

Dr. Michael D. McNeese

Associate Professor, School of Information Sciences and Technology;
 Courtesy Appointments, Associate Professor; Dept. of Psychology, and Dept of Learning Systems and Performance
 301E Information Sciences and Technology Building
 The Pennsylvania State University
 University Park, PA 16801 Tel: (814) 865-7885 E-mail: mmcneese@ist.psu.edu

Relevant Background

The idea of providing visual information in large group displays, virtual environments, and mobile situations is not new but has certainly been challenging for many researchers. During my 23 year tenure at the USAF, Wright-Patterson AFB, as a senior scientist my own research and design history emanates from several conjoint areas, specifically involving C³ISR battle management, air crew systems (e.g. AWACS a/c), information warfare threats and analysis. The current research plan is strongly centered on using perception-recognition processes, contextual-situation awareness, and collaborative teamwork as a basis to inform the design of information and collaborative systems that assist / support users in complex problem solving. Inherently, this research is strongly coupled to many of the ideas manifest in information visualization, visual analytics, and tools that enhance these areas. This long strand of research conducted for the USAF is complemented by more recent work that focuses on collaborative activities and advanced group interfaces to counter terrorism, address crisis planning and emergency management needs, and to develop user-centered support for intelligence and image analysts. Much of work assumes complex-messy settings, time pressured and stressful responses, emergent and fluidic situations, and changing roles and procedures that must adapt on-the-fly. The approach is problem-centric and is guided by the Living Laboratory Framework, a comprehensive cognitive systems engineering strategy for developing technology that makes sense to users.

Professional Preparation

Ph.D.	Cognitive Science 1992	Vanderbilt University	Nashville, TN
M.A.	Experimental-Cognitive Psychology 1983	The University of Dayton	Dayton, OH
B.A.	Psychology (magna cum laude) 1977	The University of Dayton	Dayton, OH
A.A.S	Engineering Design (honors) 1975	Sinclair College	Dayton, OH

Appointments

2004	Director, The HCI Summer Institute, The Pennsylvania State University.
2002	Director, User Science and Engineering Laboratory, The Pennsylvania State University.
2000	Associate Professor, School of Information Sciences & Technology, and the Dept. of Psychology, and the Dept. of Learning Systems and Performance, The Pennsylvania State University.
1998-99	Visiting Professor, The Institute of Ergonomics, The Ohio State University, Columbus, OH
1993-00	Senior Scientist, The United States Air Force Research Laboratory, Crew System Interface Division, Wright-Patterson Air Force Base, OH
1987-89	Research Associate, The Cognition and Technology Group at Vanderbilt, Learning Technology Center, Vanderbilt University
1984-93	Engineering Research Psychologist, USAF Aerospace Medical Research Laboratory, Fitts Human Engineering Division, Wright-Patterson Air Force Base, OH
1981-84	Human Factors Engineer, USAF Aeronautical Systems Center, Human Factors Engineering Branch, Wright-Patterson Air Force Base, OH
1977-81	Senior Designer - Technology, Inc. and Avco Corp, at Systems Engineering Avionics Facility, Wright-Patterson Air Force Base, OH.

Publications

(ii) Major Publications

- Perusich, K. A., & McNeese, M. D. (in press). Using fuzzy cognitive maps for knowledge management in a conflict environment. *IEEE Systems, Man and Cybernetics*.
- McNeese, M. D. (2004). How video informs cognitive systems engineering: Making experience count. *International Journal of Cognition, Technology, and Work*, 6(3), 186-196.
- McNeese, M. D. (2003). New visions of human-computer interaction: Making affect compute. *International Journal of Human-Computer Studies*, 59 (1), 33-53
- McNeese, M. D. (2003). Re: Response: Is affective computing an oxymoron? *International Journal of Human-Computer Studies*, 59 (1), 77-80.
- Hudlicka, E. and McNeese, M. D. (2002). User affective & belief states: Assessment and user interface adaptation. *Journal of User Modeling and User Adapted Interaction*, 12, 1-47
- McNeese, M. D., Salas, E., & Endsley, M. (Eds.). (2001). *New trends in cooperative activities: System dynamics in complex environments*. Santa Monica, CA: Human Factors and Ergonomics Society
- McNeese, M. D. (2000). Socio-cognitive factors in the acquisition and transfer of knowledge. *International Journal of Cognition, Technology, and Work*, 2, 164-177.
- McNeese, M. D., Bautsch, H. S., Narayanan S. (1999). A framework for cognitive field research. *International Journal of Cognitive Ergonomics*, 3(4), 307-332.
- Nosek, J., & McNeese, M. D. (1997). Augmenting group sensemaking in ill-defined, emerging situations. *Information Technology and People*, 10(3), 241-252.
- Citera, M., McNeese, M. D., Brown, C.E., Selvaraj, J. S., Zaff, B.S., & Whitaker, R. (1995). Fitting information systems to collaborating design teams. *Journal of the American Society of Information Science*, 46(7), 551-559.

(ii) Other Publications

- McNeese, M. D. & Vidulich, M. (Eds.) (2002). *Cognitive systems engineering in military aviation environments: Avoiding cogminutia fragmentosa*. Wright-Patterson Air Force Base, OH: CSERIAC Press.
- McNeese, M. D., Theodorou, E., Ferzandi, L., Jefferson, T., Jr., & Ge, X. (2002). Distributed cognition in shared information spaces. *Proceedings of the 46th Annual Meeting of the Human Factors and Ergonomics Society* (pp. 556-560). Santa Monica: Human Factors and Ergonomics Society.
- McNeese, M. D. (2001). The use of ubiquitous computing/computational neuroscience for distributed battlefield management. *Proceedings of the 45th Annual Meeting of the Human Factors and Ergonomics Society*, (pp. 473-477).
- Young, M. F., & McNeese, M. D. (1995). A situated cognition approach to problem solving. In P. Hancock, J. Flach, J. Caird, & K. Vicente (Eds.), *Local applications of the ecological approach to human-machine systems*. Hillsdale, NJ: Erlbaum.

Synergistic Activities

- 2005 Director, Penn State University Human-Computer Interaction Summer Institute (July 2005)
- 2003 Special Issue Organizer and Editor, *International Journal of Human-Computer Studies*, Applications of Affective Computing in Human-Computer Interaction (w. Eva Hudlicka).
- 2003 Director, User Science and Engineering Laboratory, Penn State University
- 2000 Developer and Director, Center for MINDS (Multidisciplinary Initiatives in Networked and Distance Decision Supports), The Pennsylvania State University
- 2000 Awarded *Penn State Presidents Fund for Undergraduate Research* to mentor undergraduate students in Web-related research.
- 1998 Organizer, NATO RTO Conference on Multi-Crew Performance, Human Factors and Medical Panel, Edinburgh, Scotland

Selected Professional Activities

- Current Editorial Board, *International Journal of Aviation Psychology*
- Current Editorial Board, *Journal of Human Performance in Extreme Environments*
- Current Editorial Board, *Journal of Cognitive Engineering and Decision Making*