conference on Conceptual Modeling (ER '99), Paris France, Nov. 1999.
- “Precis-Based Navigation for Familiarization,” Lois Delcambre, Paul Gorman, David Maier, Radikha Reddy, Steve Rehfuss, in Proc. of the 1998 MEDINFO (Medical Informatics) Conference, Seoul, Korea, July, 1998.

- “Change Cases: Use Cases that Identify Future Requirements” by Earl F. Ecklund, Jr., L. Delcambre, and M. Freiling, in Proc. of the 1996 Object-Oriented Programming, Systems, Languages and Applications (OOPSLA) Conference, San Jose, CA, Oct. 1996.
- “Reuse of High-Level Information Requests: Leveraging the Investment”, G.A. Washburn, L.M.L. Delcambre and M.A. Whiting, in Proceedings of the Eighth International Conference on Scientific and Statistical Database Management. Edited by Per Svensson and James C. French. IEEE Press, May 1996.
- “Dynamic Development and Refinement of Hypermedia Documents” by L. Delcambre, C. Hamon, M. Biezunski, R. Reddy, S. Newcomb, in Proc. of the Extending Database Technology (EDBT) '96 Conference, Avignon, France, March 1996.
- “Reusing (Shrink Wrap) Schemas by Modifying Concept Schemas” by L. Delcambre and J. Langston in Proc. of International Conference on Data Engineering, IEEE Press, New Orleans, LA, Feb. 1996.
- “Queries from Outer Space” by G. Washburn, L. Delcambre, and M. Whiting in Proc. of Research Issues in Data Engineering (RIDE) Workshop, IEEE Press, New Orleans, LA, Feb. 1996.
- “A Navigational Transaction Language for an Object-Oriented DBMS” by Beheshti, M. and Delcambre, L., Proc. of the ACC '96 Conference.
- “Object-Oriented Conceptual Modeling of Discrete Event Systems”, Pollacia, L. and Delcambre, L., Proc. of the Object-Oriented Simulation Conference, 1994 Western Simulation Multi-Conference, Tempe, AZ, Feb. 1994.
- “The Object Flow Model: A Formal Framework for Describing the Dynamic Construction, Destruction and Interaction of Complex Objects”, Pollacia, L. and Delcambre, L., Proc. of the 12th International Conf. on the Entity-Relationship Approach, Dallas TX, Dec. 1993.
- “The Object Flow Model for Data-Based Simulation”, (invited paper), Delcambre, L. and Pollacia, L., Proc. of the 1993 Winter Simulation Conference, Los Angeles, CA, Dec. 1993.
- “Conceptual Modeling of Discrete Simulation Systems”, Pollacia, L. and Delcambre, L., Proc. of the SimTec93: Society for Computer Society Simulation Technology Conference, San Francisco, CA, Nov. 1993.
- “An Expert Database System Framework for the Configuration of Parallel, Multi-Path, Data-Directed, Inference Engines”, Navabi, D. and Delcambre, L., Proceedings of IJCAI (International Joint Conference on Artificial Intelligence) Workshop on Production Systems and their Innovative Application, Chambery, France, August 1993.
- “Credibility Assessment Using AutoCRAT”, Schwartz, D. and Delcambre, L., Proc. of the 1993 Simulation MultiConference - 2nd Annual Conference on Military and Government Simulation, April 1993.
- “Simulation of the Object Flow Model: A Conceptual Modeling Language for Object-Driven Applications”, Delcambre, L., Narayanswamy, J., and Pollacia, L., Proc. of the 26<sup>th</sup> Annual ACM Simulation Symposium, Arlington, Va., April 1993.

- "Annotative and Denotative Metadata for Scientific Applications", Delcambre, L., and Maier, D., Proc. of the 2nd Workshop on Scientific Data Management, Salt Lake City, UT, Nov. 1992.
- "AutoCRAT: Automated Support for Design in a Concurrent Engineering Environment", Delcambre, L. and Schwartz, D., Proc. of the European Joint Conference on Engineering Systems Design and Analysis, Istanbul, Turkey, June 1992.
- "Statistical Evaluation of Data Allocation Optimization Techniques with Application to Computer Integrated Manufacturing", I. Remedios, K. Efe, and Delcambre, L., Proc. of the 11th Annual IEEE Phoenix Conference on Computers and Communications, Scottsdale, AZ, April 1992.
- "Context Trees: An Explanation Tool", S. Urban and L. Delcambre, Proc. of the 11th Annual IEEE Phoenix Conference on Computers and Communications, Scottsdale, AZ, April 1992.
- "AutoCRAT Templates for Design Knowledge Capture", Schwartz, D., Delcambre, L., and Gillam, A., Proc. of the International Space Year Conference on Earth and Space Science Information Systems, Feb. 1992.
- "The AutoCRAT Project: Knowledge-Based Design for Complex Space Systems", Delcambre, L., Schwartz, D., and Metzger, E., Proc. of the Louisiana Aerospace Forum, Jan. 1992.
- "Load Balancing with Network Cooperation", M. Schaar, K. Efe, Delcambre, L. and Bhuyan, L.N., Proc. of the 11th International Conference on Distributed Computing Systems, Arlington, TX, May 1991.
- "Object-Centered Constraints", Delcambre, L., Lim, B.L. and Urban, S.D., Proc. of the IEEE International Conference on Data Engineering, Kobe, Japan, April 1991.
- "AutoCRAT: An Automated Design Tool for Constraint Refinement", Schwartz, D., Dasgupta, S., Delcambre, L., Landry, S., Andrieux, R. and Metzger, E., Artificial Intelligence and Simulation, Proc. of the Simulation MultiConference on Artificial Intelligence and Simulation, New Orleans, LA, April 1991.
- "Foundations for Object-Oriented Query Processing", Davis, K.C. and Delcambre, L., Proc. of the X3/SPARC/DBSSG Object-Oriented Database Task Group Workshop, National Institute of Standards and Technology, held in conjunction with OOPSLA 1990, New Orleans, La., Oct. 1990.
- "The Direct Simulation of the Object Flow Model", with Waramahaputi, J., Delcambre, L., Landry, S.P., Pollacia, L., Proc. of Applied Modeling and Simulation Conference, International Association of Science and Technology for Development, International Symposium, Lugano, Switzerland, June 1990.
- "An Automated Tool for the Design and Assessment of Space Systems", Delcambre, L. and Landry, S.P., Proc. of the Fifth Conference on Artificial Intelligence for Space Applications, Huntsville, Alabama, May 1990.
- "A Knowledge-Based Framework for an Automated Engineering Design System", Delcambre, L., Landry, S.P., and Dasgupta, S., Proc. 1990 Eastern Multi-Conference, Artificial Intelligence and Simulation, The Society for Computer Simulation, Nashville, Tennessee, April 1990.

- “Heuristic Algorithms for Adaptive Load Sharing in Local Networks”, M. Schaar, K. Efe, S. Koppolu and Delcambre, L., Proc. of the 1st Int'l Conference on Systems Integration, IEEE Computer Society Press, Los Alamitos CA, April 1990, pp. 762-770.
- “Specifying Object Flow in an Object-Oriented Database for Simulation”, Delcambre, L., Landry, S.P., Pollacia, L., and Waramahaputi, J., Proc. of the 1990 Western Multi-Conference, Object-Oriented Simulation Conference, Society for Computer Simulation, San Diego, California, Jan. 1990.
- “A Systolic Machine for Relational Database and Hashing”, Elleithy, K., Bayoumi, M., and Delcambre, L., Proc. of the 3rd Annual Parallel Processing Symposium, pp. 621-635, March 1989.
- “Constraint Analysis for Specifying Perspectives of Class Objects”, Susan D. Urban and Delcambre, L., Proc. of the 5th International Conference on Data Engineering, IEEE Computer Society Press, Los Angeles, CA, Feb. 1989.
- “Automatic Validation of Object-Oriented Database Structures”, Delcambre, L. and Karen C. Davis, Proc. of the 5th International Conference on Data Engineering, IEEE Computer Society Press, Los Angeles, CA, Feb. 1989.
- “Automated Support for the Explanation of Constraints in Object-Oriented Design”, Susan D. Urban and Lois Delcambre, Proc. Computer-Aided Software Engineering Workshop, Advanced Working Papers, Boston, MA, July 1988.
- “A Self-Controlling Interpreter for the Relational Production Language”, Lois Delcambre and James N. Etheredge, Proc. of the ACM SIGMOD Conference, Chicago, IL, June, 1988.
- “The Relational Production Language: An Expert System Language for Relational Databases”, Lois Delcambre and James N. Etheredge, Proc. of the Second Int'l Conference on Expert Database Systems, Tysons Corner, VA, April, 1988.
- “A Knowledge Based System for Diagnosing Nosocomial Infections”, Gail Landry, Lois Delcambre and B. Eugene Beyt, Jr., M.D., Proc. 11th Annual Symposium on Computer Applications in Medical Care, Washington, D.C., Nov. 1987.
- “Perspectives of a Semantic Schema”, Susan D. Urban and Lois Delcambre, Proc. 3rd International Conference on Data Engineering, Los Angeles, CA, IEEE Computer Society Press, Feb. 1987.
- “Describing Distributed Execution Environments”, with Paul Ponville, Lois Delcambre, and Steve Landry, Proc. of the 6th International Conference on Distributed Computing Systems, Cambridge, Massachusetts, May 1986.
- “A Feature Analysis of Structural, Dynamic, and Temporal Aspects of Conceptual Models”, Susan Urban and Lois Delcambre, Proc. of the 2nd International Data Engineering Conference, IEEE Computer Society Press, Los Angeles, CA, Feb. 1986.

“The Random Walk and Deposit Algorithm for Distributed Searching”, Lois Delcambre and Susan M. Mouton, Proc. 18th Annual Hawaii International Conference on System Sciences, Jan. 1985.

“An Introduction to DEA-Suite: A Distributed Execution Analysis Suite”, L. Delcambre, C. Linn, B. Shriver and S. Landry, Proc. of the 17th Annual Hawaii International Conference on System Sciences, Honolulu, Hawaii, Jan. 1984.

“HLL Architectures: Pitfalls and Predilections”, K. Kavi, B. Belkouche, E. Bullard, L. Delcambre, S. Nemecek, Proc. of the 9<sup>th</sup> Annual Symposium on Computer Architecture, Austin, Texas, April 1982.

“Cyclic Codes and Finite Field Arithmetic”, T. R. N. Rao, L. M. L. Delcambre, A. Iskander, Proc. of the 1st Conference on Foundations of Software Technology and Theoretical Computer Science, Bangalore, India, December 1981.

“Transaction Management in a Distributed Database System”, L. M. L. Delcambre and E. T. Lisboa, Proc. of the 3rd Conference of the European Co-operation in Informatics (ECI-81), Munich, W. Germany, October 1981.

“Decentralized Concurrency Control for Distributed Database Management Systems”, L. M. L. Delcambre and E. T. Lisboa, Proc. of the IEEE Symposium on Reliability in Distributed Software and Database Systems, Pittsburgh, Pennsylvania, July 1981.

“Guideline for the Design of Medley: a Distributed Multiple Database System”, L. Delcambre, E. Adams, A. Birjandi, M. Farooq, M. K. Sadagopan, A. Hayatgheyb, C. Lillie, E. Lisboa, and D. Vines, Proc. of ACM Pacific '80, San Francisco, California, November 1980.

## **Ph.D. STUDENT SUPERVISION**

### ***Ph.D. Students Currently Supervised***

Jeremy Steinhauer, Beginning in Fall 2008.

Scott Britell, Beginning in Fall 2009. Scott was first an MS student; he entered the PhD program in Spring of 2011. While he was a MS student, he was a full-time research assistant working on one of my grants.

Christoph Schuetz, PhD student at University of Linz, Austria, Department of Business Informatics - Data & Knowledge Engineering (DKE), currently at Portland State University, working with Dr. Delcambre.

### ***Ph.D. Students Graduated***

David Archer, Spring, 2011, “Conceptual Modeling of Data with Provenance,” Portland State University, Current Position, Research and Engineering, Galois, Inc., Portland, OR.

James Terwilliger, Winter 2009, “Graphical User Interfaces as Updateable Views”, Portland State University, Current Position, SQL Server Team, Microsoft Corporation.

Susan Price, Winter 2008, “Semantic Components: A Model for Enhancing Retrieval of Domain-Specific Information,” Portland State University, Current Position, SQL Server Team, Microsoft Corporation.

Mathew Weaver, Summer 2005, "Enhancing a Domain-Specific Digital Library with Metadata Based on Hierarchical Controlled Vocabularies", OGI School of Science and Engineering, OHSU, Current Position, Chief Technology Officer, EarthSoft, Inc.

Shawn Bowers, Fall 2003, "The Uni-Level Description: A Uniform Framework for Managing Structural Heterogeneity", OGI School of Science and Engineering, OHSU, Current Position, Assistant Professor, Gonzaga University.

James Langston, May 1995, "Object-Oriented Database Design based on a Shrink Wrap Schema", University of Louisiana, Lafayette, Current Position, Intel Corporation.

Greg Washburn, May 1995, "Vertical Information Management: A Framework to Support High Level Information Requests in the Context of Autonomous Information Systems", University of Louisiana, Lafayette, Current Position, Webtrends, Inc.

Donald Schwartz, Defense, April 1993, "A Computer-Aided Design Database Integrated with a Generic Formal Design Paradigm", University of Louisiana, Lafayette, Current Position, Millsaps College.

Carlos Pena, Defense, June 1992, "Early Conflict Resolution for Recency-Based Rule Firing" University of Louisiana, Lafayette.

Ian Remedios, (Co-Chair with Dr. Kemal Efe), Defense, April 1992, "Factory Data Allocation for a CIM Environment", University of Louisiana, Lafayette, Current Position, Oracle Corporation.

Mohsen Beheshti, Defense, April 1992, "Object-Oriented Concurrency Control", University of Louisiana, Lafayette, Current Position, California State University, Dominguez Hills.

Bee Lee (Billy) Lim, Defense, February 1992, "The Enforcement of Object-Centered Constraints", Current Position, University of Louisiana, Lafayette, Illinois State University, Normal, IL.

Theodore Williams, Defense, Nov. 1991, "The Internal Model for Formalization of the Storage Structures of an Object-Oriented Database", University of Louisiana, Lafayette.

Darius Navabi-Shirazi, Defense, May 1991, "A Flexible Multi-Level, Multi-Path Expert Database System for Non-Deterministic Rule Programs", University of Louisiana, Lafayette.

Lissa Pollacia, Defense, April 1991, "The Object Flow Model: A Conceptual Modeling Language for Object-Driven Software", University of Louisiana, Lafayette, Current Position, Professor of Information Technology, Georgia Gwinnett College.

G. Margaret Schaar, (Co-Chair with Dr. Kemal Efe), Defense, Dec. 1990. "A Queuing Theoretical Framework for Load Sharing Algorithms in Heterogeneous Systems", University of Louisiana, Lafayette.

Craig Leger, Ph.D. Defense, July 1990. "Nexus Logic: A Model Framework for Database Intension", University of Louisiana, Lafayette.

Karen C. Davis, April 1990. "A Formal Foundation for Object-Oriented, Algebraic Query Processing", University of Louisiana, Lafayette, Current Position, University of Cincinnati, Cincinnati OH.

Jint Waramahaputi, Ph.D. Defense, May 1990. "Formal Design and Analysis of the USL MMDBS and PMR/TD for the Efficient Implementation of RPL," University of Louisiana, Lafayette.

James Etheredge, Ph.D. Defense, May 1989. "Pattern Match Reduction in the Relational Production Language". Current Position, University of Louisiana, Lafayette, Louisiana.

Susan D. Urban, Ph.D. Defense, September 1987. "Constraint Analysis for the Design of Semantic Database Update Operations". Current Position, Arizona State University, Tempe AZ.

## **CONFERENCE ACTIVITIES (other than presentation and refereeing of papers)**

Program Committee Member, 2012 International Conference on Scientific and Statistical Database Management Systems (SSDBM).

Program Committee Member, 2012 Joint Conference on Digital Libraries.

Program Committee Member, 2012 International Conference on Conceptual Modeling.

Program Committee Co-Chair, with Manfred Jeusfeld and Tok Wang Ling, 2011 International Conference on Conceptual Modeling.

Program Committee Member, 2011 Joint Conference on Digital Libraries.

Program Committee Member, 2010 European Conference on Digital Libraries (ECDL).

Program Committee Member, 2010 Very Large Databases Conference (VLDB).

Co-Workshop Chair, 1<sup>st</sup> International Workshop on Data Semantics, held in conjunction with EDBT (International Conference on Extending Database Technology) 2010.

Program Committee Member, 2009 Very Large Databases Conference (VLDB).

Program Committee Member, 2009 Joint Conference on Digital Libraries (JCDL).

Program Committee Member, 2008 Web Information Systems Engineering (WISE).

Co-organizer, Dagstuhl Workshop on the Evolution of Conceptual Modeling, with Roland Kaschek and Heinrich Mahr, April 2008.

Program Committee Member, 2008 International Conference on Conceptual Modeling (ER).

Program Committee Member, 2007, International Conference on Conceptual Modeling (ER).

Program Committee Member, 2006 International Conference on Digital Government, May 2006.

Program Committee Member, 2006 Extending Database Technology Conference, March 2006.

Program Committee Member, dg.o 2006, The National Digital Government Research Conference, San Diego, CA, May 2006.

Program Committee Member, International Conference on Conceptual Modeling (ER 2006), Tuscon, AZ, Nov. 2006.

Steering Committee Member, International Conference on Conceptual Modeling (ER), 2005-present.

Program Committee Co-Chair, 24<sup>th</sup> International Conference on Conceptual Modeling (ER 2005), with Oscar Pastor and John Mylopoulos, Klagenfurt, Austria, October, 2005.

Conference Co-General Chair, dg.o 2005, The National Digital Government Research Conference, with Genevieve Giuliano, sponsored by the National Science Foundation, published in the ACM Digital Library, May 2005.

Program Committee Member, The 17th Conference on Advanced Information Systems Engineering (CAiSE'05), 13-17 June 2005, Porto, Portugal.

Program Committee Member, ACM SIGMOD Conference, 2005.

Program Committee Member, International Conference on Conceptual Modeling (ER 2004), Shanghai, China, Nov. 2004.

Program Chair, dg.o 2004, The Digital Government Conference, The National Conference on Digital Government Research, Sponsored by the National Science Foundation, May 2004.

Panel Organizer and Moderator, "Conceptual Modeling for GIS," International Conference on Conceptual Modeling (ER 2003), Chicago, Illinois, Oct. 2003.

Program Committee Member, International Conference on Conceptual Modeling (ER 2003), Chicago, Illinois, USA, Oct. 2003.

Proceedings Chair, Joint Conference on Digital Libraries, 2003.

Program Committee Member, Joint Conference on Digital Libraries, 2003.

Program Committee Member, ACM SIGMOD Conference, 2003.

Organizer (with Paul Gorman and David Maier), National Science Foundation, Digital Libraries 2 Program (DLI2), Principal Investigators Meeting, July 2002, Portland, Oregon.

Posters Chair and Program Committee Participant, Joint Conference on Digital Libraries, 2002.

Program Committee Member, International Conference on Data Engineering, 2002.

Program Committee Member, ACM SIGMOD Conference, 2000.

Program Committee Member, International Conference on Data Engineering, 2000.

Program Committee Member, CIKM, 1999.

Conference Committee Member, Demonstrations Chair, ACM SIGMOD Conference, 1998.

Program Committee Member, International Data Engineering Conference, 1998.

Poster Session (presented by Radhika Reddy), "Structured Maps: CARTE 1.0 Demonstration", Automated Digital Libraries Forum, Washington, D.C., May 1996.

Regional Coordinator (USA), International Conference on Extending Database Technology, March 1996.

Steering Committee Member, International Database Engineering and Applications Symposium (IDEAS), 1998-2000.

Program Committee Member, International Database Engineering and Applications Symposium, Cardiff, England, August 1998.

Program Committee Member, International Database Engineering and Applications Symposium, Montreal, Canada, August 1997

Poster Session, (presented by Mark Whiting), "Vertical Information Management", 1995 Conference on Object-Oriented Programming, Systems, Languages, and Applications.

Program Committee Member, International Conference on Very Large Databases, 1995.

Program Committee Member, International Symposium on Object-Oriented Methodologies and Systems (ISOOMS), Palermo, Italy, Sept. 1994.

Program Committee Member, CoopIS-94, International Conference on Cooperative Information Systems, Toronto, Canada, May 1994.

Co-General Chair, Research Issues in Data Engineering (RIDE) Workshop 1994: Active Database Systems, with Eric Simon (of INRIA, Roquencourt, France), Houston, TX, February, 1994.

Track Organizer, Simulation MultiConference on Artificial Intelligence and Simulation, New Orleans, LA, April 1991.

Program Committee Member, IEEE Computer Society 1986 International Conference on Computer Languages, Miami, FL, Oct. 1986. IEEE International Conference on Data Engineering.

Finance Chairman, IEEE Computer Society 1986 International Conference on Computer Languages, Miami, FL., Oct. 1986.

Theme Day Chairman, "Distributed Processing, Distributed Control, and Distributed Data", for the ACM Computer Science Conference, New Orleans, La., March 1985.

Conference Treasurer, ACM Computer Science Conference, New Orleans, La., March 1985.

Session Chairman (with C. Linn), Distributed Execution of Programs, 17th Annual Hawaii International Conference on System Sciences, Honolulu, Hawaii, Jan. 1984.

## **INVITED PARTICIPATION**

Dagtushl Seminar on the Principles of Provenance, 12091, February/March, 2012.

NSF CE-21 Program Informational Meeting, February 2012, Washington, DC.

NSF III Program, PI's Meeting, April 2010, Washington, DC.

Workshop on US – European Union Collaboration on Digital Government Research, organized by Roland Traunmueller and Maria Wimmer, in conjunction with the 3<sup>rd</sup> International Electronic Government Conference (EGOV 2004), Zaragoza, Spain, August 2004.

Workshop on US – European Union Collaboration on Digital Government Research, organized by Sharon Dawes and Eduard Hovy, sponsored by the National Science Foundation, Seattle, Washington, May 2004.

Workshop on US – Hungarian Collaboration on Digital Government Research, organized by Anthony Stefanidis and Noshir Contractor, sponsored by the National Science Foundation, Budapest, Hungary, March 2004.

Digital Library Initiative Metadata Workshop, organized by Ed Fox, sponsored by the National Science Foundation, Nov., 1995.

## **INVITED PRESENTATIONS**

“Subdocuments in (Domain-Specific) Digital Libraries,” Department of Information Management, Tilburg University, Tilburg, The Netherlands, October 2011.

“The User Interface is the Conceptual Model”, Information Systems Engineering (ISE) chair at the Computer Science Institute at the Technical Faculty at the Christian Albrechts University Kiel, Kiel, Germany, June 2011.

“The User Interface is the Conceptual Model,” Department of Communication and Psychology, Aalborg University, Aalborg, Denmark, June 2011.

“The User Interface is the Conceptual Model,” The Center for Advanced Computer Studies, University of Louisiana, Lafayette, Louisiana, April 2011.

“Digital Government Research in the US: A Domain-Specific Digital Library for the USDA Forest Service”, Third International Conference on Electronic Government, August 2004, Zaragoza, Spain.

“SLIMPad Technology for Superimposed Information,” OHSU Board of Trustees, Poster Session, Dec. 2002.

“Tracking Footprints through a Medical Information Space: Overview” with Paul Gorman and David Maier, OHSU Foundation, August, 2002, with Paul Gorman.

“Tracking Footprints through a Medical Information Space: Update,” with Paul Gorman, NSF, Digital Libraries 2, PI Meeting, Portland, OR, July 2002.

“Harvesting Information to Sustain our Forests “, Oregon State University, Computer Science Colloquium Series, May 13, 2002.

“Technology for Superimposed Information, Invited Speaker, Stanford Computer Science Colloquium Series, Oct. 2001.

“Tracking Footprints through a Medical Information Space: Update,” with Paul Gorman, NSF Digital Libraries 2, PI Meeting, Roanoke, VA, June 2001.

“Tracking Footprints through a Medical Information Space: Update”, NSF Digital Libraries 2, PI Meeting, Stratford Upon Avon, England, UK, June 2000.

“Tracking Footprints through a Medical Information Space: Update”, with David Maier and Paul Gorman, NSF Digital Libraries 2, PI Meeting, Ithaca, NY (Cornell University), 1999.

“Superimposed Information and Generic Representations”, Invited Speaker, INRIA, Rocquencourt, France (near Versailles, France), March 2001.

“Models for Superimposed Information”, Invited Speaker, 1997 Pre-Conference Symposium, Conceptual Modeling: Historical Perspectives and Future Directions, held in conjunction with the 1997 Conceptual Modeling Conference (ER '97), at UCLA, Los Angeles, CA, Nov. 1997.

“Superimposed Information”, Computer Science Colloquium, Concordia University, Montreal, CA, August 1997.

Panelist: The Future of Database Modeling, International Data Engineering Applications and Systems (IDEAS) Conference, Montreal, CA, August 1997.

Speaker, DARPA PIs Meeting: Wrappers and Composition, The Heterodyne Project, Lake Tahoe, CA, August, 1997.

“Modeling Flexibility and Modeling Weirdness in the Topic Navigation Map Architecture”, International HyTime Conference, Seattle, WA, August, 1996.

“Adding Database Capability to the Topic Navigation Map Architecture”, International HyTime Conference, Seattle, WA, August 1996.

Computer Science Colloquium Speaker, “Exploring the Topic Map Architecture from a Database Point of View”, Johannes Kepler University, University of Linz, Linz, Austria, March 1996.

“Database Paradigms”, International HyTime Conference, Vancouver, Canada, August, 1995.

Department of Environmental Science, OGI, Colloquium Series, Database Support for Environmental Information, Spring 1994.

Simposio International en Tecnologias Informaticas, One day symposium on “Object-Oriented Models and Methods”, Medellin, Columbia.

Panelist, 1992 ACM Computer Science Conference, Knowledge-Based Systems and Software Engineering, Kansas City, Missouri, March, 1992.

Invited Presentation, Conference on Fielded Applications of Intelligent Software Technology (FAIST `92), Toulouse, France, February, 1992.

Panelist, 1991 World Congress on Expert Systems, Large Intelligent Database and Knowledge Based Systems, Orlando, Florida, Dec. 1991.

“The Object Flow Model: A Conceptual Modeling Language for Database Applications”, Institute Nationale de Recherche Informatique Automatique (INRIA), Rocquencourt, France.

Northeast Louisiana University, Monroe, Louisiana, Nov. 1991, (funded by the Louisiana Consortium on Computer Science and Engineering, Two Way Exchange Program).

Louisiana Technical University, Ruston, Louisiana, Nov. 1991, (funded by the Louisiana Consortium on Computer Science and Engineering, Two Way Exchange Program).

Institut Nationale de Recherche en Informatique at en Automatique (INRIA), Rocquencourt, France, July 1990.

Lamar University, Beaumont, Texas, April 1990 (ACM National Lectureship Program).

Baylor University, Waco, Texas, April 1990 (ACM National Lectureship Program).

Clemson University, Clemson, South Carolina, October 1989.

Tulane University, New Orleans, Louisiana, July 1989.

Clemson University, Clemson, South Carolina, May 1988.

Louisiana Technical University, Ruston, Louisiana, April 1986.

Northeast Louisiana University, Monroe, La., April 1986.

### **PROFESSIONAL SERVICE (beyond conference activities)**

Member of the PhD Dissertation Committee for Uma Murthy, Virginia Tech, (Ed Fox, advisor), graduated 2011.

Co-Editor-in-Chief: (with Stefano Spaccapietra, Editor-in-Chief), Journal of Data Semantics (Lecture Notes in Computer Science subline), Springer-Verlag, 2008-2009.

Co-Organizer, Dagstuhl Seminar Number 08181, “The Evolution of Conceptual Modeling”, L. Delcambre, R. H. Kaschek, H. C. Mayr (Eds.) published by LZJ Host ISSN 1862 – 4405, April 27-30, 2008.

Opponent, PhD Dissertation, Terje Brasethvik, "Conceptual modelling for domain specific document description and retrieval - An approach to semantic document modeling," (Arne Solvberg, advisor), Norwegian University of Science and Technology.

Editorial Board Member, Journal of Data Semantics (Lecture Notes in Computer Science subline), Springer-Verlag, 2002-present.

NSF Site Review Team, Engineering Research Center Program, 2004.

NSF Site Review Team, Engineering Research Center Program, 2003.

NSF Site Review Team, Engineering Research Center Program, 2002.

Review Team Member, Laboratory Review, Pacific Northwest National Laboratory, a Department of Energy, Multi-Program National Laboratory, September 1999.

Addison-Wesley, Reviewer of Books and Book Proposals in the field of object-oriented analysis and design, including use case modeling.

Laboratory-Directed Research and Development Program Reviewer, Pacific Northwest National Laboratory, August 1996.

Outside member of the PhD Jury for Shim Yoon, Advised by Professor Georges Gardarin, Universite de Pierre et Marie Curie, Versailles, France, March, 1996.

Invited participant, National Science Foundation Digital Library Initiative Metadata Workshop, Nov., 1995.

OGI, Computer Science and Engineering Representative to the Master of Software Engineering Council, Fall 1995 to 2002.

Invited participant, Metadata Workshop, Sponsored by the Online Center for Library Cataloging and the National Center for Supercomputing Applications, Dublin, Ohio, March, 1995.

Reviewer, Atmospheric Radiation Monitoring (ARM) Program, for the Department of Energy, Oakridge National Laboratories, 1995.

External participant, 1994 Strategic Planning Session for the Computer Sciences Department, Pacific Northwest National Laboratories.

External Participant, 1993 Strategic Planning Session for the Computer Sciences Department, Pacific Northwest Laboratories.

Panelist, Review Board. Environmental Protection Agency.

Reviewer, and panelist, National Science Foundation, on an ongoing basis.

Reviewer for:

The National Science Foundation  
ACM Transactions on Information Systems  
Journal of Data Semantics (Springer journal)

Journal on Digital Libraries  
IEEE Transactions on Knowledge and Data Engineering  
IEEE Transactions on Software Engineering  
ACM Transactions on Database Systems  
IEEE Software Magazine  
IEEE Expert Magazine  
IEEE International Conference on Data Engineering  
International Conference on Very Large Databases  
International Database Engineering and Applications Symposium  
(IDEAS)  
International Symposium on Object-Oriented Methodologies and  
Systems (ISOOMS)  
International Conference on Cooperative Information Systems  
International Conference on Computer Languages

## **INDUSTRIAL INTERACTION**

Co-Director of the Data-Intensive Systems Center (DISC) with Leonard Shapiro, a joint center of the Oregon Graduate Institute and Portland State University 1994-2002. Corporate members paid a \$25,000 annual membership fee and received a variety of services. Responsible for outreach for new members, organizing meetings of the Technical Advisory Board to authorize member services, directing the delivery of member services, and running DISC administrative activities. Member companies included: ABC Technologies, ADP Corporation, Intel Corporation, Nike Corporation, Northwest Natural Gas Company, Regence Blue Cross/Blue Shield of Oregon, Sequent Computer Systems, Inc., and Sharp Labs.

Member of the Oregon Master of Software Engineering (MSE) Council (OGI representative). Have actively participated in the MSE Council since the Fall of 1995. Interacted with industry, through meetings with Tektronix, Mentor Graphics, Sequent Computer Systems, Inc., and Intel Corporation. The purpose of these interactions is to understand the need for well-educated software engineers and then design the Oregon MSE program to meet these needs.

Interface with the Center for Professional Development to promote the use of adjunct faculty, encourage the use of distance learning technology, develop new regular and short courses. Organized the Computer Science and Engineering table for the Fall 1996 and Winter 1997 CPD Open Houses.

## **DEPARTMENTAL/INSTITUTIONAL SERVICE, AWARDS & OUTREACH**

Chair of the Computer Science Department, Promotion and Tenure Committee, 2005-present (except for the 2010-2011 academic year when I was on sabbatical).

Supervised a high school apprentice, Ananth Mohan, as he worked on one of my research projects, Summer 2011, through the Apprenticeships in Science and Engineering (ASE) program offered through Saturday Academy.

Demonstrated computer science concepts at the Oregon Museum for Science and Industry (with Tim Sheard) at a day-long event for children aged 6-15, Fall 2010.

Supervised an undergraduate CS student, Tyler Hayes, as he worked on one of my research grants, Winter 2010-Spring 2010 as part of a Research Experience for Undergraduates supplement.

Supervised an undergraduate CS student, Felicia Decker, as she worked on one of my research grants, Fall 2009-Spring 2010.

Supervised an undergraduate CS student, Holly Decker, as she worked on one of my research grants, Winter 2010-Spring 2010 as part of a Research Experience for Undergraduates supplement.

Demonstrated computer science concepts at an all-day event for the Oregon Mathematics, Engineering, Science Achievement (MESA) for students and their parents, Spring 2010.

Supervised a high school apprentice, Gabe Buckmaster, as he worked on one of my research projects, Summer 2009, Summer 2010, and then as a freshman undergraduate student in the Summer of 2011.

Supervised two high school apprentices, Vikram Ramesh and Kelson Luc, as they worked on one of my research grants through the Apprenticeships in Science and Engineering (ASE) program offered through Saturday Academy, Summer 2009.

Supervised two high school interns, Oliver Daniels and Matt MacQueston, as they worked on one of my research grants, from the School of Science and Technology, Beaverton, OR, January – May 2009.

James Terwilliger, my PhD student at the time, was selected as the outstanding graduate student in MCECS and also the outstanding graduate student at PSU. The awards were given just before graduation, June 2009.

Developed a pilot offering of our first course in computer science, CS161 to coincide with a curriculum change. This change eliminated the CS161 class as a prerequisite for CS162 which allowed new students who already know how to program (in some programming language) can enter CS162 because it is now taught without expecting the student to be familiar with the C programming language. This change also provides a better experience for students who do not know how to program because CS161 is taught accordingly (since students with experience can begin in CS162). Finally, this change allows each offering of CS161 to be different – supporting more flexibility in the way that students are introduced to computer science. Pilot was offered in the Spring 2009 Quarter; it was the first class offered using the Python programming language.

Offered a three-hour class (with Cynthia Brown) to a group of middle school girls to introduce them to “things that computer scientists enjoy thinking about”. We used demonstrations involving the girls holding cards and exchanging places in order to help the girls understand that there is more than one way (that is, more than one algorithm) to sort numbers. Summer 2008.

Volunteered to teach CS 386 in the Shanghai program using video recording technology: 2005-present.

Co-Project Leader, OGI School Web Development Project, with Jeff Schilling. Co-led the entire effort to interview constituents across the OGI school, interview web vendors, select I-Site Design, and serve as the primary leads for the project work in conjunction with I-Site Design.

2002 Computer Science and Engineering Department, Outstanding Teacher, OGI School of Science and Engineering, OHSU.

2001 Recipient of the Oregon Graduate Institute Faculty Award for Outreach.

Developed CSE514D, the distance learning version of CSE514 Introduction to Database Systems, in conjunction with Cenquest, Inc. Taught this class in Fall 2001, Spring 2002, and mentored Shawn Bowers (one of my PhD students) to teach it Fall 2002 and Spring 2003.

1999 Computer Science and Engineering Department, Outstanding Teacher, Oregon Graduate Institute.

Member of the Institute Strategic Planning Committee 1998-1999.

Awarded the Oregon Graduate Institute Outstanding Teaching Award (one of ten awardees), with a cash award of \$1500, 1997.

Member of the accreditation team for OGI representing the Computer Science and Engineering Department, Nov. 1997 - Nov. 1998. OGI was accredited with a number of acclamations in December 1998.

Member of the Computer Science and Engineering Department Strategic Planning Committee, Fall 1997.

Organized a team of three to teach CSE 514 in the summer of 1996, based on the unavailability of anyone to teach the class. Served as anchor for the class, responsible for coordinating the grading and the lectures of the three faculty, Drs. Earl Ecklund, Mike Freiling, and Lois Delcambre.

Organized an experimental, team-delivered course, CSE 514, in order to match the research expertise of various database faculty with the topic material of the courses. Drs. David Maier, Leonard Shapiro (of Portland State University), Calton Pu, and Lois Delcambre delivered the course in the Fall 1996 Quarter at OGI. Served as anchor for the class, responsible for coordinating the grading and the activities of the class.

Facilitated the expansion of "industry-friendly" time scheduling for OGI CSE classes, including classes that meet in a three hour block. During the 1996/97 academic year, the CSE department has a net increase in enrollments from part-time students.

Taught CSE 504 over ProShare video teleconferencing product, with two remote students at Intel.

Taught CSE 514 over ProShare video teleconferencing product with seven remote students (two at HP in Corvallis and five at Informix in Portland).

Facilitated the expansion of the use of ProShare for distance learning.

Primary contact for the Center for Professional Development with the Computer Science and Engineering Department.

Member of the Faculty Senate, 1993-1998.

Member of the Academic Renewal Committee, 1995/96 Academic Year.

Chair of the Educational Innovation Subcommittee for the Academic Renewal Committee, Spring 1996.

Regular attendance at departmental faculty meetings and retreats.

Numerous presentations for the OGI Development Office: Chief Executive Roundtable Breakfast meetings, and other events, 1993-1995.