Dr. Lynne E. Parker
Professor

(*as of 1/10*)

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Research Interests:

- Distributed autonomous mobile robotics, artificial intelligence, machine learning, sensor networks, distributed sensing, brain and cognitive science, multi-agent systems, human-robot cooperation, embedded systems.

Education:

- Ph.D.: Massachusetts Institute of Technology, Department of Electrical Engineering and Computer Science, Artificial Intelligence Laboratory, Cambridge, MA, 1994. Minor: Brain and Cognitive Science. Dissertation Advisor: Prof. Rodney A. Brooks. GPA: 4.9/5.0.
- M.S.: University of Tennessee, Department of Computer Science, Knoxville, TN, 1988. GPA: 4.0/4.0.
- B.S.: Tennessee Technological University, Department of Computer Science, Cookeville, TN, 1983. Minor: Mathematics. GPA: 4.0/4.0.

Professional Experience:

- **UNIVERSITY OF TENNESSEE**, 2002–Present
  Department of Electrical Engineering and Computer Science, Knoxville, TN
  Professor (2007–Present).
  Assistant Director, UT/ORNL Science Alliance (2008–Present).
  Founder and Director, Distributed Intelligence Laboratory (2002–Present).
  Associate Professor (2002–2007).
  Perform research in cooperative robot systems and artificial intelligence; teach undergraduate and graduate courses on algorithms, theory of computation, and advanced topics in robotics and artificial intelligence; advise graduate students in robotics and artificial intelligence research. Direct research group working on multi-robot systems, distributed sensor networks, and cooperative intelligent systems. Lab URL: http://www.cs.utk.edu/dilab.
- **OAK RIDGE NATIONAL LABORATORY**, 1994–Present
  Computer Science and Mathematics Division, Complex Systems Group, Oak Ridge, TN
  Adjunct Distinguished R&D Staff Member (2002–Present).
  Distinguished R&D Staff Member (2001–2002).
  Group Leader (1996–2001).
  Senior Research Staff II (2000–2001).
  Senior Research Staff I (1998–2000).
  Research Staff II (1996–1998).
  Research Staff I (1994–1996).
  Research and development of systems facilitating cooperation among heterogeneous distributed robots. Research issues include intelligent control, learning theory, pattern recognition, neural networks, intelligent decision making, probabilistic reasoning, and computer vision. Served as CESAR Laboratory facilities manager.
- **UNIVERSITY OF TENNESSEE**, 2001–2002
  Mechanical and Aerospace Engineering and Engineering Science Dept., Knoxville, TN
  Adjunct Professor. Advised graduate students and developed collaborative research opportunities in learning for human-robot teleoperation.

- **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**, 1989–1994
  Artificial Intelligence Laboratory, Cambridge, MA
  Research Assistant. Performed research in situated agent cooperation, architectures for autonomous agents, learning in embedded systems, and multi-agent communication.

- **HUGHES RESEARCH LABORATORY**, 1991
  Artificial Intelligence Center, Malibu, CA
  Research Staff. Researched and developed issues of local versus global control for cooperative agent teams. Implemented this research as a system which allowed simulated teams of agents to robustly maintain formation in an unstructured environment.

- **OAK RIDGE NATIONAL LABORATORY**, 1986–1989
  Center for Engineering Science Advanced Research, Oak Ridge, TN
  Research Associate. Researched and developed artificial intelligence methodologies for job planning, dynamic task allocation, and automated monitoring for Human-Robot Symbiosis – the cooperative association between human and robot.

- **MARTIN MARIETTA ENERGY SYSTEMS, Y-12 Plant**, 1983–1986
  Computing and Telecommunications Division, Oak Ridge, TN
  Computing Analyst. Designed, developed, and implemented user-friendly, interactive barcoding and transaction data edit interfaces, and systems for tracking critical material movement and shipping.

Summary of Research Contributions:

- Dr. Parker's dissertation research (1994) on ALLIANCE, an archicture for multi-robot cooperation, was the first Ph.D. dissertation on the topic of multi-robot systems, and is considered a pioneering work in the field. In recent work funded by the National Science Foundation (2006–2011), she and her students have developed ASyMTRe, which is the first approach for the automatic synthesis of sensor-sharing in multi-robot coalitions; this work is being extended to achieve autonomous constructivist learning that allows robots to learn over time from prior experience. In other current research, she and her students are developing machine learning algorithms for anomaly detection in wireless sensor networks and in multi-robot teams. In previous work, Dr. Parker has contributed to several additional government-sponsored research programs. For example, she was a PI for two projects in the Software for Distributed Robotics Program (SDR) of DARPA/IPTO. The first SDR project (2002–2004), collaborative with SAIC and the University of Southern California, successfully demonstrated the deployment of up to 100 heterogeneous mobile robots in an indoor surveillance and reconnaissance task. The second SDR project (2002–2005) was a study of the current state of the art in distributed robot algorithms, which is now being developed in book form for widespread dissemination. Dr. Parker was a co-PI for a project in the Tactical Mobile Robotics Program (TMR) of DARPA/TTO (1998–2000). This project involved the development of robots and algorithms capable of challenging navigation and cooperation tasks in urban environments. Dr. Parker was a PI for a DARPA/IPTO seedling project entitled Synergistic Cyber Forces (2001–2002), which focused on technologies enabling human-robot interactions. Dr. Parker also served as a consultant to a DARPA/IPTO seedling (2003) on the development of multi-agent, multi-robot systems that operate in adversarial, dynamic environments. Dr. Parker was co-PI for the Department of Energy (DOE) Center for Engineering Science Advanced Research (1994–2002), involving extensive development of intelligent systems applied to many applications, such as multi-robot tracking of multiple moving objects, multi-robot motion planning, formation keeping, and multi-robot object handling. Industry-sponsored research of Dr. Parker includes her work as PI for a Caterpillar, Inc. project (1999–2002) that resulted in the successful development and demonstration (in simulation) of cooperative autonomous behaviors for surface coal mining, as well as recent work for Lockheed Martin Advanced Technology Laboratories (2008–2009) on peer-to-peer human-robot teaming.

Honors and Awards:

- IEEE Fellow, 2010.
- Gonzalez Family Award for Excellence in Research, 2009.
- UTK College of Engineering Allen and Hoshall Engineering Faculty Award, 2009.
- UTK Department of Computer Science Professor of the Year Award, 2007.
- UTK Chancellor's Honor: Angie Warren Perkins Award (for scholarship, teaching, and contributions to campus intellectual life), 2006.
- PECASE Award (United States Presidential Early Career Award for Scientists and Engineers), 2000.
- Department of Energy (DOE) Office of Science Early Career Scientist and Engineer Award, 1999.
- Selected participant (out of 60 total from U.S. and Germany) in the German-American Frontiers of Engineering Symposium (GAFOE), organized by the National Academy of Engineering (NAE) and the Alexander von Humboldt Foundation, 2007.
- Selected participant (out of approx. 80 nationwide) in the National Academy of Engineering's 7th Annual Frontiers of Engineering Symposium, 2001.
- UT-Battelle Technical Achievement Award for Significant Research Achievement, 2000.
- ORNL Values World Class Teamwork Award, 2001.
- Selected participant (out of approx. 100 nationwide) in the National Academy of Science's 12th Annual Frontiers of Science Symposium, 2000.
- Selected and Served as Artificial Intelligence Delegate to People's Republic of China, 1998.
- Founding Fellow of the KISS Institute for Practical Robotics, 1994.
- Elected full member of Sigma Xi, the honorary scientific research society, by the MIT Chapter, 1993.
- Howard Scholarship Award (top TTU graduate of June 1983), 1983.
- TTU Tech Faculty Award, 1983.
- Moorman Mathematics Award, 1983.
- Mortar Board Outstanding Junior Award, 1982.
- TTU Outstanding Female Sophomore, 1981.
- Outstanding Freshman in the College of Arts and Sciences, 1980.
- TTU Valedictorian Scholarship, 1979-1983.

Edited Books:

- L. E. Parker, F. Schneider, and A. Schultz (eds.), *Multi-Robot Systems: From Swarms to Intelligent Automata, Volume III*, Springer, 2005.
- A. Schultz, L. E. Parker, and F. Schneider (eds.), *Multi-Robot Systems: From Swarms to Intelligent Automata, Volume II*, Kluwer, 2003.
- T. Balch and L. E. Parker (eds.), *Robot Teams: From Diversity to Polymorphism*, A K Peters, 2002.
- A. Schultz and L. E. Parker (eds.), *Multi-Robot Systems: From Swarms to Intelligent Automata*, Kluwer, 2002.
- L. E. Parker, G. Bekey, and J. Barhen (eds.), *Distributed Autonomous Robot Systems 4*, Springer, 2000.
- L. E. Parker (ed.), "Proceedings of Microrobotics and Micromechanical Systems," 1995 SPIE International Symposium on Intelligent Systems and Advanced Manufacturing, SPIE, vol. 2593, October 1995.

Journal Papers:

- L. E. Parker, "Distributed Intelligence: Overview of the Field and its Application in Multi-Robot Systems", invited article, *Journal of Physical Agents*, special issue on multi-robot systems, vol. 2, no. 1, 2008: 5-14.
- L. E. Parker and F. Tang, "Building Multi-Robot Coalitions through Automated Task Solution Synthesis", *Proceedings of the IEEE*, Special Issue on Multi-Robot Systems, vol. 94, no. 7, 2006: 1289-1305.
- A. Howard, L. E. Parker, and G. Sukhatme, "Experiments with a Large Heterogeneous Mobile Robot Team: Exploration, Mapping, Deployment, and Detection", *International Journal of Robotics Research*, vol. 25, no. 5-6, 2006: 431-447.
- L. E. Parker, "Why Autonomous Robotics and Artificial Intelligence? One Researcher's Perspective", *Journal of the Robotics Society of Japan*, Special Issue on Women in Robotics, vol. 24, no. 5, 2006: 582-584.
- F. Fernandez, D. Borrajo, and L. E. Parker, "A Reinforcement Learning Algorithm in Cooperative Multi-Robot Domains", *Journal of Intelligent and Robotic Systems*, vol. 43, no. 2-4, 2005: 161-174.

- K. Fregene, D. Kennedy, R. Madhavan, L. E. Parker, and D. Wang, "A Class of Intelligent Agents for Coordinated Control of Outdoor Terrain Mapping UGVs", *Engineering Applications of Artificial Intelligence*, vol. 18, no. 5, 2005: 513-531.
- L. Canamero, Z. Dodds, L. Greenwald, J. Gunderson, A. Howard, E. Hudlicka, C. Martin, L. E. Parker, T. Oates, T. Payne, Y. Qu, C. Schlenoff, J. G. Shanahan, S. Tejada, J. Weinberg, and J. Weibe, "The 2004 AAAI Spring Symposium Series", *AI Magazine*, vol. 25, no. 4, 2004: 95-100.
- L. E. Parker, "Interview, with Lynne E. Parker", *International Journal of Advanced Robotic Systems*, vol. 1, no. 2, 2004: 57-60.
- R. Madhavan, K. Fregene, and L. E. Parker, "Terrain Aided Distributed Heterogeneous Multirobot Localization and Mapping", *Autonomous Robots*, vol. 17, 2004: 23-39.
- L. E. Parker, "Current Research in Multi-Robot Systems", *Journal of Artificial Life and Robotics*, vol. 7, nos. 1-2, 2003: 1-5.
- T. Arai, E. Pagello, and L. E. Parker, "Guest Editorial: Advances in Multi-Robot Systems", *IEEE Transactions on Robotics and Automation*, vol. 18, no. 5, 2002: 655-661.
- L. E. Parker, "Distributed Algorithms for Multi-Robot Observation of Multiple Moving Targets," *Autonomous Robots*, vol. 12, no. 3, 2002: 231-255.
- F. Fernandez and L. E. Parker, "Learning in Large Cooperative Multi-Robot Domains", *International Journal of Robotics and Automation*, special issue on Computational Intelligence Techniques in Cooperative Robots, vol. 16, no. 4, 2001: 217-226.
- L. E. Parker, "Evaluating Success in Autonomous Multi-Robot Teams: Experiences from ALLIANCE Architecture Implementations", *Journal of Theoretical and Experimental Artificial Intelligence*, vol. 13, 2001: 95-98.
- L. E. Parker, "Lifelong Adaptation in Heterogeneous Multi-robot Teams: Response to Continual Variation in Individual Robot Performance", *Autonomous Robots*, special issue on Heterogeneous Multi-Robot Systems, vol. 8, no. 3, 2000: 239-267.
- T. Balch and L. E. Parker, "Guest Editorial", *Autonomous Robots*, special issue on Heterogeneous Multi-Robot Systems, vol. 8, no. 3, 2000: 207-208.
- L. E. Parker, "Adaptive Heterogeneous Multi-Robot Teams," *Neurocomputing*, special issue of NEURAP '98 (Neural Network Applications), vol. 28, 1999: 75-92.
- L. E. Parker, "Cooperative Robotics for Multi-Target Observation," special issue of *Intelligent Automation and Soft Computing*, on Robotics Research at Oak Ridge National Laboratory, vol. 5, no. 1, 1999: 5-19.
- L. E. Parker, "ALLIANCE: An Architecture for Fault Tolerant Multi-Robot Cooperation," *IEEE Transactions on Robotics and Automation*, vol. 14, no. 2, 1998: 220-240.
- L. E. Parker, "L-ALLIANCE: Task-Oriented Multi-Robot Learning in Behavior-Based Systems," *Advanced Robotics*, Special Issue on Top Selected Papers from International Conference on Intelligent Robots and Systems, vol. 11, no. 4, 1997: 305-322.
- L. E. Parker, "On the Design of Behavior-Based Multi-Robot Teams," *Advanced Robotics*, vol. 10, no. 6, 1996: 547-578.
- F. G. Pin, L. E. Parker, and F. W. DePiero, "On the Design and Development of a Human-Robot Synergistic System," *Robotics and Autonomous Systems*, vol. 10, nos. 2-3, 1992: 161-184.
- F. G. Pin, P. F. R. Belmans, S. I. Hruska, C. W. Steidley, and L. E. Parker, "Robot Learning from Distributed Sensory Sources," *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 21, no. 5, September 1991: 1216-1223.

Refereed Book Chapters:

- L. E. Parker, "Path Planning and Motion Coordination in Multiple Mobile Robot Teams", in *Encyclopedia of Complexity and System Science*, Springer, 2009.
- L. E. Parker, "Multiple Mobile Robot Systems", Chapter 40 of *Springer Handbook of Robotics*, Springer-Verlag, Berlin Heidelburg, 2008: 921-941. [Handbook won two American Publishers Awards for Professional and Scholarly Excellence (PROSE) in the Engineering and Technology Catgory and the Award for Excellence in the overall Physical Sciences and Mathematics Category.]
- Y. Guo, L. E. Parker, and R. Madhavan, "Collaborative Robots for Infrastructure Security Applications", in *Mobile Robots: The Evolutionary Approach*, Book Series on Intelligent Systems Engineering, N. Nedjah, L. dos Santos Coelho, and L. de Macedo Mourelle (eds),Springer-Verlag, Berlin, 2006: 185-200.

- L. E. Parker, M. Chandra, and F. Tang, "Enabling Autonomous Sensor-Sharing for Tightly-Coupled Cooperative Tasks", in *Multi-Robot Systems From Swarms to Intelligent Automata: Volume III*, Kluwer 2005: 119-230.
- L. E. Parker, "The Effect of Heterogeneity in Teams of 100+ Mobile Robots", in *Multi-Robot Systems: From Swarms to Intelligent Automata, Volume II*, Kluwer, 2003: 205-215.
- S. Carpin and L. E. Parker, "Cooperative Motion Coordination Amidst Dynamic Obstacles", in *Distributed Autonomous Robotic Systems 5*, Springer Verlag, 2002: 145-154.
- L. E. Parker, K. Fregene, Y. Guo, and R. Madhavan, "Distributed Heterogeneous Sensing for Outdoor Multi-Robot Localization, Mapping, and Path Planning", in *Multi-Robot Systems: From Swarms to Intelligent Automata*, Kluwer, 2002: 21-30.
- L. E. Parker, C. Touzet, and F. Fernandez, "Techniques for Learning in Multi-Robot Teams", in *Robot Teams: From Diversity to Polymorphism*, A K Peters, 2002: 191-236.
- L. E. Parker, "Current State of the Art in Distributed Robot Systems", in *Distributed Autonomous Robotic Systems 4*, Springer Verlag, 2000: 3-12.
- L. E. Parker and C. Touzet, "Multi-Robot Learning in a Cooperative Observation Task", in *Distributed Autonomous Robotic Systems 4*, Springer Verlag, 2000: 391-401.
- L. E. Parker and J. Draper, "Robotics Applications in Maintenance and Repair," in *Handbook of Industrial Robotics*, 2nd edition, Shimon Nof (ed), Wiley Publishers, 1999: 1023-1036.
- L. E. Parker, "Behavior-Based Cooperative Robotics Applied to Multi-Target Observation," in *Intelligent Robots: Sensing, Modeling, and Planning*, edited by R. Bolles, H. Bunke, and H. Noltemeier, World Scientific, 1997: 356-373.
- L. E. Parker, "Multi-Robot Team Design for Real-World Applications," in *Distributed Autonomous Robotic Systems 2*, edited by H. Asama, T. Fukuda, T. Arai, and I. Endo, Springer-Verlag, Tokyo, 1996: 91-102.
- L. E. Parker and F. G. Pin, "A Methodology for Dynamic Task Allocation in a Man-Machine System," in *Methodologies for Intelligent Systems*, Eds. Zbigniew W. Ras and Maria Zemankova, New York: North-Holland (1987): 488-495.

Refereed Conference Papers:

- Y. Zhang and L. E. Parker, "A General Information Quality Based Approach for Satisfaction of Sensor Constraints in Multirobot Tasks", in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2010.
- A. Marino, L. E. Parker, G. Antonelli, F. Caccavale, and S. Chiaverini, "A Modular and Fault-Tolerant Approach to Multi-Robot Perimeter Patrol", in *Proceedings of IEEE International Conference on Robotics and Biomimetics (ROBIO)*, 2009. (Finalist for best paper award.)
- A. Marino, L. E. Parker, G. Antonelli, and F. Caccavale, "Fuzzy Behavioral Control for Multi-Robot Border Patrol", in *Proceedings of 17th Mediterranean Conference on Control and Automation*, 2009.
- X. Li and L. E. Parker, "Distributed Sensor Analysis for Fault Detection in Tightly-Coupled Multi-Robot Team Tasks", in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2009.
- L. E. Parker, C. M. Reardon, H. Choxi, and C. Bolden, "Using Critical Junctures and Environmentally-Dependent Information for Management of Tightly-Coupled Coperation in Heterogeneous Robot Teams", in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2009.
- A. Marino, L. E. Parker, G. Antonelli, and F. Caccavale, "Behavioral Control for Multi-Robot Perimeter Patrol: A Finite State Automata Approach", in *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2009.
- Y. Li and L. E. Parker, "Detecting and monitoring time-related abnormal events using a wireless sensor network and mobile robot", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2008.
- Y. Li and L. E. Parker, "A spatial-temporal imputation technique for classification with missing data in a wireless sensor network", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2008.
- Y. Tang and L. E. Parker, "Towards Schema-Based, Constructivist Robot Learning: Validating an Evolutionary Search Algorithm for Schema Chunking", in *Proceedings of IEEE International Conference on Robotics and Automation*, 2008.
- B. Kannan and L. E. Parker, "Metrics for Quantifying System Performance in Intelligent, Fault-Tolerant Multi-

Robot Teams", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2007.

- X. Li and L. E. Parker, "Sensor Analysis for Fault Detection in Tightly-Coupled Multi-Robot Team Tasks", in *Proceedings of IEEE International Conference on Robotics and Automation*, 2007.
- F. Tang and L. E. Parker, "Layering ASyMTRe-D with Task Allocation for Multi-Robot Tasks", in *Proceedings of IEEE International Conference on Robotics and Automation*, 2007.
- B. Kannan and L. E. Parker, "Adaptive Causal Models for Fault Diagnosis and Recovery in Multi-Robot Teams", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2006.
- F. Tang and L. E. Parker, "Distributed Multi-Robot Coalitions through ASyMTRe-D", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2005.
- F. Tang and L. E. Parker, "Coalescent Multi-Robot Teaming through ASyMTRe: A Formal Analysis", in *Proceedings of the 12th International Conference on Advanced Robotics*, 2005.
- F. Tang and L. E. Parker, "ASyMTRe: Automated Synthesis of Multi-Robot Task Solutions through Software Reconfiguration", *Proceedings of the IEEE International Conference on Robotics and Automation*, 2005.
- L. E. Parker, B. Kannan, F. Tang, and M. Bailey, "Tightly-Coupled Navigation Assistance in Heterogeneous Multi-Robot Teams", in *Proceedings of IEEE International Conference on Intelligent Robots and Systems*, 2004.
- A. Howard, L. E. Parker, and G. S. Sukhatme, "The SDR Experience: Experiments with a Large-Scale Heterogeneous Mobile Robot Team", *Proceedings of 9th International Symposium on Experimental Robotics*, 2004.
- Y. Tang, B. Birch, and L. E. Parker, "Planning Mobile Sensor Net Deployment for Navigationally-Challenged Sensor Nodes", *Proceedings of IEEE International Conference on Robotics and Automation*, 2004.
- Y. Guo, L. E. Parker, and R. Madhavan, "Towards Collaborative Robots for Infrastructure Security Applications", *Proceedings of International Symposium on Collaborative Technologies and Systems.*, pp. 235-240, San Diego, CA, 2004.
- L. E. Parker, B. Kannan, X. Fu, and Y. Tang, "Heterogeneous Mobile Sensor Net Deployment Using Robot Herding and Line-of-Sight Formations", *Proceedings of IEEE International Conference on Intelligent Robots and Systems*, 2003.
- L. E. Parker, B. Birch, and C. Reardon, "Indoor Target Intercept Using an Acoustic Sensor Network and Dual Wavefront Path Planning", *Proceedings of IEEE International Conference on Intelligent Robots and Systems*, 2003. Also appeared later in *Proceedings of 10th International Conference on Robotics and Remote Systems for Hazardous Environments, 2004.*
- M. Long, R. R. Murphy, and L. E. Parker, "Distributed Multi-Agent Diagnosis and Recovery from Sensor Failures", *Proceedings of IEEE International Conference on Intelligent Robots and Systems*, 2003.
- Y. Guo, L. E. Parker, D. Jung, and Z. Dong, "Performance-Based Rough Terrain Navigation for Nonholonomic Mobile Robots", *Proceedings of the 29th Annual Conference of the IEEE Industrial Electronics Society*, 2003.
- R. Madhavan, K. Fregene, and L. E. Parker, "Distributed Heterogeneous Outdoor Multirobot Localization", *Proceedings of IEEE International Conference on Robotics and Automation*, 2002: 374-381.
- K. Fregene, R. Madhavan, and L. E. Parker, "Incremental Multiagent Robotic Mapping of Outdoor Terrains", *Proceedings of IEEE International Conference on Robotics and Automation*, 2002: 1339-1346.
- Y. Guo and L. E. Parker, "A Distributed and Optimal Motion Planning Approach for Multiple Mobile Robots", *Proceedings of IEEE International Conference on Robotics and Automation*, 2002: 2612-2619.
- S. Carpin and L. E. Parker, "Cooperative Leader Following in a Distributed Multi-Robot System", *Proceedings of IEEE International Conference on Robotics and Automation*, 2002, 2994-3001.
- D. Jung and L. E. Parker, "Path Planning is no Substitute for Intelligent Behavior", *Proceedings of SPIE Conference on Unmanned Ground Vehicle Technology IV*, 2002.
- L. E. Parker, Y. Guo, and D. Jung, "Cooperative Robot Teams Applied to the Site Preparation Task", *Proceedings of 10th International Conference on Advanced Robotics"*, 2001, 71-77.
- L. E. Parker and C. Touzet, "Multi-Robot Learning in an Inherently Cooperative Task", *Proceedings of SPIE Conference on Unmanned Ground Vehicle Technology III*, 2001, vol. 4364, 127-135.
- A. Scott and L. E. Parker, "Quantitative and qualitative comparison of three laser-range mapping algorithms using two types of laser scanner data", *Proceedings of IEEE Systems, Man, and Cybernetics Society Conference*, 2000.
- L. E. Parker, D. Jung, T. Huntsberger, and P. Pirjanian, "Opportunistic Adaptation in Space-Based Robot Colonies: Application to Site Preparation", *Proceedings of World Automation Congress*, 2000.
- L. E. Parker, C. Touzet, and D. Jung, "Learning and Adaptation in Multi-Robot Teams," in *Proceedings*

of Eighteenth Symposium on Energy Engineering Sciences, held at Argonne National Laboratory, May 2000, 177-185.

- L. E. Parker, "A Case Study for Lifelong Learning and Adaptation in Cooperative Robot Teams", *Proceedings of SPIE Sensor Fusion and Decentralized Control in Robotic Systems II*, 1999, vol. 3839, 92-101.
- L. E. Parker, "Toward the Automated Synthesis of Cooperative Mobile Robot Teams," *Proceedings of SPIE Mobile Robots XIII*, 1998, vol. 3525, 82-93.
- L. E. Parker, "Distributed Control of Multi-Robot Teams: Cooperative Baton-Passing Task," *Proceedings of the 4th International Conference on Information Systems Analysis and Synthesis (ISAS '98)*, vol. 3, 89-94.
- L. E. Parker, "Adaptive Heterogeneous Multi-Robot Teams," *Proceedings of Neural Networks and Their Applications (NEURAP '98)*, 87-94.
- L. E. Parker, "Cooperative Motion Control for Multi-Target Observation," *Proceedings of the 1997 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '97)*, 1591-1598.
- L. E. Parker and Brad Emmons, "Cooperative Multi-Robot Observation of Multiple Moving Targets," *Proceedings of the 1997 IEEE International Conference on Robotics and Automation,* vol. 3, 2082-2089.
- L. E. Parker, "Multi-Robot Motion Control for Cooperative Observation," in *Proceedings of Fifteenth Symposium on Energy Engineering Sciences*, CONF-9705121, held at Argonne National Laboratory, May 1997: 223-230.
- L. E. Parker, "Task-Oriented Multi-Robot Learning in Behavior-Based Systems," in *Proceedings of the 1996 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '96)* , November, 1996: 1478-1487.
- L. E. Parker, "The Effect of Action Recognition and Robot Awareness in Cooperative Robotic Teams," *Proceedings of the 1995 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '95)*, August 1995: vol. 1, 212-219.
- L. E. Parker, "Distributed Multi-Robot Sensing and Tracking: A Behavior-Based Approach," *SPIE International Symposium on Intelligent Systems and Advanced Manufacturing, Conference on Sensor Fusion and Networked Robotics VIII*, October 1995: 110-121.
- L. E. Parker, "ALLIANCE: An Architecture for Fault Tolerant, Cooperative Control of Heterogeneous Mobile Robots," *Proceedings of the 1994 IEEE/RSJ/GI International Conference on Intelligent Robots and Systems (IROS '94)*, September 1994: 776-783.
- L. E. Parker, "An Experiment in Mobile Robotic Cooperation," *Proceedings of the ASCE Specialty Conference on Robotics for Challenging Environments*, February, 1994: 131-139.
- L. E. Parker, "Designing Control Laws for Cooperative Agent Teams," *Proceedings of the 1993 IEEE International Conference on Robotics and Automation*: 582-587.
- L. E. Parker, "Adaptive Action Selection for Cooperative Agent Teams," *Proceedings of the Second International Conference on Simulation of Adaptive Behavior*, MIT Press, 1992: 442-450.
- L. E. Parker and F. G. Pin, "Man-Robot Symbiosis: A Framework for Cooperative Intelligence and Control," *Proceedings of SPIE Cambridge Symposium: Advances in Intelligent Robot Systems*, November 1988: 94-103.
- L. E. Parker and F. G. Pin, "Architecture for Dynamic Task Allocation in a Man-Robot Symbiotic System," *Proceedings of SPIE Cambridge Symposium: Advances in Intelligent Robot Systems*, November 1987: 95-102.
- L. E. Parker and F. G. Pin, "A Methodology for Dynamic Task Allocation in a Man-Machine System," *Proceedings of Goddard Conference on Space Applications of Artificial Intelligence and Robotics*, May 1987.

Refereed Symposia, Lightly-Refereed Conference and Workshop Papers:

- R. Edwards, L. E. Parker, and D. R. Resseguie, "Robopedia: Leveraging Sensorpedia for Web-Enabled Robot Control", *Proceedings of 7th International Workshop on Managing Ubiquitous Communications and Services, part of IEEE International Conference on Pervasive Computing and Communications*, published in Multicon Lecture Notes series, March, 2010.
- Y. Li and L. E. Parker, "Intruder detection using a wireless sensor network with an intelligent mobile robot response", IEEE SoutheastCon, April 2008.
- Y. Li and L. E. Parker, "Classification with missing data in a wireless sensor network", IEEE SoutheastCon, April 2008.
- Y. Tang and L. E. Parker, "Introducing SB-CoRLA, a Schema-Based Constructivist Robot Learning Architecture", IEEE SoutheastCon, April 2008.

- X. Li and L. E. Parker, "Design and performance improvements for fault detection in tightly-coupled multi-robot team tasks", IEEE SoutheastCon, April 2008.
- L. E. Parker, "Distributed Intelligence: Overview of the Field and its Application in Multi-Robot Systems", in *Proceedings of AAAI Fall Symposium on "Regarding the Intelligence in Distributed Intelligent Systems"*, November 2007.
- B. Kannan and L. E. Parker, "Fault-Tolerance Based Metrics for Evaluating System Performance in Multi-Robot Teams", in *Proceedings of Performance Metrics for Intelligent Systems Workshop (PerMIS)*, August 2006.
- F. Tang and L. E. Parker, "Layering Coalition Formation with Task Allocation", in *Workshop Notes of AAAI-06 Workshop on Auction Mechanisms for Robot Coordination*, July 2006.
- F. Tang and L. E. Parker, "Peer-to-Peer Human-Robot Teaming through Reconfigurable Schemas", *AAAI Spring Symposium on "To Boldly Go Where No Human-Robot Team Has Gone Before"*, Stanford University, March 2006.
- L. E. Parker, "On the Development of Metrics for Multi-Robot Teams within the ALLIANCE Architecture", *NIST Workshop on Metrics for Intelligence*, August 2000.
- L. E. Parker, "Generating Self-Reliant Teams of Autonomous Cooperating Robots: Desired Design Characteristics," *Working Notes of Autonomous Agents (Agents '99) Autonomy Control Software Workshop*, May 1999.
- L. E. Parker, "Learning in Cooperative Robot Teams," *Working Notes of International Joint Conference on Artificial Intelligence (IJCAI), Workshop on Dynamically Interacting Robots*, August 1993: 12-23.
- L. E. Parker, "A Performance-Based Architecture for Heterogeneous, Situated Agent Cooperation," *Working Notes of AAAI Workshop on Cooperation Among Heterogeneous Intelligent Systems*, July 1992: 96-105.

Poster Presentation:

- L. E. Parker and F. Tang, "ASyMTRe: Building Multi-Robot Coalitions through Automated Task Solution Synthesis", presented at German-American Frontiers of Engineering Symposium (GAFOE), April 2007.

Technical Reports:

- L. E. Parker, "L-ALLIANCE: A Mechanism for Adaptive Action Selection in Heterogeneous Multi-Robot Teams," ORNL/TM-13000, October 1995.
- L. E. Parker, "Heterogeneous Multi-Robot Cooperation," Massachusetts Institute of Technology Ph.D. Dissertation, January 1994. Available as MIT Artificial Intelligence Laboratory Technical Report 1465, February 1994.
- L. E. Parker, "Local versus Global Control Laws for Cooperative Agent Teams," MIT A.I. Memo 1357, March 1992.
- L. E. Parker, "Job Planning and Execution Monitoring for a Human-Robot Symbiotic System," ORNL/TM-11308, CESAR-89/34, November 1989.
- L. E. Parker and F. G. Pin, "Dynamic Task Allocation for a Man-Machine Symbiotic System," ORNL/TM-10397, CESAR-87/08, June 1987.
- L. E. Parker and C. R. Weisbin, eds., "1988 Workshop on Human-Machine Symbiotic Systems Proceedings," (December 5-6, 1988) ORAU 89/C-140, CESAR-89/19.
- L. E. Parker, "A Robot Navigation Algorithm for Moving Obstacles," University of Tennessee Master's Thesis, June 1988.

Other Publications:

- L. E. Parker, "Cooperative Robotics Research at Oak Ridge National Laboratory," in *SPIE Robotics and Machine Perception Newsletter*, 5 (2), September 1996: 6.
- L. E. Parker, "Fault Tolerant Multi-Robot Cooperation," MIT AI Laboratory Video AIV 9, December 1994.

Invited Talks:

International:

- TBA, ROSACE (Robots and self-adaptive embedded communicating systems) Project Workshop, February 12, 2010, LAAS, Toulouse, France.
- "Towards Strongly Cooperative Multi-Robot Teams: Dealing with Heterogeneity and Faulty Systems", May 29, 2009, Orebro University, Sweden.
- "Dynamic Task Allocation in Heterogeneous Multi-Robot Teams", German summer school on Monitoring and Coordination Across Networked Autonomous Entitites, August 19, 2008, Bad Muenster am Stein-Ebernburg, Germany.
- "Performance Monitoring and Benchmarking in Multi-Robot Teams", German summer school on Monitoring and Coordination Across Networked Autonomous Entitites, August 18, 2008, Bad Muenster am Stein-Ebernburg, Germany.
- "Dealing with Heterogeneity in Multi-Robot Teams", IRIDIA seminar, Universite Libre de Bruxelles, June 20, 2008, Brussels, Belgium.
- "Collaborative Processing in Sensor Networks", tutorial, International Conference on Control, Automation, Robotics, and Vision, December 5, 2006, Singapore.
- "Intelligence, Reasoning, and Knowledge in Multi-Vehicle Systems: Recent Advances and Current Research Challenges", plenary talk, IFAC First Workshop on Multivehicle Systems, October 3, 2006, Salvador, Brazil.
- Invited Panelist, New Trends in Multi-Vehicle Systems, International Federation of Automatic Control (IFAC) First Workshop on Multivehicle Systems, October 3, 2006, Salvador, Brazil.
- "Dealing with Heterogeneity in Multi-Robot Teams", Workshop on Fieldable Multirobot Systems, International Conference on Robotics and Automation, April 18, 2005, Barcelona, Spain.
- "Experiments with a Large-Scale Heterogeneous Mobile Robot Team", EURON (European Robotics Research Network) Annual Meeting, Warsaw University of Technology, February 17, 2005, Warsaw, Poland.
- "Software Reconfigurability for Networked Heterogeneous Mobile Robots", Workshop on Networked Robotics, International Conference on Intelligent Robots and Systems, September 29, 2004, Sendai, Japan.
- "Autonomously Reconfigurable Distributed Schemas for Task-Level Multi-Robot Team Control: Proof of Concept", Workshop on Issues and Approaches to Task Level Control, International Conference on Intelligent Robots and Systems, September 28, 2004, Sendai, Japan.
- "Real-World Challenges in Deploying a Large-Scale Mobile Sensor Network", Workshop on Urban Search and Rescue, International Conference on Intelligent Robots and Systems, September 28, 2004, Sendai, Japan.
- "From Theoretical to Practical Implementations of Heterogeneous Robot Teams", The Second Swedish Workshop on Autonomous Robotics, October 11, 2002, Stockholm, Sweden.
- "Towards Practical Implementations of 100+ Heterogeneous Robot Teams", Workshop on Cooperative Robotics at the 2002 IEEE/RSJ International Conference on Intelligent Robots and Systems", October 1, 2002, Lausanne, Switzerland.
- "Multi-Robot Systems: Where we have been and Where we are going", Plenary speech, Joint Session of 2002 RoboCup Symposium and 2002 Distributed Autonomous Robot Systems (DARS) Symposium, June 25, 2002, Fukuoka, Japan.
- "Advances in Multi-Robot Systems", Plenary speech, Seventh International Conference on Artificial Life and Robotics, January 16, 2002, Beppu, Japan.
- "Distributed Robotics and Team Learning in Inherently Cooperative Tasks", University of Tokyo, Institute for Industrial Science, January 15, 2002, Tokyo, Japan.
- "Cooperative Robot Teams", Czech Technical University, Department of Cybernetics, August 30, 2001, Prague, Czech Republic.
- "Distributed Robot Team Learning in Inherently Cooperative Tasks", Silesian University, Institute for Computer Science, August 27, 2001, Opava, Czech Republic.
- "Current State of the Art in Robotics", Artificial Intelligence Delegation Presentation, Chinese Academy of Sciences, Institute of Computer Science and Chinese Association of Artificial Intelligence, June 9, 1998, Beijing, China.
- "From Social Animals to Teams of Cooperating Robots: Examples of Successful Multi-Robot Cooperation," IROS '97 Workshop *Multi-Robot Cooperation: Current Trends and Key Issues*, September 7, 1997, Grenoble, France.

- "Learning in Cooperative Robot Teams," *International Joint Conference on Artificial Intelligence (IJCAI), Workshop on Dynamically Interacting Robots*, August 1993, Chambery, France.

National:

- TBA, Department of Computer Science research colloquium series, University of Alabama, March 8, 2010, Tuscaloosa, AL.
- "General Information Quality-Based Approach for Satisfaction of Sensor Constraints in Tightly-Coupled Multi-Robot Tasks", GRASP (General Robotics, Automation, Sensing, and Perception) Lab Seminar Series, University of Pennsylvania, October 23, 2009, Philadelphia, PA.
- "Smart Machines: Robots that Integrate Perception, Reasoning, and Action to Perform Cooperative Tasks", National Mu Alpha Theta Convention (National High School and Two-Year College Mathematics Honor Society), Knoxville, TN, July 21, 2009.
- "From Birds and Bees to Multi-Robot Teams: What Nature Can Teach Roboticists", Global Conference on Educational Robotics, Norman, OK, July 8, 2008.
- "A Progress Report on Networked Robot Systems Research in the USA", Workshop on Network Robot Systems: Benchmarks and Platforms Towards Human-Robot Interaction, IEEE International Conference on Robotics and Automation, Pasadena, CA, May 19, 2008.
- "Towards Strongly Cooperative Multi-Robot Teams: Dealing with Heterogeneity and Faulty Systems", Colloquium Series, College of Engineering and Information Technology, University of Arkansas at Little Rock, Little Rock, AR, March 21, 2008.
- "Distributed Intelligence: Overview of the Field and its Application in Multi-Robot Systems", AAAI Fall Symposium on "Regarding the Intelligence in Distributed Intelligent Systems", Arlington, VA, November 10, 2007.
- "Advances in Robotics", Secretary of Defense Corporate Fellows Program, Washington, D.C., July 3, 2007.
- "Distributed Intelligence", Next Generation Innovation Forum, Naval Surface Warfare Center, Port Hueneme, CA, May 22, 2007.
- "Building Multi-Robot Coalitions: Enabling Sensor and Capability Sharing Across Heterogeneous Teams", U. S. National Intelligence Council's (NIC) Science and Technology Expert Partnership (STEP) Workshop on Advanced Robotics, March 20, 2007, McLean, VA.
- Invited Academic Panelist, Unmanned Systems Capabilities Conference, January 23, 2007, Nashville, TN.
- "Towards Strongly Cooperative Multi-Robot Teams: Dealing with Heterogeneity and Faulty Systems", The City College of New York, November 13, 2006, New York City, NY.
- Invited Panelist, Robotics Science and Systems Workshop on Science and Technology Challenges, August 18, 2006, Philadelphia, PA.
- Invited Panelist, NSF Workshop on the Future of Robotics Research, May 14, 2006, Orlando, FL.
- "Intelligence, Reasoning and Knowledge: Current State of the Field and Open Research Challenges", Keynote speaker, International Advanced Robotics Programme Planning Forum, May 13, 2006, Orlando, FL.
- "Overview of Research in Distributed Intelligence Laboratory", Lockheed Martin Advanced Technology Laboratories, March 6, 2006, Cherry Hill, NJ.
- "The Merging of Man and Machine: Using Brain-Computer Interfaces to Augment Human Capabilities", Institute for Defense Analyses, November 15, 2005, Alexandria, VA.
- "Generating Coalescent Multi-Robot Teams through Distributed Sensor Sharing", Vanderbilt University, January 27, 2005, Nashville, TN.
- "Experiments with a Large-Scale Heterogeneous Mobile Robot Team", University of Notre Dame, September 16, 2004, South Bend, IN.
- "Generating Fault Tolerance through Learning in Heterogeneous Multi-Robot Teams", DARPA Information Science and Technology Workshop on Cognitive Systems Focused on Team/Multiagent Learning, American Academy of Arts and Sciences, June 2, 2004, Cambridge, MA.
- "Indoor Target Intercept Using an Acoustic Sensor Network and Dual Wavefront Path Planning", 10th International Topical Meeting on Robotics and Remote Systems for Hazardous Environments", March 30, 2004, Gainesville, FL.
- "Adaptable Tactical Behaviors for Unmanned Ground Vehicles", Army Research Laboratory Tactical Behaviors Workshop, U.S. Army War College, October 28, 2003, Carlisle, PA.

- "Heterogeneous Mobile Sensor Net Planning and Deployment Using Robot Herding", Georgia Institute of Technology, October 20, 2003, Atlanta, GA.
- "Heterogeneous Mobile Robot Herding for Mobile Sensor Network Deployment", The Robotics Institute, Carnegie Mellon University, September 5, 2003, Pittsburgh, PA.
- "Distributed Intelligence Research at The University of Tennessee", Intel Robotics Workshop and Forum, January 23, 2003, Hillsboro, OR.
- "Towards Cooperative Robot Teams in Complex Site Preparation Tasks", Carnegie Mellon University, The Robotics Institute, December 11, 2001, Pittsburgh, PA.
- "Distributed Robotics and Team Learning in Inherently Cooperative Tasks", George Mason University, Computer Science Department Seminar Series, November 16, 2001, Fairfax, VA.
- "Distributed Robot Cooperation and Team Learning in Inherently Cooperative Tasks", Penn State University, Department of Mathematics Distinguished Visitors Program, October 31, 2001, University Park, PA.
- "Autonomous and Cooperative Robotics at ORNL", Vanderbilt University, Center for Intelligent Systems, May 18, 2001, Nashville, TN.
- "Multi-Robot Cooperation: From Fundamental Research to Real-World Applications", Institute for Mathematics and its Applications, Association for Women in Mathematics Workshop on Connecting Women in Mathematical Sciences to Industry, September 9, 2000, Minneapolis, MN.
- "The ALLIANCE Architecture for Multi-Robot Control", NASA Surface Systems Meeting, Panel on Multi-Robot Control Architectures – Redundancies and Commonalities, March 24, 2000, Pasadena. CA.
- "System of Systems Robotics: Multi-Robot Cooperation", Center for Intelligent Systems Seminar, Science Applications International Corporation, March 8, 2000, Littleton, CO.
- "Cooperation and Learning in Multiple Robot Teams", Navy Center for Applied Research in Artificial Intelligence Seminar Series, Naval Research Laboratory, March 6, 2000, Washington, D.C.
- "An Overview of ORNL's Research in Robotics", Idaho National Engineering and Environmental Laboratory Seminar, November 2, 1999, Idaho Falls, ID.
- "We Don't See Eye to Eye: A Distributed Robot's View of Sensor Fusion", (together with Prof. Robin Murphy), SPIE Robotics and Machine Perception Technical Group meeting, September 20, 1999, Boston, MA.
- "Generating Self-Reliant Teams of Autonomous Cooperating Robots: Desired Design Characteristics," Autonomous Agents (Agents '99) Autonomy Control Software Workshop, May 1, 1999, Seattle, WA.
- "From Social Animals to Teams of Cooperating Robots", short presentation for DARPA workshop on Biologically Inspired Approaches for Micro Air Vehicles, April 21-22, 1999, Washington, D.C.
- "Overview of Autonomous and Cooperative Robotics Research At Oak Ridge National Laboratory", JAUGS (Joint Architecture for Unmanned Ground Systems) Working Group Meeting, October 6, 1998, Huntsville, AL.
- "Distributed Motion Control for Multi-Robot Observation of Multiple Moving Targets", University of Southern California, Department of Computer Science, August 18, 1998, Los Angeles, CA.
- "Small-Scale Locomotion, Intelligent Cooperation, and Energy- Efficient Computation: A Concept for Cooperating Heterogeneous Biomorphic Explorers", First NASA/JPL Workshop on Biomorphic Explorers for Future Missions, August 20, 1998, Pasadena, CA.
- "On the Design of Cooperating Multi-Robot Teams," University of Arkansas, Department of Applied Science Seminar Series, January 21, 1998, Little Rock, AR.
- "Cooperating Multi-Robot Teams," Harding University, January 22, 1998, Searcy, AR.
- "Multi-Robot Cooperation," University of Wisconsin, Computer Science Department Seminar Series, November 14, 1997, Milwaukee, WI.
- "Fault Tolerance and Heterogeneity in Multi-Robot Reconnaissance," short presentation for DARPA workshop on Small Multi-Agent Reconnaissance Technology, May 21, 1997, Washington, D.C.
- "Multi-Robot Cooperation," Distinguished Lecture, LSU 25th Anniversary Symposium, Department of Computer Science, April 18, 1997, Baton Rouge, LA.
- "Multi-Robot Cooperation," Caterpillar, Inc., October 22, 1996, Peoria, IL.
- "Multi-Robot Team Design for Real-World Applications," *ONR Autonomous Robotics Workshop*, June 1996, Newport, R.I.
- "From Social Animals to Teams of Cooperating Robots," Biologically Inspired Autonomous Systems Workshop, Duke University, March 4, 1996, Durham, NC.
- "Adaptive Cooperation in Heterogeneous Robot Teams," *IEEE International Conference on Robotics and Automation; Workshop on Needs for Research in Cooperating Robots*, May 1993, Atlanta, GA.

- "Designing Control Laws for Cooperative Agent Teams," *1993 IEEE International Conference on Robotics and Automation*, May 1993, Atlanta, GA.
- "Adaptive Action Selection for Cooperative Agent Teams," Rowland Institute for Science, Seminar Series on Natural and Artificial Computation, March 1993, Cambridge, MA.
- "A Performance-Based Architecture for Heterogeneous, Situated Agent Cooperation," *AAAI Workshop on Cooperation Among Heterogeneous Intelligent Systems*, July 1992, San Jose, CA.
- "A Methodology for Dynamic Task Allocation in a Human-Machine System," Wright-Patterson Air Force Base, October 1987, Dayton, OH.

Regional:

- "Distributed Intelligence in Multi-Robot Teams", University of Tennessee Centripetals seminar, April 29, 2009, Knoxville, TN.
- "Creating Intelligent Mobile Robot Teams", Oak Ridge Philosophical Society, March 2, 2007, Oak Ridge, TN.
- "Creating Intelligent Mobile Robot Teams", Sarah Moore Green Technology Magnet School, February 10, 2005, Knoxville, TN.
- "Smart Machines: Robots that Integrate Perception, Reasoning, and Action to Perform Cooperative Tasks", University of Tennessee Pre-Game Faculty Showcase Lecture, September 18, 2004, Knoxville, TN.
- "Robots and How they Might Some Day Change Your Life", American Association of Family and Consumer Sciences, Knoxville Area Home and Community Section, December 5, 2002, Knoxville, TN.
- "Robotics Research at ORNL", Knoxville Technical Society, July 9, 2001, Knoxville, TN.
- "Multi-Robot Systems", American Nuclear Society of Knoxville/Oak Ridge, April 24, 2001, Knoxville, TN.
- "Looking to the Future ... Multi-Robot Teams", Center for Manufacturing Research, Manufacturing 2020 Seminar Series, Tennessee Technological University, March 29, 2001, Cookeville, TN.
- "Autonomous Mobile Robotics", Farragut Rotary Club, March 28, 2001, Farragut, TN.
- "Multi-Robot Teams", Oak Ridge Institute for Continued Learning, Frontiers in Science and Technology, February 28, 2001, Oak Ridge, TN.
- "Cooperative Autonomous Mobile Robotics Research at ORNL", East Tennessee Economic Council, February 16, 2001, Oak Ridge, TN.
- "Cooperation and Learning in Multi-Robot Teams", University of Tennessee Department of Nuclear Engineering seminar series, January 31, 2001, Knoxville, TN.
- "Teaching Robots to Cooperate", Roane/Anderson Counties Professional Society and Friends of ORNL, January 10, 2001, Oak Ridge, TN.
- "Ethics in Robotics: Implications of Asimov's Three Laws", Women in Science and Technology Conference, Panel on Ethics, March 10, 2000, Oak Ridge, TN.
- "Robotics Research", 35th Annual Junior Science and Humanities Symposium, March 3, 2000, Oak Ridge, TN.
- "Multi-Robot Cooperation", SIAM Southeastern-Atlantic Sectional Meeting, University of Tennessee, March 19-20, 1999, Knoxville, TN.
- "Cooperative Robotics Research at Oak Ridge National Laboratory", U.S. Army Training and Doctrine Command (TRADOC) Robotics Workshop, August 13, 1998, Oak Ridge, TN.
- "Cooperating Multi-Robot Teams," ORNL Advisory Committee Review, ORNL, April 20, 1998, Oak Ridge, TN.
- "Behavior-Based Robot Control," guest lecture, University of Tennessee Mechanical and Aerospace Engineering class on Real-Time Robot Control, March 25, 1996, Knoxville, TN.
- "Cooperative Robot Control," guest lecture, University of Tennessee Mechanical and Aerospace Engineering class on Real-Time Robot Control, March 27, 1996, Knoxville, TN.
- "Mobile Robots: Real-Life Fact versus Hollywood Fiction," Wattec Science in Action presentation, Tennessee Valley Authority, February 22, 1996, Knoxville, TN.
- "Practical Issues in the Use of Expert Systems," guest lecture, Masters Accounting Systems Class, University of Tennessee, February 21, 1995, Knoxville, TN.
- "An Autonomous Job Planning System," *CESAR/CEA Workshop on Autonomous Mobile Robots*, May 1989, Oak Ridge, TN.
- "Human-Machine Symbiosis," *CESAR/CEA Seminar on Advanced Teleoperation*, March 1989, Oak Ridge, TN.
- "Illustration of Human-Machine Symbiosis Technology—Review of ORNL/ORAU Symbiosis Workshop," Oak Ridge National Laboratory, January 1989, Oak Ridge, TN.

- "Reasoning Methodologies for Human-Machine Symbiosis," Oak Ridge National Laboratory, May 1988, Oak Ridge, TN.
- "Computing Careers for the '90's," Powell High School Professional Involvement Seminar, Spring 1988, Powell, TN.
- "Overview of Robotics," *Oak Ridge Science Semester Seminar Series*, March 1988, Oak Ridge, TN.
- "A Methodology for Dynamic Task Allocation," *Robotics and Intelligent Systems Program Review*, November 1987, Oak Ridge, TN.
- "Status of Research in Dynamic Task Allocation for a Human-Machine Symbiotic System," Oak Ridge National Laboratory, September 1987, Oak Ridge, TN.
- "Human-Machine Dynamic Task Allocation: Concepts and Issues," Oak Ridge National Laboratory, July 1987, Oak Ridge, TN.
- "Dynamic Task Allocation for a Human-Machine Symbiotic System," Oak Ridge National Laboratory, April 1987, Oak Ridge, TN.
- "Scientific Computing at Martin Marietta Energy Systems," ACM Chapter Meeting, Tennessee Technological University, Spring 1984, Cookeville, TN.

Advising of Graduate Students and Undergraduate Honors Theses

(does not include M.S. non-thesis committee work)

Year of Graduation	Role	Student	Degree	Thesis/Project Title or Topic Area
Exp. 2014	**Advisor**	Mike Franklin	CS (Ph.D.)	TBD
Exp. 2013	**Advisor**	Chris Reardon	CS (Ph.D.)	TBD
Exp. 2013	**Advisor**	Hao Zhang	CS (Ph.D.)	TBD
Exp. 2012	**Advisor**	Richard Edwards	CS (Ph.D.)	Learning in Multi-Robot Teams
Exp. 2012	**Advisor**	John Hoare	CS (Ph.D.)	Peer-to-Peer Human-Robot Teaming
Exp. 2012	**Advisor**	Sudarshan Srinivasan	CS (Ph.D.)	Peer-to-Peer Human-Robot Teaming
Exp. 2011	**Advisor**	Yu "Tony" Zhang	CS (Ph.D.)	Using Information Quality in Heterogeneous Robot Teaming
Exp. 2011	**Advisor**	Nick Overfield	CS (M.S.)	TBD
Exp. 2010	**Advisor**	Bob Lowe	CS (M.S.)	TBD
Exp. 2010	**Advisor**	Yuanyuan Li	CS (Ph.D.)	*Anomaly Detection in Mobile Sensor Networks*
2009	Committee Member	Jason Carter	CS (Ph.D.)	*Sequence-based Specification of Embedded Systems*
2009	Committee Member	Gil Jones	CS (Ph.D.) Carnegie Mellon	*Multi-Robot Coordination in Domains with Intra-Path Constraints*
2009	Committee Member	Joshua New	CS (Ph.D.)	*Visual Analytics for Relationships in Scientific Data*
2009	Committee Member	Michael Orsega	CS (Ph.D.)	*Sketchmate: A Digital Drawing Tool for the Splay Tree Data Structure*
2009	"Opponent"	Robert Lundh	Technology (Ph.D.) Orebro Univ. Sweden	*Robots that Help Each Other: Self-Configuration of Distributed Robot Systems*
2009	**Advisor**	Nick Overfield	CS (B.S.)	*Honors Thesis: Implicit Communication for Peer-to-Peer Human-Robot Teams in Shared Work Spaces*
2009	**Advisor**	Scott Livingston	EE and Math (B.S.)	*Honors Thesis: Multi-modal Person Tracking: Toward Peer-to-Peer Human-Robot Teams Using Implicit Communication in Shared Workspaces*
2009	Committee Member	Mark Lenox	CS (Ph.D.)	*Iterative Transmission Image Reconstruction for the DPET Positron Emission Tomograph*
2008	Committee Member	Yun Zhang	CS (Ph.D.)	*Scalable Graph Algorithms with Applications in Genetics*
2008	**Advisor**	Yifan Tang	CS (Ph.D.)	*SB-CoRLA: Schema-Based Constructivist Robot Learning Architecture*
2008	Committee Member	Brandon Merkl	Mech. Engr. (Ph.D.)	*The Future of the Operating Room: Surgical Preplanning and Navigation Using High Accuracy Ultra-Wideband Positioning and Advanced Bone Measurement*

Graduate Student Advising (continued):

2008	**Advisor**	Xingyan Li	CS (Ph.D.)	*Sensor Analysis for Fault Detection in Tightly-Coupled Multi-Robot Team Tasks*
2008	**Advisor**	Chris Reardon	CS (M.S.)	*Using Automated Task Solution Synthesis to Generate Critical Junctures for Management of Planned and Reactive Cooperation between a Human-Control Blimp and an Autonomous Ground Robot*
2008	Committee Member	Anders Christensen	Applied Science (Ph.D.), Universite Libre de Bruxelles, Belgium	*Fault Detection in Autonomous Robots: Endogenous fault detection through fault injection and learning – exogenous fault detection based on firefly-inspired synchronization*
2007	Committee Member	Jon Scharff	CS (M.S.)	*Preprocessing of Microarray Data and Analysis and Comparison Techniques for the Resulting Graph Structure*
2007	Committee Member	Matthew Aldridge	CS (Ph.D.)	*A Finite State Machine Approach to Cluster Identification using the Hoshen-Kopelman Algorithm*
2007	Committee Member	Alexander Usynin	Nuclear Eng. (Ph.D.)	*A Generic Prognostic Approach to Remaining Useful Life Prediction of Complex Engineering Systems*
2007	Committee Member	Erika Fuentes	CS (Ph.D.)	*Statistical and Machine Learning Techniques Applied to Algorithm Selection for Solving Sparse Linear Systems*
2007	**Advisor**	Balajee Kannan	CS (Ph.D.)	*LeaF: A Learning-Based Fault Diagnostic System for Multi-Robot Teams*
2007	Committee Member	Pamela Murray	Mech. Eng. (Ph.D.)	*Modeling Coordinate Measuring Machine Scanning Operations*
2007	Committee Member	Lan Lin	CS (Ph.D.)	*Management of Requirements Changes in Sequence-Based Software Specifications*
2006	Committee Member	Lovekesh Vig	EE (Ph.D.), Vanderbilt	*Multi-Robot Coalition Formation*
2006	**Advisor**	Fang "Daisy" Tang	CS (Ph.D.)	*ASyMTRe: Building Coalitions for Heterogeneous Multi-Robot teams*
2006	Committee Member	Cheng Qian	ECE (M.S.)	*Distributed Solution to Detect Targets in Crowds for Visual Sensor Networks*
2006	Committee Member	Renbin Zhou	Mech. Eng. (Ph.D.)	*Control of a Transmission Based Servo Actuator System*
2005	Committee Member	Yingyue Xu	ECE (Ph.D.)	*Energy Efficient Designs for Collaborative Signal and Information Processing in Wireless Sensor Networks*
2004	**Advisor**	Michael Bailey	CS (M.S.)	*Pilot: WiFi for Mobile Robot Localization*
2004	**Advisor**	Maureen Chandra	CS (M.S.)	*Software Reconfigurability for Heterogeneous Robot Cooperation*

Graduate Student Advising (continued):

2004	**Advisor**	Jun Xu	CS (M.S.)	*Pilot: Converting Grid-Based Map to Topological Map*
2003	**Advisor**	Jeff Barnett	CS (M.S.)	*Pilot: Integration of XScale Processor Board and WebCam for Object Tracking on a Mobile Robot*
2003	Committee Member	Bugra Koku	EE (Ph.D.), Vanderbilt	*Egocentric Navigation and its Applications*
2003	Committee Member	Melissa Smith	ECE (Ph.D.)	*Analytical Modeling of High Perf. Reconfigurable Computers: Prediction and Analysis of System Performance*
2003	Committee Member	Ashley Stroupe	Robotics (Ph.D.), Carnegie Mellon	*Collaborative Execution of Exploration and Tracking using Moving Value Estimation for Robot Teams*
2002	Committee Member	Sewoong Kim	Mech. Eng. (Ph.D.)	*Intelligent Fault Tolerant Control for Telerobotic System in Operational Space*

Teaching Experience:

Semester	Course	Class Size	Comments
Spring 2010	CS581: Advanced Design and Analysis of Algorithms	20	Graduate core class.
	CS593: Grad. Independent Study in Peer-to-Peer Human-Robot Interaction	2	
	CS593: Grad. Independent Study in Intent Recognition	1	
	CS593: Grad. Independent Study in Sensor Fusion	1	
	CS593: Grad. Independent Study in Bootstrap Learning	1	
	CS493: STARS (Broadening participation in CS)	1	
Fall 2009	CS494/594: Artificial Intelligence	30	
	CS593: Grad. Independent Study in Machine Learning	1	
	CS594: STARS: (Broadening participation in CS)	2	
Summer 2009	CS493: STARS (Broadening participation in CS)	1	
	CS593: STARS (Broadening participation in CS)	2	
	CS593: Grad. Independent Study in Stochastic Processes	1	
Spring 2009	CS581: Advanced Design and Analysis of Algorithms	23	Graduate core class.
	CS593: Grad. Independent Study in Robotics/AI	3	
	CS493: Undergrad. Independent Study in Robotics/AI	1	
Fall 2008	CS494/594: Autonomous Mobile Robots	19	
Spring 2008	CS581: Advanced Design and Analysis of Algorithms	21	Graduate core class.
	CS593: Grad. Independent Study in Artificial Intelligence	1	
Fall 2007	CS494/594: Machine Learning	22	
Spring 2007	CS494/594: Software for Intelligent Robotics	25	
Fall 2006	CS302: Fundamental Algorithms	22	Undergraduate core class.
Summer 2006	CS493: 3D Robotic Simulations	1	
Spring 2006	CS494/594: Projects in Machine Learning	24	Designed course.
	CS620: Advanced Topics in Artificial Intelligence	6	
Fall 2005	CS302: Fundamental Algorithms	39	Undergraduate core class.
	CS620: Advanced Topics in Artificial Intelligence	5	
	CS593: Grad. Independent Study in Artificial Intelligence	2	
Spring 2005	CS581: Advanced Design and Analysis of Algorithms	15	First teacher of new graduate core class. Designed course.
	CS620: Advanced Topics in Artificial Intelligence	4	
	CS593: Grad. Independent Study in Artificial Intelligence	1	
Fall 2004	CS594: Artificial Intelligence	17	Designed course.
	CS620: Advanced Topics in Artificial Intelligence	8	
	CS593: Grad. Independent Study in Artificial Intelligence	1	
Spring 2004	CS580: Foundations (Theory of Computation)	28	Graduate core class.
	CS620/593/493: Advanced Topics in Artificial Intelligence	10	
Fall 2003	CS302: Fundamental Algorithms	35	Undergraduate core class.
	CS620/593: Advanced Topics in Artificial Intelligence	9	
Spring 2003	CS594: Distributed Intelligence in Autonomous Robotics	19	Designed course.
	CS620: Advanced Topics in Artificial Intelligence	3	
Fall 2002	CS594: Software for Intelligent Robotics	27	Designed course.
Feb. 2001	Universidad Carlos III de Madrid, Invited Professor, Behavior-based and cooperative robotics (1-week short course)	∼25	Designed course.

Teaching Experience (continued):

July 1999	University of Buenos Aires, Invited Professor, Collective and cooperative robotics (1-week short course)	∼25	Designed course.
Fall 1989	Massachusetts Institute of Technology, GTA, 6.034: Introduction to Artificial Intelligence	∼25	Designed and taught recitations.
1989	Volunteer teacher for Knoxville Adult Education Program	1	

Other Curriculum Development Activities:

- Initiated and led redevelopment of CS102 course to use robots for teaching introductory computing, Spring-Fall, 2008.
- Member, UTK-EECS Curriculum Reform Committee for Computer Science, Fall 2009–present.

University, College, and Department Service:

- Member, UTK-EECS Faculty Search Committee for Computer Engineering, Fall 2009–present.
- Faculty Senate, Fall 2006–present.
- Faculty Senate Committee on Nominations and Appointments, Spring 2010.
- Research Council (Faculty Senate Committee), Fall 2009–present.
- Member, UTK-EECS Undergraduate Committee, 2008–present.
- UTK/ORNL Science Alliance, Assistant Director, 2008–present.
- Faculty Senate Task Force on Program Reduction, Realignment, and Reallocation, Fall-Spring 2008.
- Teaching Council (Faculty Senate Committee), Fall 2006–Spring 2009.
- College of Engineering Faculty Mentor for female COE faculty, Summer 2007–Fall 2008.
- Search committee, UTK CEE Department Head, Spring 2008–Spring 2009.
- EECS Department Ad Hoc Committee on Minimum Expectations of Faculty Members, Spring 2008.
- Search committee, UTK-ORNL Governor's Chair in Computing and Computational Science, 2006–2008.
- Internal reviewer for academic program review of the UTK Department of Mechanical, Aerospace, and Biomedical Engineering, Spring 2008.
- Member, UTK-EECS Graduate Curriculum Committee, 2007–2008.
- Member, UTK-CS Undergraduate Committee, 2002–2007.
- Search committee, UTK EECS Department Head, 2006–2007.
- Search committee, UTK CS Department Linux System Administrator, 2006–2007.
- Co-department leader for SACS accreditation input, 2003–2007.
- Search committee, ORNL Joint Institute for Computational Science CS position, 2005–2006.
- Computer Science Representative to Dean's Advisory Council (Arts and Sciences), 2004–2006.

Advisory Boards and Study Panels:

- Appointed Member, National Research Council's Study Committee on "Persistent Intelligence: A Critical Tool for the Counter-IED Mission", 2009–present.
- Appointed Member, National Research Council's Technical Review Panel on Air and Ground Vehicle Technology (evaluates research of the Army Research Laboratory's Vehicle Technology Directorate), 2008–present.
- Appointed Member, National Research Council's Technical Review Panel on Armor and Armaments (evaluates research of the Army Research Laboratory's Weapons and Materials Research Directorate), 2003–2007.
- Selected Member, Defense Science Study Group (DSSG) (17 selected out of 137 applicants), administered by the Institute for Defense Analyses (IDA), sponsored by the Defense Advanced Research Projects Agency (DARPA), 2004–2005.
- Appointed Member, Strategic Advisory Committee, European Union's "Beyond Robotics" program, 2004–2007.

- Invited Participant, DARPA ISAT (Information Science and Technology Board) Study Group, "Robot, Agent, Person (RAP) Teams for Emerging Threats", 2001.
- Member, Tennessee Technological University Computer Science Advisory board, 2003–Present.
- Member, Oak Ridge National Laboratory Library Advisory Board, 1997–2002.

Membership in Professional Organizations:

- Fellow, IEEE (Robotics and Automation Society, Computer Society)
- Member, American Association for Artificial Intelligence
- Member, Association for Computing Machinery
- Member, Sigma Xi

Leadership/Service in Professional Organizations:

- Elected Member, Administrative Committee (RAS AdCom), IEEE Robotics and Automation Society, 2008–2010.
- Appointed Member, Publication Activities Board, IEEE Robotics and Automation Society, 2008–Present.
- Appointed Member, Electronic Products and Service Board, IEEE Robotics and Automation Society, 2008–Present.
- Appointed Member, Nominations Committee, IEEE Robotics and Automation Society, 2008.
- Member, Technical Committee on Networked Robots, IEEE Robotics and Automation Society, 2008–Present.
- Member, Technical Committee on Mobile Robots, IEEE Robotics and Automation Society, 1995–2000.

Editorial Boards:

- Senior Editor, *IEEE Transactions on Robotics*, 2005–Present.
- Associate Editor, *Swarm Intelligence*, 2008–Present.
- Associate Editor, *IEEE Transactions on Robotics and Automation*, 2002–2005.
- Associate Editor, *IEEE Intelligent Systems*, 2003–Present.
- Editorial Advisory Board, *International Journal of Advanced Robotic Systems*, 2004–Present.

Guest Editor:

- *IEEE Transactions on Robotics and Automation*, special issue on Multirobot Systems, co-editor with E. Pagello and T. Arai, 18 (5), 2002.
- *Autonomous Robots*, special issue on Heterogeneous Multi-Robot Systems, co-editor with T. Balch, 8 (3), 2000.

Conference Organization:

- Program chair, *IEEE International Conference on Intelligent Robots and Systems (IROS 2014)*.
- Program Committee, New Investigators Technical Papers for *Grace Hopper Celebration of Women in Computing Conference*, 2010.
- Chair of Award Subcommittee on Cognitive Robotics, *IEEE International Conference on Robotics and Automation (ICRA 2010)*.
- Program committee, *Autonomous Agents and Multi-Agent Systems (AAMAS2010)*.
- Program committee, *ANTS 2010 – Seventh International Conference on Swarm Intelligence*, 2010.
- International steering committee, *International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR 2010)*.
- Program committee, *IEEE International Conference on Intelligent Robots and Systems (IROS 2009)*.
- Area chair, *Robotics: Science and Systems (RSS 2009)*.
- Steering committee, *Adaptive and Learning Agents Workshop*, 2009–2010.
- International program committee, *IFAC Workshop on Networked Robotics*, 2009.
- Program committee, *ECSIS Symposium on Learning and Adaptive Behavior in Robotic Systems (LAB-RS)*, 2009.

- Program committee,*9th Conference on Autonomous Robot Systems and Competitions (Robotica 2009).*
- Program committee, *14th International Conference on Advanced Robotics (ICAR 2009).*
- Program committee, *IEEE International Conference on Intelligent Robots and Systems (IROS 2008).*
- Program committee, *ECSIS Symposium on Learning and Adaptive Behavior in Robotic Systems (LAB-RS)*, 2008.
- Best Video Awards Committee, *IEEE International Conference on Robotics and Automation (ICRA 2008).*
- Advisory Committee and Program Committee, *Ninth International Symposium on Distributed Autonomous Robotic Systems (DARS 2008).*
- Program committee, 8th European Symposium on Adaptive Learning Agents and Multi-Agent Systems and Adaptive and Learning Agents Workshop (ALAMAS+ALAg-08).
- Senior Program Committee, *Autonomous Agents and Multi-Agent Systems* special track on Multi-Robot Systems (AAAMAS-08).
- Best Video Award Committee, *IEEE International Conference on Robotics and Automation (ICRA 2008).*
- Co-Organizer, IROS Workshop on *Robot Semantic Web*, 2007.
- Program committee, *IEEE International Conference on Intelligent Robots and Systems (IROS 2007).*
- Program committee, *13th International Conference on Advanced Robotics (ICAR 2007).*
- Senior program committee, *International Joint Conference on Artificial Intelligence (IJCAI 2007).*
- Program committee, Autonomous Agents and Multi-Agent Systems (AAAMAS) Workshop on Adaptive and Learning Agents, 2007.
- Program committee, *12th Conference of the Spanish Association of Artificial Intelligence, Workshop on Technology Transfer in Artificial Intelligence (CEPIA–TTIA 2007).*
- Program committee, *IEEE International Conference on Intelligent Robots and Systems (IROS 2006).*
- Program committee, *IEEE International Conference on Robotics and Automation (ICRA 2006).*
- Advisory Committee, *Eighth International Symposium on Distributed Autonomous Robotic Systems (DARS 2006).*
- Co-organizer, *Third Naval Research Laboratory Workshop on Multi-Robot Systems*, Naval Research Laboratory, March 2005.
- Program committee, *IEEE International Conference on Intelligent Robots and Systems (IROS 2005).*
- Program committee, *IEEE International Conference on Robotics and Automation (ICRA 2005).*
- Program committee, *2005 IEEE International Conference on Advanced Robotics (ICAR 2005).*
- Program committee, *2005 Robotics Science and Systems.*
- Program committee, *2004 IEEE International Conference on Intelligent Robots and Systems (IROS 2004).*
- Program committee, *American Association for Artificial Intelligence National Conference (AAAI 2004).*
- Program committee, *International Workshop on Computational Autonomy – Potential, Risks, Solutions (AUTONOMY 2003).*
- Best Paper Awards Committee, *2003 IEEE International Conference on Robotics and Automation (ICRA 2003).*
- Best Student Paper Committee, *2003 IEEE International Conference on Robotics and Automation (ICRA 2003).*
- Program committee, *IEEE International Conference on Robotics and Automation (ICRA 2003).*
- Co-organizer, *Second Naval Research Laboratory International Workshop on Multi-Robot Systems*, Naval Research Laboratory, 2003.
- Program committee, *Second International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2003).*
- Program vice chair, *IEEE International Conference on Robotics and Automation (ICRA 2002).*
- Co-organizer, *International Workshop on Multi-Robot Systems*, Naval Research Laboratory, 2002.
- Program committee, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2002).*
- Program committee, *IEEE International Conference on Robotics and Automation (ICRA 2001).*
- Program committee, *2001 European Simulation Symposium.*
- Program committee, *Unmanned Ground Vehicle Technology III*, part of *SPIE's 15th International Symposium on Aerosense.*
- Program chair and symposium organizer, *Fifth International Symposium on Distributed Autonomous Robotic Systems (DARS 2000).*
- Program committee, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2000).*

- Program committee, *Fourth International Workshop on RoboCup (RoboCup-2000).*
- Program committee, *Workshop on Interactive Robotics and Entertainment (WIRE-2000).*
- Program committee, *IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA '99).*
- Invited session organizer, "Cooperating Robots", *SPIE Sensor Fusion and Decentralized Control in Robotic Systems II, 1999.*
- Program committee, *1998 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS '98).*
- Program committee, *International Symposium on Methodologies for Intelligent Systems, 1997.*
- Robotics program committee, *International Joint Conference on Artificial Intelligence*, 1997, 1999.
- Program committee, *International Symposium on Distributed Autonomous Robotic Systems (DARS '96).*
- Conference Advisory Committee, *Robotic Industries Association, 1996.*
- Program committee, *AAAI 1996.*
- Program committee, *SPIE 1996 Conference on Sensor Fusion and Distributed Robotic Agents.*
- Conference chair, *SPIE Conference on Microrobotics and Micromechanical Systems*, 1995.
- Session organizer, *IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS), "Human-Robot Interaction and Cooperative Robots," 1995.
- Program coordinator, *Workshop on Human-Machine Symbiotic Systems*, 1988.

Chaired Sessions:

- IEEE International Conference on Intelligent Robots and Systems, "Networked Robotics", 2009.
- IEEE International Conference on Intelligent Robots and Systems, "Sensor Networks", 2008.
- IEEE International Conference on Robotics and Automation, "Multi-Robot Search", 2008.
- IEEE SoutheastCon, "Signal Processing", 2008.
- IEEE International Conference on Intelligent Robots and Systems, "Multi-Robot Systems I", 2007.
- IEEE International Conference on Intelligent Robots and Systems, "Multi-Robot Systems I", 2006.
- IEEE International Conference on Robotics and Automation, "Vision and SLAM 2", 2005.
- IEEE International Conference on Robotics and Automation, "Localization and Navigation", 2005.
- IEEE International Conference on Intelligent Robots and Systems, "Collective Robotic Systems", 2004.
- IEEE International Conference on Robotics and Automation, "Multi-Robot Motion Planning", 2003.
- Seventh International Conference on Artificial Life and Robotics, "Pattern Recognition", 2002.
- SPIE Unmanned Ground Vehicle Technology III, "DOE Robotics", 2001.
- Fourth International Conference on Information Systems Analysis and Synthesis (ISAS), "Control Systems", 1998.
- IEEE International Conference on Robotics and Automation (ICRA), "Sensor Fusion," 1997.
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), "Multi-Agent Robotic Systems–Group Behavior I," 1996.
- International Symposium on Distributed Autonomous Robotic Systems (DARS), "Model for Group Robots," 1996.
- International Conference on Intelligent Robots and Systems (IROS), "Human-Robot Interaction and Cooperative Robots," 1995.
- ASCE Specialty Conference on Robotics for Challenging Environments, "Vision and Virtual Environments," 1994.
- International Joint Conference on Artificial Intelligence, "Machine Learning: Search Control," 1993.
- International Joint Conference on Artificial Intelligence, "Machine Learning: Combinatorial Problems," 1993.
- Workshop on Human-Machine Symbiotic Systems, "Dynamic Task Allocation," 1988.

Reviewer/Referee:

- Book manuscript review for MIT Press, 2009.
- *Journal of Autonomous Agents and Multi-Agent Systems*, 2009.
- *International Conference on Robotics and Automation*, 2006-2010.
- *Artificial Intelligence* (journal), 2008.
- *Swarm Intelligence* (journal), 2008.

- *Autonomous Robots*, 1995-1997, 2000, 2002-2003, 2006, 2008.
- *International Journal of Robotics Research*, 1999, 2007-2008.
- *Handbook of Technology Management*, 2008.
- *IEEE Transactions on Systems, Man, and Cybernetics*, 1999, 2000, 2002, 2003, 2008.
- IEEE International Conference on Robotics and Automation, 1993-2008.
- *Wiley Encyclopedia of Computer Science and Computer Engineering*, 2008.
- *Medical Engineering and Physics*, 2007.
- *Journal of Robotics and Autonomous Systems*, 2005, 2007.
- *Annals of Mathematics and Artificial Intelligence*, 2006, 2007.
- Grace Hopper Conference, 2006.
- IEEE Swarm Intelligence Symposium, 2006.
- *Journal of Artificial Intelligence Research*, 2006, 2008.
- *International Journal of Control, Automation, and Systems*, 2005.
- *Proceedings of the IEEE*, 2005.
- *IEEE Control Systems*, 1994, 2000.
- *IEEE Transactions on Robotics and Automation*, 1992-1993, 1995, 1997-1998, 2000-2003.
- *IEEE Expert*, 1994.
- *Journal of Intelligent and Robotic Systems*, 2000, 2001.
- *Journal of Experimental and Theoretical Artificial Intelligence*, 1996, 1999.
- *Neurocomputing*, 1998.
- *Journal of Machine Learning*, 1994, 1997.
- AAAI Tenth National Conference on Artificial Intelligence, 1992.
- Distributed Artificial Intelligence Workshop, 1994.
- Tenth International Symposium on Methodologies for Intelligent Systems, 1997.
- International Joint Conference on Artificial Intelligence (IJCAI), 1997, 1999.
- Dagstuhl Seminar on Modelling and Planning for Sensor-Based Intelligent Robot Systems, 1996.
- Conference on Artificial Intelligence Applications, 1992.

Reviewer/Referee for Proposals:

- City University of Hong Kong, Strategic Funding research program, 2008.
- U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC) proposals, 2008.
- Singapore Ministry of Education, Academic Research Fund, 2008.
- NSF Proposal Review Panels, 1999, 2004, 2005, 2007–2009.
- European Commission Proposal Review Panels, 2006–2010.
- Austrian Science Foundation, 2006, 2007.
- Army Research Office, 2006.
- University of Queensland, Australia, external Ph.D. thesis review, 2004.
- Wiley Publishing, service robotics handbook proposal, 2004.
- Israel Science Foundation, 2004.
- DOE Robotics and Intelligent Machines Program, 2001.
- NASA Intelligent Systems Program, 2000.
- Natural Sciences and Engineering Research Council (NSERC) of Canada research grant program, 2001.
- ORNL Seed Money, 1997, 1998, 2000.
- DOE Energy Research, 1997.
- DOE Environmental Management Science Program, Engineering Panel, 1997, 1998, 2000.
- DOE EPSCOR Program, 2000.
- DOE SBIR Program, 1994.
- DoD DEPSCOR Program, 2000, 2001.

Selected Outreach Activities:

- Mentor (of two non-UTK female undergraduates each summer), CRA-W (Computing Research Association's Committee on the Status of Women in Computing Research) Distributed Mentor Program, Summers of 2008, 2009.

- Judge, East Tennessee FIRST (For Inspiration and Recognition of Science and Technology) LEGO League Robotics State Tournament, 2000, 2002, 2004–2009.