

Gerald C. Gannod

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SUMMARY OF EDUCATION AND EXPERIENCE

This section describes the education and experience of Dr. Gerald C. Gannod (the candidate). The main research and teaching interests of the candidate fall in the general area of software engineering with an emphasis on mobile computing, service-oriented computing, software reverse engineering, and digital humanities. Dr. Gannod is also actively performing research in the area of integrating communication skills (including reading, writing, speaking, and teamwork) into the computer science curricula, as well as identifying methods for using mobile technology to support learning. The primary philosophy of the candidate is to achieve a balance as a teacher-scholar. Dr. Gannod's experiences have been geared towards reaching that balance. The candidate has a wide variety of experiences in both industry and in academia, including undergraduate research experience in the CIC Summer Research Opportunity/Ronald P. McNair program, a long-term co-operative education experience with IBM Corporation, and a short stint with the Unisys Corporation prior to entering graduate school. In addition, from 1994–1997, Dr. Gannod was a graduate student research fellow under the NASA Graduate Student Fellowship Program (Underrepresented Minority Focus). Dr. Gannod performed much of his dissertation research at the NASA/California Institute of Technology Jet Propulsion Laboratory as part of that fellowship. Prior to joining Miami University, the candidate was a faculty member at Arizona State University on both the Tempe and Polytechnic campuses. Dr. Gannod's teaching history is outlined in Section 2. Dr. Gannod's research accomplishments, as described in Section 1, include graduate and faculty fellowships with NASA, and a number of grants from the National Science Foundation (including a CAREER grant in 2002). Finally, Dr. Gannod's service activities are described in Section 3.

Note: All activities since joining Miami University are marked with a '★'.

Education

- 1998 PH.D., COMPUTER SCIENCE. *Michigan State University, East Lansing, Michigan.*
Dissertation Title: *Integrating Informal and Formal Techniques to Reverse Engineer Imperative Programs.* Advisor: Dr. Betty H.C. Cheng
- 1994 M.S., COMPUTER SCIENCE. *Michigan State University, East Lansing, Michigan.*
- 1991 B.S., COMPUTER SCIENCE. *Michigan State University, East Lansing, Michigan.* Minors in Economics and Communication.

Principal Areas of Research and Teaching

- RESEARCH Mobile Computing, Service-Oriented Computing, Software Product Lines, Reverse Engineering, Program Understanding, Digital Humanities, and Integration of Communication Skills into the CS Curriculum.
- TEACHING Introductory and advanced courses in Software Engineering and Programming, Software Design, Formal Methods for Software Development, Enterprise and Service-Oriented Computing, Mobile Computing.

Academic Experience

- 8/11–present PROFESSOR, *Department of Computer Science and Software Engineering, Miami University, Oxford, Ohio.*
- 8/06–07/11 ASSOCIATE PROFESSOR, *Department of Computer Science and Software Engineering, Miami University, Oxford, Ohio.*
- 7/04–7/09 ADJUNCT PROFESSOR, *Dept. of Computer Science and Engineering, Arizona State University, Tempe, AZ.*
- 8/06–8/07 ADJUNCT PROFESSOR, *Division of Computing Studies, Arizona State University at the Polytechnic Campus, Mesa, AZ.*
- 7/04–8/06 ASSISTANT PROFESSOR, *Division of Computing Studies, Arizona State University at the Polytechnic Campus. Mesa, AZ.*

8/98–6/04 ASSISTANT PROFESSOR, *Dept. of Computer Science and Engineering, Arizona State University, Tempe, AZ.*

Research Experience

Summer 2000 MOTOROLA FACULTY FELLOW, *Motorola Computer Group and ASU, Tempe, AZ.*

Summer 1999 NASA/ASEE FACULTY FELLOW, *NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.*

1994–1997 NASA GRADUATE STUDENT RESEARCH PROGRAM (GSRP) FELLOW, *NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA.*

Summer 1991 UNDERGRADUATE RESEARCH FELLOW, *Department of Computer Science, MSU.*

Industrial Experience

8/13–8/14 ARCHITECT, *Suncorp Business Services, Sydney NSW, Australia.*

1/92–9/92 SOFTWARE ENGINEER, *Unisys Corporation, Plymouth, MI.*

8/88–3/90 CO-OP SOFTWARE DEVELOPER, *International Business Machines, Rochester, MN.*

Honor Societies

- *Member, Upsilon Pi Epsilon Computer Science Honorary Society; Chapter President, Michigan State University, 1994–1996. Charter Member at MSU.*

RELATIONSHIP BETWEEN TEACHING, RESEARCH, AND SERVICE

The candidate's philosophy on the relationship between teaching, research, and service can be observed in the activities that have been pursued in the recent past. For instance, interests in curriculum and program assessment have bridged the service and teaching components. Specifically, the candidate has chaired the Teaching Improvement and Assessment committee, during which time the CSE department has moved towards a more outcomes-based style of assessment. The candidate has worked with students and an external software developer to create tools to support assessment activities and has actively utilized the tools in all of his courses. In regards to the integration of research and education, the candidate has always sought to achieve integration through advising of graduate students in research that is relevant to his research interests. In addition, the candidate's research activities have included not just scientific endeavors but also more pedagogical activities, including publication of scholarly papers that focus on the use of new techniques in the classroom. Finally, the candidate has been actively seeking to expose students to service-learning opportunities in an effort to integrate educational and service interests.

1 RESEARCH AND SCHOLARSHIP

The research philosophy of the candidate is based on a desire to find synergies between the theoretical and practical in order to develop techniques and tools that move research towards application and adoption. This section describes the research and scholarship activities of the candidate. The rest of this section is organized as follows. Honors and awards are summarized in Section 1.1, publications in journals, book chapters, refereed conferences, and refereed workshops are shown in Section 1.2. Section 1.3 describes presentations and grants (external, internal, and pending) are shown in Section 1.4.

1.1 Honors and Awards

- *Male Ally Award, Celebrating Women's Leadership, Miami University, 2013.*
- *Ohio Magazine 2012, Outstanding Higher Education Teacher Award, December 2012.*
- *National Science Foundation Faculty Early Career Development (CAREER) Award, 2002–2009 (Funded and extended).*
- *Motorola Summer Faculty Fellowship, Motorola and ASU, 2000 (Funded).*

- *NASA/ASEE Summer Faculty Fellowship*, NASA/California Institute of Technology Jet Propulsion Laboratory, 1999 (Funded).
- *Dissertation Completion Fellowship*, Michigan State University, 1998 (Funded).
- *NASA Graduate Student Researchers Program (GSRP) Fellowship (Underrepresented Minority Focus)*, 1994–97 (Funded).
- *Honorable Mention, Ford Foundation Pre-Doctoral Fellowship*, 1992, 1993, *National Science Foundation Minority Graduate Fellowship*, 1992 (Funded), *Department of Defense Graduate Fellowship*, 1992.
- *Michigan State University/Committee on Institutional Cooperation Fellowship*, Summer Research Opportunity/Ronald P. McNair Program, 1991 (Funded).

1.2 Publications and Manuscripts

This section describes the publications and manuscripts of the candidate. The candidate has published 80 papers in refereed journals, book chapters, conferences, and workshops. Some of the papers are marked with citation numbers, acceptance rate, or impact factors. Journals for which the impact factors were available are all over a 1.0 except for 1. Several papers were published in top venues for the respective fields including papers in the International Conference on Software Engineering (ICSE) and the International Conference on Web Services (ICWS). In addition, several conference papers had acceptance rates that were 25% or less, including a few in venues at 20% or less. One paper (Paper 15 in the conference section) was awarded a best paper award, while others were recognized as best paper nominees. Several papers have been co-authored with students (student contributors shown in **bold font**). These students have been at all levels (PhD, Masters, and Bachelors), including two journal papers with an undergraduate student. The authors on all papers are listed according to contribution. The superscript following the candidate’s name indicates percentage of contribution. The † symbol indicates papers presented by the candidate at conferences.

Refereed Archival Journal Articles:

1. ★ “How to Read a Literary Visualization: Network Effects in the Lake School of Romantic Poetry”, Laura Mandell, Gerald Gannod, and Jon Jekeli. *Digital Studies / Le Champ Numrique*, Vol 3, No 2., 2013.
2. ★ “A Characterization of Social Networks for Effective Communication and Collaboration in Computing Education”, Gerald C. Gannod and **Kristen M. Bachman**, *Computers in Education Journal*, ASEE, Vol. 4, No. 3, 2012.
3. ★ “First Steps Toward Integration Communication Instruction Throughout Computer Science and Software Engineering Curricula”, Janet E. Burge, Paul V. Anderson, Michael Carter, Gerald C. Gannod^(20%), Mladen A. Vouk, *Computers in Education Journal*, ASEE, April-June 2012 issue, Vol 3(2), pp. 34-48.
4. ★ “Foundations for Specifying OWL-S Groundings”, Gerald C. Gannod^(60%), **Raynette J. Brodie**, and **John T.E. Timm**, the *International Journal of Business Process Integration and Management*, pp. 49–59, Vol. 2, No. 1, 2007.
5. ★ “Facilitating the Specification of Semantic Web Services Using Model-Driven Development”, Gerald C. Gannod^(50%), **John T.E. Timm**, and **Raynette J. Brodie**, *International Journal of Web Services Research*, Vol. 3, No. 3, pp. 61–81, 2006, IGI, (submission invited as part of selected papers from ICWS 2005), (IF: 1.2).
6. ★ “A Product Line Process Simulator”, **Yu Chen**, Gerald C. Gannod^(40%) and James S. Collofello, the *Journal of Software Process Improvement and Practice (Special Issue on Selected Papers from Prosim 2005)*, *InterScience*, Vol. 11, 385–409, 2006.
7. ★ “Synthesizing and Integrating Legacy Components as Services Using Adapters”, **Sudhakiran Muddiam**, Gerald C. Gannod^(40%), and Timothy E. Lindquist, in the *Journal of the Science of Computer Programming*, (60) 2006, pp. 134–148 (IF: 1.269).

8. “Automated Support for Service-Based Software Development and Integration”, Gerald C. Gannod^(60%), **Sudhakiran Mudiam**, and Timothy E. Lindquist, *Journal of Systems and Software* (Special Issue on Automated Component Based Software Engineering - Guest Editors: Ivica Crnkovic, Heinz Schmidt, Judith Stafford, and Kurt Wallnau), Elsevier Science Publishers, 74 (2005). (IF: 1.241)
9. “Analysis of a Software Product Line Architecture: An Experience Report”, Robyn R. Lutz and Gerald C. Gannod^(50%), *Journal of Systems and Software* (Special Issue on Software Architecture - Engineering Quality Attributes), guest editors - Jan Bosch and Lars Lundberg, Elsevier Science Publishers, 66 (2003) 253–267. (IF: 1.241) (22 citations).
10. “Developing and Maintaining an Object-Oriented Distributed Multimedia Information System,” Betty H.C. Cheng and Gerald C. Gannod^(40%), *The Annals of Software Engineering* (Special Volume on Multimedia Software Engineering), Baltzer Science Publishers, Volume 12, December 2001, pp. 95–118.
11. “Strongest Postcondition Semantics as the Formal Basis for Reverse Engineering,” Gerald C. Gannod^(70%) and Betty H.C. Cheng, *The Journal of Automated Software Engineering*, Vol. 3, No. 1 & 2, Kluwer Academic Publishers, 1996 (50 citations).
12. “Facilitating the Maintenance of Safety-Critical Systems Using Formal Methods,” Gerald C. Gannod^(70%) and Betty H.C. Cheng, *The International Journal of Software Engineering and Knowledge Engineering*, Vol. 4 No. 2, World Scientific Publishing Company, 1994. (IF: .508)

Book Chapters:

1. ★ “Semantic Web Service Specification”, *Advances in Web Services Research: Volume 2 - Web Services Research and Practices*, John T.E. Timm, Gerald C. Gannod^(45%), and Raynette J. Brodie, LJ Zhang ed., May 2008.
2. “The Object-Oriented Development of Multimedia Information Systems,” Gerald C. Gannod^(50%) and Betty H.C. Cheng, *Multimedia Information Storage and Management*, S.M. Chung ed., Kluwer Academic Publishers, 1996.

Refereed International Conference and Workshop Papers (Research):

1. ★ ”Myopia: A Visualization Tool in Support of Close Reading”, **Manish Chaturvedi**, Gerald Gannod, Laura Mandell, Helen Armstrong, and Eric Hodgson. Proceedings of the 2012 Conference on Digital Humanities, October 2012.
2. ★ “Using Requirements and Rationale to Drive Feature Model Configuration”, Janet E. Burge, Gerald C. Gannod, and **Holly L. Connor**, in the Sixth ICSE Workshop on Sharing and Reusing Architectural Knowledge (SHARK), May 2011.
3. ★ “The Effect of Time Reporting Delay on Time Reporting Behavior: An Experimental Investigation of Unintentional Underreporting of Time”, Timothy Eaton, Andrew B. Reffett, and Gerald C. Gannod, in Proceedings of the American Accounting Association Midwest Region Meeting, October 2010.
4. ★ “Using TEI to Create a Geo-Located Table of Contents for the Poetess Archive in Google Earth”, Laura C. Mandell, Gerald C. Gannod^(45%), and **Kristen M. Bachman**, in the Proceedings of the 2009 TEI-C Conference, Nov 2009.
5. ★ † “Using Proportional-Integral-Derivative Control in Self-Healing Adaptive Content Systems”, Henri Q. Naccache and Gerald C. Gannod^(50%), in Proceedings of the IEEE Software and Services Maintenance and Management Workshop (SSMM 2009), July 2009.
6. ★ † “A Tool Suite for Automated TEI Encoding”, Gerald C. Gannod^(70%), Laura C. Mandell, and **Holly L. Connor**, in Proceedings of the 2009 Digital Humanities Conference – the Joint Meeting of the Association for Computers and the Humanities, the Association for Literary and Linguistic Computing, and the Society for Digital Humanities / Société pour l’étude des médias interactifs. 25% acceptance rate.

7. ★ † “Grounding and Execution of OWL-S Based Semantic Web Services”, John T.E. Timm and Gerald C. Gannod^(50%), in the Proceedings of the IEEE International Conference on Services Computing, July 2008. 18% acceptance rate.
8. ★ “Incorporating Wikis Into Software Repository Mining”, Michael T. Helmick, James D. Kiper, Janet E. Burge, Valerie Cross, and Gerald C. Gannod^(20%), in Proceedings of the WikiSym Workshop on Wikis For Software Engineering, October 2007.
9. ★ “Specifying Semantic Web Service Compositions using UML and OCL”, **John T.E. Timm** and Gerald C. Gannod^(50%), in the 2007 International Conference on Web Services, July 2007, 18% acceptance rate (29 citations).
10. ★ “A Self-Healing Framework for Web Services”, **Henri Q. Naccache** and Gerald C. Gannod^(50%), in the 2007 International Conference on Web Services, July 2007, 18% acceptance rate (30 citations).
11. ★ “Recovering Concepts from Source Code with Automated Concept Identification”, **Maurice M. Carey** and Gerald C. Gannod^(50%), in ICPC 2007, June 2007, 33% acceptance rate.
12. ★ † “Issues in the Design of Flexible and Dynamic Service-Oriented Systems”, Gerald C. Gannod^(33%), Janet E. Burge, and Susan D. Urban, Proceedings of the International Workshop on Systems Development in SOA Environments (SDSOA 2007), May 2007.
13. ★ † “A Self-Healing Web Server Using Differentiated Services”, **Henri Naccache**, Gerald C. Gannod^(40%), and Kevin A. Gary, Proceedings of the 4th International Conference on Service Oriented Computing (ICSOC 2006), Dec. 2006, 17% acceptance rate.
14. † “An Interactive Approach for Specifying OWL-S Groundings”, Gerald C. Gannod^(60%), **Raynette J. Brodie**, and **John T.E. Timm**, Proceedings of the IEEE EDOC Enterprise Computing Conference, Sept. 2005, (best paper nominee), 14% acceptance rate.
15. “A Model-Driven Approach for Specifying Semantic Web Services”, **John T. E. Timm** and Gerald C. Gannod^(50%), Proceedings of the 3rd IEEE International Conference on Web Services (ICWS 2005), July 2005, 19% acceptance rate, awarded “Best Paper” in the student first author category. (53 citations)
16. “A Software Product Line Process Simulator”, **Yu Chen**, Gerald C. Gannod^(40%), and James S. Collofello, Proceedings of the 6th International Workshop on Software Process Simulation and Modeling (ProSim 2005), May 2005.
17. “A Technique for Verification of Race Conditions in Real-time Systems”, **Nagendar Telkar**, Karam S. Chatha, Yann-Hang Lee, Gerald C. Gannod^(20%), and Eric Wong, in Proceedings of the 2004 International Workshop on Software Verification and Validation (SVV 2004).
18. † “Evolution of Java Programs to a Model-Driven Environment Using EMF”, Gerald C. Gannod^(70%) and **Maurice M. Carey**, in Proc. of the 8th IEEE EDOC Enterprise Computing Conference Workshop on Model-Driven Evolution of Legacy Systems, September 2004.
19. † “An MDA-Based Approach for Facilitating Adoption of Semantic Web Service Technology”, Gerald C. Gannod^(80%) and **John T. E. Timm**, in Proc. of the 8th IEEE EDOC Enterprise Computing Conference Workshop on Model-Driven Semantic Web, Sept. 2004.
20. “Using Simulation to Facilitate the Study of Software Product Line Evolution”, **Yu Chen**, Gerald C. Gannod^(40%), James S. Collofello, Hessam S. Sarjoughian, in Proceedings of the 7th International Workshop on Principles of Software Evolution, September 2004.
21. † “Facilitating Automated Search for Web Services”, Gerald C. Gannod^(70%) and **Sushant Bhatia**, In Proc. of the 2004 IEEE Intl. Conference on Web Services, July 2004, pp. 761 – 764. (16 citations)

22. †“On-the-fly Wrapping of Web Services to Support Dynamic Integration”, Gerald C. Gannod^(70%) and **Huimin Zhu** and **Sudhakaran V. Mudiam**, 10th IEEE Working Conference on Reverse Engineering, IEEE, Nov. 2003, pp. 175–185 (top 18%).
23. †“Verification of Recovered Software Architectures”, Gerald C. Gannod^(70%) and **Shilpa Murthy**, In Proceedings of the 2003 International Workshop on Program Comprehension (an international conference), pp. 258–265, IEEE, May 2003.
24. †“Using Log Files to Reconstruct State-Based Software Architectures”, Gerald C. Gannod^(70%) and **Shilpa Murthy**, in Proceedings of the Working Conference on Reverse Engineering Workshop on Software Architecture Reconstruction, pp. 5–7, IEEE, November 2002, (top 18% impact factor).
25. †“A Novel Service-Based Paradigm for Dynamic Component Integration”, **Sudhakaran Mudiam**, Gerald C. Gannod^(40%), and Timothy E. Lindquist, in the Proceedings of the AAAI-02 Workshop on Intelligent Service Integration, pp. 8–11, July 2002.
26. †“An Automated Tool for Analyzing Petri Nets using Spin”, Gerald C. Gannod^(70%) and **Sunil Gupta**, in the Proceedings of the 16th Automated Software Engineering Conference, IEEE, November 2001, pp. 404–407 (25% acceptance rate).
27. “An Investigation into the Connectivity Properties of Source-Header Dependency Graphs”, Gerald C. Gannod^(50%) and Barbara D. Gannod, in Proceedings of the 8th Working Conference on Reverse Engineering, pp. 115–124, IEEE, October 2001, (top 18% impact factor).
28. †“A Suite of Tools for Facilitating Reverse Engineering Using Formal Methods,” Gerald C. Gannod^(70%) and Betty H.C. Cheng, in Proceedings of the 9th International Workshop on Program Comprehension, pp. 221–232, IEEE, May 2001.
29. †“Embedded Software for a Space Interferometry System: Automated Analysis of a Software Product Line”, Gerald C. Gannod^(45%), Robyn R. Lutz, and **Marian Cantu**, in Proceedings of the 20th IEEE International Performance, Computing, and Communications Conference (IPCCC 2001), pp. 145–150, IEEE, April 2001.
30. “An Architectural Based Approach for Synthesizing and Integrating Wrappers for Legacy Software,” Gerald C. Gannod^(50%), **Sudhakaran V. Mudiam** and Timothy E. Lindquist, Proceedings of the 7th Working Conference on Reverse Engineering, pp. 128–137, IEEE, November 2000, (top 18% impact factor) (25 citations).
31. “An Approach to Architectural Analysis of Product Lines”, Gerald C. Gannod^(50%) and Robyn R. Lutz, in *Proceedings of the 22nd IEEE International Conference on Software Engineering*, pp. 548–557, IEEE, June 2000 (18% acceptance rate, top 28% impact factor). (34 citations)
32. †“A Formal Approach for Reverse Engineering: A Case Study”, Gerald C. Gannod^(70%) and Betty H.C. Cheng, in *Proc. of the 6th Working Conf. on Reverse Engineering*, pp. 100–111, IEEE, Oct. 1999, (top 18% impact factor).
33. †“A Framework for Classifying and Comparing Software Reverse Engineering and Design Recovery Techniques”, Gerald C. Gannod^(70%) and Betty H.C. Cheng, in *Proceedings of the 6th Working Conference on Reverse Engineering*, pp. 77–88, October 1999 (57 citations).
34. †“A Specification Matching Based Approach to Reverse Engineering”, Gerald C. Gannod^(70%) and Betty H.C. Cheng, in *Proceedings of the 21st International Conference on Software Engineering*, pp. 389–398, IEEE, May 1999 (18% acceptance rate, top 28% impact factor).
35. †“An Automated Approach for Supporting Software Reuse via Reverse Engineering”, Gerald C. Gannod^(40%), Yonghao Chen, and Betty H.C. Cheng, in *Proceedings of the 13th Automated Software Engineering Conference*, pp. 94–103, IEEE, October 1998.

36. †“PACKRAT: A Software Reengineering Case Study”, Gerald C. Gannod^(50%), Gora Sudindranath, Mark E. Fagnani, and Betty H.C. Cheng, in *Proceedings of the 5th IEEE Working Conference on Reverse Engineering*, pp. 125–134, IEEE, October 1998, (top 18% impact factor).
37. †“A Formal Automated Approach for Reverse Engineering Programs with Pointers,” Gerald C. Gannod^(50%) and Betty H.C. Cheng, in *Proceedings of the 12th IEEE Automated Software Engineering Conference*, pp. 219–226, IEEE, November 1997.
38. †“Using Informal and Formal Techniques for the Reverse Engineering of C Programs,” Gerald C. Gannod^(60%) and Betty H.C. Cheng, in *Proceedings of the IEEE International Conference on Software Maintenance*, pp. 265–274, November 1996. Also appears as a joint session paper in the *Proceedings of the 3rd IEEE Working Conference on Reverse Engineering*, (top 18% impact factor).
39. “Strongest Postcondition Semantics as the Formal Basis for Reverse Engineering,” Gerald C. Gannod^(60%) and Betty H.C. Cheng, in *Proceedings of the 2nd IEEE Working Conference on Reverse Engineering*, pp. 188–197, IEEE, July 1995, (top 18% impact factor).
40. “A Distributed Multimedia Environmental Information System,” Joseph L. Sharnowski, Gerald C. Gannod^(40%), and Betty H.C. Cheng, in *Proceedings of the IEEE International Conference on Multimedia Computing and Systems*, pp. 142–149, IEEE, June 1995.
41. “The Object-Oriented Development of a Distributed Multimedia Environmental Information System,” Robert H. Bourdeau, Betty H.C. Cheng and Gerald C. Gannod^(30%), in *Proceedings of the 6th IEEE International Conference on Software Engineering and Knowledge Engineering*, pp. 70–77, June 1994.
42. †“A Two-Phase Approach to Reverse Engineering using Formal Methods,” Gerald C. Gannod^(50%) and Betty H.C. Cheng, *Lecture Notes in Computer Science: Proceedings of the Conference on Formal Methods in Programming and Their Applications*, Vol. 735, pp. 335–348, Springer-Verlag, 1993.
43. “Abstraction of Formal Specifications from Program Code,” Betty H.C. Cheng and Gerald C. Gannod^(30%), in *Proceedings of the 3rd IEEE International Conference on Tools in Artificial Intelligence*, pp. 125–128, IEEE, November 1991.

Refereed Scholarship of Teaching and Learning Papers

1. ★ “Developing CS/SE Students’ Communication Abilities through a Program-Wide Framework”, Janet E. Burge, Gerald C. Gannod, Michael Carter, Alanna Howard, Brian Schultz, Mladen Vouk, David Write, and Paul Anderson, in *Proceedings of SIGCSE 2014*, ACM, March 2014.
2. ★ “Girls on the Go: A CS Summer Camp to Attract and Inspire Female High School Students”, Janet E. Burge, Gerald C. Gannod, Maureen Doyle, and Karen C. Davis, in *Proceedings of SIGCSE 2013*, ACM, March 2013.
3. ★ “Characterizing Communication Instruction in Computer Science and Engineering Programs: Methods and Applications”, Janet E. Burge, Gerald C. Gannod, Paul V. Anderson, Kara Rosine, Mladen A. Vouk, and Michael Carter, in *Proceedings of the 2012 Frontiers in Education Conference*, October 2012.
4. † ★ “Work in Progress: The Effects of Mobile Learning on Inquiry-Based Instruction”, **Kristen Bachman** and Gerald Gannod, in *Proceedings of the 2012 Frontiers in Education Conference*, October 2012.
5. ★ “A Characterization of Social Networks for Effective Communication and Collaboration in Computing Education”, Gerald C. Gannod and **Kristen M. Bachman**, in *Proceedings of the 2012 ASEE Conference*, June 2012.
6. ★ “Communication Genres: Integrating Communication into the Software Engineering Curriculum”, Michael Carter, Gerald C. Gannod, Janet E. Burge, Mladen Vouk, Paul V. Anderson, and Mark E. Hoffman, in *Proceedings of the 24th Conference on Software Engineering Education and Training*, IEEE, May 2011.

7. ★ “App Development in the Miami University Mobile Learning Center”, Gerald C. Gannod, **Kristen M. Bachman**, James D. Kiper, Glenn J. Platt, Robert Howard, and Micah Cooper, in the CSEET Smartphones in the Curriculum Workshop, May 2011.
8. ★ “An Evaluation Framework for M-Learning”, Gerald C. Gannod and **Kristen M. Bachman**, in Proceedings of the 2011 International Conference on Computer Supported Education, INSTCC, May 2011.
9. ★ “Integrating M-Learning into a Broad Context: Issues and Recommendations”, Gerald C. Gannod and **Kristen M. Bachman**, in Proceedings of the 2011 Mobile Learning Conference, IADIS, March 2011.
10. ★ “A Critical Analysis of M-Learning Initiatives”, Gerald C. Gannod and **Kristen M. Bachman**, in Proceedings of the 2011 Mobile Learning Conference, IADIS, March 2011.
11. ★ “Increasing Alumni Engagement Through The Capstone Experience”, Gerald C. Gannod, **Kristen M. Bachman**, Steve D. Brockman, and Douglas A. Troy, 2010 IEEE Frontiers in Education Conference (FIE), October 2010.
12. ★ “Investigating Mobile and Ubiquitous Learning”, Gerald C. Gannod, Glenn Platt, Robert Howard, and James D. Kiper, Proceedings of the 30th Annual International Lilly Conference on College Teaching, November 2010.
13. ★ † “Streamlining and Integration of Miami Three-Tier Outcomes Assessment for Sustainability”, Michael T. Helmick and Gerald C. Gannod^(50%), 2009 IEEE Frontiers in Education Conference (FIE), Oct 2009.
14. ★ “Dimensions for Categorizing Capstone Projects”, Janet E. Burge and Gerald C. Gannod^(40%), in the 22nd IEEE Conference on Software Engineering Education and Training (CSEET), 2009. (31% acceptance rate)
15. ★ † “Using the Inverted Classroom to Teach Software Engineering”, Gerald C. Gannod^(70%), Janet E. Burge, and Michael T. Helmick, in the 2008 IEEE International Conference on Software Engineering (ICSE 2008), May 2008. (23% acceptance rate), (53 citations)
16. ★ † “WIP: Using Podcasting in an Inverted Classroom”, Gerald C. Gannod^(100%), in IEEE Frontiers in Education Conference (FIE 2007), Oct 2007.
17. ★ † “Work in Progress: Increasing Recruitment of Native American Students in Computing Programs”, **Nishant J. Bhajaria** and Gerald C. Gannod^(50%), Proceedings of the IEEE Frontiers in Education Conference, October, 2006.
18. † “A Constituent-Centered Approach for Curriculum Assessment”, Barbara D. Gannod, Gerald C. Gannod^(33%), and Mark R. Henderson, Proceedings of the ABET Annual Conference and Meeting, 2005.
19. † “Course, Program, and Curriculum Gaps: Assessing Curricula for Targeted Change”, Barbara D. Gannod, Gerald C. Gannod^(33%), and Mark R. Henderson, Proceedings of the IEEE/ASEE Frontiers in Education Conference, 2005.
20. † “WIP: The Software Experience”, Kevin Gary, Gerald Gannod^(15%), Harry Koehnemann, Timothy Lindquist, and Richard Whitehouse, Proceedings of the IEEE/ASEE Frontiers in Education Conference, 2005.
21. “Development and Utilization of a Process for Incorporating Constituent Feedback Into Curriculum Improvement”, Barbara D. Gannod, Gerald C. Gannod^(33%), and Mark R. Henderson, in Proceedings of the 2005 ASEE Annual Conference.

22. “Educating Future Software Professionals on Outsourced Software Development”, Kevin A. Gary, Gerald C. Gannod^(20%), Harry Koehnemann, and M. Brian Blake, in Proceedings of the 2005 ASEE Annual Conference.
23. †“Using a Product Line Approach to Develop Course Projects”, Gerald C. Gannod^(70%) and **John J. Doherty**, in the Proceedings of the 2002 American Society for Engineering Education Annual Conference and Exposition, ASEE, June 2003, (CD-ROM Proceedings).
24. “A Consortium-Based Model for the Development of a Concentration Track in Embedded Systems”, Gerald C. Gannod^(70%), Forouzan Golshani, Ben Huey, Yann-Hang Lee, Sethuraman Panchanathan, and David Pheanis, in the Proceedings of the 2002 American Society for Engineering Education Annual Conference and Exposition, ASEE, June 2002, (CD-ROM Proceedings).

1.3 Talks and Presentations

Invited Talks:

1. ★ ”Using the iPhone as a Target Development Platform”, SEAS 50th Anniversary Celebration, April 2009.
2. ★ “Using Microsoft Word 2007 for Encoding TEI”, Summer NINES Workshop, Miami University, July 2008.
3. ★ “Construction of Domain Models by Recovering Concepts from Source Code”, Software Engineering and Network Systems Group, Michigan State University, September 2007.
4. ★ “Construction of Domain Models by Recovering Concepts from Source Code”, Wayne State University, September 2007.
5. ★ “Facilitating A Transition To Semantic Web Services Using Model-Driven Development”, Service-Oriented Architecture (SOA) and Web Services, Atlanta GA, October 2006.
6. ★ “Semantic Web Services and Model-Driven Development”, Graduate Student Seminar, September 29, 2006.
7. ★ “Microsoft .NET Overview with C#”, ACM Student Group, October 2, 2006.
8. “Using Model Driven Architecture to Specify Semantic Web Services”, Miami University, Oct 2005.
9. “Specification of Semantic Web Services”, Symposium on Research in Engineering and Applied Sciences, Tempe AZ, Oct 2005.
10. “Verification of Recovered Software Architectures”, University of Notre Dame, Oct 2004.
11. “Using Visualization to Support Event Trace Analysis”, Embry-Riddle Aeronautical University, Prescott Arizona, April 2004.
12. “Software Architecture Challenges and Research”, Modeling and Simulation for Design of Large Software Intensive Systems, Tuscon, Arizona, December, 2003.
13. “A Formal Approach for Reverse Engineering”, *Litton Data Systems Division*, Agoura Hills, California, August 1999.
14. “Issues in Software Reuse”, *Gemini Observatory*, Hilo, Hawaii, March 1999.

1.4 Research Grants

1.4.1 Sponsored Research - External Grants

The candidate has been involved in seven externally funded research projects, two as PI and two as a co-PI. The projects have totaled over \$2.5M. The remainder of this section describes the projects.

★ SMARTPHONE ACADEMY. (PI: G. GANNOD, AIR FORCE RESEARCH LABORATORY, 2012, \$24,695 TOTAL). This project involves the creation of online educational materials in the area of mobile computing.

★ RESEARCH BUDDY:REVOLUTIONIZING UNDERGRADUATE STUDENT RESEARCH USING MOBILE TECHNOLOGY. (PI: G. GANNOD, CO-PI: G. PLATT, PROCTER & GAMBLE, 2011, \$10,000 TOTAL). This project is funded by a Procter & Gamble Higher Education Grant.

★ RESEARCH EXPERIENCES FOR UNDERGRADUATES SUPPLEMENTAL AWARD TO CPATH-2:COLLABORATIVE RESEARCH: INCORPORATING COMMUNICATION OUTCOMES INTO THE COMPUTER SCIENCE CURRICULUM, (PI: J. BURGE, CO-PI: P. ANDERSON AND G. GANNOD, NATIONAL SCIENCE FOUNDATION, 2010, \$16,000 TOTAL).

★ CPATH-2: INCORPORATING COMMUNICATION OUTCOMES INTO THE COMPUTER SCIENCE CURRICULUM (PI: J. BURGE, CO-PI: P. ANDERSON AND G. GANNOD, NATIONAL SCIENCE FOUNDATION, 2009, \$800,000 TOTAL, \$445,122 TO MIAMI, CCF-0939122). This project is a collaborative grant with North Carolina State University. This grant began on 10/1/2009 and has a duration of 3 years.

★ EQUIPMENT FOR THE BREAD OF LIFE CAPSTONE PROJECT (PI: G. GANNOD, CO-PI: L. OPRYCHAL, MILES DATA TECHNOLOGIES, 2008, \$3045.) The award for this project was an in-kind donation of equipment for a capstone project being directed by the candidate and L. Oprychal. The equipment includes two handheld scanners, two wireless Pocket-PC scanners, and other wireless equipment.

★ LINKING SCIENCE TO PRACTICE THROUGH DIGITAL MEDIA (PI: J. BURG (WAKE FOREST), C. GLEBER (LA SALLE), SENIOR CONSULTANTS: C. CORNETT (E. TENN ST.), G. GANNOD, L. HAWKES (FSU), G. RUBINI (FSU), M MATEAS (UC SAN DIEGO), M. NIEDERMAN (COLUMBIA COLLEGE), NSF CCF, \$237,991, CCF-0722261). This proposal explores the issues related to the use of digital media in computer science education. The proposal was submitted to the National Science Foundation Pathways to Revitalized Computer Science Education Program (through Wake Forest University). The candidate made a small contribution and is listed as a consultant on the proposal. No overhead is generated for Miami on this grant.

CAREER:A TWO-TIER APPROACH FOR THE ANALYSIS AND EVOLUTION OF HIGH INTEGRITY SOFTWARE PRODUCT LINES (PI: G. GANNOD, NSF CISE, 2002-2007, \$295,228, CCR-0133956). This project was focused on the use of simulation and empirical approaches for the development and evolution of high-integrity software product lines. The research used simulation to analysis product-line processes while the empirical aspect of the work was focused on the development of self-healing components. The grant work produced several publications in journals and conferences, as well as a PhD student dissertation and a pair of MS student theses. The research was funded by a National Science Foundation Career grant.

TIMING AND RACE CONDITION VERIFICATION FOR REAL-TIME SYSTEMS (PI: Y.H. LEE, CO-PIs: K. CHATHA, G. GANNOD, E. WONG, NASA IV&V:2003, \$125,264, NAG-5-12584). This project involved the exploration of different approaches for performing timing and race condition verification in real-time systems. The primary deliverable for this project was a survey on model checking approaches and a demonstration of one of those approaches on a real-time system. The research resulted in a publication in a conference and a pair of MS student theses. This research was funded by the NASA IV&V center.

A CONCENTRATION TRACK IN EMBEDDED SYSTEMS(PI: S. PANCHANATHAN, CO-PIs: G. GANNOD, F. GOLSHANI, B. HUEY, Y. LEE, D. PHEANIS, NSF, 2001-2006, \$735,322 EIA-0122600). This project involved the development of course materials for a concentration in embedded systems. The candidate developed an embedded software course under this grant and explored the use of an approach developing course projects based on product line concepts. The project resulted in the development of course curricula and the publication of papers in educational conferences. The project also resulted in an MS thesis. This research was funded by the the National Science Foundation.

USING A FORMAL APPROACH FOR REVERSE ENGINEERING AND DESIGN RECOVERY TO SUPPORT SOFTWARE REUSE (PI: G. GANNOD, NASA LANGLEY, 1999-2002, \$275,034, NAG 1-2241). This project involved the development of reverse engineering and re-engineering in order to formally describe software components. The focus of the work was to use formal and semi-formal techniques to describe distributed components and services. The research resulted in the publication of papers in conferences and a pair of MS

thesis projects. The work was funded by the NASA Langley Research Center.

1.4.2 Sponsored Research - Internal Grants

The candidate has been involved in five internally sponsored research projects as summarized below. Two of the projects directly led to development of future externally funded projects.

★ THE MIAMI UNIVERSITY M-LEARNING INITIATIVE (PI: G. GANNOD, CO-PI: J. KIPER, G. PLATT, R. HOWARD, M. COOPER, VARIOUS FUNDING SOURCES INCLUDING AN AIMS GRANT, IT SERVICES, FY11 STUDENT TECH FEE GRANT, AND UNIVERSITY COMMUNICATIONS, \$70,629.) The Miami M-Learning Initiative is an effort focused on facilitating education, research, and service in the area of mobile technology for learning.

★ USING THE IPHONE AS A TARGET DEVELOPMENT PLATFORM (PI: G. GANNOD, CO-PI: J. KIPER, MIAMI FY09 STUDENT TECHNOLOGY FEE, \$25,756.) The purpose of this project is to develop course materials and modules for developing software for the iPhone OS platform. In addition, we are studying how the iPhone can be used to facilitate learning.

★ DEVELOPMENT AND DEFINITION OF THE PROGRAM AND COURSE LEVEL LEARNING OUTCOMES FOR A PROPOSED SOFTWARE ENGINEERING DEGREE PROGRAM (PI: G. GANNOD, MIAMI SMALL ASSESSMENT GRANT, \$1000.) This small assessment grant was used to fund a trip to the Rose Hulman Assessment Best Practices Symposium in 2007. The project involved assessment of the CSA 274 course using outcomes-based assessment techniques.

A PRODUCT LINE APPROACH TO THE DEVELOPMENT OF NETWORK PROCESSOR PROGRAMMING TOOLS(PI: G. GANNOD AND K. CHATHA, CEINT, 2004, \$90,147). This project involved the development of a set of programming tools using a product line approach. The research was funded by the Consortium for Embedded and Internetworking Technologies (CEINT).

ASU SOFTWARE FACTORY(PI: K. DOOLEY AND S. CORMAN, CO-PI: J. COLLOFELLO, G. GANNOD, P. WOLFE, ASU IT 301, 2002-2004, \$375,000). This project was created to develop an internal software development consulting firm managed by a software professionals but staffed with students. The purpose was to support development of software for sponsored projects. The research was funded by the ASU IT 301 initiative.

TECHNIQUES FOR THE ANALYSIS AND ASSESSMENT OF AFFORDABILITY OF SOFTWARE PRODUCT LINES(PIS: J. COLLOFELLO, G. GANNOD, D. SMITH-DANIELS, IMES, 2001-2002, \$40,896). This project involved the development of analysis techniques for determining affordability of software product lines. A primary deliverable of this project was the hosting of a workshop involving industrial participants. The research was funded by the Institute for Manufacturing and Enterprise Systems.

ENGINEERING EMBEDDED SYSTEMS(PI: J. COLLOFELLO, CO-PI: G. GANNOD, W. TSAI, CEINT, 2001-2002, \$50,000). This project involved the identification of software design patterns that assist in the development of embedded systems. The research was funded by CEINT.

1.4.3 Other Funding - Scholarships

AFRL YEAR AT THE EDGE(COORDINATOR: G. GANNOD, \$154,000). Dr. Gannod has been instrumental in securing and awarding scholarships for the AFRL Year-At-The-Edge program. The scholarships are worth \$7,000 per student. In 2011-12, 8 scholarships were awarded. In 2012-2013, 14 scholarships are available.

1.5 Research Agenda

The candidate's main areas of research are in service-oriented computing, reverse engineering, digital humanities, and mobile learning. The candidate's current research agenda for the near term is based on expanding research collaborations and moving away from single investigator projects. Computing is an important field that impacts each and every discipline in the university (surely, there are few disciplines that do not in some way depend upon the work done within computer science and software engineering). As such, the candidate has been making an effort to reach out to researchers in other disciplines. While the candidate is still performing research in core software engineering areas (including reverse engineering and service-oriented computing), much of the more recent efforts have been in interdisciplinary research. Specifically, the candidate has been recently working in the area of Digital Humanities (interdisciplinary work with L. Mandell of English). In addition, the candidate has been working towards developing a center for mobile learning in an attempt to create synergistic relationships with faculty outside of computer science and software engineering, all to promote using mobile technologies in education. Finally, the candidate has been collaborating with

faculty in Accountancy (Reffett and Eaton), and Health and Kinesiology (Parkinson and Ward on separate projects) to provide cutting and leading edge computing expertise to research in other disciplines.

2 TEACHING

The teaching philosophy of the candidate is that it is of utmost importance that course subject matter be made relevant to the student and that the student be prepared to be able to discern (e.g., critically think about) the value of what they are taught. Computer science is inherently an applied science; software engineering embodies the nature of that application by bringing to the forefront the practices that are used in the everyday activities of working professionals. The philosophy of the candidate is that student knowledge needs to be strong in the foundations and theories of computer science and that they (the students) need to be able to recognize how and where those theories can be used in practice. In the classroom, the candidate is a proponent of the use of the *inverted classroom* for instruction. Since the Spring of 2007, the candidate has used the approach to in all but one course (CSA 174). The candidate has reported on his philosophy and adaptation of the inverted classroom approach in software engineering (see papers 15 and 16 under pedagogy in Section 1.2).

The remainder of this section describes the teaching activities of the candidate. Course and curriculum development efforts are summarized in Sections 2.1 and 2.2, respectively. Student development (e.g., graduate and undergraduate advisement) is described in Section 2.3. Section 2.4 lists participation in teaching improvement and enrichment programs and conferences. Finally, Section 2.5 describes a short course that the candidate offered for a continuing education program.

2.1 Development of Courses and Curricula

Courses developed and modified at Miami University.

★ DATA ABSTRACTION AND DATA STRUCTURES, CSA 274 (FALL 2007) - This course was developed using an *inverted classroom* approach. The course used podcasting as the primary delivery mechanism for lectures, with the classroom experience focusing on active hands-on learning. The course was also heavily modified to incorporate the use of the C++ programming language. The course had previously been taught in the department using Java.

★ SERVICE ORIENTED ARCHITECTURE AND WEB SERVICES, CSA 470/570 (SPRING 2007) - This course was developed using an *inverted classroom* approach. The course used podcasting as the primary delivery mechanism for lectures, with the classroom experience focusing on active hands-on learning. The course content introduced students to a recent advance in distributed software development (e.g., web services).

★ APPLIED SOFTWARE ENGINEERING, CSA 348 (FALL 2006) - The syllabus and course outline was developed by Dr. J. Burge. However, the candidate implemented the first offering of the course at Miami, including the development of lecture slides, homework material, examples, and class project. The course content focuses on approaches for the development of software.

★ ADVANCED SOFTWARE ENGINEERING, CSA 621 - Worked with Dr. A. Sobel to revamp the syllabus for CSA 621 to account for future software engineering graduate offerings.

Courses developed and modified at Arizona State University.

SOFTWARE ARCHITECTURE, CST 494/598 (SPRING 2005) - This course was focused primarily on software architecture and safety and reliability in the design of software.

SOFTWARE ANALYSIS AND DESIGN, CSE 460/598 (FALL 1999-2003) - This course introduced the use of software architectures, architectural styles, and design patterns in to the curriculum at ASU. The course was also the primary source for learning about the use of the Unified Modeling Language (UML) in the CSE curriculum.

SOFTWARE DESIGN, CSE 564 (SPRING 1999 - SPRING 2004) - The graduate design course was overhauled by the candidate to include more rigorous methods as well as to focus on cutting edge methods. The course included coverage of model checking, theorem proving, and model-driven architecture.

SOFTWARE DEVELOPMENT FOR EMBEDDED SYSTEMS, CSE 494/598 (SPRING 2003-2004) - This course was developed as part of a grant from the NSF for a concentration track in embedded systems. Course materials that were developed for this course focused on issues for software developers, including the use of safety and reliability patterns in software.

2.2 Degree Program Development and Assessment

★ SOFTWARE ENGINEERING AT MIAMI. At Miami University, the candidate led an effort to offer an undergraduate software engineering program. The activity led to the establishment of the program with the first students entering in Fall 2009. The team has defined the program requirements based on the Software Engineering Education Knowledge Volume from ACM/IEEE. This program is the first of its kind in the state of Ohio.

EMBEDDED SYSTEMS AT ASU. At Arizona State University, the candidate was involved in the development and assessment of an Embedded Systems program. The program (part of the Computer Systems Engineering degree out of the Department of Computer Science and Engineering) was developed as part of a grant from the National Science Foundation and from support provided by the Consortium for Embedded Systems at ASU. The candidate was involved in two major assessment activities, each involving a *gap analysis* that assessed the desired program against the existing program. The assessment activities were performed prior to the creation of the program and after the program had been in place for five years. The program development and assessment activities resulted in publications describing the approach used in the gap analysis.

2.3 Student Development and Independent Study

Students Advised

This section summarizes the one-on-one instructional activities of the candidate. All students are Arizona State University students except for Cihan Kaynak, Manish Chaturvedi, Joseph Geyer, Holly Connor, Hanqing Hu, David Morell, and Kristen Bachman, all of whom are current or former Masters students at Miami (see Masters students in progress or completed). Among the list shown below are two PhD students that the candidate actively advised remotely through to the completion of their degrees. The work of one of the PhD students (Timm) has resulted in a best paper award (see conference publications in Section 1.2). The list also includes undergraduate honors thesis projects and independent study projects. The work of one of the undergraduate honors thesis students at Arizona State resulted in publications in a conference and two journals (Brodie). The work of two undergraduate students at Miami University has resulted in publications (Bachman, Connor).

Doctoral Dissertations Awarded

- ★ Henri Q. Naccache, Ph.D., Arizona State University, Dissertation title: “Graceful Degredation in Server Overload Using Adaptive Content”, Dec 2008.
- ★ John T.E. Timm, Ph.D., Arizona State University, Dissertation title: “A Model-Driven Framework for the Specification, Grounding, and Execution of Semantic Web Services”, May 2008. (Currently with IBM Research)
- Yu Chen, Ph.D., Arizona State University, Dissertation title: “A Process-Centric Framework for Software Product Line Evolution Management”, August 2006. (Currently with HP)
- Sudhakiran V. Mudiam, Ph.D., Arizona State University, Dissertation title: “An Architecture-Based Approach for Service-Oriented Software Development”, August 2003. (Currently with Motorola)

Masters Theses Awarded

- ★ Kristen Bachman, MSCS (Miami), Topic - M-Learning, August 2012 (Currently at the University of Dayton Research Institute).
- ★ David Morell, MSCS (Miami), Topic - Event Prediction using Social Media Analysis, August 2012 (Currently with Google, Mountain View CA).
- ★ Manish Chaturvedi, MSCS (Miami), Topic - Digital Humanities, December 2011 (Currently at Miami University).
- ★ Holly Connor, MSCS (Miami), Topic - Automated Synthesis of XML Encoding Tools using Product Lines and Rationale, May 2011 (Currently with Cardinal Solutions).

- ★ Hanqing Hu, MSCS (Miami), Topic - Digital Evolution using the Avida System, December May 2011 (Currently a PhD student at University of Louisville).
- ★ Joseph Geyer, MSCS (Miami), Title - "Identification of Candidate Concepts in a Learning-Based Approach to Reverse Engineering", May 2010 (Caterpillar).
- ★ Cihan Kaynak, MSCS (Miami), Topic - Reverse Engineering, August 2008 (Currently with Cerner).
- Nishant Bhajaria, MS, Topic - Broadening Participation in Computing, August 2006.
- Jon Lammers, MS, Topic - Aspect-Oriented Design, May 2006.
- Sushant Bhatia, MS, Topic - Automated Search for Web Services, Dec. 2005.
- Swaminatha Venkataramani, MS, Topic - Playback Visualization of Software Fault Trees, Dec 2004.
- John Doherty, MS, "Using Software Product Lines Approach for Course Development", August 2004.
- Sharad Mankapure, MS, "An Approach for Developing Survivable Software Systems", May 2004.
- Shilpa Murthy, MS, "Verification of Recovered Software Architectures", May 2004.
- Divya Ramasubban, MS, "Post Failure Safety Remediation of Software", Dec. 2003.
- Huimin Zhu, MS, "On-the-fly Wrapping of Web Services to Support Dynamic Integration", Dec. 2003.
- Jason Cox, MS, "Simulation as an Integral Component of the Software Architecture Design Process", December 2002.
- Mohamed Ridha, MS, "An Approach to Assessment of Software Maintenance Tools", December 2000.
- Joshua Hou, MS, "A Web-Based Software Component Library System", May 2000.
- Gupta Gogula, MS, "Framework Assessment Using Software Architecture Quality Attribute Analysis", December 1999.

Masters Projects Awarded

- ★ Casey Kelso, MS, Topic - Visualization of Data Fused from a Wide Variety of Bio and Geo Sources, December 2006.
- ★ Siddarth Goutam, MCS, Topic - Demonstration of the MS Process Engine, December, 2006.
- Renee Slattery, MCS, Topic - Software Simulation, May 2005.
- John T.E. Timm, MCS, Topic - Web Services, December 2004.
- Jonathon Thomas, MCS, "A Comparative Analysis of Jini and Microsoft .NET", Dec 2002.
- Thomas Remaklus, MCS, "An XML-based C Source to GXL Translator", May 2002.
- Michael Donnerstein, MCS, "Source Header Dependency Analysis Tools", December 2001.
- Greg Hodgdon, MCS, "PANDA: A Natural Deduction Proof Assistant", Summer 2001.
- Margaret Harris, MCS, "Software Architecture Analysis Tool" August 2001.
- Richard Garner, MCS, "Log File Analysis Language to Promela Translator", August 2001.
- Shurong Xia, MCS, "Online Store Builder", May 2001.
- Bryan Wilcox, MCS, "Building a reverse engineering parser using the JavaCC System and the Statement Class Hierarchy", May 2001.

- Gang Huang, MCS, “Building a reverse engineering system”, May 2001.
- Charles S. Bowman, MCS, “PVS to XML Translator”, May 2001.
- Aruna Chebolu, MCS, “SpecGen-II: A Java-Based Specification Analysis Tool”, May 2000.
- Sandeep Patil, MCS, “A Parser for Supporting the Analysis of Java Programs”, May 1999.
- Ravikanth Dronamraju, MCS, “A Framework for Supporting Logic Based Analysis Tools in Java”, May 1999.

BS Honors Thesis

- Raynette J. Brodie, BS Honors, Topic - Semantic Web Service Groundings, May 2005. The work by this student resulted in publications appearing in a conference and two journals.
- James Sirota, BS Honors, Topic - Religion and Artificial Intelligence, May 2005.
- Peter Neubauer, BS Honors, Topic - Orthogonal Defect Classification, May 2003. The work performed by the student was part of a student fellowship provided by the NASA Jet Propulsion Laboratory Summer Undergraduate Research Program.
- Pablo Tapia, BS Honors, Topic - Software Safety, May 2000.

Undergraduate Independent Study

- ★ Raquel Gonzalez, Summer 2013, “Today’s Dad: A Mobile Application for Supporting Parenting”, (Summer work funded by Undergraduate Summer Scholars Fellowship).
- ★ Jonathan Jekeli, Summer 2010, “A tool to support the analysis of social networks embedded in the Bloomfield and Southey Archives”, (Summer work funded by Undergraduate Summer Scholars Fellowship).
- ★ Joshua Wyse, Summer 2009, “Development of Tools to Support TEI Transformation using XSLT”, (Summer work funded by Undergraduate Summer Scholars Fellowship).
- ★ Jeffrey Rericha, Summer 2009, “Using TEI to Discover Emergent Ontologies in Literary Documents”, (Summer work funded by Undergraduate Summer Scholars Fellowship).
- ★ Brendan Barth, Spring 2009, “Development of Software for the iPhone”.
- ★ Kristen Bachman, Spring 2009, “Tools for the Digital Humanities”, work resulted in publication in conference.
- ★ Holly L. Connor, Summer, Fall 2008, “Tools for the Digital Humanities”. (Summer work funded by Undergraduate Summer Scholars Fellowship), work resulted in publication in conference.
- Mark Gallucci, Spring 2006, “Reverse Engineering of the Jake Game Engine”.
- Matthew Blake, Fall 2005, “Requirements Analysis of AirPhoto Process Management System”.
- Tina Pauley, Spring 2001, “A Digital Scanner Using the Lego Mindstorms System”.
- Koorosh Yasami, Fall 2000, “A Satellite Simulation System”.
- Judd Heckman, Fall 1999, “Investigation into Quality Attributes of Software Architecture”.
- Brent Vermilion, Spring 1999, “ASUSat Software Test Plan Development”.

2.4 Teaching Enrichment

★ ASSESSMENT OF MIAMI PLAN PRINCIPLES AD-HOC COMMITTEE, Summer 2010 - This committee is responsible for creating an assessment plan for three of the four Miami Plan Principles.

★ FACULTY LEARNING COMMUNITY (FLC): USING SMART PHONE TECHNOLOGY TO ENHANCE LEARNING, Jan – Dec 2009 - This faculty learning community is studying methods for using smart phone technology for teaching.

★ ASSESSING CRITICAL THINKING (ACT) IV, Spring 2008 - In the Spring of 2008, the candidate participated in the ACT IV program as a group leader. In addition to the project, the candidate led a group of faculty in discussion on the project.

★ ASSESSING CRITICAL THINKING (ACT) III, Spring 2007 - In the Spring of 2007, the candidate participated in the ACT III program. The candidate performed a project to develop an assignment and rubric for assessing critical thinking. The project focused on the use of critical thinking as a way of doing technology assessment and comparison.

★ NEW FACULTY TEACHING ENRICHMENT PROGRAM (NFTEP), Fall 2006 - In the Fall of 2006, the candidate participated in the NFTEP program. The program required attendance at several short seminars on college teaching as well as attendance at the 2006 Lilly Conference. The candidate performed a project as part of NFTEP to create an example and summary of the use of outcomes-based assessment. The example will be used as an exemplar for CSA as it looks at the its future accreditation activities.

2.5 Teaching in Continuing Education Programs

At Arizona State University, the candidate provided a continuing education course on two occasions (Oct. 2003 and Apr 2006) entitled “An Introduction to .NET Using C#”. The course focused on the basics of the Microsoft .NET framework and the C# language. Students participants were professional developers from local companies including Motorola, Boeing, and Intel.

3 PROFESSIONAL SERVICE

The service philosophy of the candidate is based on the desire to have a broad and vertical perspective of the academy. Specifically, the philosophy is that in order to have an impact on the university community on a whole, it is important to have participated at all levels (e.g., department level, school level, university level, global research community level, and local community level). This global perspective helps with gaining an understanding of how decisions made at each level impact both student and faculty. To this end, the candidate has been active with departmental level committee and has taken leadership roles where appropriate. At the school/divisional level, the candidate has participated in committees that have impacted overall direction (notably participation in the SEAS Strategic Planning Committee). At the university level, the candidate is serving on the Liberal Education Council, a committee responsible for maintaining excellence in the Miami’s liberal education mission, and in 2010 is serving on the search committee for selecting a new provost. At the global level, the candidate has been involved in conference activities, most recently chairing an IEEE conference in the Spring of 2009. Finally, in the local community, the candidate has been involved in many service projects (integrated with capstone courses) and is actively involved with a local church. The remainder of this section summarizes all of the candidate’s service activities.

3.1 Professional Activities and Service

Scientific and Professional Society Memberships

- *Member*, IEEE Computer Society.
- *Member*, Upsilon Pi Epsilon Computer Science Honorary Society; *Chapter President*, Michigan State University, 1994–1996. Charter Member at MSU (Candidate was involved in starting the new chapter at MSU).

3.2 Conference Activities

Conference organization activities are shown below.

- *General Chair*: ★ IEEE Intl. Conf. on Program Comprehension, 2009.

- *Proceedings Chair*: ★ IEEE/SIGSOFT Automated Software Engineering Conf., (2007), IEEE Computer Software and Applications (COMPSAC) Conf., (1999).
- *Workshop Organizer*
 - ★ Miami University Mobile Learning (M-Learning) Summit, 2010.
 - ★ Integrating Communication Skills Throughout the Curriculum in Computer Science, Engineering, and Other Technical Fields, *Frontiers in Education*, Washington DC, October 2010.
 - ★ CPATH II: Incorporating Communication Outcomes into the Computer Science Curriculum, Paul Anderson, Janet Burge, Michael Carter, Mladen Vouk, June and August, 2010
 - ★ Birds of a Feature session on Distributing Communication Skills Across the Computer Science Curriculum, Gerald Gannod, Janet Burge, and Mladen Vouk, SIGCSE 2010, Milwaukee, WI, March 2010
 - ASU Software Product Line Workshop, Gerald C. Gannod, James Collofello and Dwight Smith-Daniels, Tempe, AZ, 2002.
- *Program Committee Member*
 - ★ 2nd Workshop on Comparison and Versioning of Software Models (CVSM'09), 2009.
 - ★ Workshop on Systems Development for Service Oriented Architectures (SDSOA), 2007–2008.
 - ★ INSTCC Intl. Conf. on Software and Data Technologies (ICSOFT), 2006–2008.
 - ★ ACM Symposium on Applied Computing, Semantic Web Track, 2006–2008.
 - ★ IEEE Intl. Conf. on Program Comprehension, 2007-2008, 2010.
 - ★ IEEE Automated Software Engineering Conf., 1999 - 2005, 2007.
 - ★ IEEE EDOC Enterprise Computing Conf., 2006–2009.
 - ★ CSMR Workshop on Web Maintenance and Reengineering (WMR 2006).
 - *Other*: Workshop on Reengineering Towards Product Lines (2005), Intl. Workshop on Program Comprehension (2005), Working Conf. on Reverse Engineering (1999, 2001–2004), Computer Software and Applications (COMPSAC) Conf. (1999).
- *Expert Review Committee*: ★ IEEE Intl. Conf. on Software Engineering, (2006), IEEE Automated Software Engineering Conf., (2006).
- *Session Chair*, Intl. Conf. on Web Services (2004), Automated Software Engineering Conf. (2001), Working Conf. on Reverse Engineering, (1999, 2003).
- *Tool Demonstrations Chair*, Intl. Workshop on Program Comprehension, 2005.
- *Publicity Co-chair*, IEEE Automated Software Engineering Conf., 2000, 2001.
- *Registration Chair*, IEEE Automated Software Engineering Conf., 1999.
- *Research Demonstrations and Posters Subcommittee*, IEEE Intl. Conf. on Software Engineering, 2001.

3.3 Journal Editorship

★ The candidate is a co-editor for a special issue in the *Software Quality Journal*, due to be released in late 2010. The special issue will be for selected papers from the 2009 IEEE International Conference on Program Comprehension.

3.4 Journal Referee Service

The candidate has reviewed for the following journals (7): *IEEE Transactions on Software Engineering*, *ACM Transactions on Software Engineering and Methodology*, *Journal of Systems and Software*, *Annals of Software Engineering*, *IEE Proceedings on Software Engineering*, *Journal of Automated Software Engineering*, and the *Journal of Software and System Modeling*.

3.5 Proposal Reviewer Service

The candidate has served as a reviewer and panelist for the following agencies: National Science Foundation (2003, 2005, 2007), National Aeronautics and Space Administration (2003).

3.6 Miami University Committee Service

University Committees

★ MIAMI UNIVERSITY LIBERAL EDUCATION COUNCIL (2008–2013). This committee is responsible for oversight of the Miami liberal education program (e.g., Miami Plan). This involves review of proposals and formation of policies regarding the implementation of the Miami Plan.

★ MIAMI UNIVERSITY E-LEARNING ADVISORY COUNCIL (2012). This committee is responsible for creating a recommendation to the university community on the use of e-learning.

★ MIAMI UNIVERSITY EVALUATION OF ADMINISTRATORS COMMITTEE (2012–2013, (chair in 2013)). This committee is responsible for setting the standards for evaluating administrators around the university.

★ SEARCH COMMITTEE - ASSISTANT VICE PRESIDENT ACADEMIC AND INSTITUTIONAL SOLUTIONS (2012–present). This committee is responsible for hiring a candidate for a new position recently created in the IT division.

★ MIAMI UNIVERSITY PROVOST SEARCH, 2010. Represented SEAS on the committee responsible for hiring a new provost.

SEAS Committees

★ SCHOOL OF ENGINEERING AND APPLIED SCIENCES STRATEGIC PLANNING COMMITTEE. Committee responsible for identifying strategic directions for SEAS. Member of the subcommittee responsible for exploring SEAS multidisciplinary and interdisciplinary activities (AY 07-08).

Department Committees

★ UNDERGRADUATE COMMITTEE, 2012–present.

★ CHAIR, FACULTY SEARCH COMMITTEE, 2011–2012. Chaired the search committee for the hiring of a new assistant professor. Over 150 applications were received and the search ended in a successful hire.

★ CHAIR, TEACHING IMPROVEMENT AND ASSESSMENT COMMITTEE, 2007–2009. Committee is charged with institutionalizing the use of learning outcomes as the primary means for describing and assessing teaching. Organized a workshop in the department for disseminating information about outcomes-based assessment.

★ ADHOC COMMITTEE ON SOFTWARE ENGINEERING, 2006–2009 - Worked on the effort to define a software engineering degree program at Miami. Has resulted in the development and offer of the Software Engineering degree program at Miami.

★ TEACHING IMPROVEMENT AND ASSESSMENT COMMITTEE, 2006–2007, 2009–2010 - Headed the effort to move towards outcomes-based assessment for the CSA department by providing the initial details and examples for CSA 348; Developed overview report on Outcomes-Based Assessment for department; Worked with rest of committee to institutionalize the assessment activities for the unit.

★ GRADUATE COMMITTEE, 2006–2007 - Headed the effort to get the graduate software engineering offerings in CSA stabilized and expanded.

3.7 Arizona State University Committee Service

The candidate served on the following committees at the departmental and divisional level at ASU: *Faculty Recruiting* (1999–2001), *Graduate Initial Advisor* (1999–2001), *Software Engineering Faculty Search* (1998–99), *Graduate Programs* (1998–2001), *Graduate Admissions* (1998–1999, 2001, 2004–2005), *Undergraduate Admissions* (2002–2003), *Curriculum*, Consortium for Embedded and Internetworking Technologies (2001), *Undergraduate Programs, Chair* (2003–2004), *Computing Resources* (2003–2004) and *Graduate Council* (2004–2005).

3.8 Service to Students

★ FACULTY ADVISOR TO CAMPUS CRUSADE FOR CHRIST AT MIAMI. (2008–Present).

FACULTY ADVISOR TO ACM STUDENT CHAPTER AT ASU. From 2000 – 2004 the candidate was the faculty advisor to the ACM student chapter at ASU. During that time, the candidate advised students regarding the revitalization of the group and the introduction of new programs aimed to serve the community including the creation of “TEK: Technology Education for Kids”.

3.9 Service to the Community

In the area of professional service to the community, the candidate acted as a consultant on a number of occasions, including to FMI Communications (in the area of mobile computing), and the Direct Alliance Corporation in Tempe, AZ on an educational program on Software Product Lines in their efforts to evaluate whether to adopt the approach in 2003. In addition, the candidate was (in ★ 2007) an expert advisor for a intellectual property case in involving software (details withheld for legal reasons). In ★ 2008, Dr. Gannod consulted on a reverse engineering project with Dow Chemical through PRIME Integration, LLC. In the area of personal service to the community, the candidate is actively involved with a local church (Oxford Bible Fellowship), with past activities including volunteer work with Vacation Bible School (VBS). Dr. Gannod regularly plays guitar with the OBF worship team, and leads a small group adult bible study.