

STEPHANIE ELZER SCHWARTZ

Department of Computer Science
Millersville University
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EDUCATION

Ph.D., Computer and Information Sciences, University of Delaware, Newark, DE, January, 2006. Advisor: Sandra Carberry, Ph.D.

Master of Science, Computer and Information Sciences, University of Delaware, Newark, DE, 1993

Bachelor of Science, Computer Science, Shippensburg University, Shippensburg, PA, 1991. Graduated Summa Cum Laude

RESEARCH INTERESTS

Artificial Intelligence
Information Graphics
Computational Linguistics (Intelligent Interfaces, Dialogue Systems)
User Modeling
Cognitive Modeling
Planning and Plan Recognition
Machine Learning

EXPERIENCE

Professor and Department Chair, Millersville University of Pennsylvania, Department of Computer Science, Millersville, PA, May 2020—Present

Professor, Millersville University of Pennsylvania, Department of Computer Science, Millersville, PA, August 2013—May 2020

Associate Professor, Millersville University of Pennsylvania, Department of Computer Science, Millersville, PA, August 2008-2013

Assistant Professor, Millersville University of Pennsylvania, Department of Computer Science, Millersville, PA, August 2003-2008

Research Assistant, Dept. of Computer and Information Sciences, University of Delaware, Newark, DE, August 2002-May 2003

- Worked to develop techniques for dynamically recognizing the communicative intention of information graphics

Adjunct Instructor, Millersville University of Pennsylvania, Department of Computer Science, Millersville, PA, August 2001—May 2002

- Taught three sections of the introductory programming course (CSCI 161)
- Developed lectures, labs, programming and written assignments, and examinations

Adjunct Instructor, The Pennsylvania State University (Harrisburg Campus), Middletown, PA, August 2001—December 2001

- Taught COMP 416, Principles of Programming Languages
- Developed lectures, programming assignments, and examinations

Senior Software Engineer, MapQuest.com (later AOL Time Warner), Mountville, PA, September 1998—August 2001

- Worked on various teams including the core product group, research and development, and the website development group
- Projects included internationalization efforts, key architecture initiatives and new platform explorations
- Responsibilities included both development and team leadership

System Architect, AMP, Incorporated, Harrisburg, PA, December 1996—September 1998

- Worked in the global research and development group
- Researched and developed new core architectures for the company
- Served as a technical consultant to project teams, helping to build solutions to overcome technical challenges as well as making recommendations on appropriate technologies and architectures

Software Engineer, Primavera Systems, Inc., Bala Cynwyd, PA, March 1996—December 1996

- Responsibilities included developing an OLE automation interface for project management software in C++ and developing test applications in Visual Basic

Software Engineer, Electronic Payment Services, Inc., Wilmington, DE, June 1995—March 1996

- Worked as a developer and project leader/manager
- Responsibilities included GUI and PL/SQL development as well as project management tasks

Research Assistant and Teaching Assistant, Dept. of Computer and Information Sciences, University of Delaware, Newark, DE, May 1991--May 1995

- Research involved the construction of a model of user preferences during collaborative consultation dialogues and the development of augmentative communication devices using natural language processing techniques
- Teaching responsibilities included independently teaching CISC 105 (General Computer Science) during a summer session and serving as a teaching assistant for CISC 106 (General Computer Science for Engineers)

AWARDS

Best Poster Award (for Student-Authored Poster), 34th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Millersville, PA, April 2019.

Best Paper Award (for Student-Authored Paper), 32nd Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Edinboro, PA, April 2017.

Best Paper Award (for Student-Authored Paper), 31st Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown, PA, April 2016.

Best Paper Award (for Student-Authored Paper), 29th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), California, PA, April 2014.

Best Paper Award (for Student-Authored Paper), 7th International Conference on the Theory and Application of Diagrams (Diagrams 2012), London, England, July 2012.

Best Paper Award (for Student-Authored Paper), 6th International Conference on the Theory and Application of Diagrams (Diagrams 2010), Portland, OR, August 2010.

Springer Best Paper Award, 11th International Conference on User Modeling (UM), Corfu, Greece, June 2007.

James Chen Annual Award for Best Journal Article, User Modeling and User-Adapted Interaction (UMUAI), 2006.

Best Paper Award, Fourth International Conference on the Theory and Application of Diagrams (Diagrams '06), Stanford, CA, June 2006.

Frank A. Pehrson Award for Outstanding Graduate Student, Computer & Information Sciences Department, University of Delaware, May 2006.

Best Student Paper Award, Third International Conference on the Theory and Application of Diagrams (Diagrams '04), Cambridge, UK, March 2004.

The Quantum Leap Innovations Graduate Student Excellence Award, University of Delaware, 2003, for excellence in the field of artificial intelligence

Laurie Pfeffer Shinn Memorial Award, University of Delaware, 1995, for outstanding female computer science student

Shippensburg University Outstanding Student Scholarship, Shippensburg University, 1987-1991, full tuition academic scholarship

SICO Scholarship, Shippensburg University, 1987-1991

BOOKS

Jamnik, Mateja., Yuri Uesaka and Stephanie Schwartz, (eds.) Diagrammatic Representation and Inference, 9th International Conference, Diagrams 2016, Proceedings. Volume 9781 of Lecture Notes in Artificial Intelligence. Springer, 2016.

REFEREED PUBLICATIONS

Edward J. Schwartz, Cory F. Cohen, Jeffrey S. Gennari and Stephanie M. Schwartz. A Generic Technique for Automatically Finding Defense-Aware Code Reuse Attacks, Proceedings of the 2020 ACM Conference on Computer and Communications Security.

Burns, Richard, Sandra Carberry, and Stephanie Elzer Schwartz. An automated approach for the recognition of intended messages in grouped bar charts. Computational Intelligence. 2019; Volume 35, Issue 4, pp. 955–1002.

Groff, Zachary and Stephanie Schwartz. Data Preprocessing and Feature Selection for an Intrusion Detection System Dataset. In the Proceedings of the 34th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Millersville, PA, April 12-13, 2019.

Thorpe, Jamie and Stephanie Schwartz. Using Machine Learning to Identify Phishing Attacks. In the Proceedings of the 32nd Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Edinboro, PA, March 31-April 1, 2017. Won award for best student paper.

Burns, Richard, Eric Balawejder, Wiktoria Domanowska, Stephanie Elzer Schwartz and Sandra Carberry. Exploring the Types of Messages that Pie Charts Convey in Popular Media. To appear in the 9th Annual Conference on the Theory and Application of Diagrams, Lafayette Hill, PA, USA, August 7-10, 2016.

- McIntosh, Shayne, Stephanie Schwartz and Gary Zoppetti. Optimizing the Multiclass Perceptron through Parameter Tuning and GPU Utilization. In the Proceedings of the 31st Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown, PA, April 1-2, 2016. Won award for best student paper.
- Burns, Richard, Sandra Carberry, and Stephanie Elzer Schwartz. Classifying Salient Textual Entities in the Headlines and Captions of Grouped Bar Charts. In Proceedings of the 28th International Florida Artificial Intelligence Research Society Conference, pp. 217-220, 2015.
- Zevallos, Alyssa, and Stephanie Elzer Schwartz. Identification of Most Relevant Paragraph in an Article for a Bar Chart Using Machine Learning and Kullback-Leibler Divergence. In the Proceedings of the 29th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), California, PA, April 4-5, 2014. Won award for best student paper.
- Burns, Richard, Sandra Carberry, and Stephanie Elzer Schwartz. Analyzing the Effect of Communicative Evidence in a Bayesian System for Grouped Bar Chart Message Recognition. 27th International FLAIRS Conference (Florida Artificial Intelligence Research Society), Pensacola Beach, FL, May 21-23, 2014, pp. 14-17.
- Burns, Richard, Stephanie Elzer Schwartz, Sandra Carberry. Towards Adapting Information Graphics to Individual Users to Support Recognizing Intended Messages. First International Workshop on User-Adaptive Visualization (WUAV at International Conference on User Modeling, Adaptation and Personalization: UMAP '13), 2013.
- Burns, Richard, Sandra Carberry, and Stephanie Elzer Schwartz. Modeling a Graph Viewer's Effort in Recognizing Messages Conveyed by Grouped Bar Charts. In the Proceedings of the 21st Conference of User Modeling, Adaptation and Personalization (UMAP '13), pp. 114-126, 2013.
- Demir, Seniz, Stephanie Elzer Schwartz, Richard Burns and Sandra Carberry. What is being Measured in an Information Graphic? In the Proceedings of Computational Linguistics and Intelligent Text Processing (CICLING) 2013, Lecture Notes in Computer Science Volume 7816, 2013, pp 501-512.
- Carberry, Sandra, Stephanie Elzer, Kathleen McCoy, Seniz Demir, Peng Wu, Charles Greenbacker, Daniel Chester, Edward Schwartz, David Oliver, and Priscilla Moraes. Access to Multimodal Articles from Popular Media for Individuals with Sight Impairments. Transactions on Interactive Intelligent Systems, Volume 2, Issue 4, December 2012, article 21 pp. 1-49.
- Carberry, Sandra, Stephanie Elzer, Richard Burns, Peng Wu, Daniel Chester, and Seniz Demir. Information Graphics in Multimodal Documents. In Multimedia Information Extraction, Mark T. Maybury, Editor, John Wiley & Sons, Inc, 2012, Chapter 15, pp 235-252.
- Burns, Richard, Sandra Carberry, Stephanie Elzer, and Daniel Chester. Automatically Recognizing Intended Messages in Grouped Bar Charts. Proceedings of the Sixth International Conference on the Theory and Application of Diagrams, London, England, July, 2012, pp. 8-22, acceptance rate 29%, won award for Best Student Paper.
- Greenbacker, Charles, Peng Wu, Sandra Carberry, Kathleen McCoy, Stephanie Elzer, David McDonald, Daniel Chester and Seniz Demir. Improving the Accessibility of Line Graphs in Multimodal Documents. In Proceedings of the EMNLP 2011 Workshop on Speech and Language Processing for Assistive Technologies (SLPAT), 2011, pp. 52-62.
- Greenbacker, Charles, Peng Wu, Sandra Carberry, Stephanie Elzer, and Kathleen F. McCoy. Abstractive Summarization of Line Graphs from Popular Media. In Proceedings of the ACL-HLT 2011 Workshop on Summarization for Different Genres, Media and Languages, pp. 41-48, Portland, Oregon, June 2011.

Pape, Matthew, Robert Grube and Stephanie Elzer. Face the Waste: A Software Productization Center Project from the Computer Science Student's Perspective. In the Proceedings 26th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE), April 2011, Shippensburg, PA, 90-94.

Elzer, Stephanie, Sandra Carberry, Ingrid Zukerman, The automated understanding of simple bar charts, *Artificial Intelligence*, Volume 175, Issue 2, February 2011, Pages 526-555, ISSN 0004-3702, DOI: 10.1016/j.artint.2010.10.003.

Demir, S., Oliver, D., Schwartz, E., Elzer, S., Carberry, S., McCoy, K. F., et al. (2010). Interactive SIGHT: textual access to simple bar charts. *New Review of Hypermedia and Multimedia*, 16(3), 245-279.

McCaskey, Patrick, Stephanie Elzer, Nancy Mata and Amanda Godley, Software Productization Center and RunOff Studios: A Case Study. In the Proceedings of the 2010 Eastern SBI® Annual Meeting, Pittsburgh, PA, October, 1-2, 2010, pp. 31-43.

Wu, Peng, Sandra Carberry, and Stephanie Elzer. Segmenting line graphs into trends. In the Proceedings of the Twelfth International Conference on Artificial Intelligence. 2010, page 697-703, Acceptance rate approximately 28%.

Wu, Peng, Sandra Carberry, Stephanie Elzer, Daniel Chester: Recognizing the Intended Message of Line Graphs. Proceedings of the Fifth International Conference on the Theory and Application of Diagrams, Portland, Oregon, August 2010, 220-234, acceptance rate 34%, won award for Best Student Paper.

Demir, Seniz, David Oliver, Edward Schwartz, Stephanie Elzer, Sandra Carberry, Kathleen F McCoy: Interactive SIGHT demo: textual summaries of simple bar charts. *ASSETS 2010*, 267-268, acceptance rate approx. 35%.

Burns, Richard, Sandra Carberry, Stephanie Elzer. Visual and Spatial Factors in a Bayesian Reasoning Framework for the Recognition of Intended Messages in Grouped Bar Charts. *AAAI Workshop: Visual Representations and Reasoning*, Technical Report WS-10-07, pp. 6-13, 2010.

McCaskey, Patrick, Stephanie Elzer and Nancy Mata. Software Productization Center -- Small Business Institute ®: A Case Study of Cooperation. In the Proceedings of the 2010 Annual Meeting of the Small Business Institute ®, Albuquerque, NM, February 18-20, 2010, Vol. 34, Issue 1, pp. 218-223.

Dougherty, Elyse, Trevor Scheitrum, Stephanie Elzer. Cruzcourt: A Software Productization Project from the Computer Science Students' Perspective. In the Proceedings of the 25th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), West Chester, PA, April 2010.

Oliver, David, Stephanie Elzer. The User Interface for Interactive_SIGHT. In the Proceedings of the 25th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), West Chester, PA, April 2010.

Demir, Seniz, David Oliver, Edward Schwartz, Stephanie Elzer, Sandra Carberry, Kathleen F. McCoy. Interactive SIGHT into Information Graphics. In Proceedings of the 7th International Cross-Disciplinary Conference on Web Accessibility (W4A), Raleigh, NC, US, April, 2010, acceptance rate 31%.

Elzer, Stephanie, Edward Schwartz, Sandra Carberry, Daniel Chester, Seniz Demir and Peng Wu. Bar Charts in Popular Media: Conveying Their Message to Visually Impaired Users via Speech, in *Advances in Intelligent Information Systems*, Z. W. Ras, L. Tsay (Eds), Studies in Computational Intelligence, Volume 265, Springer, 2010, pages 275-298.

Burns, Rich, Stephanie Elzer and Sandra Carberry. Modeling Relative Task Effort for Grouped Bar Charts. In Proceedings of the Annual Meeting of the Cognitive Science Society, Amsterdam, Netherlands, July 2009, pages 2292-2297, acceptance rate 32%.

Demir, Seniz; Sandra Carberry and Stephanie Elzer. Issues in Realizing the Overall Message of a Bar Chart., in Recent Advances in Natural Language Processing V, Nicolas Nicolov, Galia Angelova, and Ruslan Mitkov (Eds), Current Issues in Linguistic Theory, John Benjamins, 2009, pages 311-320.

Workman, Kevin, and Stephanie Elzer. Utilizing Microsoft Robotics Studio in Undergraduate Robotics. In the Proceedings of the Eastern Conference of the Consortium for Computing Sciences in Colleges, Frederick, MD, October 10-11, 2008, pp. 65-71.

Elzer, Stephanie, Richard Burns, and Sandra Carberry. The Role of Cognitive Modeling in an Automated System for Understanding Bar Charts. In the Proceedings of the Workshop on Cognitive Models of Human Spatial Reasoning (in conjunction with International Conference on Spatial Cognition), Freiburg, Germany, September 15-19, 2008, pages 1-6.

Burns, Richard, Sandra Carberry, and Stephanie Elzer. Processing Information Graphics in Multimodal Documents. In the Proceedings of the AAAI Fall Symposium on Multimedia Information Extraction, 2008, pages 5-9.

Burns, Richard, Stephanie Elzer, and Sandra Carberry. Estimating Effort for Trend Messages in Grouped Bar Charts. Proceedings of the Fifth International Conference on the Theory and Application of Diagrams, Herrsching, Germany, September 19-21, 2008, pages 353-356.

Carberry, Sandra and Stephanie Elzer. Toward Effective Processing of Information Graphics in Multimodal Documents: A Bayesian Network Approach. In Computational Intelligence in Multimedia Processing: Recent Advances, Aboul-Ella Hassanien, Ajith Abraham, and Janusz Kacprzyk, Editors, Springer, pp. 191-212, 2008, acceptance rate below 50%.

Wu, Peng, Sandra Carberry, Daniel Chester, and Stephanie Elzer. Decision Tree Induction for Identifying Trends in Line Graphs. In the Proceedings of the 17th International Symposium on Methodologies for Intelligent Systems (ISMIS-08), pp. 399-409, 2008.

Workman, Kevin and Stephanie Elzer. Creating an Upper-Level Undergraduate Robotics Elective in Computer Science. In the Proceedings of the 23rd Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown, PA, April 2008.

Hober, David and Stephanie Elzer. Does the Real-Time Java Specification Form a Viable Real-Time Programming Language? In the Proceedings of the 23rd Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown, PA, April 2008.

Cummings, Jarett, Stephanie Elzer, and Gary Zoppetti. Bayesian Networks in Video Games. In the Proceedings of the 23rd Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Kutztown, PA, April 2008.

Demir, Seniz, Sandra Carberry, and Stephanie Elzer. Effectively Realizing the Inferred Message of an Information Graphic. In the Proceedings of the International Conference on Recent Advances in Natural Language Processing (RANLP), Borovets, Bulgaria, September 27-29, 2007, pages 150-156, acceptance rate 12%.

Elzer, Stephanie, Edward Schwartz, Sandra Carberry, Daniel Chester, Seniz Demir, Peng Wu. A Browser Extension for Providing Visually Impaired Users Access to the Content of Bar Charts on the Web. In the Proceedings of Third International Conference on Web Information Systems and Technology (WebIST), Barcelona, Spain, March 3-6, 2007, pages 59-66, acceptance rate under 14%.

Carberry, Sandra and Stephanie Elzer. Exploiting Evidence Analysis in Plan Recognition. In Proceedings of the 11th International Conference on User Modeling (UM2007), Corfu, Greece, June 25-29, 2007, pages 7-16, acceptance rate 19.6%, Best Paper Award.

Schwartz, Edward and Stephanie Elzer. An Introduction to COM, ATL, and the Windows API Through Creation of an Internet Explorer Browser Helper Object. In Proceedings of the 22nd Annual Spring conference of the Pennsylvania Computer and Information Science Educators (PACISE), Lock Haven, PA, March 23-24, 2007.

Elzer, Stephanie, Nancy Green, Sandra Carberry, and James Hoffman. A Model of Perceptual Task Effort for Bar Charts and its Role in Recognizing Intention. *Journal of User Modeling and User-Adapted Interaction*, Volume 16, Number 1, March 2006, pages 1-30, based on the ISI Impact Factor, this journal has been consistently ranked among the top 5% of Computer Science journals over the past few years (<http://www.umuai.org>), Best Paper Award.

Elzer, Stephanie, Sandra Carberry and Seniz Demir. Communicative Signals as the Key to the Automated Understanding of Simple Bar Charts. In the Proceedings of the Fourth International Conference on the Theory and Application of Diagrams (Diagrams '06), Stanford, CA, USA, June 2006, pages 25-39, acceptance rate 29.5%, Best Paper Award.

Carberry, Sandra, Stephanie Elzer, and Seniz Demir. Information Graphics: An Untapped Resource for Digital Libraries. In the Proceedings of the 29th Annual International ACM SIGIR Conference on Research & Development on Information Retrieval, Seattle, WA, USA, August 2006, pages 581-588, acceptance rate 18.5%.

Elzer, Stephanie, Sandra Carberry, Ingrid Zukerman, Daniel Chester, Nancy Green and Seniz Demir. A Probabilistic Framework for Recognizing Intention in Information Graphics. In the Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), pages 1042-1047, Edinburgh, Scotland, July 2005, acceptance rate 18.1%.

Elzer, Stephanie, Sandra Carberry, Daniel Chester, Seniz Demir, Nancy Green, Ingrid Zukerman, and Keith Trnka. Exploring and Exploiting the Limited Utility of Captions in Recognizing Intention in Information Graphics. In the Proceedings of the 43rd Annual Meeting of the Association for Computational Linguistics, pages 223-230, Ann Arbor, Michigan, USA, June 2005, acceptance rate 18.4%.

Chester, Daniel and Stephanie Elzer. Getting Computers to See Information Graphics so Users Do Not Have to. In Proceedings of the 15th International Symposium on Methodologies for Intelligent Systems, Lecture Notes in Artificial Intelligence 3488, Springer-Verlag, pages 660—668, June 2005, acceptance rate approximately 33%.

Carberry, Sandra, Stephanie Elzer, Nancy Green, Kathleen McCoy and Daniel Chester. Extending Document Summarization to Information Graphics. In the Proceedings of the Workshop 'Text Summarization Branches Out', Association for Computational Linguistics, pages 3-9, Barcelona, Spain, July 2004.

Elzer, Stephanie, Nancy Green, Sandra Carberry and James Hoffman. Incorporating Perceptual Task Effort into the Recognition of Intention in Information Graphics. In the Proceedings of the Third International Conference on the Theory and Application of Diagrams (Diagrams '04), pages 255-270, Cambridge, UK, March 2004, acceptance rate 35%, Best Paper Award.

Elzer, Stephanie, Nancy Green, Sandra Carberry and Kathleen McCoy. Extending Plan Inference Techniques to Recognize Intention in Information Graphics. In Proceedings of the Ninth International Conference on User Modeling, pages 122-132, Pittsburgh, PA, USA, June 2003, acceptance rate 24.5%.

Elzer, Stephanie, Nancy Green and Sandra Carberry. Exploiting Cognitive Psychology Research for Recognizing Intention in Information Graphics. In Proceedings of the 25th Annual Meeting of the Cognitive Science Society, Boston, MA, USA, July 2003.

Carberry, Sandra, Stephanie Elzer, Nancy Green, Kathleen McCoy and Daniel Chester. 2003. Understanding Information Graphics: A Discourse-Level Problem. In the Proceedings of the Fourth SIGdial Workshop on Discourse and Dialogue, Association for Computational Linguistics, pages 1-12, Sapporo, Japan, July 2003.

Carberry, Sandra, Jennifer Chu-Carroll, Stephanie Elzer. Constructing and Utilizing a Model of User Preferences in Collaborative Consultation Dialogues. *Computational Intelligence Journal*, 15(3), pp. 185-217, 1999.

Elzer, Stephanie. The role of user preferences and problem-solving knowledge in plan recognition for expert consultation systems. In *Proceedings of the workshop on The Next Generation of Plan Recognition Systems: Challenges for and Insight from Related Areas of AI*, pages 37--41, Montreal, Canada, August 1995.

Elzer, Stephanie and Jennifer Chu-Carroll and Sandra Carberry. Recognizing and Utilizing User Preferences in Collaborative Consultation Dialogues. *Proceedings of the Fourth International Conference on User Modeling*, pp. 19-24, Hyannis, MA, USA, August 1994.

TALKS AND PRESENTATIONS

“Putting the Fun in Functional Programming,” Central PA Open Source Conference (CPOSC), Lancaster, PA, December 5, 2020. Presented with Edward Schwartz.

“Understanding the Role of Information Graphics in Multimodal Documents,” International Association of Applied Linguistics (AILA) 2021, S202 - Multimodality: Evaluation and Application. Presented with Richard Burns.

“Machine Learning with Random Forests: How (and Why!) They Work,” Central PA Open Source Conference (CPOSC), Lancaster, PA, September 21, 2019.

“Your First Neural Network: From Concept to Code,” Central PA Open Source Conference (CPOSC), Lancaster, PA, November 29, 2018.

“Cracking the Code: What’s Missing in Computer Science?” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 7, 2015.

“Beyond Facebook: Why You Should Help Decide What’s Next in Computer Science,” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 8, 2014.

“Beyond Facebook: Why You Should Help Decide What’s Next in Computer Science,” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 2, 2013.

“Engaging Resources to Accelerate Start-Up Success,” with Fran Gillott and Ryan Keener, LeadersHYP Summit, Harrisburg University, October 20, 2012.

“You Got Your Design in My Code,” with Nancy Mata, Adam Bitner, Robert Hennessey and Logan Peck, Pennsylvania Association of Councils of Trustees, Millersville University, October 18, 2012.

“The Software Productization Center at Millersville University: A Study in Successful Cross-Disciplinary Collaboration at the Undergraduate Level,” *Frontiers in Education: Computer Science and Computer Engineering*, Las Vegas, July 18, 2012

“Reaching for the.. Clouds? The Next Big Things in Computer Science” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, March 27, 2012.

“Beyond Facebook and Google: What’s Next in Computer Science?” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, March 29, 2011.

“High Impact Student Practices Within the SPC,” with Nancy Mata and Pat McCaskey, an invited talk as part of the Millersville University Faculty Convocation, March 23, 2011.

“SPC and Runoff Studios,” with Jake Walker, Matthew Pape and Robert Grube, an invited talk at the Central PA Simulation and Serious Game Xchange, March 16, 2011.

“Beyond Facebook and Google: What’s Next in Computer Science?” Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 6, 2010.

“Cruzcourt: The Story of a Successful Collaboration,” with Adrian Fang, an invited talk as part of the Technology-Led Development component of the Basic Economic Development Course in Pennsylvania, offered by Penn State Harrisburg and the International Economic Development Council, December 8th, 2009.

“Women and Innovation,” with Nancy Mata, a panel discussion in WSTU 491 (Creativity, Innovation, and Gender), Millersville University, April 2, 2009.

“Exciting Endeavors in Computer Science,” with Dr. Nazli Hardy, Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, March 31, 2009.

“Faculty/Student Collaboration in Computer Science,” invited presentation, Millersville University Council of Trustees, Millersville, PA, March 18, 2009.

“The Role of Cognitive Modeling in an Automated System for Understanding Bar Charts,” Workshop on Cognitive Models of Human Spatial Reasoning, Freiburg, Germany, September, 2008.

“Faculty/Student Collaboration in Computer Science,” part of the invited presentation on best practices, PASSHE Board of Governors, Harrisburg, PA, April 9, 2008.

“Exploiting Evidence Analysis in Plan Recognition,” 11th International Conference on User Modeling, Corfu, Greece, June 2007.

“Collaborative Research,” invited speaker as part of the Sponsored Projects Sampler at the Millersville University Academic Festival, May 2007.

“Shaping the Future with Computer Science,” with Dr. Nazli Mollah, Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 3, 2007.

“A Browser Extension for Providing Visually Impaired Users Access to the Content of Bar Charts on the Web,” with Edward Schwartz, Third International Conference on Web Information Systems and Technology (WebIST), Barcelona, Spain, March 2007.

“Communicative Signals as the Key to the Automated Understanding of Simple Bar Charts,” Fourth International Conference on the Theory and Application of Diagrams (Diagrams ‘06), Stanford, CA, USA, June 2006.

“The Fun, Fearless Future in Computer Science,” with Dr. Nazli Mollah, Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 4, 2006.

“Beyond Instant Messaging: Careers in Computer Science,” with Dr. Nazli Mollah, Career Day, Manor Middle School, November, 2005.

“A Probabilistic Framework for Recognizing Intention in Information Graphics,” International Joint Conference on Artificial Intelligence (IJCAI), Edinburgh, Scotland, July 2005.

“Beyond Instant Messaging: Careers in Computer Science,” with Dr. Nazli Mollah, Glenna Hazeltine Women in Mathematics and Science Conference, Millersville University, April 5, 2005.

Invited Panel Participant, “Academic Careers,” New Graduate Student Seminar, CIS Department, University of Delaware, October 27, 2004.

Invited Panel Participant, “The Process of Publishing Papers,” New Graduate Student Seminar, CIS Department, University of Delaware, October 13, 2004.

“Incorporating Perceptual Task Effort into the Recognition of Intention in Information Graphics,” Third International Conference on the Theory and Application of Diagrams (Diagrams '04), Cambridge, UK, March 2004.

“Incorporating Perceptual Task Effort into the Recognition of Intention in Information Graphics,” SIG-AI (Departmental Seminar), Computer and Information Sciences Department, University of Delaware, Newark, DE, March 8th, 2004.

“Incorporating Perceptual Task Effort into the Recognition of Intention in Information Graphics,” Scholarship Social, Millersville University, February 27th, 2004.

DISSERTATION COMMITTEES

“Automated Intention Recognition of Grouped Bar Charts in Multimodal Documents,” Richard Burns, University of Delaware, Computer and Information Systems, July 2012, external committee member.

“Recognizing the Intended Message of Line Graphs: Methodology and Applications,” Peng Wu, University of Delaware, Computer and Information Systems, December 2011, external committee member.

“SIGHT for Visually Impaired Users: Summarizing Information Graphics Textually,” Seniz Demir, University of Delaware, Computer and Information Systems, February 2010, external committee member.

HONORS THESIS SUPERVISION

“Solving Nonograms: A Constraint Satisfaction Approach,” Jonathan Wilkins, Spring 2022, Committee Member.

“Singular Value Decomposition: Implementation, Analysis, and Optimization,” Maksim Melnichenko, Spring 2020, Committee Member.

“Towards Better Fuzzing: Generating Program Input Formats through NeuroEvolution,” Connor Billings, Fall 2019, Faculty Supervisor.

“Minimizing False Negatives and False Positives in Neural Network-based Intrusion Detection Systems,” Zachary Groff, Spring 2019, Faculty Supervisor.

“Parallel Pathfinding in a Gridded Environment with Parallel Divide Search,” Alex Wilton, Spring 2018, Committee Member.

“NES I/O: Machine Learning on Platform and Flight NES Video Games,” Sean Strange, Fall 2017, Faculty Supervisor.

“Using Machine Learning to Identify Phishing Attacks,” Jamie Thorpe, Spring 2017, Faculty Supervisor.

“Comparison of Principal Components Analysis and Canonical Correlation Analysis,” Jessica Butts, Spring 2017, External Committee Member.

“Is Academic Exposure a Critical Element to Student Perceptions in Computer Science?” Emma Montgomery, Spring 2017, External Committee Member.

“Implementing a Concurrent-by-Default Programming Language with Automatic Memoization,” Daniel Rabięga, Spring 2015, Committee Member.

“Generating Box-Jenkins ARIMA Data in JAVA, with a concentration on Seasonal Model Analysis,” Christopher Schneider, Spring 2015, External Committee Member.

“Identification of Most Relevant Paragraph in an Article for a Bar Chart Using Machine Learning and Kullback-Leibler Divergence,” Alyssa Zevallos, Spring 2014, Faculty Supervisor.

“A Comparison of Efficient Techniques For Rendering Van der Waals Surfaces of Molecules,” Edward Kimmel, Spring 2013, Committee Member.

“Factors for Success of an Educational Serious Game,” Robert Grube, Fall 2011, Faculty Supervisor.

“The Features and Usability of a Mobile Platform for Gaming,” Matthew Pape, Spring 2011, Faculty Supervisor.

“Ocular Trauma Microsurgery Simulation: Creating a Realistic Ocular Surgery Simulation,” Matthew Maze, Spring 2011, Committee Member.

“Inattentive Blindness and Driving Confidence,” Alesia Hagar (psychology), Spring 2009, Committee Member

“Building an Accessible Interface for Bar Charts in Internet Explorer,” Edward Schwartz, Spring 2007, Faculty Supervisor

“Network Security & Forensics in Financial Institutions,” Michael Vicinsky, Fall 2006, Committee Member

“Affective Instant Messaging,” Daniel Blanchard, Spring 2005, Faculty Supervisor

“A Study on Input Rates in an AAC Device,” J.J. McCaw, Spring 2005, Committee Member

INDEPENDENT STUDY SUPERVISION

Joshua Carney, “Fire Emblem Machine Learning,” Spring 2022

Emma Montgomery, “Analyzing Student Success Factors,” Spring 2018

Seth Miller, “Made in Millersville Data Development,” Spring 2018

Daniel Sipe, “Designing and Developing a Mobile Application,” Fall 2017

Carlos Beltre, “Developing a Personal Blog Site Using Django and Bootstrap,” Spring 2017

Seth Miller, “Made in Millersville Application Development,” Spring 2017

Nicole Seese, “Using Machine Learning to Uncover Relations between Depression Diagnoses and Patient Medical History and Demographics,” Fall 2016

Tyler Helsel, “Augmented Reality with Google Cardboard,” Spring 2016

Shayne McIntosh, “Leveraging CuDNN,” Fall 2015

Kyle Hopkins, “Teachers in the Park,” Spring 2015

Adam Drago, “Building an iPhone Application,” Spring 2010

Kevin Workman, “Exploring Distributed Computing with Hadoop,” Fall 2008

Jarett Cummings, “Bayesian Networks in Video Games,” Fall 2007, Spring 2008

David Hober, “Java Real-Time Systems,” Fall 2007, Spring 2008

Courtney Ewing, Michael Ridgway and Ryan

Griffith, “A Dynamic Content Management System for the CS Department Website,” Fall 2007

Courtney Ewing and Ryan Griffith, “Developing a Database-Driven Website for PAWS,” Spring 2007

Joseph Lyga, “Exploring Microsoft Robotics Studio,” Spring 2007
Adam Bretz and Daniel Nguyen, “Simulating Hemisson and Pioneer Robots Using Pyro,” Fall 2006
Adam Bretz, Daniel Nguyen and Long Nguyen, “Exploring Robotics Using Pyro,” Spring 2006
Edward Schwartz, “Multimodal Access to Bar Charts,” Spring 2006
Edward Schwartz, “Generating Natural Language Summaries Using Templates,” Fall 2005
Adam Worrell, “Open Source Software in a Government Environment,” Spring 2005
Daniel Blanchard, “Affective Instant Messaging,” Fall 2004
Shaun Dunning, “User Modeling in Intelligent Systems,” Spring 2004
Daniel Blanchard, “Building a Natural Language Parser,” Fall 2003

UNIVERSITY SUPPORT

Chair, Technology Advisory Council, January 2022-present
APSCUF Faculty Liaison to Information Technology CTO, December 2021-present
University Multidisciplinary Studies Curriculum Committee, Fall 2019-Spring 2022)
All University Council (Fall 2019-Spring 2020)
Honors College Curriculum Committee (Fall 2018-Spring 2021)
Made in Millersville, Mentor, 2017
Made in Millersville, Reviewer, Moderator and Mentor, 2016
Search Committee for Dean of College of Science and Technology, Fall 2014-Spring 2015
Director of the Entrepreneurship Minor, 9/2012 through 5/2014
University Promotion and Tenure Committee 5/2010-5/2012 (chair for 2nd year of service)
Software Productization Center at Millersville University, Director, Spring 2008-2015
Commencement Marshal: Fall 2009, Spring 2010, Fall 2010, Spring 2011
Millersville Mentoring Alliance Program (MMAP), Mentor, Spring 2008-Spring 2013
Search Committee for Dean of School of Science and Mathematics, Fall 2008-Spring 2009
Millersville Self-Study for Middle States Commission on Higher Education Accreditation Review, Working Group 10:
Standard 13 (Spring 2008-Fall 2009)
Academic Policies Committee (Fall 2007-Spring 2009)
Noonan Grants Committee (Fall 2006-Spring 2008)
Upward Bound Program, Math & Science Curriculum Committee (Fall 2006-Spring 2007)
Millersville University Online Advisory Group, (Fall 2005-Spring 2008)
Ad Hoc Honor Code Committee (Fall 2005-Spring 2007)
University Theme Committee (Fall 2005-Spring 2007)
Faculty Senate Alternative Representative (Fall 2004 – present). Serving as fulltime representative in Fall 2006 due to a course conflict of the primary senator.

SCHOOL/COLLEGE SUPPORT

Science Lectureship Demos, November 2017 (with Sean Strange)
Science Olympiad, Judge/Supervisor of the “Game On” event, March 2017 (with Gary Zoppetti)
Science Olympiad, Judge/Supervisor of the “Game On” event, March, 2016 (with Gary Zoppetti)
School Curriculum Committee (Spring 2009-Fall 2018, except Spring 2013 and Spring 2017), Secretary 2013, Chair 2014
Glenna Hazeltine Women in Mathematics and Science Conference Committee (Fall 2005 – Spring 2008)
School Advancement Committee (Fall 2004 – Spring 2005)

DEPARTMENTAL SUPPORT

Chair, Faculty Search Committee Tenure Track (Fall 2019-Spring 2020).
Member, Faculty Search Committee Tenure Track (Fall 2018-Spring 2019).
Chair, Faculty Search Committee Tenure Track (Fall 2017-Spring 2018).
Organizer for Technical Symposium, Spring 2017. Speaker: Dr. Thanassis Avgerinos. Subject: The World’s First All-Machine Hacking Competition. Date: April 11th, 2017.
Member, Faculty Search Committee One-Year (Spring 2016, 2017)

Member, Faculty Search Committee Tenure Track (Spring 2013-Spring 2014)
Faculty Evaluation Committee, Member (Fall 2008-Spring 2011, Fall 2014-present)
Organizer for Technical Symposium, Fall 2008. Speaker: Dr. John Spletzer. Subject: Mobile Robotics – The Next Transformative Technology. Date: October 20th, 2008.
Faculty Advisor, Upsilon Pi Epsilon, Computer Science Honors Society (2005-2012). Originated the idea for the department to foster this organization, and managed the writing of the constitution, the application for charter from the international organization, and application for approval from Student Senate. First induction ceremony held in November 2006.
Recruitment and Retention Committee (Chair Spring 2005 – May 2020, Member May 2020-present)
Organizer for Social Issues Symposium, Fall 2004. Speaker: J. McGrath Cohoon. Subject: Closing the gender gap in computer science and other scientific disciplines. Date: October 26, 2004.
Chair, Faculty Search Committee (Fall 2005: Search postponed)
Faculty Search Committee (Spring 2004, Spring 2005)
ABET Accreditation Committee (Fall 2003 – present)
Honors College Liaison (From January 2004 – present)
Chair of Programming Language Selection Committee (Spring 2005 – Spring 2006)
Organizer/Editor for Departmental Newsletter (Fall 2004 – Spring 2009)
Departmental Host for University Open House (At least once each year)
Organizer for Faculty/Student Social (Twice each year)
CSEMS Scholarship Committee (Spring 2004 – Fall 2007)

EXTERNAL GRANTS AND FUNDING

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2018, (2 students, \$17,505).

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2017, (4 students, \$37,500).

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2016, (3 students, \$28,500).

Originator/Principal Investigator. Doctoral Symposium at the Ninth International Conference on the Theory and Application of Diagrams, National Science Foundation, 2016, \$20,000.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2015, (3 students, \$26,018).

Originator/Principal Investigator. Doctoral Symposium at the Eighth International Conference on the Theory and Application of Diagrams, National Science Foundation, 2014, \$20,000.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2014, (1 student, \$8,445).

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2012, (2 students, \$16,842).

Originator/Principal Investigator. Research Experience for Undergraduates Supplement to NSF grant ID 1016900. \$16,000. 2012 to 2013.

Originator/Principal Investigator for “Exploiting Graphics in a Digital Library,” funded by NSF. This is a collaborative grant with the University of Delaware. (UD principal investigator Dr. Sandra Carberry, UD grant amount \$395,056), MU grant amount \$104,857. MU award ID 1016900.

Originator/Principal Investigator for “Cemboo: a Collaboration Between Millersville University SPC and Haydenfilms,” funded as a subcontract from an NSF-PFI grant at Penn State Harrisburg, award amount \$18,060 in direct costs, August 2011.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2010, \$7,815.

Gift, ITN to Software Productization Center, \$20,000, 2010.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2009, \$7,465.

Originator/Principal Investigator for Millersville subcontract. “Multimodal Access to Information Graphics,” funded by US Department of Education (NIDRR) and awarded to University of Delaware (UD principal investigators Dr. Kenneth Barner, Dr. Kathleen McCoy and Dr. Sandra Carberry, total grant amount \$599,487), MU subcontract amount \$54,745. Award period October 1, 2008 through September 30, 2011.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2008, (1 student, \$7,465).

Co-Principal Investigator. “Building the Future: Improving Recruitment and Retention of Underrepresented and Financially Disadvantaged Science and Math Students,” funded by the National Science Foundation. Co-PIs: Drs. LaVern Whisenton-Davidson, Dominique Dagit, Natalia Dushkina, and Robert Smith. August 15, 2008 through July 31, 2013, \$584,980

Originator/Principal Investigator. “Millersville University Computer Software Productization Center,” funded by the PASSHE Planning and Feasibility for University/Business Infrastructure Project, January 2008-January 2011, \$182,541.

Originator/Principal Investigator. “Developing an Upper-Level Robotics Elective for a Computer Science Curriculum,” funded by the PASSHE Professional Development Council, 2007, \$3792.

Originator/Principal Investigator. “An Extensible Web Application for GIS Data Visualization,” funded by the Lancaster and Harrisburg Keystone Innovation Zones (KIZ), business partner: ATS (now GeographIT), co-PI: Dr. Gary Zoppetti, 2007, \$10,000.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2007, (3 students, \$21,793).

Originator/Principal Investigator. “Extending Software Through Web Services,” funded by the Lancaster and Harrisburg Keystone Innovation Zones (KIZ), business partner: Mission Research, co-PI: Dr. Gary Zoppetti, 2006, \$10,000.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2006, (3 students, \$22,405).

Senior Personnel. National Science Foundation (NSF) grant entitled “Exploiting Communicative Signals to Summarize Information Graphics,” funded under the Digital Libraries and Archives track of the Information and Intelligent Systems program. PI: M. Sandra Carberry, University of Delaware, 2006-2009, total budget \$301,215.

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2005, (2 students, \$13,744).

Originator/Principal Investigator. NIST (National Institute of Standards and Technology) for Summer Undergraduate Research Fellowship, 2004, (1 student, \$6,934).

INTERNAL GRANTS AND FUNDING

Faculty Special Academic and Administrative Activities Grant, International Conference on the Theory and Application of Diagrams, Summer 2016, \$340

Faculty Special Academic and Administrative Activities Grant, 1st International Workshop on Multimedia Analysis And Retrieval for Multimodal Interaction, Summer 2016, \$336

Faculty Travel to Present Grant, Las Vegas, Summer 2012

Faculty Sponsor, Neimeyer-Hodgson Research Grant, Adam Drago, Spring 2010, \$100.

Faculty Sponsor, Noonan Grant, Fall 2008

Faculty Travel to Present Grant Germany Fall 2008

Faculty Release Grant, "Toward the Automated Understanding of Grouped Bar Charts," Fall 2007.

Travel to Present Grant, Faculty Grants, Eleventh International Conference on User Modeling, Corfu, Greece, June 2007, \$500.

Faculty Sponsor, Noonan Grant, Third International Conference on Web Information Systems and Technology, Barcelona, Spain, March 2007, \$395

Travel to Present Grant, Faculty Grants, Third International Conference on Web Information Systems and Technology, Barcelona, Spain, March 2007, \$500.

Faculty Sponsor, Student Research Grant, Edward Schwartz, Spring 2007, \$250.

Faculty Sponsor, Student Research Grant, Joseph Lyga, Spring 2007, \$350.

"Building an Accessible Interface for Bar Charts in Internet Explorer," Research Grant, Faculty Grants, awarded Fall 2006, \$1000.

Faculty Sponsor, Student Research Grant, Daniel Nguyen, Fall 2006, \$250.

Faculty Sponsor, Student Research Grant, Adam Bretz, Fall 2006, \$250.

Faculty Sponsor, Student Research Grant, Edward Schwartz, Fall 2006, \$300.

Faculty Sponsor, Neimeyer-Hodgson Research Grant, Edward Schwartz, Fall 2006, \$400.

Travel to Present Grant, Faculty Grants, Fourth International Conference on the Theory and Application of Diagrams (Diagrams '06), Stanford, CA, USA, June 2006, \$475.

Travel to Present Grant, Faculty Grants, International Joint Conference on Artificial Intelligence (IJCAI), Edinburgh, Scotland, July 2005, \$415.

Travel to Present Grant, Faculty Grants, Third International Conference on the Theory and Application of Diagrams (Diagrams '04), Cambridge, UK, March 2004, \$300.

CURRICULUM DEVELOPMENT

CSCI 151 (Intro to Programming for Data Science I), developed and wrote proposal for this course, content developed in collaboration with department faculty.

CSCI 152 (Intro to Programming for Data Science II), developed and wrote proposal for this course, content developed in collaboration with department faculty.

CSCI 330 (Programming Languages), developed a series of five lab assignments to introduce functional programming using OCaml. Utilized for the first time in Fall 2017.

CSCI 452 (Data Mining), developed a new advanced topics course for the Computer Science curriculum. Taught the course for the first time in Fall 2016 as CSCI 406. Eventually wrote proposal to have it approved for permanent course number.

CSCI 366 (Database and Web Development), developed a new core course for the Computer Science curriculum (along with Dr. Gary Zoppetti). Taught the course for the first time in Spring 2016.

Entrepreneurship Minor Director, helped to guide course proposals for ENTR 201, COMM 390 and ENTR 488 through the approval process. Authored ENTR 488 proposal.

CSCI 406 (CS Topics: Software Productization Center), developed a classroom experience based on the “lessons learned” from the SPC collaborations. Multi-disciplinary teams of Design and Computer Science students developed websites for local organizations and companies.

Entrepreneurship Minor Committee, Co-Chair (with Marlene Arnold), February 2011 through June 2011 and Member (October 2010 through present). Now Director of the Minor. Helped to draft the proposal for this cross-disciplinary minor, soliciting proposals from various departments, and helping to guide the proposal through UCPRC and Faculty Senate. Now that it has been approved, we are working on implementation issues, and getting individual courses approved.

UNIV 103 in Computer Science, developing an FYE course to support the campus-wide initiative and to hopefully improve retention within the department (along with Dr. Blaise Liffick and Dr. Nazli Hardy)

CSCI 450, adding a W to the course to reflect the writing requirements.

CSCI 101, converted to distance learning format (received final approval Fall 2011), first offered Summer 2 2012. This is the first distance course to be offered by the computer science department.

CSCI 161, Introduction to Programming I, department elected to change the programming language being used in

CSCI161 and CSCI162 from C++ to Java. The change in languages has had a broad impact on the curriculum, shifting topics on object-oriented design from later courses into this first programming course. All lecture materials, labs, exams and assignments have been (or are being) redesigned. Work has been done in conjunction with Dr. Gary Zoppetti.

CSCI 456, Robotics and Computer Vision, course has not been offered in a number of years. Equipment is being acquired and the course materials are being redesigned so that the course can be offered during in the Fall 2007 semester

CSCI 450, Artificial Intelligence (Fall 2003), course had not been offered in a number of years, and all lectures, materials and assignments were redesigned

COURSE INSTRUCTION AT MILLERSVILLE UNIVERSITY

CSCI 420 Spring 2021, Spring 2022

CSCI 406/452 Topics in CS, Data Mining, Fall 2016, Fall 2017, Spring 2019, Spring 2021

CSCI 366, Database and Web Development, Spring 2016, Spring 2017, Spring 2018, Spring 2019

CSCI 406, Topics in CS, Software Productization Center, Fall 2013, Fall 2014

CSCI 162, Intro to Programming II, Spring 2012, Fall 2013, Spring 2013, Spring 2014, Fall 2014, Fall 2015, Fall 2016, Spring 2017, Spring 2020

CSCI 330, Programming Languages and Software Engineering, Spring 2011, Spring 2013, Fall 2017, Fall 2018, Fall 2019, Spring 2020, Fall 2021

CSCI 101, Problem-Solving with Computers, Fall 2011, Summer 2 2012, Summer 2 2013, Summer 1 2014, Summer 1 2015, Summer 1 2016, Summer 1 2017

CSCI 161, Introduction to Programming I: Fall 2001, Spring 2002, Fall 2003, Spring 2004, Fall 2004, Spring 2005, Fall 2005, Fall 2006, Spring 2007, Fall 2009, Summer 2010, Fall 2010, Summer 2010, Spring 2011, Fall 2012

CSCI 340, Computational Models, Spring 2006, Spring 2008, Spring 2009, Spring 2015, Spring 2016, Spring 2020

CSCI 350, Cognitive Science, Fall 2010, Spring 2013

CSCI 450, Artificial Intelligence: Fall 2003, Fall 2004, Spring 2005, Spring 2006, Spring 2007, Fall 2008, Spring 2010,

Spring 2012, Spring 2014, Fall 2015, Spring 2017, Spring 2018, Fall 2018, Fall 2019, Fall 2020, Fall 2021
CSCI 466, Databases, Fall 2005, Fall 2006, Spring 2008, Spring 2010, Spring 2013, Spring 2015
CSCI 456, Robotics and Computer Vision, Fall 2007

COMMUNITY SERVICE

Young Women's STEM workshop on Neural Networks at Landisville Middle School, May 15, 2019
Convert to Code, Java workshop for middle and high school students, department liaison/teacher's assistant, July 29, 2017
Spotlight on Science, "Exploring Artificial Intelligence," Manheim Township Middle School, June 1, 2015.
Spotlight on Science, "Exploring Artificial Intelligence," Manheim Central High School, September 19, 2014.
"Robotics and Artificial Intelligence: The Next Technologies to Impact Our Lives?" Pathways Institute, Landis Homes, Course Instructor, October 15, 2009.
Spotlight on Science, Hosted robotics program for Manheim Central Middle School Omega program, Spring 2008, Spring 2009, Spring 2011.
"Robots on Mars," North Museum Portal Scientist Program, August 7, 2008.
Science, Technology & Me. This is a program designed to encourage female participation in science and technology careers. Member of Planning Committee for inaugural event in 2007. Instructor in 2008.
Middle School Computer Club, Manheim Christian Day School, Manheim, PA. Creator and advisor. Club meets once per week and provides guidance and activities for students interested in learning more about computer science (Fall 2005, Fall 2006).
Website Maintenance, Manheim Christian Day School, Manheim, PA, Fall 2005-Fall 2006.
Judge, Patriot-News Capital Area Science & Engineering Fair, 2004.

PROFESSIONAL DEVELOPMENT

Attended 26th ACM Conference on Computer and Communications Security, in London, UK, November, 2019.
Attended Data Analytics Summit V: Driving Results through Data Visualization & Advanced Analytics at Harrisburg University, May 2nd, 2019
Attended ACM Technical Symposium on Computer Science Education (SIGCSE), in Memphis, TN, March, 2016.
Attended International Conference on the Theory and Application of Diagrams, in Melbourne, Australia, July 28-August 1, 2014.
Attended UMAP 2013 Conference (User Modeling, Adaptation and Personalization) in Rome, Italy, June, 2013.
Attended the 25th AAAI Conference (Association for the Advancement of Artificial Intelligence) and EAAI (Educational Advances in Artificial Intelligence) in San Francisco, CA, August, 2011.
Attended National Council of Entrepreneurial Tech Transfer's SBIR Workshop, Washington DC, December 2nd, 2009.
Attended Workshop on Weka Data Mining System, Portland, Oregon, March 12th, 2008.
Attended the 39th ACM Technical Symposium on Computer Science Education (SIGCSE), Portland, Oregon, March 12 15, 2008.
Attended joint meeting between Marine Sciences Consortium and NASA-Wallops to discuss possible new collaborations, Shippensburg University, Shippensburg, PA, October 2006.
Attended PACISE 2007, 2008, 2010, 2011, 2012.
Attended Advanced Java Workshop, NSF Chautauqua Program, Dayton, OH, May 22-24, 2006.
Appointed to attend a workshop on effective online instruction, invited instructor was Dr. Richard Novak, Millersville University, January 2006 (participants were approved/selected by Deans).
Attended Workshop on Knowledge and Reasoning in Practical Dialogue Systems, held in conjunction with the Joint International Conference on Artificial Intelligence, Edinburgh, Scotland, August 2005.
Attended CUR (Council on Undergraduate Research) Dialogues 2005, the Art of Grantsmanship, Washington, D.C., April 17-19, 2005.
Attended the Pyro Workshop (Pyro is a project designed to support the teaching of robotics), Bryn Mawr College, August 2004.

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

General Conference Chair, 34th Annual Conference of the Pennsylvania Computer and Information Science Educators (PACISE), Millersville, PA, April 12-13, 2019.

NSF Panel Reviewer, April 2016.

Organizing Committee, 1st International Workshop on Multimedia Analysis and Retrieval for Multimodal Interaction, held in conjunction with the ACM Conference on Multimedia Retrieval (ICMR), New York City, NY, June 6, 2016.

General Conference Chair, 9th International Conference on the Theory and Application of Diagrams, Philadelphia, August 2016.

Organizing Committee (Graduate Symposium Chair), 8th International Conference on the Theory and Application of Diagrams, Australia, August 2014.

Organizing Committee (Doctoral Consortium Chair), 21st International Conference on User Modeling, Adaptation and Personalization (UMAP), Rome, Italy, 2013.

Reviewer, SIGCSE (Technical Symposium on Computer Science Education), Main Program, 2006 through present.

Reviewer, ITiCSE (Innovation and Technology in Computer Science Education) Conference, main program, 2006 through present.

Reviewer, Cognitive Science Society Annual Meeting, Main Program, 2006, 2016-2018.

Program Committee Member and Reviewer, North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL-HLT), 2018.

Program Committee Member and Reviewer, Empirical Methods in Natural Language Processing (EMNLP), 2017.

Program Committee Member and Reviewer, Workshop on User-Adaptive Visualizations, to be held in conjunction with VisWeek, October, 2012.

Session Moderator, International Conference on Frontiers in Education: Computer Science and Computer Engineering, Las Vegas, NV, July, 2012.

Program Committee Member and Reviewer, Workshop on “Accessible Graphics: Graphics for Vision Impaired People,” held in conjunction with Diagrams 2012, July 6, 2012.

Program Committee Member and Reviewer, 7th International Conference on the Theory and Application of Diagrams, 2012.

Organizing Committee (Tutorial Chair), 6th International Conference on the Theory and Application of Diagrams, 2010.

Program Committee Member and Reviewer, SIGdial Conference on Discourse and Dialogue, Association for Computational Linguistics, 2009.

International Conference on the Theory and Application of Diagrams, Steering Committee, 2009-2015 (elected position) and 2016-2021 (based on conference chairmanship).

Program Committee Member and Reviewer, SIGdial Workshop on Discourse and Dialogue, Association for Computational Linguistics, 2008.

Program Committee Member, Reviewer and Session Moderator, 5th International Conference on the Theory and Application of Diagrams, 2008.

Session Moderator, 11th International Conference on User Modeling, 2007.

Program Committee Member and Reviewer, 11th International Conference on User Modeling, 2007.

Reviewer, 2nd European Cognitive Science Conference, 2007.

Session Moderator, Third International Conference on Web Information Systems and Technology, 2007.

Reviewer, User Modeling and User-Adapted Interaction, invited to review a journal submission for the special issue on Statistical and Probabilistic Methods for User Modeling, Fall 2005.

Reviewer, Prentice Hall Publishing, multiple C++ book proposals, 2005-2006.

Reviewer, PACISE (Pennsylvania Association of Computer and Information Science Educators) Conference, 2005 through present.

Program Committee Member. “User Modeling and HCI Approaches in Natural Language Generation” track, Florida AI Research Conference (FLAIRS 2004).