Lucas M. Layman, Ph.D.

Department of Computer Science
601 South College Road
Wilmington, NC 28403
+1 (910) 962-3672

Email: laymanl@uncw.edu
Web: http://people.uncw.edu/laymanl/
Web: https://www.ezzoterik.com/
Google Scholar, GitHub

RESEARCH INTERESTS

My primary areas of interest are: 1) human factors in software development and security; 2) empiricism and analytics to support software development and security; and 3) computer science education. I believe that both human-focused and technical perspectives are essential to improving the state-of-the-art in these areas. I perform applied research with professional software developers, security engineers, and everyday users, which I believe is a critical component to validating research results. I have led research on mobile device cybercrime, empirical software development, human aspects of computer security, data mining in software development, cognitive processes of debugging, and agile software development. I am committed to computer science education, having both taught and conducted research on pedagogy, personality types, and the sociological issues surrounding women and minorities in computer science education.

EDUCATION

Doctor of Philosophy, Computer Science — May 2009
North Carolina State University, Raleigh, NC
Dissertation title: "Information Needs of Developers for Program Comprehension during Software Maintenance Tasks"

Master of Science, Computer Science — May 2004
North Carolina State University, Raleigh, NC

Bachelor of Science, Computer Science — May 2002
Loyola College, Baltimore, MD

PROFESSIONAL EXPERIENCE

University of North Carolina Wilmington — July 2017 – Present
Department of Computer Science
Wilmington, NC
Assistant Professor

- Instructor of record for:
  - CSC 231 – Introduction to Data Structures
  - CSC 242 – Computer Organization
  - CSC 315 – Mobile Applications Development
  - CSC 475/592 – Engineering Secure Software
- Research projects:
  - A master's thesis on an empirical study of factors impacting cyber security analyst performance in the use of intrusion detection systems
  - A mobile application developed with the Watson College of Education to deliver interactive information for Carolina Beach State Park

  - Internally-funded award to develop a cloud platform for capturing programming IDE interactions in introductory programming courses to support educational data mining and pedagogical intervention.
  - Internally-funded award to study machine learning of Twitter streams for early warning of threats relevant to the UNCW network.
  - Internally-funded award to supervise a student project to analyze performance of machine learning algorithms in facial-recognition tasks for a US government customer.
- Student capstone projects advised:
  - (Master's Project Chair) Kinsley Sigmund, "Imprnt: A cross-platform mobile application for personality-based pet adoption", in progress.
  - (Master's Thesis Chair) William T. Roden, "An Empirical Study of Factors Impacting Cyber Security Analyst Performance in the Use of Intrusion Detection Systems", December 2019.
  - (Master's Project Committee Member) Jannatun Nahar, "Daily Text Analytics of News and Social Media with Power BI", December 2019.
  - (Master's Project Committee Member) Kevin Gay, "MetaFace: A System for Benchmarking Face Processing APIs", May 2019.
  - (Master's Project Committee Member) Caitlin Mabe, "Data Forensics Solutions for Higher Education Environment: Scoring Framework for Optimal Configuration", April 2019.
  - (Undergraduate Honors Thesis Committee Member) Jaimee Pyron, "Using Geospatial Technologies to Predict Spring PM2.5 Concentrations in Northern Egypt", April 2019.
  - (Master's Project Committee Member) Alexia Dunlap, "Malware Analysis: Learning Framework and Design Implementation", August 2018.
  - (Master's Project Committee Member) Monica Gokule, "PENS (PROGRAM ENROLLMENT AND ANALYSIS)", June 2018.
- Software published:
  - *Coastal Eco Explorer*: A guide to exploration of Carolina Beach State Park ecological sites. Available for Android and iOS.
  - *The Cry Wolf IDS Simulator*: An environment for conducting controlled experiments of cybersecurity analysis tasks. https://uncw-hfcs.github.io/ids-simulator/ https://uncw-hfcs.github.io/ids-simulator-analysis/
  - *The Cry Wolf Dataset*: A repository of simulated IDS alerts for experimentation. https://uncw-hfcs.github.io/ids-simulator-analysis/

Fraunhofer Center for Experimental Software Engineering June 2009 – June 2017
College Park, MD
Research Scientist
Adjunct Associate Professor of Research, Dept. of Computer Science, North Carolina State University

- Security research and development
  - Co-PI on the Pocket Security project – NSF-sponsored research on psycho-social factors of smartphone use contributing to cybercrime using large scale data collection from Android smartphones. NSF Award #1619084
  - Developed security requirements and verification cases for automotive embedded systems software for a US passenger vehicle provider.
  - Conducted basic research on human processes for investigating malicious activity in webserver log files.

  - Led development of the InViz tool to visualize network application log files in real time to support attack investigation and monitoring.

- Software development basic and applied research
  - Conducted NSF-sponsored research on software engineering decision making and lessons transfer using machine learning techniques (transfer learning), including analysis of TSP, NASA, and commercial software process and product data. NSF Award #1302169
  - Conducted NASA-sponsored research on improving the utility of post-launch anomaly reporting, and extracting trends and lessons learned from anomaly databases using semi-automated data mining methods to improve software engineering and assurance efforts.
  - Applied and reported software quality and productivity metrics for the NASA Space Network Ground Segment Sustainment project.
  - Conducted NASA-sponsored research on software safety assessment and process improvement applied to the NASA Constellation program and Global Precipitation Measurement satellite.
  - Investigated software process techniques to improve quality, productivity and customer satisfaction in systems engineering with short development lifecycles, high requirements volatility, and high criticality as part of the Department of Defense's Systems Engineering Research Center (SERC).
  - Studied test-driven development and debugging practices and information needs of professional programmers at Microsoft.
  - Conducted independent product validation for an external customer producing database analysis software for government clients.

National Research Council January 2009 – June 2009
Ottawa, Ontario, Canada
Research Associate

Investigated the feasibility, effectiveness and application of software development methods that emphasize three main traits: agility, communication and collaboration. Assisted in a systematic literature review of test-driven development articles. Also participated in the planning and initial implementation of large, in-depth empirical study on the effectiveness of test-driven development at a major international software development corporation.

MEDIA APPEARANCES

- "CoastLine: Blockchain, Beyond Bitcoin And Unpacked", *WHQR Radio*, 14 June 2018.
- "Local expert weights in on possible repeat of net neutrality", *WWAY TV3*, 28 November 2017.
- "School system fears repeal of net neutrality", *WECT News6*, 27 November 2017.
- "Government held hostage: Are your records safe?", *WECT News6*, 25 October 2017.
- "Beware of scammers, fake links caused by Equifax fallout", *WECT News6*, 26 September 2017.

CURRENT AND PAST FUNDING

Recent competitive funding received on projects where serving as Principal Investigator or Co-PI:

Source	Topic	Period	Amount
UNCW SURCA	Telemetry for Learning Analytics in Programming-Intensive Courses	6/20–8/20	$3,500
UNCW CAS Pilot Award	Anchoring Bias in the Identification of Cyber Attacks	5/20–6/20	$3,500
Oncology Nursing Foundation	Refinement and Usability Testing of a Pharmacogenomics App for Dosing Guidelines for Oncology	1/20–1/22	$25,000
UNCW Sustainability's Green Initiative Fund	Island Ecology for Educators: Coastal Eco Explorer Mobile Application Project	1/20–5/20	$2,000
UNCW CTE	A Safe Environment for Teaching Computer Security in an Adversarial Setting	6/19–7/19	$3,000
UNCW ETEAL	Island Ecology for Educators: Transitioning Content to Application	5/19–12/19	$3,500
UNCW CAS	Implementing CSC 315 - Mobile Applications Development	6/18–8/18	$3,500
UNCW Cahill	A Social Media-based early Warning System for Cyber Threats	1/18–5/18	$3,270
UNCW ETEAL	IARPA Janus Project Verification	1/18–5/18	$2,500
Cisco University Research Program Fund	Data Protection Policy Effectiveness Measures	12/16–11/17	$100,000
NSF	Pocket Security – Smartphone Cybercrime in the Wild	9/16–9/18	$309,000
US Automotive OEM	Software Reliability Metric Analysis	05/16–11/16	$40,000
US Automotive OEM	Security Requirements Engineering for Embedded Software	09/14–01/15	$100,000
NASA OSMA SARP	Software Anomalies: Trending, Analysis, and Lessons Learned	10/13–09/15	$202,500
NASA OSMA SARP	A JIRA-based Hazard Tracking System	10/13–09/15	$82,005
NSF	Transfer Learning in Software Engineering	07/13–06/17	$482,852
NASA OSMA SARP	Improving the Utility of Anomaly Reports	10/12–09/13	$115,117
Fraunhofer USA	InViz: Instant Visualization of Cyber Attacks	02/12–03/13	$145,000
SERC UARC	Modeling of Contingency Bases	09/11–11/12	$62,019
NASA OSMA SARP	NASA Software Standards Improvement - Software Safety Risk Metrics Initiative	06/09–09/12	$988,000

PUBLICATIONS

Journal articles

- Carl Sabottke, Daniel Chen, Lucas Layman, and Tudor Dumitraş. "How to trick the Borg: threat models against manual and automated techniques for detecting network attacks". In: *Computers & Security* 81 (Mar. 2019), pp. 25–40. ISSN: 0167-4048. DOI: 10.1016/J.COSE.2018.07.022. URL: https://www.sciencedirect.com/science/article/pii/S0167404818311283

- Rahul Krishna, Tim Menzies, and Lucas Layman. "Less is More: Minimizing Code Reorganization using XTREE". in: *Information and Software Technology* 88 (2017), pp. 53–66. ISSN: 09505849. DOI: 10.1016/j.infsof.2017.03.012. arXiv: 1609.03614. URL: https://arxiv.org/pdf/1609.03614.pdf

- Tim Menzies, William Nichols, Forrest Shull, and Lucas Layman. "Are delayed issues harder to resolve? Revisiting cost-to-fix of defects throughout the lifecycle". In: *Empirical Software Engineering: An International Journal* 22.4 (2016), pp. 1903–1935. ISSN: 15737616. DOI: 10.1007/s10664-016-9469-x. URL: http://dx.doi.org/10.1007/s10664-016-9469-x

- Lucas Layman, Victor R Basili, and Marvin V Zelkowitz. "A Methodology for Exposing Risk in Achieving Emergent System Properties". In: *Transactions on Software Engineering Methodology* 22.3 (2014), Article 22. ISSN: 15577392. DOI: 10.1145/2560048

- Tim Menzies, Andrew Butcher, David Cok, Andrian Marcus, Lucas Layman, Forrest Shull, Burak Turhan, and Thomas Zimmermann. "Local versus Global Lessons for Defect Prediction and Effort Estimation". English. In: *IEEE Transactions on Software Engineering* 39.6 (June 2013), pp. 822–834. ISSN: 0098-5589. DOI: 10.1109/TSE.2012.83. URL: http://ieeexplore.ieee.org/articleDetails.jsp?arnumber=6363444

- Lucas Layman, Laurie Williams, Kelli Slaten, Sarah Berenson, and Mladen Vouk. "Addressing Diverse Needs through a Balance of Agile and Plan-driven Software Development Methodologies in the Core Software Engineering Course". In: *International Journal of Engineering Education* 24.4 (2008), pp. 659–670. ISSN: 0949149X

- Lucas Layman, Laurie Williams, Daniela Damian, and Hynek Bures. "Essential Communication Practices for Extreme Programming in a Global Software Development Team". In: *Information and Software Technology* 48.9 (2006), pp. 781–794

- Lucas Layman, Laurie Williams, and Lynn Cunningham. "Motivations and Measurements in an Agile Case Study". In: *Journal of Systems Architecture* 52.11 (2006), pp. 654–667

Refereed conference papers

- Lucas Layman, Yang Song, and Curry Guinn. "Toward Predicting Success and Failure in CS2 : A Mixed-Method Analysis". In: *Proceedings of the 2020 ACM Southeast Conference (ACMSE 2020)*. Tampa, FL, USA: ACM, 2020, p. 8. DOI: 10.1145/3374135.3385277. URL: https://arxiv.org/abs/2002.11813

- William Roden and Lucas Layman. "Cry Wolf : Toward an Experimentation Platform and Dataset for Human Factors in Cyber Security Analysis". In: *Proceedings of the 2020 ACM Southeast Conference (ACMSE 2020)*. Tampa, FL, USA: ACM, 2020, p. 8. DOI: 10.1145/3374135.3385301. URL: https://arxiv.org/abs/2002.10530

- Yang Song, Yunkai Xiao, Jonathan Stephens, Emma Ruesch, Sean Roginski, and Lucas Layman. "Suitability of SCS1 as a Pre-CS2 Assessment Instrument : A Comparison with Short Deliberate-practice Questions". In: *Proceedings of the 2020 ACM Southeast Conference (ACMSE 2020)*. Tampa, FL, USA, 2020, p. 2. DOI: 10.1145/3374135.3385277

- Lucas Layman, Allen P. Nikora, Joshua Meek, and Tim Menzies. "Topic Modeling of NASA Space System Problem Reports". In: *Proceedings of the 13th International Conference on Mining Software Repositories (MSR '16)*. Austin, TX, 2016, pp. 303–314
- Fayola Peters, Tim Menzies, and Lucas Layman. "LACE2: Better Privacy-Preserving Data Sharing for Cross Project Defect Prediction". In: *37th International Conference on Software Engineering (ICSE '15)*. Vol. 1. Florence, Italy, 2015, pp. 801–811. ISBN: 9781479919345. DOI: 10.1109/ICSE.2015.92
- Lucas Layman, Sylvain David Diffo, and Nico Zazworka. "Human Factors in Webserver Log File Analysis: A Controlled Experiment on Investigating Malicious Activity". In: *Proc. of the 2014 Symposium and Bootcamp on the Science of Security (HotSoS '14)*. Raleigh, NC, 2014, 9:1–9:11. ISBN: 9781450329071. DOI: 10.1145/2600176.2600185
- Davide Falessi and Lucas Layman. "Automated classification of NASA anomalies using natural language processing techniques". In: *2013 IEEE International Symposium on Software Reliability Engineering Workshops (ISSREW)*. Pasadena, CA: IEEE, Nov. 2013, pp. 5–6. ISBN: 978-1-4799-2552-0. DOI: 10.1109/ISSREW.2013.6688849
- Lucas Layman, Madeline Diep, Meiyappan Nagappan, Janice Singer, Robert DeLine, and Gina Venolia. "Debugging Revisited: Toward Understanding the Debugging Needs of Contemporary Software Developers". In: *2013 ACM / IEEE International Symposium on Empirical Software Engineering and Measurement*. Baltimore, Maryland, USA: IEEE, Oct. 2013, pp. 383–392. ISBN: 978-0-7695-5056-5. DOI: 10.1109/ESEM.2013.43
- Lucas Layman and Gunnar Sigurdsson. "Using Amazon's Mechanical Turk for User Studies: Eight Things You Need to Know". In: *Proceedings of the 7th International Symposium on Empirical Software Engineering and Measurement (ESEM 2013)*. Baltimore, Maryland, USA, 2013, pp. 275–278
- Lucas Layman, Marvin Zelkowitz, Victor Basili, and Allen P Nikora. "Toward Baselining Software Anomalies in NASA Missions". In: *2012 IEEE 23rd International Symposium on Software Reliability Engineering Workshops*. Dallas, Texas, USA: IEEE, Nov. 2012, pp. 13–14. ISBN: 978-1-4673-5048-8. DOI: 10.1109/ISSREW.2012.49
- Lucas Layman, Victor R Basili, Marvin V Zelkowitz, and Karen L Fisher. "A Case Study of Measuring Process Risk for Early Insights into Software Safety". In: *Proceedings of the 33rd ACM/IEEE International Conference on Software Engineering (ICSE '11)*. Honolulu, HI, 2011, pp. 623–632. ISBN: 9781450304450. DOI: 10.1145/1985793.1985881
- Victor R Basili, Marvin V Zelkowitz, Lucas Layman, Kathleen Dangle, and Madeline Diep. "Obtaining Valid Safety Data for Software Safety Measurement and Process Improvement". In: *Proceedings of the 4th ACM/IEEE International Symposium on Empirical Soiftware Engineering and Measurement (ESEM '10)*. Bolzano, Italy, 2010, Article No. 46. ISBN: 9781450300391. DOI: 10.1145/1852786.1852846
- Lucas Layman, Forrest Shull, Paul Componation, S. O'Brien, D. Sabados, Anne Carrigy, Richard Turner, Sue O Brien, Anne Carrigy, and Richard Turner. "A Methodology for Mapping System Engineering Challenges to Recommended Approaches". In: *Proceedings of the 4th Annual IEEE International Systems Conference*. San Diego, CA, 2010, pp. 294–299. ISBN: 9781424458837. DOI: http://dx.doi.org/10.1109/SYSTEMS.2010.5482336
- Lucas Layman, Nachiappan Nagappan, Sam Guckenheimer, Jeff Beehler, and Andrew Begel. "Mining software effort data: A preliminary analysis of Visual Studio Team System Data". In: *Proceedings of the 2008 International Working Conference on Mining software repositories - MSR '08*. New York, New York, USA: ACM Press, May 2008, pp. 43–46. ISBN: 9781605580241. DOI: 10.1145/1370750.1370762

- Lucas Layman, Gunnar Kudrjavets, and Nachiappan Nagappan. “Iterative identification of fault-prone binaries using in-process metrics”. In: *Proceedings of the Second ACM-IEEE international symposium on Empirical software engineering and measurement - ESEM ’08*. Kaiserslautern, Germany: ACM Press, Oct. 2008, pp. 206–212. ISBN: 9781595939715. DOI: 10.1145/1414004.1414038. URL: http://portal.acm.org/citation.cfm?doid=1414004.1414038

- Laurie Williams, D. Scott McCrickard, Lucas Layman, and Khaled Hussein. “Eleven Guidelines for Implementing Pair Programming in the Classroom”. In: *Agile 2008 Conference*. IEEE, 2008, pp. 445–452. ISBN: 978-0-7695-3321-6. DOI: 10.1109/Agile.2008.12

- Lucas Layman, Laurie Williams, and Robert St. Amant. “Toward Reducing Fault Fix Time: Understanding Developer Behavior for the Design of Automated Fault Detection Tools”. In: *First International Symposium on Empirical Software Engineering and Measurement (ESEM 2007)*. Madrid, Spain: IEEE, Sept. 2007, pp. 176–185. ISBN: 978-0-7695-2886-1. DOI: 10.1109/ESEM.2007.11 **(Best Paper Award)**

- Laurie Williams and Lucas Layman. “Lab Partners: If They’re Good Enough for the Sciences, Why Aren’t They Good Enough for Us?” In: *20th Conference on Software Engineering Education and Training (CSEET’07)*. Dublin, Ireland: IEEE, July 2007, pp. 72–82. ISBN: 0-7695-2893-7. DOI: 10.1109/CSEET.2007.31

- Laurie Williams, Lucas Layman, Kelli M. Slaten, Sarah B. Berenson, and Carolyn Seaman. “On the Impact of a Collaborative Pedagogy on African American Millennial Students in Software Engineering”. In: *29th International Conference on Software Engineering (ICSE’07)*. IEEE, May 2007, pp. 677–687. ISBN: 0-7695-2828-7. DOI: 10.1109/ICSE.2007.58. URL: http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4222629

- Lucas Layman, Laurie Williams, and Kelli Slaten. “Note to self: Make Assignments Meaningful”. In: *Proceedings of the 28th SIGCSE Technical Symposium on Computer Science Education*. Covington, KY: ACM, Mar. 2007, pp. 459–463. ISBN: 1-59593-361-1. DOI: 10.1145/1227504.1227466

- Laurie Williams, Lucas Layman, Jason Osborne, and Neha Katira. “Examining the Compatibility of Student Pair Programmers”. In: *AGILE 2006 (AGILE’06)*. Minneapolis, MN: IEEE, 2006, pp. 411–420. ISBN: 0-7695-2562-8. DOI: 10.1109/AGILE.2006.25

- L. Layman. “Changing Students’ Perceptions: An Analysis of the Supplementary Benefits of Collaborative Software Development”. In: *19th Conference on Software Engineering Education and Training (CSEET’06)*. IEEE, 2006, pp. 159–166. ISBN: 0-7695-2557-1. DOI: 10.1109/CSEET.2006.10

- Lucas Layman, Travis Cornwell, and Laurie Williams. “Personality Types, Learning Styles, and an Agile Approach to Software Engineering Education”. In: *Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education*. Houston, TX, 2006, pp. 428–432

- Lucas Layman et al. “How and Why Collaborative Software Development Impacts the Software Engineering Course”. In: *Proceedings Frontiers in Education 35th Annual Conference*. Indianapolis, Indiana: IEEE, 2005, T4C 9–14. ISBN: 0-7803-9077-6. DOI: 10.1109/FIE.2005.1611964

- Kelli M Slaten, Maria Droujkova, Sarah B Berenson, Laurie Williams, and Lucas Layman. “Undergraduate Student Perceptions of Pair Programming and Agile Software Methodologies: Verifying a Model of Social Interaction”. In: *Agile Development Conference (ADC’05)*. Denver, CO: IEEE Comput. Soc, 2005, pp. 323–330. ISBN: 0-7695-2487-7. DOI: 10.1109/ADC.2005.48

- L Layman, L Williams, and L Cunningham. “Exploring Extreme Programming in Context: An Industrial Case Study”. In: *Agile Development Conference 2004 (ADC’04)*. Salt Lake City, UT, 2004, pp. 32–41. ISBN: TR-2004-8

- Laurie Williams, William Krebs, Lucas Layman, Annie I Anton, and Pekka Abrahamsson. “Toward a Framework for Evaluating Extreme Programming”. In: *Proceedings of the 8th International Conference on Evaluation and Assessment in Software Engineering (EASE ’04)*. Edinburgh, Scotland: IET

Digital Library, 2004, pp. 11–20. ISBN: TR-2003-18. URL: http://digital-library.theiet.org/content/conferences/10.1049/ic%7B%5C_%7D20040394

Refereed workshop publications, doctoral symposiums, and posters

- Lucas Layman, Carolyn Seaman, Davide Falessi, and Madeline Diep. "Ask the Engineers: Exploring Repertory Grids and Personal Constructs for Software Data Analysis". In: *8th International Workshop on Cooperative and Human Aspects of Software Engineering (CHASE 2015)*. Florence, Italy, 2015, pp. 81–84. ISBN: 9781479919345. DOI: 10.1109/CHASE.2015.25
- Lucas Layman and Nico Zazworka. "InViz: Instant Visualization of Cyber Attacks". In: *Proc. of the 2014 Symposium and Bootcamp on the Science of Security (HotSoS '14)*. Raleigh, NC, 2014, article 9
- Andrew Begel, Nachiappan Nagappan, Christopher Poile, and Lucas Layman. "Coordination in large-scale software teams". In: *2009 ICSE Workshop on Cooperative and Human Aspects on Software Engineering*. Vancouver, BC: IEEE, May 2009, pp. 1–7. ISBN: 978-1-4244-3712-2. DOI: 10.1109/CHASE.2009.5071401
- Lucas M Layman, Laurie A Williams, and Robert St. Amant. "MimEc: Intelligent User Notification of Faults in the Eclipse IDE". in: *1st Workshop on Cooperative and Human Aspects of Software Engineering (CHASE '08)*. Leipzig, Germany, 2008, pp. 73–76
- Lucas Layman. "Intelligent User Notifaction to Expedite Awareness of Fault Code". In: *International Doctoral Symposium on Empirical Software Engineering (IDoESE '06)*. 2006
- Laurie Williams, Lucas Layman, and Pekka Abrahamsson. "On establishing the essential components of a technology-dependent framework". In: *ACM SIGSOFT Software Engineering Notes* 30.4 (July 2005), p. 1. ISSN: 01635948. DOI: 10.1145/1082983.1083179
- Lucas Layman. "Empirical investigation of the impact of extreme programming practices on software projects". In: *Companion to the 19th annual ACM SIGPLAN conference on Object-oriented programming systems, languages, and applications - OOPSLA '04*. New York, New York, USA: ACM Press, Oct. 2004, p. 328. ISBN: 1581138334. DOI: 10.1145/1028664.1028787
- K. Gallagher and L. Layman. "Are decomposition slices clones?" In: *Proceedings of the 11th International Workshop on Program Comprehension (IWPC '03)*. IEEE Comput. Soc, 2003, pp. 251–256. ISBN: 0-7695-1883-4. DOI: 10.1109/WPC.2003.1199209

Book chapters and Magazine Articles

- Forrest Shull, Davide Falessi, Carolyn Seaman, Madeline Diep, and Lucas Layman. "Technical Debt: Showing the Way for Better Transfer of Empirical Results". In: *Perspectives on the Future of Software Engineering: Essays in Honor of Dieter Rombach*. Ed. by Jürgen Münch and Klaus Schmid. Vol. 9783642373. Elsevier, 2013, pp. 179–190. ISBN: 9783642373954. DOI: 10.1007/978-3-642-37395-4_12
- Forrest Shull, Grigori Melnik, Burak Turhan, Lucas Layman, Madeline Diep, and Hakan Erdogmus. "What Do We Know about Test-Driven Development". In: *IEEE Software* 27.6 (2010), pp. 16–19. DOI: http://dx.doi.org/10.1109/MS.2010.152
- Burak Turhan, Lucas Layman, Madeline Diep, Hakan Erdogmus, and Forrest Shull. "How Effective is Test Driven Development?" In: *Making Software: What Really Works, and Why We Believe It*. Ed. by Andy Oram and Greg Wilson. Cambridge, MA: O'Reilly, 2010, pp. 207–219

PROFESSIONAL ACTIVITIES

Organizing Committees

- Empirical Software Engineering and Measurement (ESEM): Proceedings Chair - 2018
- International Doctoral Symposium on Empirical Software Engineering (IDoESE): Co-chair - 2016
- Symposium and Bootcamp on the Science of Security (HotSoS): Financial Chair - 2014
- Empirical Software Engineering and Measurement (ESEM): Financial Chair - 2009, 2013
- Product-Focused software Process Improvement (PROFES): Publicity Chair - 2012
- International Symposium on Software Reliability Engineering (ISSRE): Student Volunteers Chair and Registrar - 2006

Conference and Workshop Program Committees

- Empirical Software Engineering and Measurement (ESEM) Industry Track - 2019–2020
- IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER) - 2018
- Mining Software Repositories (MSR) - 2016–2017
- Foundations of Software Engineering (FSE) Industry Track - 2016–2017
- International Conference on Software Engineering (ICSE) - 2016
- Empirical Software Engineering and Measurement (ESEM) Short Papers - 2014–2016
- Int'l Conference on Evaluation and Assessment in Software Engineering (EASE) Short Papers- 2015
- Symposium and Bootcamp on the Science of Security (HotSoS) - 2015
- Empirical Software Engineering and Measurement (ESEM) - 2015
- ACM Technical Symposium on Computer Science Education (SIGCSE) - 2007–2014
- IEEE Systems Conference - 2013–2014
- Agile (Development Conference) Research Track - 2013–2014
- Int'l Doctoral Symposium on Empirical Software Engineering (IDoESE) - 2013–2014
- Workshop on Empirical Requirements Engineering (EmpiRE) - 2012, 2014
- International Symposium on Software Reliability Engineering (ISSRE) - 2012
- Workshop on Empirical Software Engineering in Practice (IWESEP) - 2012
- Workshop on Cooperative and Human Aspects of Software Engineering (CHASE) - 2009, 2011
- Workshop on Defects in Large Software Systems (DEFECTS) - 2009
- Frontiers in Education (FIE) - 2006–2007
- OOPSLA Student Research Competition - 2005

Journals and Magazine Reviewer

- ACM Transactions on Computing Education - 2020
- IEEE Transactions on Software Engineering - 2006, 2008, 2010–2012, 2014, 2016-2018

- Empirical Software Engineering - 2008–2012, 2014–2018
- Information and Software Technology - 2005, 2010–2012, 2014
- IEEE Software (magazine) - 2012
- Computer Science Education - 2010
- International Journal of Engineering Education - 2007

Memberships

- Association for Computing Machinery (ACM), SIGSOFT, SIGCSE
- IEEE Computer Society

PROFESSIONAL RECOGNITION

Awards

- NASA Safety Center Certificate of Appreciation
- 2012 NASA Group Achievement Award - OSMA Software Assurance Research Program

Honor Societies

- Phi Beta Kappa, April 2002
- Upsilon Pi Epsilon, April 2000