

Renée Cathryn Bryce

E-mail: renee.bryce@usu.edu

URL: <http://www.cs.usu.edu/~renee Bryce>

Research interests: Software engineering, software testing, applications of combinatorial designs to software testing, software test suite prioritization, web applications testing

Degrees:

Ph.D. in Computer Science, Arizona State University (8/2002-3/2006)

Dissertation title: *Algorithms for Covering Arrays*

Advisor: Charles J. Colbourn

GPA: 4.0/4.0

M.S. in Computer Science, Rensselaer Polytechnic Institute, (8/1999-5/2000)

Advisor: Ephraim Glinert

GPA: 3.7/4.0 (*Graduated early in 9 months*)

B.S. in Computer Science, Rensselaer Polytechnic Institute, (8/1996-5/1999)

Advisor: Edwin Rogers

GPA: 3.7/4.0 (*Graduated early in 2 years and 9 months*)

Work Experience

Academic appointments

Assistant Professor of Computer Science at Utah State University, Logan, UT (Jan. 2009 – present)

My role statement is research (50%), teaching (40%), and service (10%). I served as PI on research grants from the National Science Foundation (NSF), the National Institute of Standards and Technology (NIST), Computing Research Association – Women (CRA-W), U.S. Forest Service, U.S. Department of Interior (subcontract from UNLV), USU Center for Women and Gender, and Lawrence Livermore National Lab. My research grants at USU total \$940k+ with my share being \$725k+. My funded research has resulted in software testing methodologies, software, and empirical studies within the domain of combinatorial testing and test suite prioritization. In addition, my research has resulted in contributions to Computer Science Education, specifically in the area of software testing. Six research grants are currently active or have been recommended for funding with start dates in the spring 2012 semester (NSF (2), NIST (1), CRA-W (1), U.S. Forest Service (1), and USU Center for Women and Gender(1)). I have taught Software Engineering and Software Testing courses with good teaching evaluations. My major service contributions include serving as advisor to the USU ACM-W organization, co-chair of the NCWIT Student Organization Seed Fund, co-chair of posters for the Grace Hopper Conference for Women in Computing, PC member of ICST, and reviewer for several journals.

Assistant Professor of Computer Science at University of Nevada, Las Vegas, Las Vegas, NV (Fall 2006 – Summer 2008)

In this position, I was responsible for software engineering research, teaching, and service. I taught courses in software engineering, software testing, and data structures. My teaching evaluation scores were always positive. I was Co-PI on an internal grant for approximately \$38k and then Co-PI of an external contract for \$300k with Dr. Craig Palmer and Dr. Fatma Nasoz.

Lecturer of Computer Science & Engineering at Arizona State University, Tempe, AZ (Fall 2002 - Summer 2006)

This full-time position was held while I was also a full-time PhD student. I taught three courses per semester and contributed to committees and curriculum development. I taught over 1,500 students and specialized in teaching and developing curriculum in the areas of introductory data structures, software engineering, and human-computer interaction. I proposed and created two new courses that are currently part of the department's regular course offerings: *Introduction to Human Computer Interaction* and *Computing Ethics*. I was the recipient of the

department's *Instructor of the Year Award* twice during my time of service (in 2002 and 2004). I also received perfect marks on my annual evaluations in all three areas of research, teaching, and service.

Adjunct Faculty (Faculty Associate) at Arizona State University, Tempe, AZ (Fall 2000 – Summer 2002)

I taught one course per semester in this position before joining as a full-time lecturer.

Research Assistant at Rensselaer Polytechnic Institute, Troy, NY (Fall 1999- Spring 2000)

I served as a Research Assistant to Professor Ephraim Glinert and developed a GUI for a scientific Problem Solving Environment (PSE) project.

Industry Experience

Human Factors Engineer (Contractor) at General Dynamics, Scottsdale, AZ (2003)

I worked with engineers on the HCI portion of a proposal for a large-scale, mission critical system with dynamic ambience. The end-user customer is the United Kingdom Ministry of Defense.

Software Engineer at Motorola/General Dynamics Decision Systems, Scottsdale, AZ (2000-2002)

I served as a Software Engineer in an SEI Level 5 division. The position entailed software design, HCI design, implementation, and testing work in the UNIX environment and Windows 2000 environment. Additionally, contributed to a large-scale proposal by working on a technical volume on Software Process.

Programmer at Lockheed Martin's Knolls Atomic Power Lab, Schenectady, NY (1999-2000)

I interned in the Artificial Intelligence lab. Work included the design of a major software project including a requirements document, prototype, and user interface. Programming environment included Windows NT, with emphasis on Visual Basic and Visual C++.

Consultant Test Writer at Regents College, Albany, NY (2000)

I wrote test questions and solutions for Information Technology exams administered by the university.

Programmer at IBM Microelectronics, Burlington, VT (1998)

I modified diagnostic code for use in reporting if and where various types of silicon chips failed. Programming environment included AIX UNIX, C, C++, and JAVA.

Programmer at University of Pittsburgh/Psychology Software, Pittsburgh, PA (1997-1999)

My responsibilities included the design and implementation of various statistical programs for use in analyzing functional MRI brain images. Programming environment included HP-UNIX with C, C++, LISP, and MatLab. This position was held forty hours a week in the summer after my freshman year of college and then approximately 10 hours a week when I worked on code remotely during the school years.

Research (50% of Role Statement)

My research interests include software testing, including combinatorial testing, test suite prioritization, and web testing. All of my research publications fall under these topics. (//Tenure committee data\\ The impact ratings of the publication venues listed below were accessed on October 28,2008 from: <http://citeseer.ist.psu.edu/impact.html>. The website includes justification on how the impact ratings were calculated.)

Publications:

Journal

1. S. Sampath, R. Bryce. *Improving the effectiveness of test suite reduction for user-session-based testing of web applications*, Information and Software Technology Journal (IST, Elsevier), (July 2012), 54(7):724-738. (Citeseer impact ranking of ICST: .19)

2. [R. Bryce](#), S. Sampath, A. Memon. *Developing a Single Model and Test Prioritization Strategies for Event-Driven Software*, Transactions on Software Engineering, (January 2011), 37(1):48-64. (Citeseer impact ranking of TSE: 1.38)
3. [R. Bryce](#), S. Sampath, J. Pedersen, S. Manchester. *Test Suite Prioritization by Cost-based Combinatorial Interaction Coverage*, International Journal on Systems Assurance Engineering and Management (Springer, IJSAEM), (April 2011), 2(2): 126-134.
4. S. Montiero, [R. Bryce](#). *Code Inspections: A Web Crawler Exercise for Students*, Journal of Computing Sciences in Colleges (JCSC, ACM), (December 2011), 27(2):67-77.
5. [R. Bryce](#). *Bug Wars: A Competitive Exercise to Find Bugs in Code*, Journal of Computing Sciences in Colleges (JCSC, ACM), (December 2011), 27(2):45-52.
6. [R. Bryce](#), C.J. Colbourn. *A Density-Based Greedy Algorithm for Higher Strength Covering Arrays*, Journal of Software Testing, Verification and Reliability (JSTVR, Wiley), (March 2009), 19(1):37-53. (Citeseer impact ranking of STVR: .36)
7. L. Ran, C. Dyreson, A. Andrews, [R. Bryce](#), and C. Mallery. *Building Test Cases and Oracles to Automate the Testing of Web Database Applications*, Information and Software Technology Journal (IST, Elsevier), (February 2009), 51(2):460-477. (Citeseer impact ranking of ICST: .19)
8. [R. Bryce](#), C.J. Colbourn. *The Density Algorithm for Pairwise Interaction Testing*, Journal of Software Testing, Verification and Reliability, (JSTVR, Wiley), (August 2007), 17(3): 159-182. (Citeseer impact ranking of STVR: .36)
9. [R. Bryce](#), C.J. Colbourn, Y. Chen. *Biased Covering Arrays for Progressive Ranking and Composition of Web Services*, International Journal Simulation and Process Modeling, (IJSPM, InderScience), (July 2007), 3(1-2):80-87.
10. [R. Bryce](#), C.J. Colbourn. *Prioritized Interaction Testing for Pairwise Coverage with Seeding and Avoids*, Information and Software Technology Journal (IST, Elsevier), (October 2006), 48(10):960-970. (Citeseer impact ranking of IST: .19)

Book Chapter.

1. [R. Bryce](#), R. Kuhn, Y. Lei, R. Kacker. *Chapter 18: Combinatorial Testing*, in the Handbook of Software Engineering Research and Productivity Technologies: Implications of Globalisation (IGI Global), August 2009.

Refereed Conference and Workshop

1. S. Sampath, [R. Bryce](#), S. Jain, S. Manchester. *A Tool for Combinatorial-based Prioritization and Reduction of User-Session-Based Test Suites*, Proceedings of the International Conference on Software Maintenance (ICSM) – Tool Demonstration Track, Williamsburg, VA, September 2011, pp. 574-577.
2. [R. Bryce](#), C. Colbourn, D. R. Kuhn. *Finding Interaction Faults Adaptively using Distance-Based Strategies*. Proceedings of the International Conference on the Engineering of Computer Based Systems (ECBS), Las Vegas, NV, April 2011, pp. 4-13.
3. [R. Bryce](#), A. Cooley, A. Hansen, N. Hayrapetyan. *A One Year Empirical Study of Student Programming Bugs*. Proceedings of the Frontiers in Education Conference (FIE), Arlington, VA, (October 2010), pp. FIG-1-7.

4. S. Sampath, [R. Bryce](#), Gokulanand Viswanath, Vani Kandimalla, A. Gunes Koru. *Prioritizing User-session-based Test Cases for Web Applications Testing*. Proceedings of the International Conference on Software Testing, Verification, and Validation, Lillehammer, Norway, (April 2008), pp. 141-150. (21% acceptance rate)
5. [R. Bryce](#), A. Memon. *Test Suite Prioritization by Interaction Coverage*. Proceedings of the Domain-Specific Approaches to Software Test Automation (DoSTA) Workshop at ESEC/FSE 2007, Dubrovnik, Croatia, (September 2007), pp. 1-7.
6. [R. Bryce](#), C.J. Colbourn. *One-Test-at-a-Time Heuristic Search for Interaction Test Suites*. Proceedings of the Genetic and Evolutionary Computation Conference (GECCO), Search-based Software Engineering track (SBSE), London, England, (July 2007), pp. 1082-1089.
7. [R. Bryce](#), A. Rajan, M.P.E. Heimdahl. *Interaction Testing in Model-Based Development: Effect on Model-Coverage*, The 13th Asia-Pacific Software Engineering Conference (APSEC), Bangalore, India, (December 2006), pp. 258-269. (26% acceptance rate)
8. [R. Bryce](#), C.J. Colbourn, M.B. Cohen. *A Framework of Greedy Methods for Constructing Interaction Tests*. The 27th International Conference on Software Engineering (ICSE), St. Louis, Missouri. (May 2005), pp. 146-155. (13% acceptance rate) (Citeseer impact ranking of ICSE: 2.05)
9. [R. Bryce](#), C.J. Colbourn. *Test Prioritization for Pairwise Coverage*, ACM Proceedings of the 2005 workshop on Advances in model-based testing, St. Louis, MO (May 2005), pp. 1-7. *Invited to submit this work to a special issue of the Information and Software Technology Journal (IST, Elsevier)
10. D. S. Hoskins, C.J. Colbourn, [R. Turban](#). *Experimental Designs in Software Engineering: D-Optimal Designs and Covering Arrays*, Proc. SIGSOFT 2004/Foundations on Software Engineering (FSE-12): Workshop on Interdisciplinary Software Engineering Research (WISER). Newport Beach, CA (November 2004), pp.55-66. (33% acceptance rate)
11. C.J. Colbourn, M.B. Cohen, [R. Turban](#). *A Deterministic Density Algorithm for Pairwise Interaction Coverage*, Proceedings of the International Conference on Software Engineering (SE 2004). Innsbruck, Austria (February 2004), pp. 245-252.

Doctoral Symposium

12. [R. Bryce](#). *Automatic Generation of High Coverage Usability Tests*, ACM CHI 2005, Extended Abstract – Doctoral Symposium. Portland, Oregon (April 2005), pp.1108-1109.
13. [R. Bryce](#). *Constructing Interaction Test Suites with Greedy Algorithms*, 20th IEEE/ACM International Conference on Automated Software Engineering (ASE05), Extended Abstract – Doctoral Symposium. Long Beach, California, (November 2005), pp. 440-443.

Other

14. S. Sampath, [R. Bryce](#), S. Jain, S. Manchester, D. R. Kuhn, R. Kacker. CPUT: Combinatorial-Based Prioritization for User-Session-Based Testing of Web Applications, VERIFY/ATI Conference, Presentation based on Accepted Abstract, Arlington, VA, September 2011.
15. [R. Bryce](#), V. Allan. Mystery Bug Theater, Work-in-Progress paper in the Proceedings of the CS Conference on Software Engineering Education and Training (CSEE&T), Honolulu, HI, April 2011, pp. 381-385.

Research Funding Active

1. R. Bryce. “CAP-Bugs: A Process to Capture, Analyze, and Prevent Bugs” from the National Science Foundation (NSF) for \$184,650. PI share: 100%. (Active 1/15/2012 – 12/31/2013). (Funding rate: 11.8%).
2. R. Bryce and D. Bryce. REU Site: Bug Wars: A Collaborative Software Testing Research Experience for Undergraduates from the National Science Foundation (NSF) for \$315,990. PI share: 50%. (Active 3/1/2012 – 2/28/2015). (Funding rate: ~25%).
3. R. Bryce. “A Study of Retention Issues for Female Computer Science Students at USU” from the USU Center for Women and Gender for \$500. PI share: 100%. (Active 12/1/2011 – 8/31/2011).
4. R. Bryce and S. Sampath. “Combinatorial-based Techniques for Web Application Test Selection” from National Institute of Standards and Technology (NIST) for \$128,000. PI share: 50%. (Active 2/1/2010 – 1/31/2013).
5. R. Bryce. “Mystery Bug Theater” from the Computing Research Association - Women for \$27,000. PI share: 100%. (Active 8/15/2011 – 8/31/2012).
6. R. Bryce. “Developing Improved Metadata Software” from the U.S. Forest Service for \$210,000. PI share: 100%. (8/2011-8/2014)

Completed

7. R. Bryce. “Test case selection and Statistical modeling of the behavior of the Ceph parallel file system” from Lawrence Livermore National Lab for \$24,377. PI share: 100% (Active 9/2010 – 8/14/2011)
8. R. Bryce. “An Algorithm for Cost-based Combinatorial Prioritization” from the Utah State Women and Gender Research Institute (WGRI) for \$500. PI Share: 100%. (Active 11/15/10 – 5/31/11).
9. R. Bryce. “An Algorithm for Combinatorial-based Prioritization” from the Utah State Women and Gender Research Institute (WGRI) for \$500. PI Share: 100%. (Active 10/15/09 – 5/31/10).
10. R. Bryce. “An Empirical Study of Bugs in Undergraduate Programming Assignments” from the Computing Research Association - Women for \$23,600. PI share 100%. (Active 8/15/2009 – 8/31/2009).
11. R. Bryce. “Interagency Restoration Database” from the Department of Interior (through UNLV). Award number: 09/7499-00 for \$9,600. PI share: 100%. (Active: 5/31/09-12/31/10). (This is an amendment to F5.)
12. R. Bryce. “Interagency Restoration Database” from the Department of Interior (through UNLV). Award number: 09/7499-00 for \$21,368. PI share: 100%. (Active: 8/21/08 – 12/31/10). (This is a sub-award from F5 below.)
13. R. Bryce. “Tracking Student Bugs Across the Computer Science Curriculum” from the Utah State Women and Gender Research Institute (WGRI) for \$500. PI Share: 100%. (Active 1/30/09 – 12/31/09).
14. C. Palmer, R. Bryce, F. Nasoz.”Interagency Restoration Database” from the Department of Interior. Award number 2360-268-7499 for \$300,000. (Active 4/1/08 – 3/31/11). Co-PI: 40%
15. F. Nasoz, R. Bryce, C. Palmer. “A User Centric Metadata Interface for Preserving the Nation’s Ecological Data” from the UNLV Presidents Awards for \$38,647. (Active 2008-2009) Co-PI: 33%

Travel Grants in the past 3 years

1. R. Bryce. I received a travel grant of \$2,000 to attend the Software Engineering Educator's Symposium (SEES08) and the 16th International Symposium on the Foundations of Software Engineering (FSE16) in

Atlanta, GA. (Application for travel grant submitted in August 2008; Notified of Award in September 2008; and travel occurred in November 2008).

2. **R. Bryce.** I was invited to attend the Microsoft Faculty Summit in Redmond, WA. (The travel occurred on 7/26/08-7/29/2008.)

Invited Talks

Notre Dame, Notre Dame, IN

(February 22, 2007)

Title: Offsetting Human Bias with Systematic Software Testing

R. Bryce

ITL Lecture Series at the National Institute of Standards and Technology (NIST), Gaithersburg, MD

(January 9, 2007)

Title: Adaptive distance-based software testing

R. Bryce

Teaching (40% of Role Statement)

Courses and Evaluations

I have taught about 1,500 students over the past several years, including all levels of students (freshman, sophomore, junior, senior, and graduate). My teaching evaluations have always been above the department, college, and university averages. (Scores for Spring 2011 are not available as I was on maternity leave.)

University	Semester	Course	Teaching Evaluations
USU	Fall 11	CS3450: Software Engineering II (Class size: 32)	Course: 4.7/6.0 Instructor: 5.0/6.0
USU	Sum 11	CS5890/6890: Usability Testing (Class size: 18)	Course: 5.3/6.0 Instructor: 5.0/6.0
USU	Fall 10	CS3450: Software Engineering II (Class size: 21)	Course: 4.4/6 Instructor: 4.5/6
USU	Spring 10	CS5890: Software Testing (Class size: 10)	Course: 5.3/6 Instructor: 5.1/6
USU	Spring 10	CS3450: Software Engineering II (Class size: 15)	Course: 5.2/6 Instructor: 5.1/6
USU	Fall 09	CS3450: Software Engineering (Class size: 17)	Course: 4.8/6 Instructor: 5.0/6
USU	Sum 09	CS5890: Usability Testing (Class size: 9)	Course: 5.3/6.0 Instructor: 5.6/6.0
USU	Spring 09	CS6890: Software Testing Research (Class size: 5)	Course: 5.0/6.0 Instructor: 5.0/6.0
UNLV	Spring 08	CS472/672: Software Product Design I (Class size: 14)	Mean: 4.6/5 Median: 5/5
UNLV	Fall 07	CS789: Software Testing (Class size: 10)	Mean: 4.7/5 Median: 5/5
UNLV	Spring 07	CS472/672: Software Product Design I (Class size: 11)	Mean: 4.7/5 Median: 5/5
UNLV	Fall 06	CS 302: Data Structures (Class size: 30)	Mean: 4.7/5 Median: 5/5
ASU	Spring 06	CSE 210: OOP and Data Structures Using JAVA (Sections A and B) (Class size: 85)	Did not receive scores.
ASU	Fall 05	CSE 210: OOP and Data Structures Using JAVA (Sections A and B) (Class size: 97)	Section A Course: 4.29/5

			Instructor: 4.68/5 <i>Section B</i> Course: 4.11/5 Instructor: 4.39/5
ASU	Fall 05	Introduction to Software Engineering (Class size: 54)	Course: 4.37/5 Instructor: 4.63/5
ASU	Spring 05	CSE 463/598: Introduction to HCI (Class size: 40)	<i>Section 463</i> Course: 4.14/5 Instructor: 4.58/5 <i>Section 598</i> Course: 4.29/5 Instructor: 4.56/5
ASU	Fall 04	CSE 210: OOP and Data Structures Using JAVA (Sections A and B) (Class size: 126)	<i>Section A</i> Course: 4.17/5 Instructor: 4.49/5 <i>Section B</i> Course: 4.23/5 Instructor 4.52/5
ASU	Fall 04	CSE 360: Introduction to Software Engineering (Class size: 53)	Course: 4.08/5 Instructor: 4.48/5
ASU	Spring 04	CSE210: OOP and Data Structures Using JAVA (Sections A and B) (Class size: 47)	<i>Section A</i> Course: 3.93/5 Instructor: 4.41/5 <i>Section B</i> Course: 4.12/5 Instructor: 4.4/5
ASU	Spring 04	CSE 360: Introduction to Software Engineering (Class size: 58)	Course: 4.15/5 Instructor: 4.41/5
ASU	Fall 03	CSE 210 – OOP and Data Structures Using JAVA (Sections A and B) (Class size: 126)	Section A Course: 4.53/5 Instructor: 4.83/5 Section B Course: 4.37/5 Instructor: 4.57/5
ASU	Fall 03	CSE 360 – Introduction to Software Engineering (Class size: 72)	Course: 4.3/5 Instructor: 4.68/5
ASU	Sum 03	CSE 494/598: Introduction to HCI (Class size: 49)	No course evaluations administered over summers
ASU	Spring 03	CSE 185: Internet & the WWW (Class size: 112)	Course: 4.12/5 Instructor: 4.4/5
ASU	Spring 03	CSE210: OOP and Data Structures Using JAVA (Class size: 23)	Course: 4.59/5 Instructor: 4.88/5
ASU	Spring 03	CSE360: Introduction to Software Engineering (Class size: 62)	Course: 3.9/5 Instructor: 4.25/5
ASU	Fall 02	CSE 185: Internet and the World Wide Web (Class size: 112)	Course: 4.16/5 Instructor: 4.41/5
ASU	Fall 02	CSE 210: OOP and Data Structures Using JAVA (Class size: 26)	Course: 4.31/5 Instructor: 4.71/5
ASU	Fall 02	CSE 494/598: Introduction to HCI (Class size: 42)	Course: 4.37/5 Instructor: 4.69/5
ASU	Sum 02	CSE 494/598: Introduction to HCI (Class size: 48)	No course evaluations

			administered over summers
ASU	Spring 02	CSE 210: OOP and Data Structures Using JAVA (Class size: 52)	Course: 4.53/5 Instructor: 4.85/5
ASU	Fall 01	CSE 210: OOP and Data Structures Using JAVA (Class size: ~45)	Course: 4.46/5 Instructor: 4.56/5
ASU	Spring 01	CSE 210: OOP and Data Structures Using JAVA (Class size: ~70)	Did not receive scores.
ASU	Fall 00	CSE 210: OOP and Data Structures Using JAVA (Class size: ~25)	Did not receive scores.

Students Supervised

Graduate students

In progress

1. Steena Monteiro (Utah State University, PhD). (Passed qualifying exam in April 2010)
2. Arjun RoyChoudhury (Utah State University, M.S. Thesis option). (Anticipated graduation: May 2012)
3. Weibing Zheng (Utah State University, M.S. Thesis option). (Anticipated graduation: Dec 2012 or May 2013)

Graduated

4. Schuyler Manchester (Utah State University, M.S. Thesis option). (May 2012)
5. Nazneen Malik (Utah State University, M.S. Project option). (July, 2010)
6. Jared Mygrant (Utah State University, M.S. Project option). (March, 2010)
7. Vani Kandimalla (University of Nevada, Las Vegas, Thesis option) M.S. Thesis: *Empirical studies of test suite prioritization techniques applied to web-based applications*. (July, 2008.)

Undergraduate research students

In progress

1. Jessica Brown (Utah State University) CRA-W CREU grant (2011-2012)
2. Chelynn Day (Utah State University) CRA-W CREU grant (2011-2012)
3. Morgan Hall (Utah State University) CRA-W CREU grant (2011-2012)
4. Keri Laughter (Utah State University) CRA-W CREU grant (2011-2012)
5. Dylan Jones (Utah State University) USU EURP grant (2011-2012)
6. Mark Eborn (Utah State University) Funded on U.S. Forest Service grant (2012)

Completed

Honors Thesis

6. Amy Hansen (Utah State University) Undergraduate thesis: *An Empirical Study of Bugs in Undergraduate Programming Assignments* (January 2010- May 2011) *Recipient of the Best Honors Thesis of the Year for the entire Utah State University.

Undergraduate Research Transcript Mark (for at least two semesters of research)

7. Schuyler Manchester (Utah State University) Research topic: *Combinatorial-based Prioritization for user-session-based testing* (2011)

8. Alison Cooley (Utah State University) Research topic: *An Empirical Study of Bugs in Undergraduate Programming Assignments* (2010)
9. Nare Hayrapetyan (Utah State University) Research topic: *An Empirical Study of Bugs in Undergraduate Programming Assignments* (2010)
10. Devin Minson (Utah State University) Research topic: *Combinatorial-based Prioritization for user-session-based testing* (2010)

Teaching Awards

1. **(2006) ASU Women in Computer Science – Outstanding Advisor and Mentor Award*** *this award was initiated by a group of graduating students that wanted to let me know that they have appreciated my involvement in their academic careers.*
2. **(2005) ASU Women in Computer Science - Outstanding Advisor Award**
3. **(2005) ASU College of Engineering and Applied Sciences - Teaching Excellence Nomination**
4. **(2002, 2004) ASU Computer Science and Engineering Instructor of the Year**
5. **(2004) Foundations on Software Engineering Educators Grant** *to attend the FSE-12 conference and tutorial sessions on Software Engineering education. (Newport Beach, CA).*
6. **(2004) ASU College of Engineering and Applied Sciences - Teaching Excellence Nomination**
7. **(2002, 2003) ASU Centennial Professor Nomination**
8. **(2002) ASU College of Engineering and Applied Sciences Appreciation Award**
9. **(2002) ASU Last Lecturer Award Nomination**

Service (10% of Role Statement)
--

1. **(2012)** Program Committee for the First Workshop on Combinatorial Testing (*CT 2012*).
2. **(2010-2012)** Technical Program Committee for the International Conference on Software Testing, Verification and Validation (*ICST 2011, ICST 2012*)
3. **(2012)** Ph.D. Symposium Co-Chair for the Grace Hopper Conference for Women in Computing (*GHC 2012*)
4. **(2012)** Evaluator for the ACM Student Research Competition Grand Finals (*ACM SRC Grand Finals 2012*)
5. **(2012)** Australian Journal of Combinatorics, Reviewer.
6. **(2011)** Posters Co-Chair for the Grace Hopper Conference for Women in Computing (*GHC 2011*)
7. **(2010-2011)** Co-Chair for the NCWIT Academic Alliance Student Leadership Fund Team *to solicit, review, and award funds to student organizations.*
8. **(2010)** Journal of Empirical Software Engineering, Reviewer.
9. **(2010)** Journal of Discrete Applied Mathematics, Reviewer.

10. (2010) Journal of Systems and Software, Reviewer
11. (2010) NCWIT Aspirations in Computing Scholarships for High School Females, Reviewer.
12. (2009-2010) Technical Program Committee for the International Workshop on Testing Techniques and Experimentation Benchmarks for Event-Driven Software (*TESTBEDS 2009, TESTBEDS 2010*)
13. (2009-2012) Technical Program Committee for the International Workshop on Assurance in Distributed Systems and Networks (*ADSN 2009, ADSN 2010, ADSN 2012*)
14. (2011-2013) Technical Program Committee for the International Symposium on Autonomous Decentralized Systems (*ISADS 2011, 2013*)
15. (2009) Journal on Software Testing, Verification, and Reliability, Reviewer
16. (2009) ACM Computing Surveys, Reviewer
17. (2007 - 2010) Technical Program Committee for the International Workshop on Assurance in Distributed Systems and Networks (*ADSN 2009, ADSN 2010*)
18. (2008-2009) Technical Program Committee for the International Conference on Software Testing, Verification and Validation (*ICST 2009*)
19. (2008 - 2010) Technical Program Committee for the International Workshop on Testing Techniques and Experimentation Benchmarks for Event-Driven Software (*TESTBEDS 2009, TESTBEDS 2010*)
20. (Oct. 2008) Grace Hopper Conference for Women in Computing, Panel, “*What is a PhD Really Good For?: Thoughts from New(er) Grads*”, Jennifer Beckmann, Microsoft; Renée Bryce, Utah State University; Ariadna Font-Llitjós, Vivísimo; Kathrin Probst, Accenture; Stefanie Tomko, Microsoft; Laura Tomokiyo, Carnegie Mellon University.
21. (2008, 2009) Grace Hopper Conference for Women in Computing, Poster Judge
22. (Sep. 2008) Aggie Family Day, Computer Science Table, Exercise for Children, “*Code Cracking*”.
23. (2008) Journal on Software Testing, Verification and Reliability, Reviewer
24. (2007, 2008) SIGCSE, Reviewer
25. (Oct. 2008) Handbook of Software Engineering Research and Productivity Technologies: Implications of Globalisation, Reviewer
26. (2007) NSF Panel Review
27. (2006) Faculty Advisor for ASU Women in Computer Science at ASU, Tempe, AZ (2002-2006)
I co-founded the group and served as faculty co-advisor to this group that supports female students in the department. I worked with students to organize monthly lunches, programming team competitions, a banquet, and attended the Admiral Grace Hopper Conference for Women in Computing with students.
28. (2006) Faculty Advisor for the Annual Programming Competition at ASU, Tempe, AZ (2003-2006)

I advised students on publicizing the events; reviewed programming problems and solutions for the competition; organized for volunteers and judges; and helped to plan the submission and scoring criteria. As many as 70 students have competed each year.

29. (2005) CSE/Motorola Intern Mentor at ASU, Tempe, AZ (2002-2005)

I mentored students participating in an internship program through the ASU Consortium for Embedded Technologies.

30. (2004) McGraw Hill's Data Structure Symposium, Chicago, IL (June 2004)

I was invited to debate and advise on challenges in teaching Data Structures courses taught in the Java programming language. Much emphasis was on using the Java Framework versus building data structures from scratch. I advocated building from scratch.

31. (2004) Imagine Cup Judge for the Windows Interest Group at ASU, Tempe, AZ (March 2004)

I served as a judge for student projects.

32. (2004) Faculty Advisor for Women in Science & Engineering Investments Program (2001-2004)

Over the summers, I gave workshops to middle and high school teachers about the field of Computer Science, along with exercises that they can share with their students. During the school year, I organized curriculum and taught on the Computer Science & Engineering day of their Saturday academy.

33. (2003) Faculty Advisor for ASU American Indian Science & Engineering Society (AISES) Summer Camp for High School Students (June 2003)

34. (2003) Judge at the Central Arizona Regional Science & Engineering Fair for Mathematics and Computer Science (April 2003)

Service and Career Advancement Awards

1. (2012) USU Undergraduate Research Mentor of the Year for the College of Engineering

2. (2012) Faculty Advisor to the recipient of the USU Best Honors Thesis Award for Amy Hansen's Honors Thesis titled, "An Empirical Study of Student Programming Bugs"

3. (2006) Google Women's Workshop to attend the first Google Workshop for Women Engineers (Mountain View, CA)

4. (2006) Arizona State Commission on the Status of Women Award for "achievement and contribution towards advancing the status of women"

5. (2006) CRA-W Scholarship to attend the CRA-W Career Mentoring Workshop. (Washington, D.C.)

6. (2004) ASU W.I.S.E. (Women in Science and Engineering) Investments Award (2002-2004)

7. (2003) ASU AISES (American Indian Science & Engineering Society) Award for contributions to their summer camp program for high school students

8. (2003) Keynote speaker for the ASU W.I.S.E. Investments annual banquet – Talk – "A Scrapbook from Science & Engineering"

9. (2003) Speaker at American Indian Institute at ASU for students interested in engineering majors

10. (2002) Keynote speaker for the ASU W.I.S.E. annual banquet

11. (1999) Stanley I. Landgraf Prize – *annual prize for the Computer Science undergraduate student who excelled in leadership skills and academic achievement.* As an undergraduate, I earned my degree in 2 years and 9 months; received special permission to take graduate level courses as an undergrad; and served as a student representative on the Computer Science Undergraduate Program Committee.