



**2008 APA Div 21, Div 19, & HFES Potomac Chapter  
Annual Symposium on Applied Experimental Research  
George Mason University, Fairfax, VA, March 6-7, 2008  
SUB II Ballroom**

**“Distributed Cognition: Teams, Technology, Family, and the Individual”**

**PRELIMINARY PROGRAM**

**Thursday March 6<sup>th</sup>, 2008**

**8:30 – 9:30 Continental Breakfast and On-site Registration**

**9:30 – 9:40 Welcome**

Frank Durso, Ph. D., President, APA Division 21  
Mike Matthews, Ph. D., President, APA Division 19  
Michael Eidelkind, President, HFES Potomac Chapter  
Ewart de Visser, President, GMU HFES Student Chapter  
Joe McLaine, Co-Program Chair  
Ericka Rovira, Ph. D., Co-Program Chair

**9:40 – 10:30 Keynote Address: Eduardo Salas, Ph. D.**

Institute for Simulation & Training, University of Central Florida  
“The Science of Team Performance: Progress, Some Observations and the Road Ahead”

**10:30 – 12:00 Panel I: Distributed Cognition: Current Approaches and Trends**

Jacob Seagull, Ph. D., University of Maryland Department of Surgery  
C. Shawn Burke, Ph. D., University of Central Florida IST  
Anthony Ries, Ph.D. Trideum Corporation  
Nathan Schurr, Ph. D., Aptima

**12:00 – 1:15 Lunch Break and Mounting of Poster Presentations**

**1:15 – 2:15 Session I: Distributed Operations**

Effective Distributed Operations with Efficient Devices

*Christi Adams, John Schultz, Jessica DiFilippo, and Peter Squire, Naval Surface Warfare Center, Dahlgren Division*

Collaboration Mediums, Team Performance and Efficiency Perceptions

*Ira Schurig<sup>1</sup>, Teresa Bennett<sup>2</sup>, Shaun Sucillon<sup>1</sup>, Jamie Moody<sup>2</sup>, Anthony Rocco<sup>1</sup>  
USAF Academy<sup>1</sup>, Capella University<sup>2</sup>*

SMART: A Tool for Facilitating Information Need Requests

*Janet E. Miller, Ph. D. AFRL/RH and Craig M. Stansifer, AFRL/RHCS*

TIGRFile: Incorporating Social Network Information into the Tactical Integrated Ground Reporting System

*David Feltner, Anna Johnson, John Graham, Ph. D., and Ericka Rovira, Ph. D.  
United States Military Academy*

2:15 – 2:30 **Break**

2:30 – 3:15 **Session II: Alerting Operators**

Using Eye Movement Measures to Predict a Common Procedural Error

*Raj M. Ratwani<sup>1,2</sup>, J. Malcolm McCurry<sup>1</sup>, J. Gregory Trafton, Ph. D.<sup>1</sup>, Naval  
Research Laboratory<sup>1</sup>, George Mason University<sup>2</sup>*

Response Time Using Cross-Modal Signals

*Don J. Mateer<sup>1</sup>, Zachary R. Savarie<sup>1</sup>, James Merlo<sup>1,2</sup>, and Jared Sloan<sup>1</sup>  
United States Military Academy<sup>1</sup>, University Central Florida<sup>2</sup>*

Auditory Collision Avoidance Messages Reduce Crash Probabilities in Young Drivers

*Carryl L. Baldwin<sup>1</sup> and Katrina R. Lewis<sup>2</sup>, George Mason University<sup>1</sup>, Old  
Dominion University<sup>2</sup>*

3:15 – 4:45 **Poster Session** with Light Appetizers

Using Games to Improve Learning in Distributed Teams

*Elizabeth H. Lazzara, Samuel R. Wooten II, Wendy L. Bedwell, Davin Pavlas, and  
Eduardo Salas, Ph. D., University of Central Florida*

Tactile Cueing: The Effects of Physiological Arousal

*Keith Fine<sup>1</sup>, James Keisler<sup>1</sup>, James Merlo<sup>1,2</sup>, and John Graham, Ph. D.<sup>1</sup>  
United States Military Academy<sup>1</sup>, University Central Florida<sup>2</sup>*

Adaptive Team Performance in Multicultural Teams: A Framework and Measurement Tool

*Jessica L. Wildman, Wendy L. Bedwell, Michael A. Rose, Barbara A. Fritzsche,  
Ph. D., C. Shawn, Ph. D., and Eduardo Salas, Ph. D., University of Central  
Florida*

Assessing Methods Behind the Development of Knowledge Structures

*Chad Tossell<sup>1</sup>, Jamie Moody<sup>1</sup>, Roger Schvaneveldt, Ph. D.<sup>2</sup>, Russ Branaghan, Ph.  
D.<sup>2</sup>, and Leah Rowe<sup>1</sup>, United States Air Force Academy<sup>1</sup>, Arizona State  
University<sup>2</sup>*

Effects of Different Levels of Fidelity on Change Blindness

*Mitchell Wills, Collette Bannister, Lorenz Madarang, Chad Tossell, George  
Mastroianni, Ph. D., United States Air Force Academy*

The Effectiveness of Gaming Technology in Command and Control Training

*Josh Splawn, Brandon Wolf, and Chad Tossell, United States Air Force Academy*

Deployable Virtual Training Environment: Flexible Fire Support Training for the Marine Corps

*Lee W. Sciarini<sup>1</sup>, C. Shawn Burke, Ph. D.<sup>1</sup>, Denise Nicholson, Ph. D.<sup>1</sup>, Dylan Schmorrow, Ph. D.<sup>2</sup>, University of Central Florida<sup>1</sup>, Office of Naval Research<sup>2</sup>*

Cognitive Workload: Evaluating the Effects Mobility has on Cognitive Abilities

*Kimberly DeFiori, Latoya Hall, John Graham, Ph. D., United States Military Academy*

The Effect of Videogame Expertise on Eye Movements and Visual Attention

*Daniel T. Brooks Jr., Carl F. Smith, Yi-Fang D. Tsai, Jason H. Wong, and Matthew S. Peterson, Ph. D., George Mason University*

Distributed Teams: The Impact of Technology-Mediated interaction on Team Motivation

*Sallie Weaver, Wendy L. Bedwell, Stephen M. Fiore, Ph. D., and Eduardo Salas, Ph. D., University Central Florida*

Negotiation Technology for the Evolving Soldier

*Grant Carter, Grace D. Zwick, and John Graham, Ph. D., United States Military Academy*

Bridging the Performance Gap: A Framework, Model, and Propositions for Collaborative Environments

*Wendy L. Bedwell, Michael A. Rosen, and Eduardo Salas, Ph. D., University of Central Florida*

An Evaluation of a Proposed Up-Tempo Environment that Raises Stress Level and Measuring Performance

*Travis Haigler, Roberta Usher, Ross White, and Jared Sloan, United States Military Academy*

The Future of Air Traffic Control: Using Visual Cues to Support Detection of Rogue Aircraft

*Michelle Fratto, Samuel Fullmer, Jared Sloan, and Ericka Rovira, Ph. D., United States Military Academy*

Effects of Power Risers on Perception of a Combat Situation

*Nate Drake, Ellen Sutey, Carla Joyner, and Jared Sloan, United States Military Academy*

Artillery Task: Equivalent to the Assessment of the Automated Performance Test System (APTS) While Maintaining Vigilance

*Allyson N. McKay, Jared Sloan, and Ericka Rovira, Ph. D., United States Military Academy*

Leadership Ability, Advice Seeking Behavior, and Friendship Ties in Infantry Platoons

*Elizabeth A. Conjar<sup>1</sup> and Daniel B. Horn, Ph. D.<sup>2</sup>, George Mason University<sup>1</sup>, U.S. Army Research Institute<sup>2</sup>*

NASA's Distributed Observer Network (DON) for Collaborative Simulation & Design

*Michelle Rudder, Space Exploration Human Factors & Simulation, ASRC Aerospace/NASA*

Deployable Virtual Training Environment: An Adaptive Simulation Suite for the Marine Corps

*Lee W. Sciarini, Bo Sun, and Denise Nicholson, Ph. D., University of Central Florida*

6:30 – 7:00 **HFES Potomac Chapter hosts cash bar**

7:00 – 9:00 **HFES Potomac Chapter Dinner**

**Guest Speaker:** Dr. Michael Drillings, Director for MANPRINT, US Army  
“Human Systems Integration – A Wider Perspective”  
Cost is \$25 for Symposium attendees, \$20 for members of HFES Potomac Chapter, and \$15 for students. For more information, contact Derek Schultz (mediadesign@att.net). RSVP by February 27 to Derek Schultz (mediadesign@att.net) and please pick your dinner entree: **Salmon Italiano OR Marinated Beef**. The rest of the dinner includes: tossed salad, assorted rolls, sautéed green beans with garlic, roasted red potatoes, carrot cake, coffee, iced/hot tea.

**Friday, March 7<sup>th</sup>, 2008**

8:00 – 8:30 Continental Breakfast and On-Site Registration

8:30 – 10:00 **Panel II:** Soldier Training for the Army’s Future Combat Systems: New Capabilities, New Challenges  
**Chair:** Arnold Leonard, Ph. D., ICF International

Rickey Smith, Director, Army Capabilities Integration Center Forward  
Jim Belanich, Ph. D., U.S. Army Research Institute  
Cliff Scott, Ph. D., UNC-Charlotte  
Shawn Burke, Ph. D., University Central Florida  
Eduardo Salas, Ph. D., University Central Florida

10:00 – 11:00 **Session III:** Leadership Development

Comparing Two Personality Measures in an Executive Assessment Development Program

*Mark A. Vaitkus, Ph. D. and Mark K. Davis, Psy. D., National Defense University*

Between Cues and Behavior: How Individual Differences in Self Consciousness Mediate Processes That Influence Inhibition and Moral Cognition

*Robert E. Meine, United States Military Academy*

Collective Leadership Effectiveness (CLE): Conceptualization and Model Development

*Steven N. Aude, Ph. D.<sup>1</sup>, Trevor Conrad<sup>1</sup>, Jon Fallensen, Ph. D.<sup>2</sup>, ICF International<sup>1</sup>, Center for Army Leadership<sup>2</sup>*

Resilience to Deployment Stress: An Exploratory Study

*Joseph B. Lyons, Ph. D.<sup>1</sup>, Debbie Patton<sup>2</sup>, Jeremy Jordon<sup>1</sup>, Krystal Thomas<sup>1</sup>, & Justin Adams<sup>1</sup>, Air Force Research Laboratory<sup>1</sup>, Army Research Laboratory<sup>2</sup>*

11:00 – 11:15 **Break**

11:15 – 12:30 **Panel III:** Soldier Deployment Issues: Diverse Perspectives  
**Chair:** Angela Rehak, United States Military Academy

12:30 – 1:30 **Lunch**

1:30 – 2:30 **Session IV: Displays / Aviation**

Measurements of Visual Capabilities Using Augmented Reality Displays

*Mark A. Livingston, Ph. D. and Jane H. Barrow, Naval Research Laboratory*

Expanding Dimensions: 3D Possibilities in TiGRNET

*Holden Leute, Chase Podsiad, Adam Renkiewicz, John Graham, Ph. D., United States Military Academy*

The Role of Communication in Team Performance

*Justin H. Prost, Ph. D.<sup>1</sup>, Brian T. Schreiber<sup>1</sup>, Winston Bennett, Jr., Ph. D.<sup>2</sup>, Lumir Research Institute<sup>1</sup>, Air Force Research Laboratory<sup>2</sup>*

The Effects of Color Vision on Perceived Angle of Descent and Glide Path During Aircraft Approach and Landing

*Randall Gibb, Stephen Bump, Calvin Glass, and Joel Baldwin, United States Air Force Academy*

2:30 – 3:15 **Session V: Automation**

Effects of Mental Model Quality on Collaborative System Performance

*Bart D. Wilkison, Georgia Institute of Technology*

A Decision Support Tool for ISR Asset Collection Managers: Preliminary Findings of the Effects of Imperfect Automation

*Evan Leitch<sup>1</sup>, Austin Cross<sup>1</sup>, Ericka Rovira, Ph. D.<sup>1</sup>, Erika Darling<sup>2</sup>, Nikhil Kalghatgi<sup>2</sup>, and Craig Bonacetto<sup>2</sup>, United States Military Academy<sup>1</sup>, Mitre<sup>2</sup>*

Adaptive Automation for Human-Interaction with Uninhabited Vehicles

*Ewart De Visser<sup>1</sup>, Don Horath<sup>1</sup>, Raja Parasuraman, Ph. D.<sup>1</sup>, and Keryl Cosenzo, Ph. D.<sup>2</sup>, George Mason University<sup>1</sup>, Army Research Lab<sup>2</sup>*

3:15 – 3:30 **Break**

3:30 – 4:15 **Session VI: Training**

Influences of Military Training & Education on Attention

*Tomko Yamazaki, Ph. D.<sup>1</sup>, Margaret Schurig<sup>2</sup>, Kara Thoreson<sup>1</sup>, Chad Tossell<sup>1</sup>, United States Air Force Academy<sup>1</sup>, Boeing<sup>2</sup>*

Assessing PC-Based Training Technology Against Chair-Flying and Memorization

*Raymond Hoffman, Nicholas Lee, Chad Tossell, Christopher Hays, United States Air Force Academy*

Evaluating Learning Environments

*Zachary B. Schaeffer, Adam F. Werner, and Jared Sloan, United States Military Academy*

4:15 – 4:45    **Session VII: Deployment Equipment**

Thermoregulation and usability of the Army Combat Shirt

*Thomas L. Beirne, Christopher O. Bowen, and Jared Sloan, United States  
Military Academy*

Night Vision Camouflage prediction: Effectively Predicting Visibility in Low light  
Environments

*Benjamin J. Schmidt, Robert A. Darket, and Jared Sloan, United States Military  
Academy*

4:45 – 5:00    **Presentation and Poster Award Ceremony and Concluding Remarks**