

ADRIENNE DECKER
ASSISTANT PROFESSOR
DEPARTMENT OF ENGINEERING EDUCATION

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EDUCATION

Ph.D., Computer Science and Engineering, University at Buffalo (SUNY) **June 2007**
How Students Measure Up: An Assessment Instrument for Introductory Computer Science
Advisor: William J. Rapaport

M.S., Computer Science and Engineering, University at Buffalo (SUNY) **June 2001**
Master's Project: *ASPAS: A Solution for Providing Application Services*
Advisor: Bina Ramamurthy

B.S., Computer Science, *Summa Cum Laude*, University at Buffalo (SUNY) **February
2001**

PROFESSIONAL EXPERIENCE

Assistant Professor, Department of Engineering Education 1/2019 – present
University at Buffalo, Buffalo, NY

Development Committee Higher Ed co-chair: 7/2018 – present 7/2015 – present
(**Member:** 7/2015 – 6/2018), **AP Computer Science A**
The College Board, New York, NY
Creation of questions, review and approval of the content for the annual AP
Computer Science A exam.

Standards Setting Panelist: AP Computer Science A 5/2020-6/2020
The College Board, New York, NY
Panel that determined new cut scores for 2020 exam due to exam changes.

Articulation Group: AP Computer Science A 11/2015-12/2017
The College Board, New York, NY
Worked on articulation and framework curriculum documents for the AP
Computer Science A Course and Exam Description (CED) published 2019

Exam Leader: 2020 exam reading	6/2011 – 6/2020
Question Leader: 2014, 2015, 2016, 2017, 2018 exam readings	
Table Leader: 2019 exam reading; Reader: 2011, 2012, 2013 exam readings	
AP Computer Science A Exam	
Educational Testing Services, Princeton, NJ	
Associate Professor, School of Interactive Games and Media	7/2017 – 1/2019
Rochester Institute of Technology, Rochester, NY	
Eugene M. Fram Faculty Fellow in Applied Critical Thinking, Office of the Provost	7/2017 – 1/2019
Rochester Institute of Technology, Rochester, NY	
Assist and support the chair of ACT in university-level initiatives to promote critical thinking	
Faculty Affiliate, RIT MAGIC Center	9/2013 – 1/2019
Rochester Institute of Technology, Rochester, NY	
Assistant Professor, School of Interactive Games and Media	9/2011 – 6/2017
Rochester Institute of Technology, Rochester, NY	
Question Writer, AP Computer Science Principles	6/2014– 11/2014
Educational Testing Services, Princeton, NJ	
Teaching Assistant Professor, Department of Computer Science and Engineering	8/2007 – 8/2011
University at Buffalo, Buffalo, NY	
Lecturer, Department of Computer Science and Engineering	8/2002 – 7/2007
University at Buffalo, Buffalo, NY	
Instructor, Department of Computer Science and Engineering	5/2001 – 7/2002
University at Buffalo, Buffalo, NY	
Instructor, Department of Mathematics/Physics/ Computer & Information Sciences	8/2001– 12/2001
Niagara County Community College, Sanborn, NY	

AWARDS AND HONORS

Senior Member, Association of Computing Machinery (ACM), 2016

As one of ACM's prestigious Advanced Member Grades, ACM Senior Member status recognizes the top 25% of ACM Professional Members for their demonstrated excellence in the computing field.

Wall of Fame Inductee, John F. Kennedy High School (Cheektowaga, NY), March 2013

Milton Plesur Award for Excellence in Teaching, University at Buffalo, May 2007

Best Paper, When Objects Collide: Abstractions over Common Physics Problems for Capstone Projects in CS1,
Twenty-first Annual CCSC Eastern Conference, October 2005

Best Paper, A Tale of Two Paradigms, Nineteenth Annual CCSC Eastern Conference, October 2003

GRANTS AND CONTRACTS

Summary of Research Funding:

Funding Category	Total	Candidate's Share
External Sources – UB	\$1,521,879	\$1,040,221
Internal Sources – UB	\$0	\$0
External Sources – RIT	\$3,358,063	\$134,133
Internal Sources – RIT	\$23,185	\$23,185
Total Funded Research	\$4,903,127	\$1,197,539

CURRENT FUNDING

1. *Collaborative Research: Developing and Assessing Subgoal Labels for Imperative Programming to Improve Student Learning Outcomes*, PI: Briana Morrison, University of Nebraska Omaha, Co-PIs: Adrienne Decker, Lauren Margulieux, 8/2017-7/2020, National Science Foundation, NSF IUSE Grant Nos. 1712231, 171205, 1927906, \$299,927 (11% share - \$33,136)

Creation of educational materials around the use of subgoal labels in introductory classrooms. Pilot study and larger scale roll-out of materials planned.

Additional External Collaborators: Elizabeth Johnson, Xavier University (subcontract)

2. *Collaborative Research: Establishing and Propagating a Model for Evaluating the Long Term Impact of Pre-College Computing Activities*, PI: Adrienne Decker, Co-PI: Monica McGill, Knox College, 9/2016-8/2021, National Science Foundation, NSF IUSE Phase 2 Grant Nos: 1625005, 1625335, 1757402, 1933671, \$1,115,137 (86% share - \$965,085)

Identification and analysis of past and current pre-college computing activities and their impact on participants followed by creation and implementation of a formal process for collecting data related to such activities.

Funded Students (Graduates): Nathaniel Blair (9/2017-5/2018)

(Undergraduates): Ma'kiah Holliday (5/2017-8/2017), Sean Mackay (5/2019-8/2020)

PENDING FUNDING

1. *Twitter Follower/Friend Assessment Tool (TWIFFA)*, PI: Guy Howard, IntelliGenesis LLC, 6/2020-12/2020, Department of Defense, \$140,000 (30% share - \$42,175)

COMPLETED FUNDING

1. *Forensic Models of Cyberspace Behavior*, PI: Guy Howard, IntelliGenesis LLC, 6/2019-12-2019, Department of the Navy, Navy STTR 2019.A - Topic N19A-T021, \$139,951 (30% share - \$42,000).

This project is an effort between the IntelliGenesis and the University of Buffalo to respond to a STTR from the Office of Naval Research that models Advanced Persistent Threat (APT) groups and their Tactics, Techniques, and Procedures (TTPs) to help predict the next action for an APT of interest.

Funded Students (Undergraduates):

Joey Dubill (6/2019-12/2019), Jordan Chau (6/2019-9/2019), Kevin Cheung (6/2019-9/2019), Kevin Lin (9/2019-12/2019), Md Hasan (9/2019-12/2019)

2. *Using a Researcher-Practitioner Partnership Approach to Develop a Shared Evaluation and Research Agenda for Computer Science for All*, PI: Alan Peterfreund, SageFox Consulting, co-PIs: Rebecca Zarch [SageFox Consulting], Leigh Ann DeLyser [CSNYC], 9/2017-12/2018, National Science Foundation, NSF ITEST Grant No: 1745199, \$1,414,165 (1% share - \$20,684)

Development and cultivation of a community of practice for the recent awardees from the NSF RPP awards. Provide support to group to facilitate interactions and shared data amongst awardees.

3. *Charting a Course Towards Full Professor*, PI: Adrienne Decker, 6/2016-12/2017, AdvanceRIT Connect Grant, \$2325 (100% share)

Mentoring, workshop and conference attendance in an effort to create a work plan towards promotion to full professor.

4. *Impacts of Underrepresentation in Games on Members of the Underrepresented Group*, PI: Adrienne Decker, 1/2016-12/2016, RIT GCCIS Dean's Seed Funding, \$5860 (100% share)

Investigations into Women of Color (WOC) and other underrepresented groups in games and the impact the lack of representation has on their place in gamer culture.

Funded Students (Undergraduates): Ma'kiah Holliday (1/2016-12/2016), Ila Vaughan (1/2016-5/2016)

5. *Transmedia Augmented Reality Game for Essential Transfer in Science (TARGETS)*, PI: Victoria VanVoorhis, Second Avenue Software, 10/2013-11/2013, DoEd SBIR Phase 1, \$150,000 (7% share - \$11,746)

Creation and implementation of additional in-school study for TARGETS Phase 1 award.

6. *Transmedia Augmented Reality Game for Essential Transfer in Science (TARGETS)*, PI: Victoria Van Voorhis, Second Avenue Software, 6/2013-11/2013, DoEd SBIR Phase 1, \$150,000 (7% share - \$11,703)

Creation and implementation of in-school study for TARGETS Phase 1 award including field work and in-classroom observations.

7. *Martha Madison's Marvelous Machines*, PI: Victoria Van Voorhis, Second Avenue Software, 8/2012-7/2014, NSF SBIR Phase 2, \$1,008,000 (7% share - \$70,000)
Assessment of educational outcomes for web-based STEM-focused game.
8. *Creating a Pedagogic Environment for Introductory Game Design and Development Students*, PI: Adrienne Decker, 1/2012-8/2012, RIT GCCIS Dean's Seed Funding, \$15,000 (100% share)
Creation of a pedagogic environment for introductory game design students.
9. *Preserving Virtual Worlds II: Methods for Evaluating and Preserving Significant Properties of Educational Games*, PI: Jerome McDonough (University of Illinois Urbana-Champaign, 9/2011-12/2012, Insitute of Museum and Library Services, \$785,898 (2.5% share - \$20,000)
Multi-institutional collaboration focusing on preservation issues for digital educational games.

PUBLICATIONS (*Bold indicates lead/corresponding author for publications, * denotes graduate student, + denotes undergraduate student*)

Google Scholar: <https://scholar.google.com/citations?user=JjLxdewAAAAJ&hl=en>

ORCID: <https://orcid.org/0000-0002-0822-4813>

BOOKS

4. Alphonse C. and Decker, A. (2015) *An Introduction to Object-Oriented Programming and Problem Solving*, Pearson Learning Solutions. New York, NY. ISBN-13 9781323230749
http://www.pearsoncustom.com/ny/ub_cse115/
3. Alphonse C. and Decker A. *Class Notes for CSE 115*, Self-published for use in course, 2006-2014.
2. **Decker A.** *Instructor's Manual with Solutions for Walter Savitch's Absolute Java 2nd Edition*, Addison-Wesley, Electronic Supplement, 2005.
1. **Decker A.** *Instructor's Manual with Solutions for Walter Savitch's Absolute Java*, Addison-Wesley, Electronic Supplement, 2004.

REFEREED BOOK CHAPTERS

3. Phelps, A., Egert, C. A., and Decker, A. (2019) "Splattershump: A Game of Art & Motion" In K. Schrier (Ed.), *Learning, Education & Games Volume 3: 100 Games to Use in the Classroom & Beyond*. ETC Press.
2. **Decker, A.**, Phelps, A., and Egert, C. A. (2017) "Trial by a Many-Colored Flame: A Multi-Disciplinary, Community-Centric Approach to Digital Media and Computing Education" In Fee, S., Holland-Minkley, A. and Lombardi T. (Eds.), *New Directions for Computing Education: Embedding Computing Across Disciplines*. Springer.

1. McGill, M.M., Decker, A. and Settle, A. (2014) “A Framework for Addressing Gender Imbalance in the Game Industry through Outreach” In Prescott, J. and McGurran, J. (Eds.), *Gender Considerations and Influence in the Digital Media and Gaming Industry*. IGI Global.

REFEREED JOURNAL ARTICLES

10. Margulieux, L.E., Morrison, B.B., and Decker. A. (2020) “Reducing Withdrawal and Failure Rates in Introductory Programming with Subgoal Labeled Worked Examples”, *International Journal of STEM Education*, Accepted – in press.
9. **Decker, A.**, Egert, C., Cascioli, E. (2020) “Cohorting Incoming Students in a CS1 Course: Experiences and Reflections from the First Year of Implementation”, *Journal of Computing Sciences in Colleges*, Accepted – in press.
8. Morrison, B. B., Margulieux, L. E. & Decker, A. (2020) “The curious case of loops”, *Computer Science Education*. 30, 28 pages, DOI: 10.1080/08993408.2019.1707544
7. **Decker. A.**, and McGill, M.M., (2019) “A Systematic Review Exploring the Differences in Reported Data for Pre-College Educational Activities for Computer Science, Engineering, and other STEM Discipline”, *Educational Sciences*. 9(2), 69; <https://doi.org/10.3390/educsci9020069>
6. Margulieux, L., Ayer, T., and Decker. A. (2019) “Review of Measurements Used in Computing Education Research and Suggestions for Increasing Standardization”, *Computer Science Education*. 29:1, 49-78, DOI: 10.1080/08993408.2018.1562145. (acceptance rate: 16%)
5. McGill, M.M., Decker, A., and Settle, A. (2016) “Undergraduate students’ perceptions of the impact of pre-college computing activities on choices of major”, *ACM Transactions on Computing Education*. 16:4, Article 15, 33 pages. (Cited by: 24)
4. **Decker, A.** and Simkins, D. (2013) “You Have Died of Dysentery: A First Attempt at Navigating a Course in Educational Games”, *Journal of Interactive Humanities*, Volume 1, Issue 1, Article 1. (<http://scholarworks.rit.edu/jih/vol1/iss1/1>)
3. McGill, M.M., Settle, A. and Decker, A. (2013) “Demographics of Undergraduates Studying Games in the United States: A Comparison of Computer Science Students and the General Population”, *Computer Science Education*, 23:2, pp. 158-185.
2. **Decker, A.**, Haydanek, S.+ and Egert, C. (2005) “When Objects Collide: Abstractions over Common Physics Problems for Capstone Projects in CS1”, *Journal of Computing Sciences in Colleges*, 21(2), pp. 12-18.
1. **Decker, A.** (2003) “A Tale of Two Paradigms”, *The Journal of Computing Sciences in Colleges*, 19(2), pp. 238-246. (cited by: 19)

REFEREED CONFERENCE PAPERS (*Underline indicates presenter*)

Note on Conference Acceptance Rates:

Computer Science Conferences: Acceptance rates for ACM conferences range between 20-35% for papers. Papers in ACM proceedings are considered **journal equivalent publications in the field.**

Engineering Education Conferences: The “Submit-to-Publish” acceptance rate for ASEE and FIE is around 50% i.e. of the initial N number of abstracts submitted, 50% are accepted as full papers after two rounds of review of full papers. The exact acceptance rate is not always published.

36. McGill, M., Decker, A. (2020) “Tools, Languages, and Environments Used in Primary and Secondary Computing Education”, *Proceedings of the 2020 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE '20)*, ACM, June 17-19, 2020. Trondheim, Norway. (in press- acceptance rate: 28%)
35. McGill, M., Decker, A. (2020) “A Gap Analysis of Statistical Data Reporting in K-12 Computing Education Research: Recommendations for Improvement”, *Proceedings of the 51st SIGCSE Technical Symposium of Computer Science Education*, ACM, March 11-14, 2020. Portland, OR, USA, pp. 591-597. (acceptance rate: 31%)
34. Upadhyaya, B.*, McGill, M.M., Decker, A. (2020) “A Longitudinal Analysis of K-12 Computing Education Research in the United States: Implications and Recommendations for Change”, *Proceedings of the 51st SIGCSE Technical Symposium of Computer Science Education*, ACM, March 11-14, 2020. Portland, OR, USA, pp. 605-611. (acceptance rate: 31%)
35. Maxim, B.R., Decker, A., Yackley, J.J.* (2019) “Student Engagement in Active Learning Software Engineering Courses”, *Proceedings of the 2019 Frontiers in Education Conference*, October 16-19, 2019, Cincinnati, OH, USA, 5 pages.
32. Decker, A., Margulieux, L.E., Morrison, B.B. (2019) “Using the SOLO Taxonomy to Understand Subgoal Labels Effect on Problem Solving Processes in CS1”, *Proceedings of the fifteenth annual International Conference on International Computing Education Research (ICER '19)*, ACM, August 12-14, 2019, Toronto, ONT, Canada, pp. 209-217. (acceptance rate: 20%)
31. Margulieux, L.E., Morrison, B.B., Decker, A. (2019) “Design and Pilot Testing of Subgoal Labeled Worked Examples for Five Core Concepts in CS1”, *Proceedings of the 2019 ACM Conference on Innovation and Technology in Computer Science Education (ITiCSE '19)*. ACM, July 15-17, 2019, Aberdeen, Scotland, UK, 548-554. (acceptance rate: 27%)
30. Decker, A., McGill, M. (2019) “A Topical Review of Evaluation Instruments for Computing Education”, *Proceedings of the 50th SIGCSE Technical Symposium of Computer Science Education*, ACM, February 27-March 2, 2019, Minneapolis, MN, 558-564. (acceptance rate: 32%)
29. McGill, M., Decker, A., Haynie, K., and McKlin, T. (2019) “A Gap Analysis of Noncognitive Constructs in Evaluation Instruments Designed for Computing Education”, *Proceedings of the 50th SIGCSE Technical Symposium of Computer Science Education*, ACM, February 27-March 2, 2019, Minneapolis, MN, 706-712. (acceptance rate: 32%)

28. **Decker, A.**, Egert, C., and Phelps, A. (2018) “Learning to Create or Creating to Learn”, *Proceedings of Meaningful Play 2018*, October 11-13, 2018, East Lansing, MI (<http://press.etc.cmu.edu/index.php/product/proceedings-of-meaningful-play-2018/>)
27. **Yackley, J.**~~Error! Bookmark not defined.~~, Maxim, B., Brunvand, S., and Decker, A. (2018) “Active Learning and Gamification in Game Design Courses”, *Proceedings of Meaningful Play 2018*, October 11-13, 2018, East Lansing, MI (<http://press.etc.cmu.edu/index.php/product/proceedings-of-meaningful-play-2018/>)
26. **Decker, A.**, Schneider, J. and Margulieux, L. (2018) “How Engineering and Computing Students Demonstrate Critical Thinking During Required Co-op Work Experiences”, *Proceedings of the 2018 Frontiers in Education Conference*, October 3-6, 2018, San Jose, CA, 8 pages.
25. **McGill, M.**, and Decker, A. (2018) “Defining Requirements for a Repository to Meet the Needs of K-12 Computer Science Educators, Researchers, and Evaluators”, *Proceedings of the 2018 Frontiers in Education Conference*, October 3-6, 2018, San Jose, CA, 9 pages.
24. **McGill, M.**, Decker, A., and Abbott, Z.⁺ (2018) “Improving Research and Experience Reports of Pre-College Computing Activities: A Gap Analysis”, *Proceedings of the 49th SIGCSE Technical Symposium of Computer Science Education*, ACM, February 21-24, 2018, Baltimore, MD, pp. 964-969. (acceptance rate: 35% - cited by 10)
23. **Maxim, B.**, Decker, A., and Brunvand, S. (2017) “Use of Role-Play and Gamification in a Software Project Course”, *Proceedings of the 2017 Frontiers in Education Conference*, October 28-31, 2017, Indianapolis, IN, 5 pages.
22. **Decker, A.**, and McGill, M. (2017) “Pre-College Computing Outreach Research: Towards Improving the Practice”, *Proceedings of the 48th SIGCSE Technical Symposium of Computer Science Education*, ACM, March 8-11, 2017, Seattle, WA, pp. 153-158. (acceptance rate: 30% - cited by: 13)
21. **Decker, A.**, and Simkins, D. (2016) “Uncovering Difficulties in Learning for the Intermediate Programmer”, *Proceedings of the 2016 Frontiers in Education Conference*, October 12-15, 2016, Erie, PA, 9 pages.
20. Simkins, D. and **Decker, A.** (2016) “Examining the Intermediate Programmers Understanding of the Learning Process”, *Proceedings of the 2016 Frontiers in Education Conference*, October 12-15, 2016, Erie, PA, 4 pages.
19. **Decker, A.**, and Simkins, D. (2016) “Leveraging Role Play to Explore Software and Game Development Process”, *Proceedings of the 2016 Frontiers in Education Conference*, October 12-15, 2016, Erie, PA, 5 pages.
18. **Decker, A.**, Egert, C.A., and Phelps, A. (2016) “Splat! er, Shmup? A Postmortem on a Capstone Production Experience”, *Proceedings of the 2016 Frontiers in Education Conference*, October 12-15, 2016, Erie, PA, 9 pages.

17. Morrison, B.B., Decker, A., and Margulieux, L.E. (2016) "Learning Loops: A Replication Study Illuminates Impact of HS Courses" *Proceedings of the twelfth annual International Conference on International Computing Education Research (ICER '16)*, ACM, September 9-11, 2016, Melbourne, Australia, pp. 221-230. (acceptance rate: 25% - cited by: 12)
16. Smith, R.* and Decker, A. (2016) "Understanding the Impact of QPOC Representation in Video Games", *Proceedings of Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*, August 12-13, 2016, Atlanta, GA, 9 pages.
15. Decker A., McGill, M.M., and Settle, A. (2016) "Towards a Common Framework for Evaluating Computing Outreach Activities", *Proceedings of the 47th SIGCSE Technical Symposium of Computer Science Education*, ACM, March 2-5, 2016, Memphis, TN, pp. 627-632. (acceptance rate: 35% - cited by: 25)
14. Decker, A., Eiselt, K., and Voll, K. (2015) "Understanding and Improving the Culture of Hackathons: Think Global Hack Local", *Proceedings of the 2015 Frontiers in Education Conference*, October 21-24, 2015, El Paso, TX, pp. 1138-1145. (cited by: 32)
13. Decker, A., and Egert, C. (2015) "Is this thing on? Determining Comfort Level with Communication Skills in a Technical Discipline", *Proceedings of the 2015 Frontiers in Education Conference*, October 21-24, 2015, El Paso, TX, pp. 2326-2334.
12. McGill, M.M., Decker, A., and Settle, A. (2015) "Does Outreach Impact Choices of Major for Underrepresented Undergraduate Students?" *Proceedings of the eleventh annual International Conference on International Computing Education Research (ICER '15)*, ACM, August 9-13, 2015, Omaha, NE, pp. 71-80. (acceptance rate: 26% - cited by: 19)
11. Decker, A., Egert, C., and Jacobs, S. (2014) "Throwing Out the First Pitch", *Proceedings of the 2014 Frontiers in Education Conference*, October 22-25, 2014, Madrid, Spain, pp. 202-209.
10. Simkins, D., Decker, A., Egert, C., Snyder, A., and VanVoorhis, V. (2014) "Martha Madison: Marvelous Machines: Exploring Simple Machines in an Open-Ended, Collaborative Sandbox" *Proceedings of the 2014 Frontiers in Education Conference*, October 22-25, 2014, Madrid, Spain, pp. 275-281.
9. McGill, M.M., Settle, A. and Decker, A. (2013) "Demographics of Undergraduate Students in Game Degree Programs in the United States and United Kingdom", *Proceedings of the 14th Annual Conference on Information Technology Education (SIGITE 2013)*, ACM, October 10-12, 2013, Orlando, FL, pp. 43-50.
8. Settle, A., McGill, M.M., and Decker, A. (2013) "Diversity in the Game Industry: Is Outreach the Solution?" *Proceedings of the 14th Annual Conference on Information Technology Education (SIGITE 2013)*, ACM, October 10-12, 2013, Orlando, FL, pp. 171-176.
7. Decker A. and Lawley, E.L. (2013) "Life's a Game and the Game of Life: How Making a Game Out of It Can Change Student Behavior", *Proceedings of the 44th SIGCSE Technical Symposium of Computer Science Education*, ACM, March 6-9, 2013, Denver, CO, pp. 233-237. (cited by: 63)

6. **Decker, A.**, Egert, C., Phelps, A. and McDonough, J., (2012) “Technical Properties of Play: A Technical Analysis of Significant Properties for Video Game Preservation”, *Proceedings from the 2012 IEEE International Games Innovation Conference*, Rochester, NY, pp. 56-59.
5. **Simkins, D.**, Egert, C. and Decker, A. (2012) “Evaluating Martha Madison: Developing Analytical Tools for Gauging the Breadth of Learning Facilitated by STEM Games”, *Proceedings from the 2012 IEEE International Games Innovation Conference*, Rochester, NY, pp. 137-140.
4. **Alphonse, C.**, **Caspersen M.** and **Decker A.** (2007) “Killer ‘Killer Examples’ for Design Patterns”, *Proceedings of the 38th SIGCSE Technical Symposium on Computer Science Education*, ACM, Covington, KY. pp. 228 – 232. (cited by: 14)
3. **Decker A.**, Egert C. and Ventura, P. (2006) “Through the Looking Glass: Reflections on Using Undergraduate Teaching Assistants in CS1”, *Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education*, ACM, Houston, TX. pp. 46 - 50. (acceptance rate: 35% - cited by: 25)
2. Ventura, P., Egert, C. and **Decker A.** (2004) “Ancestor Worship in CS1: Reexamining the Introduction of Arrays”, *2004 OOPSLA Educator’s Symposium*, ACM, Vancouver, BC, pp. 68 - 72. (cited by: 12)
1. **Decker, A.** and Ventura, P. (2004) “We Claim this Class for Computer Science: A Non-Mathematician’s Discrete Structures Course”, *Proceedings of the SIGCSE Technical Symposium on Computer Science Education*, ACM, Norfolk, VA, pp. 442 – 446. (acceptance rate: 28% - cited by: 12)

Submitted and under review:

McGill, M., Decker, A. (2020) “Tools, Languages, and Environments Used in Primary and Secondary Computing Education”, *Proceedings of the fifteenth annual International Conference on International Computing Education Research (ICER '20)*, ACM, August, 2020. Dunedin, New Zealand.

McGill, M., Decker, A. (2020) “Designing and Developing a Resource Center for Primary and Secondary Computing Education Researchers”, *Proceedings of the 2020 Frontiers in Education Conference*, October, 2020, Uppsala, Sweden.

Mackay, S.⁺, Decker, A. (2020) “Updating our Understanding of the Impact of Pre-College Computing Experiences on University Students”, *Proceedings of the 2020 Frontiers in Education Conference*, October, 2020, Uppsala, Sweden.

EDITED CONFERENCE PROCEEDINGS

3. Decker, A., Eiselt, K., Payton, J., Barnes, T., and Thiruvathukal, G.K. (Eds.) (2016) *Proceedings of the 2016 Research on Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*. IEEE, New York, NY, USA.
2. Decker, A., Eiselt, K., Alphonse, C., and Tims, J. (Eds.) (2015) *Proceedings of the 46th ACM Technical Symposium on Computer Science Education*. ACM, New York, NY, USA.
1. Dougherty, J.D., Nagel, K., Decker, A. and Eiselt, K. (Eds.) (2014) *Proceedings of the 45th ACM Technical Symposium on Computer Science Education*. ACM, New York, NY, USA.

INVITED ARTICLES

13. **Decker A.** (2019) "SIGCSE Board Initiatives" *SIGCSE Bulletin*. 51:4, 2-3. DOI: <https://doi.org/10.1145/3371394.3371395>
12. **Decker A.** (2019) "SIGCSE 2018 Travel Grant Program Awards" *SIGCSE Bulletin*. 51:2, 12-13. DOI: <https://doi.org/10.1145/3329103.3329111>
11. **Decker A.** (2019) "SIGCSE Top Ten Symposium Papers of All Time Award Winners" *SIGCSE Bulletin*. 51:2, 14-15. DOI: <https://doi.org/10.1145/3329103.3329112>
10. **Decker A.,** Weiss, M.A., Sheard, J. (2019) "Announcing the SIGCSE Test of Time Award" *SIGCSE Bulletin*. 51:2, 17. DOI: <https://doi.org/10.1145/3329103.3329115>
9. **Decker A.,** Weiss, M.A. (2019) "SIGCSE Top Ten Symposium Papers of All Time Award" *SIGCSE Bulletin*. 51:1, 9. DOI: <https://doi.org/10.1145/3310216.3310221>
8. **Decker A.** (2019) "Open Access to Past SIGCSE Proceedings" *SIGCSE Bulletin*. 51:1, 10. DOI: <https://doi.org/10.1145/3310216.3310223>
7. **Decker A.,** Eiselt, K., Alphonse, C. (2018) "Help us Celebrate 50 SIGCSE Technical Symposiums" *SIGCSE Bulletin*. 50:3, 2. DOI: <https://doi.org/10.1145/3243071.3243072>
6. **Decker A.,** (2018) "2018 SIGCSE Travel Grants" *SIGCSE Bulletin*. 50:3, 11. DOI: <https://doi.org/10.1145/3243071.3243078>
5. **Decker A.,** (2018) "2018 SIGCSE Travel Grant Program Awards" *SIGCSE Bulletin*. 50:1, 6-8. DOI: <https://doi.org/10.1145/3183559.3183562>
4. **Decker A.,** (2017) "2017 SIGCSE Travel Grants" *SIGCSE Bulletin*. 49:4, 7. DOI: <https://doi.org/10.1145/3157823.3157827>
3. **Decker, A.,** Phelps, A. and Egert, C.A. (2017) "Disappearing Happy Little Sheep" *Educational Technology*. 57:2, pp. 50-54.

2. **Decker, A.** and Eiselt, K. (2015) “SIGCSE Conference Report” *SIGCSE Bulletin*. 47:3, 2.
DOI=<http://dx.doi.org/10.1145/2822363.2822364>
1. **Decker, A.** and Eiselt K. (2015) “SIGCSE Symposium Preview” *SIGCSE Bulletin*. 47:1, 4-5
DOI=<http://dx.doi.org/10.1145/2728793.2728803>

OTHER PUBLICATIONS

2. Cigas, J., Czajka, S., Decker, A., Martin, R.G., Coutts, R., Furman, C., McDonough, D., Milverton, A., Spaulding, E., Thurber, A. “AP Computer Science A Course and Exam Description”
<https://apcentral.collegeboard.org/pdf/ap-computer-science-a-course-and-exam-description.pdf>
1. **Decker, A.** “How Students Measure Up: An Assessment Instrument for Introductory Computer Science.” Doctoral Dissertation, UMI AAT 3261966, DAI-A 68(5) [Nov 2007], Buffalo, NY, June 2007. (cited by: 15)

PRESENTATIONS (*Bold indicates lead/corresponding author for presentations, * denotes graduate student, + denotes undergraduate student*)

INVITED TALKS/COLLOQUIA

19. *Improving Performance in Introductory Programming Courses*, SIGCSE symposium Keynote at ACM Turing Conference, Hefei, Anhui, China, May 22-24, 2020 [postponed].
18. *Reflections on Assessment, Impact, and Contribution in Computing Education*, CSE Up Beat Presentation Series, University at Buffalo, Buffalo, New York, November 18, 2019.
17. *Creating Learning Creatively*, Colloquium, Baldwin Wallace University, Berea, Ohio, November 1, 2018.
16. *Creating Learning Creatively*, Colloquium, Kettering University, Flint, Michigan, October 10, 2018.
15. *Computing Students: How do we get them? How do we keep them?*, RIT’s STEM Education Research Group’s Interdisciplinary STEM Education Research Forum, Rochester, NY, April 24, 2018.
14. *Gaming Education*, RIT MAGIC Center’s Professional Development Day at McQuaid Jesuit, Rochester, NY, April 23, 2018.
13. *Game Design and Development*, A teleconference presentation to Heywood Avenue School’s Engineering Week, Orange, New Jersey, March 1, 2018.
12. *Students: How do we get them? How do we keep them?*, Colloquium, Mt. Saint Mary’s University, Frederick, Maryland, February 20, 2018.
11. *What is your passion?*, Presentation, Winter Springs High School, Winter Springs, Florida, October 23, 2017.

10. *An Introduction to Computing*, A presentation to S. Bishop's 4th grade class, Alden Intermediate School, Alden, New York, April 18, 2017.
9. *What is your passion?*, Presentation, Meade High School, Fort Meade, Maryland, February 24, 2017.
8. *What is your passion?*, Presentation, Riverside Brookfield High School, Riverside, Illinois, January 16, 2017.
7. *So you think you know about the games industry*, Colloquium, Hiram College, Hiram, Ohio, November 8, 2016.
6. *Computing education crossroads (or six-degrees of separation)*, IGM Colloquium series, Rochester Institute of Technology, Rochester, New York, November 3, 2016.
5. *Computing Education Crossroads: Finding my passion where my journey started*, CSE Colloquium series, University at Buffalo, Buffalo, New York, October 27, 2016.
4. *What is your passion?*, Presentation, School for the Talented and Gifted, Dallas, Texas, September 13, 2016.
3. *What is your passion?*, Presentation, Weslaco High School, Weslaco, Texas, September 12, 2016.
2. *How Chance Meetings Change Your Life*, IGM Colloquium series, Rochester Institute of Technology, Rochester, New York, October 24, 2014.
1. *Teaching Java to Novices*, Guest Speaker, SUNY Fredonia First Annual High School Programming Competition, Fredonia, NY, December 19, 2000.

REFEREED PRESENTATIONS

These presentations are submitted for review and juried in a manner similar to conference papers. Acceptance rates vary by venue and are often not published.

9. **Decker, A.**, McGill, M.M. *Understanding the Landscape of Diversity Efforts in K-12 Computing Using csedresearch.org*, Presentation to be presented at 2020 The Collaborative Network for Engineering and Computing Diversity (CoNECD), April 2020 – postponed to January 2021.
8. McGill, Decker, A., Torbey, R., Vivian, R. *An Introduction to Conducting Quantitative K-12 Computing Education Research*. Special Session presented at SIGCSE 2020, March 2020.
7. McGill, M.M., Decker, A. 2019. *csedresearch.org: Resources for Primary and Secondary Computer Science Education Research*. Tips, Techniques and Courseware Talk presented at ITiCSE 2019, July 16, 2019.

6. **Decker, A.**, McGill, M.M. *csedresearch.org: Resources for K-12 Computing Education*, NSF STEM for All Video Showcase Presentation, May 13-20, 2019.
<https://stemforall2019.videohall.com/presentations/1494>
7. Morrison, B.B., Decker, A., Margulieux, L.E. *Using Subgoal Labels to Improve Learning Outcomes in CSI*, NSF STEM for All Video Showcase Presentation, May 13-20, 2019.
<https://stemforall2019.videohall.com/presentations/1391>
4. **Decker, A.**, McGill, M.M., Ravitz, J., Snow, E., and Zarch, R. *Connecting Evaluation and Computing Education Research: Why is it so Important?* Special Session: presented at SIGCSE 2018, February 2018.
3. Cigas, J., **Decker, A.**, Furman, C., Gallagher, T. *How am I Going to Grade All These Assignments? Thinking About Rubrics in the Large*, Special Session: presented at SIGCSE 2018, February 2018.
2. **Decker, A.**, McGill, M.M., DeLyser, L., Quinn, B., Berry, M., Haynie, K., McKlin, T. *Repositories You Shouldn't Be Living Without*, Special Session: presented at SIGCSE 2018, February 2018.
1. **Decker, A.**, Trees, F. P., and Hoepfner, S. *Greenfoot: An Approach for Introducing Java*, Special Session: CS & IT 2011, July 12, 2011.

REFEREED WORKSHOP & TUTORIAL ORGANIZATION AND LEADERSHIP

These workshops and tutorials are submitted for review and juried in a manner similar to conference papers. Acceptance rates vary by venue and are often not published. When presented they are hands-on or teaching sessions rather than presentations.

15. **Decker, A.**, Morrison, B.B., and Margulieux, L.E. and McGill, M.M. *Using Subgoal Labeling in Teaching Introductory Programming*. Tutorial: CCSC NE 2020, April 2020.
14. **Decker, A.** and McGill, M.M. *Student Learning: Creating, Refining, and Promoting Evaluation and Research Across Computing Education*. Full day workshop held in conjunction with ICER 2019, August 11, 2019. (<https://csedresearch.org/icer-workshop-2019/>)
13. Morrison, B., Margulieux, L., and Decker, A. *Using Subgoal Labeling in Teaching CSI*. Workshop: SIGCSE 2019, March 1, 2019.
12. Furman, C., Czajka, S., **Decker, A.**, and Xu, D. *College Board: Engaging students with algorithms*. Workshop: CSTA 2017, July 9, 2017.
11. Furman, C., Czajka, S., Decker, A., and Xu, D. *Engaging students with algorithms*. Workshop: SIGCSE 2017, March 10, 2017.
10. Blaheta, D., and Decker, A. *Rubricating like a boss: writing and using rubrics for faster, fairer grading of student programs*, Workshop: SIGCSE 2016, March 4, 2016.

9. **Decker, A.**, and Trees, F. P. *Intro 3 Ways: An Introduction to Three Environments for Teaching Introductory Programming*, Workshop: CCSC E 2012, November 2-3, 2012.
8. **Decker, A.**, and Trees, F. P. *Greenfoot: Introducing Java with Games and Simulations*, Workshop: CCSC NE 2011, April 15-16, 2011.
7. **Decker, A.**, and Trees, F. P. *Greenfoot: Introducing Java with Games and Simulations*, Tutorial Session: CCSC NE 2011, April 15-16, 2011.
6. Kölling, M., Trees, F.P., Hoepfner, S., and Green, D. Teaching with Greenfoot - From development of material to delivery in the classroom, Workshop: SIGCSE 2011, Dallas, TX, March 12, 2011. [uncredited because I was on the conference committee, but did serve as a coordinator for this workshop]
5. Skrien, D., Decker, A., Caspersen, M., Börstler, J., and Alphonse, C. *Good Examples for Exposing Bad Practice: The Eighth "Killer Examples" Workshop*, Workshop: OOPSLA 2009, Orlando, Florida, October 25-29, 2009.
4. Caspersen, M., Börstler, J., Decker, A., and Alphonse, C. *Worked Examples for Sound Object-Oriented Pedagogy: A "Killer Examples" Workshop*, Workshop: OOPSLA 2008, Nashville, Tennessee, October 19-23, 2008.
3. Alphonse, C., Börstler, J., Caspersen, M., Decker, A., and Kölling, M. *Process in OO Pedagogy: A "Killer" Workshop*, Workshop: OOPSLA 2007, Montreal, Quebec, Canada, October 21-25, 2007.
2. Alphonse, C., Caspersen, M., Decker, A., and Trask, B. *Fifth "Killer Examples" for Design Patterns Workshop*, Workshop: OOPSLA 2006, Portland, OR, October 22-26, 2006.
1. Alphonse, C., Caspersen, M., Wong, S. and Decker, A. *Fourth "Killer Examples" for Design Patterns and Objects First Workshop*, Workshop: OOPSLA 2005, San Diego, CA, October 16-20, 2005.

REFEREED BIRDS OF A FEATHER SESSION ORGANIZATION

These sessions are submitted for review and juried in a manner similar to conference papers.

Acceptance rates vary by venue and are often not published. They are sessions that bring individuals of similar interests together to share ideas. Proposing a session implies leadership of the session.

2. Morrison, B., and Decker, A. *Using Subgoals to Improve Student Performance in CS1*, Birds of a Feather Session: SIGCSE 2018, February 22, 2018.
1. **Decker, A.**, McGill, M.M., and Peterfreund, A. *Evaluating the Long-Term Impact of Pre-college Computing Activities*, Birds of a Feather Session: SIGCSE 2017, March 9, 2017.

REFEREED PANEL SESSION PARTICIPATION

These sessions are submitted for review and juried in a manner similar to conference papers. Acceptance rates vary by venue and are often not published.

3. **Decker, A.**, DePasquale, P., Raj, R.K., Jadud, M. *Bringing Industry Experience into the University Experience*. Panel to be presented at CCSC Northeast, April 2020.
2. **Decker, A.**, McGill, M.M., Schreiber, I., and Zinoveva, O. “Improving the Quality of New Hires in the Game Industry by Expanding the Pipeline”, Panel Session, Foundations of Digital Games 2014, Royal Caribbean Liberty of the Seas – Fort Lauderdale, FL, April 3-7, 2014.
1. Egert, C., Ventura, P., and Decker, A. “Putting the ‘Fun’ Back in Fundamentals: Using Games to Teach Object-Oriented Design Early”, Panel Session: Computer Gaming, *ASEE St. Lawrence Section Conference 2005*, Binghamton University, Binghamton, NY, April 8-9, 2005.

REFEREED POSTER PRESENTATIONS (*graduate student, +undergraduate student)

These sessions are submitted for review and juried in a manner similar to conference papers. Acceptance rates vary by venue and are often not published.

20. Howard, G. and **Decker, A.** (2020) “Predicting Behaviors of Advanced Persistent Threats Using Collaborative Filtering”, A poster to be presented at 15th International Conference on Cyber Warfare and Security (ICWS), March 12-13, 2020, Norfolk, VA, USA.
19. **Decker, A.** and McGill, M. (2019) “Evaluating the Long-Term Impact of Pre-College Computing Education Phase 1 Overview”, A poster to be presented at *ASEE Annual Conference & Exposition*, June 16-19, 2019, Tampa, FL.
18. **Decker, A.**, Morrison, B., and Margulieux, L. (2019) “Developing Subgoal Labels for Imperative Programming to Improve Student Learning Outcomes”, A poster to be presented at *ASEE Annual Conference & Exposition*, June 16-19, 2019, Tampa, FL.
17. Margulieux, L. E., Decker, A., Morrison, B. B. (2019). “Subgoal labels effect on problem solving processes in CS1”, A poster presented at the *Computer Science + Learning Sciences Symposium*, April 28, 2019, Northwestern University, Evanston, IL.
16. McGill, M.M., Decker, A. (2019) “Six Simple Steps to Help Grow the Quantity and Quality of Research Focusing on Broadening Participation in K-12 Computer Science Education using cshedresearch.org”, A poster presented at *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*, February 27, 2019, Minneapolis, MN, USA.
15. Holliday, M.+ and Decker, A. (2018) “Women of Color and Role in Video Games”, A poster presented at *ACM Richard Tapia Celebration of Diversity in Computing*, September 19-21, 2018, Orlando, FL.

14. **Decker, A.**, and McGill, M. (2018) “Differences in Reporting of Outreach Research Data between CS Education and STEM Education”, A poster presented at *ICER 2018*, August 13-15, 2018, Espoo, Finland.
13. Smith, R.* and Decker, A. (2016) “Investigating QPoC Representation in Video Games”, A poster presented at *ACM Richard Tapia Celebration of Diversity in Computing*, September 14-17, 2016, Austin, TX.
12. **Decker, A.**, McGill, M.M., and Settle, A. (2015) “An Analysis of the Impact of Outreach Activities on Choices of Majors”, A poster presented at *Grace Hopper Celebration of Women in Computing 2015*, October 14-16, 2015, Houston, TX. <http://schedule.gracehopper.org/session/general-poster-session>
11. **Decker, A.**, McGill, M.M., and Settle, A. (2015) “Computing Outreach Literature Review”, A poster presented at *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*, August 13-14, 2015, Charlotte, NC. doi: 10.1109/RESPECT.2015.7296509
10. Skrien, D., Alphonse, C., Decker, A., Börstler, J., and Caspersen, M. (2009) “The Eighth “Killer Examples” Workshop: Good Examples for Exposing Bad Practice”, A poster presented at *OOPSLA 2009*, October 25-29, 2009, Orlando, Florida.
9. Decker, A., and Alphonse, C. (2009) “Closing the Feedback Loop: Using Historical Data and Student Feedback to Guide Course Changes”, A poster presented at *SIGCSE 2009*, March 4-7, 2009, Chattanooga, Tennessee.
8. Decker, A., Alphonse, C., Börstler, J., and Caspersen, M.E. (2008) “Worked Examples for Sound OO Pedagogy: The Seventh “Killer Examples” Workshop”, A poster presented at *OOPSLA 2008*, October 19-23, 2008, Nashville, Tennessee.
7. Alphonse, C., Börstler, J., Caspersen, M.E., Decker, A., and Kölling, M. (2007) “Process in OO Pedagogy: The Sixth “Killer Examples” Workshop”, A poster presented at *OOPSLA 2007*, October 21-25, 2007, Montreal, Quebec, Canada.
6. Wang, G.*, McSkimming, B.*, Marzec, Z.*, Gardner, J.*, Decker A., and Alphonse, C. (2007) “Green: A Flexible UML Class Diagramming Tool for Eclipse”, A poster presented at *OOPSLA 2007*, October 21 – 25, 2007, Montreal, Quebec, Canada.
5. Gardner, J.*, McSkimming, B.*, Wang, G.* - with Faculty Advisors Alphonse, C., and Decker A. (2007) “Green: A Software Design Tool Developed for Students by Students”, A poster presented at the *University at Buffalo’s Celebration of Academic Excellence*, April 19, 2007, Buffalo, NY.
4. Alphonse, C., Caspersen, M., Decker, A. and Trask, B. (2006) “Fifth Killer Examples for Design Patterns and Objects First Workshop Results”, A poster presented at *OOPSLA 2006*, October 22-26, 2006, Portland, OR.

3. **Decker, A.** and Alphonse, C. “Does CS1 Have to Be So Syntactical?” (2006) A poster presented at *OOPSLA 2006 Educator’s Symposium*, October 23, 2006, Portland, OR.
2. Alphonse, C., Caspersen, M., Decker, A., Kosa, M., and Wong, S. (2006) “*Objects First, Design Patterns Second: Lessons Learned from the 'Killer Examples' for Design Patterns and Objects First Workshops*”, A poster presented at the *37th SIGCSE Technical Symposium on Computer Science Education*, March 3, 2006, Houston, TX.
1. Alphonse, C., Caspersen, M., Wong, S. and Decker, A. (2005) “Fourth Killer Examples for Design Patterns and Objects First Workshop Results”, A poster presented at *OOPSLA 2005*, October 16-20, 2005, San Diego, CA.

REFEREED LIGHTNING TALK PRESENTATIONS

These sessions are submitted for review and juried in a manner similar to conference papers.

Acceptance rates vary by venue and are often not published.

2. Decker, A., and McGill, M.M. [presenter] (2020) “Supporting Research on Inclusion in K-12 Computer Science Education using CEdResearch.org”, A lightning talk presented at *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*, March 11, 2020, Portland, OR.
1. **Decker, A.** [presenter], McGill, M.M., and Settle, A. (2015) “Computing Outreach Literature Review”, A lightning talk presented at *Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT)*, August 13-14, 2015, Charlotte, NC. doi: 10.1109/RESPECT.2015.7296509

REFEREED DEMO PRESENTATIONS

These sessions are submitted for review and juried in a manner similar to conference papers.

Acceptance rates vary by venue and are often not published.

1. Wang, G.⁺, McSkimming, B.⁺, Marzec, Z.⁺, Gardner, J.⁺, Decker, A., and Alphonse, C. (2007) “Green: A Flexible UML Class Diagramming Tool for Eclipse”, A demo presented at *OOPSLA 2007*, October 21-25, 2007, Montreal, Quebec, Canada.

DOCTORAL CONSORTIUM PARTICIPATION AND PRESENTATION

2. **Decker, A.** (2004) “How Students Measure Up: Creation of an Assessment Tool for CS1”, *SIGCSE 2004 Doctoral Consortium: held in conjunction with the SIGCSE 2004 Technical Symposium on Computer Science Education*, Norfolk, VA.
1. **Decker, A.** (2003) “I Want to be a Computer Scientist When I Grow Up: Evaluating the Skills Necessary for Computer Science”, *SIGCSE 2003 Doctoral Consortium: held in conjunction with the SIGCSE 2003 Technical Symposium on Computer Science Education*, Reno, NV.
<http://www.radford.edu/~sigcse/DC03/participants/decker.html>.

INVITED PRESENTATIONS

5. **Decker, A.**, and McGill, M.M. (2019) “Establishing and Propagating a Model for Evaluating the Long Term Impact of Pre-College Computing Education”, A presentation at the NSF Research Showcase, presented in conjunction with SIGCSE 2019.
4. **Decker, A.**, and McGill, M.M. (2018) “Establishing and Propagating a Model for Evaluating the Long Term Impact of Pre-College Computing Activities”, A presentation at the NSF Research Showcase, presented in conjunction with SIGCSE 2018.
3. **Decker, A.** (2017) “Evaluating the Long Term Impact of Pre-College Computing Activities”, A presentation at the GCCIS Research Showcase, April 28, 2017, Rochester Institute of Technology, Rochester, New York.
2. **Decker, A.** and Alphonse, C. (2012) “Computer Science K–8: Building a Strong Foundation”, A presentation at the 4th Annual Western New York CSTA Fall Conference, October 12, 2012, Buffalo, New York.
1. **Decker, A.** (2010) “Using Greenfoot, Games and Simulations to Introduce Programming to Students”, A presentation at the 2nd Annual Western New York CSTA Fall Conference, October 15, 2010, Buffalo, New York.

INVITED PANEL PARTICIPATION

1. **Decker, A.**, Garcia, D., Astrachan, O., and Hu, H. (2018) “The 8th Big Idea”, A panel discussion at InfoSys Crossroads 2018, May 23, 2018, Santa Cruz, CA.

INVITED WORKSHOPS

1. **Decker, A.** (2014) “Introduction to GameMaker *Workshop Leader: RU4CS*, Rutgers University, August 18-19, 2014.

GRADUATE STUDENTS

Dissertations/Theses (as major professor unless otherwise indicated)

Ph.D. degrees

1. Anna Loparev, PhD, 2016, “The Impact of Collaborative Scaffolding in Educational Video Games on the Collaborative Support Skills of Middle School Students”, Computer Science Department, University of Rochester (outside reader).

M.S. degrees (theses/projects)

1. Roger Smith, MS, May 2020 (expected), “Exploring AAVE Use and Impact in Social Media”, Georgia Institute of Technology (external advisor).
2. Anthony Saxon, MS, 2014, “A Cinematic Guide to Designing Martial Art Film-Based Video Games” Department of Interactive Games and Media, Rochester Institute of Technology.
3. Preston Johnson, MS, 2014, “A./V.” Department of Interactive Games and Media, Rochester Institute of Technology.

4. Doug Lynn, MS, 2014, "A./V." Department of Interactive Games and Media, Rochester Institute of Technology.
5. Alex Hogue, MS, 2014, "Shady Dealings" Department of Interactive Games and Media, Rochester Institute of Technology.
6. Matthew Kauffman, MS, 2014, "Shady Dealings" Department of Interactive Games and Media, Rochester Institute of Technology.
7. Avinash Krishnan, MS, 2014, "Shady Dealings" Department of Interactive Games and Media, Rochester Institute of Technology.
8. Dan Wild, MS, 2014, "Shady Dealings" Department of Interactive Games and Media, Rochester Institute of Technology.

Special Achievements of Graduate Students

- Preston Johnson and Doug Lynn, *Recipient of Excellence in Sensory Experience*, Rensselaer GameFest2014, April 2014.

Dissertation/Thesis Committee Member

1. Luis Bobadilla, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013.
2. Sebastian Hernandez, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013.
3. Rob Link, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Into the Paws of Madness".
4. Nitin Nandakumar, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Into the Paws of Madness".
5. Bill Phillips, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Into the Paws of Madness".
6. Andrew Wilkinson, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Into the Paws of Madness".
7. Jia Xu, "Into the Paws of Madness", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Into the Paws of Madness".
8. John Araujo, "Unbroken", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013 "Unbroken".
9. Daniel Whiddon, "Carbon Conquest", Department of Interactive Games and Media, Rochester Institute of Technology, MS, 2013, "Carbon Conquest".

PROFESSIONAL ACTIVITIES

LEADERSHIP

Professional Organizations

- Chair, ACM SIGCSE Board, July 2019-June 2022
- Treasurer, ACM SIGCSE Board, July 2016-June 2019
 - SIGCSE Symposium Liaison
 - Special Projects Review Committee
 - Travel Grant Review Committee (Chair)
 - Top Ten SIGCSE TS Papers Committee (Chair)
- Guest Editor, *IEEE Computing in Science and Engineering*, Best of RESPECT, Issue 3, May-June 2017
- Conference co-chair, SIGCSE Technical Symposium on Computer Science Education, 2015
- Secretary, Western New York CSTA, 2008-2013

OTHER SERVICE

Journal Reviewer

- ACM Transactions on Computing Education: 2012, 2014, 2015, 2016, 2018, 2019, 2020
- Computer Science Education: 2009, 2011, 2012, 2017, 2018, 2019, 2020
- ACM Inroads: 2012, 2014, 2016, 2017, 2018
- IEEE Transactions on Education: 2016
- Electronics: 2016
- IEEE Computing in Science and Engineering: 2015
- Journal of Interactive Humanities: 2014
- Communications of the ACM: 2012

Conference Program Chair

- International Conference on Research in Equity and Sustained Participation in Engineering, Computing, and Technology (RESPECT), Program co-chair: 2016
- SIGCSE Technical Symposium on Computer Science Education, Program co-chair: 2014
- Western New York CSTA's "College Computing Fair", Program Chair: 2009
- Western New York CSTA's "College Computing Fair", Program Chair: 2008

Conference Associate Program Chair

- SIGCSE Technical Symposium on Computer Science Education: 2016-2019
- ACM CompEd: 2019
- Innovation and Technology in Computer Science Education (ITiCSE): 2018

Conference Track Chair/Other Conference Committee Positions

- ACM Richard Tapia Celebration of Diversity in Computing, Academic Panel and Workshop Chair: 2019 and 2020
- SIGCSE Technical Symposium on Computer Science Education, 50th anniversary celebration chair: 2019
- Grace Hopper Celebration of Women in Computing, Faculty Track Committee: 2016, 2017, 2018

- SIGCSE Technical Symposium on Computer Science Education, pre-symposium events chair: 2013
- SIGCSE Technical Symposium on Computer Science Education, workshop co-chair: 2012 and 2011
- OOPSLA Educator's Symposium Committee: 2009

Conference Program Committee

- New York Celebration of Women in Computing (NYCWIC): 2017
- ACM International Computing Education Research (ICER): 2016
- Western New York CSTA's "Conversation about Computing" Program Committee: 2008

Conference Reviewer

- Conference on International Computing Education Research (ICER): 2016, 2017, 2018, 2019, 2020
- SIGCSE Technical Symposium on Computer Science Education: 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019
- Conference on Innovation and Technology in Computer Science Education (ITiCSE) Working Group Reports: 2016, 2017, 2019
- Frontiers in Education: 2016, 2017, 2018, 2019
- ACM CompEd Conference: 2019
- ACM Southeast Conference: 2019
- ASEE Annual Conference & Exposition: 2019
- Conference on Innovation and Technology in Computer Science Education (ITiCSE): 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2017, 2018
- International Conference on the Learning Sciences: 2018
- ACM Richard Tapia Celebration of Diversity in Computing: 2017
- The Consortium for Computing Sciences in College: Eastern Region Conference (CCSC Eastern): 2004, 2005, 2006, 2007, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
- The Consortium for Computing Sciences in College: Northeastern Region Conference (CCSC NE): 2009, 2010, 2011, 2012, 2013, 2014, 2015
- Conference on Information Technology Education and Conference on Research in Information Technology (SIGITE/RIIT): 2014, 2015
- OOPSLA Educator's Symposium: 2009

Proposal Reviewer

- NSF Panel (2020)
- NSF Ad hoc proposal review (2020)
- NSF Panel (2018)
- NSF (2016)

Task Force Membership/Other Committee Service

- ACM/IEEE Joint Task Force CC2020 (2017-2020)
- SIGCSE Committee on the Implementation of a Discrete Mathematics Course (2003-2007)

Advisory Board Membership

- Alice Project (<http://www.alice.org/>): 2016-present

Mentoring

- Doctoral Consortium Panel Member: Tapia Celebration 2018
- CRA-W Mentoring at Grace Hopper Celebration of Women in Computing: 2016

Judging

- ACM Student Research Competition at Tapia Celebration of Diversity in Computing: 2018
- ACM Student Research Competition Grand Finals: 2018
- ACM Student Research Competition at Grace Hopper Celebration of Women in Computing: 2017
- ACM Richard Tapia Celebration of Diversity in Computing Poster Judge: 2016

Workshop Refereeing

- Good Examples for Exposing Bad Practice: The Eighth “Killer Examples” Workshop: OOPSLA 2009
- Worked Examples for Sound Object-Oriented Pedagogy: A “Killer” Workshop: OOPSLA 2008
- Process in OO Pedagogy: A “Killer” Workshop: OOPSLA 2007
- Fifth “Killer Examples” for Design Patterns Workshop: OOPSLA 2006
- Fourth “Killer Examples” for Design Patterns and Objects First Workshop: OOPSLA 2005

Other Refereeing

- NCWIT’s EngageCSEdu submission reviewer: 2018-present

Focus Group Participation

- College Board’s AP Computer Science Focus Group (February 25-26, 2017)
 - Discussion of AP CSA and AP CSP, college credit and placement for those courses, and future direction for courses.

Conference Session Chair

- SIGCSE Technical Symposium on Computer Science Education: 2013 and 2012

Textbooks

- Review of two chapters from E. Koffman and P. Wolfgang. (2010) *Data Structures: Design & Use in Java*, Second Edition, John Wiley & Sons Publishing
- Technical review of entire manuscript for B. Sanders and C. Cumarantunge. (2007) *ActionScript 3.0 Design Patterns*. O’Reilly Publishers
- Review of eight chapters (entire text) from J. Gersting. (2007) *Mathematic Structures for Computer Science*, Sixth Edition. W.H. Freeman & Co. Publishers
- Review of fourteen chapters (entire text) from N. Dale and C. Weems. (2006) *Programming and Problem Solving with Java*, Second Edition. Jones & Barlett Publishers
- Review of one chapter from E. Koffman. (2004) *Objects, Abstraction, Data Structures and Design: Using Java*. John Wiley & Sons Publishing
- Review of thirty-one chapters (entire text) from F. Carrano and W. Savitch (2006) *Data Structures and Abstractions with Java*, Second Edition. Prentice Hall Publishers

- Potential audience and table of contents review for H. Hahn *Harley Hahn's Student Guide to Unix*, Third Edition. McGraw-Hill Publishing
- Book proposal review for M. Henry *Discrete Math for Students*. McGraw-Hill Publishing
- Review of twenty chapters (entire text) from W. Savitch (2003) *Absolute Java*. Addison-Wesley
- Review of twenty chapters (entire text) from C.T. Wu (2003) *An Introduction to Object-Oriented Programming with Java (3rd Edition)*. McGraw-Hill
- Review of twenty chapters (entire text) from J. Cohoon and J. Davidson (2004) *Java Program Design*, McGraw-Hill
- Review of twenty chapters (entire text) from S. Kamin, M.D. Mickunas, and E. Reingold (2002) *Pan Introduction to Computer Science Using Java (2nd Edition)*, McGraw-Hill

MEMBERSHIP IN PROFESSIONAL AND HONOR SOCIETIES

- Associate for Computing Machinery (ACM), Senior Member [2001-present]
- ACM Special Interest Group in Computer Science Education (SIGCSE), Member [2001-present]
- ACM Council on Women in Computing (ACM-W), Member [2015-present]
- American Society for Engineering Education (ASEE), Member [2019-present]
- Computer Science Teachers Association (CSTA), Member [2008-present]
- Western New York CSTA, Member [2008-present] {Founding member}
- Institute of Electrical and Electronics Engineers (IEEE), Member [2015-2016]
- IEEE Special Technical Community on Broadening Participation (STCBP), Member [2015-present]
- Consortium for Computing Sciences in Colleges (CCSC), Member [2003-2006; 2011-2013]
- ACM Special Interest Group on Information Technology Education (SIGITE), Member [2008-2011]
- ACM Special Interest Group on Programming Languages (SIGPLAN), Member [2008-2010]

UNIVERSITY SERVICE

DEPARTMENTAL SERVICE (ENGINEERING EDUCATION - UB)

- Coordinator, Seminar Series, 9/2019-8/2020

DEPARTMENTAL SERVICE (COMPUTER SCIENCE & ENGINEERING - UB)

- Computer Science BS/MS Program Coordinator: 9/2010-8/2011
- Undergraduate Student Advising: 9/2010-8/2011
- CSE 111-113-115-116 Undergraduate Teaching Assistants Hiring Committee: 2010, 2011
- CSE 113 Undergraduate Teaching Assistants Supervisor: 9/2009-8/2011
- CSE 101 Undergraduate Teaching Assistants Supervisor: 9/2009-10/2009
- CSE 115 Undergraduate Teaching Assistants Supervisor: 1/2004-8/2011
- CSE 115 Undergraduate Teaching Assistants Hiring Committee: 2004, 2005, 2006, 2007, 2008, 2009
- ACM Student Chapter Faculty Advisor: 1/2005-6/2009
- CSE Undergraduate Lab Assistants Supervisor: 1/2006-9/2008
- CSE Student Mentors Supervisor: 1/2006-9/2008
- CSE Student Mentors Hiring Committee: 2006, 2007
- CSE Freshmen Orientation Group Discussion Facilitator: 2006, 2007, 2009
- CSE Graduate Conference Reviewer: 2006

- Computer Science BA Program Revision Committee: 2005-2006
- Computer Science Curriculum Committee: 2004-2005
- CSE Promotional Video Committee Chair: 2004
- Discrete Structures Committee: 2002-2003
 - Chair (2002-2003)
 - Successfully proposed the teaching of discrete math course solely by CSE
- Undergraduate Affairs Committee: 2002-2011

SCHOOL SERVICE (SCHOOL OF ENGINEERING AND APPLIED SCIENCES – UB)

- SEAS Commencement: 2008, 2009, 2010, 2011
 - Commencement Marshall (2008)
- Engineering Discovery Day (CSE Presentation): 2006

UNIVERSITY SERVICE (UNIVERSITY AT BUFFALO)

- University at Buffalo Academic Integrity Adjudication Pool Member: 2019
- University at Buffalo Faculty-to-Faculty Articulation Conference: 2006
- University at Buffalo Preview Day (CSE Presentation): 2006, 2007
- University at Buffalo Open House (CSE Presentation): 2005, 2006, 2007, 2009, 2010

UNIVERSITY SERVICE (ROCHESTER INSTITUTE OF TECHNOLOGY)

- Long Range Planning and Environment (LRPE) Committee: 2015-2017
 - Subcommittees:
 - Ombud's Office Review (2015-2016)
 - Middle States Document Feedback (2016-2017)
- President's Pedestrian Safety Committee: 2014-2015
- Faculty Plus/Minus Grading Study Participant: 2012

COLLEGE SERVICE (GOLISANO COLLEGE OF COMPUTING AND INFORMATION SCIENCE – RIT)

- GCCIS Ad hoc committee on Computing Education: 2017-present
- GCCIS Curriculum Committee: 2016-2017
- Student Scholars Committee: 2014-2017
- Dean's Seed Funding Review Committee: 2014, 2016, 2017
- GCCIS Graduation Ceremony: 2012, 2013, 2014, 2015, 2016

DEPARTMENTAL SERVICE (SCHOOL OF INTERACTIVE GAMES AND MEDIA – RIT)

- IGM Curriculum Committee: 2016-2017
 - Chair (2016-2017)
 - Created and implemented new process for approval of curricular changes within the department
- IGM Undergraduate Game Design and Development Curriculum Committee: 2016
 - Chair (2016)
- IGM Graduate Admissions Committee: 2013-2016
- IGME 601 (Processes) Course Redesign Group: 2012-2013
 - Chair (2012-2013)

- Led redesign effort for course for transition to semesters
- IGME 105/106 (Introductory Programming) Course Redesign Group: 2012-2013
- IGM Curriculum Committee: 2011-2013
- IGM First Year Courses Redesign Task Force: 2011-2012
 - Chair (2011-2012)
 - Led group in discussions about bringing together intro sequences so that students in either GDD or NM were getting equivalent experience and knowledge by the end of the first year
- IGM Open House Tour Guide: 2011-2013

OUTREACH ACTIVITIES

COMMUNITY SERVICE

- 9/2012-9/2016 Alden Central School District Volunteer
Kindergarten classroom assistant (2012-2013 & 2014-2015), Computer class assistant, Library assistant for library leveling project
- 2/2013-5/2014 Alden Central School District's Superintendent's Search Committee (Community Group)

TEACHING

COURSES TAUGHT AT UNIVERSITY AT BUFFALO

<i>Session</i>	<i>Course</i>	<i>Class Size</i>
Fall 2019	Special Topics in Eng Ed – Computing Education Research*	7

* Course that I proposed and developed

COURSES TAUGHT AT ROCHESTER INSTITUTE OF TECHNOLOGY

<i>Session</i>	<i>Course</i>	<i>Class Size</i>
Fall 2017	Game Development and Algorithmic Problem Solving I	30
Spring 2017	Game Development and Algorithmic Problem Solving II	21
Fall 2016	Game Development Processes	23
Fall 2015	Game Development Processes	12
Fall 2014	Seminar in Educational Games*	17
Fall 2014	Game Development Processes	15
Spring 2014	Capstone Development	7
Fall 2013	Game Development Processes	19
Winter 2012	Seminar in Educational Games*	27
Fall 2012	Game Design Processes	16
Fall 2012	Game Software Design I (Sections 2 & 4)	26 & 27
Winter 2011	Game Software Design II (Section 5)	14
Winter 2011	Introduction to Programming for New Media (Section 2)	26
Fall 2011	Game Software Design I (Section 4)	29
Fall 2011	Introduction to Programming for New Media (Section 2)	17

* Course that I proposed and developed

COURSES TAUGHT AT UNIVERSITY AT BUFFALO

<i>Session</i>	<i>Course</i> ** Course with multiple sections and multiple instructors. TAs would be split among all instructors for course.	<i>Class Size</i>	<i>Teaching Asst.</i> U = Undergraduates G = Graduate
Spring 2011	Introduction to Computer Programming I (CSE 113 Sections A & B)	87 + 84 = 171	1 (U – Teaching) 2 (G – Teaching & Grading)
Spring 2011	Introduction to Computer Science for Majors I (CSE 115 Section A)	130	4 (U – Teaching) 1 (G – Grading)
Spring 2011	Computer Science for Non-Majors I (CSE 503)	5	Same as above
Fall 2010	Great Ideas in Computer Science (CSE 111 Sections A & B)	285	2 (U – Teaching) 3 (G – Teaching & Grading)
Fall 2010	Introduction to Computer Programming I (CSE 113 Sections B)**	66	1 (U – Teaching) 2 (G – Teaching & Grading)
Spring 2010	Introduction to Computer Programming I (CSE 113 Sections A & B)	86 + 111 = 197	1 (U – Teaching) 2 (G – Teaching & Grading)
Spring 2010	Introduction to Computer Science for Majors I (CSE 115 Section A)	115	3 (U – Teaching) 1 (G – Grading)
Spring 2010	Computer Science for Non-Majors I (CSE 503)	12	Same as above
Fall 2009	Computers: A General Introduction (CSE 101)	109	3 (U – Teaching) 1 (G – Grading)
Fall 2009	Introduction to Computer Programming I (CSE 113 Sections A & B)	70 + 121 = 191	1 (U – Teaching) 3 (G – Teaching & Grading)
Spring 2009	Introduction to Computer Programming I (CSE 113 Sections A & B)	85 + 121 = 206	3 (G)
Spring 2009	Data Structures (CSE 250)	67	2 (G)
Fall 2008	Introduction to Computer Science for Majors I (CSE 115 Sections A & B)**	72 + 45 = 117	3 (U – Teaching) 1 (G – Grading)
Fall 2008	Data Structures (CSE 250)	58	2 (G)
Spring 2008	Introduction to Computer Science for Majors I (CSE 115)	62	3 (U – Teaching) 1 (G – Grading)
Spring 2008	Computer Science for Non-Majors I (CSE 503)	7	Same as above
Spring 2008	Data Structures (CSE 250)	62	2 (G)
Spring 2008	Introduction to Computer Programming I (CSE 113 Sections A & B)	80 + 98 = 178	4 (G)

Fall 2007	Introduction to Computer Science for Majors II (CSE 116)	31	2 (G)
Fall 2007	Introduction to Discrete Structures (CSE 191)	80	3 (G)
Spring 2007	Introduction to Computer Science for Majors I (CSE 115 Sections A & B)	$46 + 43 = 89$	3 (U-Teaching) 2 (G-Grading)
Spring 2007	Computer Science for Non-Majors I (CSE 503)	6	Same as above
Spring 2007	Introduction to Discrete Structures (CSE 191)	77	2 (G)
Fall 2006	Introduction to Computer Science for Majors I (CSE 115 Section C) [co-taught with another instructor]**	61	4 (U-Teaching) 4 (G-Grading)
Fall 2006	Introduction to Computer Science for Majors II (CSE 116)	39	2 (G)
Fall 2006	Computer Science for Non-Majors II (CSE 504)	1	Same as above
Fall 2006	Introduction to Discrete Structures (CSE 191 A & B)	$35 + 45 = 80$	3 (G)
Spring 2006	Introduction to Computer Science for Majors I (CSE 115 Sections A & B)	$62 + 65 = 127$	3 (U-Teaching) 2 (G-Grading)
Spring 2006	Computer Science for Non-Majors I (CSE 503)	9	Same as above
Spring 2006	Introduction to Discrete Structures (CSE 191)	67	2 (G)
Fall 2005	Introduction to Computer Science for Majors I ** (CSE 115 Section C)	49	4 (U-Teaching) 2 (G-Grading)
Fall 2005	Introduction to Discrete Structures (CSE 191)	$38 + 51 = 89$	3 (G)
Spring 2005	Introduction to Computer Science for Majors I (CSE 115 Sections A & B)	$68 + 44 = 112$	5 (U-Teaching) 1 (G-Grading)
Spring 2005	Computer Science for Non-Majors I (CSE 503)	2	Same as above
Spring 2005	Introduction to Discrete Structures (CSE 191)	65	2 (G)
Fall 2004	Introduction to Computer Science for Majors I ** (CSE 115 Section D)	48	5 (U-Teaching) 3 (G-Grading)
Fall 2004	Introduction to Discrete Structures (CSE 191 Section A & B)	118	3 (G)
Spring 2004	Introduction to Computer Science for Majors I (CSE 115 Sections A & B)	$74 + 54 = 128$	4 (U-Teaching) 2 (G-Grading)

Spring 2004	Computer Science for Non-Majors I (CSE 503)	14	Same as above
Spring 2004	Introduction to Discrete Mathematics (CSE 191)	55	1 (G)
Fall 2003	Introduction to Computer Science for Majors II (CSE 116 Sections A & B)	45 + 33 = 78	2 (G)
Fall 2003	Computer Science for Non-Majors II (CSE 504)	1	Same as above
Fall 2003	Introduction to Computer Programming I (CSE 113 Section B)	68	2 (G)
Spring 2003	Introduction to Discrete Mathematics (CSE 191)	73	2 (G)
Spring 2003	Introduction to Computer Programming II (CSE 114 Sections A & B)	46 + 67 = 113	3 (G)
Fall 2002	Introduction to Computer Science for Majors I ** (CSE 115 Sections C & D)	75 + 80 = 155	5 (U – Teaching) 1 (G - Teaching) 2 (G - Grading only)
Fall 2002	Computer Science for Non-Majors I (CSE 503)	18	Same as above
Fall 2002	Great Ideas in Computer Science I (CSE 111)	183	4 (G)
Summer 2002	Programming Languages (CSE 305)	38	0
Spring 2002	Great Ideas in Computer Science I (CSE 111)	89	2 (G)
Spring 2002	Computer Science for Non-Majors II (CSE 504)	8	1 (G)
Fall 2001	Introduction to Computer Science for Majors I ** (CSE 115 Section A)	96	10 (G)
Summer 2001	Introduction to Computer Science for Majors I (CSE 115)	31	0

COURSES TAUGHT AT NIAGARA COUNTY COMMUNITY COLLEGE

<i>Session</i>	<i>Course</i>	<i>Class Size</i>
Fall 2001	Introduction to Computer Systems	18

CURRICULUM DEVELOPMENT

COMPUTING EDUCATION RESEARCH

Fall 2019

Developed a new course for the Department of Engineering Education focusing on current themes and trends in computing education. The course is designed to be an exploration in the underlying theories of learning,

cognitive science, and education and underpin current work in computing education. Students are encouraged to explore a topic of interest to them and create a proposal for a research study to explore their topic of interest.

GAME DEVELOPMENT PROCESSES

Fall 2013, 2014, 2015, 2016

Moved the content of the quarter course into semesters and shifted focus toward improving student communication skills (oral presentation) through the introduction of several different types of activities. In Fall 2015 and 2016, the course integrated elements of role-play throughout the course as a mechanism for structuring the course activities and assignments.

EDUCATIONAL GAMES

Winter 2012

Proposed and created a seminar in education games for the undergraduate and graduate levels. Incorporated important readings and findings in learning sciences as well as game design to construct a seminar in which students produced their own educational games. Discussions around evaluation, analysis, and research methodologies for learning games were also key to the course content.

GAME SOFTWARE DESIGN I

Fall 2011/Fall 2012

Redesigned the introductory game software design course to integrate Greenfoot environment which provides a development environment for students to create graphical and interactive games and/or simulations right from the first day of the course. To properly utilize the environment, the entire set of hand-on class activities, homework assignments, and examples needed to be re-written. In the two iterations of the course I have taught, the students completed Pac-Man and Centipede as their final projects for the quarter.

GRAPHICAL OBJECTS-FIRST COMPUTER SCIENCE I

Fall 2006/Spring 2007/Spring 2008/Fall 2008/Spring 2010/Spring 2011

Continued work on graphical objects-first introduction to computer science I course (see below). In Fall 2006, a text that I co-authored began to be used as the main text for the course. Along with the introduction of this text (which is still being used to present), the examples and assignments of the course were designed to complement the ordering and content of the book. A graphics library (implemented by one of the teaching assistants) was also introduced at this time to allow the students a gentler introduction to graphics programming in Java. In 2010, automatic grading of student assignments (via Web-CAT) was introduced and I was responsible for creating the testing code that was used for my student's assignments. During this time, additional final projects were developed for the use in the course including Dr Mario, Battleship, and a redesign of a Tron Light Cycles assignment that was given previously.

INTRODUCTION TO COMPUTER PROGRAMMING FOR NON-MAJORS (GREENFOOT)

Spring 2010/Fall 2010/Spring 2011

Redesigned the introductory programming for non-majors course to use the Greenfoot environment as the primary development environment for the students. Using Greenfoot allowed the students to interact with graphical programs from the first day. In Spring 2011, I introduced a unit at the beginning of the course that used the Scratch programming environment. The students then transitioned into the Greenfoot environment in week 3 of the semester. In the three semesters of the redesign, homework assignments and in-class examples were constructed to complement the new approach. In Fall 2010 and Spring 2011, assignments

were graded using an automatic grading system (Web-CAT) and I designed the testing code for the assignments for this course.

GREAT IDEAS IN COMPUTER SCIENCE

Spring 2002/Fall 2002/Fall 2010

In the course, Great Ideas in Computer Science, a breadth of topics in computing should be introduced to students. In the 2002 offerings, I created course modules to correspond to the History of Computing and important people in computing history. The original module included lectures and accompanying slides. I found out later that the slides were being used by others to teach history of computing at other institutions. In the 2010 offering, assignments were created for the students to work on in regards to historical events and important people. Additionally for the 2010 offerings, modules were created that incorporated many CS Unplugged activities as well as the use of Scratch as the programming environment for the students. In 2002, JavaScript was used for the programming unit for students and at the end of the semester, the students picked one of eight games to implement (Blackjack, Hangman, Who Wants to be a Millionaire, Crossword, Pick up sticks, Tic Tac Toe, Poker, Memory).

INTRODUCTION TO COMPUTER PROGRAMMING FOR NON-MAJORS (MEDIA COMPUTATION)

Spring 2008/Spring 2009

Adopted the Media Computation approach (Georgia Tech) for the introductory programming for non-majors course. Integrated the DrJava programming environment for use in the course and designed complimentary assignments for the approach and environment.

DISCRETE STRUCTURES (DISCRETE MATHEMATICS)

Spring 2003/Spring 2004/Fall 2004/Spring 2005/Fall 2005/Spring 2006/Spring 2007

Starting in Spring 2003, I worked on a Discrete Structures (Mathematics) curriculum that better integrated computer science concepts in with the discrete math topics. To this end, I created a series of programming exercises that were integrated as assignments in the course. There was a semester-long project of developing a graph ADT and implementing associated graph algorithms as well as a series of shorter programming assignments dealing with logic, Prolog, sets, relations, and trees. Several texts were adopted during my tenure as instructor that integrated aspects of computer science as well as active learning techniques for the course.

GRAPHICAL OBJECTS-FIRST COMPUTER SCIENCE I

Summer 2001/Fall 2001/Fall 2002/Spring 2004/Fall 2004/Spring 2005/Fall 2005/Spring 2006

Continued work on a graphical objects-first computer science 1 for majors. Developed new assignments and examples based on the work started at Brown University in their CS015 course. Adopted the NGP graphics library from Brown to allow students to more easily create graphical programs. I supervised the development of a physics package that allowed for basic collision detection, gravity and friction to be used inside CS1 projects. Projects that I developed (alone or in conjunction with the other instructors for the course) during this time included Pac-Man, Number Munchers, Centipede, Tron Light Cycles/Nibbles, and Diamond Mine.

STUDENT SUPERVISION

CO-OP STUDENTS SUPERVISED

2017

Ma'kiah Holliday

NSF IUSE (1625335) Evaluation instrument gathering classification

2012 Alex George
K.E.R.M.I.T. initial development

2012 Peter Thorpe
K.E.R.M.I.T. initial development

INDEPENDENT STUDENT RESEARCH PROJECTS SUPERVISED

- 2016 – 2018 **Women of Color (WOC) Representation in Video Games**
Undergraduate Student: Ma'kiah Holliday
Investigation into the representation of Women of Color (WOC) in video games and how WOC perceive themselves as part of the gaming culture.
- 2016 – 2017 **Investigation of Video Game Influence amongst Bisexual People of Color**
Undergraduate Student: Ila Vaughan
Investigation into the influence of video games on Bisexual People of Color. Interested in studying how representation affects the perception of self for this cross-sectional group.
- 2015 – 2017 **QPoC Representation in Video Games**
Graduate Student: Roger Smith
Investigation into the representation of Queer People of Color (QPoC) in video games. Investigations included an online survey (many quantitative in nature) and face-to-face interviews to find out perceptions of QPoC about representation in video games and what impact that had on them.
- 2014 – 2015 **MonoFoot**
Graduate Student: Alex Herdzik
Creation of a C# graphics library on top of MonoGame that mimics many of the same interactions as the Greenfoot environment. The end goal of this library was integration into the first course in the IGM programming sequence. The library has been created and is functional. Curriculum needs to be written to adopt the use of the library.
- 2012 – 2013 **K.E.R.M.I.T. (Kinecting Education Relevance and Media in Introductory Teaching)**
Undergraduate Students: Thomas Bentley, Luke Familo, Alex George, Peter Thorpe
Creation of a Visual Studio Add-In for introductory game software development students that allows for the creation of games and simulations in a multimedia-enabled environment. Students create graphical programs that can integrate sound and user input via keyboard, mouse, game pads, and the Microsoft Kinect during their first course of study in programming in the game design context.
- 2006 - 2011 **Green UML Tool Development**

Students: Robert Dygert, Joshua Gardner, John Kirchgraber, Zachary Marzec, Brian McSkimming, Jeffrey Meyer, Austin Miller, Daniel Padgett, Moses Vaughan, Gene Wang, Sean Weppner

Supervision and guidance of the students providing the continual development of the Green UML Tool. Currently implemented as a plug-in to the Eclipse development environment, this tool is an open-source UML diagramming tool used by students in UB's CSE 115 and CSE 116 course. It is also available for download and is being used outside the university.

- 2008 **Traffic Controlling System Design & Study**
Undergraduate Student: Jianqiao Zhu
Research into methods of studying traffic flow and how to better control traffic patterns and traffic light synchronization by processing GPS information and using aspects of graph theory.
- 2007 **Undergraduate Research in Computer Science Education**
Undergraduate Student: Kari Bancroft
Initial development of a study to see what effect visualizations have on the learning experience for students in undergraduate computer science courses.
- 2007 **Game Design and Implementation: NES Platform**
Graduate Student: Mark Zorn
Exploration of the technologies used in the original 8-bit Nintendo gaming system. Student developed an understanding of the language, compiler, and limitations of this early gaming technology while creating a game in this environment.
- 2006 **CSE 115 Graphics Package**
Graduate Student: Michael Kozelsky
Development of graphics package for use by the students enrolled in CSE 115 (CS1) in the Java programming language. Package was built upon existing Java graphics capabilities, but designed to be easier for students to use so that the students could create graphical programs from scratch faster than with traditional raw Java code. Package has been used to facilitate creation of simulation environments and games by the students in the CS1 course. Package still used in course to present date.
- 2006 **Game Design and Implementation: Microsoft Platform**
Undergraduate Student: Jason Abofsky
Using Visual Studio, C++, DirectX and some basic graphics and gaming algorithms, a prototype game was developed as a sequel to work previously done by the student. This adventure-style game takes its main character Dabu through various worlds where he is required to pick up items and face off against menacing villains.
- 2006 **Survey of Projects for Discrete Structures**
Undergraduate Student: Benjamin Robboy
Creation of survey of published projects and activities for Discrete Structures courses created by student using published resources and websites. A prototype project was constructed to allow students to better explore the applications of the material in

Discrete Structures to the computing field. Project assigned to students in Fall 2006 semester.

- 2006 **CSE 115 Course Materials for Instructors and Teaching Assistants**
Undergraduate Students: W. Clark Dever, Michael Kozelsky, Jimmie Perrin
Creation of reference materials for CSE 115 course including complete set of lecture notes, guidelines for teaching assistants with sample lesson plans and exploration of web technologies for improving course web site.
- 2004 - 2005 **CSE 115 Physics Package**
Undergraduate Student: Sara Haydanek
Creation of a Physics API in Java that is integrated with NGP (Graphics Package used in CSE 115) and provides a framework for students for doing basic collision detection, gravity, and friction within their programs for CSE 115. Used for the first time in Spring 2005 for the final lab of CSE 115. Paper submitted and accepted to CCSC Eastern Conference 2005 and won Best Paper Award at conference.

PROFESSIONAL DEVELOPMENT

- 2019 – Attended ACM Richard Tapia Celebration of Diversity in Computing
- 2019 – Attended AR/VR Conference (University at Buffalo, April 2019)
- 2018 – Attended Grace Hopper Celebration of Women in Computing
- 2018 – Attended NSF CISE PI Meeting
- 2017 – Attended Grace Hopper Celebration of Women in Computing
- 2017 – Attended ICER 2017 Conference
- 2017 – Attended NSF CISE PI Meeting
- 2016 – Attended Grace Hopper Celebration of Women in Computing
- 2016 – Attended Denice Denton Emerging Leaders Workshop
- 2014 - Attended #TeachCS Conference (WNY CSTA Conference)
- 2014 – Selected to participate in the First Workshop on Diversity in Games Research (DiGR)
- 2014 – Selected to attend Microsoft Faculty Summit 2014
- 2013 – Attended Game Developer’s Conference (GDC) 2013
- 2012 – Attended Connecting Computing Communities (WNY CSTA Conference)
- 2012 – Attended GLS 8.0 Conference
- 2012 – Attended SIGCSE 2012 Conference
- 2011 – Attended SIGCSE 2011 Conference
- 2010 – Attended SIGCSE 2010 Conference
- 2009 – Attended Creating a Network: Connecting K through 16 Computing Education in WNY (WNY CSTA Conference)
- 2009 – Attended BlueJ/Greenfoot Day 2009 (Half-day mini-conference held at SIGCSE 2009)
- 2008 – Attended OOPSLA Educator’s Symposium [Educator’s Symposium Scholarship Recipient]
- 2008 – Writing More Effective NSF Proposals: Stephen Cooper, Timothy Fossum– Presenters (Workshop held at SIGCSE 2008)

- 2008 – Teaching and Testing the Middle Novice Programmer: Raymond Lister – Presenter (Workshop held at SIGCSE 2008)
- 2008 – BlueJ/Greenfoot Day 2008 (Half-day mini-conference held at SIGCSE 2008)
- 2007 – Green Bar for C++ - Unit Testing and Refactoring C++: Peter Somerlad – Presenter (Tutorial held at OOPSLA 2007)
- 2007 – Attended OOPSLA Educator’s Symposium [Educator’s Symposium Scholarship Recipient]
- 2007 – Teaching Objects First in an Enlightening, Exciting Manner: David Gries - Presenter (Workshop held at SIGCSE 2007).
- 2006 – Attended OOPSLA Educator’s Symposium [Educator’s Symposium Scholarship Recipient]
- 2005 – Attended OOPSLA Educator’s Symposium [Educator’s Symposium Scholarship Recipient]
- 2004 – Attended OOPSLA Educator’s Symposium [Educator’s Symposium Scholarship Recipient]
- 2004 – Designing with Patterns: John Vlissides – Presenter (Tutorial held at OOPSLA 2004).
- 2004 – Java Generics: Angelika Langer – Presenter (Tutorial held at OOPSLA 2004)
- 2004 – DMS 612 – Programming for Web Design: Christopher Egert - Instructor (Semester Course).
- 2002 – Attended SIGCSE 2002 Conference.