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Education

University of Washington, September 1985 to July 1991

Ph.D. Computer Science (1991)
Dissertation: *Program Restructuring as an Aid to Software Maintenance*
Advisor: David Notkin

M.S. Computer Science (1988)

University of Arizona, August 1981 to May 1985

B.A. Mathematics, minor Computer Science, with highest honors (1985)

Professional Experience

University of California, San Diego

Full Professor, Computer Science and Engineering, July 2003 to Present
Associate Professor, Computer Science and Engineering, July 1997 to June 2003
Assistant Professor, Computer Science and Engineering, July 1991 to June 1997

Xerox Palo Alto Research Center

Visiting Researcher, Aspect Oriented Programming Group (Gregor Kiczales), October 1999–June 2000

IBM Research, Hawthorne

Visiting Faculty, Software Technology Lab (Mark Wegman), August–September 1992

University of Washington

Research Assistant, January 1986 to July 1991
Teaching Assistant, September 1985 to December 1985

IBM Research, Almaden

Researcher on the Functional Programming Project, June to September 1988

Optical Sciences Center, University of Arizona

Parallel Systems Researcher, May 1984 to January 1990

Research Interests

Software engineering (especially software evolution and analysis), high-level programming languages, programming methodology, compilers, parallel languages and parallel systems.

Publications

Journals

J19. C. C. Tsai, G. Lee, F. Raab, G. J. Norman, W. G. Griswold, and K. Patrick, "Usability and Feasibility of PmEB: A Mobile Phone Application for Monitoring Real Time Caloric Balance", *Mobile Networks and Applications*, Vol. 12, No. 2-3, pages 173–184, Springer, June 2007.

J18. D. C. Atkinson and W. G. Griswold. "Effective Pattern Matching of Source Code Using Abstract Syntax Patterns", *Software - Practice and Experience* Vol. 36, No. 4, pages 413–447, April 2006.

J17. W. G. Griswold, K. Sullivan, Y. Song, M. Shonle, N. Tewari, Y. Cai, and H. Rajan, "Modular Software Design with Crosscutting Interfaces", *IEEE Software*, Special Issue on Aspect-Oriented Programming, January/February 2006.

J16. T. C. Chan, J. Killeen, W. Griswold, L. Lenert, "Information Technology and Emergency Medical Care during Disasters", *Academic Emergency Medicine*, Kluwer, Vol. 11, No. 11, pp. 1229–1236, November 2004.

J15. W. G. Griswold, P. Shanahan, S. W. Brown, R. Boyer, M. Ratto, R. B. Shapiro, and T. M. Truong, "ActiveCampus - Experiments in Community-Oriented Ubiquitous Computing", *IEEE Computer*, Vol. 37, No. 10., pp. 73–81, October 2004.

J14. W. G. Griswold, "Teaching Software Engineering in a Compiler Project Course", *ACM Journal on Educational Resources in Computing (JERIC)*, Vol. 2, No. 4, December 2002.

J13. G. Kiczales, E. Hilsdale, J. Hugunin, M. Kersten, J. Palm, W. G. Griswold, "Getting Started with AspectJ", *Communications of the ACM*, pp. 59–65, October 2001.

J12. M. Ernst, J. Cockrell, W. G. Griswold, and D. Notkin, "Dynamically Discovering Likely Program Invariants to Support Program Evolution", *IEEE Transactions on Software Engineering*, Vol. 27, No. 2, pp. 1–25, February 2001. A version of this paper first appeared in the *1999 International Conference on Software Engineering*, and was recommended for expedited publication in *IEEE TSE*.

J11. W. G. Griswold, M. I. Chen, R. W. Bowdidge, J. L. Cabaniss, V. B. Nguyen, J. D. Morgenthaler, "Tool Support for Planning the Restructuring of Data Abstractions in Large Systems," *IEEE Transactions on Software Engineering*, Vol. 24, No. 7, pp. 534–558, July 1998. A version of this paper first appeared in the *ACM SIGSOFT '96 Symposium on the Foundations of Software Engineering*, and was recommended for expedited publication in *IEEE TSE*.

J10. G. C. Murphy, D. Notkin, W. G. Griswold, E. S. Lan, "An Empirical Study of Static Call Graph Extractors," *Transactions on Software Engineering and Methodology*, ACM, Vol. 7, No. 2, pp. 158–191, April 1998.

J9. R. W. Bowdidge, W. G. Griswold, "Supporting the Restructuring of Data Abstractions through Manipulation of a Program Visualization," *Transactions on Software Engineering and Methodology*, ACM, Vol. 7, No. 2, pp. 109–157, April 1998.

J8. G. A. Alverson, W. G. Griswold, C. Lin, D. Notkin, L. Snyder, "Abstractions for Portable, Scalable Parallel Programming" *IEEE Transactions on Parallel and Distributed Computing*, IEEE, Vol. 9, No. 1, pp. 71–86, January 1998.

J7. R. W. Bowdidge, W. G. Griswold, "How Software Tools Organize Programmer Behavior During the Task of Data Encapsulation", *Empirical Software Engineering*, Kluwer, Vol. 2, No. 3, pp. 221–267, September 1997.

J6. W. G. Griswold, D. C. Atkinson, "Managing the Design Tradeoffs for a Program Understanding and Transformation Tool", *Journal of Systems and Software*, Vol. 30, No. 1–2, pp. 99–116, July–August, 1995.

J5. W. G. Griswold, D. Notkin, "Architectural Tradeoffs for a Meaning-Preserving Program Restructuring Tool", *IEEE Transactions of Software Engineering*, Vol. 21, No. 4, pp. 275–287, April, 1995.

J4. (**brief contribution**) W. G. Griswold, "Comments on 'Language Design for Program Manipulation"', *Transactions on Software Engineering*, IEEE, pp. 218–219, March 1994.

J3. W. G. Griswold, D. Notkin, "Automated Assistance for Program Restructuring", *Transactions on Software Engineering and Methodology*, ACM, July 1993.

J2. W. G. Griswold, Gregg M. Townsend, "The Design and Implementation of Dynamic Hashing for Sets and Tables in Icon", *Software: Practice and Experience*, Wiley and Son, pp. 351–367, April 1993.

J1. J. E. Weber, P. H. Bartels, W. Griswold, W. Kuhn, S. H. Paplanus, A. R. Graham, "Colonic Lesion Expert System: Performance Evaluation", *Analytical and Quantitative Cytology and Histology*, Vol. 10, No. 2, pp. 150–159, April 1988.

Book Chapters

B2. G. C. Murphy, W. G. Griswold, M. P. Robillard, J. Hannemann, and W. Leong, "Design Recommendations for Concern Elaboration Tools", *Aspect-Oriented Software Development*, R. Filman, T. Elrad, S. Clarke, M. Aksit, Eds., pp. 507–530, Addison-Wesley, 2004.

B1. W. G. Griswold, P. H. Bartels, R. L. Shoemaker, H. G. Bartels, R. Maenner, D. Hillman, "Multiprocessor Computer System for Medical Image Processing", *Intermediate-Level Image Processing*, M.J.B. Duff, Ed., Academic Press, London, 1986.

Conference Proceedings

C49. T. Sohn, K. A. Li, W. G. Griswold, and J. D. Hollan, "A Diary Study of Mobile Information Needs", *CHI '08: Conference on Human Factors in Computing Systems*, April 2008.

C48. P. Shanahan and W. G. Griswold, "Inferring the Everyday Task Capabilities of Locations, *LoCA'07: 3rd International Symposium on Location- and Context-Awareness*, September 2007.

C47. M. Shonle, W. G. Griswold, and S. Lerner, "Beyond Refactoring: A Framework for Modular Maintenance of Crosscutting Desgin Idioms", *ESEC/FSE'07: 12th European Software Engineering Conference; Held Jointly with the 13th ACM SIGSOFT Symposium on the Foundations of Software Engineering*, September 2007.

C46. D. Lindquist, T. Denning, M. Kelly, R. Malani, W. G. Griswold, and B. Simon, "Exploring the Potential of Mobile Phones for Active Learning in the Classroom", *SIGCSE '07: Proceedings of the 38th SIGCSE Technical Symposium on Computer Science Education*, March 2007.

C45. T. Denning, M. Kelly, D. Lindquist, R. Malani, W. G. Griswold, and B. Simon, "Lightweight Preliminary Peer Review: Does In-Class Peer Review Make Sense?", *SIGCSE '07: Proceedings of the 38th SIGCSE Technical Symposium on Computer Science Education*, March 2007.

C44. J. Neddenriep and W. G. Griswold, "RiverInk - An Extensible Framework for Multimodal Interoperable Ink", *HICSS'07: Software Technology Track, Proceedings of the 40th Annual Hawaii International Conference on System Sciences*, January 2007.

C43. N. J. McCurdy, W. G. Griswold, L. A. Lenert, "A Robust Abstraction for First-Person Video Streaming: Techniques, Applications, and Experiments, *ISM '06: IEEE International Symposium on Multimedia*, December 2006.

C42. C. C. Tsai, G. Lee, F. Raab, G. J. Norman, T. Sohn, W. G. Griswold, K. Patrick, "Usability and Feasibility of PmEB: A Mobile Phone Application for Monitoring Real Time Caloric Balance", *IEEE/ACM First International Conference on Pervasive Computing Technologies for Healthcare*, November 2006.

C41. S. W. Brown, W. G. Griswold, B. Demchak, and L. Lenert, "Middleware for Reliable Mobile Medical Workflow Support in Disaster Settings", *AMIA'06: Proceedings of the American Medical Informatics Association Annual Fall Symposium 2006*, November 2006.

C40. T. Sohn, A. Varshavsky, A. LaMarca, M. Y. Chen, T. Choudhury, I. Smith, S. Consolvo, W. G. Griswold, and E. de Lara, "Mobility Detection Using Everyday GSM Traces", *UbiComp'06: Eighth International Conference on Ubiquitous Computing*, September 2006.

C39. T. Sohn, W. G. Griswold, J. Scott, A. LaMarca, Y. Chawathe, I. Smith, M. Y. Chen, "Experiences with Place Lab: an Open Source Toolkit for Location-Aware Computing", *ICSE'06: 28th International Conference on Software Engineering*, May 2006.

C38. T. Denning, W. G. Griswold, B. Simon, M. Wilkerson, "Multimodal Communication in the Classroom: What does it mean for us?", *SIGCSE '06: Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education*, February 2006.

C37. N. McCurdy, W. Griswold, and L. Lenert, "RealityFlythrough: Enhancing Situational Awareness for Medical Response to Disasters Using Ubiquitous Video", *AMIA'05: Proceedings of the American Medical Informatics Association Annual Fall Symposium 2005*, pp. 510–514, October 2005.

C36. T. Sohn, K. A. Li, G. Lee, I. Smith, J. Scott, and W. G. Griswold, "Place-Its: A Study of Location-Based Reminders on Mobile Phones", *UbiComp'05: Seventh International Conference on Ubiquitous Computing*, pp. 232–250, September 2005.

C35. K. J. Sullivan, W. G. Griswold, Y. Song, Y. Cai, M. Shonle, N. Tewari, and H. Rajan, "Information Hiding Interfaces for Aspect-Oriented Design", *ESEC/FSE'05: 10th European Software Engineering Conference; Held Jointly with the 13th ACM SIGSOFT Symposium on the Foundations of Software Engineering*, pp. 166–175, September 2005.

C34. N. J. McCurdy, W. G. Griswold, "A Systems Architecture for Ubiquitous Video", *MobiSys '05: Proceedings of the 3rd International Conference on Mobile Systems, Applications, and Services*, pp. 1–14, June 2005.

C33. M. Wilkerson, W. G. Griswold, B. Simon, "Ubiquitous Presenter: Increasing Student Access and Control in a Digital Lecturing Environment", *SIGCSE '05: Proceedings of the 36th SIGCSE Technical Symposium on Computer Science Education*, pp. 116–120, February 2005.

C32. R. T. Boyer and W. G. Griswold, "Fulcrum - An Open-Implementation Approach to Internet-Scale Context-Aware Publish / Subscribe", Software Technology Track, *HICCS'05: Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, p. 275a (10 pages), January 2005.

C31. R. Y. Sit, J. D. Hollan, W. G. Griswold, "Digital Photos as Conversational Anchors", Digital Documents and Media Track, *HICSS'05: Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, p. 109b (10 pages), January 2005.

C30. E. Bhasker, S. W. Brown, and W. G. Griswold, "Employing User Feedback for Fast, Accurate, Low-Maintenance Geolocationing", *IEEE 2nd International Conference on Pervasive Computing and Communications (PerCom 2004)*, pp. 111–120, March 2004.

C29. M. Ratto, R. B. Shapiro, T. M. Truong, and W. G. Griswold, "The ActiveClass Project: Experiments in Encouraging Classroom Participation", *CSCL'03: Computer Support for Collaborative Learning 2003*, Kluwer, pp. 477–486, June 2003.

C28. W. G. Griswold, R. Boyer, S. W. Brown, and T. M. Truong, "A Component Architecture for an Extensible, Highly Integrated Context-Aware Computing Infrastructure", *ICSE'03: 25th International Conference on Software Engineering*, pp. 363–372, May 2003.

C27. M. C. Burton, W. G. Griswold, A. D. McCulloch, G. A. Huber, "Static Data Structures - Reconciling Template Metaprogramming and Generic Programming", *IFIP Working Conference on Generic Programming*, Kluwer, July 2002.

C26. D. C. Atkinson, W. G. Griswold, "Implementation Techniques for Efficient Data-Flow Analysis of Large Programs", *2001 International Conference on Software Maintenance (ICSM '01)*, November 2001.

C25. Y. Kataoka, M. D. Ernst, W. G. Griswold, D. Notkin, "Automated Support for Program Refactoring using Invariants", *International Conference on Software Maintenance (ICSM '01)*, November 2001.

C24. W. G. Griswold, "Coping with Crosscutting Software Changes Using Information Transparency", *Reflection 2001: The Third International Conference on Metalevel Architectures and Separation of Crosscutting Concerns*, Lecture Notes In Computer Science, Vol. 2192, pp. 250–265, September 2001.

C23. K. Sullivan, W. G. Griswold, Y. Cai, B. Hallen, "The Structure and Value of Modularity in Design", *8th European Software Engineering Conference*; Held Jointly with *9th ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2001)*, pp. 99–108, September 2001.

C22. G. Kiczales, E. Hilsdale, J. Hugunin, M. Kersten, J. Palm, W. G. Griswold, "An Overview of AspectJ", *15th European Conference on Object-Oriented Programming (ECOOP 2001)*, pp. 327–353, June 2001.

C21. W. G. Griswold, J. J. Yuan, Y. Kato, "Exploiting the Map Metaphor in a Tool for Software Evolution", *2001 International Conference on Software Engineering*, pp. 265–274, May 2001.

C20. Y. Kato, W. G. Griswold, J. J. Yuan, "Experimental Study on Scalability of Tools Utilizing Information Transparency", *International Conference on Software*, 2000 IFIP World Computer Congress, pp. 877–882, August 2000.

C19. J. Hayes, W. G. Griswold, S. Moskovics, "Component Design of Retargetable Program Analysis Tools that Reuse Intermediate Representations", *2000 International Conference on Software Engineering*, pp. 356–365, June 2000.

C18. M. Ernst, A. Czeisler, W. G. Griswold, and D. Notkin, "Quickly Detecting Relevant Program Invariants", *2000 International Conference on Software Engineering*, pp. 449–458, June 2000.

C17. M. Ernst, J. Cockrell, W. G. Griswold, and D. Notkin, "Dynamically Discovering Likely Program Invariants to Support Program Evolution", *1999 International Conference on Software Engineering*, pp. 213–224, May 1999. Recommended for expedited publication in IEEE Transactions on Software Engineering.

C16. D. C. Atkinson, W. G. Griswold, "Effective Whole-Program Analysis in the Presence of Pointers", *ACM SIGSOFT '98 Symposium on the Foundations of Software Engineering*, pp. 46–55, November 1998.

C15. W. G. Griswold, M. I. Chen, R. W. Bowdidge, J. D. Morgenthaler, "Tool Support for Planning the Restructuring of Data Abstractions in Large Systems", *ACM SIGSOFT '96 Symposium on the Foundations of Software Engineering*, pp. 33–45, October 1996. Recommended for expedited publication in IEEE Transactions on Software Engineering.

C14. D. C. Atkinson, W. G. Griswold, "The Design of Whole-Program Analysis Tools", *Proceedings of the 18th International Conference on Software Engineering*, IEEE, pp. 16–27, March 1996.

C13. R. W. Bowdidge, W. G. Griswold, "Automated Support for Encapsulating Abstract Data Types", *ACM SIGSOFT '94 Symposium on the Foundations of Software Engineering*, pp. 97–110, December 1994.

C12. (**short paper**) J. S. Mattson, W. G. Griswold, "Speculative Evaluation for Parallel Graph Reduction", *International Conference on Parallel Architectures and Compilation Techniques*, North-Holland, Vol. A-50, pp. 331–334, August 1994.

C11. W. G. Griswold, "Direct Update of Dataflow Representations for a Meaning-Preserving Program Restructuring Tool", *ACM SIGSOFT '93: First Symposium on the Foundations of Software Engineering (FSE-1)*, pp. 42–55, December 1993.

C10. (**invited**) D. Notkin, D. Garlan, W. G. Griswold, K. Sullivan, "Adding Implicit Invocation to Languages: Three Approaches", *Proceedings of the JSSST International Symposium on Object Technologies for Advanced Software*, S. Nishio and A. Yonezawa (editors), pp. 489–510, November 1993. Springer-Verlag Lecture Notes in Computer Science #742, November 1993.

C9. G. Alverson, W. G. Griswold, D. Notkin, L. Snyder, "A Flexible Communication Abstraction for Nonshared Memory Parallel Computing", *Proceedings of Supercomputing '90*, New York, November 1990.

C8. W. G. Griswold, G. Harrison, D. Notkin, L. Snyder. "Scalable Abstractions for Parallel Programming", *Proceedings of the Fifth Distributed Memory Computing Conference*, Charleston, South Carolina, April 1990.

C7. R. L. Shoemaker, D. B. Thompson, W. G. Griswold, P. H. Bartels, "Performance and Task Scheduling Studies of a Multiprocessor in Histopathologic Image Analysis", *New Technologies in Cytometry and Molecular Biology*, G. C. Salzman, Ed., Proceedings of the SPIE, Vol. 1206, pp. 31–39, January 1990.

C6. R. L. Shoemaker, O. Stucky, R. Maenner, D. B. Thompson, W. G. Griswold, P. H. Bartels, "Dynamically Reconfigurable Multiprocessor System for Scene Segmentation in Histopathology", *New Technologies in Cytometry*, G. C. Salzman, Ed., Proceedings of the SPIE, Vol. 1063, pp. 10–17, January 1989.

C5. D. Notkin, D. Socha, M. Bailey, B. Forstall, K. Gates, R. Greenlaw, W. G. Griswold, T. J. Holman, R. Korry, G. Lasswell, R. Mitchell, P. A. Nelson, and L. Snyder. "Experiences with Poker", *Proceedings of the ACM SIGPLAN Symposium on Parallel Programming: Experience with Applications, Languages, and Systems*, July 1988.

C4. D. Notkin, W. G. Griswold, "Extension and Software Development", *Proceedings of 10th International Conference on Software Engineering, Singapore*, IEEE, pp. 274–282, April 1988.

C3. D. Notkin, W. G. Griswold, "Enhancement through Extension: The Extension Interpreter", *Proceedings of the ACM SIGPLAN '87 Symposium on Interpreters and Interpretive Techniques*, SIGPLAN Notices, ACM, July 1987.

C2. W. P. Kuhn, P. H. Bartels, W. G. Griswold, and R. L. Shoemaker, "Hierarchical Expert System for Automated Assessment of Histopathologic Images", *Applications of Digital Image Processing X*, A. G. Tescher, Ed., Proceedings of the SPIE, Vol. 829, pp. 275–282, August 1987.

C1. R. L. Shoemaker, P. H. Bartels, H. Bartels, W. G. Griswold, D. Hillman, R. Maenner, "Image-Data-Driven Dynamically Reconfigurable Multiprocessor System in Automated Histopathology", *Architecture and Algorithms for Digital Image Processing*, M.J.B. Duff et al., Eds., Proceedings of the SPIE, Vol. 596, pp. 190–198, December 1985.

Workshop and Miscellaneous Publications

M11. G. Lee, C Tsai, W. G. Griswold, F. Raab, K. Patrick, "PmEB: A Mobile Phone Application for Monitoring Caloric Balance", *CHI '06: CHI '06 Extended Abstracts on Human Factors in Computing Systems*, April 2006.

M10. A. O'Connor, M. Shonle, W. Griswold, "Star Diagram with Automated Refactorings for Eclipse", *Eclipse '05: Proceedings of the OOPSLA Workshop on Eclipse Technology EXchange*, October 2005. Winner of the Eclipse'05 Best Student Research Paper Award.

M9. N. J. McCurdy, J. N. Carlisle, and W. G. Griswold, "Harnessing Mobile Ubiquitous Video", *CHI '05: CHI '05 Extended Abstracts on Human Factors in Computing Systems*, pp. 1645–1648, April 2005.

M8. M. Shonle, J. Neddenriep, and W. Griswold, "AspectBrowser for Eclipse: A Case Study in Plug-in Retargeting", *Eclipse '04: Proceedings of the 2004 OOPSLA Workshop on Eclipse Technology EXchange*, pp. 78–82, 2004.

M7. B. N. Schilit, A. LaMarca, G. Borriello, W. G. Griswold, D. McDonald, E. Lazowska, A. Balachandran, and J. Hong, "Challenge: Ubiquitous Location-Aware Computing and the 'Place Lab' Initiative", *WMASH'03: Proceedings of the First ACM Workshop on Wireless Mobile Applications and Services on WLAN Hotspots*, pp. 29–35, San Diego, September 2003.

M6. W. G. Griswold, "Just-in-Time Architecture: Planning Software in an Uncertain World," 2nd International Workshop on Software Architecture (ISAW-2), *Joint Proceedings of the SIGSOFT '96 Workshops*, San Francisco, October 1996.

M5. W. G. Griswold, D. C. Atkinson, C. McCurdy, "Fast, Flexible Syntactic Pattern Matching and Processing", *Fourth Workshop on Program Comprehension*, IEEE, pp. 144–153, March 1996.

M4. W. G. Griswold, D. C. Atkinson, "A Syntax-Directed Tool for Program Understanding and Transformation", *Proceedings of the Fourth Systems Reengineering Technology Workshop*, Monterey CA, pp. 274–282, February 1994.

M3. W. G. Griswold, R. W. Bowdidge, "Program Restructuring via Design-level Manipulation", *Proceedings of the Workshop on Studies of Software Design*, Baltimore MD, May 17-18, 1993. Springer-Verlag, pp. 127–39, 1996.

M2. J. S. Mattson Jr., W. G. Griswold, "Local Speculative Evaluation for Distributed Graph Reduction", *Proceedings of the Glasgow Workshop on Functional Programming*, J. T. O'Donnell, K. Hammond, eds., Springer-Verlag, pp. 185–192, July 1993.

M1. W. G. Griswold, D. Notkin, "Computer-Aided vs. Manual Program Restructuring", *ACM SIGSOFT Software Engineering Notes*, Vol. 17, No. 1, January 1992.

Videos

V2. N. McCurdy and W. G. Griswold, "An Abstraction for Ubiquitous Video", Video, *UbiComp'05: Seventh International Conference on Ubiquitous Computing*, September 2005. Available at http://www.realityflythrough.com/node/24

V1. N. McCurdy and W. G. Griswold, "Tele-Reality in the Wild", Video, *UbiComp'04: Sixth International Conference on Ubiquitous Computing*, September 2004. Available at http://www.realityflythrough.com/-node/24

Technical Reports

T17. W. G. Griswold, "A Scalable Capstone Course for Academic Preparation", Technical Report CS2005-0832, Computer Science and Engineering, UC San Diego, August 2005.

T16. W. G. Griswold, R. Boyer, S. W. Brown, T. M. Truong, E. Bhasker, G. R. Jay, and R. B. Shapiro, "Using Mobile Technology to Create Opportunitistic Interactions on a University Campus", position paper for UbiComp 2002 Workshop on Supporting Spontaneous Interaction in Ubiquitous Computing Settings, Technical report CS2002-0724, Computer Science and Engineering, UC San Diego, September 2002.

T15. W. G. Griswold, R. Boyer, S. W. Brown, T. M. Truong, E. Bhasker, G. R. Jay, and R. B. Shapiro, "ActiveCampus - Sustaining Educational Communities through Mobile Technology", Technical report CS2002-0714, Computer Science and Engineering, UC San Diego, July 2002.

T14. T. M. Truong, W. G. Griswold, M. Ratto, S. L. Star, "The ActiveClass Project: Experiments in Encouraging Classroom Participation", Technical report CS2002-0715, Computer Science and Engineering, UC San Diego, July 2002.

T13. W. G. Griswold, J. J. Yuan, Y. Kato, "Exploiting the Map Metaphor in a Tool for Software Evolution", Technical Report CS2000-0660, Department of Computer Science and Engineering, University of California, San Diego, September 2000.

T12. W. G. Griswold, Teaching Software Engineering in a Compiler Project Course", Technical Report CS2000-0659, Department of Computer Science and Engineering, University of California, San Diego, September 2000.

T11. L. Bent, D. C. Atkinson W. G. Griswold, "A Comparative Study of Two Whole Program Slicers for C", Technical Report CS2000-0643, Department of Computer Science and Engineering, University of California, San Diego, June 2000 (revised).

T10. W. G. Griswold, Y. Kato, J. J. Yuan, "AspectBrowser: Tool Support for Managing Dispersed Aspects", Technical Report CS99-0640, Department of Computer Science and Engineering, University of California, San Diego, December 1999.

T9. M. Ernst, Y. Kataoka, W. G. Griswold, and D. Notkin, "Dynamically Discovering Pointer-Based Program Invariants", University of Washington technical report UW-CSE-99-11-02, November 16, 1999 (revised March 2000).

T8. W. G. Griswold, "Coping With Software Change Using Information Transparency", Technical Report CS98-585, Department of Computer Science and Engineering, University of California, San Diego, April 1998 (revised August 1998).

T7. W. G. Griswold, et al., "The Next Leap in Programmer Productivity: A Response to Brooks's 'No Silver Bullet"', Technical Report CS94-395, Department of Computer Science and Engineering, University of California, San Diego, November 1994.

T6. W. G. Griswold, F. Berman, J. P. Mesirov, "Practical Performance Guidelines—Matching Parallel Machines, Algorithms, and Languages" Technical Report CS94-338, Department of Computer Science and Engineering, University of California, San Diego, January 1994.

T5. G. Alverson, W. Griswold, C. Lin, D. Notkin, L. Snyder, "Abstractions for Portable, Scalable Parallel Programming", Technical Report 93-12-09, Department of Computer Science and Engineering, University of Washington, December 1993.

T4. W. G. Griswold, D. Notkin, "Semantic Manipulation of Program Source", Technical Report number 91-08-03, University of Washington, Dept. of Computer Science & Engineering, August 1991.

T3. W. G. Griswold, "Program Restructuring as an Aid to Software Maintenance", Ph.D. Thesis, Technical Report 91-08-04, Department of Computer Science and Engineering, University of Washington, July 1991.

T2. D. Notkin, W. G. Griswold, M. Donner, "Enhancement through Extension: Analysis and Experiments", Technical Report 03-03-87, Department of Computer Science, University of Washington, March 1987.

T1. W. G. Griswold, "Object Icon", *Icon Project Document 82*, Department of Computer Science, University of Washington, June 1989.

Invited Talks

- W. G. Griswold, "Software Architectures for Context-Aware Computing – Experience and Emerging Challenges", *OT4AmI'06: Workshop on Object Technology for Ambient Intelligence and Pervasive Computing*, July 2006 (unpublished).
- W. G. Griswold, "Making Slicing Practical: The Final Mile", *ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering*, p. 1 (abstract), June 2001.
- R. L. Shoemaker, P. H. Bartels, W. G. Griswold, W. P. Kuhn, "An Expert System Approach to the Processing of Histopathologic Imagery", International Academy of Cytology Conference on AI Systems as Diagnostic Consultants for the Cytologic and Histologic Diagnosis of Cancer, February 1987.

Panels

- W. G. Griswold, R. P. Gabriel, L. Northrop, G. Kiczales, K, Sullivan (moderator), "Important Open Problems for Future Research in AOSD", 2006 International Conference on Aspect-Oriented Software Development (AOSD'06), March 2006.
- W. Griswold, J. Larus, J. Pincus, J. Spencer (moderator), and L. Williams, "Accomplishing Successful Software Engineering Research in Universities", 2005 Microsoft Research Faculty Summit, July 2005.
- J. F. McCarthy, d. boyd, E. F. Churchill, W. G. Griswold, W. Lawley, and M. Zaner, "Digital Backchannels in Shared Physical Spaces: Attention, Intention and Contention", Panel, *CSCW'04: 2004 Conference on Computer Support for Collaborative Work*, pp. 550–553, November 2004.
- L. Brooks, W. G. Griswold, L. Harvel, and W. Riffee (moderator), "Pushing Technology into the Background—Services for Useful Collaborations", Syllabus 2004, July 2004.

Workshops (Unpublished)

- Participant, 2005 Tablet PCs in Higher Education Workshop, University of Washington, July 2005.
- Participant, 2004 Tablet PCs in Higher Education Workshop, University of Washington, August 2005.
- Presentation, Workshop on Economics-Driven Software Engineering Research, ICSE 2001.
- (**invited**) Presentation and Participant, University of Washington/Microsoft Research Summer Institute on Accelerating the Pace of Software Tools Research: Sharing Infrastructure, August 2000.
- Presentation and Participant, ICSE Workshop on Multidimensional Separation of Concerns, Limerick, Ireland, 2000.
- Presentation and Participant, OOPSLA Workshop on Multidimensional Separation of Concerns, Denver, Colorado, 1999.
- Participant, University of Washington/Microsoft Research Summer Institute on Technologies to Improve Software Development, August 1999.

- Presentation and Participant, Dagstuhl Seminar on Software Reengineering, Dagstuhl Germany, March 1998.
- Participant, NSF/ARPA Workshop on Software Engineering and Programming Languages, June 1996.
- Participant, ACM/CRA Workshop on Strategic Directions in Computing Research, Working Group on the Role of Programming Languages in Software Engineering, June 1996.
- Presentation and Participant, Dagstuhl Seminar on Software Architecture, Dagstuhl Germany, February 1995.
- Presentation and Participant, ARO/AFOSR/ONR Workshop on Increasing the Practical Impact of Formal Methods for Computer-Aided Software Development: Software Slicing, Merging, and Integration. Monterey, CA, October 1993.
- Local Arrangements, Third Icon Programming Language Workshop, San Diego, CA, 1992.
- Presentation and Participant, Dagstuhl Seminar on Programming Environments, Dagstuhl Germany, 1992.
- Participant, Second Icon Programming Language Workshop, Flagstaff AZ, 1990.
- Participant, First Icon Programming Language Workshop, Flagstaff AZ, 1988.

Professional Activities

Program Committee Member

- Sixth International Conference on Aspect-Oriented Software Development (AOSD 2007), Vancouver BC, 2007.
- 21st Object-Oriented Programming Systems and Languages Conference (OOPSLA 2006), Portland OR, 2006.
- Workshop on Software Engineering Challenges for Ubiquitous Computing (SEUC 2006), Lancaster, 2006.
- 2nd International Workshop on Location- and Context-Awareness (LoCA 2006), Dublin, 2006.
- 26th International Conference on Software Engineering (ICSE-2004), Edinburgh, 2004.
- First International Conference on Aspect-Oriented Software Development (AOSD 2002), Enschede Netherlands, 2002.
- The Third International Conference on Metalevel Architectures and Separation of Crosscutting Concerns (Reflection 2001), Kyoto, 2001.
- 22nd International Conference on Software Engineering (ICSE-2000), Limerick, 2000.
- (and Mentor) Doctoral Symposium, 20th International Conference on Software Engineering (ICSE-98), Kyoto, 1998.
- 20th International Conference on Software Engineering (ICSE-98), Kyoto, 1998.
- ACM SIGPLAN PLDI Workshop on Program Analysis for Software Tools and Engineering (PASTE), Montreal, 1998.

- 19th International Conference on Software Engineering (ICSE-97), Boston, 1997.
- 2nd International Software Architecture Workshop (ISAW-2), 1996.
- 17th International Conference on Software Engineering (ICSE-17), Seattle, 1995.
- First through Fourth California Software Symposium (CSS), 1995-98.
- Second, Third, and Fourth Irvine Software Symposium, UC Irvine, 1992-94.

Other Professional Activities

- Advisor, to San Diego Public Wireless Working Group, a subcommittee of the San Diego Science and Technology Commission (2006).
- Guest Co-Editor, *IEEE Pervasive Computing*, Special Issue on Real World Ubicomp Deployments: Lessons Learned (2006).
- Chair, ACM Special Interest Group on Software Engineering (SIGSOFT), 2005-2007.
- Program Co-Chair, 27th International Conference on Software Engineering (ICSE-2005), 2005.
- Advisory Board Member, Place Lab Project, Intel Research Seattle, 2004-2005.
- Secretary-Treasurer, ACM Special Interest Group on Software Engineering (SIGSOFT), 2001-2005.
- Legal Expert to Solomon, Ward, Seidenwurm & Smith, 2004.
- General Chair, 2nd International Symposium on Aspect-Oriented Software Development, 2003.
- Program Chair, ACM SIGSOFT Symposium on the Foundations of Software Engineering, 2002.
- Roundtable guest, "Student Technologies: What's Hot?", CREN TechTalk, September 19th.
- Panel Member, NSF Proposal Review Panel, 2000 and 2002.
- Associate Editor, IEEE Transactions on Software Engineering, 1998 to 2002.
- Membership Co-Liaison, ACM Special Interest Group on Software Engineering (SIGSOFT), 1997-2001.
- Committee Member, Review of Computer Science Department at the University of Nebraska, Lincoln, 1999.
- Co-chair, 1999 SIGSOFT-SIGPLAN Workshop on Program Analysis for Software Tools and Environments, Toulouse, France.
- Chair, Doctoral Workshop, 1999 International Conference on Software Engineering (ICSE-99), Los Angeles, 1999.
- Consultant to Solomon, Ward, Seidenwurm & Smith, 1999.
- Interview on Year 2000 Problem, for San Diego CBS affiliate Channel 8, aired November 3, 1998.
- Consultant, National Decision Systems, January to March 1998.
- Co-Chair, ICSE-17 Workshop on Program Transformation for Software Evolution, Seattle, 1995.
- Judge, San Diego County Science Fair, for Dean's Engineering and Science awards, Spring 1992 and 1993.
- Consultant to Preston, Thorgrimson, Shidler, Gates and Ellis, October 1989 to May 1990.

Invited Colloquia

2002-2007

- Microsoft Research 2007 Faculty Summit
- Microsoft Research
- University of Colorado, Boulder
- UT Austin
- ACM, San Diego Chapter
- Motorola Research, Schaumburg IL
- CU Boulder, Academic and Campus Technology Center
- HP Research, Palo Alto
- ACM, San Diego Chapter
- Bishop's High School, La Jolla CA
- NJIT, College of Computing Sciences
- IBM Research, Hawthorne NY.
- Microsoft Research 2003 Faculty Summit
- University of Washington
- University of Utah, Library of Medicine
- HP Research, Palo Alto

Past Presentations

Bell Communications Research (Bellcore), IBM Research (Hawthorne), Columbia University, Georgia Institute of Technology, Carnegie Mellon University, UC Irvine, University of Massachusetts at Amherst, UC San Diego, University of British Columbia, Xerox PARC, NEC Princeton, Information Sciences Institute (USC), ATT Bell Labs, Brown University, UCI IRUS Software Engineering Tools and Technology Forum, University of Durham (England), Technical University of Vienna, University of Virginia, UC Santa Barbara, UC Berkeley, MIT, Harvey Mudd, Rutgers University, IBM Research (Hawthorne), Xerox PARC.

Courses Designed and Taught

Title	*Level*	*Designed*	*Terms*
TIES Capstone Lab	Undergrad		F/W/Sp/Su 2004-07
Ubiquitous Computing	Undergrad	$\surd$	Fall 2002-04, 2006-07
Software Engineering	Graduate	$\surd$	Spring 1997-99, 2001-3, 2005, 2007
Adv. Software Engineering (Tools and Techniques for Evolutionary Design)	Graduate	$\surd$	Fall 1997-98, 2000, 2002-4, 2006-07
Compiler Design	Graduate	$\surd$	Winter/Fall 1992, Spring 1994-96
Compiler Construction "B"	Undergrad	w/Paturi & Russ	Winter 1993-99, 2001-2, 2004-5, 2007 Spring 1992-99, 2001, 2003

Students Supervised and Mentored

Ph.D.

- Robert T. Boyer, "Open-Implementation Approach to Internet-Scale Context-Awareness", June 2005.
- Michael D. Ernst, "Dynamically Discovering Likely Program Invariants" (external co-advisor, University of Washington), July 2000.
- Darren C. Atkinson, "The Design and Implementation of Practical and Task-Oriented Whole-Program Analysis Tools", January 1999.
- J. David Morgenthaler, "Static Analysis for a Software Transformation Tool", August 1997.
- Robert Bowdidge, "Supporting the Restructuring of Data Abstractions through Manipulation of a Program Visualization", November 1995.
- James Mattson, "An Effective Speculative Evaluation Technique for Parallel Supercombinator Graph Reduction", March 1993.

Masters

- Alexis O'Connor, "Star Diagram with Automated Refactorings for Eclipse", December 2005.
- Jonathan Neddenriep, "RiverInk - A Framework for Multimodal Interoperable Ink", October 2004.
- Ryan Sit, "JussPress: A Digital Photography System that Supports Automatic Organization and Conversations around Photos", June 2004.
- Wesley Y. Leong, "Using the Atlas Metaphor to Assist Cross-Cutting Software Changes", March 2002.
- Michael A. Copenhafer, "A Case Study Evaluation of StarTool, A Tool for Planning the Restructuring of Software", December 2001.
- Michael Burton, "Exploring Extensibility and Performance in a Generic Programming Finite Element System", June 2001.
- Stuart Moskovics, "Multi-Language Support in a Program Analysis and Visualization Tool", June 2000.
- Jimmy J. Yuan, "Using the Map Metaphor to Assist Crosscutting Software Changes", May 2000.
- James J. Hayes, "A Method for Adapting a Program Analysis Tool to Multiple Source Languages", September 1998.
- Walter F. Korman, "Elbereth: Tool Support for Refactoring Java Programs", June 1998.
- Andrew J. Gray, "Development of an Unanticipated Member of a Program Family", October 1997.
- Jenny L. Cabaniss, "Lessons Learned from Applying HCI Techniques to the Redesign of a User Interface", June 1997.
- Van B. Nguyen, "Impact of Adding Customizibility On Software Architecture: A Case Study", March 1997.
- Morison I. Chen, "Tool Support for Planning the Restructuring of Data Abstractions in Large Systems", January 1996.
- Thomas Powell, "A Simple Tool for Restructuring C Programs", October 1993.

- Michael Sanfratello, "Uncovering Latent Parallelism", June 1992.

Undergraduate and High School (Mentoring)

- Tammy Denning, UCSD Junior-Senior, CRA-W Distributed Mentor Program and NSF Research Experience for Undergraduates (with Beth Simon), 2005-2006. *Honorable Mention - CRA 2007 Outstanding Undergraduate Award.*
- David Lindquist and Michael Kelly, UCSD Senior and Sophomore, Cal-$(IT)^2$ Summer Internship Program (with Beth Simon), 2006.
- Jennifer Carlisle, UCSD Senior (2004-2005).
- Jennifer Chai and Adrienne Wang, UCSD Seniors, CRA-W CREW scholarship, 2002-2003.
- Timothy Foley, UCSD Senior, Cal-$(IT)^2$ Summer Internship Program, 2002.
- David Harbottle, UCSD Junior, UCSD STEP Program, 2002.
- Gabriel Littman, UCSB Senior, UCLEADS / UCSD STARS Program, Summer 2002.
- Lin Liu, UCSD Junior, McNair and Faculty Mentor Programs, 2002.
- Ezekiel Bhasker, UCSD Freshman, Cal-$(IT)^2$ Summer Internship Program, 2001 and 2002.
- Gregory Jay, UCSD Junior, Faculty Mentor Program, 2001-2002.
- Cristina Cerda and Carissa Astudillo, UCSD Sophomores, UCSD STEP Program, 1998.
- Josef Geoola, Lewis Middle School, science fair project studying memory hierarchies, 1997.
- Lydia Rivera, UCSD Sophomore, UCSD STEP Program, 1997.
- Polita Huff, UCSD Sophomore, UCSD STEP Program, 1996.
- Rochelle Lakey, UCSD Sophomore, UCSD STEP Program, 1995.
- Orson Alvarez, UCSD Senior, Faculty Mentor Program, 1993.
- Davis Houlton, Morris High School, on visual programming languages, 1991-1994.

Software Systems

- Reality Flythrough: a system supporting the use of ubiquitous video (http://www.realityflythrough.com). With Neil McCurdy (2005-Present).
- Ubiquitous Presenter: a web-enabled extension of University of Washington Classroom Presenter (http://edtech.ucsd.edu). With Beth Simon, Michelle Wilkerson, and Tammy Denning (2005-Present).
- JussPress: a web site for self-organized, conversation-supported, photo sharing. With Ryan Sit and Ryan Kim (2002-2004, now http://www.dropshots.com).
- ActiveCampus: a ubiquitious infrastructure for sustaining an educational community (http://activecampus.ucsd.edu). With Steve Brown, Tan Minh Truong, and others (2002-Present).
- ActiveClass: a mobile application for encouraging classroom participation (http://activecampus.ucsd.edu). With Tan Minh Truong and Chris Schulte (2001-Present).

- AspectBrowser: A lightweight tool for managing crosscutting concerns. With Wesley Leong, Yoshi Kato, Jimmy Yuan, and Eric Lundberg; later Macneil Shonle and Alexis O'Connor (Eclipse Plug-in including Elbereth) (UCSD, 1999-Present).
- Daikon: A dynamic analysis tool for inferring likely invariants (properties) in programs (http://pag.csail.mit.edu/daikon/). With Michael Ernst, David Notkin, and Jake Cockrell, and Gregory Jay (UW and MIT, 1999-2002).
- Sprite/Icaria: A whole-program slicer for C programs (http://www.cse.scu.edu/∼atkinson). With Darren Atkinson (UCSD and SCU, 1998-2001).
- Elbereth: A tool for planning and performing the restructuring of large Java programs. With Walter Korman (UCSD, 1997).
- StarTool: A tool for planning and performing the restructuring of large programs. With Mike Cophenhafer, David Morgenthaler, Morison Chen, Van Nguyen, and Jenny Cabaniss (UCSD, 1994-2001).
- Ponder/TAWK: An efficient, retargetable, programmable program understanding tool, targeted to MUMPS and C (http://www.cse.scu.edu/∼atkinson). With Darren Atkinson and Collin McCurdy (UCSD, 1993-2000).
- Program Restructuring System: A prototype demonstrating the feasibility of restructuring imperative programs to lower the cost of maintenance (UW 1990-91). Continued with Robert Bowdidge to add graphical interfaces, including star diagram (UCSD 1992-1995).
- The Extension Interpreter: A prototype demonstrating a program extension mechanism that is multilingual and dynamic (UW, 1987).
- Hierarchical Expert System Shell: A tool for composing hierarchical and heterogeneous knowledge to perform classification (UA, 1987).
- The POLYP Operating System: An operating system and host interface for a hierarchical shared-memory MIMD parallel computer. With Hubert Bartels (UA, 1985-1990).

Departmental and University Activities

Departmental

- Computing Committee, Chair (2000-06).
- Space Committee (2004-05).
- Graduate Admissions Committee (2000-01).
- *ad hoc* New Building Committee (2000-01).
- *ad hoc* Department Chair Selection Committee (1994, 1996, 1998, 2000).
- Graduate Committee, Chair (1997-99).
- Undergraduate Committee (1994-99).
- Graduate Committee and Comprehensive Exam Chair (1993-97).
- External Relations Committee (1992-93, 1995-96).

- Computing Committee (1994-95).
- Graduate Program Review Response Committee (1993).
- Comprehensive Exam Committee (1992-93).
- Graduate Committee (1991-93).
- UW/CSE Graduate Admissions Committee (1988).
- UW/CSE *ad hoc* Committee for Establishing a Computer Science Course for Non-majors (1989).
- UW/CSE Lab Policy Committee (1990).

Non-Departmental

- Academic Dishonesty Hearing Board, alternate (2006-2007).
- External Review Committee for UC Irvine Institute for Software Research (2004)
- Advisory Committee to Center for Research in Computing and the Arts (2003-5).
- Senate-Administration Task Force on Enrollment Management (2002-4).
- Software and Interfaces Layer Leader, Cal-IT^2 (2001-4).
- Campus Admissions Committee (2000-04).
- K-14 Outreach Committee, Jacobs School of Engineering (2002-4).
- K-14 Outreach Committee, Jacobs School of Engineering, Vice Chair (2001-2).
- *Ad hoc* committee to review Jacobs School's role in K-12 education (2001).
- Cal-IT^2 Building Working Group (2001).
- School of Engineering Annual Retreat (2000-02).
- University *ad hoc* Quinquennial Committee to Review the MICRO Program (1998).
- Warren College Executive Committee (1995-97).
- Campus *ad hoc* Committee for Science and Engineering Periodical Cutbacks (1993).
- Campus *ad hoc* Committee for Relocation of Science and Engineering Library (1992-93).
- UW College of Arts and Sciences *ad hoc* Student Grievance Committee (1990).

Grants, Contracts, & Gifts

- Microsoft Research gift, "Campus of the Future", $225,000 (2007-2008).
- NSF grant DUE-0618511 (with Beth Simon, UCSD), "Breaking Barriers in Communication: Technology - Enabled Active Learning for STEM Disciplines", $400,000 (2007-2009).
- NSF grant CCF-0613845 (with Kevin Sullivan, UVa), "Representations for a Science of Design", $392,776 UCSD, $837,740 total (2006-2009).
- UC MICRO Grant 06-186, with Motorola, "Mobile Phones for Social Computing: Applications, Infrastructure, and Experiments", $29,531, 2006-2007.
- Motorola Research gift, $50,000 (2006-2007).

- HP gift, "UP Note Blogger: Continuous Active Learning for the University Classroom", 20 Tablet PCs and cash, $63,000.
- Microsoft gift (with Beth Simon), "Student and Instructor Adoption: Maximizing the Impact of Tablet PCs in the Classroom", $45,000 (2006-2007).
- Microsoft gift (with Beth Simon), "A Tiered Approach to Evaluating and Exploiting the Effects of Multi-modal Communication on Expression and Learning in the Classroom", $60,000 (2005-2006).
- IBM gift, Eclipse Innovation Program, "Fluid Architecture - Turbocharging Automated Agile-Design Refactorings with Aspect-Oriented Programming", $23,500, (2005-2006).
- NSF grant CCF-0429947 (with Kevin Sullivan, UVa), "Advances in Aspect-Oriented Languages, Methods, and Tools", $80,000 UCSD, $200,000 total (2004-2006).
- Intel Research Seattle gifts, for infrastructure in location-based computing, $43,000 (2004-2005).
- Microsoft gift (with Geoff Voelker), $50,000 for collaborative distance learning instructional technology (2004).
- NSF grant EEC-0431841 (as Senior Investigator; Jeanne Ferrante and Ramamohan Paturi; co-PIs), "Training Tomorrow's Technology Leaders Through Educational Transformation", $100,000 (2004-2006).
- HP and Microsoft gifts, 3 TabletPCs (2004).
- IBM gift, Eclipse Innovation Program, "The Star Diagram - Direct-Manipulation Visualization Support for Crosscutting Refactorings", $20,000 (2004).
- NIH National Library of Medicine contract N01-LM-3-3511 (as Senior Investigator; Leslie Lenert and Ramesh Rao, PIs), "Wireless Internet Information System for Medical Response in Disasters", $4,065,027 (2003-2006).
- HP gift, University Mobility Technology Solutions Program, "Reinventing the University Campus" (Phase III), Co-PI with Gabriele Wienhausen and Adriene Jenik, $110,000 (2003).
- Intel California Education Team, "Accessible Computer Science Capstone Design — A Hierarchical Approach", $42,463 (2003).
- Microsoft gift, 2 servers and cash, est. $20,000 (2003).
- HP gift, 6 TabletPCs (2003).
- Microsoft gift, Microsoft Research TabletPC Program, "Extensible Context-Aware Component Infrastructure for Highly Integrated, Heterogenous .NET clients", $182,972 (2002-2004).
- IBM gift, Eclipse Innovation Program, "AspectBrowser - Global Visualization of Crosscutting in Eclipse", $28,000 (2003).
- Microsoft gift, $18,500 (2002).
- HP gift, HP Mobility Program, "Reinventing the University Campus" (Phase II), Co-PI with Gabriele Wienhausen, $107,000 (2002).
- HP gift, HP Mobility Program, "Reinventing the University Campus", $480,000 (2001).
- Cal-$(IT)^2$, support for "Reinventing the University Campus", $67,000 (2001).
- UC MICRO grant 01-035 with Conexant, "Aspect Browser: Applying the Map Metaphor to Evolving Large Software Systems", $47,500 (2001-2002).

- Raytheon Contract, Legacy Software Reengineering Pilot (renewal), $15,000 (2001-2002).
- Xerox gift, Aspect Oriented Programming Group, Xerox PARC, $15,000 (2001).
- Raytheon Contract, Legacy Software Reengineering Pilot, $50,000 (2001).
- Xerox gift, Aspect Oriented Programming Group, Xerox PARC, $11,000 (2000).
- Xerox gift, Aspect Oriented Programming Group, Xerox PARC, $28,800 (1999).
- NSF grant CCR-9970985, "Coping with Software Change Using Information Transparency", $180,000 (1999-2002).
- UC MICRO grant 99-049 with Raytheon, "Low-Risk Reengineering of Legacy Systems", $60,000 (1999).
- UC MICRO grant 98-054 with Raytheon, "Risk-Free Reengineering of Legacy Systems", $41,600 (1998).
- UC MICRO grant 97-061 with Hughes, "Low-Risk Reengineering of Legacy Systems", $43,000 (1997).
- UC MICRO grant 96-063 with Hughes, "Low-Risk Reengineering of Legacy Systems", $41,000 (1996).
- NSF grant CCR-9508745, "Practical Program Restructuring for Software Evolution", $218,000 (1995-98).
- UCSD Hellman Fellowship, "Improved the Engineering of Whole-Program Analysis Tools", $19,000 (1995).
- UC MICRO grant 95-065 with Hughes, "Low-Risk Reengineering of Legacy Systems", $34,000 (1995).
- UC MICRO grant 94-053 with SAIC, "Technology for Acquiring Efficient, Precise Semantic Information during Reverse Engineering", $36,000.
- SAIC Contract, "The Understanding and Evolution of the Comprehensive Health Care System", $35,000.
- UCSD Faculty Senate grants, "Program Restructuring via Design-Level Manipulation", $9,000 (1993-1994).
- NSF grant CCR-9211002, "Practical Automated Assistance for Program Restructuring", $90,000 (1992-95).
- Powell Foundation Equipment grant, $50,000 (1991-92).
- UCSD Equipment grant, $34,000, 9 month RA, 4 Summer months, $4,000 travel (1991-93).

Honors & Achievements

UCSD Warren College Outstanding Teacher Award (2003).

Xerox Research and Technology Achievement Award, for work on the AspectJ programming language while on sabbatical at Xerox PARC (2000).

UCSD Hellman Fellow (1995).

UCSD School of Engineering Assistant Professor Teacher of the Year, Computer Science and Engineering (1994).

Also: IBM Graduate Fellowship (1988-91), NSF Graduate Fellowship honorable mention (1986), Phi Beta Kappa (1984), American Can Company undergraduate scholarship (1981-85), and Eagle Scout (1980).