

# CURRICULUM VITAE

Robert S. Roos

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## Contact Information

My current residence is in Mercer, PA. I can be reached via email at [bob.roos@gmail.com](mailto:bob.roos@gmail.com)

## Education

Degree	Date	Place	Subject
Ph.D.	Dec. 1988	The Pennsylvania State University	Computer Science: Computational Learning Theory
M.C.S.	May 1977	University of Illinois	Computer Science
M.S.	May 1974	University of Illinois	Mathematics
B.S.	May 1972	Waynesburg College	Mathematics

Ph.D. thesis: *Deciding Equivalence of Deterministic One-Counter Automata in Polynomial Time with Applications to Learning*

## Employment History

**August 2016–present:** Retired.

**September 1996–August 2016:** Associate professor (2002–2016); assistant professor (1996–2002), Department of Computer Science, Allegheny College, Meadville, Pennsylvania 16335. Chair, August 2005–December 2012.

**July 1988–June 1996:** Assistant professor, Department of Computer Science, Smith College, Northampton, Massachusetts 01063.

**June 1986–August 1988:** Research assistant, Applied Research Laboratory, The Pennsylvania State University, University Park, Pennsylvania 16802.

**August 1985–May 1986:** Instructor (half-time), Computer Science Department, The Pennsylvania State University.

**August 1980–July 1985:** University fellowship (three years), teaching assistantship (two years), Computer Science Department, The Pennsylvania State University.

**August 1977–July 1980:** Assistant professor, Department of Mathematics and Physics, The Defiance College, Defiance, Ohio 43512.

**September 1972–July 1977:** Teaching assistant, Mathematics Department, and supervisor, Computer Calculus laboratory, Mathematics Department, University of Illinois, Urbana, Illinois 61801.

## Publications

### Book Chapters

Architectures and Networks. Chapter 24 in Tucker, Allen B. (editor in chief). *Computer Science Handbook*, 2nd edition. CRC Press, 2004.

### Articles

(With Alexander P. Conrad and Gregory M. Kapfhammer:) Empirically studying the role of selection operators during search-based test suite prioritization. In *Proceedings of the ACM SIGEVO Genetic and Evolutionary Computation Conference, Portland, Oregon*. ACM, July 2010. [Winner, Best Paper Award in Search Based Software Engineering.]

(With Kristen R. Walcott, Mary Lou Soffa, and Gregory M. Kapfhammer:) Time-Aware Test Suite Prioritization. In *Proceedings of the ACM SIGSOFT/SIGPLAN International Symposium on Software Testing and Analysis, Portland, Maine*. ACM Press, June, 2006, 1–12.

(With Gregory M. Kapfhammer and Chris Howell:) An examination of the run-time performance of GUI creation frameworks. In *Proceedings, Second International Conference on the Principles and Practice of Programming in Java, Kilkenny City, Ireland*. ACM International Conference Proceedings Series, June 2003, 171–176.

(With Tiffany Bennett, Jennifer Hannon, and Elizabeth Zehner:) A genetic algorithm for improved shellsort sequences. Poster presentation at the 2002 Genetic and Evolutionary Computation Conference (GECCO 2002), New York City, July 9–13, 2002. In W. B. Langdon, E. Cantú-Paz, et al. (eds.) *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO 2002)*. San Francisco: Morgan Kauffman Publishers, 2002, 694.

(With Geoffrey Arnold and Gregory M. Kapfhammer:) Implementation and analysis of a JavaSpace supported by a relational database. In *Proceedings of the 2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '02)*. Las Vegas: CSREA Press, 2002, 950–955.

(With Brian Zorman and Gregory M. Kapfhammer:) Creation and analysis of a JavaSpace-based distributed genetic algorithm. In *Proceedings of the 2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '02)*. Las Vegas: CSREA Press, 2002, 1107–1112.

Parameter relaxation methods in memetic algorithms. Presented at the Second Workshop on Memetic Algorithms, part of the 2001 Genetic and Evolutionary Computation Conference (GECCO 2001) July 7–11, San Francisco, 2001.

The patchy GA and domination problems. Poster presentation at GECCO-2001. In L. Spector, E. Goodman, et al. (eds.) *Proceedings of the Genetic and Evolutionary Computation Conference, (GECCO 2001)*. San Francisco: Morgan Kaufmann Publishers, 2001, 779.

(With Gregory M. Kapfhammer and Marcus Bittman:) Creating a free, dependable software engineering environment for building Java applications. Position paper presented at “Making Sense of the Bazaar: the 23rd International Conference on Software Engineering’s First Workshop on

Open Source Software Engineering,” Toronto, 2001 (available online at <http://opensource.ucc.ie/icse2001/bittmanrooskapfhammer.ps>).

(With Amr Fahmy:) Efficient learning of real-time two-counter automata. In *Algorithmic Learning Theory: Seventh International Workshop, ALT '96. Proceedings*. Springer-Verlag: Lecture Notes in Artificial Intelligence no. 1160, 1996, 113–126.

(With Amr Fahmy:) Efficient learning of real-time one-counter automata. In *Algorithmic Learning Theory: Sixth International Workshop, ALT '95. Proceedings*. Springer-Verlag: Lecture Notes in Artificial Intelligence no. 997, 1995, 25–40. Preliminary version available online as Technical Report TR-07-95, Harvard University Center for Research in Computing Technology, <ftp://ftp.das.harvard.edu/techreports/tr-07-95.ps.gz>.

(With Piotr Berman:) A learning algorithm for a class of context-free languages. In Zbigniew W. Ras and Maria Zemankova (eds.) *Methodologies for Intelligent Systems: Proceedings of the Second International Symposium*, Charlotte, North Carolina, October 1987 (New York: North-Holland), 317–324.

(With Piotr Berman:) Learning one-counter languages in polynomial time. In *Proceedings of the Twenty-Eighth Annual IEEE Symposium on Foundations of Computer Science*, Los Angeles, California, October 1987, 61–67.

## Book Reviews

Gallardo R., Hommel S., Kannan S., Gordon J., and Zakhour S. *The Java Tutorial: A Short Course on the Basics (6th ed.)* Addison-Wesley Professional, 2014. *Computing Reviews*, May 2015.

Campbell B., Iyer S., and Akbal-Delibas B. *Introduction to Compiler Construction in a Java World*. Boca Raton: Chapman & Hall/CRC, 2013. *Computing Reviews*, November 2013.

Calude, C., Rozenberg, G., and Salomaa, A. (eds.) *Rainbow of Computer Science: Dedicated to Hermann Maurer on the Occasion of his 70th Birthday*. Lecture Notes in Computer Science 6570. Berlin: Springer-Verlag, 2011. *Computing Reviews*, May 2012.

Peutz, M. *Introducing Aviary*. New York: Friends of ED, 2010. *Computing Reviews*, June 2011.

Rasskin-Gutman, D. *Chess Metaphors: Artificial Intelligence and the Human Mind*. Cambridge, MA: MIT Press, 2009. *Computing Reviews* (online), 30 November 2009. *Computing Reviews*, December 2010.

Parkes, A. *A Concise Introduction to Languages and Machines*. London: Springer-Verlag, 2008. *Computing Reviews* (online), 4 March 2009 (chosen by the editors as a highlight review). *Computing Reviews*, January 2010.

Linz, P. *An Introduction to Formal Language and Automata, 4th ed.* Boston: Jones and Bartlett, 2006. *Computing Reviews* (online), 14 November 2007. *Computing Reviews*, September 2008.

Nikolaev, N. and Iba, H. *Adaptive Learning of Polynomial Networks: Genetic Programming, Back-propagation and Bayesian Methods* New York: Springer, 2006. *Computing Reviews*, November 2007, 671–672.

- Ito, M. *Algebraic Theory of Automata and Languages*. Singapore: World Scientific Publishing, 2004. *Computing Reviews*, November 2005, 697–698.
- Kanazawa, M. *Learnable Classes of Categorical Grammars*. Stanford: CSLI Publications, 1998. *Computing Reviews*, July 1998, 355.
- Flamig, B. *Practical Algorithms in C++*. New York: John Wiley and Sons, 1995. *Computing Reviews*, December 1995, 623–624.
- Sengupta, S. and Korobkin, C. *C++ Object-Oriented Data Structures*. New York: Springer-Verlag, 1994. *Computing Reviews*, December 1994, 620.
- Flamig, B. *Practical Data Structures in C++*. New York: John Wiley and Sons, 1993. *Computing Reviews*, February 1994, 93.
- Skinner, M. T. *The C++ Primer: A Gentle Introduction to C++*. Summit, NJ: Silicon Press, 1992. *Computing Reviews*, March 1993, 136–137.
- Anthony, M. and Biggs, N. *Computational Learning Theory: An Introduction*. Cambridge: Cambridge University Press, 1992. *Computing Reviews*, February 1993, 102.

## Other Reviews

- Jurkiewicz T. and Mehlhorn K. On a model of virtual address translation. (*Journal of Experimental Algorithmics* **19**: 1.1–1.28, 2014.) *Computing Reviews* (online), April 2015.
- Barash, M. and Okhotin, A. An extension of context-free grammars with one-sided context specifications. (*Information and Computation* **237**: 268–293, 2014.) *Computing Reviews* (online), December 2014.
- Genkin, D., Kaminski, M., and Peterfreund, L. A note on the emptiness problem for alternating finite-memory automata. (*Theoretical Computer Science* **526**: 97–107, 2014.) *Computing Reviews* (online), September 2014.
- Backhouse R., Chen W., and Ferreira J. The algorithmics of solitaire-like games (*Science of Computer Programming* **78**(11): 2029–2046, 2013.) *Computing Reviews* (online), July 2014.
- Tahat, L., Korel, B., Harman, M., and Ural, H. Regression test suite prioritization using system models. (*Software Testing, Verification & Reliability* **22**(7): 481–506, 2012.) *Computing Reviews*, June 2013.
- Coffey, J. Integrating theoretical and empirical computer science in a data structures course. (In *Proceedings of the 44th ACM Technical Symposium on Computer Science Education, SIGCSE 2013, Denver, CO, Mar 6-9, 2013*, 23–28.) *Computing Reviews*, August 2013.
- Valmari, A. Fast brief practical DFA minimization. (*Information Processing Letters* **112**(6): 213–217, 2012.) *Computing Reviews*, November 2012.
- Esparza, J., Ganty, P., Kiefer, S., and Luttenberger, M. Parikh’s theorem: a simple and direct automaton construction. (*Information Processing Letters* **111**:12, 614–619, 2011.) *Computing Reviews*, March 2012.

- Kirsten, D. and Quaas, K. Recognizability of the support of recognizable series over the semiring of the integers is undecidable. (*Information Processing Letters* **111**:10, 500–502, 2011.) *Computing Reviews*, December 2011
- Holzer, M., Kutrib, M., and Malcher, A. Complexity of multi-head finite automata: origins and directions. (*Theoretical Computer Science* **412**:1–2, 83–96, 2011.) *Computing Reviews*, October 2011.
- Janoušek, J. and Melichar, B. On regular tree languages and deterministic pushdown automata. (*Acta Informatica* **46**:7, 533–547, 2009.) *Computing Reviews*, July 2010.
- Alur, R. and Madhusudan, P. Adding nesting structure to words. (*Journal of the ACM* **56**:3, 2009, 1–43.) *Computing Reviews*, March 2010.
- Jensen, R., Veloso, M., and Bryant, R. State-set branching: Leveraging BDDs for heuristic search. (*Artificial Intelligence* **172**: 23, 2008, 103–139.) *Computing Reviews*, May 2009.
- Petrilis, D. and Halatsis, C. Two-level clustering of Web sites using self-organizing maps. (*Neural Processing Letters* **27**:1, 2007, 85–95.) *Computing Reviews*, June 2009. (Chosen by the editors as a highlight review.)
- Izquierdo, E., Harvey, I., and Beer, R. Associative learning on a continuum in evolved dynamical neural networks. (*Adaptive Behavior* **16**:6, 2008, 361–384.) *Computing Reviews*, January 2010.
- Carme, J., Gilleron, R., Lemay, A., and Niehren, J. Interactive learning of node selecting tree transducer. (*Machine Learning* **66**:1, 2007, 33–67.) *Computing Reviews*, September 2008.
- Jurdzinski, T. and Otto, F. Restarting automata with restricted utilization of auxiliary symbols. (*Theoretical Computer Science* **363**:2, 2006, 162–181.) *Computing Reviews*, September 2008.
- Gajardo, A. and Goles, E. Crossing information in two-dimensional sandpiles. (*Theoretical Computer Science* **369**:1, 2006, 163–169.) *Computing Reviews*, May 2007.
- Harju, T. and Nowotka, D. Counting bordered and primitive words with a fixed weight. (*Theoretical Computer Science* **340**:2, 2005, 273–279.) *Computing Reviews*, May 2007.
- Alstrup, S., Husfeldt, T., Rauhe, T., and Thorup, M. Black box for constant-time insertion in priority queues (*ACM Transactions on Algorithms* **1**:1, 2005, 102–106.) *Computing Reviews*, August 2006.
- Rędziejowski, R. Asynchronous circuits, communicating processes, and Muller automaton (*Fundamenta Informaticae* **61**:1, 2004, 47–59.) *Computing Reviews*, February 2006.
- Miller, D., and Fredkin, E. Two-state, reversible, universal cellular automata in three dimensions (in *Proceedings of the 2nd Conference on Computing Frontiers, Ischia, Italy, May 4–6, 2005*, 45–51.) *Computing Reviews*, May 2006.
- Alexander, P. Integrating formalism into undergraduate software engineering (*Journal of Systems and Software* **74**:2, 2005, 147–154.) *Computing Reviews*, October 2005.
- Bouyer, P. Forward analysis of updatable timed automata (*Formal Methods in System Design* **24**:3, 2004, 281–320.) *Computing Reviews*, April 2005.

- Dang, Z., Bultan, T., Ibarra, O., and Kemmerer, R. Past pushdown timed automata and safety verification (*Theoretical Computer Science* **313**:1, 2004, 57–71.) *Computing Reviews*, February 2005.
- Mateescu, A., Salomaa, A., and Yu, S. Subword histories and Parikh matrices (*Journal of Computer and System Sciences* **68**:1, 2004, 1–21.) *Computing Reviews* (online), 16 September 2004.
- Wolter, U. CSP, partial automata, and coalgebras (*Theoretical Computer Science* **280**, 2002, 3–34.) *Computing Reviews*, March 2003.
- Goeman, H. On parsing and condensing substrings of LR languages in linear time (*Theoretical Computer Science* **267**, 2001, 61–82.) *Computing Reviews*, November 2002.
- Stirling, C. Decidability of DPDA equivalence (*Theoretical Computer Science* **255**, 2001, 1–31.) *Computing Reviews*, May 2002.
- Engelfriet, J. and Hoogeboom, H. J. MSO definable string transductions and two-way finite-state transducers (*ACM Transactions on Computational Logic* **2**, 2001, 216–254). *Computing Reviews* (online), 1 May 2001.
- Beimel, A., Bergadano, F., Bshouty, N. H., Kushilevitz, E., and Varrichio, S. Learning functions represented as multiplicity automata (*Journal of the ACM* **47**, 2000, 506–530). *Computing Reviews*, July 2000.
- Droste, M., and Gastin, P. The Kleene-Schützenberger theorem for formal power series in partially commuting variables (*Information and Computation* **153**, 1999, 47–80). *Computing Reviews*, March 2000.
- Mazoyer, J. and Terrier, V. Signals in one-dimensional cellular automata (*Theoretical Computer Science* **217**, 1999, 53–80). *Computing Reviews*, November 1999.
- Worsch, T. Parallel Turing machines with one-head control units and cellular automata (*Theoretical Computer Science* **217**, 1999, 3–30). *Computing Reviews*, June 1999.
- Sato, T. Ergodic characterization of linear cellular automata over  $Z_m$  (*Theoretical Computer Science* **205**, 1998, 135–144). *Computing Reviews*, May 1999.
- Brandenburg, F. J. The ancestor width of grammars and languages (*Theoretical Computer Science* **207**, 1998, 25–41). *Computing Reviews*, March 1999.
- Boreale, M. On the expressiveness of internal mobility in name-passing calculi (*Theoretical Computer Science* **195**, 1998, 205–226). *Computing Reviews*, December 1998.
- Geser, A. Omega-termination is undecidable for totally terminating term rewriting systems (*Journal of Symbolic Computation* **23**, 1997, 388–411). *Computing Reviews*, March 1998.
- Mazoyer, J. On optimal solutions to the firing squad synchronization problem (*Theoretical Computer Science* **168**, 1996, 367–404). *Computing Reviews*, December 1997.
- Salomaa, K., Wood, D., and Yu, S. Structural equivalence and ET0L grammars (*Theoretical Computer Science* **164**, 1996, 123–140). *Computing Reviews*, September 1997.
- Basu, S., Pollock, R., and Roy, M. On the combinatorial and algebraic complexity of quantifier elimination (*Journal of the ACM* **43**, 1996, 1002–1045). *Computing Reviews*, July 1997.

- Nandi, S. and Chaudhuri, P.P. Analysis of periodic and intermediate boundary 90/150 cellular automata (*IEEE Transactions on Computing* **45**, 1996, 1–12). *Computing Reviews*, May 1997.
- Dauchet, M., Caron, A-C, and Coquidé, J-L. Automata for reduction properties solving (*Journal of Symbolic Computation* **20**, 1995, 215–233). *Computing Reviews*, November 1996.
- Slutzki, G. and Vágvölgyi, S. Deterministic top-down tree transducers with iterated look-ahead (*Theoretical Computer Science* **143**, 1995, 285–308). *Computing Reviews*, September 1996.
- Blum, A. L. Separating distribution-free and mistake-bounded learning models over the Boolean domain (*SIAM Journal on Computing* **23**, Oct. 1994, 990–1000). *Computing Reviews*, October 1995.
- Jiang, T., Ibarra, O. H., and Wang, H. Some results concerning 2-D on-line tessellation acceptors and 2-D alternating finite automata (*Theoretical Computer Science* **125**, 1994, 243–257). *Computing Reviews*, May 1995.
- Kari, J. Rice’s theorem for the limit sets of cellular automata (*Theoretical Computer Science* **127**, 1994, 229–254). *Computing Reviews*, February 1995.
- Ehrenfeucht, A. and Rozenberg, G. T-structures, T-functions, and texts (*Theoretical Computer Science* **116**, 1993, 227–290). *Computing Reviews*, July 1994.
- Villemaire, R. The theory of  $\langle N, +, V_k, V_l \rangle$  is undecidable (*Theoretical Computer Science* **106**, 1992, 337–349). *Computing Reviews*, November 1993.
- Helmbold, D., Sloan, R., and Warmuth, M.K. Learning integer lattices (*SIAM Journal on Computing* **21:2**, April 1992). *Computing Reviews*, April 1993.

## Grants and Other Funding

November 2003 – January 2009: participated in \$50,000 grant from the Buhl Foundation for “Teaching Computing in the 21st Century” (Robert D. Cupper, principal investigator). While Dr. Cupper was on leave, managed the grant in his absence (supervising student programmers, working with outside evaluators, conducting in-class tests of course software).

June 2002 – May 2003: \$3,400 grant for “Collaborative Research Experiences for Women” from Computing Research Association Committee on the Status of Women in Computing Research (CRA-W) in cooperation with USENIX and the National Science Foundation’s Partnership for Advanced Computational Infrastructure’s Education, Outreach and Training program. Worked with three students—Mary Ellen Alaskey, Brenda Gruber, and Stacy Monarko—on “Steganographic Image Processing.” Poster presented at National Conference on Undergraduate Research (NCUR 2003), Salt Lake City, UT, March 2003. Poster accepted by Council on Undergraduate Research “Posters on the Hill,” Washington, D.C., April 2003.

June 2001 – May 2002: \$3,500 grant, “Collaborative Research Experiences for Women” from same funding source as above. Worked with three students—Tiffany Bennett, Jennifer Hannon, and Elizabeth Zehner—on “Memetic Algorithms and Applications: Sorting, Image Processing, Cryptanalysis.” Attended spring 2002 SIGCSE conference, presented poster, “A genetic algorithm for improved shellsort sequences,” at GECCO 2002.

June 2000: Obtained funding (\$1000) from National Science Foundation and the Michigan State University Department of Computer Science for purchase of an Orinoco WavePOINT II Access Point and six Orinoco PC Cards to create a wireless network in Alden Hall 103 (matched with \$971 from Allegheny College).

### **Panels and Lectures (Other than Conference Papers)**

(With Patricia Kobak, '14) "The Art of Evolution; the Evolution of Art." Presentation at Allegheny College Summer Research Series (ACRoSS), 26 July 2011.

(With Radu Creanga, '11) "Points of Interest along the Santa Fe Ant Trail." Presentation at Allegheny College Summer Research Series (ACRoSS), 28 July 2009. An updated version was presented at the Research in Computer Science Seminar (RICSS), Allegheny College, 2 October 2009.

"Current Topics in Computer Graphics: A Report from SIGGRAPH 2007." Presentation at the Research in Computer Science Seminar (RICSS), Allegheny College, 5 October 2007.

Invited lecture. "A Little Bit Off: An Introduction to Digital Steganography." Westminster College, October 2002.

Panelist and co-leader (with Eric Palmer and Evelyn Buday) of "Mind and Brain" workshop. "Perspectives on Consciousness: Ways of Knowing." Allegheny College, April 2002.

Devil's advocate presenter of "Memetic Algorithm Approach to Thin-Film Optical Coating Design" by R. J. W. Hodgson at Second Workshop on Memetic Algorithms, part of the 2001 Genetic and Evolutionary Computation Conference (GECCO 2001) July 7, San Francisco, 2001.

Panelist, "Allegheny at the Zoo." Smithsonian National Zoological Park, April 2001. Spoke on implications of primate language research to artificial intelligence research. Washington, D.C., April 3, 2001.

Panel Moderator, "The Networks Course: Old Problems, New Solutions." SIGCSE Technical Symposium on Computer Science Education (New Orleans, March 1999). Summary published in *Proceedings of the Twenty-ninth SIGCSE Technical Symposium on Computer Science Education* (ACM Press, 1999), 360–361.

"The Ultimate Example: Mapping the Virtual World." Presented at The Eighth National Conference on College Teaching and Learning, Jacksonville, FL, April 1997.

Post-ALT '95 Workshop, Iizuka Research and Development Center, Kyushu Institute of Technology, Oct. 21, 1995 (Takeshi Shinohara, workshop organizer).

Joint lecture series, University of Electro-Communications and Tokyo Institute of Technology, Oct. 16, 1995, University of Electro-Communications, Chofu City, Japan (E. Tomita, T. Nishino and T. Yokomori, series organizers)

Lectured on learnability of two-counter automata. NEC theory group, Oct. 13, 1995, NEC C & C Information Technology Research Laboratories, Kawasaki, Japan (Naoki Abe, host)



## Refereeing, Consulting, and Reviewing

Referee, *IEEE Transactions on Education*, 2002

Referee, *Transactions on Information and Systems*, IEICE (Japan), 1994–95

Referee, *American Mathematical Monthly*, 1989

Referee, *Machine Learning*, 1989

Outside examiner, Swarthmore College Honors Program, May 2002, May 2007.

Reviewer, proposals for CREW grants (Collaborative Research Experiences for Women, Computing Research Association), July 2003.

Reviewer, Franklin Beedle and Associates, 2001.

Reviewer, Oxford University Press, 1996.

Reviewer, John Wiley & Sons, 1993.

Reviewer, P. W. S. Kent Publishers, 1992–1994; PWS Publishing Company 1996–1997.

## Other Professional Activities

### Processing Workshop

Attended NSF-funded Winter Faculty Training Workshop on Processing, January 5–7, 2012, Southern Methodist University, Dallas, TX.

### Course-Based Assessment

Attended (with Gregory Kapfhammer) GLCA-funded workshop on “Developing Course-Based Assessment,” October 28–October 29, Toledo, OH.

### GECCO 2009

Attended the 2009 Genetic and Evolutionary Computation Conference (GECCO 2009), July 8–12, Montréal, Canada.

### SIGGRAPH 2007

Attended the 34th International Conference and Exhibition on Computer Graphics and Interactive Techniques (SIGGRAPH 2007), San Diego, CA, 5–9 August 2007.

### Canisius Robotics Workshop

Attended the Canisius College Summer Robotics Workshop For Teachers; took one student along. Canisius College, 25–27 July 2007.

### NSF Workshop

Attended NSF-sponsored workshop on “Pyro Robotics,” Bryn Mawr College, 3–5 August 2004.

### NSF Workshop

Attended NSF-sponsored workshop on “Learning Outside the (Desktop) Box: Lego Mindstorms in CC2001,” Alma College, 21–23 November 2003.

### Judge, ACM Regional Programming Contest

One of three judges for the ACM East Central North America Regional Programming Contest, 2002–2015. (Dr. Iyad A. Ajwa, Ashland University, Regional Contest Director).

**Judge, ACM International Collegiate Programming Contest**

One of seven to twelve judges selected competitively based on annual problem submissions. 1996–2012; 2017. (Dr. John Bonomo, Westminster College, Chief Judge).

**Moderator, Discussion Group on Visual Contest Judging Methods**

Moderated on-line discussion group on judging methods for programming contest problems with a visual component, 1998–1999; reported to annual meeting of ACM Regional Contest Directors, Eindhoven, The Netherlands, 1999.

**Coach, Allegheny College Programming Contest Team**

Took teams to regional programming contests at Bucknell University, University of Waterloo, Case Western Reserve University, Ashland University, and Youngstown University, 1997–2003, 2007–2014.

**NSF/MSU Network Workshop**

Attended 1998 Networking Workshop sponsored by the National Science Foundation and Michigan State University (resulted in SIGCSE workshop and funds for purchasing wireless network cards).

**Professional Memberships**

Association for Computing Machinery (ACM)

ACM Special Interest Group in Computer Science Education (SIGCSE)

ACM Special Interest Group in Algorithms and Computation Theory (SIGACT)

**Teaching****Courses Taught at Allegheny College**

- First Year/Sophomore Seminar I, II, III (FS101, FS102, FS201). Topics have included artificial intelligence, World Wide Web and Internet, robots in culture and literature, and digital media.
- Introduction to Computer Science I, II (CMPSC 101, 102, 111, 112). C++, Java
- Computer Organization (CMPSC 210)
- Programming Languages (CMPSC 220)
- Theory of Computation (CMPSC 230)
- Analysis of Algorithms (CMPSC 250)
- Artificial Intelligence (CMPSC 370)
- Database Systems (CMPSC 380)
- Data Communications and Networks (CMPSC 381)
- Visual Computing (CMPSC 390)

- Junior Seminar (CMPSC 580)
- Internship Seminar (CMPSC 500–501)

### Senior Project Supervision

Project director (or, in several cases, co-director) of sixty-nine senior projects. Served as a reader on an additional fifty-eight senior projects. Of the projects I have supervised, seven have won the Allegheny College Student Chapter of the Association for Computing Machinery's Outstanding Senior Thesis award: Kim Bailey (1998), Dan Phifer (Dec. 2000), Matthew Pegula (2001), Tiffany Bennett (2003), David Wagner (2008), Molly Mattis (2012), and Braden Licastro (2014). Melanie Neff's project (co-supervised with Mike Keeley) won the College's 2002 Dieter P. Lotze Award for the best essay exploring the relation of the sciences to other components of the liberal arts education.

### Miscellaneous

Allegheny College Scheduler Task Force, 2009–2010.

Allegheny College Public Events Committee, Convener. 1999–2000, 2007–2010; chair, 2008–2010.

Allegheny College Ad-Hoc Committee on the Annual Theme, 2008–2010.

Allegheny College Campus Life Committee (Public Events subcommittee), 1997–1999.

Allegheny College Curriculum Committee. 2002–2004; chair, 2003–2004.

Attended 2001 GLCA Course Design and Teaching Workshops at Albion College (part of Allegheny College's Teaching Partners Program), June 26–July 1, 2001.

Participated in summer Allegheny College Intramural Faculty Conference, William Seward Inn, Westfield, NY, 21–22 May 2002.

Teaching Circle, 2002–2004.

