

ERICKA ROVIRA

RESEARCH INTERESTS

Broad research interests include human performance and automation. Current research projects involve investigating how expert performance, mental workload, and attention allocation is affected in aviation and command and control environments by imperfect automation.

EDUCATION

- Applied-Experimental Psychology Ph.D. Program** 2006
The Catholic University of America Washington, DC
- Concentration in Human Factors within the domains of aviation and military systems.
 - Advisor: Raja Parasuraman, Ph. D.
- Master of Arts** 2003
The Catholic University of America Washington, DC
- Applied-Experimental Psychology
 - Advisor: Raja Parasuraman, Ph. D.
- Bachelor of Science** 2000
Tufts University Medford, MA
- Engineering Psychology and Biomedical Engineering
- Study Abroad** 1998 - 1999
University College London London, UK
- Courses taken within the Master of Science in Ergonomics

GRANTS AND AWARDS RECEIVED

- Mitre** 2007
- “Supplement to Spatio-Temporal Analysis for Rapid Tasking AF MOIE” (20k)
- Naval Research Laboratory** 2007
- “Motion Coupled Visual Environment (MOCOVE) for reducing motion sickness in command and control environments” (12k)
- Army Research Laboratory** 2006-2007
- “Cognitive capacity limitations and sensory motor process” (5k)
- NASA Langley’s Graduate Student Research Program Grant** 2001-2005
- “The types and levels of automation needed to support air traffic controllers in distributed air-ground decision-making” (100k)
- Best Student Paper Award** 2005
- Human Factors and Ergonomics Society Cognitive Engineering and Decision-Making Technical Group.
- VRC Corporation Grant** 2003
- European Human Factors And Ergonomics Society (1k)
- Master’s Thesis Research Award** 2003
- District of Columbia Psychological Association.

ACADEMIC APPOINTMENTS

Assistant Professor 2006 - Present
United States Military Academy West Point, NY

- Engineering Psychology Program, Department of Behavioral Sciences and Leadership

Teaching Assistant Fall 2004
The Catholic University of America Washington, DC

- Assisted Dr. Raja Parasuraman with resource preparation for an undergraduate course entitled Biological Bases of Behavior.
- Assisted Dr. Carol Glass with the development of grading criteria and grading of exams and projects for an undergraduate course entitled Psychology of Women and Men.

Instructor Spring 2003
The Catholic University of America Washington, DC

- Developed curriculum, prepared and delivered lectures, and graded papers for Introductory Psychology to undergraduate students.

Guest Lecturer Fall 2001
The Catholic University of America Washington, DC

- Discussed human performance measurement and data collection using the "Sensor to Shooter" command and control simulation as an example for a graduate course entitled Human Performance.
- Discussed the advantages and disadvantages of eye tracking as well as demonstrated the use of an Applied Science Lab eye tracker for a graduate course entitled Human Performance.

APPLIED WORK EXPERIENCE

Junior Engineer 2004 – 2005
L-3 Titan Group Washington, DC

- Provided human factors engineering support to Federal Aviation Administration in development of Human Factors Tools website. (www.hf.faa.gov/WorkbenchTools)

Independent Contractor 2003 – 2004
Micro Analysis and Design, Inc. Washington, DC

- Conducted literature review and wrote a report presenting suggestions for potential enhancements to the IMPRINT modeling tool, based on a review of current theory and empirical evidence in the area of workload modeling and workload management.

Cognitive Engineering Scientist Summer 2003
German Aerospace Center (DLR) Braunschweig, Germany

- Collaborated on a project investigating pilots' ability to resolve conflicts with varying levels of automation and traffic density in a distributed air-ground traffic management system.

Engineering Psychologist Intern 1999 - 2000
Volpe Center (Department of Transportation) Cambridge, MA

- Responsibilities included the application of human performance measurement techniques in determining the relationship between job performance and human capabilities.
- Participated in the experimental design and physical construction of a head up display simulator.

RESEARCH EXPERIENCE

Graduate Research Assistant for Dr. Raja Parasuraman 2004 - 2006
ARCH Lab, George Mason University Fairfax, VA

- Currently investigating the effects of futuristic concepts of air traffic control and automation reliability on air traffic controller performance, mental workload, and attention allocation in a distributed air-ground traffic management environment.

Graduate Research Assistant for Dr. Raja Parasuraman

2000 - 2004

Cognitive Science Lab, The Catholic University of America

Washington, DC

- Studied the effects of unreliable automation on multi-task performance using a low fidelity flight simulator.
- Examined the effects of information and decision automation on performance in a "Sensor to Shooter" targeting simulation of command and control.
- Investigated the effects of mixed equipage on air traffic controller performance and mental workload in a simulation of free flight conditions with different proportions of managed and unmanaged aircraft.
- Gained experience with various physiological measures including eye movements, heart rate variability, and transcranial blood flow.
- Gained familiarity with Quick Basic, Visual Basic, C, Unix Command Line, Access, and SPSS.

Participant in The NASA Reduced Gravity Student Flight Opportunities Program

2000-2001

NASA Houston Space Center

Houston, TX

- Designed and conducted a reduced-gravity experiment using the Sternberg Memory Paradigm evaluating digital and analog display dials.

Participant in The Research Experience for Undergraduates (R.E.U.)

Summer 1999

Florida International University

Miami, FL

- Performed research in the field of naturalistic decision making, specifically information gathering.

PUBLICATIONS

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- Rovira, E., McGarry, K., & Parasuraman, R. (2007). Effects of imperfect automation on decision-making in a simulated command and control task. *Human Factors, Vol. 49, 1*, 76-87.
- Rovira, E. & Parasuraman, R. (2007). Effects of imperfect automation support on air traffic controlled performance, mental workload, and attention allocation: Miss vs. false alarm. *Proceedings of the International Symposium on Aviation Psychology*. Columbus, OH: Ohio State University.
- Parasuraman, R. & Rovira, E. (2005). *Workload modeling and workload management: Recent theoretical developments*. (Technical Report ARL-CR-0562, Human Research and Engineering Directorate). Aberdeen, MD: Army Research Laboratory.
- McGarry, K., Rovira, E., & Parasuraman, R. (2005). Adaptive change in the type of automation support reduces the cost of imperfect decision aids in a simulated battlefield engagement task. *Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting* (pp. 307-311). Santa Monica, CA: HFES.
- Metzger, U., Rovira, E., & Parasuraman, R. (2003). Controller performance, workload, and attention allocation in distributed air-ground traffic management: Effects of mixed equipage and decision support. *Proceedings of the 12th International Symposium on Aviation Psychology* (pp. 803-809). Columbus, OH: Ohio State University
- McGarry, K., Rovira, E., & Parasuraman, R. (2003). Effects of task duration and type of automation support on human performance and stress in a simulated battlefield engagement task. *Proceedings of the Human Factors and Ergonomics Society 47th Annual Meeting* (pp. 548-552). Santa Monica, CA: Human Factors and Ergonomics Society.
- Rovira, E., McGarry, K., & Parasuraman, R. (2002). Effects of unreliable automation on decision making in command and control. *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting* (pp. 428-432). Santa Monica, CA: Human Factors and Ergonomics Society.
- Rovira, E., Zinni, M. R., & Parasuraman, R. (2002). Effects of information and decision automation on multi-task performance. *Proceedings of the Human Factors and Ergonomics Society 46th Annual Meeting* (pp. 327-331). Human Factors and Ergonomics Society.

Metzger, U., Duley, J. A., Rovira, E., & Parasuraman, R. (1999). The Effect of training on monitoring of an automated system. *Proceedings of the Human Factors and Ergonomics Society 43rd Annual Meeting* (pp. 1406-1410). Santa Monica, CA: Human Factors and Ergonomics Society.

CONFERENCE PRESENTATIONS

- Rovira, E. & Parasuraman, R. (2006, October). *Effects of automation on human performance in complex systems*. Presented at ARL & USMA Joint Technological Alliance, Aberdeen, MD.
- McGarry, K., Rovira, E., Parasuraman, R. (2005, March). *Adaptive change in the type of automation support reduces the cost of imperfect decision aids in a simulated battlefield engagement task*. Presented at American Psychological Association (APA) Divisions 19 (Military Psychology) and 21 (Engineering Psychology) Mid-year Symposium, Fairfax, VA.
- Rovira, E., Lorenz, B., Edinger, C., Becker, H., Kuenz, A. (2004, March). *Conflict resolution planning: Effects of levels of automation and traffic density*. Poster presented at the Human Performance Situation Awareness and Automation Conference, Daytona Beach, FL.
- Rovira, E., Zinni, M., & Parasuraman, R. (2002, March). *Information and decision uncertainty: Effects of unreliable automation on multi-task performance and workload*. Poster presented at the American Psychological Association Divisions 19 (Military Psychology) and 21 (Engineering Psychology) Mid-year Symposium, Fort Belvoir, VA.

PROFESSIONAL MEMBERSHIPS & ACTIVITIES

- APA Division 21/19 & HFES Potomac Midyear Symposium Program Co-Chair (2006 – Present)
- Reviewer, Journal of Behavioral Research Methods, Psychonomic Society (2006 – Present)
- Transition Associate, Human Factors and Ergonomics Society (HFES, 2006 – Present)
- Student Affiliate, Human Factors and Ergonomics Society (HFES, 2001 - 2006)
- Student Affiliate, APA Division 21 Applied Experimental Psychology (2001 - 2006)
- Student Affiliate, George Mason University HFES Student Chapter (2004 - Present)
- APA Advocate for Psychology Training (2005)
- Peer Reviewer for Best Student Paper, HFES Cognitive Engineering and Decision-Making Technical Group (2004)
- Student Volunteer at annual HFES Conference (2000, 2001, & 2005)

FOREIGN LANGUAGES

- Proficient in Spanish
- Proficient in Italian

COMMUNITY SERVICE

- Court Appointed Special Advocate (CASA) Program in Alexandria, VA (2005)
- Eucharistic Minister at Georgetown University (2004 - Present)
- Salvadoran American Humanitarian Foundation in Washington, DC (2003 - 2004)
- Tufts Alumni Association - Potential Candidate Interviewer in Washington, DC (2000 - Present)
- Latino Mentoring Program in Boston, MA (1996 - 1997)

PERSONAL INTERESTS

- Traveling
- Triathlon Training