LAURIE A. WILLIAMS

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RESEARCH AREAS

Software Engineering: Software Security, Agile Software Development Processes and Practices, Continuous Deployment/DevOps, sEmpirical Software Engineering, Software Reliability, Software Testing, Pair-Programming

EDUCATION

Ph.D. Computer Science   Computer Science, University of Utah
Spring 2000
Dissertation Title: *The Collaborative Software Process*[SM]
Advisor: Robert R. Kessler

M.B.A.   Fuqua School of Business, Duke University
1990

B.S. Industrial Engineering   Industrial Engineering, Lehigh University
1984

AWARDS AND HONOR SOCIETIES

IEEE Fellow, 2018
Carol Miller Graduate Lecturer Award, 2016-2017
NCSU Research Leadership Academy, 2016
2014-2015 Alumni Association Outstanding Research Award
North Carolina State University Faculty Scholar, 2014
ACM Distinguished Scientist, 2011
IBM Smarter Planet Faculty Award 2010
ACM SIGSOFT Influential Educator Award, 2009
North Carolina State Chapter of Sigma Xi, 2007
ACM/AITP Student Chapter Award: Most Helpful Professor Outside of Class, 2007
Member, NC State's Academy of Outstanding Teachers, 2006
National Science Foundation CAREER Award, 2003
IBM University Partnership/Faculty Award, 2003, 2005, 2008, 2009, 2010
IBM Jazz Innovation Award, 2008
IBM Eclipse Innovation Award, 2002
Tau Beta Pi Engineering Honor Society
Alpha Pi Mu Industrial Engineering Honor Society
Phi Eta Sigma Freshman Honor Society

RESEARCH EXPERIENCE

Distinguished Professor, Computer Science, North Carolina State University, Raleigh, NC
November 2018 - present

Interim Department Head, Computer Science, North Carolina State University, Raleigh, NC
January 2017 – October 2018

Associate Department Head, Computer Science, North Carolina State University, Raleigh, NC
September 2015 – December 2016

Acting Department Head, Computer Science, North Carolina State University, Raleigh, NC
December 2014 to August 2015

Professor, North Carolina State University, Raleigh, NC
August 2011 to October 2018

Associate Professor, Computer Science, North Carolina State University, Raleigh, NC
August 2006 to August 2011

Assistant Professor, Computer Science, North Carolina State University, Raleigh, NC
Fall 2000 to August 2006

Co-Director NSA Science of Security Lablet, North Carolina State University
August 2011 to present

Senior Research Director, Institute for Next Generation Information Technology, NC State University
January 2010 to 2015

Co-Director, Center for Advanced Computers and Communications, NC State University
January 2008 to 2010

Director, Center for Open Software Engineering, North Carolina State University
June 2007 to 2014

Area Technical Director, Secure Open Systems Initiative, North Carolina State University
May 2008 to 2014

Director, Realsearch Research Group, North Carolina State University
Fall 2002 to Present

- o Students Graduated (PhD)
  1. Michael Gegick (2009, National Security Agency)
     Using Automated Static Analyzer Alerts to Predict Vulnerability- and Attack-prone Components
  2. Sarah Smith Heckman (2009, North Carolina State University)
     Adaptive Model for Prioritizing Code-based Static Analysis Alerts
  3. Chih-wei Ho (2008, SAS)
     Performance Requirements Improvement with an Evolutionary Model
  4. JeeHyun Hwang (2014, SAS)
     Improving the Quality of Security Policies
  5. Lucas Layman (2008, Fraunhofer Institute, co-advised by Robert St. Amant)
     Information Needs of Developers for Program Comprehension during Software Maintenance Tasks
  6. Jason King (2015, North Carolina State University)
     Measuring the Forensic-ability of User Activity Logs
  7. Andrew Meneely (2011, Rochester Institute of Technology)
     Investigating the Relationship between Developer Collaboration and Software Security
  8. Pat Morrison (2017, IBM)
     A Security Practices Evaluation Framework
  9. Nachiappan Nagappan, (2005, Microsoft Research)
     Software Testing and Reliability Early Warning (STREW) Metric Suite
  10. Rahul Pandita (2015, Phase Change Software)
      Inferring Semantic Information from Natural-Language Software Artifacts
  11. Akond Rahman (2019, Tennessee Tech)
      Anti-patterns in Infrastructure as Code
  12. Maria Riaz (2016, Google)

Inferring Security Requirements from Natural Language Requirements Artifacts
13. Mark Sherriff (2007, University of Virginia)
    Analyzing Software Artifacts through Singular Value Decomposition to Guide Development Decisions
14. Yonghee Shin (2010, FOLIOfn)
    Exploring Complexity Metrics as Indicators of Software Vulnerabilities
15. John Slankas, PhD (2015, Laboratory for Analytic Sciences, NCSU)
    Implementing Database Access Control Policy from Unconstrained Natural Language Text
16. Ben *Smith, PhD (*2012, IBM*)*
    Empirically Developing a Software Security Test Pattern Catalog Using a Grounded Theory Approach
17. Hema Srikanth (2005, IBM)
    Value-Driven System Level Test Case Prioritization
18. Christopher Theisen (2018, Microsoft)
    Risk-Based Attack Surface Approximation
19. Xusheng Xiao, PhD (2014, Case Western University, co-advised with Tao Xie)
    Cooperative Testing and Analysis via Informed Decision Making
20. Jiang Zheng (2007, IBM)
    In Regression Testing Without Code

- Students Graduated (MS)
    1. Andrew Austin, MS (2011, Interactive Intelligence)
       Improving the Security of Electronic Health Record Systems
    2. Prashant Baheti, (2003, Google)
       Evaluating a Software Engineering Knowledge Base
    3. Michael Gegick (2003, NCSU PhD student then NSA)
       Analyzing Security Attacks to Generate Signatures from Vulnerable Architectural Patterns
    4. Boby George, MS (2002, Microsoft)
       Analysis and Quantification of Test Driven Development Approach
    5. Lauren Hayward (2009, IBM)
       Students' Perception of Distributed Pair Programming in an Upper-Level Undergraduate Software Engineering Course
    6. Neha Katira, (2004, Accenture)
       Pair Programming Compatibility
    7. David Palmieri (2002, IBM)
       Knowledge Management Through Pair Programming
    8. Vinay Ramachandran (2002, HP Enterprise Services)
       An Extreme Programming (XP) Process Analysis and Project Management Tool
    9. Anuja Shukla (2002, Google)
       Pair Programming and the Factors Affecting Brooks' Law.
    10. Harmanpreet Singh (2002, founder Sikhya Solutions)
        Developing and eLearning Model for an Industrial Enterprise
    11. Raza Abbas Syed (2011, SAS)
        Investigating Intermittent Software Failures
    12. Stephen Thomas (2007, IBM)
        Using Automated Fix Generation to Mitigate SQL Injection Vulnerabilities
    13. Dylan Wilson (2003, Becton Dickinson)
        An Empirical Study of the Tacit Knowledge Management Potential of Pair Programming
    14. Kai Yang, (2002)
        Pair Learning in Undergraduate Computer Science Education

- Postdoc
    - Özgür Kafali, (2015-2017; University of Kent)
    - Nirav Ajmeri (2018-present)

- Current Thesis/Dissertation Advising
    - Sarah Elder, PhD

- Nasif Imtiaz, PhD
- Rezvan Mahdavi-Hezaveh, PhD
- Rayhanur Rahman, PhD
- Nusrat Zahan, PhD

o Sponsored Research ($25.6M)
  - *Machine Learning Integrity**
    Laboratory for Analytic Sciences
    National Security Agency ($58K)
    January 2020 – December 2020
  - *SHF: Small: Detecting the 1%: Growing the Science of Vulnerability Detection**
    with Tim Menzies, NCSU
    National Science Foundation ($500K)
    October 2019 – October 2022
  - *Laboratory for Analytic Sciences**
    National Security Agency ($63K)
    September 2013 – September 2014
  - *IBM PhD Fellowship for Patrick Morrison**
    IBM ($50K)
    August 2014 – August 2016
  - *EDU: Motivating and Reaching Students and Professionals with Software Security Education**
    with Emerson Murphy-Hill, NCSU
    National Science Foundation ($300K)
    August 2014 – August 2016
  - *Science of Security Lablet**
    with Michael Rappa and Munindar Singh, NCSU
    National Security Agency and Army Research Office ($19.1M)
    October 2011 – present
  - *National Collaborative for Bio-Survaillance*
    Department of Homeland Security ($200K)
    July 2011-April 2013
  - *Toward Secure and Privacy-Preserving Data Transfer and Data Analytics in a Health Information Exchange**
    IBM ($10K)
    March 2012 – March 2013
  - *Secure MANET**
    Army Research Office ($240K)
    July 2011 – November 2013
  - *On Educational Materials for Secure and Privacy-Preserving Development of Healthcare IT Electronic Health Record Applications **
    IBM ($10K)
    January 2011 – December 2011
  - *Planning Poker and Automated Acceptance Testing Support for Jazz**
    IBM ($20K)
  - *North Carolina Bio-Preparedness Collaboration (NCB-Prepared)*
    US Dept. of Homeland Security (DHS) via UNC-CH (lead) ($1.8M)
    June 2010 – February 2015
  - *IBM PhD Fellowship for Ben Smith**
    IBM ($25K)
    August 2010 – August 2011
  - *Use of Affordable Open Source Systems by Rural/Small-Practice Health Professionals**
    Agency for Healthcare Research and Quality ($299K)
    September 2009-September 2011
  - *Defect Observability**
    ABB ($170K)

August 2009 – May 2012
- *On the Use of Software Metrics as a Predictor of Software Security Problems**
  Army Research Office ($117K)
  July 2008 – December 2009
- *Open Source Health Care and the Virtual Computing Laboratory*
  IBM ($20K)
  September 2009 – August 2010
- *On Agility in Software Reliability and Software Security Engineering**
  Center for Advanced Computing and Communications ($40K)
  July 2008 – July 2009
- *Supporting Pair Programming and Virtualization of the Jazz Development Environment**
  IBM ($25K)
  with Michael Devetsikiotis
  January 2008 – December 2008
- *On the Use of Security Metrics to Predict Vulnerability- and Attack-Prone Software Components**
  Center for Advanced Computing and Communications ($100K)
  January 2008 – December 2008
- *On the Use of Security Metrics to Identify and Rank the Risk of Vulnerability- and Expoit-Prone Components**
  National Science Foundation ($194K)
  August 2007 – August 2009
- *IBM PhD Fellowship for Sarah Smith Heckman*
  IBM ($72K)
  August 2006 – August 2009
- *Hot Spot Identification and Test-Driven Development**
  Nortel ($46K)
  August 2006 – December 2007
- *Software Testing Curricular Materials Development*
  IBM
  July 2006 – June 2007 ($27K)
- *On Expediting Software Engineering AWAREness of Anomalous Code**
  with Tao Xie
  Center for Advanced Computing and Communications ($40K)
  July 2006 – June 2007
- *The STARS Alliance: A Southeastern Partnership for Diverse Participation in Computing**
  National Science Foundation ($492K)
  January 2006 – January 2011
- *Academy for Software Engineering Educators and Trainers **
  National Science Foundation ($10K)
  Sept. 2005 – Sept. 2006
- *Using Validation and Verification Certificates to Estimate Software Defect Density**
  National Science Foundation ($150K)
  May 2005 – August 2006
- *Continuous Checking of Static Analysis and Automated Unit Tests for Java Programs**
  with Jun Xu
  Center for Advanced Computing and Communications ($40K)
  July 2005 – June 2006
- *Supporting Evidence-Based Software Engineering**
  Center for Advanced Computing and Communications ($40K)
  July 2005 – June 2006
- *In Regression Testing without Code**
  ABB, Inc. ($115K)
  January 2005 – May 2007
- *Test Case Prioritization**
  with Annie Anton

ABB, Inc. ($15K)
September 2004 – December 2004

- *Incorporating Automated Inspection into the Emerald Decision Support System**
  with Mladen Vouk
  Nortel Networks ($15K)
  May 15, 2004 – December 31, 2004
- *On the Identification of Agile and Plan-Driven Best Practices**
  with Carla Savage and Jason Osborne
  Center for Advanced Computing and Communications ($40K)
  July 2004 – June 2005
- *CAREER: The Test-Driven Development of Secure and Reliable Software Applications**
  National Science Foundation ($400K)
  Duration: April 2004 – February 2009
- *Establishing an OpenSeminar for Eclipse-based Software Engineering Education*
  with Michael Rappa
  IBM Eclipse Innovation Award ($21K)
  Duration: January 2004 – December 2004
- *Distributed Extreme Programming with Eclipse*
  with Ed Gehringer
  IBM Eclipse Innovation Award ($20K)
  Duration: January 2004 – December 2004
- *On Assessing Transitions to Extreme Programming**
  Tekelec, Inc. ($36K)
  January 2004 – August 2004
- *Serviceability Enhancements: Comprehensive or Needs Based?**
  IBM University Partnership Award ($40K)
  November 2003 – November 2004
- *Agile Software Dependability**
  with Mladen Vouk
  Nortel ($22K)
  September 2003-May 2004
- *Mapping CMMI to ISO Standard 12207-15504*
  with Annie Antón
  ABB, Inc. ($25K)
  September 2003-May 2004
- *Extending Extreme Programming**
  with Mladen Vouk
  Center for Advanced Computing and Communication ($48K)
  July 2003-May 2004
- *Collaboration through Agile Software Development Practices: A Means for Improvement in Quality and Retention of the IT Workforce**
  with Mladen Vouk, Sarah Berenson, Winser Alexander, Virginia Knight, Barrett Koster, Sung Yoon, Jason Osborne
  National Science Foundation ($813K)
  August 2003-August, 2006
- *Agile Quality Assurance: Agile Practices or Best Practices?**
  with Mladen Vouk
  Center for Advanced Computing and Communication ($43K)
  July 1, 2003-June 30, 2004
- *Good Enough Reliability Tool**
  with Mladen Vouk
  IBM Eclipse Innovation Award ($28K)
  January 1, 2003-December 31, 2003
- *A Metrics Suite for a Software Engineering Knowledge Management System**
  with Annie Antón
  ABB, Inc. ($25K)
  August 15, 2002 – May 15, 2003

- *Assessing Agile Requirements Practices**
  with Annie Antón
  Center for Advanced Computing and Communications($43K)
  July 2002 – June 2003
- *An Investigation of Learning Content Objects in the Industrial Learning Context**
  with Annie Antón
  ABB, Inc. ($20K)
  August 2001 – May 2002
- *Analyzing Emerging Software Development Methodologies and Practices**
  with Annie Antón
  Center for Advanced Computing and Communication Core Project ($47K)
  July 2001 – June 2002
- *Pair-Learning in Undergraduate Computer Science Education**
  National Science Foundation ($227K)
  January 2001 – December 2003
- *Incorporating the Collaborative Software Process^{SM*}*
  Eyecast, Inc. ($108K)
  September 2000 – August 2001
- *Integrating Collaborative Programming into a Disciplined Software Process**
  Nortel, ($65K)
  November 2000 – November 2001
- *NSF Partnership in the Center for Advanced Computing and Communication*
  National Science Foundation ($783K)
  September 2009 – December 2001

- Gifts
  - Student Lab for Agile Software Development
    $20,000 from the Agile Alliance

Graduate Student, University of Utah, Salt Lake City, UT
Fall 1996 – Spring 2000
- Development and validation of the Collaborative Software Process^{SM} (CSP^{SM}). CSP is a defined and disciplined process for two programmers to work collaboratively on one software artifact. Empirical research results have shown that pairs of programmers using the CSP produce higher quality products faster than individual programmers using a similar process, the Personal Software Process (PSP) developed by Watts Humphrey at the Software Engineering Institute (SEI).

- Sponsored Research
  - *Incorporating Software Engineering in the Undergraduate Computer Science Curriculum*
    University of Utah Teaching Assistantship Grant ($10,850)
    August 1997 – May 1998

TEACHING EXPERIENCE
Distinguished Professor, North Carolina State University, Raleigh, NC
Fall 2018 to Present
- Software Security (Spring 2020)

Professor, North Carolina State University, Raleigh, NC
Fall 2011 to Fall 2018
- Software Security (Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2016, Fall 2017, Fall 2018)
- Software Engineering (Fall 2011, Fall 2016)

Associate Professor, North Carolina State University, Raleigh, NC
Fall 2006 to Summer 2011
- Analytics Practicum (Spring 2008)

- Software Security (Fall 2009, Fall 2010)
- Software Testing and Reliability (Fall 2006, Fall 2007)
- Software Engineering (Fall 2006, Fall 2007, Fall 2008, Fall 2009)

Assistant Professor, North Carolina State University, Raleigh, NC
Fall 2000 to Summer 2006

- Software Testing and Reliability (Fall 2002, Fall 2004, Fall 2005)
- eCommerce Practicum (Spring 2003, Fall 2003)
- Software Engineering (Spring 2001, Fall 2001, Fall 2002, Fall 2003, Fall 2004, Fall 2005)
- Software Process and Risk Management (Spring 2003)
- Launching the Digital Enterprise (Fall 2000, Fall 2001)

Graduate Student, University of Utah, Salt Lake City, UT
Fall 1996 – Spring 2000
- Senior Software Engineering (Instructor, Fall 1999)
- The Collaborative Development of Active Server Pages (Instructor, Summer 1999)
- Software Engineering (Teaching Assistant, Fall 1998)
- Defect Prevention Software Engineering (Instructor, Fall 1997)
- CS/1 and CS/2 (Teaching Assistant and Special Lecturer, Fall 1996-Spring 1997)

PROFESSIONAL EXPERIENCE
Independent Consultant, Cary and Raleigh, NC

2007 to present, Consultant services include industrial training, seminars, and coaching in software reliability engineering, agile software development, and software security to Fortune 500 organizations; expert witness services.

IBM Corporation, Research Triangle Park, NC

1993, **Project Manager**. Responsible for managing the technical activities involved in producing two operating systems software products for the retail industry. Implemented a development process in compliance with ISO 9001 requirements.

1990-1992, **Software Test Manager**. Responsible for personnel and technical management for the testing of operating systems and applications software product for the retail industry. Initiated a focused effort on development unit test involving a widespread education program, which resulted in increased product quality.

1989, **Assistant to Lab Director.** Assistant to lab director of Store Systems hardware and software development lab. During this time, the lab director exceeded every business, financial, and employee morale objective.

1987-1988, **Production Control Manager**. Responsible for personnel and technical management for the ordering and delivery of production parts to a mid-range computer manufacturing line. Successfully delivered manufacturing parts, which resulted in a flawless, on-time customer shipment record.

1986, **Production Control Planner**. Responsible for managing the inventory level and parts turnover of production parts for communication controllers. Coordinated first successful just-in-time delivery at Research Triangle Park of major manufacturing component in a build-to-customer-order environment.

1984-1985, **Cost Engineer**. Responsible for management of manufacturing costs for approximately ten communication products. Coordinated the introduction of a new financial system into the cost management process.

PROFESSIONAL ACTIVITIES:

- Editorial Board
    - Empirical Software Engineering (2006-2014)
    - IEEE Transactions on Software Engineering (2011-2015)
    - Associate Editor, Information and Software Technology (2011-2019)
    - Associate Editor-in-Chief (2018-present)
    - IEEE Software (2013-present)
- Steering Committee Member/Chair
    - International Conference on Software Engineering (2015-19); Chair (2019-2021)
    - MetriSec (2011-13)
    - International Conference on Software Engineering (ICSE) 2014 - 2019
    - IEEE Conference on Software Engineering Education and Training (CSEET) (2005-2010)
    - IEEE Symposium on Empirical Software Engineering and Measurement (ESEM) (2008-2012)
- Guest Editor:
    - *IEEE Software*, Software Reliability Engineering, 2017
    - *Empirical Software Engineering Journal*, best papers from ISSRE 2008, 2009
    - *IEEE Computer* Special Issue on Agile Software Development, June 2003 with Alistair Cockburn (Humans and Technology)
    - *IEEE Software* Special Issue on Extreme Programming, May/June 2003
    - *Computer Science Education* Journal Special Issue on Agile Software Development, September 2002 with James Tomayko (Carnegie Mellon)
- General Chair:
    - Symposium and Bootcamp on the Science of Security (HotSoS) 2014, 2018, Raleigh, NC
    - IEEE Empirical Software Engineering and Measurement (ESEM) 2009, Lake Buena Visa, FL
    - IEEE Conference on Software Engineering Education and Training (2008), Charleston, SC
- Program Co-Chair and Co-Founder:
    - XP Universe: Conference on Flexible Software Processes, Raleigh, NC, July 2001
- Program Chair:
    - Foundations of Software Engineering (FSE) Industry Track Chair, 2020.
    - International Conference of Software Engineering (ICSE) 2016, Austin, TX.
    - Joint: International Symposium on Foundations of Health Information Engineering and Systems (FHIES) and Software Engineering in Healthcare (SEHC) 2014, Washington, DC.
    - International Conference on Software Testing, Validation and Verification (ICST) 2014, Cleveland, OH.
    - Agile 2011, Salt Lake City, UT
    - International Workshop on Security Measurement and Metrics (MetriSec) 2011, Balzano-Bozen, Italy.
    - IEEE International Symposium on Software Reliability Engineering (ISSRE) 2008, Redmond, WA
    - IBM Academy of Technology Agile Methods and Practices Conference, San Jose, CA 2007; Raleigh, NC 2008
    - IEEE Conference on Software Engineering Education and Training (CSEET) 2006, Hawaii
    - International Workshop on Software Security from Design to Deployment (SEAD) at Automated Software Engineering (ASE) 2019, 2020.
- Program Committee:

- ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE) 2010, 2021; Industry Track 2019
- ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE) Workshop on the Future of Software Engineering Research 2010
- Agile 2005-10, 2013, 2014
- Agile Alliance Academic Program, 2007-9
- Agile Development Conference 2003, 2004
- Asia Pacific Software Engineering Conference (APSEC) 2006
- Conference on Software Engineering Education and Training (CSEET) 2012
- Data Analysis Patterns in Software Engineering (DAPSE) 2013
- Engineering Secure Software and Systems (ESSoS) 2012, 2018
- HealthTech at USENIX Security 2013
- IEEE Secure Development Conference (SecDev) 2019
- International Conference on Computer-based Systems 2008
- International Conference on Empirical Software Engineering (ISESE) 2005, 2006
- International Conference on Empirical Software Engineering and Measurement (ESEM) 2007, 2008, 2010, 2011, 2013, 2017, 2018, 2019
- International Conference of the IBM Cloud Academy (ICA CON 2012)
- International Conference on Extreme Programming and Agile Processes in Software Engineering 2002-2009, 2012-13; tutorial committee 2008
- International Conference on Quantitative Evaluation of SysTems (QEST) 2014
- International Conference on Software Engineering Workshop Human and Social Factors of Software Engineering (HSSE) 2005
- International Conference on Software Engineering (ICSE) Experience Track 2007; Industry Track 2009, Research Track 2011, 2012, 2014, 2015, 2017, 2018, 2020; Education Track 2008, 2010
- International Conference on Software Engineering and Knowledge Engineering (SEKE) 2008
- International Conference on Software Process (ICSP) 2007, 2008
- International Conference on Software Testing, Verification and Validation (ICST) 2008-10, 2012; Industry Track 2018
- International Symposium on Software Reliability Engineering (ISSRE) 2005-2007, 2009-2013, 2017, 2018; program board 2019
- Foundations of Software Engineering Workshop Quantitative Techniques for Software Agile Process (QTE-SWAP) ACM 2004
- International Conference on Software Science, Technology & Engineering 2003, 2006, 2007
- International Working Conference on Mining Software Repositories (MSR) 2010, 2011, 2013, 2017, 2020
- International Workshop on Requirements Engineering for Investigating and Countering Crime (iRENIC) 2016
- International Workshop on Predictor Models in Software Engineering (PROMISE) 2006-8, 2012
- International Workshop on Rapid Continuous Software Engineering (RCoSE) 2017, 2018.
- International Workshop on Realizing Evidence-Based Software Engineering (REBSE) 2007, 2008
- International Workshop on Security Measurements and Metrics (MetriSec) 2012
- International Workshop on Security Testing 2008
- Metrics and Standards for Software Testing (MaSST) workshop 2012
- Mutation 2009, 2010
- Research-in-progress Workshop on Agile Software Engineering (RWASE '07)
- Symposium and Bootcamp on the Science of Security (HotSoS) 2016, 2019
- User Evaluation for Software Engineering Researchers (USER) 2013

- o Workshop on Knowledge Management for Distributed Agile Processes: Models, Techniques, and Infrastructure (WET ICE) 2003
- o Workshop on Mobile Cloud Computing in Healthcare (WMCCH) in conjunction with IEEE International Conference on Healthcare Informatics 2013 (ICHI 2013)
- o Workshop on Software Engineering in Health Care (SEHC) 2010, 2011, 2012
- o XP/Agile Universe 2003, 2004

- Research Proposal Panel or Reviewer:
  - o National Science Foundation (2004, 2005, 2007, 2009, 2010, 2011, 2012, 2015, 2016, 2017, 2019, 2020)
  - o Engineering and Physical Sciences Research Council, UK (2004)
  - o Science Foundation, Ireland (2005)

- Doctoral Symposium:
  - o Panel, Foundations of Software Engineering (FSE) 2015, Bergamo, Italy
  - o Panel, International Conference of Software Engineering (ICSE) 2012 Zurich, Switzerland; 2014, Hyderabad, India; 2017 Buenos Aires, Argentina
  - o Panel, Empirical Software Engineering and Measurement (ESEM) 2012, Lund, Sweden; 2013, Baltimore MD
  - o Panel, ACM SIGSOFT Foundation of Software Engineering (FSE) 2011, Szeged, Hungary; 2015 Bergamo, Italy.
  - o Panel, 12th International Conference on Product-Focused Software Development and Process Improvement (Profes) 2011, Torre Canne, Italy.
  - o Chair, ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) 2004, Vancouver, November 2004
  - o Panel, XP2017, Cologne, Italy
  - o Panel, International Conference on Software Engineering (ICSE) 2017, Buenos Aires, Argentina.
  - o Chair, International Conference on Software Engineering (ICSE) 2019, Montreal, Canada

- Other:
  - o Advisory Board, World of Code (WoC), NSF supported project, 2019-present.
  - o Chair, New Faculty Symposium, Foundations of Software Engineering, Athens, Greece, 2021.
  - o Chair, New Faculty Symposium, International Conference on Software Engineering, Madrid, Spain, 2021.
  - o Speaker, New Faculty Symposium, International Conference on Software Engineering, Gotenberg, Sweden, 2018.
  - o Expert Review Panel, Automated Software Engineering (SE) 2013
  - o Education Track Chair, International Conference on Software Engineering (ICSE) 2006, Shanghai, May 2006; 2013 San Francisco
  - o Local Arrangements Chair, International Symposium on Software Reliability Engineering (ISSRE) 2005, Raleigh, NC, November 2006; ACM SIGSOFT Foundations in Software Engineering (FSE) 2012, Raleigh, NC; ACM Computers and Communications Security (2012).
  - o Publicity Chair, International Symposium on Software Reliability Engineering (ISSRE) 2005, Chicago, November 2005
  - o Poster Chair, ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) 2002, Seattle, WA, November 2002
  - o Poster Committee, ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) 2007, Montreal, Canada, October 2007
  - o Workshop Committee, ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) 2002, Seattle, WA, November 2002
  - o ACM Student Research: Chair, 2003 (OOPSLA); Committee, 2011 (ICSE); Chair 2012 (ICSE)
  - o Coordinator, Annual NSF Grant Principle Investigator Meeting (Information Technology Workforce), April 2006

- o Scholarship Reviewer, Grace Hopper conference, 2007, 2009, 2010
- o Student Contest on Software Engineering (SCORE) program committee in conjunction with the International Conference of Software Engineering (ICSE) 2011.
- o ACM SIGSOFT Influential Educator Award Selection Committee, 2010- 2013.
- o Vice Chair of the ACM Student Research Competition (2013)
- o ACM Awards Committee for Senior Member 2012-3
- Reviewer for:
  - o ACM Transactions on Software Engineering and Methodology (2008-2012, 2016, 2017, 2020), Communications of the ACM (2004, 2006, 2008, 2013), Computer Science Education (2003, 2004), Computers and Security (2005), Empirical Software Engineering (2004, 2005, 2018, 2019, 2020), IEE Proceedings Software (2005), IEEE Privacy and Security (2003, 2018), fmetr IEEE Technology and Society (2004, 2007), IEEE Transactions on Software Engineering 2004-2020), IET Software (2008), Information and Software Technology (2003-2005, 2008, 2012), International Journal on Engineering Education (2007), Journal of Software and Systems (2016-2020), Microprocessors and Microsystems (2006), Requirements Engineering Conference (2002), and International Journal of Human Computer Studies (2005), Software Quality Journal (2008, 2009), Software Process: Improvement and Practice Journal (2008), Software Testing, Verification, and Reliability (2007).
- North Carolina State Faculty Representative, AT&T Education Alliance, 2001.

PUBLICATIONS

Note: Most of the papers below can be viewed from https://collaboration.csc.ncsu.edu/laurie/publicationsAll.html

REFEREED JOURNAL PUBLICATIONS

- Rahman, A., Parnin, C., and Williams, L. Security Smells in Ansible and Chef Scripts: A Replication Study, ACM Transactions on Software Engineering, to appear.
- Rahman, A., Farhana, E., Williams, L, *The 'as Code' Activities: Development Anti-patterns for Infrastructure as Code*, to appear Empirical Software Engineering.
- Yu, Z., Theisen, C., Williams, L., Menzies, T., *Improving Vulnerability Inspection Efficiency Using Active Learning*, October 2019, https://doi.org/10.1109/TSE.2019.2949275.
- Theisen, C. and Williams, L., "Better Together: Comparing Vulnerability Prediction Models", Information and Software Technology, Vol. 119, March 2020, https://doi.org/10.1016/j.infsof.2019.106204.
- Guo, H., Kafali, O., Jeukeng, A., Williams, L., Singh, M., *Çorba: Crowdsourcing to Obtain Requirements from Regulations and Breaches*, Empirical Software Engineering, 2019, https://doi.org/10.1007/s10664-019-09753-2.
- Rahman, L., and Williams, L., *Source Code Properties of Defective Infrastructure as Code Scripts*, Information and Software Technology, Vol. 112, August 2019, pp. 148-163.
- Inger Anne Tøndel, Martin Gilje Jaatun, Daniela Soares Cruzes, Laurie Williams, *Collaborative Security Risk Estimation in Agile Software Development*, Information and Computer Security, Vol. 26, No., 4, pp. 508-535. https://doi.org/10.1108/ICS-12-2018-0138.
- Rahman, A. and Mahdavi-Hezaveh, R., Williams, L., A Systematic Mapping Study of Infrastructure as Code Research, Information and Software Technology, Vol. 108, April 2019, pp. 65-77, DOI: 10.1016/j.infsof.2018.12.004.
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- Morrison, P., Moye, D., Pandita, R., Williams, L., Mapping the Field of Software Development Security Metrics, Information and Software Technology, Volume 102, October 2018, Pages 146-159
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- Zheng, J., Williams, L., Nagappan, N., Snipes, W., Hudepohl, J., Vouk, M. Ngo, K. *On the Effectiveness of Static Analysis Tools for Fault-Detection*, NCSU CSC Technical Report, TR-2005-2, January 11, 2005.
- Berenson, S., Slaten, K., Williams, L., Ho, C, *Voices of Women in a Software Engineering Course: Reflections on Collaboration,* NCSU CSC Technical Report, TR-2004-31, November 18, 2004.
- Ho, Chih-wei, Slaten, Kelli, Williams, L., Berenson, S., *Extreme Examining the Impact of Pair Programming on Female Students*, NCSU CSC Technical Report, TR-2004-20, June 17, 2004.

- Williams, L., Krebs, W., Layman, L. *Extreme Programming Evaluation Framework for Object-Oriented Languages – Version 1.4*, NCSU CSC Technical Report, TR-2004-18, June 17, 2004.
- Berenson, S., Slaten, K. M., Williams, L., *Collaboration through Agile Software Development Practices: Student Interviews and Lab Observations,* NCSU CSC Technical Report, TR-2004-12, April 26, 2004.
- Williams, L., Krebs, W., Layman, L. *Extreme Programming Evaluation Framework for Object-Oriented Languages – Version 1.3*, NCSU CSC Technical Report, TR-2004-11, April 6, 2004.
- Williams, L., Layman, L., Krebs, W., Antón, A., *Exploring the Use of a .Safe Subset. of Extreme Programming: An Industrial Case Study* NCSU CSC Technical Report, TR-2004-3, January 20, 2004
- Williams, L., Krebs, W., Layman, L. *Extreme Programming Evaluation Framework for Object-Oriented Languages – Version 1.2*, NCSU CSC Technical Report, TR-2004-1, January 5, 2004.
- Williams, L., Krebs, W., Layman, L. *Extreme Programming Evaluation Framework for Object-Oriented Languages – Version 1.1*, NCSU CSC Technical Report, TR-2003-20, October 8, 2003.
- Nagappan, N., Sherriff, M., Williams, L., *On the Feasibility of Using Operational Profiles to Determine Software Reliability in Extreme Programming,* NCSU CSC Technical Report, TR-2003-15, August 19, 2003.
- Weibe, E., Williams,, L, Yang, K., Miller, C., *Computer Science Attitude Survey*, NCSU CSC Technical Report, TR-2003-1, January 10, 2003.
- Ferzli, M., Wiebe, E., Williams, L., *Paired Programming Project: Focus Groups with Teaching Assistants and Students*, NCSU CSC Technical Report, TR-2002-16, November 25, 2002.
- Baheti, P., Williams, L., Gehringer, E., Stotts, D., and Smith, J., *Distributed Pair Programming: Empirical Studies and Supporting Environments*, UNC-CH Technical Report TR02-010, March 15, 2002.
- Antón, A., Carter, R., Srikanth, H., Sureka, A., Williams, L., Yang, K., Yang, L., *Tailored CMM for a Small e-Commerce Company- Level 2: Repeatable,* NCSU CSC Technical Report, TR-2001-09, August 23, 2001.
- Antón, A., Carter, R., Earp, J. and Williams, L., *EPRAM: Evolutionary Prototyping Risk Analysis & Mitigation (e-Commerce Software Development Process Document)*, NCSU CSC Technical Report, TR-2001-08, August 20, 2001.
- Williams, Laurie, *A Collaborative Software Process* PhD Dissertation, University of Utah, 2000.

OTHER CONFERENCE INVOLVEMENT

- Agile 2010 Workshop, *Comparative Agility: How Agile You Are and How Agile is the Industry*, August 2010.
- XP/Agile Universe Workshop Empirical Evaluation of Agile Processes (Refereed), August 2002 and August 2003.
- Agile Development Conference Technical Exchange on *What We Have Learned about Agile Methods* (Refereed) with Forrest Shull (Fraunhofer Institute), June 2003.
- OOPSLA Workshop on Distributed Pair Programming (Refereed) with David Stotts (University of North Carolina – Chapel Hill), November 2002.
- XP/Agile Universe Workshop on Distributed Pair Programming (Refereed) David Stotts (University of North Carolina – Chapel Hill), August 2002.
- CSEET Workshop: *Integrating Agile Practices into Software Engineering Courses* (Refereed), with five other professors, February 2002.
- SIGCSE Tutorial: *Examining Extreme Programming (Refereed)* with Joseph Bergin (Pace University), February 2002.
- OOPSLA Workshop: *Agile Software Development Methodologies: Raising the Floor or Lowering the Ceiling* with Steven Fraser (Nortel Networks), October 2001.
- OOPSLA Tutorial: *Pair Programming: Experience the Differ*ence with Robert Kessler (University of Utah), October 2001.
- Conference on Software Engineering Education and Training, *Teaching PSP and TSPi in Universities* Workshop (Refereed), February 2001.
- SIGCSE *Collaboration Versus Plagiarism in CS Programming Courses* Panel (Refereed), February 2001.
- OOPSLA Panel, *Hacker or Hero: Extreme Programming Today* Panel (Refereed), October 2000.

- OOPSLA Poster Display, *The Collaborative Software Process*, November 1999.
- OOPSLA Doctoral Symposium, *The Collaborative Software Process,* November 1999, including a travel grant.
- IEEE Frontiers in Education Faculty Fellow Award, November 1999
- SIGCSE Doctoral Symposium, *The Collaborative Software Process,* March 1999.
- SIGCSE Doctoral Symposium, *Object-Orientation Meets Cleanroom Software Engineering*, March 1998.

INVITED TALKS
- Panel Moderator, The Role of Cybersecurity in Times of Crisis, IBM, July 2020.
- **Keynote,** Risk-based Security Technical Debt Reduction: When everything's important, nothing gets done, TechDebt 2020, June 2020.
- Panel: "The Future of Digital Software Engineering Conferences", **16th International Conference on Open Source Systems,** Innopolis, Russia (remote participation), May 2020.
- Finding the 1%: Advancing the Science of Vulnerability Discovery**,** East Carolina University, Greenville, SC, March 2020.
- **Keynote,** International Conference of Software Maintenance and Evolution, Software Engineering Research: Beyond Impacting Practitioners, Cleveland, Ohio, October 2019.
- IEEE Computer Society Webinar, Principles and Practices of Secure Coding, April 2019.
- IBM Back to School speaker, Finding the 1%: Advancing the Science of Vulnerability Discovery, March 2019, Raleigh, NC.
- Computer Science Colloquium Speaker, Finding the 1%: Advancing the Science of Vulnerability Discovery, University of Florida, March 2019.
- Women in Data Science Panel, IBM, Research Triangle Park, NC, March 2019.
- Introduction of (Cyber) Security into Software Development, Synopsys, San Francisco, CA, January 2019.
- Continuous Deployment Transitions at Facebook, Google, Netflix, and Others, Infosys, Raleigh, NC, January 2019.
- **Keynote,** Protection Poker, Security Summit, Trondheim, Norway, January 2019.
- **Keynote,** Industry-Research Collaboration in Cybersecurity, Munich, Germany, October 2018. Zentrum Digitalisierung.Bayern.
- Continuously Deploying Security, Harbin, China, June 2018.
- How to Have a Paper Accepted, ICSE 2018 New Faculty Symposium, Gotenberg, Sweden, May 2018.
- Challenges with Continuous Deployment at Facebook, Netflix, Google and other companies, Lindholmen, Gotenberg, Sweden, May 2018.
- **Keynote,** Continuously Integrating Security, 1st International Workshop on Security Awareness from Design to Deployment (SEAD) 2018, Gotenberg, Sweden, May 2018.
- **Keynote,** Seven Habits of Highly Effective Computer Science PhD Students, 19th International Conference on Agile Software Development (XP2018) Doctoral Symposium, Porto, Portugal, May 2018
- **Keynote,** Continuously Deploying Security, 19th International Conference on Agile Software Development (XP2018) , Porto, Portugal, May 2018.
- **Computer Science Colloquium Speaker,** If Not Us, then Who?, Penn State, February 2018.
- **Computer Science Colloquium Speaker,** If Not Us, then Who?, University of Southern California, January 2018.
- **Keynote,** Building Securing into the Internet of Things, Hawaii International Conference on Software Systems (HICSS) Workshop on the Internet of Things in Education, Kona, HI, January 2018.
- **Keynote,** Continuous Deployment Summit Summary and Reflection, 1st Vienna Software Seminar (VSS) on the Relation of Software Architecture and DevOps/Continuous Delivery, Vienna, Austria, December 2017.
- **Keynote,** The Advancement of Science in Cybersecurity, (Learning of Authoritative Security Experiment Results (LASER) Workshop, Alexandria, VA, October 2017.
- **Keynote,** Temamøte, Experiences with Continuous Deployment and Software Security in Google, Netflix, Facebook and others, Oslo, Norway, September 2017.
- **Keynote,** International Workshop on Secure Software Engineering in DevOps and Agile Development, Experiences with Continuous Deployment and Software Security in Google, Netflix, Facebook and others, Oslo, Norway, September 2017.

- **Keynote,** International Workshop of Software Engineering and Digital Forensics, Building Forensics In: Supporting the Investigation of Digital Criminal Activities, Paderborn, Germany, September 2017.
- **Keynote,** ACM Foundations of Software Engineering, *The Rising Tide Lifts All Boats: The Advancement of Science in Cyber Security*, Paderborn, Germany, September 2017.
- IBM Women in Technology, Seven Habits of Highly Effective Women in Computer Science, Raleigh, NC, May 2017.
- Goldman Sachs Distinguished Lecture, University of Utah, The Rising Tide Lifts All Boats: The Advancement of Science in Cyber Security**,** Salt Lake City, UT, March 2017.
- Challenges in Continuous Deployment, DevOps Meetup, Raleigh, September 2016.
- Challenges in Continuous Deployment, William and Mary, September 2016
- Girls Develop It-RDU, A Day in the Life of Tech Leader panel, Raleigh, NC, September 2106.
- Seven Habits of Highly Successful Computer Science PhD Students, International Conferene on Software Engineering (ICSE) PD Warm Up, Buenos Aires, Argentina, September 2016.
- Challenges in Continuous Deployment, SINTEF, Norway, August 2016.
- **Keynote**, Seven Habits of Highly Effective Female Computer Science, NCSU Women in Computer Science DiamondHack, Raleigh, April 2016.
- After All These Years, What's Pair Programming Looking Like? Agile Technical Conference, Raleigh, NC, April 2016.
- Privacy and Open Source Information, Data4Decisions Conference and Exposition, Raleigh, NC March 2016.
- **Dinner speaker**, SAS Patent Recipient Dinner, Cary, NC, January 2016.
- Highlights of the Continuous Deployment Summit, Pivotal Labs, San Francisco, CA, January 2016.
- Transitioning to Continuous Deployment, IBM Research, San Jose, CA, January 2016.
- When You Can't Do it All (and You Can Never Do It All): Prioritization in Release Planning, NC Project Management Institute, Cary, NC, November 2015.
- **Keynote**, The Rising Tide Lifts All Boats: The Advancement of Science in Cybersecurity, Beijing, China, October 2015.
- Introduction to Software Reliability Engineering, Siemens Medical, Princeton, NJ, May 2015.
- When You Can't Do it All (and You Can Never Do It All): Prioritization in Release Planning, TriAgile Conference, Raleigh, NC, April 2015.
- **Keynote**, Avoiding the Top 10 Security Design Flaws, Costa Rican Workshop on Computer Science, San Jose, Costa Rica, March 2015.
- Agile Software Development and Security, RedHat, Raleigh, NC, March 2015.
- **Keynote**, Seven Habits of Highly Successful Female Computer Scientists, Women in Computing Research Workshop, University of North Carolina – Chapel Hill, NC, February 2015.
- Let's Play Poker: Effort and Software Risk Estimation in Software Engineering, National Security Agency, April 2014.
- Protection Poker: An Agile Security Game, University of Trento, Trento, Italy, March 2014.
- On Building a Science for Software Security, Symposium on the Future of Software Engineering, Redmond, WA, July 2013.
- **Plenary Talk.** *Where Should I Look? Using Metrics to Prioritize Verification Efforts*, Augmenting Software Developer Support to Improve Productivity Symposium, Mote Verita, Ascona, Switzerland, March 2013.
- **Keynote.** *Why We Need a Science for Security*, International Symposium on Engineering Secure Software and Systems (ESSoS) 2013, Versailles, France, March 2013.
- Agile Triad, *Let's Play Poker: Agile Software Security Risk Estimation*, Winston Salem, NC, April 2012.
- *Teaching and Mentoring Students*, International Conference on Software Engineering (ICSE) 2012 New Faculty Symposium.
- **Keynote.** *Seven Habits of Highly Impactful Empirical Software Engineers*, International Conference on Predictive Models for Software Engineering (PROMISE) 2011, Banff, Alberta, Canada, September 2011.

- NetApp "Women in Technology", *After All These Years, What Does It Mean to Be Agile: An Industry and Personal Retrospective,* December 2010.
- Agile Practices East, *Pairing in Software Development*, Orlando, FL, November 2010.
- AgileTour, *After All These Years, What Does It Mean to Be Agile*, Durham, NC, October 2010.
- TechEngage, *Agile Software Development*, Raleigh, NC, July 2010.
- AHRQ Health IT Grantee and Contractor Meeting, *Discussion of the Use and Evaluation of Open Source Software*, Washington, DC, June 2010.
- Overture Networks, Agile Software Development, May 2010.
- Panel, Software Assurance Forum, *Lessons Learned from Evaluating Open Source Software*, McLean, VA, March 2010.
- **Keynote. Developer Days**, *Let's Play Poker: Effort and Software Security Risk Estimation in Software Engineering,* Durham, NC, February 2010.
- Agile RTP, *Let's Play Poker: Effort and Software Security Risk Estimation in Software Engineering, June 2009.*
- IBM, *Test Driven Development: Case Studies from the Industry*, Research Triangle Park, NC, June 2009
- Nortel, *Protection Poker*, Durham, NC, June 2009
- Nortel, *Pair Programming*, Durham, NC, May 2009
- Red Hat, *Test Driven Development*, Durham, NC, April 2009
- Nortel, *Test Driven Development*, Durham, NC, April 2009
- **Spring Seminar Series Speaker**, University of Kentucky Center for Computation Sciences, *Let's Play Poker: Effort and Software Security Risk Estimation in Software Engineering*, Lexington, KY, March 2009.
- Triangle Information Systems Quality Association, *Agile Testing for the Whole Team*, Raleigh, NC, March 2009.
- North Carolina Chapter of the Society for Information Management (SIM*), Agile Software Development,* March 2009.
- Fraser, S. Beck, K., Cunningham, W., Crocker, R., Fowler, M., Rising, L., Williams, L., *Privacy and Security: What are you Doing to Keep the Community Safe?***,** ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA) Panel 2008, Nashville, TN, Companion pp 5-7.
- Microsoft, *Agile Testing for the Whole Team*, Redmond, WA, September 2008.
- IBM Agile Software Development Conference, *Combining the Best of Traditional and Test Driven Development*, Raleigh NC, June 2008.
- Mayo Clinic, *Agile Software Development*, via teleconference, April 2008.
- Nortel, *Agile Software Development*, Research Triangle Park, March 2008.
- Directors Meeting at SAS, *Agile Software Development Methods and Practices*, Cary, NC, February 2008.
- Channel Advisor, *Empirical Studies of Agile Practices*, Morrisville, NC, December 2007.
- Agile Development Practices Conference, *Empirical Studies of Agile Practices*, Orlando, FL, December 2007.
- Panelist, *Anything You Want To Ask About Software Reliability Engineering*, International Symposium on Software Reliability Engineering (ISSRE) 2007, November 2007.
- Agile RTP, *Empirical Studies of Test-driven Development*, Raleigh, NC, May 2007.
- Agile-Carolinas, *Empirical Studies of Test-driven Development*, Charlotte, NC, March 2007.
- University of Wilmington, *Pair Programming: Why, Where, When, and How To*, Wilmington, NC, March 2007.
- NetApp, *Agile Software Development*, Research Triangle Park, NC, February 2007.
- ACM Computer Science Teachers Association Computer Science and Information Technology Symposium, *Responding to Millennials' Learning Preferences with Pair Programming*, San Diego, July 2006.
- University of California, Irvine Institute of Software Research **Distinguished Speaker**, *Industrial Case Studies of Extreme Programming Teams*, Irvine, CA, March 2006.
- Harris, Corp*., Agile/Extreme Programming*, Research Triangle Park, February 2006.

- Microsoft, *Empirical Evaluation of Agile Software Development Processes: Industrial Case Studies*, Redmond, WA, September 2005.
- **Keynote**, *Crossing the Chasm in Agile Software Engineering Education*, Agile 2005 Educator's Symposium, Denver, CO, July 2005.
- Panelist, Microsoft Faculty Summit, *How to Accomplish Successful Software Engineering Research in Universities,* Redmond, WA, July 2005.
- Fraunhofer Center – Maryland (FC-MD), *Case Study Retrospectives: Kent Beck's Extreme Programming 1 and 2*, College Park, MD, June 2005.
- Panelist, IFIP 8.6, *Agile Methods: When and why do they work*, Atlanta, GA, May 2005.
- **Keynote**, *Debunking the Geek Stereotype with Software Engineering Education*, Conference on Software Engineering Education, Ottawa, CA, April 2005.
- University of Southern California Center for Software Engineering, *Extreme Programming 2*, Los Angeles, CA, March 2005.
- RTP SPIN, Triangle XP User Group, *Extreme Programming 2: Is That What Teams Were Doing Anyway?* Raleigh, NC, February 2005.
- Old Dominion, *Agile Software Development,* February 2005.
- IBM, *XP Practices: Top Candidates for Agile/Plan-Driven Hybridization*, Raleigh, NC, November 2004.
- IBM University Day, *Open Seminar and its Application to Software Engineering Education*, Raleigh, NC, October 2004.
- CASCON (14th Annual IBM Centers for Advanced Studies Conference), *Open Seminar*, Toronto, Canada, October 2004.
- Telcordia, *Agile Software Development*, Piscataway, NY, July 2004.
- University of Southern California Center for Software Engineering, *A Tale of Two XP Teams*, Los Angeles, CA, March 2004
- IBM University Day, *"Good Enough Reliability Tool" Plug-In for Eclipse*, Research Triangle Park, NC, February 2004.
- IBM, *Extreme Programming*, NCTEC/PSI Symposium, Research Triangle Park, NC, October 2003.
- PinPoint, *A Survey of Agile Software Development*, Research Triangle Park, NC, October 2003
- Intel Agile Software Development Research Group, *Pair Programming*, September 2003.
- Tekelec, *A Survey of Agile Software Development*, Research Triangle Park, NC, September 2003.
- Sabre, Pair Programming, Dallas, TX, July 2003
- University of Southern California Center for Software Engineering, *Agile Practices or Best Practices?*, March 2003.
- IEEE Women in Computing, *Pair Programming*, Cary, NC, January 2003.
- Microsoft, *Agile Software Development*, Redmond, WA, November 2002.
- IBM Technical Vitality, Research Triangle Park, NC, *Agile Software Development*, October 2003.
- **Keynote**, Agile Software Development Conference, Wellington, NZ, *An Empirical Analysis of Agile Methodologies,* September 2002*.*
- Motorola, *Agile Software Development Panel*, Chicago, IL, August 2002.
- Ericsson, Research Triangle Park, NC, *Agile Software Development*, May 2002.
- University of North Carolina – Chapel Hill, *Pair Programming: Why Have Two Do the Work of One?*, April 2002.
- **Keynote**, ACM SIGPLAN Mid-Atlantic Student Workshop on Programming Languages and Systems (MAPLAS '02), *Pair Programming: Why Have Two Do the Work of One?*, April 2002.
- NCR, Cary, NC, *Pair Programming and Test-First Programming*, April 2002.
- National Research Center of Canada, *Pair Programming*, March 2002.
- University of Southern California Center for Software Engineering, *Extreme Programming and Pair Programming*, March 2002.

- NASA Goddard, Software Assurance Technology Center, *Extreme Programming and other Agile Software Development Methodologies*, February 2002.
- University of Maryland, *A Survey of Agile Software Development Methodologies and Practices and Methodologies*, February 2002.
- IBM, Research Triangle Park, NC, *Agile Software Development,* September 2001
- **Keynote**, XP Universe, *Pair Programming: Why Have Two Do the Work of One*?, July 2001.
- XP Immersion VII, *Pair Programming,* June 2001.
- Rochester Institute of Technology, *Agile Software Development*, May 2001.
- NASA Langley, *Pair Programming*, May 2001.
- Research Triangle Park SPIN, *Pair Programming*, April 2001.
- North Carolina State University, Department of Electrical and Computer Engineering Seminar, *Pair Programming*, January 2001.
- SAS Institute, Cary, NC, *Pair Programming*, January 2001.
- Nortel Design Forum, RTP, NC, *Pair Programming*, December 2000.
- General Dynamics, Greensboro, NC, *Pair Programming*, November 2000.
- Allianz Insurance, Vienna, Austria, *Organizational Patterns Workshop*, November 2000.
- Blue Cross/Blue Shield, Chapel Hill, NC, *Pair Programming*, November 2000.
- Research Triangle Institute, RTP, NC, *Pair Programming and Extreme Programming*, October 2000.
- IBM Corp., Raleigh, NC, *Pair Programming*, October 2000 and November 2000.
- Advisor Technology Services, Charlotte, NC, *Pair Programming and Extreme Programming*, October 2000.
- IBM Corp., Raleigh, NC, *Pair Programming and Extreme Programming*, October 2000.
- Goto.com, Durham, NC, *Pair Programming and Extreme Programming*, September 2000.
- Duke University, Durham, NC, NSF First Year of Instruction Workshop, *Pair Programming*, July 2000.
- Salt Lake Object-Oriented Roundtable, Salt Lake City, *The Collaborative Software Process*, October 1999.
- Embry-Riddle University Computer Science Department, Daytona Beach, FL, *The Collaborative Software Process*, February 1999.