

**Holly A. Yanco**  
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**EDUCATION**

Ph.D. in Computer Science, Massachusetts Institute of Technology, September 2000.  
*Shared User-Computer Control of a Robotic Wheelchair System*. Advisor: Rodney Brooks.  
Committee: Rosalind Picard and Eric Grimson. Minor in Health Sciences and Technology.

M.S. in Computer Science, Massachusetts Institute of Technology, May 1994. *Robot Communication: Issues and Implementations*. Thesis advisor: Prof. Lynn Andrea Stein.

B.A. in Computer Science and Philosophy, cum laude, with honors in Computer Science, Wellesley College, May 1991. Honors thesis: *The Use of Saliency in the Marr-Poggio-Grimson Stereo Algorithm*. Thesis advisor: Prof. Ellen Hildreth.

**ACADEMIC EXPERIENCE**

- 2015 – present Distinguished University Professor, University of Massachusetts Lowell, Lowell, MA
- 2012 – present Director, New England Robotics Validation and Experimentation (NERVE) Center, Lowell MA
- 2011 – present Professor, University of Massachusetts Lowell, Lowell, MA
- 2007 – 2011 Associate Professor, University of Massachusetts Lowell, Lowell, MA
- 2001 – 2007 Assistant Professor, University of Massachusetts Lowell, Lowell, MA
- 2000 – 2001 Visiting Lecturer, Boston College, Chestnut Hill, MA
- 2000 Lecturer, ArsDigita University, Cambridge, MA
- 1994 – 1996 Lecturer, Wellesley College, Wellesley, MA
- 1994, 1996 Recitation Instructor, Massachusetts Institute of Technology, Cambridge, MA

**INDUSTRY AND CONSULTING EXPERIENCE**

- 2008 – present The MITRE Corporation, Bedford, MA  
Consulting Principal Artificial Intelligence Engineer
- 2012 VGo Communications, Nashua, NH  
Expert witness in patent suit.

- 2006 iRobot, Burlington, MA  
Redesign of human-robot interaction for the PackBot EOD robot.
- 2004 – 2005 ActivMedia Robotics, Amherst, NH  
Designed testing methodologies for robotic wheelchair and made recommendations for system improvement, funded by NIH Phase 2 SBIR.
- 2004 – 2005 American Standard Robotics, St. Petersburg, FL  
Consulted on design of a new robot platform, funded by NIST Phase 1 SBIR.
- 2002 ActivMedia Robotics, Petersborough, NH  
Development of a robotic wheelchair, funded by NIH Phase 1 SBIR.

## **AWARDS AND HONORS**

- 2015 Distinguished University Professor, University of Massachusetts Lowell
- 2014 Named one of Robohub's 25 Women You Should Know About In Robotics  
<http://robohub.org/25-women-in-robotics-you-need-to-know-about-2014/>
- 2013 Women to Watch Award, Mass High Tech
- 2013 "Designing Speech-Based Interfaces for Telepresence Robots for People with Disabilities," co-written with Katherine M. Tsui, Kelsey Flynn, Amelia McHugh, and David Kontak, selected as First Runner-Up for Best Student Paper at the IEEE International Conference on Rehabilitation Robotics (ICORR).
- 2013 First Place, RASC-AL Robo-Ops Competition, June 2013, NASA Johnson Space Center. Advised team of undergraduate and graduate students on the design and development of a Mars rover robot.
- 2013 "Impact of Robot Failures and Feedback on Real-Time Trust," co-written with Munjal Desai, Poornima Kaniarasu, Mikhail Medvedev, and Aaron Steinfeld, nominated as Best Paper, 8<sup>th</sup> Annual ACM/IEEE International Conference on Human-Robot Interaction.
- 2013 Wong Research Award, University of Massachusetts Lowell
- 2011 Awarded senior membership in the Association for the Advancement of Artificial Intelligence (AAAI).
- 2011 Faculty Award for the Advancement of Teaching and Learning in the Sciences, University of Massachusetts Lowell
- 2010 "Considering the Bystander's Perspective for Indirect Human-Robot Interaction," co-written with Katherine M. Tsui and Munjal Desai, nominated as Best Late Breaking Paper, 5<sup>th</sup> Annual ACM/IEEE International Conference on Human-Robot Interaction.
- 2005 Pyro, courseware developed by NSF grant, selected as Premier Courseware of 2005 by National Engineering Education Delivery System (NEEDS).

- 2004 "Improved Interfaces for Human-Robot Interaction in Urban Search and Rescue," co-written with Michael Baker, Robert Casey and Brenden Keyes, selected as a finalist for Best Student Paper at IEEE Systems, Man and Cybernetics Conference.
- 2002 Computer Science Department Award for Teaching Excellence, University of Massachusetts Lowell
- 1998 Institute Fellow, KISS Institute of Practical Robotics, elected in 1998
- 1998 Elected to full membership in Sigma Xi. First elected in 1991.
- 1996 Frederick C. Hennie III Teaching Award, Massachusetts Institute of Technology, Electrical Engineering and Computer Science Department
- 1988 – 1992 Digital Equipment Corporation Corporate Scholar
- 1987 Massachusetts Commonwealth Scholar

**PROFESSIONAL ACTIVITIES**

***Current Memberships in Professional Societies***

- Association for the Advancement of Artificial Intelligence (AAAI)
- Association for Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Sigma Xi

***Offices Held***

- 2015 – present Co-Chair, Robotics Cluster, Massachusetts Technology Leadership Council (MassTLC)
- 2013 – 2016 Co-Chair, Steering Committee, ACM/IEEE International Conference on Human-Robot Interaction
- 2011 – 2013 Steering Committee, ACM/IEEE International Conference on Human-Robot Interaction
- 2008 – 2015 Advisory Board, Robotics Cluster, MassTLC
- 2006 – 2009 Executive Council, Association for the Advancement of Artificial Intelligence (AAAI)
- 2002 – 2005 Chair, Symposia Committee, AAAI
- 2001 – 2003 Chair, SIG-13 (Robotics and Mechatronics), Rehabilitation Engineering Society of North America (RESNA)
- 1998 – 2001 Vice-Chair, SIG-13 (Robotics and Mechatronics), RESNA

### ***Editorial Positions***

- 2011 – present      Advisory Board, Journal of Human-Robot Interaction
- 2006 – present      Editorial Board, Robotics Chair, AI Magazine
- 2006              Guest Editor, Special Issue of IEEE Intelligent Systems on Interacting with Autonomy

### ***Selected Conference Program Committees and Conference Organization***

- 2017, 2016, 2015, 2014      Program Committee, We Robot (a conference on robots and the law)
- 2017, 2015, 2013, 2011, 2010, 2008, 2007, 2006      Program Committee, ACM/IEEE Conference on Human-Robot Interaction
- 2012              General Chair, ACM/IEEE Conference on Human-Robot Interaction
- 2011              Associate Editor, IEEE Robotics and Automation Society Conference Editorial Board (CEB), ICRA 2011
- 2011, 2010, 2007, 2006, 2005, 2004      Program Committee, National Conference on Artificial Intelligence, Association for the Advancement of Artificial Intelligence (AAAI)
- 2011, 2009      Program Committee, International Joint Conference on Artificial Intelligence
- 2007 - 2009      Exhibitions Chair, ACM/IEEE Conference on Human-Robot Interaction

### ***Selected Program and Grant Reviews***

- 2016              Panel member, Department of Energy
- 2015 – 2016      Member, National Academies Panel on Mechanical Science and Engineering at the Army Research Laboratory
- 2013 – 2014      Member, National Academies Panel on Information Science Technical Assessment Board at the Army Research Laboratory
- 2012              Expert, European Commission, Information and Communications Technologies, Seventh Framework Programme (FP7-ICT)
- 2011 – 2012      Member, National Research Council (NRC) Soldier System Panel Technical Assessment Board.

2001 – present Panel member, National Science Foundation. Average of 1-2 panels per year for several directorates at NSF. Have also served on site visit panels.

## RESEARCH GRANTS

- 2016 “NE<sup>2</sup>R<sup>2</sup>VE Center: Designing Better Robot Systems for People,” UMass President’s Office Science and Technology Fund, 7/1/16 – 6/30/18, \$123,000, PI.
- 2016 Research Experience for Undergraduates (REU) Supplement to IIS-1552228, National Science Foundation, \$16,000, PI.
- 2016 REU Supplement to IIS-1426968, National Science Foundation, \$8,000, PI.
- 2016 “Test and Evaluation Services for the Fast Lightweight Autonomy Program,” Defense Advanced Research Projects Agency (DARPA), N65236-16-C-8002, 12/15/15 – 9/15/18, \$1,641,126, PI.
- 2016 “Accessible Testing on Humanoid-Robot-R5 and Evaluation of NASA Administered (ATHENA) Space Robotics Challenge Tasks,” NASA, NNX16AC48A, 12/3/15 – 12/31/17, \$250,000 and a Valkyrie humanoid robot valued at \$2,000,000, co-PI. (PI is Taskin Padir of Northeastern University. All funds listed are UML funds.)
- 2015 “EAGER: Collaborative Research: Exploring Models for Conveying Imminent Robot Failures to Allow for Human Intervention,” National Science Foundation, IIS-1552228, 9/1/15 – 8/31/16, \$184,656, PI. (Collaborative partner: Dr. Aaron Steinfeld of Carnegie Mellon University. All funds listed are UML funds.)
- 2015 “Human-Robot Interaction Design for a Single Operator with Many Robots,” \$232,111, Non-federal support, 8/15/15 – 8/14/17, PI.
- 2015 Supplement to IIS-1426968 for Stimulating Collaboration Between United States and European Union Robotics Researchers, National Science Foundation, \$49,394.
- 2015 REU Supplement to IIS-1426968, National Science Foundation, \$8,000, PI.
- 2014 “NRI: Collaborative Research: Human-Supervised Perception and Grasping in Clutter,” National Science Foundation, IIS-1426968, 9/1/14 – 8/31/17, \$496,213, PI. (Collaborative partner: Dr. Robert Platt of Northeastern University. All funds listed are UML funds.)
- 2014 “Research and Development of Test Methods for Autonomous Robots in Manufacturing Environments,” National Institute for Standards and Technology 70NANB14H235, \$181,380, 9/1/14 – 8/31/16, PI.
- 2014 “Improving Disaster Response with Project Tango, Google Glass, and Robots,” Google Research Award, \$51,777, 9/1/14 – 8/31/15, PI.
- 2014 “Development of Standard Test Methods for Response Robots with an Emphasis on Training,” National Institute for Standards and Technology, 60NANB14D286, 8/1/14 – 4/30/17, \$280,090, PI.

- 2013 "R-LUCID (Robot-Linked User Control and Interface Design)," DARPA STTR Phase II, W31P4Q-13-C-0136, 8/7/13 – 6/2/16, \$458,616 (subcontract amount; lead institution: Boston Engineering; PI for UML subcontract).
- 2013 "Equipment to Support Development of Neuronal Network Controlled Robots," Army Research Office W911NF-13-1-0299, 7/24/13 – 7/23/14, \$204,299, PI.
- 2013 "2013 RASC-AL Robo-Ops Challenge," National Institute of Aerospace/NASA, 1/22/13 – 9/30/13, \$10,000, PI.
- 2012 "BPC-A: Expanding Computing Education Pathways (ECEP) Alliance," National Science Foundation, CNS-1228355, 10/1/12 – 9/30/17, \$201,298 (UML subcontract amount; lead institution: UMass Amherst; PI for UML subcontract).
- 2012 "R-LUCID (Robot-Linked User Control and Interface Design)," DARPA STTR Phase I, W31P4Q-12-C-0216, 7/28/12 – 7/27/13, \$38,535 (subcontract amount; lead institution: Boston Engineering; PI for UML subcontract).
- 2012 "New England Robotics Validation and Experimentation (NERVE) Center," UMass President's Office Science and Technology Fund, 7/1/12 – 6/30/14, \$135,000, PI.
- 2012 "Travel Support for Students to Attend a Symposium on the Influences of Behavior-Based Robotics on the Field," National Science Foundation, IIS-1237941, 4/15/12 – 3/31/13, \$11,250, PI.
- 2012 REU Supplement to IIS-0905228, National Science Foundation, \$16,000, PI.
- 2012 REU Supplement to IIS-1111125, National Science Foundation, \$8,000, PI.
- 2011 "HCC: Large: Collaborative Research: Human-Robot Dialog for Collaborative Navigation Tasks," National Science Foundation, IIS-1111125, 8/15/11 – 7/31/13 (no-cost extension to 7/31/15), \$408,903, PI. (Collaborative research with Ben Kuipers at the University of Michigan and Matthias Scheutz of Tufts University. All funds listed are UML funds.)
- 2011 REU Supplement to IIS-0905228, National Science Foundation, \$16,000, PI.
- 2011 "Development and Refinement of a Computer/Neuronal Robotics Interface," Army Research Office W911NF-11-1-0125, 5/1/11 – 4/30/14 (no-cost extension to 10/31/14), \$759,056, co-PI.
- 2010 REU Supplement to IIS-0905228, National Science Foundation, \$16,000, PI.
- 2010 REU Supplement to IIS-0546309, National Science Foundation, \$16,000, PI.
- 2010 REU Supplement to CNS-0837739, National Science Foundation, \$16,000, PI.
- 2010 "Workshop: Human Robot Interaction (HRI) 2010 Doctoral Consortium," National Science Foundation, IIS-1015953, 3/1/10 – 2/28/11, \$41,735, PI.

- 2009 "HCC: Medium: Collaborative Proposal: Development of Trust Models and Metrics for Human-Robot Interaction," National Science Foundation, IIS-0905228, 9/1/09 – 8/31/12 (no-cost extension to 8/31/14), \$500,000, PI. (Collaborative partner: Dr. Aaron Steinfeld of Carnegie Mellon University. All funds listed are UML funds.)
- 2009 "Student Travel for PerMIS 2009," National Science Foundation, IIS-0958132, 9/15/09 – 8/31/10, \$16,609, PI.
- 2009 Research Experience for Teachers (RET) Supplement to CNS-0837738, National Science Foundation, \$12,000.
- 2009 REU Supplement to CNS-0837739, National Science Foundation, \$16,000.
- 2009 REU Supplement to IIS-0546309, National Science Foundation, \$16,000, PI.
- 2008 "BPC-AE: Commonwealth Alliance for Information Technology Education Extension," National Science Foundation, CNS-0837739, 12/1/08 – 8/31/12. Lead for UML subcontract (lead institution: UMass Amherst). UML subcontract: \$314,808 (\$273,574 for original subcontract, \$41,234 additional during extension of grant).
- 2008 "Establishment of Safety Standards for USAR Robots," National Institute of Standards and Technology, 70NANB8H8168, 8/1/08 – 7/31/10, \$75,508, PI.
- 2008 "Multi-Touch Human-Robot Interaction for Disaster Response," Microsoft Research, 6/08 – 5/09, \$59,217, PI.
- 2008 REU Supplement to IIS-0546309, National Science Foundation, \$12,000, PI.
- 2007 "SUBTLE: Situation Understanding Bot Through Language and Environment," Army Research Office W911NF-07-1-0216, 7/07 – 8/14, UML subcontract: \$770,078, lead: University of Pennsylvania.
- 2007 "Expanding Robotics R&D in Massachusetts," UMass President's Office Science and Technology Fund, 7/1/07 – 6/30/09, \$120,000, PI.
- 2007 Supplemental award to CNS-0540564 for expansion of program, National Science Foundation, \$71,735, PI.
- 2007 REU Supplement to CNS-0540564, National Science Foundation, \$12,000, PI.
- 2006 "DRU: Analysis of Current HAZMAT Response Capabilities and the Impact of Human-Robot Interaction on Risk Mitigation," National Science Foundation, SES-0623083, 10/1/06 – 9/30/07, \$124,765, PI.
- 2006 REU Supplement to CNS-0540564, National Science Foundation, \$12,000, PI.
- 2006 REU Supplement to IIS-0534364, National Science Foundation, \$6,000, PI.
- 2006 REU Supplement to IIS-0415224, National Science Foundation, \$6,000, PI.

- 2006 "CAREER: Interacting with Autonomy," National Science Foundation, IIS-0546309, 3/1/06 – 2/28/11, \$420,887, PI.
- 2006 "BPC-DP: Collaborative Computing Experiences to Broaden Participation in Computer Science," National Science Foundation, CNS-0540564, 3/1/06 – 2/28/09, \$360,640, PI.
- 2005 "Collaborative Research: A Novel User Interface for Operating an Assistive Robot Arm in Unstructured Environments," National Science Foundation, IIS-0534364, 12/1/05 – 11/30/08, \$161,730, PI. (Collaborative partner: Dr. Aman Behal, University of Central Florida. Funds listed are UML funds.)
- 2005 "Collaborative Research: Novel Approaches to Human-Robot Interaction," National Science Foundation, IIS-0415224, 4/1/05 – 3/31/07, \$364,592, PI. (Collaborative partner: Dr. Jill Drury, MITRE. Funds listed are UML funds.)
- 2003 "A Fully-Articulated Snake Robot for Navigation in Unstructured Environments," UMass Lowell Healey Award, 12/1/03 – 6/30/04, \$1,500, PI.
- 2003 "Human-Robot Interaction in Safety-Critical Applications," National Science Foundation, IIS-0308186, 5/15/03 – 4/30/04, \$122,290, PI.
- 2003 "A Study of Human-Robot Interaction using the NIST Test Arena for Urban Search and Rescue," National Institute of Standards and Technology, 10/1/03 – 9/30/05, \$49,258, PI.
- 2003 "Beyond LEGOs: Software, Hardware and Curriculum for the Next Generation Robotics Laboratory," National Science Foundation, DUE-0231363, 1/1/03 – 12/31/05, \$400,194, PI.
- 2003 "Development of Improved Sensing Capabilities for Mobile Robots in Search and Rescue Applications," University of Massachusetts Lowell Research Seed Grant, \$2,000, PI.
- 2002 "Robotics Workshop for K-12 Teachers," University of Massachusetts Lowell Community Service Grant, \$1,526, PI.
- 2002 "Student Travel to the AAAI Robot Competition and Exhibition," National Science Foundation, EIA-0227845, 9/15/02 – 8/31/03, \$19,755, PI.
- 1995 "Towards Assistive Robotics for the Disabled," National Science Foundation, CDA-9505200, 3/1/95 – 2/29/96, \$11,000, PI.
- 1995 Wellesley College Faculty Research Grant, \$1,500, 1995.

## **PATENTS**

- 2015 US Patent 9,013,430, "Hand and Finger Registration For Control Applications." Mark J. Micire, Eric McCann, Adam Norton, and Holly A. Yanco. Awarded April 21, 2015.



## PUBLICATIONS

### Books

- 1998 Vibhu O. Mittal, Holly A. Yanco, John Aronis and Richard Simpson, eds. *Lecture Notes in Artificial Intelligence: Assistive Technology and Artificial Intelligence*. Springer-Verlag, 1998.

### Refereed Journals

- 2016 Momotaz Begum, Richard Serna, and Holly Yanco. "Are Robots Ready to Deliver Autism Interventions? A Comprehensive Review." *International Journal of Social Robotics*, 8(2):157-181, April 2016.
- 2015 Daniel J. Brooks, Katherine M. Tsui, and Holly A. Yanco. "Methods for Evaluating and Comparing the Use of Haptic Feedback in Human-Robot Interaction with Ground-Based Mobile Robots." *Journal of Human-Robot Interaction*, 4(1): 3-29, 2015.
- 2015 Holly A. Yanco, Adam Norton, Willard Ober, David Shane, Anna Skinner, and Jack Vice. "Analysis of Human-Robot Interaction at the DARPA Robotics Challenge Trials." *Journal of Field Robotics*, 32(3): 420-444, May 2015.
- 2015 Katherine M. Tsui, James M. Dalphond, Daniel J. Brooks, Mikhail S. Medvedev, Eric McCann, Jordan Allspaw, David Kontak, and Holly A. Yanco. "Accessible Human-Robot Interaction for Telepresence Robots: A Case Study." *Paladyn, Journal on Behavioral Robotics*, Special Issue on Assistive Robotics, 6(1): 1-29, January 2015.
- 2014 Sangmook Lee, Jill M. Zemianek, Abraham Shultz, Anh Vo, Ben Y. Maron, Mikaela Therrien, Christina Courtright, Mary Guaraldi, Holly A. Yanco, and Thomas B. Shea. "Synaptic Signal Streams Generated by *Ex Vivo* Neuronal Networks Contain Non-Random, Complex Patterns." *International Journal of Developmental Neuroscience*, 38:184-194, 2014.
- 2014 Katherine M. Tsui, Eric McCann, Amelia McHugh, Mikhail Medvedev, Holly A. Yanco, David Kontak, and Jill L. Drury. "Towards Designing Telepresence Robot Navigation for People with Disabilities." *International Journal of Intelligent Computing and Cybernetics*, Volume 7, Issue 3, 2014.
- 2014 Katherine M. Tsui, Adam Norton, Daniel J. Brooks, Eric McCann, Mikhail S. Medvedev, Jordan Allspaw, Sompop Suksawat, James M. Dalphond, Michael Lunderville, and Holly A. Yanco. "Iterative Design of a Semi-Autonomous Social Telepresence Robot Research Platform: A Chronology." *Intelligent Service Robotics Journal*, 7(2): 103-119, 2014.
- 2013 Katherine M. Tsui and Holly A. Yanco. "Design Challenges and Guidelines for Social Interaction Using Mobile Telepresence Robots." *Reviews of Human Factors and Ergonomics*, 9(1): 228-302, November 2013.

- 2013 Jill M. Zemianek, Abraham M. Shultz, Sangmook Lee, Mary Guaraldi, Holly Yanco, and Thomas B. Shea. "Transient Epileptiform Signaling During Neuronal Network Development: Regulation by External Stimulation and Bimodal Gabaergic Activity." *International Journal of Developmental Neuroscience*, 31(2): 131-137, April 2013.
- 2011 Katherine M. Tsui, Munjal Desai, Holly A. Yanco, Henriette Cramer, and Nicander Kemper. "Measuring Attitudes Towards Telepresence Robots." *International Journal of Intelligent Control and Systems*, Special Issue on Quantifying the Performance of Intelligent Systems. Volume 16, Number 2, June 2011
- 2011 Katherine M. Tsui, Dae-Jin Kim, Aman Behal, David Kontak, and Holly A. Yanco. "I Want That: Human-in-the-Loop Control of a Wheelchair-Mounted Robotic Arm." *Journal of Applied Bionics and Biomechanics*, Volume 8, pp. 127-147, 2011.
- 2010 Jill L. Drury, Mark Micire, and Holly A. Yanco. "New Technology Applications in Hazardous Materials Operations." *Journal of Emergency Management*, pp. 55-71, September/October 2010.
- 2009 Kristen N. Stubbs and Holly A. Yanco. "STREAM: A Workshop on the Use of Robotics in K-12 STEM Education." *IEEE Robotics and Automation Magazine*, 16(4):17-19, December 2009.
- 2009 Fred Martin, Gena Greher, Jesse Heines, James Jeffers, Hyun Ju Kim, Sarah Kuhn, Karen Roehr, Nancy Selleck, Linda Silka, and Holly Yanco. "Joining Computing and the Arts at a Mid-size University." *Journal of Computing Sciences in Colleges*, Volume 24, Issue 6, pp. 87-94, June 2009.
- 2007 Holly A. Yanco, Brenden Keyes, Jill L. Drury, Curtis W. Nielsen, Douglas A. Few and David J. Bruemmer. "Evolving Interface Design for Robot Search Tasks." *Journal of Field Robotics*, Volume 24, Issue 8-9, August/September 2007.
- 2007 Holly A. Yanco and Jill L. Drury. "Rescuing Interfaces: A Multi-Year Study of Human-Robot Interaction at the AAI Robot Rescue Competition." *Autonomous Robots*, Volume 22, Number 4, May 2007, pp. 333-352.
- 2006 Douglas Blank, Deepak Kumar, Lisa Meeden and Holly Yanco. "The Pyro Toolkit for AI and Robotics." *AI Magazine*, 27(1), Spring 2006, pp. 39-50.
- 2005 Jill L. Drury, Holly A. Yanco and Jean Scholtz. "Using Competitions to Study Human-Robot Interaction in Urban Search and Rescue." *ACM CHI Interactions*, March/April 2005, pp. 39-41.
- 2004 Douglas Blank, Deepak Kumar, Lisa Meeden and Holly Yanco. "Pyro: A Python-based Versatile Programming Environment for Teaching Robotics." *Journal on Educational Resources in Computing (JERIC)*, Volume 4, Number 3, September 2004.
- 2004 Holly A. Yanco, Jill L. Drury, and Jean Scholtz. "Beyond Usability Evaluation: Analysis of Human-Robot Interaction at a Major Robotics Competition." *Journal of Human-Computer Interaction*, Volume 19, Numbers 1 and 2, pp. 117 – 149.

- 2000 Holly A. Yanco. "Book Review: *Artificial Intelligence and Mobile Robots: Case Studies of Successful Robot Systems*." *Artificial Life*, 6(2): 2000, pp. 181-183.
- 1996 Peter M. Todd and Holly A. Yanco. "Environmental Effects on Minimal Behaviors in the Minimat World." *Adaptive Behavior*, 4(3/4): 365-413, Winter/Spring 1996.

### **Book Chapters**

- 2016 Adam Norton and Holly Yanco. "Preliminary Development of a Test Method for Obstacle Detection and Avoidance in Industrial Environments." In *Autonomous Industrial Vehicles: From The Laboratory to the Factory Floor*, edited by Roger Bostelman and Elena Messina, ASTM STP1594, pp. 23-40, April 2016.
- 2016 Holly A. Yanco, Munjal Desai, Jill L. Drury, and Aaron Steinfeld. "Methods for Developing Trust Models for Intelligent Systems." In *Robotic Intelligence and Trust in Autonomous Systems*, edited by Ranjeev Mittu, Don Sofge, Alan Wagner, and W.F. Lawless, Springer, pp. 219-254, April 2016.
- 2012 Kristen Stubbs, Jennifer Casper and Holly A. Yanco. "Designing Evaluations for K-12 Robotics Education Programs." Chapter 2 in *Robots in K-12 Education: A New Technology for Learning*, edited by Bradley S. Barker, Gwen Nugent, Neal Grandgenett, and Viacheslav I. Adamchuk, IGI Global, February 2012, pp. 31-53.
- 2010 Brenden Keyes, Mark Micire, Jill L. Drury, and Holly A. Yanco. "Improving Human-Robot Interaction through Interface Evolution." *Advances in Human-Robot Interaction*, IN-TECH, 2010.
- 2009 Katherine M. Tsui, Holly Yanco, David Feil-Seifer, and Maja Mataric. "Methods for Evaluating Assistive Robotic Technology." *Performance Evaluation and Benchmarking of Intelligent Systems*. R. Madhavan, E. Tunstel, and E. Messina (eds.), Springer, 2009.
- 1998 Holly A. Yanco. "Wheelesley: A Robotic Wheelchair System: Indoor Navigation and User Interface." In *Lecture Notes in Artificial Intelligence: Assistive Technology and Artificial Intelligence*, edited by V.O. Mittal, H.A. Yanco, J. Aronis and R. Simpson. Springer-Verlag, 1998, pp. 256-268.<sup>1</sup>

### **Refereed Conference Proceedings**

- 2016 Brian Carlson, Adam Norton, and Holly Yanco. "Preliminary Development of Test Methods to Evaluate Lower Body Wearable Robots for Human Performance Augmentation." *Proceedings of the 19th International Conference on Climbing and Walking Robots and Support Technologies for Mobile Machines (CLAWAR 2016)*, London, United Kingdom, September 2016.

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<sup>1</sup> Chapter was invited and reviewed before I was asked to become a co-editor of the collection.

- 2015 Abraham Shultz, Sangmook Lee, Thomas B. Shea, and Holly A. Yanco. "Biological and Simulated Neuronal Networks Show Similar Competence on a Visual Tracking Task." Proceedings of the Fifth Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics (IEEE ICDL-EPIROB), Providence, Rhode Island, August 2015.
- 2015 Daniel J. Brooks, Eric McCann, Jordan Allspaw, Mikhail Medvedev, and Holly A. Yanco. "Sense, Plan, Triple Jump." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Applications (TePRA)*, Woburn, Massachusetts, May 2015.
- 2015 Momotaz Begum, Richard W. Serna, David Kontak, Jordan Allspaw, James Kuczynski, Jacob Suarez, and Holly A. Yanco. "Measuring the Efficacy of Robots in Autism Therapy: How Informative Are Standard HRI Metrics?" *Proceedings of the 10th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Portland, Oregon, March 2015.
- 2013 Katherine M. Tsui, Kelsey Flynn, Amelia McHugh, Holly Yanco, and David Kontak. "Designing Speech-Based Interfaces for Telepresence Robots for People with Disabilities". *Proceedings of the IEEE International Conference on Rehabilitation Robotics (ICORR)*. Seattle, Washington, June 2013. **Selected as First Runner-Up for Best Student Paper.**
- 2013 Daniel J. Brooks, Michael Lunderville, and Holly A. Yanco. "Design of a 2D Joystick for Robot Control Based on a 6 DOF Haptic Device." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Application (TePRA)*, Woburn, Massachusetts, April 2013.
- 2013 Munjal Desai, Mikhail Medvedev, Marynel Vazquez, Sean McSheehy, Sofia Gadea-Omelchenko, Christian Bruggeman, Aaron Steinfeld, and Holly Yanco. "Influence of Situation Awareness on Control Allocation for Remote Robots." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Application (TePRA)*, Woburn, Massachusetts, April 2013.
- 2013 Katherine M. Tsui, Adam Norton, Daniel J. Brooks, Eric McCann, Mikhail S. Medvedev, and Holly A. Yanco. "Design and Development of Two Generations of Semi-Autonomous Social Telepresence Robots." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Application (TePRA)*, Woburn, Massachusetts, April 2013.
- 2013 Munjal Desai, Poornima Kaniarasu, Mikhail Medvedev, Aaron Steinfeld, and Holly Yanco. "Impact of Robot Failures and Feedback on Real-Time Trust." *Proceedings of the 8th Annual ACM/IEEE International Conference on Human-Robot Interaction*, Tokyo, Japan, March 2013. **Nominated for Best Paper.**
- 2012 Munjal Desai, Mikhail Medvedev, Marynel Vázquez, Sean McSheehy, Sofia Gadea-Omelchenko, Christian Bruggeman, Aaron Steinfeld, and Holly Yanco. Effects of Changing Reliability on Trust of Robot Systems. *Proceedings of the 7th Annual ACM/IEEE International Conference on Human-Robot Interaction*, Boston, Massachusetts, March 2012.

- 2011 Nathan Rackliffe, Holly A. Yanco, and Jennifer Casper. "Using Geographic Information Systems (GIS) for UAV Landings and UGV Navigation." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Applications*, Woburn, MA, April 2011.
- 2011 Mark Micire, Eric McCann, Munjal Desai, Katherine M. Tsui, Adam Norton, and Holly A. Yanco. "Hand and Finger Registration for Multi-Touch Joysticks on Software-Based Operator Control Units." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Applications*, Woburn, MA, April 2011.
- 2011 Munjal Desai, Katherine M. Tsui, Holly A. Yanco, and Chris Uhlik. "Essential Features of Telepresence Robots." *Proceedings of the IEEE International Conference on Technologies for Practical Robot Applications*, Woburn, MA, April 2011.
- 2011 Katherine M. Tsui, Munjal Desai, Holly A. Yanco, and Chris Uhlik. "Exploring Use Cases for Telepresence Robots." *Proceedings of the 6<sup>th</sup> ACM/IEEE International Conference on Human-Robot Interaction*, Lausanne, Switzerland, March 6-9, 2011.
- 2011 Mark Micire, Munjal Desai, Jill L. Drury, Eric McCann, Adam Norton, Katherine M. Tsui, and Holly A. Yanco. "Design and Validation of Two-Handed Multi-Touch Tabletop Controllers for Robot Teleoperation." *Proceedings of the International Conference on Intelligent User Interfaces*, Palo Alto, CA, February 13-16, 2011.
- 2009 Mark Micire, Munjal Desai, Amanda Courtemanche, Katherine M. Tsui, and Holly A. Yanco. "Analysis of Natural Gestures for Controlling Robot Teams on Multi-touch Tabletop Surfaces." *Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces*, Banff, Alberta, November 2009.
- 2009 Erin B. Rapacki, Christopher Niezrecki, and Holly A. Yanco. "An Underactuated Gripper to Unlatch Door Knobs and Handles." *Proceedings of the Second Annual IEEE International Conference on Technologies for Practical Robot Applications*, Woburn, MA, November 2009.
- 2009 Mark Micire, Jill L. Drury, Brenden Keyes, and Holly Yanco. "Multi-Touch Interaction for Robot Control." *Proceedings of the ACM International Conference on Intelligent User Interfaces (IUI)*, Sanibel Island, Florida, February 2009.
- 2008 Erin Rapacki, Kate Tsui, David Kontak, and Holly Yanco. "Design and Evaluation of Laser Joystick in a Turret Assembly." *Proceedings of the Rehabilitation Engineering Society of North America Conference*, Washington DC, June 2008.
- 2008 Jill L. Drury, Jonathan Arambula, Sarah Kuhn, Mark Micire, and Holly Yanco. "Identifying Technology Gaps in Hazardous Materials Operations." *Proceedings of the IEEE Int'l Conference on Technologies for Homeland Security*, Waltham, MA, May 2008.

- 2008 Katherine M. Tsui, Holly A. Yanco, David Kontak and Linda Beliveau. "Development and Evaluation of a Flexible Interface for a Wheelchair Mounted Robotic Arm." *Proceedings of the 3<sup>rd</sup> Annual ACM/IEEE Conference on Human-Robot Interaction*, Amsterdam, The Netherlands, March 2008.
- 2007 Mark Micire, Martin Schedlbauer and Holly Yanco. "Horizontal Selection: An Evaluation of a Digital Tabletop Input Device." *Proceedings of the 13<sup>th</sup> Americas Conference on Information Systems*, Keystone, Colorado, August 2007.
- 2007 Hyun Ju Kim, Diana Coluntino, Fred G. Martin, Linda Silka and Holly A. Yanco. "Artbotics: Community-Based Collaborative Art and Technology Education." Educators Program, *ACM SIGGRAPH 2007, 34<sup>th</sup> International Conference on Computer Graphics and Interactive Techniques*, San Diego, CA, August 2007.
- 2007 Matt Bailey, Andrew Chanler, Bruce Maxwell, Mark Micire, Katherine Tsui, and Holly Yanco. "Development of Stereo Vision-Based Navigation for a Robotic Wheelchair." *Proceedings of the International Conference on Rehabilitation Robotics*, The Netherlands, June 2007.
- 2007 Linda Silka, Hyun Ju Kim, Fred Martin, Holly Yanco, Jerry Beck, Diana Coluntino and Diane Testa. "Artbotics: The Challenge of New Partnerships." *CITA International Conference on Community-University Partnerships: How Do We Achieve the Promise*, Lowell, Massachusetts, April 2007.
- 2007 Jill L. Drury, Brenden Keyes and Holly A. Yanco. "LASSOing HRI: Analyzing Situation Awareness in Map-Centric and Video-Centric Interfaces." *Proceedings of the 2<sup>nd</sup> Annual ACM/IEEE Conference on Human-Robot Interaction*, Arlington, VA, March 2007.
- 2006 Holly A. Yanco, Michael Baker, Robert Casey, Brenden Keyes, Philip Thoren, Jill L. Drury, Douglas Few, Curtis Nielsen and David Bruemmer. "Analysis of Human-Robot Interaction for Urban Search and Rescue." *Proceedings of the IEEE International Workshop on Safety, Security and Rescue Robotics*. National Institute of Standards and Technology (NIST), Gaithersburg, MD, August 2006.
- 2006 Brenden Keyes, Robert Casey, Holly A. Yanco, Bruce A. Maxwell, and Yavor Georgiev. "Camera Placement and Multi-Camera Fusion for Remote Robot Operation." *Proceedings of the IEEE International Workshop on Safety, Security and Rescue Robotics*. National Institute of Standards and Technology (NIST), Gaithersburg, MD, August 2006.
- 2006 Jill L. Drury, Holly A. Yanco, Whitney Howell, Brian Minten and Jennifer Casper. "Changing Shape: Improving Situation Awareness for a Polymorphic Robot." *Proceedings of the ACM/IEEE Conference on Human-Robot Interaction*, March 2006.
- 2005 Munjal Desai and Holly A. Yanco. "Blending Human and Robot Inputs for Sliding Scale Autonomy." *Proceedings of the 14<sup>th</sup> IEEE International Workshop on Robot and Human Interactive Communication*, Nashville, TN, August 2005.

- 2005 Michael Baker and Holly A. Yanco. "Automated Street Crossing for Assistive Robots." *Proceedings of the International Conference on Rehabilitation Robotics*, Chicago, June 2005.
- 2004 Michael Baker, Robert Casey, Brenden Keyes and Holly A. Yanco. "Improved Interfaces for Human-Robot Interaction in Urban Search and Rescue." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, The Hague, Netherlands, October 2004. Selected as a Finalist in the Best Student Paper Competition.
- 2004 Michael Baker and Holly A. Yanco. "Autonomy Mode Suggestions for Improving Human-Robot Interaction." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, The Hague, Netherlands, October 2004.
- 2004 Dan Hestand and Holly A. Yanco. "Layered Sensor Modalities for Improved Feature Detection." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, The Hague, Netherlands, October 2004.
- 2004 Holly A. Yanco and Jill Drury. "'Where Am I?' Acquiring Situation Awareness Using a Remote Robot Platform." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, The Hague, Netherlands, October 2004.
- 2004 Holly A. Yanco and Jill Drury. "Classifying Human-Robot Interaction: An Updated Taxonomy." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, The Hague, Netherlands, October 2004.
- 2004 Jean Scholtz, Jeff Young, Jill L. Drury, and Holly A. Yanco. "Evaluation of Human-Robot Interaction Awareness in Search and Rescue." *Proceedings of the IEEE International Conference on Robotics and Automation*, New Orleans, April 2004.
- 2004 Jill L. Drury, Dan Hestand, Holly A. Yanco, and Jean Scholtz. "Design Guidelines for Improved Human-Robot Interaction." *Proceedings of the International Conference on Human-Computer Interaction (CHI-2004)*, Vienna, Austria, April 2004.
- 2003 Jill L. Drury, Jean Scholtz, and Holly A. Yanco. "Awareness in Human-Robot Interactions." *Proceedings of the IEEE Conference on Systems, Man and Cybernetics*, Washington, DC, October 2003.
- 2003 Holly A. Yanco and Karl R. Wurst. "Beyond Botball: Science Experiments With Your Handyboard." *Proceedings of the National Conference on Educational Robotics*, Norman, Oklahoma, June 28 - July 1, 2003.
- 2001 Holly A. Yanco. "Development and Testing of a Robotic Wheelchair System for Outdoor Navigation." *Proceedings of the 2001 Conference of the Rehabilitation Engineering and Assistive Technology Society of North America*, Reno, Nevada. RESNA Press, 2001.

- 1998 Holly A. Yanco and James Gips. "Driver Performance Using Single Switch Scanning with a Powered Wheelchair: Robotic Assisted Control Versus Traditional Control." *Proceedings of the Annual Conference of the Rehabilitation Engineering and Assistive Technology Society of North America*, Minneapolis. RESNA Press, 1998, pp. 298-300.
- 1997 Holly A. Yanco and James Gips. "Preliminary Investigation of a Semi-Autonomous Robotic Wheelchair Directed through Electrodes." *Proceedings of the Annual Conference of the Rehabilitation Engineering Society of North America*, Pittsburgh. RESNA Press, 1997, pp. 414-416.
- 1994 Peter M. Todd, Stewart W. Wilson, Anil B. Somayaji, and Holly A. Yanco. "The Blind Breeding the Blind: Adaptive Behavior Without Looking." *From Animals to Animats 3: Proceedings of the Third International Conference on Simulation of Adaptive Behavior*, Brighton, England, edited by D. Cliff, P. Husbands, J.-A. Meyer, and S.W. Wilson. The MIT Press/Bradford Books, 1994, pp. 228-237.
- 1993 Holly Yanco and Lynn Andrea Stein. "An Adaptive Communication Protocol for Cooperating Mobile Robots." *From Animals to Animats 2: Proc. of the Second International Conference on the Simulation of Adaptive Behavior*, J.-A. Meyer, H.L. Roitblat, and S.W. Wilson, eds. MIT Press/Bradford Books, 1993, pp. 478-485.

#### **Refereed Workshop Papers**

- 2015 Adam Norton and Holly Yanco. "Using Standard Test Methods for Response Robots to Evaluate Remote Human-Robot Interaction." *IEEE IROS 2015 Workshop Towards Standardized Experiments in Human Robot Interactions*, Hamburg, Germany, September 2015.
- 2014 Momotaz Begum, Holly A. Yanco, Richard W. Serna, and David Kontak. "Robots in Clinical Settings for Therapy of Individuals with Autism: Are We There Yet?" *Proceedings of the IEEE IROS 2014 Workshop on Rehabilitation and Assistive Robotics*, September 2014.
- 2014 Abraham M. Shultz, Sangmook Lee, Thomas B. Shea, and Holly A. Yanco. "Control of a Robot Arm with Artificial and Biological Neural Networks." *Proceedings of the AAAI Workshop on Artificial Intelligence and Robotics*, Quebec City, Quebec, Canada, July 2014.
- 2014 Michelle S. Carlson, Munjal Desai, Jill L. Drury, Hyangshim Kwak, and Holly A. Yanco. "Identifying Factors that Influence Trust in Automated Cars and Medical Diagnosis Systems." *Proceedings of the AAAI Spring Symposium on the Intersection of Robust Intelligence and Trust in Autonomous Systems*, Palo Alto, CA, March 2014.
- 2012 Daniel J. Brooks, Constantine Lignos, Cameron Finucane, Mikhail S. Medvedev, Ian Perera, Vasumathi Raman, Hadas Kress-Gazit, Mitch Marcus, and Holly A. Yanco. "Make It So: Continuous, Flexible Natural Language Interaction with an Autonomous Robot." *Proceedings of the AAAI 2012 Workshop on Grounding Language for Physical Systems*, Toronto, Ontario, Canada, July 2012.



- 2012 Katherine M. Tsui, Munjal Desai, and Holly A. Yanco. "Towards Measuring the Quality of Interaction: Communication through Telepresence Robots." *Proceedings of the Performance Metrics for Intelligent Systems Workshop (PerMIS)*, College Park, Maryland, March 2012.
- 2011 Katherine M. Tsui, Adam Norton, Daniel Brooks, Holly A. Yanco, and David Kontak. "Designing Telepresence Robot Systems for Use by People with Special Needs." *Proceedings of the International Symposium on Quality of Life Technologies 2011: Intelligent Systems for Better Living*, held in conjunction with RESNA 2011 as part of FICCDAT, Toronto, Canada, June 6-7, 2011.
- 2011 Katherine M. Tsui, Munjal Desai, Holly A. Yanco, and Chris Uhlik. "Telepresence Robots Roam the Halls of My Office Building." *Human-Robot Interaction (HRI) Workshop on Social Robotic Telepresence*, Lausanne, Switzerland, March 6-9, 2011.
- 2010 Daniel Brooks, Abraham Shultz, Munjal Desai, Philip Kovac, and Holly A. Yanco. "Towards State Summarization for Autonomous Robots." *Proceedings of the AAAI Fall Symposium on Dialog with Robots*, November 2010.
- 2010 Katherine M. Tsui, Munjal Desai, Holly A. Yanco, Henriette Cramer, and Nicander Kemp. "Using the 'Negative Attitudes Toward Robots Scale' with Telepresence Robots." *Proceedings of the Performance Metrics for Intelligent Systems Workshop (PerMIS)*, September 2010.
- 2010 Katherine M. Tsui and Holly A. Yanco. "Prompting Devices: A Survey of Memory Aids for Task Sequencing." *Proceedings of the 2010 QoLT International Symposium: Intelligent Systems for Better Living*, held in conjunction with RESNA 2010, Las Vegas, NV, June 2010.
- 2009 Katherine M. Tsui and Holly Yanco. "Towards Establishing Clinical Credibility for Rehabilitation and Assistive Robots Through Experimental Design." *Proceedings of the Robotics: Science and Systems Workshop on Good Experimental Methodology in Robotics*. June 2009.
- 2009 Munjal Desai, Kristen Stubbs, Aaron Steinfeld, and Holly Yanco. "Creating Trustworthy Robots: Lessons and Inspirations from Automated Systems." *Proceedings of the AISB Convention: New Frontiers in Human-Robot Interaction*, Edinburgh, Scotland, April 2009.
- 2008 Katherine M. Tsui, Holly A. Yanco, David J. Feil-Seifer and Maja J. Mataric. "Survey of Domain-Specific Performance Measures in Assistive Robotic Technology." *Proceedings of the Performance Metrics for Intelligent Systems Workshop*, Gaithersburg, MD, August 2008.
- 2008 Katherine M. Tsui, Holly Yanco, David Kontak, and Linda Beliveau. "Experimental Design for Human-Robot Interaction with Assistive Technology." *Proceedings of the Workshop on Robotic Helpers: User Interaction, Interfaces and Companions in Assistive and Therapy Robotics*, held at the ACM International Conference on Human-Robot Interaction, March 2008.

- 2007 Amanda Courtemanche, Mark Micire and Holly Yanco. "Human-Robot Interaction using a Multi-Touch Display." Poster presentation, *Second Annual IEEE Tabletop Workshop*, October 2007.
- 2007 Fred Martin, Hyun Ju Kim, Linda Silka, Holly Yanco and Diana Coluntino. "Artbotics: Challenges and Opportunities for Multi-Disciplinary, Community-Based Learning in Computer Science, Robotics, and Art." *Proceedings of the 2007 Workshop on Research in Robots for Education*, Robotics: Science and Systems Conference, Atlanta, Georgia, July 2007.
- 2007 Kate M. Tsui and Holly A. Yanco. "Assistive, Surgical, and Rehabilitation Robots from the Perspective of Medical and Healthcare Professionals." *Proceedings of the AAAI Workshop on Human Implications of Human-Robot Interaction*, July 2007.
- 2007 Katherine M. Tsui and Holly A. Yanco. "Simplifying Wheelchair Mounted Robotic Arm Control with a Visual Interface." *AAAI Spring Symposium on Multidisciplinary Collaboration for Socially Assistive Robotics*, March 2007.
- 2007 Holly A. Yanco, Hyun Ju Kim, Fred Martin and Linda Silka. "Artbotics: Combining Art and Robotics to Broaden Participation in Computing." *AAAI Spring Symposium on Robots and Robot Venues: Resources for AI Education*, March 2007.
- 2005 Robert Casey, Andrew Chanler, Munjal Desai, Brenden Keyes, Philip Thoren, Michael Baker, and Holly A. Yanco. "Good Wheel Hunting: UMass Lowell's Scavenger Hunt Robot System." *Proceedings of the AAAI-05 Robot Competition and Exhibition Workshop*, Pittsburgh, PA, July 2005.
- 2004 Jill L. Drury, Jean Scholtz and Holly A. Yanco. "Applying CSCW and HCI Techniques to Human-Robot Interaction." *Proceedings of the CHI-2004 Workshop on Human-Robot Interaction*, Vienna, Austria, April 2004.
- 2004 Douglas Blank, Holly Yanco, Deepak Kumar, and Lisa Meeden. "Avoiding the Karel-the-Robot Paradox: A Framework for Making Sophisticated Robotics Accessible." *Proceedings of the 2004 AAAI Spring Symposium on Accessible, Hands-on AI and Robotics Education*, Stanford University, March 2004.
- 2002 Holly A. Yanco and Jill L. Drury. "A Taxonomy for Human-Robot Interaction." *AAAI Fall Symposium on Human-Robot Interaction*, Falmouth, Massachusetts, November 2002.
- 2002 Holly A. Yanco. "Evaluating the Performance of Assistive Robotic Systems." *Proceedings of the Workshop on Performance Metrics for Intelligent Systems*, NIST, Gaithersburg, MD, August 2002.
- 2002 Karen Haigh and Holly A. Yanco. "Automation as Caregiver: A Survey of Issues and Technologies." *Proceedings of the AAAI-2002 Workshop on Automation as Caregiver: The Role of Intelligent Technology in Elder Care*, Edmonton, Aug 2002.

- 2001 Holly A. Yanco. "Designing Metrics for Comparing the Performance of Robotic Systems in Robot Competitions." *Proceedings of the Workshop on Measuring Performance and Intelligence of Intelligent Systems (PERMIS)*, IEEE Conference on Control Applications, Mexico City, Mexico, September 2001.
- 1998 Holly A. Yanco. "Integrating Robotic Research for Assistive Technology Applications." *AAAI Spring Symposium on Integrating Robotic Research: Taking the Next Leap*, Stanford University, March 1998.
- 1998 Holly A. Yanco. "Integrating Robotic Research: A Survey of Robotic Wheelchair Development." *AAAI Spring Symposium on Integrating Robotic Research: Taking the Next Leap*, Stanford University, March 1998.
- 1995 Holly A. Yanco, Anna Hazel, Alison Peacock, Suzanna Smith and Harriet Wintermute. "Initial Report on Wheellesley: A Robotic Wheelchair System." *Proceedings of the Workshop on Developing AI Applications for the Disabled*, International Joint Conference on Artificial Intelligence, Montreal, Canada, August 1995.
- 1993 Holly Yanco. "Development of a Context Dependent Robot Language: Preliminary Results." *Proceedings of the Workshop on Dynamically Interacting Robots*, International Joint Conference on Artificial Intelligence, Chambery, France, August 1993.
- 1993 Holly Yanco. "Talking About the World: Cooperative Robots that Learn to Communicate." *Proceedings of the Workshop on Learning Action Models*, Eleventh National Conference on Artificial Intelligence, Washington, DC, July 1993.
- 1992 Holly Yanco. "Towards an Adaptable Robot Language." *Proceedings of the AAAI Fall Symposium on the Applications of Artificial Intelligence to Real World Robots*, Boston, October 1992.

### **Refereed Abstracts**

- 2016 Christopher Munroe, Yuanliang Meng, Holly Yanco, and Momotaz Begum. "Augmented Reality Eyeglasses for Promoting Home-Based Rehabilitation for Children with Cerebral Palsy." Abstract and video in *Proceedings of the 11<sup>th</sup> Annual ACM/IEEE International Conference on Human-Robot Interaction*, Christchurch, New Zealand, March 2016.
- 2013 Poornima Kaniarasu, Aaron Steinfeld, Munjal Desai, and Holly Yanco. "Robot Confidence And Trust Alignment." Late Breaking Report in *Proceedings of the 8<sup>th</sup> Annual ACM/IEEE International Conference on Human-Robot Interaction*, Tokyo, Japan, March 2013.
- 2012 Poornima Kaniarasu, Aaron Steinfeld, Munjal Desai, and Holly A. Yanco. "Potential Measures for Detecting Trust Changes." Late Breaking Report in *Proceedings of the 7<sup>th</sup> Annual ACM/IEEE International Conference on Human-Robot Interaction*, Boston, Massachusetts, March 2012.

- 2012 Daniel J. Brooks and Holly A. Yanco. "Design of a Haptic Joystick for Shared Robot Control." Late Breaking Report in *Proceedings of the 7th Annual ACM/IEEE International Conference on Human-Robot Interaction*, Boston, Massachusetts, March 2012.
- 2010 Katherine M. Tsui, Munjal Desai, and Holly A. Yanco. "Considering the Bystander's Perspective for Indirect Human-Robot Interaction." Late Breaking Paper in *Proceedings of the 5th Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, Osaka, Japan, March 2010. **Nominated as Best Late Breaking Paper.**
- 2008 Munjal Desai, Jill L. Drury, and Holly Yanco. "Initial User Reactions to Robot Interfaces with Sliding Scale Autonomy and Trust Scales." *Proceedings of the 3rd ACM/IEEE International Conference on Human-Robot Interaction*, Amsterdam, March 2008.
- 2008 Mark Micire, Jill L. Drury, Brenden Keyes, Holly Yanco, and Amanda Courtemanche. "Performance of Multi-Touch Table Interaction and Physically Situated Robot Agents." *Proceedings of the 3rd ACM/IEEE International Conference on Human-Robot Interaction*, Amsterdam, March 2008.
- 2006 Katherine M. Tsui and Holly A. Yanco. "Human-in-the-Loop Control of an Assistive Robot Arm." *Proceedings of the Workshop on Manipulation for Human Environments, Robotics: Science and Systems Conference*, Philadelphia, PA, August 2006.
- 2005 Holly A. Yanco, Michael Baker, Robert Casey, Andrew Chanler, Munjal Desai, Dan Hestand, Brenden Keyes, and Philip Thoren. "Improving Human-Robot Interaction for Remote Robot Operation." Robot Competition and Exhibition Abstract, National Conference on Artificial Intelligence (AAAI-05), Pittsburgh, July 2005.
- 2005 Douglas Blank, Deepak Kumar, Lisa Meeden and Holly A. Yanco. "Pyro: An Integrated Environment for Robotics Education." Robot Competition and Exhibition Abstract, AAAI-05, Pittsburgh, July 2005.
- 1998 Holly A. Yanco. "Development of Outdoor Navigation for a Robotic Wheelchair System." Student abstract in *Proceedings of the Fifteenth National Conference on Artificial Intelligence*, Madison, WI, AAAI Press/MIT Press, 1998, pp. 1208.
- 1994 Holly Yanco. "Synthetic Robot Language Development." Student abstract in *Proceedings of the Twelfth National Conference on Artificial Intelligence*, Seattle. AAAI Press/The MIT Press, 1994, p. 1500.

### **Invited Magazine Articles**

- 2005 William D. Smart, Sheila Tejada, Bruce Maxwell, Ashley Stroupe, Jennifer Casper, Adam Jacoff, Holly Yanco and Magda Bugajska. "The 2004 Mobile Robot Competition and Exhibition." *AI Magazine*, 26(2), Summer 2005, pp. 25-35.

- 2004 Bruce A. Maxwell, William Smart, Adam Jacoff, Jennifer Casper, Brian Weiss, Jean Scholtz, Holly Yanco, Mark Micire, Ashley Stroupe, Dan Stormont, and Tom Lauwers. "2003 AAI Robot Competition and Exhibition." *AI Magazine*, 25(2), Summer 2004, pp. 68-80
- 2003 Holly A. Yanco and Tucker Balch. "The AAI-2002 Mobile Robot Competition and Exhibition." *AI Magazine*, Spring 2003, pp. 45-50.
- 2002 Tucker Balch and Holly A. Yanco. "Ten Years of the AAI Robot Competition and Exhibition: Looking Back and to the Future." *AI Magazine*, Spring 2002.
- 2002 Jennifer L. Casper and Holly A. Yanco. "AAI/RoboCup 2001 Robot Rescue." *AI Magazine*, Spring 2002.
- 2002 Pedro Lima, Tucker Balch, Masahiro Fujita, Raul Rojas, Manuela Veloso, and Holly A. Yanco. "The RoboCup 2001 Competitions and Conference: Report and Research Issues." *IEEE Robotics and Automation Magazine*, June 2002.
- 1998 Holly A. Yanco. "The AAI-97 Robot Exhibition." *AI Magazine*, 19(3): Fall 1998, pp. 39-47.
- 1998 Holly A. Yanco. "The 'Hors D'Oeuvres Anyone?' Event." *AI Magazine*, 19(3): Fall 1998, pp. 33-37.

## TUTORIALS

Selected competitively by conference program committees, recognizing expertise in a given area.

- 2010 "Human-Robot Collaboration," with Jill Drury, International Symposium on Collaborative Technologies and Systems (CTS 2010), Chicago, IL, May 2010, full day.
- 2009 "Using and Adapting HCI Evaluation Methods for HRI," with Jill Drury, ACM/IEEE Int'l Conference on Human-Robot Interaction, San Diego, CA, March 2009, full day.
- 2008 "Human-Robot Interaction," National Conference on Artificial Intelligence (AAAI-08), Chicago, IL, July 2008, half day.
- 2006 "Designing for Human-Robot Interaction," MIT Humans & Technology Symposium, January 2006, half day.
- 2005 "Pyro: A Tool for Teaching Robotics and AI," with Doug Blank, National Conference on Artificial Intelligence (AAAI-05), Pittsburgh PA, July 2005, half day.
- 2005 "Human-Robot Interaction: Design and Evaluation," with Jean Scholtz, International Conference on Human-Computer Interaction (CHI-2005), Portland, Oregon, April 2005, full day.
- 2004 "Human-Robot Interaction," with Jean Scholtz, International Conference on Human-Computer Interaction (CHI-2004), Vienna, Austria, April 2004, full day.

**INVITED RESEARCH TALKS - Excluding presentations of conference and workshop papers listed in publications section above**

- 2016 "Human-in-the-Loop Coordination with Robots"
- University of Twente, Enschede, Netherlands, June 2016.
  - Oregon State University, Corvallis, OR, May 2016.
  - Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, March 2016.
  - Seoul National University, Seoul, Korea, March 2016.
  - Yujin Robotics, Seoul, Korea, March 2016.
- 2016 "The Robotics Evolution"
- Distinguished University Professor Lecture, UMass Lowell, Lowell, MA, March 2016.
  - Keynote speaker, Tech Day, Northern Essex Community College, Haverhill, MA, March 2016.
- 2016 "Artbotics: Attracting Students to STEM (Science, Technology, Engineering, and Mathematics)," Seoul Media Institute of Technology, Seoul, Korea, March 2016.
- 2016 "Human-Robot Interaction at the DARPA Robotics Challenge Finals," NSERC Canadian Field Robotics Network (NCFRN) Robotics Field Trials Workshop, McGill Bellairs Institute, Barbados, January 2016.
- 2016 "UMass Lowell New England Validation and Experimentation (NERVE) Center and HRI Research," NASA Johnson Space Center, Houston, TX, January 2016.
- 2015 "Improving Robotic Systems: Testing and Training," Worcester Polytechnic Institute (WPI) Venture Forum, Worcester, MA, November 2015.
- 2015 "Human-in-the-Loop Coordination with Robots," Invited plenary, IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR), Purdue University, Lafayette, IN, October 2015.
- 2015 "Evaluating Human-Robot Interaction: Experimental Designs and Methods," IEEE RAS Summer School on Experimental Methodology, Performance Evaluation and Benchmarking in Robotics, Benicassim, Spain, September 2015.
- 2015 Panelist, IDB Ideas Panel Discussion on Robotics, MassChallenge, Innovation Design Building, Boston, MA, July 2015. Moderated by Scott Kirsner, Boston Globe.
- 2015 Panelist, "Economics, Education, and Care," Societal Implications of Robotics Symposium (SIRoS), Brown University, Providence, RI, May 2015.
- 2015 "Robot Research, Development and Testing at the NERVE Center," IEEE NH Robotics and Engineering in Medicine and Biology Chapters, UMass Lowell, Lowell, MA, April 2015.

- 2015 Panelist, New England's Robot Ecosystem, Xconomy Robo Madness Boston, Google, Cambridge, MA, March 2015.
- 2015 "Human-Robot Interaction at the DARPA Robotics Challenge Trials," NSERC Canadian Field Robotics Network (NCFRN) Robotics Field Trials Workshop, McGill Bellairs Institute, Barbados, January 2015.
- 2014 Panelist, The Machines are Coming! Robots and Drones on the Rise, Xconomy Forum: Tech Agenda 2015, Fidelity Investments, Boston, MA, December 2014.
- 2014 "Robot-Based Assistive Technology," UMass Lowell Disability Studies Conference, Lowell, MA, November 2014.
- 2014 "Improving Robotic Systems Using Research, Testing and Training," RoboBusiness, Boston, MA, October 2014.
- 2014 "Robot Research, Development and Testing at the NERVE Center," New England Robotics Colloquium, Brown University, Providence, RI, October 2014.
- 2014 "Collaborative Design and Evaluation of Assistive Robot Systems," IROS 2014 Workshop on Assistive Robotics for Individuals with Disabilities: HRI Issues and Beyond, Chicago, IL, September 2014.
- 2014 Panelist, Socially Assistive Robots, Visions 2025: Interacting With the Computers All Around Us Workshop, Computing Research Association (CRA) and National Science Foundation (NSF), Washington DC, May 2014.
- 2014 "Human-Robot Interaction at the DARPA Robotics Challenge Trials"
- IEEE Conference on Technologies for Practical Robot Applications (TePRA), Woburn, MA, April 2014.
  - National Institute of Standards and Technology, ASTM International Standards Committee on Homeland Security Applications (Operational Equipment; Robots; E54.08.01), Gaithersburg, MD, May 2014
- 2014 "Designing Human-Robot Interaction for Humanoid Robots," Google, Mountain View, CA, March 2014.
- 2013 "New England Robotics Validation and Experimentation (NERVE) Center: Testing and Training Opportunities," Massachusetts Technology Leadership Council's Future of Robotics Summit, Microsoft, Cambridge, MA, December 2013.
- 2013 "Human-Robot Interaction," Army Science Planning and Strategy Meeting on Intelligent Systems, Potomac, MD, November 2013.
- 2013 "Factors that Impact Operator Interaction with Remote Autonomous Robots," AAAI Spring Symposium on Trust and Autonomous Systems, Stanford University, Palo Alto, CA, March 2013.
- 2012 "Artbotics: Combining Art, Computer Science and Robotics to Attract Students to STEM," Rhode Island College, Providence, RI, December 2012.

- 2012 “Human-in-the-Loop Control of Robot Systems”
- Willow Garage, Mountain View, CA, October 2012
  - Vecna Technologies, Cambridge, MA, September 2012
  - Autonomous Systems Research Laboratory (ASRL) / Navy Center for Applied Research in Artificial Intelligence (NCARAI) Symposia Series, Naval Research Laboratory, Washington, DC, May 2012
- 2012 Panelist, “Robotics in Healthcare: Solutions for the Hospital and the Home,” MIT Enterprise Forum of Cambridge, Innovation Series Event, Massachusetts Institute of Technology, Cambridge, MA, April 2012.
- 2012 “Neuronal Networks: In Vitro, In Simulation, and Controlling Robots,” Workshop on Biologically Inspired Algorithms and Multi-objective Optimizations, Williamsburg, VA, April 2012.
- 2012 Panelist, “Humans and Humanoid Assistive Robots,” Trinity College, Hartford, CT, March 2012.
- 2012 “SciFi to HRI: Designing the Robots of Tomorrow,” Trinity College, Hartford, CT, March 2012.
- 2012 “Evaluate Early, Evaluate Often: A Design Process for Creating Better Robot Systems,” Keynote at Performance Metrics for Intelligent Systems (PerMIS’12) Workshop, College Park, MD, March 2012.
- 2011 “Human-in-the-Loop Control of Robot Systems,” Robotics and Intelligent Machines Seminar, Georgia Institute of Technology, December 2011.
- 2011 “Human-Robot Interaction,” Massachusetts Technology Leadership Council’s Future of Robotics Event, Microsoft, Cambridge, MA, December 2011.
- 2011 “Command and Control of Robot Systems”, BAE Systems, Burlington, MA, November 2011.
- 2011 “SciFi to HRI: Designing the Robots of Tomorrow,” Google, Mountain View, CA, August 2011.
- 2010 “Command and Control of Robots Using Multi-Touch Interfaces,” Beneath the Surface, Microsoft Faculty Summit, July 2010.
- 2010 “Multi-Touch Human-Robot Interaction for Disaster Response,” External Research Symposium, Microsoft, April 2010.
- 2010 “Designing for Human-Robot Interaction,” UMass Dartmouth, April 2010.
- 2009 “Designing for Human-Robot Interaction”
- Carnegie Mellon University, October 2009.
  - Mass Technology Leadership Council’s Future of Robotics Summit, Microsoft NERD, Cambridge, MA, December 2009.



- 2009 "Programming Robots to Understand People," Workshop on Situated Understanding of Intention, University of Pennsylvania, July 2009.
- 2009 "Assistive Robotics: Making the Leap from the Lab to Commercial Development," RoboBusiness, April 2009.
- 2008 "Human-Robot Interaction," MIT Emerging Technologies Conference, September 2008.
- 2008 "Improving Disaster Response with UGV and C2I Technologies," Massachusetts Defense Roundtable, May 2008.
- 2007 "Human-Robot Interaction for Assistive Robots," Colby College, October 2007.
- 2007 "Human-Robot Interaction for Assistive Technology," Biomedical Engineering Society, UMass Lowell, March 2007.
- 2006 "Outreach in a Box," National Center for Women and Information Technology (NCWIT) Meeting, Atlanta, GA, November 2006.
- 2006 "Designing Human-Robot Interaction for Assistive Robots"
- Invited Plenary, Eighth International Symposium on Distributed Autonomous Robotic Systems (DARS 2006), Minneapolis, July 2006.
  - MITRE, Bedford, MA, October 2006.
- 2006 "Botball 2006: Winners from the New England Tournament." Central New England Chapter of the IEEE Robotics and Automation Society, June 2006.
- 2006 "Designing and Evaluating Human-Robot Interaction"
- UMass Boston, May 2006.
  - UMass Amherst, April 2006.
- 2006 "Designing for Human-Robot Interaction," Human-Computer Interaction Lecture Series, Massachusetts Institute of Technology, January 2006.
- 2005 "Human-Robot Interaction for Assistive Technology," AAAI Fall Symposium on Caring Machines: AI in Eldercare, Washington DC, November 2005.
- 2005 "Human-Robot Interaction"
- Mechanical Engineering Department Seminar, UMass Lowell, October 2005.
  - Honors Workshop (Faculty member: Doreen Arcus), October 2005.
- 2005 "Pyro: A Tool for Teaching Robotics and AI," Robotics Education Workshop, Robotics: Science and Systems Conference, Cambridge, MA, June 2005.

- 2005 "Improving Human-Robot Interaction for Urban Search and Rescue"
- Boston Chapter of the IEEE Robotics and Automation Society, Lowell MA, April 2005.
  - Human-Computer Interaction Seminar Series, Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology, Cambridge, MA, February 2005.
- 2005 "Careers in Robotics," Timony School, Methuen MA, February 2005.
- 2005 "Human-Robot Interaction," Honors Workshop (Faculty member: Noelle McAfee), February 2005.
- 2004 "Botball and Botfest: Engaging Students Using Robotics," presented with Karl Wurst (Worcester State College), Massachusetts Association of Science Teachers Annual Conference, Worcester, MA, November 2004.
- 2004 "Botball and Botfest: Engaging Students Using Robotics," New England Association of Technology Teachers Annual Conference, Newport, RI, November 2004.
- 2004 "Robotics in the Classroom," Museum Institute for Teaching Science, Boott Mill, Lowell, MA, July 2004.
- 2004 "Three Years of Studying HRI at AAI and RoboCup," AAI 2004 Robot Competition and Exhibition Workshop, San Jose, CA, July 2004.
- 2004 "Supervisory Control of Assistive Technology," AAI 2004 Workshop on Supervisory Control of Learning and Adaptive Systems, San Jose, CA, July 2004.
- 2004 "Assistive Robotics," US First, Manchester, NH, July 2004.
- 2003 Panelist, "Human-Robot Interaction," IEEE Conference on Systems, Man, and Cybernetics, Washington, DC, October 2003.
- 2003 "Botball: Not Just Another Robot Competition," Robotics workshop for high-school teachers, Rhode Island College, September 2003.
- 2003 "Robots for Urban Search and Rescue," US First, Manchester, NH, July 2003.
- 2002 "Research in the Robotics Lab," Center for Advanced Computation and Telecommunications, Electrical and Computer Engineering Department, UMass Lowell, December 2002.
- 2002 "Botball: Not Just Another Robot Competition," Boston Chapter of the IEEE Robotics and Automation Society, Bedford, MA, October 2002.
- 2002 "Assistive Robotics," US First, Manchester, NH, August 2002.
- 2002 Panel Chair, AAI-2002 Workshop on Automation as Caregiver: The Role of Intelligent Technology in Elder Care, July 2002.

- 2002, 2001 “Shared User-Computer Control of a Robotic Wheelchair System”
- University of Massachusetts Amherst, July 2002.
  - University of Minnesota, June 2002.
  - Boston Chapter, IEEE Robotics and Automation Society, April 2002.
  - Navy Center for Applied Research in Artificial Intelligence Seminar Series, Naval Research Laboratory, Washington, DC, October 2001.
- 2002 Panel Chair, Workshop on Multi-Agent Robot Systems, Naval Research Laboratory, Washington, DC, March 2002.
- 2001 “Artificial Intelligence.” Computers and Society, Prof. Jonathan Liebowitz, UMass Lowell, December 2001.
- 2001 “A Wheelchair Prototype for Assisted Indoor and Outdoor Driving,” Assistive Technology Conference, TechACCESS of Rhode Island, Warwick, RI, November 2001.
- 2001 “Introduction to Robotics,” The Artemis Project, Computer Science Department, Brown University, Providence, RI, July 2001.
- 1997 “Environmental Effects on Minimal Behaviors in the Minimat World,” MIT/Harvard Artificial Life Group, Cambridge, MA, March 1997.
- 1993 “Robot Language Development,” VUB AI Laboratory, Brussels, Belgium, September 1993.
- 1993 Panelist, Communication in Multi-agent Robotic Systems, *IJCAI-93 Workshop on Dynamically Interacting Robots*, Chambéry, France, August 1993.
- 1993 “Language Development in Cooperative Mobile Robots,” SNAC Seminar Series, Rowland Institute for Science, Cambridge, MA, April 1993.
- 1992 “An Adaptive Communication Protocol for Cooperating Mobile Robots,” *SPIE Mobile Robots VII*, Boston, MA, November 1992.
- 1992 Panelist, Multiple Agents, *AAAI Fall Symposium on Applications of AI to Real World Robotics*, Cambridge, MA, October 1992.

### ***Invited Participation in Workshops***

- 2016 NSF/DHS Policy for Autonomy Workshop, National Academy of Sciences, Washington DC, January 2016.
- 2015 DOE Workshop on Robotic Handling of High Consequence Materials, Savannah River Site, South Carolina, December 2015.
- 2012 National Academy of Sciences Workshop on Intelligent Human-Machine Collaboration, Washington DC, June 2012.

- 2008 NSF/CRA/CCC Roadmapping for Robotics Workshop: A Research Roadmap for Medical and Healthcare Robotics, Arlington, VA, June 2008.
- 2006 NSF Human-Robot Interaction (HRI) Workshop, University of Southern California, Los Angeles, September 2006.
- 2006 Army Research Laboratories Workshop on Robot Languages, West Point, NY, July 2006. Member of meeting's advisory board.
- 2005 NIST Forum on Urban Search and Rescue Robot Performance Standards, Gaithersburg, MD, May 2005.
- 2002 Scientists Helping America Conference, Washington DC, March 2002. 100 scientists selected from the United States to participate.
- 2001 DARPA/NSF Study on Human-Robot Interaction, San Luis Obispo, CA, September 2001.

## **SUPERVISION OF STUDENT RESEARCH**

### ***Graduated Students, Doctor of Philosophy, Advisor***

- 2014 Katherine Tsui, "The Development of Telepresence Robots for People with Disabilities," May 2014 (defended March 2014). Now at Yale University, New Haven, CT.
- 2012 Munjal Desai, "Modeling Trust to Improve Human-Robot Interaction," December 2012. Now at Google, Mountain View, CA.
- 2011 Dan Hestand, "A Service Oriented Architecture for Robotic Platforms," May 2011. Now at United Technologies Research Center, East Hartford, CT.
- 2010 Mark Micire. "Multi-Touch Interaction for Robot Command and Control," September 2010. Now at DARPA, Arlington, VA.

### ***Current Students, Doctor of Philosophy, Advisor***

- 2013 – present Daniel Brooks. Development of haptic control to improve human-robot interaction.
- 2013 – present Eric McCann. Development of a toolkit for human-robot interaction design.
- 2013 – present Abraham Shultz. Development of neuronal control for robot arms.

### ***Graduated Students, Doctor of Philosophy, Thesis Committee***

- 2013 Paul Joseph. "Computing Affect in Autonomous Software Agents."
- 2006 Martin Schedlbauer. "An Empirically Derived Model for Predicting Completion Time of Cursor Positioning Tasks in Dual-Task Environments."

### ***Current Students, Master of Science, Advisor***

- 2015 – present Bryan Carlson. Automated methods for evaluating the performance of robot exoskeletons.
- 2015 – present Carlos Ibarra-Lopez. Improved human-robot interaction for disaster response.

### ***Graduated Students, Master of Science, Advisor***

- 2013 Daniel Brooks. “Haptic Behavior Evaluation Toolkit for Autonomous Ground Robot Navigation.” Continuing for PhD.
- 2013 Abraham Shultz. “Modeling of the Networking and activity of Cultured Mouse Neurons for Simulated Experiments.” Continuing for PhD.
- 2009 Erin Rapacki. “The Design of an Underactuated Wheelchair-Mounted Robotic Arm to Unlatch Door Knobs and Handles.” Currently at Suitable Technologies.
- 2008 Katherine Tsui. “Design and Evaluation of a Visual Control Interface of a Wheelchair Robotic Arm for Users with Cognitive Impairments.” Completed PhD in 2014; now a postdoctoral associate at Yale University.
- 2007 Munjal Desai. “Sliding Scale Autonomy and Trust in Human-Robot Interaction.” Completed PhD in 2012; now at Google.
- 2007 Philip Thoren. “Phission: A Concurrent Vision Processing System Software Development Kit for Mobile Robots.” Currently at BAE Systems.
- 2007 Brenden Keyes. “Evolution of a Telepresence Robot Interface.” Currently at Levant Power.
- 2006 Michael Baker. “An Intelligent Suggestion System for Improved Human-Robot Interaction.” Currently at BAE Systems.

### ***Graduated Students, Master of Science, Thesis Committee***

- 2014 Philip Colangelo. “Design and Implementation of an Automated Medication Organization and Dispensing System.”

### ***Advisor, Undergraduate Research***

- 2016 Jennifer Green. Development of a multi-touch interface for multiple robot systems.
- 2016 Katherine Lucas. Development of software for Pioneer robots.
- 2016 Eddie Novinyo. Development of software for Pioneer robots.
- 2016 Jonathan Roche. Development of system to allow Valkyrie robot to mimic human actions.

2016 Joshua Rodriguez. Development of Bluetooth software for robots and smartphones to allow for robots to request assistance.

2015 Victoria Albanese. Development of software for NAO robot.

2015 - present Dalton Curtin. Arduino adaptation of Artbotics. Development of multi-touch interface for multi-robot human-robot interaction.

2015 Christopher Gibbs. Development of software for the Baxter robot.

2015 Alexander Infantino. Development of software for NAO robot.

2015 – present Christopher Munroe. Development of software for the Baxter robot and Myo arm band.

2014 – present James Kuczynski. Object recognition system using computer vision and Microsoft Kinect.

2014 Jonathan Knittel. Development of robot software.

2014 Cory Reyes. LEGO Mindstorms adaptation of Artbotics.

2014 Brandon Route. Development of robot software.

2014 Aakriti Sharan. LEGO Mindstorms adaptation of Artbotics.

2014 Jacob Suarez. Development of robot software.

2014 Tamara Zbitnaja. Development of vision software.

2013 – 2016 Eric Marcoux. Google Glass for human-robot interaction.

2013 Adam DeFelice. RoverHawk software development.

2013 Carlos Ibarra-Lopez. RoverHawk interface development.

2013 Alejandro Salido. RoverHawk interface development.

2013 Josue Trinidad. Development of robot software.

2012 – 2013 Jonathan Hasenzahl. Neuronal control of a robot arm.

2012 Jamal Grant. Development of a telepresence robot system.

2012 Michael Lunderville. Software development for haptic robot control.

2012 Kelsey Flynn. Design and testing of a telepresence robot system.

2012 Amelia McHugh. Wizard of Oz testing of a telepresence robot system.

- 2012 Sompop Suskawat. Development of a telepresence robot system.
- 2012 John Ouellette. Multi-touch control of multiple robots.
- 2012 Michael Coates. Development of autonomous telepresence robots.
- 2011 – present Jordan Allspaw. Control of multiple robots with novel human-robot interaction techniques.
- 2010 – 2012 Mikhail Medvedev. State summarization for mobile robots.
- 2010 – 2012 Sean McSheehy. Development of robot control using the iPad.
- 2009 – 2011 Eric McCann. Development of multi-touch robot control.
- 2009 Dan Shedd. Development of multi-robot simulation system.
- 2006 – 2010 Philip Kovac. Robot software development.
- 2006 – 2010 Adam Norton. Artbotics program.
- 2006 – 2010 Amanda Courtemanche. Software development for multi-touch display and summer pilot of Artbotics project in 2006.
- 2006 – 2007 Matt Bailey. Development of a robotic wheelchair system, including its vision system.
- 2006 Mark Sherman. Robot wheelchair development.
- 2005 – 2006 Mia Parviainen. Committee member for honors thesis in English on women in Computer Science.
- 2006 Jeremy Badessa. Summer pilot of Artbotics project.
- 2006 Tom Murphy. Hardware development for robot wheelchair system.
- 2005 Phil Katz, Swarthmore College. Development and testing of Pyro, a programming environment for robots.
- 2004 – 2005 Andrew Chanler. Robotics research, including development of robotics hardware and audio processing.
- 2004 Aron Barabas. Redesign of robot wheelchair system.
- 2004 Rachel Mulcrone, Mills College, through the CRA-W Research Mentoring Program. Design of an interface for an urban search and rescue robot.
- 2004 Marbella Duran, Universidad Metropolitana Cupey – Puerto Rico, through the CRA-W Research Mentoring Program. Computer vision for detecting crosswalks for a street-crossing robot.

2003 – 2004	Robert Casey. Human-robot interaction research and development of Pyro, a programming environment for robots.
2003 – 2004	Brenden Keyes. Development of Pyro, a programming environment for robots, and research in human-robot interaction.
2002	Duane Younkin. Computer vision research.
2002	Tomoko Koyama. Creation of a robotic toy for a child with disabilities.
1995	Anna Hazel, Wellesley College. Development of a robotic wheelchair.
1995	Alison Peacock, Wellesley College. Development of a robotic wheelchair.
1995	Suzanna Smith, Wellesley College. Development of a robotic wheelchair.
1995	Harriet Wintermute, Wellesley College. Development of a robotic wheelchair.

## COURSES

91.117: Artbotics	Undergraduate	Fall 2014	23
		Fall 2012	24
		Spring 2011	22
		Spring 2008	28
		Spring 2007	22
91.301: Organization of Programming Languages	Undergraduate	Fall 2015	49
		Fall 2013	43
		Fall 2011	35
		Fall 2010	34
		Spring 2010	21
		Spring 2008	14
		Fall 2007	22
		Spring 2007	18
		Fall 2006	20
		Spring 2006	20
		Fall 2005	22
		Fall 2004	20
		Spring 2004	36
Fall 2003	22		
Fall 2002	18		
91.420: Artificial Intelligence	Undergraduate	Spring 2002	22



91.450: Robotics I	Undergraduate	Spring 2015	19
		Spring 2014	19
		Spring 2013	20
		Fall 2011	19
		Fall 2009	15
		Fall 2002	20
		Fall 2001	18
91.451: Robotics II	Undergraduate	Spring 2010	9
		Spring 2007	6
		Spring 2006	1
		Spring 2005	7
		Spring 2004	14
		Spring 2003	8
91.543: Artificial Intelligence	Graduate	Spring 2002	5
91.548: Robot Design	Graduate	Spring 2015	15
		Spring 2010	19
91.549: Mobile Robotics	Graduate	Fall 2006	7
		Fall 2005	7
		Fall 2004	7
		Fall 2003	8
91.550: Human-Robot Interaction	Graduate	Fall 2013	11
		Fall 2007	14
91.550: Multi-Touch Computing	Graduate	Spring 2012	9
		Spring 2011	20
		Fall 2009	12

## SERVICE TO THE COMMUNITY

2001 – present	Chair, New England Botball Regional ( <a href="http://botball.org">botball.org</a> )
2002 – present	Chair, Botfest ( <a href="http://botfest.org">botfest.org</a> )
2002 – present	Co-organize and teach at one-day November Robotics Workshop at UMass Lowell for K-12 teachers.
2009 – 2012	Co-organizer, STREAM K-12 Teacher workshop ( <a href="http://stream.cs.uml.edu">stream.cs.uml.edu</a> )
2006, 2005	Special Awards Judge for AAAI, Intel Science Fair.
2004, 2003	Judge, FIRST Robotics Competition, Manchester, NH.
2002	Taught robotics workshop at Wright Center at Tufts University for middle and high school teachers, August.

## **SERVICE TO THE UNIVERSITY**

### **University Level**

2014 – 2015	College of Sciences Personnel Committee
2013 – present	UMass Lowell Strategic 2020 Innovation Research Committee
2011 – 2012	Research and Commercialization Committee, UMass Lowell 2020 Strategic Planning. Chair of the Industry Interaction and Commercialization Subcommittee.
2009 – 2010	Co-chair, Information Technology Committee, UMass Lowell 2020 Strategic Planning
2009 – 2012 2005 – 2008	Faculty Senate
2006 – 2009	Advisor to TEAMS Academy, Graduate School of Education.
2006	Advisory Board Member, Project Working WISE
2004	Member, Chancellor's Research Task Force
2001 - 2002	Member, Chancellor's Committee to Examine the Relationship Between Electrical and Computer Engineering and Computer Science

### **Department Level**

2014 – present	Faculty Advisor, Robotics Club
2014 – 2015, 2009 – 2013	Faculty Search Committee
2012 – present, 2002 – 2004	Graduate Committee
2011 – 2012	Associate Chair
2009 – 2014 2004 – 2008	Operations Committee
2004 – 2006	Colloquium Coordinator
2002 – 2003	Faculty Advisor, Student Chapter of the Association for Computing Machinery
2001 – 2002	Undergraduate Committee