

Curriculum Vitae

CHARLES MICHAEL LEWIS

Address:

School of Information Sciences
University of Pittsburgh, Pittsburgh, PA 15260
Phone: 412 624-9426, FAX: 412 624-2788
E-mail: ml@sis.pitt.edu

RESEARCH INTERESTS

Human-Robot Interaction, Human Factors, Human Computer Interaction, Visualization, CSCW, Virtual Environments, Software Agents, Human Error

TEACHING INTERESTS

Human Factors, Human Computer Interface, Human Computer Interaction, Decision Making/Decision Support, Interactive Systems

EDUCATION

Ph.D. in Psychology (engineering psychology), Georgia Institute of Technology, 1986,
Thesis: Identification of Rule-Based Models. Advisor: W.B. Rouse

M.S. in Psychology (engineering psychology), Georgia Institute of Technology, 1982,
Thesis: Modeling from Video Display in Repair Performance. Advisor: E.J. Rinalducci

B.A. in Experimental Psychology, University of California, Santa Barbara, 1973

PROFESSIONAL EMPLOYMENT and EXPERIENCE

Professor 2006-present School of Information Sciences with joint appointment in Intelligent Systems Program, University of Pittsburgh

Associate Professor 1993-2006 Department of Information Science and Telecommunications, School of Information Sciences with joint appointment in Intelligent Systems Program, University of Pittsburgh

Assistant Professor 1987-1993 Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh

Senior Human Factors Engineer 1986 Iowa Electric Light & Power Co., Cedar Rapids, IA, Lead HFE on Control Room Design Review of Duane Arnold nuclear power plant

Graduate Research Assistant and Instructor 1984-1986, Center for Human-Machine Systems Research, School of Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA 30332

Associate Scientist 1984-1986, General Physics Corp., 1770 The Exchange NW, Atlanta, GA

Human Factors Specialist 1980-1984, Human Performance Group, Institute of Nuclear Power Operations, 1100 Circle 75 Parkway, Atlanta, GA

Contract and Grant Support to Michael Lewis

- Katia Sycara, Nilanjan Chakraborty, and **Michael Lewis**, Trustworthy Human Interaction with Robotic Swarms, (June 2015-June 2018)
- Katia Sycara, Christian Lebiere, Meeko Oishi, and **Michael Lewis**, *Formal Models of Human Control and Interaction with CPS*, National Science Foundation, (September 2013-September 2016), Air Force Office of Scientific Research.
- Katia Sycara and Michael Lewis, The influence of Cultural Factors on Trust in *Automation*, (June 2013-May 2016), Air Force Office of Scientific Research.
- Katia Sycara, Paul Scerri, **Michael Lewis**, Michael Goodrich (May 2009-May 2014), *Cognitively Compliant Command for Multirobot Teams*, Science of Autonomy, Office of Naval Research
- Katia Sycara, Baruch Fischhoff, Geoffrey Gordon, **Michael Lewis**, Katherine Tinsley, Robin Dillon, Scott Atran, Robert Axelrod, Charles Grindle, David Traum (May 2008-April 2013), *Cultural Models of Collaboration and Negotiation*, Multidisciplinary University Research Initiative, Army Research Organization.
- Katia Sycara, Paul Scerri, Christian Lebiere, **Michael Lewis**, Jonathon How, Mary Cummings, Mark Campbell, and Raja Parasuraman (May 2008-April 2013), *Modeling Synergies in Large Human-Machine Networked Systems*, Multidisciplinary University Research Initiative, Air Force Office of Scientific Research.
- Katia Sycara and **Michael Lewis** (December 2006-November 2009) *Large Scale Computation for Human Agent Team Coordination in Dynamic Environments*, Air Force Office of Scientific Research.
- Eduardo Salas, Nancy Cooke, **Michael Lewis** and Alex Kirlik (May 2006-April 2011) *Reconfigurable Human-Agent Collaboration: Human Performance in Network-Centric Operations*, Multidisciplinary University Research Initiative, Office of Naval Research.

- **Michael Lewis** (April 2005-April 2006) *Extending USARsim to Support MOAST Framework, National Institute of Standards and Testing.*
- Katia Sycara, Illah Nourbakhsh and **Michael Lewis** (July 2002-July 2006) *Coordination of Heterogeneous Teams (Humans, Agents, Robots) for Emergency Response, Information Technology Research Initiative, National Science Foundation.*
- Katia Sycara and **Michael Lewis** (May 2003-November 2005) *Cooperative Attack Testbed for Aircraft, Munitions, and Ground Vehicles, Air Force Research Laboratories AFRL/MN.*
- Katia Sycara and **Michael Lewis** (September 2001-August 2006) *Information Fusion for Command and Control: from Data to Actionable Knowledge and Decision, Air Force Office of Scientific Research.*
- Katia Sycara and **Michael Lewis** (September 1997-February 2002) *Integrating Intelligent Assistants into Human Teams, Multidisciplinary University Research Initiative, Office of Naval Research.*
- Robert Korfhage and **Michael Lewis** (March 1996-February 1999) *Visual Information Retrieval Interfaces, Interactive Systems Program, National Science Foundation.*
- **Michael Lewis** (January 1999-December 1999) *Smooth Navigation through a Cluttered Virtual Environment, Fellowship in Advanced Simulation and Training, Supervision for Jeffrey Jacobson, Link Foundation.*
- **Michael Lewis** (January 1991-December 1993) *Ecological Cognition in Visualization, Interactive Systems Program, National Science Foundation.*

Editorial Boards

IEEE Transactions on Systems, Man, and Cybernetics: Part A, now reorganized as *IEEE Transactions on Human Machine Systems* (past associate editor)

Human Factors (Journal of the Human Factors and Ergonomics Society) (past associate editor)

Group Decision and Negotiation: Kluwer Academic Publishers (affiliated with Institute for Operations Research and Management Sciences) (past associate editor)

IEEE International Conference on Robotics and Automation (ICRA)

Autonomous Agents and Multi-Agent Systems: Kluwer Academic Publishers (past associate editor)

Cognition, Technology, and Work: International Journal for the Analysis, Design, and Use of Joint Cognitive Systems: Springer-Verlag (past associate editor)

Reviewer

Grant proposals National Science Foundation, Interactive Systems Program, various programs (1991-present)

IEEE Transactions on Systems, Man, and Cybernetics

IEEE Transactions on Robotics

IEEE Transactions on Reliability

Journal of Visual Languages and Computing

International Journal of Human Computer Studies

IEEE International Conference on Systems, Man, and Cybernetics

International Joint Conference on Autonomous Agents and Multiagent Systems

Human Factors and Ergonomics Society Annual Meeting, Computer Systems Technical Group, Cognitive Engineering and Decision Making, and general sessions

ACM/IEEE Conference on Human-Robot Interaction

IEEE International Conference on Robotics and Automation

IEEE/RSJ International Conference on Intelligent Robots and Systems

RoboCup Rescue

RoboCup 2008 team placed 3rd in Virtual Robots Urban Search & Rescue Competition

RoboCup 2007 Winner Virtual Robots Urban Search & Rescue Competition

RoboCup 2006 User Interface Award, Virtual Robots Urban Search & Rescue Competition

American Open 2006 team placed 1st in autonomy

Member of RoboCup Organizing Committee 2004 & 2005

American Open 2005, team placed 1st in mobility, 1st in autonomy and 3rd in rescue competitions

American Open 2004, team placed 3rd in rescue competition

Member

Association for Computing Machinery
Special Interest Group on Computer Human Interaction

Institute of Electrical and Electronics Engineers
Computer Society
Systems, Man, and Cybernetics Society

Human Factors and Ergonomics Society
Computer Systems Technical Group
Cognitive Engineering and Decision Making Technical Group

Sigma Xi

Dissertation Chair

Shafiq Abedin April 2016, *3D Generalization of Brain Model to Visualize and Analyze Neuroanatomical Data*, School of Information Sciences, University of Pittsburgh, Research Scientist, IBM Research-Almaden

Huadong, Wang, August 2013, *Asynchronous Visualization of Spatiotemporal Information for Multiple Moving Targets*, School of Information Sciences, University of Pittsburgh, Senior User Experience Researcher, Uber, San Francisco, CA

Jijun Wang, April 2008, *Human Control of Cooperating Robots*, School of Information Sciences, University of Pittsburgh, Software Engineer, Intel Corp, Philadelphia, PA.

Jumpol Polvichai, April 2008, *Modeling Team Performance for Coordination Configurations of Large Multi-Agent Teams*, School of Information Sciences, University of Pittsburgh, Lecturer, King Mongkut's Institute of Technology (Thailand)

Yang Xu, April 2008, *Token-Based Approach for Scalable Team Coordination*, School of Information Sciences, University of Pittsburgh, Associate Professor and Chair, University of Electronic Science and Technology, Chengdu, China

Jeffrey Jacobson, April 2008, *Ancient Architecture in Virtual Reality; Does Immersion Really Aid Learning?* School of Information Sciences, University of Pittsburgh, Director PublicVR, Boston, MA

Stephen Hughes August 2005. *Assisted Viewpoint Interactions for 3D Visualizations*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, previously Assistant Professor, Coe College, Cedar Rapids, IA

Cholyeun Hongpaisanwiwat December 2002. *The Influence of Animated Characters on Comprehension and Attention Performance in a Multimedia Presentation*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, Assistant Professor Thammasat University (Thailand)

Terri Lenox May 2000. *Supporting Teamwork Using Software Agents in Human-Agent Teams*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, Professor and Chair of Mathematics and Computer Science and Chair of the faculty, Westminster College

Jeffrey Campbell May 2000. *Concurrency Control for Collaborative Diagramming*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, Research Professor, University of Maryland, Baltimore County

Emile Morse June 1999. *Evaluating Visual Information Browsing Displays*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, Research Scientist, Information Technology Laboratory, National Institute of Standards and Technology

Jozsef Toth 1997. *The Effect of Representation in Computer-Mediated Small Group Decision Making*, Department of Information Science and Telecommunications, School of Information Sciences, University of Pittsburgh, previously Research Staff, Institute for Defense Analysis, now deceased

Postdoctoral Researchers

Alin Coman (2010-2012) Assistant Professor of Psychology, Princeton University

Andreas Kolling (2009-2012) Research Scientist, iRobot Corp., Pasadena, CA

Publications

Refereed Journals & Magazines

1. Kolling, A., Walker, P., Chakraborty, N., Sycara, K., **Lewis, M.** (2015, October). Human Interaction with Robot Swarms: A Survey. In *Human-Machine Systems (HMS), 2015 IEEE Transactions on.* (pp. 9-26). IEEE.
2. Kolling, A., Sycara, K., Nunnally, S., & **Lewis, M.** (2013). Human swarm interaction: An experimental study of two types of interaction with foraging swarms, *Journal of Human-Robot Interaction*, 2(2), 103-128.
3. Kleiner, A., Kolling, A., **Lewis, M.**, & Sycara, K. (2013) Hierarchical Visibility for Guaranteed Search in Large-Scale Outdoor Terrain, *Journal of Autonomous Agents and Multi-Agent Systems*, 26(1), 1-36.
4. **Lewis, M.**, Wang, H., Chien, S., Ma, Z., Velagapudi, P., Scerri, P., & Sycara, K. (2011) Process and performance in human-robot teams, *Journal of Cognitive Engineering and Decision Making*, 5(2), 186-208.
5. Scerri, P., Ma, Z., Chien, S., Wang, H., Lee, P., **Lewis, M.** & Sycara, K. (2011) An initial evaluation of approaches to building entry for large robot teams, *Journal of Intelligent and Robotic Systems* ,64, 145-159.
6. **Lewis, M.**, Wang, H., Chien, S., Velagapudi, P., Scerri, P. & Sycara, K. (2010). Choosing autonomy modes for multirobot search, *Human Factors*, 52(2), 225-233.
7. **Lewis, M.**, Sycara, K., & Scerri, P. (2009). Scaling up wide-area-search-munition teams, *IEEE Intelligent Systems*, 24(3), 10-13.
8. Sycara, K., Grinton, R., Yu, B., Giampapa, J., Owens, S., **Lewis, M.**, & Grindle, C. (2009). An integrated approach to high-level information fusion, *Information Fusion*, 10(1), 25-50.
9. Balakirsky, S., Carpin, S., Kleiner, A., **Lewis, M.**, Visser, A., Wang, J., and Zipara, V. (2007). Toward heterogeneous robot teams for disaster mitigation: Results and performance metrics from RoboCup Rescue, *Journal of Field Robotics*, 24(11-12), 943-967.
10. **Lewis, M.**, Wang, J., and Hughes, S. (2007). USARsim : Simulation for the Study of Human-Robot Interaction, *Journal of Cognitive Engineering and Decision Making*, 1(1), 98-120.

11. **Lewis, M.** and Wang, J. (2007). Gravity referenced attitude display for mobile robots: Making sense of what we see, *Transactions on Systems, Man and Cybernetics Part A*, 37(1), 94-105.
12. Hughes, S. and **Lewis, M.** (2005). Partially guided viewpoint control in virtual environments, *Human Factors*, 47(3), 630-643.
13. Hughes, S. and **M. Lewis.** (2005). Task-Driven Camera Operations for Robotic Exploration. *Transactions on Systems, Man and Cybernetics Part A*, IEEE, 35(4), 513-522.
14. Jacobson, J. and **Lewis, M.** (2005). Game engine virtual reality with CaveUT. *IEEE Computer*, 38(4), 79-82.
15. Nourbakhsh, I., Sycara, K., Koes, M., Young, M., **Lewis, M.**, and Burion, S. (2005). Human-Robot Teaming for Search and Rescue, *Pervasive Computing*, IEEE, 72-78.
16. Prasithsangaree, P., Manojlovich, J., Hughes, S., and **Lewis, M.** (2004). UTSAF: A Multi-Agent-Based Software Bridge for Interoperability between Distributed Military and Commercial Gaming Simulation, *Simulation*, 80(12), 647-657.
17. Giampapa, J., Sycara, K., Owens, S., Grinton, R., Seo, Y., Yu, B., Grindle, C., and **Lewis, M.** (2004). Extending the ONESAF Testbed into a C4ISR Testbed, *Simulation*, 80(12), 681-691.
18. **Lewis, M.** & Jacobson, J. (2002) Game Engines in Research. *Communications of the Association for Computing Machinery (CACM)*, NY: ACM 45(1), 27-48.
19. Morse, E., **Lewis, M.**, and Olsen, K. (2002) Testing visual information retrieval methodologies case study: comparative analysis of textual, icon graphical and 'spring' displays. *Journal of the American Society for Information Science and Technology (JASIST)*, Silver Spring, MD: ASIST 53(1) 28-40
20. Morse, E., **Lewis, M.** and Olsen, K. (2000) Evaluating visualizations: Using a taxonomic guide. *International Journal of Human Computer Studies*, 53(5), 637-662.
21. **Lewis, M.** (1998). Designing for human-agent interaction. *AI Magazine*.67-78.
22. **Lewis, M.** (1993). Assessing decision heuristics using machine learning. *Decision Support Systems*, 10, 199-212.
23. **Lewis, M.** & Sycara, K. (1993). Reaching informed agreement in multi-specialist cooperation, *Group Decision and Negotiation*, vol 2, 3, 279-300.
24. **Lewis, Michael** (1992). Situated visualization: Building interfaces from the mind up. *Multimedia Review*, 4(1), Spring, 23-40.

25. **Lewis, M.** & Heidorn, B. (1991). Identifying tacit strategies in aircraft maneuvers. *IEEE Transactions on Systems, Man, and Cybernetics*, 21(6), 1560-1571.
26. Sycara, K. & **Lewis M.** (1991). Modeling Group Decision making and negotiation in concurrent product design. *Systems Automation: Research and Applications*, 1(3), 217-238
27. Weiss, M. & **Lewis, M.** (1991). Telecommunications pricing and consumer expectation: The case of alternate operator services. *Telecommunications Policy*, Dec 91, 497-508.
28. **Lewis, C. Michael** and Stine, Wm Wren (1989) Hidden dependence in human errors, *IEEE Transactions on Reliability*, 38:3, NY: IEEE, 296-300.
29. Rouse, William B., Hammer, John M., and **Lewis, C. Michael** (1989) Algorithmic approaches to knowledge engineering, *IEEE Transactions on Systems, Man, and Cybernetics*, 19, 558-573.
30. Jamison, Wesley and **Lewis, C. Michael** (1990) UnixTutor: A Menu-Based Transitional Interface, *SIGCHI Bulletin*, NY: ACM.
31. **Lewis, C. Michael** and Hammer, John M. (1986) Significance testing of rules in rule-based models of human problem solving. *IEEE Transactions on Systems, Man, and Cybernetics*, vol SMC-16, no. 1, 154-157
32. Gerth, J.M., **Lewis, C.M.**, Stine, Wm, Maple, T.I. (1982) Evaluation of two computerized data collection devices for research in zoos. *Zoo Biology*, New York: Alan R. Liss, Inc.

Book Chapters

1. **Lewis, M.**, Sycara, K. and Walker, P. (2016). The role of trust in human-robot interaction, In Abbass, H., Scholz, J., & Reid, D. (Eds.), *Foundations of Trusted Autonomy*, Springer-Verlag, Berlin-Heidelberg.
2. Nunnally, S., Walker, P., **Lewis, M.**, Chakraborty, N. and Sycara, K. (2015). Using haptic feedback in human swarm interaction, In Ying Tan (Ed.), *Handbook of Research on Design, Control, and Modeling of Swarm Robotics*, Hershey, PA: IGI Global.
3. **Lewis, M.** (2013). Human Interaction with Multiple Remote Robots, In D. Kaber (Ed), *Human Factors Reviews Volume 9*, on *Human Performance in Teleoperation and Beyond*, HFES, 131-174.
4. Sukthankar, Gita and Shumaker, Randall and **Lewis, Michael** (2011) Intelligent Agents as Teammates. In: *Theories of Team Cognition: Cross-Disciplinary Perspectives*. Routledge Academic, pp. 313-343.

5. **Lewis, M.** & Wang, J. (2010). Coordination and automation for controlling robot teams, in M. Barnes & F. Jentsch (Eds), *Human-Robot Interactions in Future Military Operations*, Burlington, VT: Ashgate, 397-418.
6. **Lewis, M.** and Wang, J. (2009). Assessing coordination demand in cooperating robots, In Madhavan, Tunstel and Messina (Ed.) *Performance Evaluation and Benchmarking of Intelligent Systems*, Springer, New York, 169-186.
7. Y. Xu, P. Scerri, **M. Lewis**, and K. Sycara (2008). Token-based approach for scalable team coordination," in *Cooperative Networks: Control and Optimization*, Edward Elgar Publishing.
8. Wang, J. and **Lewis, M.** (2007). Mixed-initiative multirobot control in USAR, In N. Sarkar Ed., *Human-Robot Interaction*, Itech Education and Publishing: Vienna, Austria, 405-422.
9. **Lewis, M.**, Polvichai, J., Sycara, K., and Scerri, P. (2006) Scaling-up Human Control for Large UAV Teams, In N. Cooke (Ed.), *The Human Factors of Remotely Piloted Vehicles*, New York: Elsevier, pp. 237-250.
10. Wang, J. **Lewis, M.**, and Hughes, S. (2006) USARsim: Simulation for the Study of Urban Search and Rescue Robotics, In S. Carpin, A. Birk, A. Jacoff, A. Nardi, and S. Tadokoro (Eds), *Rescue Robotics, Lecture Notes in Computer Science*, Springer-Verlag, Berlin Heidelberg, 98-120.
11. Xu, Y., Liao, E., Scerri, P., Yu, B., K. Sycara, and **Lewis, M.** (2006) Towards Flexible Coordination of Large Scale Multi-Agent Teams, in *Coordination of Large Scale Multiagent systems*, Springer, 287-209.
12. Scerri, P., Xu, Y., Polvichai, J., Yu, B., Okamoto, S., **Lewis, M.** and Sycara, K. (2005). Challenges in Building Very Large Teams, in *Massively Multiagent Systems I*, 86-103.
13. Scerri, P., Xu, Y., Liao, E., Lai, G., **Lewis, M.** and Sycara, K. (2004) Coordinating large groups of wide area search munitions. In D. Grundel, R. Murphey, and P. Pandalos (Ed.), *Recent Developments in Cooperative Control and Optimization*, Singapore: World Scientific, 451-480.
14. Sycara, K. and **Lewis, M.** (2004). Integrating intelligent agents into human teams. In E. Salas and S. Fiore (Eds.) *Team Cognition: Understanding the Factors that Drive Process and Performance*, Washington, DC: American Psychological Association, 203-232.
15. Toth, J. & **Lewis, M.** (2002) The Role of working memory and external representation in individual decision making In M. Anderson, B. Meyer, and P. Olivier (Eds.) *Diagrammatic Representation and Reasoning*, Springer- Verlag, Berlin-Heidelberg, 207-221.

16. **Lewis, M.** (1999). Anticipation, delegation, and demonstration: Why talking to agents is hard. In Klusch, Shehory, & Weiss (Eds): *Cooperative Information Agents III, Lecture Notes in Artificial Intelligence* vol. 1652, Springer-Verlag, Berlin Heidelberg, 365-389.
17. **Lewis, M.** and J. Toth (1994). Situated cognition in diagrammatic reasoning, AAAI Technical Report on Reasoning with Diagrammatic Representations, SS-92-02 Menlo Park, CA: AAAI. 47-52.
18. **Lewis, M.** & Sycara, K. (1993). Modeling multispecialist decision making, In M. Smith & G. Salvendy (Eds.) *Human-Computer Interaction: Applications and Case Studies.*, New York: Elsevier, 481-486.
19. **Lewis, M.** (1991). Visualization and situations. In J. Barwise, M. Gawron, G. Plotkin, & S. Tutiya (Eds.), *Situation Theory and Its Applications, II*, Stanford, CA: CSLI Publications, 553-580.

Refereed Conferences and Workshops

1. Yuqing Tang, Christian Lebiere, Katia Sycara, Don Morrison, **Michael Lewis**, Paul Smart, "Information Sharing for Collective Sensemaking", HICSS, 2016, *2016 49th Hawaii International Conference on System Sciences (HICSS)* pp. 377-385, doi:10.1109/HICSS.2016.53
2. Lewis, M., Sycara, K. and Walker, P. (2016). The role of trust in human-robot interaction, In Abbass, H., Scholz, J., & Reid, D. (Eds.), *Foundations of Trusted Autonomy*, Springer-Verlag, Berlin-Heidelberg.
3. Chien, S., Lewis, M., Sycara, K., Liu, J. S., & Kumru, A. (2016). Influence of Cultural Factors in Dynamic Trust in Automation. *Proceedings of the 2016 IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 16)*.
4. Chien, S., Lewis, M., Sycara, K., Liu, J. S., & Kumru, A. (2016). Relation between Trust Attitudes Toward Automation, Hofstede's Cultural Dimensions, and Big Five Personality Traits. *Proceedings of the 60th Annual Meeting of the Human Factors and Ergonomics Society (HFES 16)*.
5. Walker, P., Lewis, M., Sycara, K. (2016). The effect of display type on operator prediction of future swarm states. In *Systems, Man, and Cybernetics (SMC), 2016 IEEE International Conference on*. IEEE.
6. Walker, P., Lewis, M., Sycara, K. (2016). Characterizing human perception of emergent swarm behaviors. In *Systems, Man, and Cybernetics (SMC), 2016 IEEE International Conference on*. IEEE.
7. Anqi Li, **Michael Lewis**, Christian Lebiere, Katia Sycara, Shehzaman khatib, Yuqing Tang, Matthew Siedsma, Don Morrison (2016). "A computational model based on human performance for fluid management in critical care", *2016 IEEE Symposium on Computational Intelligence in Healthcare and e-health (CICARE)*, December 2016.
8. Abraham P. Vinod, Yuqing Tang, Meeko M. K. Oishi, Katia Sycara, Christian Lebiere and **Michael Lewis** (2016). "Validation of Cognitive Models for Collaborative Hybrid Systems with Discrete Human Input," *IROS 2016*, to appear October 2016.
9. Chien, S., **Lewis, M.**, Hergeth, S., Semnani-Azad, Z., & Sycara, K. (2015). Cross-Country Validation of a Cultural Scale in Measuring Trust in Automation. *Proceedings of the 59th Annual Meeting of the Human Factors and Ergonomics Society (HFES 15)*.
10. Nagavalli, S., Chien, S., **Lewis, M.**, Chakraborty, N., & Sycara, K. (2015). Bounds of Neglect Benevolence in Input Timing for Human Interaction with Robotic Swarms. *Proceedings of the 10th ACM/IEEE International Conference on Human-Robot Interaction (HRI 15)*.
11. Zhaleh Semnani-Azad, Katia P. Sycara, **Michael Lewis** (2015). Cooperation in Face and Dignity Cultures: Role of Moral Identity and Gender. *HICSS 2015: 275-283*

12. Ronghuo Zheng, Ying Xu, Nilanjan Chakraborty, **Michael Lewis**, & Katia Sycara (2015). Multi agent coordination for demand management with energy generation and storage, *International Conference on Group Decision and Negotiation (GDN'15)*.
13. Katia Sycara, Christian Lebiere, Yulong Pei, Don Morrison, Yuqing Tang, and **Michael Lewis** (2015). Abstraction of analytical models from cognitive models of human control of robotic swarms, *International Conference on Cognitive Modeling*, (ICCM'15), 13-18.
14. Zadorozhny, V., **Lewis, M.** Fusing Information, Crowdsourcing and Mobility (tutorial). Proceedings of the 15th International Conference on Mobile Data Management (MDM'14), 2014.
15. Phillip M. Walker, Saman Amirpour Amraii, Nilanjan Chakraborty, **Michael Lewis**, Katia P. Sycara (2014). Human control of robot swarms with dynamic leaders. IROS 2014: 1108-1113
16. Phillip M. Walker, Saman Amirpour Amraii, **Michael Lewis**, Nilanjan Chakraborty, Katia P. Sycara (2014). Control of swarms with multiple leader agents. SMC 2014: 3567-3572
17. Chien, S., Semnani-Azad, Z., **Lewis, M.**, & Sycara, K. (2014). An Empirical Model of Cultural Factors on Trust in Automation. Proceedings of the 58th Annual Meeting of the Human Factors and Ergonomics Society (HFES 14).
18. **Lewis, M.**, Chien, S., Mehrotra, S., Chakraborty, N., & Sycara, K. (2014). Task Switching and Cognitively Compatible guidance for Control of Multiple Robots. Proceedings of the 2014 IEEE International Conference on Robotics and Biomimetics (IEEE ROBOT 14).
19. Amirpour Amraii, S., Walker, P., **Lewis, M.**, Chakraborty, N. & Sycara, K. (2014) Explicit vs. Tacit Leadership in Influencing the Behavior of Swarms, *IEEE International Conference on Robotics and Automation (ICRA 2014)*, 2209-2214.
20. Chien, S., Semnani-Azad, Z., **Lewis, M.**, & Sycara, K. (2014) Towards the development of an inter-cultural scale to measure trust in automation, International Conference on Human-Computer Interaction, (LNCS 8532), Springer International Publishing Switzerland [**Best Paper Award**], 35-46.
21. **Lewis, M.**, Chien, S., Mehrotra, S., Chakraborty, N. & Sycara, K. (2014) Task switching and single vs. multiple alarms for supervisory control of multiple robots, International Conference on Human-Computer Interaction, (LNCS 8532), Springer International Publishing Switzerland, 499-510.
22. Alizadeh, M., Coman, A., Lewis, M., Sycara, K. (preprint) Intergroup conflict escalation leads to more extremism, Journal of Artificial Societies and Social Simulation, <<http://jasss.soc.surrey.ac.uk>>.
23. Chien, S., Mehrotra, N., **Lewis, M.** & Sycara, K. (2013). Imperfect automation in scheduling operator attention on control of multi-robots,. *Proceedings of the 57th Annual Meeting of the Human Factors and Ergonomics Society (HFES'13)*, 1169-1173.

24. Nunnally, S., Walker, P., Chakraborty, N., **Lewis, M.**, Sycara, K (2013). Using Haptic feedback in human robotic swarm interaction, *Proceedings of the 57th Annual Meeting of the Human Factors and Ergonomics Society* (HFES'13), 1047-1051.
25. Walker, P, Nunnally, S., Chakraborty, N., **Lewis, M.**, Sycara, K. (2013). Levels of automation for human influence of robot swarms, *Proceedings of the 57th Annual Meeting of the Human Factors and Ergonomics Society* (HFES'13), [**Best Paper Award**], 429-433.
26. Nunnally, S., Walker, P., Chakraborty, N., **Lewis, M.** Sycara, K. (2013). Using coverage for measuring the effect of haptic feedback in human robot swarm interaction, In *Proceedings of the Conference on System Man and Cybernetics*, 516-521 .
27. Walker, P., Amnipur Amraii, S., **Lewis, M.**, Chakraborty, N., Sycara, K.(2013). Human control of leader-based swarms, *Proceedings of the Conference on System Man and Cybernetics*, 2712-2717.
28. Zadorozhny, V., **Lewis, M.** (2013). Information fusion for USAR operations based on crowdsourcing, *Proceedings of the 16th International Conference on information Fusion*, 1450-1457.
29. Zadorozhny, V., **Lewis, M.** (2013). Information fusion based on collective intelligence for multi-robot search and rescue missions, *Proceedings of the 14th International Conference on Mobile Data Management* (MDM'13)
30. **Lewis, M.** and Wang, H., Kolling, A., Sycara, K., Brooks, N. & Scerri, P. (2012). Asynchronous displays for multi-UV search tasks. In: *AAIA InfoTech*.
31. Kolling, A., Nunnally, S., & **Lewis, M.** (2012). Towards human control of robot swarms, *ACM/IEEE International Conference on Human-Robot Interaction* (HRI'12), 89-96.
32. Chien, S., Mehrotra, S., **Lewis, M.** & Sycara, K. (2012). Effects of unreliable automation in scheduling operator attention for multi-robot control, *2012 IEEE International Conference on Systems, Man, and Cybernetics* (SMC'12), [**best paper finalist**], 321-326.
33. Nunnally, S., Walker, P., **Lewis, M.**, Kolling, A., Chakraborty, N., Sycara, K. & Goodrich, M. (2012). Human influence of robotic swarms with bandwidth and localization issues, *2012 IEEE International Conference on Systems, Man, and Cybernetics* (SMC'12), 333-338.
34. Walker, P., Kolling, A., Chakraborty, N., Nunnally, S., Sycara, K. & **Lewis, M.** (2012). Neglect benevolence in human control of swarms in the presence of latency, *2012 IEEE International Conference on Systems, Man, and Cybernetics* (SMC'12), 3009-3014.
35. Chien, S., Mehrotra, S., Brooks, N., **Lewis, M.** & Sycara, K. (2012). Scheduling operator attention for multi-robot control, *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems* (IROS'12), 473-479.

36. Xu, Y., Dai, T., Sycara, K., **Lewis, M.** (2012). A Mechanism design model in multi-robot service queues with strategic operators and asymmetric information, *Proceedings of the 51st IEEE Conference on Decision and Control: CDC'12*, 6113-6119.
37. Amraii Amirpour, S., **Lewis, M.** & Chakraborty, N. (2012). Input efficiency for influencing swarm, *AAAI Fall Symposium on Human Control of Bio-Inspired Swarms*, Nov 2-4, Arlington VA.
38. Walker, P., Kolling, A., Nunnally, S., **Lewis, M.** & Sycara, K. (2012). Neglect benevolence in human swarm interaction with communication latency, *AAAI Fall Symposium on Human Control of Bio-Inspired Swarms*, Nov 2-4, Arlington VA.
39. Nunnally, S., Walker, P., Kolling, A., Sycara, K. & **Lewis, M.** (2012). **Human Influence of Robotic Swarms with Bandwidth and Localization Issues**, *AAAI Fall Symposium on Human Control of Bio-Inspired Swarms*, Nov 2-4, Arlington VA.
40. Semnani-Azad, Z., Sycara, K., **Lewis, M.** & Adair, W. (2012). Stereotype and perception change in intercultural negotiation, *Proceedings of the 45th Hawaii International International Conference on Systems Science (HICSS-45)*, 899-908.
41. Meneguzzi, F., Mehrotra, S., Tittle, J., Oh, J., Chakraborty, N., Sycara, K. & **Lewis, M.** (2012). A cognitive architecture for emergency response, *Eleventh International Conference on Autonomous Agents and Multiagent Systems (AAMAS'12)*, 1161-1162.
42. Semnani-Azad, Z., Adair, W., Sycara, K., **Lewis, M.** (2012) "Being tough doesn't always pay off: The culture of honor vs dignity in negotiation", *International Association of Conflict Management (IACM) Annual Conference*, Cape Town, 1-28.
43. Semnani-Azad, Z., Sycara, K., Lewis, M., (2012) "Dynamics of helping behavior and cooperation across culture", *International Conference on Collaboration Technologies and Systems*" (CTS2012), Denver, Colorado, 525-530.
44. Coman, A., Kolling, A., Lewis, M. & Hirst, W. (2012). Mnemonic convergence: from empirical data to large-scale dynamics, *5th International Conference on Social Computing, Behavioral - Cultural Modeling and Prediction (SBP'12)*, 256-265.
45. Walker, P. M., Kolling, A., Chakraborty, N., Nunnally, S., Sycara, K., Lewis, M. (2012). Neglect benevolence in human-swarm interaction with communication latency, in *Lecture Notes in Computer Science, vol 7677, Swarm, Evolutionary and Memetic Computing*, Springer-Link, 662-669.
46. Nunnally, S., Walker, P. M., **Lewis, M.** , Kolling, A., Chakraborty, N., Sycara, K. (2012). Connectivity differences between human operators of swarms and bandwidth limitations, in *Lecture Notes in Computer Science, vol 7677, Swarm, Evolutionary and Memetic Computing* , Springer-Link, 713-720.
47. Wang, H., Kolling, A., Abedin, S., Lee, P., Chien, S., **Lewis, M.**, Brooks, N., Owens, S., Scerri, P. & Sycara, K. (2011) Scalable target detection for large robot teams, *Proceedings of the 6th ACM/IEEE International Conference on Human-Robot Interaction*, (HRI'11), 363-370. **[best paper finalist]**

48. Lee, P., Kolling, A. and **Lewis, M.** (2011) Cumulative vs. local models of operator utilization describing an air traffic control task, *2011 IEEE International Conference on Systems, Man, and Cybernetics*, (SMC'11), 2836-2841.
49. Abedin, S., Wang, H., Lee, P., **Lewis, M.**, Brooks, N., Owens, S., Scerri, P. and Sycara, K. (2011) SUAVE: Integrating UAV video using a 3D model *2011 IEEE International Conference on Systems, Man, and Cybernetics*, (SMC'11), 91-94.
50. Walker, P., Kolling, A. and **Lewis, M.** (2011) Human exploration patterns in unknown, time-sensitive environments, *2011 IEEE International Conference on Systems, Man, and Cybernetics*, (SMC'11), 2870-2876.
51. Lee, P., Kolling, A., & **Lewis, M.** (2011) Workload modeling using time windows and utilization in an air traffic control task, *Proceedings of the 55th Annual Meeting Human Factors and Ergonomics Society* (HFES'11), 846-850.
52. Wang, H., Chien, S., & **Lewis, M.** (2011) Effects of spatial ability on multi-robot control tasks, *Proceedings of the 55th Annual Meeting Human Factors and Ergonomics Society* (HFES'11), 894-898.
53. Abedin, S., Brooks, N., Owens, S., Scerri, P., **Lewis, M.**, & Sycara, K. (2011) SUAVE: Integrating UAV video using a 3D model, *Proceedings of the 55th Annual Meeting Human Factors and Ergonomics Society* (HFES'11), 91-94.
54. Chien, S., Mehtra, S., Brooks, N., Sycara, K., & **Lewis, M.** (2011) Effects of alarms on control of robot teams, *Proceedings of the 55th Annual Meeting Human Factors and Ergonomics Society* (HFES'11), 434-438.
55. Brooks, N., Wang, H., Chien, S., **Lewis, M.**, Scerri, P., & Sycara, K. (2011) Asynchronous control with ATR for large robot teams, *Proceedings of the 55th Annual Meeting Human Factors and Ergonomics Society* (HFES'11), 444-448.
56. Kolling, A., Kleiner, A., **Lewis, M.** & Sycara, K. (2011) Computing and executing strategies for moving target search, *2011 IEEE International Conference on Robotics and Automation*, 4246-4253.
57. Tinglong Dai, T., Sycara, K. & **Lewis, M.** (2011) A game theoretic queueing approach to self-assessment in human-robot interaction systems, *2011 IEEE/RSJ International Conference on Robotics and Automation*, 58 – 63.
58. Wang, H., Kolling, A., Brooks, N., **Lewis, M.** & Sycara, K. (2011). Synchronous vs. Asynchronous Control for Large Robot Teams. *Proceedings of Human Computer International Part II* (14) (HCI'11), 415-424.

59. **Lewis, M.** & Sycara (2011), Effects of automation on situation awareness in controlling robot teams, *The Fourth International Conference on Advances in Computer-Human Interactions*, 242-248.
60. **Lewis, M.** & Sycara, K. (2011). Network-centric control for multirobot teams in urban search and rescue, *Proceedings of the 44th Hawaii International Conference on System Sciences*, 1530-1605.
61. Baracaldo, N., López, C., Anwar, M. & **Lewis, M.** (2011). Simulating the effect of privacy concerns in online social networks, *Proceedings of the IEEE International Conference on Information Reuse and Integration (IRI'11)*, 519-524.
62. Meneguzzi, F., Oh, J., Chakraborty, N., Sycara, K., Mehrotra, S. & **Lewis, M.** (2011). Anytime cognition: An information agent for emergency response, *Proceedings of Annual Conference of ITA (ACITA) 2011*.
63. Chien, S., Wang, H. & **Lewis, M.** (2010). Human vs. algorithmic path planning for search and rescue by robot teams, *Proceedings of the 54th Annual Meeting of the Human Factors and Ergonomics Society (HFES'10)*, 379-383.
64. Kolling, A., Kleiner, A., **Lewis, M.**, & Sycara, M. (2010). "Solving Pursuit-Evasion Problems on Height Maps", *IEEE International Conference on Robotics and Automation (ICRA 2010) Workshop: Search and Pursuit/Evasion in the Physical World: Efficiency, Scalability, and Guarantees*, (Anchorage, Alaska), May 2010.
65. Kolling, A., Kleiner, A., **Lewis, M.**, & Sycara, M. (2010). Pursuit-evasion in 2.5d based on team-visibility, *Proceedings of the 2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'10)*, 4610 – 4616.
66. Lee, P., Wang, H., Chien, S., **Lewis, M.**, Scerri, P., Velagapudi, P., Sycara, K. & Kane, B. (2010). Teams for teams: Performance in multi-human/multi-robot teams. *Proceedings of the 54th Annual Meeting Human Factors and Ergonomics Society (HFES'10)*, 438-442.
67. Scerri, P., Velagapudi, P., Sycara, K., Wang, H., Chien, S. & **Lewis, M.** (2010). Towards an understanding of the impact of autonomous path planning on victim search in USAR, *Proceedings of the 2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'10)*, 383-388.
68. Wang, H., **Lewis, M.**, Chien, S., Scerri, P., Velagapudi, P., Sycara, K. & Kane, B. (2010). Teams organization and performance in multi-human/multi-robot teams, *2010 IEEE International Conference on Systems, Man, and Cybernetics, (SMC'10)*, 1617-1623.
69. Xu, Y, Dai, T., Sycara, K. & **Lewis, M.** (2010). Service level differentiation in multi-robots control, *Proceedings of the 2010 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'10)*, 2224-2230.

70. Scerri, P., Owens, S., Sycara, K. & **Lewis, M.** (2010). User evaluation of a GUI for controlling an autonomous persistent surveillance team, In *SPIE'10*.
71. **Lewis, M.** & Wang, J. (2009). Measuring coordination demand in multirobot teams, *Proceedings of the Human Factors and Ergonomics Society 53rd Annual Meeting (HFES'09)*, 779-783.
72. Velagapudi, P., Wang, H., Scerri, P., **Lewis, M.** & Katia Sycara (2009). Scaling effects for streaming video vs. static panorama in multirobot search, *2009 International Conference on Intelligent Robots and Systems (IROS'09)*, IEEE, 5874-5879.
73. Ma, Z., Lee, P., Xu, Y., **Lewis, M.** & Scerri, P. (2009). An initial evaluation of approaches to building entry for large robot teams, *2009 IEEE International Workshop on Safety, Security and Rescue Robotics (SSRR'09)*, IEEE.
74. Reitter, D., Lebiere, C., **Lewis, M.**, Wang, H. & Ma, Z. (2009). A cognitive model of perceptual path planning in a multi-robot control system, *Proceedings of the 2009 IEEE International Conference on Systems, Man, and Cybernetics*, 2976-2982.
75. Wang, H., Chien, S., **Lewis, M.**, Velagapudi, P., Scerri, P. & Sycara, K. (2009). Human teams for large scale multirobot control, *Proceedings of the 2009 IEEE International Conference on Systems, Man, and Cybernetics*, 1306-1311.
76. **Lewis, M.** (2009). USARSim and HRI: from teleoperated cars to high fidelity teams, *IROS'09 Workshop on Robots, Games, and Research: Success stories in USARSim*, 18-22.
77. Wang, H., **Lewis, M.**, Chien, S. & Velagapudi, P. (2009). Scaling effects for synchronous vs. asynchronous video in multi-robot search, *Proceedings of the Human Factors and Ergonomics Society 53rd Annual Meeting (HFES'09)*, 364-368.
78. **Lewis, M.**, Wang, H., Velagapudi, P., Scerri, P. & Sycara, K. (2009). Using humans as sensors in robotic search, *Proceedings of the 12th International Conference on Information Fusion*, July 6-9.
79. Baishya, D. & **Lewis, M.** (2009). Algorithm steering for mixed-initiative robot teams, *8th International Conference on Autonomous Agents and Multiagent Systems (AAMAS'09) Workshop on Mixed-Initiative MAS*, May 10-15.
80. Velagapudi, P., Owens, S., Scerri, P., Sycara, K., & **Lewis, M.** (2009). Environmental factors affecting situation awareness in unmanned aerial vehicles, *AIAA Unmanned.Unlimited Conference*, April 6-9.
81. **Lewis, M.**, Balakirsky, S. & Carpin, S. (2009). Contributions of the virtual robot RoboCup Rescue competition to research in robotics, *21st International Joint Conference on Artificial Intelligence (IJCAI'09) Workshop on Competitions in Artificial Intelligence and Robotics*, July 12.

82. Wang, H., **Lewis, M.**, Velagapudi, P., Scerri, P., and Sycara K. (2009). How Search and its Subtasks Scale in N Robots, *Proceedings of the Forth ACM/IEEE International Conference on Human-Robot Interaction (HRI'09)*, IEEE, 141-148.
83. Balaguer, B., Balakirsky, S., Carpin, S., **Lewis, M.** and Scrapper, C. (2008). USARSim, a validated simulator for research in robotics and automation, *IROS'08 Workshop on Robot Simulators: Available Software, Scientific Applications, and Future Trends*.
84. Wang, J., Wang, H., **Lewis, M.**, Scerri, P., Velagapudi, P., and Sycara K. (2008). Experiments in Coordination Demand for MultiRobot Systems, *Proceedings of IEEE SMC International Conference on Distributed Human-Machine Systems (DHMS'08)*.
85. **Lewis, M.** and Wang, J. (2008). Assessing measures of coordination demand based on interaction durations, *Performance Metrics for Intelligent Systems (PerMIS'08)*.
86. Velagapudi, P., Scerri, P., Sycara, K., Wang, H., **Lewis, M.**, and Wang, J. (2008). Scaling effects in multi-robot control, *2008 International Conference on Intelligent Robots and Systems (IROS'08)*, 2121-2126.
87. Velagapudi, P., Wang, H., Scerri, P., **Lewis, M.**, and Sycara, K. (2008). Potential scaling effects for asynchronous video in multirobot search, *Performance Metrics for Intelligent Systems (PerMIS'08)*,
88. Wang, J., Wang, H., and **Lewis, M.** (2008). Assessing Cooperation in Human Control of Heterogeneous Robots, *Proceedings of the Third ACM/IEEE International Conference on Human-Robot Interaction (HRI'08)*, IEEE
89. Velagapudi, P., Wang, J., Wang, H., Scerri, P., **Lewis, M.**, and Sycara K. (2008). Synchronous vs. Asynchronous Video in Multi-Robot Search, *Proceedings of first International Conference on Advances in Computer-Human Interaction (ACHI'08)*, 224-229.
90. Polvichai, J., Scerri, P. and **Lewis, M.** (2008). An Approach to Online Optimization of Heuristic Coordination Algorithms, *In Proceedings of AAMAS 2008*
91. Xu, Y., Scerri, P., **Lewis, M.** and Sycara, K. (2008). Information Sharing among Large Scale Teams, *In Proceedings of FUSION'08*.
92. Wang, J. and **Lewis, M.** (2007). Assessing coordination overhead in control of robot teams, *Proceedings of 2007 IEEE International Conference on Systems, Man, and Cybernetics*, 2645-2649.
93. Wang, J. and **Lewis, M.** (2007) Human control of cooperating robot teams, *2007 Human-Robot Interaction Conference*, ACM, 9-16.

94. Carpin, S., **Lewis, M.**, Wang, J., Balakirsky, S., and Scrapper, C. (2007) USARSim: A robot simulator for research and education, *2007 IEEE International Conference on Robotics and Automation (ICRA'07)*.
95. Balakirsky, S., Scrapper, C., Carpin, S., and **Lewis, M.** (2007) USARSim: a RoboCup virtual urban search and rescue competition, Gerhart, Gage, & Shoemaker (Eds.), *Proceedings of the SPIE vol 6561 Unmanned Systems and Technology*
96. De Beer, B. and **Lewis, M.** (2007). Lightweight UAV Simulation for use in Multi-Agent Human-in-the-Loop experiments, *Proceedings of the European Concurrent Engineering Conference, EUROSIS*, pp. 51-56.
97. **Lewis, M.**, Wang, J., and Scerri, P. (2006). Teamwork coordination for realistically complex multi robot systems, NATO Symposium on Human Factors of Uninhabited Military Vehicles as Force Multipliers, RTO-MP-HFM-135, paper 17, Neully-sur-Seine: NATO-RTO, 1-12.
98. Wang, J. and **Lewis, M.** (2006). Autonomy in human-robot control, *Proceedings of the 50th Annual Meeting of the Human Factors and Ergonomics Society*, pp. 525-529.
99. Wang, J., **Lewis, M.**, and Scerri, P. (2006). Cooperating robots for search and rescue, *Proceedings of the AAMAS 1st International Workshop on Agent Technology for Disaster Management*, 92-99.
100. Carpin, S., **Lewis, M.**, Wang, J., Balakirsky, S., Scrapper, C. (2006). Bridging the gap between simulation and reality in urban search and rescue. *Robocup 2006: Robot Soccer World Cup X*, Springer, Lecture Notes in Artificial Intelligence
101. Carpin, S., Stoyanov, T., Nevatia, Y., **Lewis, M.**, Wang, J. (2006). Quantitative assessments of USARSim accuracy". *Proceedings of PerMIS 2006*
102. Balakirsky, S., Scrapper, C., Carpin, S., **Lewis, M.** (2006) USARSim: providing a framework for multi-robot performance evaluation. *Proceedings of PerMIS 2006*
103. Sycara, K., Scerri, P., **Lewis, M.**, Yu, B. and Xu, Y. (2006) Scalable and Reliable Data Delivery in Mobile Ad Hoc Sensor Networks, *Proceedings of the Fifth International Joint Conference on Autonomous Agents & Multi Agent Systems (AAMAS '06)*.
104. Sycara, K., Scerri, P., **Lewis, M.**, and Xu, Y. (2006) Comparing Market and Token-Based Coordination, *Proceedings of the Fifth International Joint Conference on Autonomous Agents & Multi Agent Systems (AAMAS '06)*.
105. Steinfeld, A., Fong, T., Kaber, D., **Lewis, M.**, Scholtz, J., Schultz, A. and Goodrich, M. (2006). Common Metrics for Human-Robot Interaction, *2006 Human-Robot Interaction Conference, ACM, March, 2006*.

106. Carpin, S., Wang, J., **Lewis, M.**, Birk, A., and Jacoff, A. (2006). High fidelity tools for rescue robotics: Results and perspectives, *Robocup 2005: Robot Soccer World Cup IX*, Springer LNAI vol 4020, Springer, 301-311. *
107. Sycara, K., Scerri, P., Giampapa, J., Srinivas, S., and **Lewis, M.** (2005). Task allocation in teams for launch and range operations, *Proceedings of the 12th International Conference on Human Computer Interaction (HCII'05)*, Las Vegas, July 22-27.
108. Giampapa, J., Sycara, K., Owens, S., Ginton, R., Seo, Y., Yu, B., Grindle, C., Xu, Y., & **Lewis, C.** (July, 2005). An Agent-Based C4ISR Testbed. Paper presented at *The Eighth International Conference on Information Fusion*, Wyndham Philadelphia at Franklin Plaza, Philadelphia, PA, USA. Available at <http://fusion2005.no-ip.com/viewabstract.php?id=136>
109. Ginton, R., Giampapa, J., Owens, S., Sycara, K., Grindle, C., & **Lewis, M.** (July, 2005). Intent Inferencing Using an Artificial Potential Field Model of Environmental Influences. Paper presented at *The Eighth International Conference on Information Fusion*, Wyndham Philadelphia at Franklin Plaza, Philadelphia, PA, USA. Available at <http://fusion2005.no-ip.com/viewabstract.php?id=308>
110. Xu, Y., Scerri, P., Yu, B., **Lewis, M.** and K. Sycara, K. (2005). A POMDP approach to token-based team coordination, in *AAMAS.05 Workshop on Challenges of Large Scale Coordination*.
111. Xu, Y., Scerri, P., Yu, B., Okamoto, S., **Lewis, M.** and Sycara, K. (2005). An integrated token-based algorithm for scalable coordination, *Fourth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS'05)*, 407-414.
112. Wang, J., **Lewis, M.**, Hughes, S., Koes, M., and Carpin, S. (2005). Validating USARsim for use in HRI Research, *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting*, 457-461.
113. Hughes, S., **Lewis, M.** (2004) Robotic camera control for remote exploration, *Proceedings of the 2004 Conference on Human Factors in Computing Systems (CHI 2004)*, Vienna, Austria, 511-517.
114. Hughes, S. and **Lewis, M.** (2004). Assisted viewpoint control for telerobotic search, *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society*, pp. 2657-2661.
115. Wang, J., **Lewis, M.**, and Hughes, S. (2004). Gravity-referenced attitude display for teleoperation of mobile robots, *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society*, pp 2662-2666.
116. Grindle, C., **Lewis, M.**, Ginton, R., Giampapa, J., Owens, S., and Sycara, K. (2004). Automating terrain analysis: Algorithms for intelligence preparation of the

battlefield, *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomics Society*, pp. 533-537.

117. Glinton, R., Grindle, C., Giampapa, J. **Lewis, M.** Owens, S. and Sycara, K. (2004). "Terrain based information fusion and inference," *Proceedings of the Seventh International Conference on Information Fusion*, Stockholm, Sweden, 338-345.
118. Glinton, R., Giampapa, J., Owens, S., Sycara, K., Grindle, C. and **Lewis, M.** (2004). Integrating context form information fusion: Automating intelligence preparation of the battlefield, *Proceedings of the 5th Conference on Human Performance, Situation Awareness, and Automation Technology*, Lawrence Erlbaum Associates, 224-229.
119. Scerri, P., Xu, Yang., **Lewis, M.**, Liao, E., Lai, J. and Sycara, . (2004). Scaling Teamwork to Very Large Teams, *The Fourth International Joint Conference on Autonomous Agents and Multi-Agent Systems AAMAS'04*.
120. Xu, Y., **Lewis, M.**, Sycara, K. and Scerri, P. (2004). Information Sharing in Large Scale Teams, in *AAMAS'04 Workshop on Challenges in Coordination of Large Scale MultiAgent Systems*, 2004.
121. Hongpaisanwiwat, C. and **Lewis, M.** (2003). The effect of Animated Character in Multimedia Presentation: Attention and Comprehension *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE, 1350-1352.
122. Hughes, S., Manojlovich, J., **Lewis, M.**, and Jeffrey Gennari, J. (2003) Camera Control and Decoupled Motion for Teleoperation. *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE, 1339-1344.
123. **Lewis, M.**, Berna, M., Sycara, K., and Nourbakhsh (2003) Robots, Agents, and People. *IEEE Workshop on Safety, Security and Rescue Robotics*, Tampa, FL, Feb 19-20.
124. **Lewis, M.**, Sycara, K., and Payne, T. (2003). Agent Roles in Human Teams *Notes of the AAMAS 2003 Workshop on Humans and Multiagent Systems*, Melbourne, AU, July 14.
125. **Lewis, M.**, Sycara, K., and Nourbakhsh, I. (2003) Developing a Testbed for Studying Human-robot Interaction in Urban Search and Rescue *Proceedings of the 10th International Conference on Human Computer Interaction (HCI'03)*, Crete, Greece, June 22-27, 270-274.
126. **Lewis, M.**, Wang, J., Manojlovich, J., Hughes, S. and Liu, X. (2003). Experiments with Attitude: Attitude Displays for Teleoperation. *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE, 1345-1349.
127. Prasithsangaree, P. Manojlovich, J., Chen, J. and **Lewis, M.** (2003) UTSAF: A Simulation Bridge between OneSAF and the Unreal Engine *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE, 1333-1338.

128. Manojlovich, J. Prasithsangaree, P. Hughes, S., Chen, J. and **Lewis, M.** UTSAF: A Multi-Agent-Based Framework for Supporting Military-Based Distributed Interactive Simulations in 3D Virtual Environments *Proceedings of the 2003 Winter Simulation Conference*, INFORMS, 960-968.
129. Manojlovich, J., Prasithsangaree, P., Hughes, S. Chen, J., and **Lewis, M.** (2003). UTSAF: Getting the Best of Consumer Graphics into Military Simulations. *Proceedings of the 47th Annual Meeting of the Human Factors and Ergonomics Society*, Santa Monica, CA: HFES, 2123-2127.
130. Sycara, K., and **Lewis, M.** (2003). Experiments in Implicit Control. *Notes of the IJCAI 2003 Workshop on Mixed-Initiative Intelligent Systems*, Acapulco, MX, Aug 9.
131. Sycara, K., Paolucci, M., **Lewis, M.** (2003) Information Discovery and Fusion: Semantics on the Battlefield. *Proceedings of the 6th International Conference on Information Fusion*, Cairns, AU, July 8-11.
132. Wang, Jijun, **Lewis, Michael**, and Gennari, Jeffrey (2003) A Game Engine Based Simulation of the NIST USAR Arenas, *Proceedings of the 2003 Winter Simulation Conference*, New Orleans, LA, (1) 1039-1045.
133. Wang, J., **Lewis, M.** and Gennari, J. (2003). Interactive Simulation of the NIST USAR Arenas. *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, IEEE, 1327-1332.
134. Wang, J., **Lewis, M.** and Gennari, J. (2003). USAR: A Game-Based Simulation for Teleoperation. *Proceedings of the 47th Annual Meeting of the Human Factors and Ergonomics Society*, Santa Monica, CA: HFES, 493-497.
135. Hughes, S. and **M. Lewis** (2002). Attentive Interaction Techniques for Searching Virtual Environments. *Proceedings of the Human Factors and Ergonomics Society's 46th Annual Meeting*, Baltimore MD.
136. Hughes, S. and **M. Lewis** (2002). Directing Attention in Open Scenes. *Proceedings of the Human Factors and Ergonomics Society's 46th Annual Meeting*, Baltimore MD.
137. Sycara, K. and **M. Lewis** (2002). Integrating agents into human teams. *Proceedings of the Human Factors and Ergonomics Society's 46th Annual Meeting*, Baltimore MD.
138. Sycara, K. and **Lewis M.** (2002). From data to actionable knowledge and decision. *Proceedings of the 5th International Conference on Data Fusion*, Annapolis, MD, July 7-11.

139. Hahn, S., **Lewis, M.**, and Lenox, T. (2002). Impact of Roles on Participation and Task Performance, *Etiquette for Human-Computer Work: AAAI Fall Symposium Technical Report FS-02-02.*, Nov 15-17, Boston, MA.
140. Hughes, S., **Lewis, M.**, and Sycara, K. (2002). Directing Attention in Virtual Environments, Workshop on Intelligent Human Augmentation & Virtual Environments (WIHAVE 2002), Oct. 17-19, Chapel Hill, NC
141. Jacobson, J., **Lewis, M.**, and Sycara, K. (2002). COTS Multiscreen Displays, Workshop on Intelligent Human Augmentation & Virtual Environments (WIHAVE 2002), Oct. 17-19, Chapel Hill, NC
142. Hughes, S., P. Brusilovsky, and **M. Lewis.** (2002). Adaptive Navigation Support in 3D E-Commerce Activities. *Workshop on Recommendation and Personalization in eCommerce* at the 2nd International Conference on Adaptive Hypermedia and Adaptive Web Based Systems, Malaga, Spain.
143. **Lewis, M.**, Lenox, T., Payne, T., & Sycara, K. (2001) Spatial planning in teams of human and machine agents. *Proceedings of the 2nd Conference on Information Technology and Spatial Planning*, Isole Tremiti, It.
144. Lenox, T., Hahn, S., **Lewis, M.**, Payne, T. and Sycara, K. (2000) Task characteristics and intelligent aiding. *Proceedings of the 2000 IEEE International Conference on Systems, Man, and Cybernetics*, Oct 8-11, Nashville, TN, 1123-1127.
145. Nuri, M., Hughes, S., and **Lewis, M.** (2000) Scriptor: Using deictics, dialog, and supervised learning to convey instructions. *Proceedings of the 2000 IEEE International Conference on Systems, Man, and Cybernetics*, Oct 8-11, Nashville, TN, 1128-1133.
146. Hughes, S. and **Lewis M.** (2000) Attentive camera navigation in virtual environments. *Proceedings of the 2000 IEEE International Conference on Systems, Man, and Cybernetics*, Oct 8-11, Nashville, TN, 967-970.
147. Payne, T., Sycara, K., **Lewis, M.**, Lenox, T., and Hahn, S. (2000) Varying the user interaction within multi-agent systems *Autonomous Agents 2000*.
148. Lenox, T., Hahn, S., **Lewis, M.**, Payne, T. and Sycara, K. (2000) Agent-based aiding for individual and team planning tasks *IEA 2000/HFES 2000 Congress*
149. Payne, T., Lenox, T., Hahn, S., Sycara, K., and **Lewis, M.** (2000) Agent-Based Support for Human/Agent Teams *CHI 2000 Demonstrations*.
150. Payne, T., Lenox, T., Hahn, S., **Lewis, M.**, and Sycara, K. (2000). Agent-Based team aiding in a time critical task. *Proceedings of the Thirty-Third Annual Hawaii International Conference on System Sciences (HICSS-33)*, IEEE Computer Society, Los Alamitos, CA.

151. Lenox, T., Hahn, S., **Lewis, M.**, and Roth, E. (1999). Improving performance: Should we support individuals or teams? *Proceedings of the Human Factors and Ergonomics Society 43rd Annual Meeting*, HFES, Santa Monica, CA, 223-227.
152. Lenox, T., **Lewis, M.**, Roth, E., Roberts, L., Shern, R. and Rafalski, T. (1998). Support of Teamwork in Human-Agent Teams *Proceedings of the 1998 IEEE International Conference on Systems, Man, and Cybernetics*, Oct 12-14, San Diego, CA 1341-1346.
153. Morse, E., **Lewis, M.**, Korfhage, R., and Olsen, K. (1998). Evaluation of text, numeric and graphical presentations for information retrieval interfaces: User preference and task performance measures. *Proceedings of the 1998 IEEE International Conference on Systems, Man, and Cybernetics*, Oct 12-14, San Diego, CA, 1026-1031.
154. Sycara, K., **Lewis, M.**, Lenox, T., and Roberts, L. (1998). Calibrating trust to integrate intelligent agents into human teams, in *Proceeding of the 31st Annual Hawaii International Conference on System Sciences*, Jan 5-9,
155. Jacobson, J. & **Lewis, M.** (1997). An Experimental comparison of three methods for collision handling in virtual environments, in *Proceedings of the 41st Annual Meeting of the Human Factors and Ergonomics Society*, Sept. 22-26, Albuquerque, NM
156. Jacobson, J. & **Lewis, M.** (1997). Collision handling in virtual environments; facilitating natural user motion, in *Proceeding of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, Oct. 12-15, Orlando, FL
157. Lenox, T., Roberts, L., & **Lewis, M.** (1997). Human-Agent interaction in a target identification task, in *Proceeding of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, Oct. 12-15, Orlando, FL
158. Morse, E. & **Lewis, M.** (1997). Why information retrieval visualizations sometimes fail, in *Proceeding of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, Oct. 12-15, Orlando, FL
159. Toth, J. & **Lewis, M.** (1997). The Role of working memory and external representation in individual decision making In *Working Notes of the AAAI Fall Symposium*
160. Edlund, Carl, Weise, Charlotte, & **Lewis, Michael.** (1995). Context Engineering For Human Problem Solving. *IJCAI-95 Workshop on Modeling Context in Knowledge Representation and Reasoning*. August 20. Montreal, Canada.
161. Edlund, Carl and **Lewis, Michael.** (1995). A Graphical User Interface Design Environment. *Graphics Interface '95*. May 18-19. Quebec City, Canada.
162. Edlund, Carl, and **Lewis, Michael.** (1995). An Automated Approach to Dynamic Interface Presentation Design. *Flairs '95*. April 26-29. Venice Beach, Fla.

163. Edlund, Carl and **Lewis, Michael** (1995). Fidelity of dynamics in integrated displays. *Proceedings of the 1995 IEEE International Conference on Systems Man, and Cybernetics*, 3139-3143.
164. Edlund, Carl, Hume, Sam, and **Lewis, Michael** (1995). Ecological design for a network scheduling interface. *Proceedings of the Human Factors and Ergonomics Society 39th Annual Meeting*, Santa Monica, CA: Human Factors and Ergonomics Society, 501-505.
165. Hume, Sam **Lewis, Michael**, and Edlund, Carl (1995). Operator performance at network scheduling with dynamic pricing and limited capacities. *Proceedings of the 1995 IEEE International Conference on Systems Man, and Cybernetics*, 3838-3843.
166. Edlund, C. and **Lewis, Michael** (1995). A Metric for situated difficulty. *Proceedings of the 17th Annual Conference of the Cognitive Science Society*, Pittsburgh, PA July 20-25, pp. 455-459.
167. **Lewis, M.** (1994). A method for selecting optimal analogies. *Proceedings of the 1994 International Conference on Systems, Man, and Cybernetics*, Piscataway, NJ: IEEE, pp. 2743-2748.
168. **Lewis, M.** (1994). Using Situation Centered Analogy for Interface Design. *OZCHI 94, Harmony through working together*, Canberra, Australia: Ergonomics Society of Australia, Inc., pp. 67-72.
169. Edlund, C. and **Lewis, M.** (1994). Comparing display integration strategies for control of a simple steam plant. *Proceedings of the 1994 International Conference on Systems, Man, and Cybernetics*, Piscataway, NJ: IEEE, pp. 2686-2691.
170. Edlund, C. and **Lewis, M.** (1994). Comparing ecologically constrained and conventional displays in control of a simple steam plant. *Proceedings of the Human Factors and Ergonomics Society 38th Annual Meeting*, Santa Monica, CA: Human Factors and Ergonomics Society, pp. 486-490.
171. **Lewis, M.** & Spoor, R. (1993). Thinking with a mouse. *Proceedings of the 15th Annual Conference of the Cognitive Science Society*, Boulder, CO, June 18-21, pp. 659-663.
172. **Lewis, M.** & Kim, H. (1993). Noise and emergent features in integrated displays. *Proceedings of the 37th Annual Meeting Human Factors and Ergonomics Society*, Seattle, WA, October 11-15, pp. 520-523.
173. **Lewis, M.** & Weise, C. (1993). Situation theoretic methods for display design, *Proceedings of the Topical Meeting on Nuclear Plant Instrumentation, Control, and Man-Machine Interface Technologies*, Oak Ridge, TN, April 18-21.

174. Edlund, C. & **Lewis, M.** (1993). Ecological display integration for direct process control of a simple steam plant, *Proceedings of the Topical Meeting on Nuclear Plant Instrumentation, Control, and Man-Machine Interface Technologies*, Oak Ridge, TN, April 18-21.
175. **Lewis, M.** and Sycara (1993). Modeling multispecialist decision making, M. Smith, G. Salvendy (Eds.): *Human-Computer Interaction: Applications and Case Studies, Proceedings of the Fifth International Conference on Human-Computer Interaction*, (HCI International '93), Orlando, Florida, USA, August 8-13, 1993, Volume 1.
176. **Lewis, M.** (1992). Why are situations hard? Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society, Bloomington, IN, 939-944.
177. **Lewis, M.** & Toth J. (1992) Situated cognition in diagrammatic reasoning, Working Notes AAAI Spring Symposium, Stanford, CA, 47-52.
178. **Lewis, M.** & Sycara, K. (1992). Informed Decision making in Multi-specialist cooperation. *Eleventh International Workshop on Distributed AI*, Glen Arbor, MI, 215-227.
179. **Lewis, M.**, & Sycara, K. (1991). Fusing Disparate Expertise in Multi-Agent Cooperation. *Proceedings of the IJCAI-91 Workshop on Intelligent and Cooperative Information Systems*, Sydney, Australia, 187-198.
180. Sycara, K., & **Lewis, M.** (1991). Forming Shared Mental Models. *Proceedings of the Thirteenth Annual Meeting of the Cognitive Science Society* Chicago, 400-405.
181. Sycara, K., & **Lewis, M.** (1991). Cooperation of Heterogeneous Agents Through the Formation of Shared Mental Models. *Proceedings of the AAAI-91 Workshop on Cooperation Among Heterogeneous Intelligent Systems*, Anaheim, CA.
182. Jamison, Wesley and **Lewis, C. Michael** (1990) UnixTutor: A Menu-Based Transitional Interface, *SIGCHI Bulletin*, NY: ACM.
183. Denault, L.G., **Lewis, C.M.**, Debons, A., and Stein, K.L. (1990). An integrative display for patient monitoring. *Proceedings of the 1990 International Conference on Systems, Man, and Cybernetics*, Los Angeles, CA, 515-517.
184. **Lewis, C. Michael.** (1990) Modeling individual differences at a process control task. *Proceedings of the Human Factors Society 34th Annual Meeting*, Orlando, FL, 917-921.
185. Kuntz, Timothy E., Amorosa, William P., and **Lewis, C. Michael** (1990) Display characteristics and errors at a complex data entry task. *Proceedings of the Human Factors Society 34th Annual Meeting*, Orlando, FL, 499-503.

186. **Lewis, C. Michael** (1989) Comparing subject strategies at a process control task, *Proceedings of the 1989 IEEE International Conference on Systems, Man, and Cybernetics*, Cambridge, MA: IEEE, 971-976.
187. **Lewis, C. Michael** and Jamison, Wesley (1989) Using menus to learn, *Proceedings of the 1989 IEEE International Conference on Systems, Man, and Cybernetics*, Cambridge, MA: IEEE, 309-311.
188. **Lewis, C. Michael** and Jamison, Wesley (1989) Problem solving in naive users, *Proceedings of the 33rd Annual Meeting of the Human Factors Society*, Denver, CO: Human Factors Society.
189. Jamison, Wesley and **Lewis, C. Michael** (1989) UNIXTUTOR: Using a transitional interface for learning UNIX, *Proceedings of the 28th Annual Technical Symposium of the Washington, DC Chapter of ACM*, Gaithersburg, MD: ACM, 13-22.
190. 128. Jamison, Wesley and **Lewis, C. Michael** (1988) Use of menu and command interface modes in a hybrid interface, *Proceedings of the 51st ASIS Annual Meeting*, 127-131.
191. **Lewis, C. Michael** (1985) Rule-based analysis of pilot decisions. *Proceedings of the 29th Annual Meeting of the Human Factors Society*, 901-904
192. **Lewis, C. Michael** (1985) Issues in rule identification and logical induction. *Proceedings of the 1985 International Conference on Systems, Man, and Cybernetics*, 537-540.
193. Potash, L.M., Stewart, M., Dietz, P.E., **Lewis, C.M.**, and Dougherty, E.M. (1981) Experience in integrating the operator contributions in the PRA of actual operating plants. *Proceedings of the American Nuclear Society/European Nuclear Society Topical Meeting on PRA*, Hinsdale, IL: American Nuclear Society
194. **Lewis, C. Michael** (1982) Unresolved issues in the prediction of latent errors. *Proceedings of the 9th Annual Engineering Conference on Reliability for the Electric Power Industry*, Milwaukee: American Society for Quality Control

Other Publications

1. **Lewis, C. Michael** (1986). *Identification of Rule-Based Models* Report No. 86-5, School of Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA
2. **Lewis, C. Michael** (1986) *Human Factors Considerations for the Control Room: Design Guide of the Duane Arnold Energy Center*. design guide DGC-E101, Iowa Electric Light and Power Co.
3. *Oconee PRA: A Probabilistic Risk Assessment of Oconee Unit 3*. NSAC-60, Palo Alto, CA: The Nuclear Safety Analysis Center/Electric Power Research Institute, 1984
4. *Study of Valve Mispositioning Involving Human Error*. INPO-85-015, Atlanta, GA: Institute of Nuclear Power Operations, 1982