

Curriculum Vitae

Gregg Rothermel

Professor and Jensen Chair of Software Engineering
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Education

Ph.D. in Computer Science, Clemson University, May 1996.

M.S. in Computer Science, State University of New York at Albany, May 1986.

B.A. in Philosophy, Reed College, May 1983.

Professional Experience

Professor and Jensen Chair of Software Engineering, Department of Computer Science and Engineering, University of Nebraska - Lincoln, 2004-present.

Visiting Scholar, Georgia Institute of Technology, 2002-2003 (sabbatical appointment).

Associate Professor, Department of Computer Science, Oregon State University, 2001-2004.

Assistant Professor, Department of Computer Science, Oregon State University, 1996-2001.

Senior Research Associate, Department of Computer and Information Science, The Ohio State University, 1995-1996.

Research Assistant, Department of Computer Science, Clemson University, 1992-1995.

Teaching Assistant, Department of Computer Science, Clemson University, 1991-1992.

Vice President, Quality Assurance and Quality Control, Palette Systems, Incorporated, Nashua, New Hampshire, 1989-1991.

Software Engineer, Palette Systems, Incorporated, Nashua, New Hampshire, 1986-1989.

Teaching Assistant, Department of Computer Science, State University of New York at Albany, 1985-1986.

External Funding

- National Science Foundation – Information Technology Research Program, Supplement to *Collaborative Research: Dependable End-User Software*, 10/07 – 12/08, \$93,660.
- Lockheed Martin, *Integrated Software Quality*, 5/07 – 12/07, \$60,000 (with M. Dwyer and S. Elbaum).
- University of Nebraska - Lincoln – Programs of Excellence, *Creating Dependable End User Software*, 7/05 – 6/10, \$500,000 (with M. Dwyer and S. Elbaum).
- National Science Foundation – Computing Research Infrastructure Program, *Collaborative Research: A Community Resource to Support Controlled Experimentation with Program Analysis and Software Testing Techniques*, 7/05 – 7/09, \$1,557,452 (with M. Dwyer and S. Elbaum of University of Nebraska - Lincoln, and J. Hatcliff of Kansas State University).
- National Science Foundation – Research Experience for Undergraduates Supplement, 5/05-5/06, \$6,000.
- National Science Foundation – Highly Dependable Computing Program, *Collaborative Research: Program Analysis Techniques to Support Dependable RTSJ Applications*, 9/04 – 8/07, \$210,000 (with M. Dwyer, S. Elbaum and S. Goddard of University of Nebraska - Lincoln).
- National Science Foundation – Information Technology Research Program, *Collaborative Research: Dependable End-User Software*, 10/03 – 9/07, \$2,600,000 (with M. Burnett, M. Erwig, and M. Niess of Oregon State University; S. Elbaum of University of Nebraska - Lincoln; B. Myers and M. Shaw of Carnegie Mellon University; S. Wiedenbeck of Drexel University; and M. B. Rosson of Penn State University).
- National Science Foundation – Information Technology Research Program, *Scaling Up a Methodology for Integrating Testing, Debugging and Validation into an End-User Programming Paradigm*, 9/03 – 8/06, \$380,000 (with M. Burnett of Oregon State University) (to simplify and reduce costs of administration, funding for this grant was rolled into the grant listed immediately above).
- National Science Foundation – Research Experience for Undergraduates Supplement, 6/02-5/03, \$9,000.
- Iwate Prefectural University - Japan, “Analysis of the Potential of Incorporating WYSIWYT into Lye,” 6/02-6/03, \$68,792.57 (with M. Burnett of Oregon State University).
- National Science Foundation, *Collaborative Research: Scalable Integration Testing of Object-Oriented Software – An Empirical Research Program*, 6/03 – 5/06, \$360,000 (with A. Orso and M. J. Harrold of Georgia Institute of Technology).
- National Science Foundation – Research Experience for Undergraduates Supplement, 6/01-5/02, \$6,000.
- National Science Foundation – Information Technology Research Program, *Collaborative Research: A New Generation of Scalable, Cost-Effective Regression Testing Techniques*, 8/00-8/03, \$444,613 (with S. Elbaum of University of Nebraska, Lincoln).
- National Science Foundation – Information Technology Research Program, *End-User Software Engineering*, 9/00-9/03, \$455,000 (with M. Burnett and C. Cook of Oregon State University).
- National Science Foundation – Industrial Matching Funds Supplement, 6/00-6/01, \$24,985.
- Boeing Commercial Airplane Group, *Impact Analysis for Critical Software*, 1/00 – 12/00, \$25,002
- National Science Foundation – Industrial Matching Funds Supplement, 6/99-6/00, \$19,095.
- Boeing Commercial Airplane Group, *The Application of Flow Analysis to Change Impact Analysis, Verification Constraints Generation, and Software Generation*, 4/99 – 12/99, \$19,095.

National Science Foundation – Experimental Software Systems Program, *An Experimental Environment for Integrating Testing and Debugging in Form-Based Visual Programming Languages*, 9/98 – 9/01, \$909,553 (with M. Burnett and C. Cook of Oregon State University).

National Science Foundation – Research Experience for Undergraduates Supplement, 6/98-6/99, \$5,000.

National Science Foundation – Industrial Matching Funds Supplement, 6/98-6/99, \$23,000.

National Science Foundation – Faculty Early CAREER Award CCR-9703108, *Testing and Maintaining Evolving Software Systems*, 9/97 – 9/01, \$200,000.

National Science Foundation – Experimental Software Systems Program Award CCR-9707792, *Scalable Program Analysis-Based Testing and Maintenance: Infrastructure and Experimentation*, 9/97 – 9/01, \$1,553,149 (with A. Porter of University of Maryland, and M. J. Harrold and R. Miller of Ohio State).

National Science Foundation – CISE Instrumentation Program Award CCR-98-18414, *Instrumentation for Experimental Research in Machine Learning, Molecular Dynamics, Probabilistic Reasoning, and Software Maintenance*, 1/99 – 12/2001, \$86,970. (Oregon State).

Microsoft, Incorporated, unrestricted gift, \$13,000.

Rogue Wave Software, Incorporated, unrestricted gift, \$10,000.

Refereed Journal Articles

A. Orso, H. Do, G. Rothermel, M. J. Harrold, and D. Rosenblum, *Using component metadata to regression test component-based software*, Journal of Software Testing, Verification, and Reliability, V. 17, No. 2, June 2007, pages 61-94.

H. Do and G. Rothermel, *On the use of mutation faults in empirical assessments of test case prioritization techniques*, IEEE Transactions on Software Engineering, V. 32, No. 9, September 2006, pages 733-752.

J. R. Ruthruff, M. Burnett, and G. Rothermel, *Interactive fault localization techniques in a spreadsheet environment*, IEEE Transactions on Software Engineering, V. 32 no. 4, April 2006, pages 213-239

M. Fisher II, G. Rothermel, D. Brown, M. Cao, C. Cook, and M. Burnett, *Integrating automated test generation into the WYSIWYT spreadsheet testing methodology*, ACM Transactions on Software Engineering and Methodology, V. 15, No. 2, April 2006, pages 150-194.

H. Do, G. Rothermel, and A. Kinner, *Prioritizing JUnit test cases: An empirical assessment and cost-benefits analysis*, Empirical Software Engineering, An International Journal, V. 11, No. 1, March 2006, pages 33-70.

H. Do, S. Elbaum, and G. Rothermel, *Supporting controlled experimentation with testing techniques: An infrastructure and its potential impact*, Empirical Software Engineering, An International Journal, V. 10, No. 4, October 2005, pages 405-435.

J. M. Kim, A. Porter, and G. Rothermel, *An empirical study of regression test application frequency*, Journal of Software Testing, Verification, and Reliability, V. 15, No. 4, December 2005, pages 257-279.

S. Elbaum, G. Rothermel, S. Karre, and M. Fisher II, *Leveraging user session data to support web application testing*, IEEE Transactions on Software Engineering, V. 31, No. 3, July 2005, pages 187-202.

G. Rothermel, S. Elbaum, A. G. Malishevsky, P. Kallakuri and X. Qiu, *On test suite composition and cost-effective regression testing*, ACM Transactions on Software Engineering and Methodology, V. 13, No. 3, July 2004, pages 277-331.

M. Burnett, C. Cook, and G. Rothermel, *End-user software engineering*, Communications of the ACM, September 2004, pages 53-58.

- S. Elbaum, G. Rothermel, S. Kanduri, and A. G. Malishevsky, *Selecting a cost-effective test case prioritization technique*, Software Quality Journal, V. 12, No. 3, September 2004, pages 185-210.
- S. Elbaum, P. Kallakuri, A. G. Malishevsky, G. Rothermel, and S. Kanduri, *Understanding the effects of changes on the cost-effectiveness of regression testing techniques*, Journal of Software Testing, Verification, and Reliability, V. 13, No. 2, June 2003, pages 65-83.
- W. Chen, R. H. Untch, G. Rothermel, S. Elbaum, and J. von Ronne, *Can fault-exposure-potential estimates improve the fault detection abilities of test suites?*, Journal of Software Testing, Verification, and Reliability, V. 10, No. 4, December 2002, pages 197-218.
- G. Rothermel, M. J. Harrold, J. von Ronne, and C. Hong, *Empirical studies of test suite reduction*, Journal of Software Testing, Verification, and Reliability, V. 10, No. 4, December 2002, pages 219-249.
- M. Burnett, A. Sheretov, B. Ren, and G. Rothermel, *Testing homogeneous spreadsheet grids with the "What You See Is What You Test" methodology*, IEEE Transactions on Software Engineering, V. 28, No. 6, June 2002, pages 576-594.
- S. Elbaum, A. Malishevsky, and G. Rothermel, *Test case prioritization: A family of empirical studies*, IEEE Transactions on Software Engineering, V. 28, No. 2, February 2002, pages 159-182.
- G. Rothermel, R. Untch, C. Chu, and M. J. Harrold, *Prioritizing test cases for regression testing*, IEEE Transactions on Software Engineering, V. 27, No. 10, October 2001, pages 929-948.
- S. Sinha, M. J. Harrold, and G. Rothermel, *Computation of interprocedural control dependencies*, ACM Transactions on Software Engineering and Methodology, V. 10, No. 2, April 2001, pages 209-254.
- J. Bible, G. Rothermel, and D. Rosenblum, *Coarse- and fine-grained safe regression test selection*, ACM Transactions on Software Engineering and Methodology, V. 10, No. 2, April 2001, pages 149-183.
- T. L. Graves, M. J. Harrold, J.-M. Kim, A. Porter, G. Rothermel, *An empirical study of regression test selection techniques*, ACM Transactions on Software Engineering and Methodology, V. 10, No. 2, April 2001, pages 184-208.
- G. Rothermel, L. Li, C. DuPuis, M. Burnett, and A. Sheretov, *A methodology for testing form-based visual programs*, ACM Transactions on Software Engineering and Methodology, V. 10, No. 1, January 2001, pages 110-147.
- M. J. Harrold, G. Rothermel, K. Sayre, R. Wu, L. Yi, *An empirical investigation of the relationship between fault-revealing test behavior and differences in program spectra*, Journal of Software Testing, Verification, and Reliability, V. 10, No. 3, September 2000, pages 171-194.
- M. J. Harrold, D. Rosenblum, G. Rothermel, and E. Weyuker, *Empirical studies of a prediction model for regression test selection*, IEEE Transactions on Software Engineering, V. 27, No. 3, March 2001, pages 248-263.
- G. Rothermel, M. J. Harrold, and J. Dedhia, *Regression test selection for C++ software*, Journal of Software Testing, Verification, and Reliability, V. 10, No. 2, June 2000, pages 77-109.
- G. Rothermel and M. J. Harrold, *Empirical studies of a safe regression test selection technique*, IEEE Transactions on Software Engineering, V. 25, No. 6, June 1998, pages 401-419.
- M. J. Harrold and J. Jones and G. Rothermel, *Empirical studies of program dependence graph size for C programs*, Empirical Software Engineering Journal, V. 3, No. 2, 1998, pages 203-211.
- G. Rothermel and M. J. Harrold, *Experience with regression test selection*, Empirical Software Engineering Journal, 2(2), 1997, pages 178-187.
- G. Rothermel and M. J. Harrold, *A safe, efficient regression test selection technique*, ACM Transactions on Software Engineering and Methodology, V. 6, No. 2, April 1997, pages 173-210.

- G. Rothermel and M. J. Harrold, *Analyzing regression test selection techniques*, IEEE Transactions on Software Engineering, V. 22, No. 8, August 1996, pages 529-551.
- M. J. Harrold and G. Rothermel, *Separate computation of alias information for reuse*, IEEE Transactions on Software Engineering, V.22, No.7, July 1996, pages 442-460.
- A. J. Offutt, A. Lee, G. Rothermel, R. Untch, and C. Zapf, *An experimental determination of sufficient mutation operators*, ACM Transactions on Software Engineering and Methodology, V.5, No. 2, April 1996, pages 99-118.

Refereed Conference Papers

- A. Koesnandar, S. Elbaum, G. Rothermel, L. Hochstein, K. Thomasset, and C. Scaffidi, *Using assertions to help end-user programmers create dependable web macros*, Proceedings of the ACM SIGSOFT Symposium on Foundations of Software Engineering, November 2008, pages 124-134.
- H. Do, S. Mirarab, L. Tahvildari, and G. Rothermel, *An empirical study of the effect of time constraints on the cost-benefits of regression testing*, Proceedings of the ACM SIGSOFT Symposium on Foundations of Software Engineering, November 2008, pages 71-82.
- A. Kinner and G. Rothermel, *Assessing the usefulness of type inference algorithms in representing Java control flow to support software maintenance tasks*, Proceedings of the International Conference on Software Maintenance, October 2008, pages 127-136.
- X. Qu, M. Cohen, and G. Rothermel, *Configuration-aware regression testing: An empirical study of sampling and prioritization*, Proceedings of the International Conference on Software Testing and Analysis, July 2008, pages 75-86.
- H. Do and G. Rothermel, *Using sensitivity analysis to create simplified economic models for regression testing*, Proceedings of the International Conference on Software Testing and Analysis, July 2008, pages 51-62.
- J. Ruthruff, J. Penix, D. Morgenthaler, S. Elbaum, and G. Rothermel, *Predicting accurate and actionable static analysis warnings: An experimental approach*, Proceedings of the 30th International Conference on Software Engineering, **ACM Distinguished Paper**, May 2008, pages 341-350.
- M. Fisher II, S. Elbaum, and G. Rothermel, *Dynamic characterization of web application interfaces*, Fundamental Approaches to Software Engineering, in volume 4422/2007 of Lecture Notes in Computer Science, Springer, March 2007, pages 260-275.
- H. Do and G. Rothermel, *An empirical study of regression testing techniques incorporating context and lifecycle factors and improved cost-benefit models*, Proceedings of the ACM SIGSOFT Symposium on Foundations of Software Engineering, November 2006, pages 141-151.
- M. Fisher II, G. Rothermel, T. Creelan, and M. Burnett. *Scaling a dataflow testing methodology to the multiparadigm world of commercial spreadsheets*, Proceedings of the 17th IEEE International Symposium on Software Reliability Engineering, November 2006, pages 13-22.
- J. Carver, M. Fisher II, and G. Rothermel, *An empirical evaluation of a testing and debugging methodology for Excel*, Proceedings of the 5th ACM-IEEE International Symposium on Empirical Software Engineering, September 2006, pages 278-287.
- J. R. Ruthruff, S. Elbaum, and G. Rothermel, *Experimental program analysis: A new program analysis paradigm*, Proceedings of the ACM International Symposium on Software Testing and Analysis, July 17-20, 2006.
- S. Elbaum, K. Chilakamarri, B. Gopal, G. Rothermel, *Helping end-users "engineer" dependable web applications*, Proceedings of the IEEE International Symposium on Software Reliability Engineering, November 2005, pages 31-40.

- H. Do and G. Rothermel, *A controlled experiment assessing test case prioritization techniques via mutation faults*, Proceedings of the IEEE International Conference on Software Maintenance, September 2005, pages 411-420.
- J. Lawrance, S. Clarke, M. Burnett, and G. Rothermel, *How well do professional developers test with code coverage visualizations? An empirical study*. Proceedings of the IEEE Symposium on Visual Languages and Human-Centric Computing, September 2005, pages 53-60.
- J. Ruthruff, M. Burnett, G. Rothermel, *An empirical study of fault localization for end-user programmers*, Proceedings of the 27th International Conference on Software Engineering, May 2005, pages 352-361.
- H. Do, G. Rothermel, and A. Kinneer *Empirical studies of test case prioritization in a JUnit testing environment*, Proceedings of the International Symposium on Software Reliability Engineering, November 2004, pages 113-124.
- H. Do, S. Elbaum, and G. Rothermel, *Infrastructure support for controlled experimentation with software testing and regression testing techniques*, Proceedings of the 2004 ACM-IEEE International Symposium on Empirical Software Engineering, August 2004, pages 60-70
- A. Orso, T. Apiwattanapong, J. Law, G. Rothermel, and M. J. Harrold, *An empirical comparison of dynamic impact analysis algorithms*, Proceedings of the 26th International Conference on Software Engineering, May 2004, pages 491-500.
- J. Law, and G. Rothermel, *Incremental dynamic impact analysis for evolving software systems*, Proceedings of the International Symposium on Software Reliability Engineering, November 2003, pages 430-441.
- P. Frankl, G. Rothermel, K. Sayre, and F. Vokolos, *An empirical comparison of two safe regression test selection techniques*, Proceedings of the International Symposium on Empirical Software Engineering, September 2003, pages 195-205.
- D. Brown, M. Burnett, G. Rothermel, H. Fujita, and F. Negoro, *Generalizing WYSIWYT visual testing to screen transition language*, Proceedings of the 2003 Symposium on Visual and Multimedia Software Engineering, October 2003, pages 203-210.
- J. Law and G. Rothermel, *Whole program path-based dynamic impact analysis*, Proceedings of the 25th International Conference on Software Engineering, May 2003, pages 308-318.
- S. Elbaum, S. Karre, and G. Rothermel, *Improving web application testing with user session data*, Proceedings of the 25th International Conference on Software Engineering, May 2003, pages 49-59.
- M. Burnett, C. Cook, O. Pendse, G. Rothermel, J. Summet, *End-user software engineering with assertions*, Proceedings of the 25th International Conference on Software Engineering, May 2003, pages 93-103.
- A. Wilson, M. Burnett, L. Beckwith, O. Granatir, L. Casburn, C. Cook, M. Durham, and G. Rothermel, *Harnessing curiosity to increase correctness in end-user programming*, Proceedings of the ACM Conference on Human Factors in Computing Systems, April 2003, pages 305-312.
- M. Fisher II, D. Jin, G. Rothermel, M. Burnett, *Test reuse in the spreadsheet paradigm*, Proceedings of the International Symposium on Software Reliability Engineering, November 2002, pages 257-268.
- A. G. Malishevsky, G. Rothermel, and S. Elbaum, *Modeling the cost-benefits tradeoffs for regression testing techniques*, Proceedings of the International Conference on Software Maintenance, October 2002, pages 204-213.
- G. Rothermel, S. Elbaum, A. Malishevsky, P. Kallakuri, and B. Davia, *The impact of test suite granularity on the cost-effectiveness of regression testing*, Proceedings of the 24th International Conference on Software Engineering, May 2002, pages 130-140.

- M. Fisher, M. Cao, G. Rothermel, C. R. Cook, M. M. Burnett, *Automated test case generation for spreadsheets*, Proceedings of the 24th International Conference on Software Engineering, May 2002, pages 141-153.
- A. Orso, M. J. Harrold, D. Rosenblum, G. Rothermel, H. Do, and M. L. Soffa, *Using component metacontent to support the regression testing of component-based software*, Proceedings of the IEEE International Conference on Software Maintenance, November 2001, pages 716-725.
- S. Elbaum, D. Gable, and G. Rothermel *The impact of software evolution on code coverage information*, Proceedings of the IEEE International Conference on Software Maintenance, November 2001, pages 169-179.
- V. Krishna, C. Cook, D. Keller, J. Cantrell, C. Wallace, M. Burnett, and G. Rothermel, *Incorporating incremental validation and impact analysis into spreadsheet maintenance: An empirical study*, Proceedings of the IEEE International Conference on Software Maintenance, November 2001, pages 72-81.
- M. Burnett, B. Ren, A. Ko, C. Cook, and G. Rothermel, *Visually testing recursive programs in spreadsheet languages*, Proceedings of the IEEE Symposium on Human-Centric Languages, September 2001, pages 288-295.
- S. Elbaum, A. Malishevsky, and G. Rothermel, *Incorporating varying test costs and fault severities into test case prioritization*, Proceedings of the 23rd International Conference on Software Engineering, May 2001, pages 329-338.
- S. Elbaum, D. Gable, G. Rothermel, *Understanding and measuring the sources of variation in the prioritization of regression test suites*, Proceedings of the Software Metrics Symposium, April 2001, pages 169-181.
- S. Elbaum, A. Malishevsky, and G. Rothermel, *Prioritizing test cases for regression testing*, Proceedings of the International Symposium on Software Testing and Analysis, August 2000, pages 102-112.
- K. J. Rothermel, C. Cook, M. Burnett, J. Schonfeld, T. R. G. Green, and G. Rothermel, *WYSIWYT testing in the spreadsheet paradigm: An empirical evaluation*, Proceedings of the 22nd International Conference on Software Engineering, June 2000, pages 230-239.
- J-M. Kim, A. Porter, and G. Rothermel, *An empirical study of regression test application frequency*, Proceedings of the 22nd International Conference on Software Engineering, June 2000, pages 126-135.
- J. Reichwein, G. Rothermel, and M. Burnett, *Slicing spreadsheets: An integrated methodology for spreadsheet testing and debugging*, Proceedings of the 2nd Conference on Domain Specific Languages, October 1999, pages 25-38.
- M. Burnett, A. Sheretov, and G. Rothermel, *Scaling up a "What you see is what you test" methodology to spreadsheet grids*, Proceedings of the IEEE Symposium on Visual Languages, September 1999, pages 30-37.
- G. Rothermel, R. H. Untch, C. Chu, and M. J. Harrold, *Test case prioritization: an empirical study*, Proceedings of the International Conference on Software Maintenance, August 1999, pages 179-188.
- S. Sinha, M. J. Harrold, and G. Rothermel, *System-dependence-graph-based slicing of programs with arbitrary interprocedural control flow*, Proceedings of the 21st International Conference on Software Engineering, May 1999, pages 432-441.
- G. Rothermel, M. J. Harrold, J. Ostrin, C. Hong, *An empirical study of the effects of minimization on the fault detection capabilities of test suites*, Proceedings of the International Conference on Software Maintenance, November 1998, pages 34-43, received **best paper** award.

- M. J. Harrold, G. Rothermel, R. Wu, and L. Yi, *An empirical investigation of program spectra*, Proceedings of the ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering, June 1998, pages 83-90.
- G. Rothermel, L. Li, C. DuPuis, M. Burnett, *What you see is what you test: A methodology for testing form-based visual programs*, Proceedings of the 20th International Conference on Software Engineering, April 1998, pages 198-207.
- T. L. Graves, M. J. Harrold, J-M. Kim, A. Porter, and G. Rothermel, *An empirical study of regression test selection techniques*, Proceedings of the 20th International Conference on Software Engineering, April 1998, pages 188-197.
- M. J. Harrold, G. Rothermel, and S. Sinha, *Computation of interprocedural control dependence*, Proceedings of the ACM SIGSOFT International Symposium on Software Testing and Analysis, March 1998, pages 11-20.
- G. Rothermel, L. Li and M. Burnett, *Testing strategies for form-based visual programs*, Proceedings of the Eighth International Symposium on Software Reliability Engineering, November 1997, pages 96-107.
- M. J. Harrold and G. Rothermel, *Separate computation of alias information for reuse*, ACM SIGSOFT International Symposium on Software Testing and Analysis, January 1996, pages 107-120.
- M. J. Harrold and G. Rothermel, *Performing dataflow testing on classes*, Proceedings of the Second ACM SIGSOFT Symposium on the Foundations of Software Engineering, December 1994, pages 154-163.
- G. Rothermel and M. J. Harrold, *Selecting regression tests for object-oriented software*, Proceedings of the Conference on Software Maintenance, September 1994, pages 14-25.
- G. Rothermel and M. J. Harrold, *Selecting tests and identifying test coverage requirements for modified software*, Proceedings of the ACM SIGSOFT International Symposium on Software Testing and Analysis, August 1994, pages 169-84.
- G. Rothermel and M. J. Harrold, *A framework for evaluating regression test selection techniques*, Proceedings of the 16th International Conference on Software Engineering, May 1994, pages 201-10.
- G. Rothermel and M. J. Harrold, *A safe, efficient algorithm for regression test selection*, Proceedings of the Conference on Software Maintenance, September 1993, pages 358-367.
- M. J. Harrold, B. A. Malloy and G. Rothermel, *Efficient construction of program dependence graphs*, Proceedings of the ACM SIGSOFT International Symposium on Software Testing and Analysis, June 1993, pages 139-148.
- A. J. Offutt, G. Rothermel, and C. Zapf, *An experimental evaluation of selective mutation*, Proceedings of the 15th International Conference on Software Engineering, May 1993, pages 100-107.

Book Chapters and Proceedings

- M. Burnett, G. Rothermel, and C. Cook, An integrated software engineering approach for end-user programmers, in *End User Development*, H. Lieberman, F. Paterno, and V. Wulf, eds., Springer, pages 87-113, 2006.
- G. Rothermel, ed., Special Issue of best papers from ISSTA, *IEEE Transactions on Software Engineering* IEEE Press, Los Alamitos, CA, July 2005.
- G. Rothermel, ed., *Proceedings of the International Symposium on Software Testing and Analysis*, ACM Press, New York, 2004.

Other Papers and Technical Reports

- M. Fisher II, S. Elbaum, and G. Rothermel, *Automated refinement and augmentation of web service description files*, Technical Report TR-UNL-CSE-2007-0026, Department of Computer Science and Engineering, University of Nebraska - Lincoln, December 2007.
- A. Kinneer, M. B. Dwyer, and G. Rothermel, *Sofya: Supporting rapid development of dynamic program analyses for Java*, International Conference on Software Engineering, May 2007.
- M. B. Cohen, J. Snyder and G. Rothermel, *Testing across configurations: Implications for combinatorial testing*, Workshop on Advances in Model-based Software Testing, November 2006, pages 1-9.
- S. Elbaum, K. Chilakamarri, M. Fisher II, and G. Rothermel, *Web application dharacterization through directed requests*, Proceedings of the 4th International Workshop on Dynamic Analysis, May 2006, pages 49-56
- A. G. Malishevsky, J. Ruthruff, G. Rothermel, and S. Elbaum, *Cost-cognizant test case prioritization*, Technical Report TR-UNL-CSE-2006-0004, Department of Computer Science and Engineering, University of Nebraska - Lincoln, March 2006.
- M. Fisher II and G. Rothermel. *The EUSES spreadsheet corpus: A shared resource for supporting experimentation with spreadsheet dependability mechanisms*. Proceedings of the 1st Workshop on End-User Software Engineering, pages 47-51, May 2005.
- M. Burnett, C. Cook, and G. Rothermel, *A spreadsheet-based view of the end-user software engineering concept*, Workshop on Foundations of Spreadsheets, September 2004.
- M. Burnett, C. Cook, and G. Rothermel, *Intelligent support for testing in languages for blended- and end-user programmers*, ACM CHI'99 Workshop on End-User Programmers and Blended-User Programmers, May 1999.
- H. Do, G. Rothermel, and S. Elbaum, *Building an infrastructure to support experimentation with software testing techniques*, Workshop on Empirical Research in Software Testing, July 2004.
- C. Cook, S. Prabhakararao, M. Main, M. Durham, M. Burnett and G. Rothermel, *Software engineering for end-user programmers*, CrossTalk: The Journal of Defense Software Engineering, June 2004, pages 20-23.
- G. Rothermel and S. Elbaum, *Putting your best tests forward*, IEEE Software - Quality Time, August/September 2003, pages 74-77.
- D. Brown, M. Burnett, and G. Rothermel, *Representation and coverage characteristics of WYSIWYT for Lyee*, Proceedings of the 2nd International Workshop on Software Methodologies, Tools and Techniques, October 2003.
- M. Burnett, G. Rothermel, and C. Cook, *Software engineering for end-user programmers*, Workshop on End User Development, April 2003.
- D. Brown, M. Burnett, and G. Rothermel, *End-user testing of Lyee programs: A Preliminary Report*, New Trends in Software Methodologies, Tools and Techniques, IOS Press, Tokyo, Japan, 2002.
- G. Rothermel, S. Elbaum, A. Malishevsky, P. Kallakuri, and B. Davia, *The impact of test suite granularity on the cost-effectiveness of regression testing*, Technical Report 01-60-11, Computer Science Department Oregon State University, September 2001.
- W. Chen, G. Rothermel, R. H. Untch, and J. von Ronne, *An empirical study of the effects of incorporating fault exposure potential estimates into a test data adequacy criterion*, Technical Report 00-60-04, Computer Science Department Oregon State University, March 2000.

- S. Elbaum, A. Malishevsky, and G. Rothermel, *Prioritizing test cases for regression testing*, Technical Report 00-60-03, Computer Science Department Oregon State University, February 2000.
- G. Rothermel, M. J. Harrold, J. von Ronne, C. Hong, and J. Ostrin, *Experiments to assess the cost-benefits of test-suite reduction*, Technical Report 99-60-09, Computer Science Department Oregon State University, December 1999.
- J. Bible and G. Rothermel, *A unifying framework supporting the analysis and development of safe regression test selection techniques*, Technical Report 99-60-11, Computer Science Department Oregon State University, December 1999.
- L. Briand, F. Lanubile, S. Pfleegar, G. Rothermel, and N. Schneidewind, *Empirical studies of software maintenance: A report from WESS '97*, Empirical Software Engineering Journal, V. 3, no. 3, 1998.
- M. J. Harrold, G. Rothermel, and S. Sinha, *Computation of interprocedural control dependencies*, Technical Report OSU-CISRC-3/97-TR17, The Ohio State University, July 1997.
- M. J. Harrold, R. Miller, A. Porter, and G. Rothermel, *A collaborative investigation of program-analysis-based testing and maintenance*, Proceedings of the International Workshop for Empirical Studies of Software Maintenance, October 1997, Bari, Italy, pages 51-56.
- D. Rosenblum and G. Rothermel, *An empirical comparison of regression test selection techniques*, Proceedings of the International Workshop for Empirical Studies of Software Maintenance, October 1997, Bari, Italy, pages 89-94.
- M. J. Harrold and G. Rothermel, *Aristotle: A system for research on and development of program analysis based tools*, Technical Report OSU-CISRC-3/97-TR17, The Ohio State University, March 1997.
- M. J. Harrold and G. Rothermel, *A coherent family of analyzable graph representations for object-oriented software*; Technical Report OSU-CISRC-11/96-TR60, The Ohio State University, November 1996.
- G. Rothermel and M. J. Harrold, *Experience with regression test selection*, Proceedings of the International Workshop for Empirical Studies of Software Maintenance, November 1996, Monterey, California.
- M. J. Harrold and G. Rothermel, *Syntax-directed construction of program dependence graphs*, Technical Report OSU-CISRC-5/96-TR32, The Ohio State University, May 1996.
- M. J. Harrold, L. Larsen, J. Lloyd, D. Nedved, M. Page, G. Rothermel, M. Singh, M. Smith, *Aristotle: A system for development of program analysis based tools*, ACM Southeast Regional Conference, March 1995, Clemson, South Carolina, pages 110-119.
- M. J. Harrold and G. Rothermel, *A system for analysis and testing of C programs*, Quality Week '93, May 1993, San Francisco, CA.

Patents

- U.S. Patent number 6,948,154; A Methodology for Testing Spreadsheets, G. Rothermel, M. Burnett, L. Li, September 20, 2005.
- U.S. Patent number 6,766,509; A Methodology for Testing Spreadsheet Grids, A. Sheratov, M. Burnett, G. Rothermel, July 20, 2004.

Teaching Experience

CSCE361: Software Engineering; University of Nebraska - Lincoln, Spring 2008.
CSCE487: Senior Design Project; University of Nebraska - Lincoln, Spring 2007,
CSCE990: Program Analysis Techniques and their uses in Software Testing and Maintenance; University of Nebraska - Lincoln, Spring 2005, Spring 2006.
CSCE361: Software Engineering; University of Nebraska - Lincoln, Fall 2004.
CS562: Applied Software Engineering; Oregon State University, Fall 2003.
CS362: Software Engineering II; Oregon State University, Winter 2002; Spring 2002; Winter 2004.
CS569: Special Topics: Program Analysis Techniques and their uses in Software Testing and Maintenance; Oregon State University, Fall 1998; Spring 2004.
CS361: Fundamentals of Software Engineering; Oregon State University, Winter 1997; Winter 1998; Spring 1998; Winter 1999; Winter 2000.
CS561: Software Engineering; Oregon State University, Winter 1997, Winter 1998; Winter 1999; Winter 2000; Winter 2001.
CS569: Special Topics: Software Testing; Oregon State University, Fall 1996.
Introduction to Software Development; Clemson University, Spring 1995.

Student Supervision

Lixin Li (M.S., 1998)
Chris Bezodis (M.S., 1998)
Clark Crawford (M.S., 1998)
Liu Yi (M.S., 1998)
Qiang Liu (M.S., 1998)
Jeff Ronne (B.S., Honors Program, 1998)
Jainay Dedhia (M.S., 1999)
Chengyun Chu (M.S., 1999)
Kent Sayre (M.S., 1999)
John Bible (M.S., 2000)
Wei Chen (M.S., 2000)
Mingming Cao (M.S., 2000)
Dalai Jin (M.S., 2001)
Brian Davia (M.S., 2001)
Xuemei Qiu (M.S., 2002)
Amit Goel (M.S., 2002)
Aarti Thorat (M.S., 2002)
Eswar Balasubramainian (M.S., 2002)
Hitesh Sharma (M.S., 2002)
Darren Brown (M.S., 2003)
Soumya Chattopadhyay (M.S., 2003)
Vasanth Williams (M.S., 2003)
Weiyun Wu (M.S., 2003)
Alexey Malishevsky (Ph.D., 2003)
Alex Kinneer (M.S., 2005)
Jim Law (Ph.D., 2005)
Hyunsook Do (Ph.D., 2007)
Andhy Koesnandar (M.S., 2007)
Marc Fisher (Ph.D., 2008)

Joe Ruthruff (Ph.D., 2008)
Zhihong Xu (Ph.D., in progress)
Guowei Yang (M.S., in progress)
Isis Cabral (M.S., in progress)
Tingting Yu (Ph.D., in progress)

Invited Talks

An evolution-centric perspective on software testing, University of Texas San Antonio, November 2008.
An evolution-centric perspective on software testing, North Dakota State University, November 2008.
Testing evolving software, Sogang University, South Korea, October 2008.
An evolution-centric perspective on software testing, Brigham Young University, February 2008.
Keynote Presentation: *Helping end-user programmers “engineer” dependable software: An opportunity for empirical researchers*, First International Symposium on Empirical Software Engineering and Measurement, September, 2007.
Keynote Presentation: *Helping end-user programmers “engineer” dependable software*, Sixth International Conference on Quality Software, October 2006.
Keynote Presentation: *Using source-code analysis to help end-user programmers create dependable software*, Fourth International Workshop on Source Code Analysis and Manipulation, September 2004.
An evolution-centric perspective on software testing, University of Maryland, June 2003.
An evolution-centric perspective on software testing, University of Massachusetts - Amherst, February 2003.
End-user software engineering in the spreadsheet paradigm, University of Massachusetts - Amherst, February 2003.
End-user software engineering in the spreadsheet paradigm, Massachusetts Institute of Technology, February 2003.
End-user software engineering in the spreadsheet paradigm, Georgia Institute of Technology, January 2003.
An evolution-centric perspective on software testing, University of Nebraska - Lincoln, January 2003.
Prioritizing test cases for regression testing, Microsoft, Inc., Seattle, WA, May 2002.
Prioritizing test cases for regression testing, Brunel University, UK, June 2002.
A methodology for testing spreadsheets, Georgia Institute of Technology, September 2001.
A methodology for testing spreadsheets, University of Nebraska - Lincoln, December 2001.
A safe and efficient algorithm for regression test selection, State University of New York at Albany, September 1993.

Editorial Boards and Conference Organization

General Chair, International Symposium on Software Testing and Analysis, July 2009.
Chair, International Symposium on Software Testing and Analysis Doctoral Symposium, July 2008.
Program Co-Chair, 29th International Conference on Software Engineering, May 2007.
Co-Organizer, Dagstuhl Seminar 07081, End-User Software Engineering, February 2007.
Organizer and Co-Chair, First Workshop on End-User Software Engineering, May 2005.
Steering Committee Member, International Conference on Software Engineering, 2004-present.
Associate Editor in Chief, IEEE Transactions on Software Engineering, 2003-2006.
Editorial Board, Empirical Software Engineering Journal, 2003-present.
Associate Editor, IEEE Transactions on Software Engineering, 2001-2003.
Editorial Board, Software Quality Journal, 2002-present.
Steering Committee Member, International Symposium on Software Testing and Analysis, 2003-present.
Program Chair, International Symposium on Software Testing and Analysis, Spring 2004.
Chair, Steering Committee, International Conference on Software Maintenance, 2001-2004.

Publications Chair, International Conference on Software Engineering, May, 2002.
Webmaster, International Conference on Software Engineering, May 2003.

Program Committees

Fundamental Approaches to Software Engineering, March 2009.
30th International Conference on Software Engineering, May 2008.
Fourth Workshop on End-User Software Engineering, May 2008.
First International Conference on Software Testing, Verification, and Validation, April 2008.
14th Asia Pacific Software Engineering Conference, December 2007.
21st IEEE/ACM International Conference on Automated Software Engineering, Fall 2006.
28th International Conference on Software Engineering, Spring 2006.
International Symposium on Software Testing and Analysis, July 2006.
International Symposium on Software Testing and Analysis Doctoral Symposium Committee, July 2006.
International Symposium on Software Reliability Engineering, September 2005.
20th IEEE/ACM International Conference on Automated Software Engineering, Fall 2005.
ACM Sigsoft International Symposium on the Foundations of Software Engineering Doctoral Symposium Committee, Fall 2005.
ACM Sigsoft International Symposium on the Foundations of Software Engineering, Fall 2004.
IEEE International Symposium on Empirical Software Engineering, 2003.
International Conference on Quality Software, Fall 2003.
International Conference on Software Maintenance, Fall 2002.
ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering, Fall 2002.
ACM Sigsoft International Symposium on the Foundations of Software Engineering (FSE), Fall 2002.
International Symposium on Software Testing and Analysis, Summer 2002.
International Symposium on Software Testing and Analysis, Summer 2000.
8th ACM Sigsoft International Symposium on the Foundations of Software Engineering, Fall 2000.
21st International Conference on Software Engineering, May 2001.
20th International Conference on Software Engineering, May 2000.
International Conference on Software Maintenance, Fall 2001.
International Conference on Software Maintenance, Fall 2000.
International Conference on Software Maintenance, Fall 1999.
International Conference on Software Maintenance, Fall 1998.
International Conference on Software Maintenance, September 1997.
International Workshop for Empirical Studies of Software Maintenance, September 1997.

Reviewer

National Science Foundation; CISE/CCF, CAREER Program.
National Science Foundation; SBIR Program.
National Science Foundation; CISE/CCR, Information Technology Research Program.
National Science Foundation; CISE/CCR, Software Engineering and Languages Program.
ACM Transactions on Software Engineering and Methodology
IEEE Transactions on Software Engineering
The Journal of Software Testing, Verification, and Reliability
The Journal of Software Maintenance
Software Practice and Experience
Empirical Software Engineering Journal
The Computer Journal

Communications of the ACM

The Fourth Symposium on the Foundations of Software Engineering, October 1996.

Conference on Software Maintenance, September 1995

Conference on Software Maintenance, September 1993

15th International Conference on Software Engineering, May 1993

ACM SIGSOFT International Symposium on Software Testing and Analysis, June 1993

Conference on Software Maintenance, October 1992

University and Departmental Committee Assignments and Service

University of Nebraska - Lincoln (2004-present)

Chair, Graduate Committee (2005-present)

Personnel Advisory Committee (2006-present)

Curriculum Committee (2006-present)

University Research Advisory Board (2004-2007)

Nebraska EPSCOR Committee (2004-2007)

Chair, Faculty Search Committee (2004-2005)

Graduate Committee (2004)

Oregon State University (1996-2004)

Awards Committee (2003-2004)

Promotion and Tenure Committee (2003-2004)

College of Engineering Space Grant Committee (2001-2002)

College of Engineering Workload Committee (Winter 1999)

Coordinator, Departmental Colloquia (1997-1998, 1998-1999)

Graduate Committee (1998-1999, 1999-2000, 2000-2001, 2001-2002)

Infrastructure Proposal Committee (1997-1998)

Faculty Recruiting Committee (1996-1997, 1998-1999, 1999-2000)

Master's in Software Engineering Committee (1996-2000)

Thesis Committees:

Charles Knutson (Ph.D.;CS), Tim Townsend (MAIS;COMM,PS), Anurag Agrawal (MS;CS), Mike Miller (MS;ECE), Vikram Gundaju (MS;CS), Cathy Zhiqin He (MS;CS), Jean-Guy Speton (MS;CS), Daxin Cheng (MS;CS), David Hackenyos (MS;CS), Hari Narayanan (MS;CS), Lalit Jain (MS;CS), Biaou Shou (MS;CS), Rebecca Djang (Ph.D.; CS), Xin Wang (Ph.D.;CS), John Atwood (Ph.D.; CS), Juli Schutfort (Ph.D.; CS), Chandrakanth Modem (MS;CS), Lin Li (MS;CS), Rashmi Dwarakanath (MS;CS), Mohan Choodamani (MS;CS), Haiyan Wang (MS;CS), Jun Gu (MS;CS), Xinju Wang (MS;CS), James Reichwein (MS;CS), Nanyu Cao (MS;CS), Ying Hua (MS;CS), Ying Qian (MS;CS), Bing Ren (MS;CS), Jay Summet (MS;CS), Sudheer Chekka (MS;CS), Miguel Arredondo-Castro (MS;CS), Li Zhang (MS;CS), Junyuan Wu (MS;CS), Lichun Jia (MS;CS), Jiqing Hu (MS;CS), Vijay Krishna (MS;CS), Gurumurthy Sundar (MS;CS), Brandon Haugh (MS;NE), Josh Snyder (MS;CS), Sandeep Lingam (MS;CS), Bhuvana Gopal (MS;CS), Madeline Hardojo (PhD;CS), Xiao Qu (PhD;CS), Zhimin Wang (PhD;CS).

Professional Associations

Association for Computing Machinery (ACM)

Institute of Electrical and Electronics Engineers (IEEE) Computer Society

Association for Computing Machinery Special Interest Group on Software Engineering

Association for Computing Machinery Special Interest Group on Programming Languages

Sigma Xi, 2001-2005

Upsilon Pi Epsilon, 1993-2000

Awards

University of Nebraska - Lincoln Graduate Teaching Award, 2005.

Oregon State University College of Engineering Research Award, 2003.

Oregon State University College of Engineering Engelbrecht Young Faculty Award, 1999.

National Science Foundation CAREER Award, 1997-2001.

Dean's Graduate Scholars Program Fellowship, College of Engineering and Sciences, Clemson University, 1995-1996.

R.C. Edwards Fellowship, Clemson University, 1991-1992.

Phi Beta Kappa, 1983.