

Curriculum Vita
DOUGLAS S. BLANK

Version 2018.4

Computer Science
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Bryn Mawr College
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Education

Ph.D. in Computer Science and Cognitive Science, Indiana University, Bloomington,
December 1997

B.A. in Computer Science, Indiana University, Bloomington, May 1988

B.A. in Anthropology, Indiana University, Bloomington, May 1987

Research Areas

Much of my research and activities can be classified into one of the following three, broad, overlapping categories:

1. **Robotics** – Adaptive robotics, developmental robotics, humanoid robotics, inexpensive personal robots for education and research, robotics programming interfaces
2. **Emergent Intelligence** – Emergence in natural and artificial systems, on-line machine learning, cognitive science, artificial neural networks, learning high-level cognitive abilities, such as analogy-making
3. **Education** – Computer science curriculum development, emergent pedagogy, effective classroom technologies, open standards in educational software and materials, inclusive teaching, working across interdisciplinary boundaries

Employment

1. **Chair**, Department of Computer Science, Bryn Mawr College (July 2007–June 2010, July 2011–June 2012). Formed the Department of Computer Science during this time.
2. **Director**, Institute for Personal Robots in Education, Bryn Mawr College (January 2008–present). Developed Institute with Georgia Tech. and Microsoft Research.
3. **Associate Professor**, Computer Science, Bryn Mawr College (2006–present).
4. **Assistant Professor**, Computer Science, Bryn Mawr College (2001–2006).
5. **Assistant Professor**, Department of Computer Science and Computer Engineering, University of Arkansas, Fayetteville (1998–2001).

6. **Visiting Scholar**, Department of Computer Science and Computer Engineering, University of Arkansas, Fayetteville (1996–1998).
7. **Teaching Assistant and Research Assistant**, Computer Science Department and Cognitive Science Program, Indiana University, Bloomington (1990–1996).

Board of Advisers

1. EngageCSEDU. A joint project between National Center for Women and Information Technology (NCWIT) and Google. 2014–present. Advise on engaging activities in CS education. www.engage-csedu.org.
2. Girls Who Code. Advisor for curriculum development. 2012–2014. girlswhocode.com

Service

National Service

1. National Center for Women and Information technology (NCWIT) Academic Alliance, Recruitment and Engagement Team, co-leader, 2012–2014. Helped develop the Member Activity and Change Tracker (ACT), among other projects. www.ncwit.org/alliances/aa
2. National Center for Women and Information technology (NCWIT) Aspirations, host and organizer of Award banquet, 2015, Philadelphia region. cs.brynmawr.edu/ncwit/
3. Google Summer of Code project advisor. Advise open source projects.

College Service

1. Quantitative Reasoning Steering Committee (chair, 2014–present)
2. Special Cases Review Board (faculty member, 2014–present)
3. McBride Advisory Committee (faculty member, 2014–present)
4. Athena Supercomputer Steering Committee (faculty member, 2014–2016, chair 2016–present)
5. Computer Science Department IRB Liaison (many years, 2012–present)
6. Computer Science Major Advisor (many years; 2015–2016, class of 2018)
7. Computing, Libraries, Information Committee (CLIC, many years including chair)
8. International Program Development Task force, visit to Effat University, Saudi Arabia (2013)
9. Summer Science Research Program for students, co-organizer with Lynn Elkins. (2011)
10. Steering Committee for the Center for Science in Society, member and chair (2008–2011)
11. Emergence Group, co-organizer (2002–2007). Weekly meetings to explore the ideas behind “emergent phenomena”
12. Tri-college MIND initiative, co-organizer (2013–present). Haverford, Bryn Mawr, and Swarthmore College faculty group that discusses issues of mind and consciousness.
13. Co-Designed and built the first Beowulf-class supercomputer on campus (with Michael Noel) (2002–2005)

Software Projects

1. Conx (2017–present): on ramp to deep learning. Easy to use software for students and researchers. Written in Python. conx.readthedocs.io/
2. Calysto (2012–present): educational tools for Jupyter notebooks, including languages, libraries, and pedagogical support. Portions funded by the Gates Foundation, and the Helmsley Charitable Trust. github.com/Calysto
3. Calico (2006–2012): a cross-platform editor, shell, and languages for teaching computer science. Individual libraries can be used directory by many languages. Funded by Microsoft Research and NSF. wiki.roboteducation.org/Calico
4. Myro (2006–2012): a library for easily use robots and media for introductory computing. Funded by Microsoft Research and NSF. bitbucket.org/ipre/calico
5. Pyro (2001–present): an advanced set of tools for exploring sophisticated robots and control algorithms. Funded by NSF. Winner of the Premier Award for Excellence in Engineering Educational Courseware. svn.cs.brynmawr.edu/pyrobot/

Publications

Books, Book Chapters, Edited Proceedings, and Special Issues

1. special issue editor, with Meeden, L.A. *Connection Science*. Special issue on “Developmental Robotics.” (2006) Connection Science.
2. proceedings editor, with Meeden, L.A. “Developmental Robotics” Symposium Notes of the 2005 AAI Spring Symposium. (2005) AAI Press.
3. proceedings editor, *Proceedings of the 2000 Midwest Artificial Intelligence and Cognitive Science Society Conference*. 2000, AAI Press.
4. book chapter, with Berghel, H. “The World Wide Web.” In M. Zelkowitz (ed.), *Advances in Computing*, v. 48, Academic Press, pp. 178-218, 1999.
5. book chapter, with Meeden, L.A., and Marshall, J.: “Exploring the Symbolic/Subsymbolic Continuum: A case study of RAAM.” In *The Symbolic and Connectionist Paradigms: Closing the Gap*, Hillsdale, N.J. L. Erlbaum Associates, 1992.

Magazine articles and columns

1. “Robots make computer science personal.” (2006) Communications of the ACM, Viewpoint. Volume 49. Pages 25 - 27. ACM Press. New York, NY, USA.
2. with D. Kumar, L. Meeden, and H. Yanco: “The Pyro toolkit for AI and robotics.” in *AI Magazine*.
3. with L. Meeden: “Developmental Robotics Spring Symposium.” in *AI Magazine*.
4. “AI Update.” A news/opinion column in *intelligence magazine*, the journal of ACM’s Special Interest Group on Artificial Intelligence (SIGART). Spring 2000, Summer 2000, Fall 2000, Winter 2000, Spring 2001, Summer 2001, Fall 2001, and Winter 2001.

Journal articles

1. Lisa A. Meeden & Douglas S. Blank (editors) Introduction to developmental robotics. (2006) Special issue of *Connection Science*, 18:2, 93-96,
2. with Tucker Balch, Jay Summet, Deepak Kumar, Mark Guzdial, Keith O'Hara, Daniel Walker, Monica Sweat, Gaurav Gupta, Stewart Tansley, Jared Jackson, Mansi Gupta, M. Muhammad, S. Prashad, Natasha Eilbert, and Ashley Gavin. (2008) "Designing Personal Robots for Education: Hardware, Software, and Curriculum." *Pervasive Computing*. 7(2).
3. with Kim Cassidy (now President of Bryn Mawr College), Anne Dalke, and Paul Grobstein. "Emergent Pedagogy: Learning to Enjoy the Uncontrollable and Make it Productive." (2007). *Journal of Educational Change*, Springer Netherlands. Volume 8, Number 2, June 2007.
4. with D. Kumar, L. Meeden, and J. Marshall: "Bringing up robot: Fundamental mechanisms for creating a self-motivated, self-organizing architecture." *International Journal of Cybernetics and Systems*, 36:2, Taylor and Francis, 2005.
5. with D. Kumar, L. Meeden, and H. Yanco: "Pyro: A Python-based Versatile Programming Environment for Teaching Robotics." in the *ACM Journal on Educational Resources in Computing* (JERIC), ACM Press, 2005.
6. "The Radical Alternative to Hybrid Systems." In A. Jagota, T. Plate, L. Shastri, R. Sun (eds), *Connectionist Symbol Processing: Dead or Alive?*, 1-40, a collective article in *Neural Computing Surveys*. Lawrence Erlbaum Associates, 1999.

Awards and Nominations

1. with O'Hara, K., Blank, D., and Marshall, J. "Computational Notebooks for AI Education." Twenty-Eighth International Florida Artificial Intelligence Research Society Conference (FLAIRS). May 2015. Nominated for best paper.
2. with D. Kumar, L. Meeden, and H. Yanco: co-winner of the Premier Award for Excellence in Engineering Educational Courseware for "Pyro: Python Robotics" from The National Engineering Education Delivery System. Received \$2,500 and 2,500 copies of our software on CD-ROM. October, 2005.
3. with students: *Technical Excellence Award* in the *Hors d'oeuvres Anyone?* robot competition at the American Association of Artificial Intelligence Conference, 2000, for research in **vision-based person recognition**.
4. with students: *Technical Excellence Award* in the *Hors d'oeuvres Anyone?* robot competition at the American Association of Artificial Intelligence Conference, 1999, for research in **on-line voice recognition learning**.

Refereed Articles

1. Helen H. Hu, Douglas Blank, Albert Chan, and Travis Doom. Panel: Teaching To Increase Diversity and Equity in STEM. To appear in the Proceedings of the 48th ACM Technical Symposium on Computer Science Education (SIGCSE '17). ACM, New York, NY, USA.
2. Mark C. Lewis, Douglas Blank, Kim Bruce, and Peter-Michael Osera. 2016. Uncommon Teaching Languages. In Proceedings of the 47th ACM Technical Symposium on Computer Science Education (SIGCSE '16). ACM, New York, NY, USA, 492-493.

3. O'Hara, K., Blank, D., and Marshall, J. "Computational Notebooks for AI Education." Twenty-Eighth International Florida Artificial Intelligence Research Society Conference (FLAIRS). May 2015.
4. with Jennifer S. Kay, James B. Marshall, Keith O'Hara, and Mark Russo. (2012). "Calico: A Multi-Programming-Language, Multi-Context Framework Designed for Computer Science Education". Published in SIGCSE '12, March, 2012, Raleigh, NC USA.
5. Mark Guzdial, David Ranum, Brad Miller, Beth Simon, Barbara Ericson, Samuel A. Rebelsky, Janet Davis, Kumar Deepak, and Doug Blank. 2010. Variations on a theme: role of media in motivating computing education. In Proceedings of the 41st ACM technical symposium on Computer science education (SIGCSE '10). ACM, New York, NY, USA, 66-67.
6. with Ananya Misra, and Deepak Kumar. "A Music Context for Teaching Introductory Computing." (2009) Published in ITiCSE '09, July 6 - 9, Paris, France.
7. with Jay Summet, Deepak Kumar, Keith O'Hara, Daniel Walker, Lijun Ni, and Tucker Balch. (2009) "Personalizing CS1 with Robots." Published in SIGCSE '09, March 4-7, 2009, Chattanooga, TN USA.
8. with Dianna Xu, Douglas Blank, and Deepak Kumar. (2008) "Games, Robots, and Robot Games: Complementary Contexts for Introductory Computing Education". Game Development and Computer Science Education (GDCSE'08). Cozumel, Mexico.
9. with Keith J. O'Hara, D. Stewart W. Tansley, Teyvonia Thomas, and Meena Seralathan. (2008) "Humanoids in the Classroom." The 5th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI 2008).
10. with J. Marshall, and student J. Lewis. (2005) "The Multiple roles of anticipation in Developmental Robotics" in *From Reactive to Anticipatory Cognitive Embodied Systems: AAAI 2005 Fall Symposium Notes*. AAAI Press, 2005.
11. with J. Marshall, and L. Meeden. (2005) "An Emergent Framework for Self-Motivation in Developmental Robotics." in *Developmental Robotics: AAAI 2005 Spring Symposium Working Notes*. AAAI Press, 2005.
12. with J. Marshall, and L. Meeden. (2004) "An Emergent Framework for Self-Motivation in Developmental Robotics." In *Proceedings of the International Conference on Development and Learning (ICDL)*. IEEE Computer Society, 2004.
13. with L. Meeden, and J. Marshall: "Self-Motivated, Task-Independent Reinforcement Learning for Robots." In *Proceedings of Real Life Reinforcement Learning (RLRL)*, a workshop at the AAAI 2004 Fall Symposium Series. AAAI Press, 2004.
14. with H. Yanco, D. Kumar, and L. Meeden: "The Karel-the-Robot Paradox: A framework for making sophisticated robotics accessible." Proceedings of the *Accessible Hands-on Artificial Intelligence and Robotics Education*, a workshop in the AAAI 2004 Spring Symposium Series. AAAI Press, 2004.
15. with D. Kumar, and L. Meeden: "Bringing up robot: Fundamental mechanisms for creating a self-motivated, self-organizing architecture." In *Proceedings of the workshop Growing Up Artifacts that live, Simulated Adaptive Behavior 2002, From Animals to Animats*, Edinburgh, Scotland, August 10-11, 2002.

16. with D. Kumar and L. Meeden: "A Developmental Approach to Intelligence," in *Proceedings of the Thirteenth Annual Midwest Artificial Intelligence and Cognitive Science Society Conference*, Chicago, IL, April 13–14, 2002. Edited by Sumali Conlon.
17. with D. Kumar: "Patterns of Curriculum Design." In *Proceedings of Informatics Curricula, Teaching Methods and Best Practice (ICTEM)*, Florianopolis, Santa Catarina, Brazil, July 10–12. ACM Press, 2002.
18. with L. Meeden, T. Newhall, and D. Kumar: "Using departmental surveys to assess computing culture: Quantifying gender differences in the classroom." *Innovation and Technology in Computer Science Education (ITiCSE)*. Thessaloniki, Greece. ACM Press, 2003.
19. with L. Meeden and D. Kumar: "Python robotics: An Environment for Exploring Robotics Beyond LEGOs." *ACM Special Interest Group: Computer Science Education Conference*, Reno, NV (SIGCSE 2003), February 19–23, 2003. ACM Press, 2003.
20. with students Em Ward, and Douglas Rolniak, and colleague Dale Thompson: "Complexity as Fitness for Evolved Cellular Automata Update Rules." In *Late Breaking Papers of the 2001 Genetic and Evolutionary Computation Conference (GECCO)*, San Francisco CA, July 7–11. AAAI Press, 2001.
21. "Radical Artificial Intelligence: A Postmodern Approach," in *Proceedings of the 2001 Twelfth Annual Midwest Artificial Intelligence and Cognitive Science Society Conference*, OH, 2001.
22. with G. Beavers, and students W. Arensman, C. Caloianu, T. Fujiwara, S. McCaul, and C. Shaw: "A Robot Team that Can Search, Rescue, and Serve Cookies: Experiments in Multimodal Person Identification and Multi-robot Sound Localization," in *Proceedings of the 2001 Twelfth Annual Midwest Artificial Intelligence and Cognitive Science Society Meetings*, 2001.
23. with student B. Mashburn: "Graphics + Robotics + AI = Fast, 3D Scene Construction," In *Proceedings of the 1999 Midwest Artificial Intelligence and Cognitive Science Society Conference*, Bloomington, IN. AAAI Press, 1999.
24. "Is A.I. becoming Robotics? Implications for Research and Pedagogy". A panel presentation at the *1998 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1998.
25. with student Clark, M. : "A Neural Network-based Cryptographic System." In *Proceedings of the 1998 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1998.
26. with Meeden, L.A.: "Use of Robot Simulations can Enhance Integration." Working Notes, AAAI Spring Symposium, AAAI98: Integrating Robotics Research. AAAI Press, 1998.
27. with Meeden, L.A.: "Innovation through Competition." Working Notes, AAAI Spring Symposium, AAAI98: Integrating Robotics Research. AAAI Press, 1998.
28. Ph.D. dissertation "Learning to See Analogies: A Connectionist Exploration." Indiana University, Bloomington. December 1997.
29. with student Ross, J.O. "Incorporating a Connectionist Vision Module into a Fuzzy, Behavior-Based Robot Controller." In *Proceedings of the 1997 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1997.
30. with student Ross, J.O.: "Learning in a Fuzzy Logic Robot Controller." In *Proceedings of the 1997 Meetings of the American Association of Artificial Intelligence*. AAAI Press, 1997.

31. “Analogy-Making: A Connectionist Exploration.” In *Proceedings of the 1996 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1996.
32. “A distributed representation of multiple objects in a visual scene.” In *Proceedings of the 1995 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1995.
33. with Meeden, L.A., McGraw, G.E.: “Emergent Control and Planning in an Autonomous Vehicle.” In *Proceedings of the 15th Annual Cognitive Science Society Conference*. Lawrence Erlbaum Associates, 1993.
34. with Gasser, M.: “Grounding via Scanning: Cooking up Roles from Scratch.” In *Proceedings of the 1992 Midwest Artificial Intelligence and Cognitive Science Society Conference*. AAAI Press, 1992.

Workshops

1. with Helen Hu, Beth Quinn, Pat Campbell, Ray Gonzales, and Alla Webb. (2016) Pre-symposium event, Creating Engaging and Relevant Classroom Activities & Assignments, at SIGCSE '16, March, 2016, Memphis, TN USA.
2. with Helen Hu, Pat Campbell, Albert Chan. (2015) Pre-symposium event, Teaching to Diversity in Computer Science, at SIGCSE '15, March, 2015, Kansas City, MO USA.
3. with Jennifer S. Kay. (2014). “Experience-It,” workshop, demonstrations of personal robots in education, at SIGCSE '14, March, 2014, Atlanta, GA USA. Featured hands-on experience with Google Glass, 3D printers, and more.
4. with Jennifer S. Kay. (2012). “Experience-It,” workshop, demonstrations of personal robots in education, at SIGCSE '12, March, 2012, Ralleigh, NC USA. Featured the Binary-Ring Robot Circus.

Art Installations

1. “Interactive Sonification of Climate Change” at the Crapo Gallery, UMass Dartmouth, 715 Purchase St., New Bedford, MA. Reception to be held on Thursday, October 13, 2016, 7-9 pm. Sponsored by www.ecologyandevolution.org/2100callforentry.html. Work with Rhine Singleton, Franklin Pierce University, Rindge, NH.

Technical Reports

1. with Deepak Kumar. (2010) “Assessing the Impact of using Robots in Education, or: How we learned to Stop Worrying and Love the Chaos.” AAAI Spring Symposium Series on Educational Robotics and Beyond: Design and Evaluation. Technical Report SS-10-03, ISBN 978-1-57735-457-4. AAAI Press.
2. with Deepak Kumar, Tucker Balch, Keith O’Hara, Mark Guzdial, and Stewart Tansley. (2008) “Engaging Computing Students with AI and Robotics.” AAAI Spring Symposium Series on Using AI to Motivate Greater Participation in Computer Science. AAAI Press.
3. with student Stober. J. and Meeden, L. “The Governor Architecture: Avoiding Catastrophic Forgetting in Robot Learning.” Manuscript, 10 pages. Bryn Mawr College Department of Computer Science.
4. with L. Meeden, T. Newhall, and D. Kumar. (2002) “Using departmental surveys to assess computing culture: Recognizing and addressing gender differences.” *Bryn Mawr College Computer Science Technical Report 2002-02*.

5. with D. Kumar and L. Meeden. (2002) “A Developmental Approach to Anchoring.” *Bryn Mawr College Computer Science Technical Report 2002-01*.
6. with L. Meeden. (1998) “Robot competitions as class projects,” in SIGART Bulletin, Volume 9, Number 2.
7. with students Hudson, J.H., Mashburn, B.C., and Roberts, E.A. (1999) “The XRCL Project: The University of Arkansas’ Entry into the AAAI 1999 Mobile Robot Competition.” Technical Report CSCE-1999-01.
8. with Holmes, G., and students Wells, R., and Wolinski, P. (1998) “Interactive Gradebook: The Missing (Hyper)Link.” Technical Report CSCE-1999-02, 1999.

Keynotes, Invited Talks, and Tutorials

1. JupyterCon (Aug 2018). New York, NY. “Jupyter Graduates!”
2. Jupyter Pop-up (Mar 2018). Boston, MA. “Deep Learning and Deep Integration via Jupyter”. www.techevents.online/deep-learning-deep-integration-via-jupyter/
3. Conx Workshop (Feb 2018). Baltimore, MD. “Deep Learning in the Classroom.”
4. PyCon (May 2018). Cleveland, OH. “Jupyter Tools for Teaching and Learning”
5. JupyterDay (2016). New York, NY. Invited presentation on educational material developed for Jupyter notebooks.
6. TechGirlz (December 12, 2015). Tutorial for girls at Baldwin School using Calysto Processing.
7. “Beyond Myro” (2011). IPRE Tutorial Workshop. Georgia Institute of Technology. Atlanta, GA USA.
8. Invited CSTA Panel discussion, July 2011, Wellesley College.
9. invited presentation at the Teaching Workshop for Engineering and CS Faculty, Union College, December 4, 2005.
10. with Yanco, H.: **AAAI Tutorial Program**. Tutorial given at AAAI-05. July 2005. Fifty participants. Pittsburgh, PA.
11. keynote talk **Growing the Seeds of Cognition**: Midwest AI and Cognitive Science Conference, April 2005. Dayton, OH.
12. invited talk **Beyond LEGOs**: Bard College, July 2002. Introduction to advanced robotics for high-achieving high school students in the Hudson Valley region.
On-line at <http://emergent.brynmawr.edu/~dblank/bard/>.
13. **Patterns of Curriculum Design**: Villanova University, Nov. 4, 2002, with Deepak Kumar.

Grants, stipends, and other funding

1. **TIDES: Teaching to Increase Diversity and Equity in STEM**, to Bryn Mawr College, 2013–present. Funded through the American Association of Colleges and Universities (AAC&U) by a grant from the Leona M. and Harry B. Helmsley Charitable Trust. Bryn Mawr College was awarded \$170,000 to fund an effort to build computational modules for the physical sciences for use in major’s curriculum, beginning with Physics and to be extended to Biology, Chemistry, and Geology via examples and applications.

2. Blended Learning, from the Gates Foundation, to Bryn Mawr College. 2011–2012.
3. from NSF, for the Center for the Science of Information, CCF-0939370.
4. from NSF, PIRE #0730206: Partnership for International Research and education. “Universally Accessible Infrastructures to Advance Capabilities”. With Drexel, Virginia Tech, UPenn, Swarthmore, Bryn Mawr College, and the Korea Advanced Institute of Science and Technology (KASIT). \$2.5M over 5 years.
5. from NSF, IPRE. DUE-0920539, “Personal Robots for CS1: Next Steps for an Engaging Pedagogical Framework.” \$250k over three years.
6. for Institute for Personal Robots in Education (IPRE). Awarded from Microsoft Research, 2006–2009.
7. NSF CCLI-Educational Materials Development, Division of Undergraduate Education, Proposal #0231363 (University of Massachusetts Lowell, Bryn Mawr College, Swarthmore College, and Stanford University), *Beyond LEGOs: Hardware, Software and Curriculum for the Next Generation Robot Laboratory*. Co-PI. \$400,194 to begin January 2003, over three years.
8. *Developmental Robotics*, Mellon Tri-Co Fellow, with Lisa Meeden and Deepak Kumar. \$4,000, 2002–2003.
9. *Multidisciplinary Assignments for Computer Science* Bryn Mawr College curriculum development summer stipend. \$2,000, summer 2002.
10. NSF 97-51, Proposal #98AR003, (University of Arkansas, Fayetteville), *Infrastructure Development Support For New Research Programs in Computer Engineering & Computer Science*. Co-PI. \$954,833 over two years.

Affiliations: AAAI, ACM, SIGCSE.

Related Conference activities:

- Conference organizer of JupyterDay Philadelphia, May, 2017.
- Conference organizer and proceedings editor (with L. Meeden) of the 2005 AAAI Spring Symposium on *Developmental Robotics*.
- Conference organizer and proceedings editor of the *Midwest AI and Cognitive Science Society Meetings*, April 2000, Fayetteville, AR.
- Member of Program Committee of Robolearn-96 workshop at FLAIRS, Florida AI Research Symposium, Key West, FL.
- Participant of IJCAI 2001 Workshop on Effective Interactive AI Resources, Seattle, WA. On the program committee for the same group for AAAI, 2002.

Research/Teaching activities:

- Robocup soccer participant at US Open 2012, Bowdoin College. Placed 5th (tied with Bowdoin College).
- Competition organizer for the **2005 Scavenger Hunt** event, AAAI national meeting this summer, Pittsburgh, PA.

- Competition organizer for the **1998 Find Life on Mars** event, AAAI national meeting, Madison, WI.
- One of the Organizer of Boosting Science, Engineering, and Technology (BEST), to introduce high school students to robotics in Fayetteville, AR.
- Invited Panel Participation: “Dimensions of Difference: Symbolic vs. Subsymbolic Computation.” Topic: Subsymbolic Representations. Third Midwest Artificial Intelligence and Cognitive Science Society Conference, Southern Illinois University, Carbondale, Illinois, April, 1991.
- Presentation: Self-controlled Recurrent Networks. Third Annual Midwest ConnectFest, Pittsburgh, PA, November, 1992.
- Presentation: Analyzing Representations in Sequential Recursive Auto-Associative Memory (RAAM), First Annual Midwest ConnectFest, Bloomington, IN, November, 1990.
- 1990-1991 President, Indiana University Computer Science Graduate Student Association.
- 1989-1990 Indiana University Graduate Student Organization Departmental Representative, Computer Science Graduate Student Association.
- 1987-1989 President, Indiana University Association of Computing Machinery, local chapter.