



September 27–October 1, 2010  
San Francisco, California USA

# MOBILE-READY MINI-PROGRAM

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**Key to Abbreviations Used in This Program**

**Program at a Glance**

**Technical Sessions**

Tuesday

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# ABBREVIATIONS

## Used in This Program

AS	Aerospace Systems
A	Aging
AC	Augmented Cognition
CE	Cognitive Engineering & Decision Making
C	Communications
CS	Computer Systems
DEM	Demonstrations
E	Education
ED	Environmental Design
FP	Forensics Professional
GS	General Sessions
HC	Health Care
HP	Human Performance Modeling
ID	Individual Differences in Performance
IE	Industrial Ergonomics
I	Internet
ME	Macroergonomics
PL	Plenary Session
PP	Perception & Performance
PD	Product Design
POS	Posters
S	Safety
SS	Special Sessions
SF	Student Forum
ST	Surface Transportation
SD	System Development
TE	Test & Evaluation
T	Training
VE	Virtual Environments
WK	Workshops

# PROGRAM AT A GLANCE

## Monday 7:00 – 10:00 a.m.

### Morning-Only Workshops, 8:30 a.m. – 12:00 noon

WK2 The Impact of Culture on User Experience, *Hospitality*

### Full-Day Workshops, 9:00 a.m. – 4:30 p.m.

WK5 Cognitive Crash Dummies, *Garden B*

WK6 Human-Centered Systems Engineering, *Garden A*

WK8 Sitting in the Hot Seat, *Seacliff A*

WK9 Workshop on Falls, *Seacliff B*

WK10 Questionnaire Design, *Grand Ballroom B*

WK11 Online Usability Testing, *Marina*

WK12 Task Structure Modeling and Flow Analysis, *Seacliff C*

WK13 Design Creation and Development, *Grand Ballroom C*

### 9:00 a.m. – 4:00 p.m.

SF1 Student Career and Professional Development Day, *Grand Ballroom A*

## Monday 10:30 – 12:00 noon

### Morning-Only Workshop continues

### Full-Day Workshops continue

### Student Career and Professional Development Day continues

## Monday 1:30 – 3:00 p.m.

### Full-Day Workshops continue

### Afternoon-Only Workshops, 1:30 – 5:00 p.m.

WK3 Macrocognition Metrics and Scenarios, *Hospitality*

WK4 Communications Analysis for Assessing Collaboration, *Seacliff D*

### Student Career and Professional Development Day continues

## Monday 3:30 – 5:00 p.m.

### Full-Day Workshops continue

### Afternoon-Only Workshops continue

### Student Career and Professional Development Day continues

## Monday Evening

### 4:45 – 6:15 p.m.

National Ergonomics Month Expo, *Bayview B*

### 5:30 – 6:30 p.m.

First-Timers & Fellows Reception, *Atrium 2*

### 6:30 – 9:30 p.m.

Gala Opening Reception, *Atrium 2–5*

## Tuesday 7:00 – 10:00 a.m.

### 7:00 – 7:45 a.m.

Early-Morning Madness, *Bayview B*

### 8:00 – 10:00 a.m.

PL Opening Plenary Session, *Grand Ballroom*

## Tuesday 10:30 – 12:00 noon

### Technical Sessions

AS1 HF Guidance for NextGen, *Grand Ballroom C*

CE1 Cognitive Engineering Methodology, *Grand Ballroom B*

E1 Distance Education in HF/E, *Seacliff B*

ED1 Impact of Environmental Design, *Seacliff D*

GS1 President's Forum, *Grand Ballroom A*

HC1 HF Contributions to Medication Safety, *Garden B*

HPI Prediction of Performance, *Garden A*

IE1 Upper Extremities & Workstations, *Bayview B*

PD1 Cross-Cultural User Experience Design, *Marina*

SD1 Human-Automation Interaction, *Hospitality*

TE1 Winning the Usability War, *Seacliff A*

VE1 Leveraging Virtual Reality, *Seacliff C*

## Tuesday 1:30 – 3:00 p.m.

### Technical Sessions

AS2 NextGen Concepts, *Grand Ballroom C*

CE2 Perspectives on Simulations & Games, *Grand Ballroom B*

CS1 Investing in User Research, *Seacliff C*

DEMI Portable Tools for HF, *Grand Ballroom A*

GS2 Bored Beyond Belief, *Seacliff A*

HC2 Electronic Health Records, *Garden B*

IE2 Anthropometry, *Bayview B*

ME1 Management Perspectives on UX Departments, *Hospitality*

PD2 Products for Emotional Connection, *Marina*

POS1 Technical Posters, *Pacific Concourse A–C*

SF2 Student Research in Applied Venues, *Seacliff D*

ST1 In-Vehicle Decision Support, *Seacliff B*

TI Making the Implicit Explicit, *Garden A*

## Tuesday 3:30 – 5:00 p.m.

### Technical Sessions

A1 Safety & Physical Performance, *Marina*

AC1 Research & Methods for EEG, *Seacliff A*

AS3 NextGen Works in Progress, *Grand Ballroom C*

CE3 Workload & Situation Awareness, *Grand Ballroom B*

FP1 Forensics Challenges in HF/E, *Seacliff B*

HC3 CEDM in Clinical Work, *Garden B*

ID1 Affective Traits & States, *Seacliff D*

PD3 User-Centered Design Award, *Grand Ballroom A*

PP1 Perception & Performance Potpourri 1, *Bayview B*

S1 Safety Communications, *Seacliff C*

SD2 Human Systems Engineering, *Hospitality*

T2 Training Vigilance, Stress, & Multitasking, *Garden A*

## Tuesday Evening

### 5:00 – 6:00 p.m.

Student Reception, *Atrium 2–3*

### 6:00 – 7:30 p.m.

HFES Business Meeting/Future Leaders & Volunteers Panel & Reception, *Grand Ballroom B*

## Wednesday 7:00 – 10:00 a.m.

### 7:15 – 8:00 a.m.

Early-Morning Madness, *Grand Ballroom B*

### Technical Sessions

AS4 Bridging the Gap, *Seacliff A*

CE4 Decision Making & Decision Strategies, *Grand Ballroom B*

CS2 Physical Issues in Computer Systems, *Seacliff C*

ED2 Rethinking Elder Design, *Garden A*

GS3 Ultimate Fighting Challenge, *Pacific Concourse O*

HC4 Just What the Doctor Ordered? *Garden B*

IE3 Pioneers of Ergonomics, *Grand Ballroom C*

SF3 Wayfinding, Memory, & Workload, *Seacliff D*

ST2 Safe Driving in the Multitasking Generation, *Seacliff B*

TE2 How Would You Test This? *Hospitality*

## Wednesday 10:30 – 12:00 noon

### Technical Sessions

AC2 Basic vs. Applied Research, *Grand Ballroom C*

CE5 Cognitive Engineering in Health Care, *Grand Ballroom B*

DEM2 Real-World Human Factors, *Grand Ballroom A*

E2 Future of Human Factors Education, *Seacliff A*

GS4 Transforming the Energy Economy, *Seacliff B*

HP2 Human Performance Modeling in Aerospace, *Seacliff C*

I1 Harvesting Innovation, *Bayview B*

ME2 Health Care Recovery, *Seacliff D*

PD4 New Concepts in Product Design, *Hospitality*

POS2 Technical & Lab Posters, *Pacific Concourse A–C*

VE2 Learning in Virtual Environments, *Garden A*

## Wednesday 1:30 – 3:00 p.m.

### Technical Sessions

AS5 Air Traffic Control & Flight Deck Strategies, *Seacliff A*

C1 From Vocal Cords to Mobile Computing, *Seacliff B*

GS5 Arnold M. Small Lecture in Safety, *Grand Ballroom A*

GS6 Blasphemy or Pragmatics? *Bayview B*

HC5 Health Care Workflow, *Garden B*

ID2 Cognitive Skills & Abilities, *Seacliff D*

IE4 Occupational Safety, *Grand Ballroom C*

PP2 Getting the Buzz, *Grand Ballroom B*

S2 Safety in Motion, *Seacliff C*

SD3 HF Engineering & HSI Requirements, *Hospitality*

T3 Training Issues in Military & Defense, *Garden A*

## Wednesday 3:30 – 5:00 p.m.

### 3:00 – 6:30 p.m.

Technical Group Networking/Business Meetings (see pp. 5–6)

## Thursday 7:00 – 10:00 a.m.

### 7:15 – 8:00 a.m.

Early-Morning Madness, *Grand Ballroom B*

### Technical Sessions

A2 Aging & Cognitive Function, *Bayview B*

CE6 Human-Automation Interaction, *Grand Ballroom B*

CS3 Usability & Evaluation, *Garden A*

E3 Teaching, Learning, or Both, *Seacliff D*

GS7 University-Industry Collaborations, *Seacliff B*

HC6 Patient Safety in the Operating Theatre, *Garden B*

IE5 Hand Tool Ergonomics, *Grand Ballroom A*

ME3 View from the Top, *Marina*

PD5 Creating an Anthropometric Database, *Seacliff A*

SD4 HF Standards for U.S. Government, *Hospitality*

ST3 Driver Workload, *Grand Ballroom C*

T4 Methods for Improving Training, *Seacliff C*

## Thursday 10:30 – 12:00 noon

### Technical Sessions

AC3 Transfer: From Lab to Real World, *Grand Ballroom C*

AS6 Aviator Performance & Displays, *Bayview B*

C2 Team Communications, *Seacliff A*

CE7 Accelerated Learning, *Grand Ballroom B*

FP2 Issues for People Disabilities, *Hospitality*

GS8 Sleep Across Military Environments, *Seacliff B*

HC7 HF in the Operating Room, *Garden B*

HP3 Modeling Human Performance Dimensions, *Marina*

POS3 Technical & Lab Posters, *Pacific Concourse A–C*

PP3 Perception & Performance Potpourri 2, *Garden A*

SF4 Technology & Computing Experience, *Seacliff D*

SS2 Low-Hanging Fruit in Health Care HF, *Grand Ballroom A*

TE3 Techniques for Usability Testing, *Seacliff C*

## Thursday 1:30 – 3:00 p.m.

### Technical Sessions

AS7 Training & Measurement at the Extremes, *Bayview B*

CE8 Design & Evaluation of Human-System Interfaces, *Grand Ballroom B*

E4 Technology & Devices for College Students, *Seacliff D*

ED3 Information Technology & Design, *Seacliff A*

GS9 General Ergonomics, *Seacliff B*

HC8 Process Improvement in Health Care, *Garden B*

I2 Internet & Social Systems, *Garden A*

IE6 Gait & Stability, *Grand Ballroom A*

SD5 Robotics Assets in Military Environments, *Hospitality*

ST4 Collisions & Mitigation, *Grand Ballroom C*

## Thursday 3:30 – 5:00 p.m.

### Technical Sessions

AS8 Human-Technology Interaction, *Bayview B*

CE9 Supporting Teams & Communities, *Grand Ballroom B*

CS4 Input & Display, *Garden A*

GS10 Monitoring & Signal Detection, *Seacliff B*

HC9 How Design Impacts Health Care, *Garden B*

IE7 Low Back & Trunk, *Grand Ballroom A*

ME4 Trust in Sociotechnical Systems, *Marina*

PD6 Ergonomics & Anthropometrics, *Seacliff A*

POS4 Technical & Lab Posters, *Pacific Concourse A–C*

S3 Safety Applications & Theories, *Hospitality*

SF5 Issues With Visual Perception, *Seacliff C*

VE3 Performance in Virtual Environments, *Seacliff C*

## Friday 7:00 – 10:00 a.m.

### 7:15 – 8:00 a.m.

Early-Morning Madness, *Grand Ballroom B*

### Technical Sessions

AC4 Measuring Workload, *Grand Ballroom C*

AS9 Next Generation Air Transportation System, *Garden A*

CE10 Interruptions & Task Switching, *Grand Ballroom B*

HC10 Health Care Handover, *Garden B*

IE8 Medical Applications, *Bayview B*

PD7 User-Centered Methods, *Seacliff A*

SF6 Crowds, Task Analyses, & Biomechanics, *Seacliff D*

ST5 Simulation & Methods in Transportation, *Bayview A*

TE4 Military Operational T&, *Seacliff C*

## Friday 10:30 – 12:00 noon

### Technical Sessions

AS10 HF Research for Space Exploration, *Garden A*

CE11 Judgment & Decision Making Behavior, *Grand Ballroom B*

E5 Teaching HF/E Professionals to Solve Problems, *Seacliff D*

HP4 Modeling SA, Decision Making, & Performance, *Seacliff B*

IE9 Construction & Warehouses, *Bayview B*

PD8 User-Centered Approaches, *Seacliff A*

SD6 HSI in the Federal Government, *Garden B*

T6 Training in the Wild, *Seacliff C*

# TECHNICAL SESSIONS

## TUESDAY

**Tuesday, September 28**

**7:00 to 8:30 a.m.**

### **Early-Morning Madness**

7:00 to 7:45 a.m.

Bayview Room B (Bay Level)

### **Technical Group Networking/ Business Meeting**

#### **Test and Evaluation**

Pacific Concourse L (Pacific Concourse Level)

7:30 to 8:30 a.m.

**Tuesday, September 28**

**8:00 to 10:00 a.m.**

### **PL – OPENING PLENARY SESSION**

Tuesday, September 28, 2010, 8:00 to 10:00 a.m.

Grand Ballroom (Street Level)

1. Presentation of HFES Fellows
2. Presentation of HFES Awards
3. Presidential Address: Human Factors in Aviation: A Brief (and Selective) History, Kathleen L. Mosier, San Francisco State U.
4. Keynote Address: Preparing for Excellence: Leading Your Team to Success, Chesley B. “Sully” Sullenberger

**Tuesday, September 28**

**10:30 a.m. to 12:00 noon**

### **ASI – A PORTFOLIO OF HUMAN FACTORS GUIDANCE FOR NEXTGEN**

Discussion Panel

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom C (Street Level)

#### **Aerospace Systems**

*Chair:* Frank Durso, Georgia Tech

*Panelists:* Valerie J. Gawron, MITRE Corp.; Paul Krois, Federal Aviation Admin.; Nadine Sarter, U. of Michigan; Philip J. Smith, Ohio State U.; Christopher D. Wickens, Alion Science and Technology; Tanya Yuditsky, Federal Aviation Admin.

### **CEI – COGNITIVE ENGINEERING METHODOLOGY**

Lecture

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom B (Street Level)

#### **Cognitive Engineering & Decision Making**

*Chair:* Ann Bisantz, U. at Buffalo, SUNY; Thomas Fincannon, U. at Buffalo, SUNY

1. Maureen E. Hassall, Penelope M. Sanderson, and Ian T. Cameron, U. of Queensland, **Using Cognitive Work Analysis Techniques to Identify Human Factor Hazards**
2. Maryam Ashoori, Catherine Burns, U. of Waterloo, **Reinventing the Wheel: Control Task Analysis for Collaboration**
3. Samuel Mahoney, Charles River Analytics; Emilie Roth, Roth Cognitive Engineering; Kristin Steinke, PatchPlus Consulting; Jonathan Pfautz, Curt Wu, and Mike Farry, **Charles River Analytics, A Cognitive Task Analysis for Cyber Situational Awareness**
4. Xilin Li, Tim Horberry, and Malcolm Powell, U. of Queensland, **Human Control in Mineral Processing Plants: An Operator-Centered Investigation**
5. Emilie M. Roth, Roth Cognitive Engineering; James Easter, Preferred Licensing Services; Robert E. Hall, REH Technology Solutions; Leonard Kabana and Kenji Mashio, Mitsubishi Nuclear Energy Systems, Inc.; Satoshi Hanada, Mitsubishi Heavy Industries, Ltd.; Timothy Clouser, Luminant Power; Gilbert Remley, Mitsubishi Electric Power Products, Inc., **Person-in-the-Loop Testing of a Digital Power Plant Control Room**

### **EI – DISTANCE EDUCATION IN HUMAN FACTORS & ERGONOMICS: PRACTICES & PROSPECTS**

Discussion Panel

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Seacliff B (Bay Level)

#### **Education**

*Chair:* R. Darin Ellis, Wayne State U.

*Panelists:* Andris Freivalds, Pennsylvania State U.; Gary Mirka, Iowa State U.; Edward Pines, New Mexico State U.; Richard Stone, Iowa State U.; Myung-Hwan Yun, Seoul National U.

### **EDI – THE IMPACT OF ENVIRONMENTAL DESIGN**

Lecture

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Seacliff D (Bay Level)

#### **Environmental Design**

*Chair:* Claudia MontAlvao; *Cochair:* Stanley Hughes

1. Mahiyar Nasarwanji, Caroline Joseph, and Victor Paquet, U. at Buffalo, SUNY, **Restricted vs. Unrestricted Space for L-Turns: A Debate in Environmental Design**
2. Alan Hedge and Kimberly Ann Rollings, Cornell U.; Jennifer L. Robinson, BD Biosciences, **“Green” Ergonomics: Advocating for the Human Element in Buildings**
3. Chung Sik Kim, Donghun Lee, Jeehea Lee, Sunghyuk Kwon, and Min K. Chung, POSTECH, **Effects of Ramp Slope and Height on Usability and Physiology During Wheelchair Driving**
4. Jon A. Sanford, Hsiang-yu Yang, and Francis Harris, Georgia Tech, **Physical Environmental Barriers to Community Mobility of Wheelchair Users**
5. Marisa Topping, Abir Mullick, Sarah Endicott, Wooyoung Sung, and Gourab Kar, Georgia Tech, **Children as Research Subjects: Methodologies for Collecting Data in Inclusive Indoor Play**

### **GSJ – PRESIDENT’S FORUM – MEDICAL HUMAN FACTORS, HUMAN PERFORMANCE MODELING: WHAT EVERY HUMAN FACTORS ENGINEER SHOULD KNOW**

Discussion Panel

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom A (Street Level)

#### **General Sessions**

*Chair:* Paul A. Green, U. of Michigan Transportation Research Inst.

*Speakers:* James Bagian, VA National Ctr. for Patient Safety; Wayne Gray, Rensselaer Polytechnic U.

### **HCI – HUMAN FACTORS CONTRIBUTIONS TO MEDICATION SAFETY**

Discussion Panel

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Garden Room B (Atrium Lobby Level)

#### **Health Care**

*Chair:* Ben-Tzion Karsh, U. of Wisconsin; *Cochair:* Marilyn Sue Bogner, Inst. for the Study of Human Error, LLC

*Panelists:* Sandra K. Garrett, Clemson U.; Michelle L. Rogers, Drexel U.; A. Joy Rivera-Rodriguez, U. of Wisconsin-Madison; Jenna L. Marquard, U. of Massachusetts-Amherst; Tosha B. Wetterneck, U. of Wisconsin-Madison

### **HPI – PREDICTION OF PERFORMANCE FOR DEVICES, AGE, WORKLOAD, AND ERROR**

Lecture

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Garden Room A (Atrium Lobby Level)

#### **Human Performance Modeling**

*Chair:* Mike Byrne, Rice U.; *Cochair:* Esa Rantanen, Rochester Inst. of Technology

1. Yeonjoo Cha and Rohae Myung, Korea U., **Extended Fitts’ Law in 3-D Pointing Tasks**
2. Jiseung Back and Rohae Myung, Korea U.; Daesub Yoon, Electronics and Telecommunications Research Inst., **Applying CPM-GOMS Analysis for Predicting and Explaining Two-Handed Korean Text Entry Task on Mobile Phone**
3. Tiffany S. Jastrzembski and Christopher Myers, U.S. Air Force Research Lab; Neil Charness, Florida State U., **A Principled Account of the Older Adult in ACT-R: Age-Specific Model Human Processor Extensions in a Mobile Phone Task**
4. Wenbi Wang and Brad Cain, Defence Research and Development Canada; Xiao Long Lu, U. of Waterloo, **Predicting Operator Mental Workload Using a Time-Based Algorithm**
5. Matthew L. Bolton and Ellen J. Bass, U. of Virginia, **Using Task-Analytic Models and Phenotypes of Erroneous Human Behavior to Discover System Failures Using Model Checking**

### **IEI – UPPER EXTREMITIES AND COMPUTER WORKSTATIONS**

Lecture

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Bayview Room B (Bay Level)

#### **Industrial Ergonomics**

*Chair:* M. Susan Hallbeck, U. of Nebraska-Lincoln; *Cochair:* Kyle Saginus, Marquette U.

1. Carisa Harris and David Rempel, U. of California, Berkeley, **A Prospective Study of Hand-Wrist Pain in Blue-Collar Workers**
2. Matthew P. Reed, Sheila M. Ebert-Hamilton, and Suzanne G. Hoffman, U. of Michigan, **Hand Positions and Forces During Truck Ingress**
3. K. Han Kim, Stephen S. Bao, and Barbara Silverstein, WA State Labor & Industries, **Task Activities, Postures and Work Performances Among Computer Operators in a State Agency**
4. Yasser Elouri, Magdy Akladios, S. Camille Peres, and April Amos, U. of Houston-Clear Lake, **Effects of Font Size on Muscle Activity**
5. Gwanseob Shin and Sudeep Hegde, U. at Buffalo, SUNY, **User-Preferred Position of Computer Displays of Different Sizes and Configurations**

### **PDI – CROSS-CULTURAL USER-EXPERIENCE DESIGN: WHAT? SO WHAT? NOW WHAT?**

Invited Address

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Marina Room (Bay Level)

#### **Product Design**

*Chair:* Stanley H. Caplan, Usability Assoc.

*Invited Speaker:* Aaron Marcus, Aaron Marcus and Assoc.

## **SDI – HUMAN-AUTOMATION INTERACTION**

Lecture

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Hospitality Room (Atrium Lobby Level)

System Development

*Chair:* Linda Elliott, U.S. Army Research Lab; *Cochair:* Sam Middlebrooks, U.S. Army Research Lab

1. Victor Finomore and Dianne Popik, U.S. Air Force Research Lab; Courtney Castle, Oak Ridge Inst. for Science and Education; Ron Dallman, Ball Aerospace & Technologies Corp., **Effects of a Network-Centric Multimodal Communication Tool on a Communication Monitoring Task**
2. LeeAnn Perkins and Janet E. Miller, U.S. Air Force Research Lab; Ali Hashemi, U. of Dayton; Gary Burns, Wright State U., **Designing for Human-Centered Systems: Situational Risk as a Factor of Trust in Automation**
3. Keryl Cosenzo and Jessie Chen, U.S. Army Research Lab; Lauren Reinerman-Jones, U. of Central Florida; Michael Barnes, U.S. Army Research Lab; Denise Nicholson, U. of Central Florida, **Adaptive Automation Effects on Operator Performance During a Reconnaissance Mission With an Unmanned Ground Vehicle**
4. Michael C. Dorneich and Stephen D. Whitlow, Honeywell Labs; Eric Olson, David Anhalt, and Tracy Monteith, SAIC, **The Combat Causal Reasoner Approach to Robotic Control**
5. John M. Colombi and Jill R. Ward, Air Force Inst. of Technology, **Human Systems Integration: A Discrete Event Simulation of Operational Utility for Control of Multiple Small Unmanned Aerial Systems**

## **TEI – WINNING THE USABILITY WAR: A LONG-TERM APPROACH TO SUCCESS IN RAPID-PROTOTYPING ENVIRONMENTS**

Discussion Panel

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Seacliff A (Bay Level)

Test & Evaluation; cosponsored by System Development

*Chair:* Pam Savage-Knepshield, U.S. Army Research Lab

*Panelists:* Christi Adams, NAVSEA Dahlgren; Melissa Weaver, Basic Commerce & Industries, Inc.; Darren Cole, Edwards Air Force Base; Bruce Hunn, U.S. Army Research Lab; Eric Pierce, Naval Surface Warfare Ctr.

## **VEI – LEVERAGING VIRTUAL REALITY, SIMULATIONS, AND GAMES FOR TRAINING**

Invited Symposium

Tuesday, September 28, 2010, 10:30 a.m. to 12:00 noon

Seacliff C (Bay Level)

Virtual Environments

*Chair:* Jennifer M. Riley, SA Technologies

1. Jennifer M. Riley, SA Technologies, **Leveraging Virtual Reality, Simulations, and Games for Training: Symposium Overview**
2. Jason P. Kring, Lauren Wessinger, Christopher Payne, Ryan Blanding, and Zoubair Entezari, Embry-Riddle Aeronautical U., **Physiological Measures in a Team Training Simulation**
3. James P. Bliss, Rachel Liebman, and J. Christopher Brill, Old Dominion U., **Alert Modality and Behavioral Compliance During Virtual Combat**
4. James L. Merlo, Jacob Frechette, and Stephen J. Banks, U.S. Military Academy, **Modeling Transfer of Training and Training Effectiveness in Simulated Marksmanship Training**
5. Jeffrey Breugelmanns, Yingzi Lin, Ronald R. Mourant, and Maura Daly Iverson, Northeastern U., **Biosensor-Based Video Game Control for Physically Disabled Gamers**
6. Jenay M. Beer, Arthur D. Fisk, and Wendy A. Rogers, Georgia Tech, **Recognizing Emotion in Virtual Agent, Synthetic Human, and Human Facial Expressions**

## **Tuesday, September 28 1:30 to 3:00 p.m.**

## **AS2 – NEXTGEN CONCEPTS FOR AIR TRAFFIC CONTROL AND FLIGHT DECK**

Lecture

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Grand Ballroom C (Street Level)

Aerospace Systems

*Chair:* Steve Landry, Purdue U.; *Cochair:* Karen Feigh, Georgia Tech

1. Paul Krois, Dan Herschler, Glen Hewitt, Thomas McCloy, and Dino Piccione, Federal Aviation Admin., **Human Factors Research and Development Planning for NextGen**
2. Carolina M. Zingale and Ben Willems, Federal Aviation Admin.; Jennifer M. Ross, Hi-Tec Systems, Inc., **Air Traffic Controller Workstation Enhancements for Managing High Traffic Levels and Delegated Aircraft Procedures**
3. Christopher D. Cabrall, Thomas Prevot, Jeffrey R. Homola, and Joey Mercer, San Jose State U., **Comparison of Deconfliction Responsibility Procedures for Adjacent En-Route Sectors in NextGen Separation Assurance**
4. Arik-Quang V. Dao, Joel Lachter, Vernol Battiste, and Summer L. Brandt, NASA Ames/San Jose State U. Research Foundation; Kim-Phuong Vu and Thomas Strybel, California State U., Long Beach; Nhut Ho and Patrick Martin, California State U., Northridge; Walter Johnson, NASA Ames Research Ctr., **Automated Spacing Support Tools for Interval Management Operations During Continuous Descent Approaches**
5. Angelia Sebok and Christopher Wickens, Alion Science and Technology; Nadine Sarter, U. of Michigan; Stacey Quesada and Connie Socash, Alion Science and Technology; Brian Anthony, U. of Michigan, **The Automation Design Advisor Tool (ADAT): Supporting Flight Deck Design in NextGen**

## **CE2 – MULTIDISCIPLINARY PERSPECTIVES ON SIMULATIONS AND GAMES IN HUMAN FACTORS RESEARCH**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Mark Pfaff, Indiana U.

*Panelists:* Laurel Allender, U.S. Army Research Lab; Wayne D. Gray, Rensselaer Polytechnic Inst.; Michael D. McNeese, Pennsylvania State U.; David J. Mendonça, Rensselaer Polytechnic Inst.; Melanie C. Wright, Duke U. Medical Ctr.

## **CSI – INVESTING IN USER RESEARCH: MAKING STRATEGIC CHOICES**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Seacliff C (Bay Level)

Computer Systems; cosponsored by Internet

*Chair:* Stephanie Rosenbaum, Tec-Ed, Inc.

*Panelists:* Kelly Braun, Braun Gordon Research LLC; Dennis Wixon, Microsoft Corp.; Seema Swamy, VMware, Inc.; Krista Van Laan, Silver Spring Networks; Chauncey Wilson, Autodesk, Inc.

## **DEM I – PORTABLE TOOLS FOR HUMAN FACTORS**

Demonstrations

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Grand Ballroom A (Street Level)

Demonstrations

*Chair:* Ron Boring, INL

1. Charneta Samms, U.S. Army Research Lab, **Improved Performance Research Integration Tool (IMPRINT): Human Performance Modeling for Improved System Design**
2. Suzanne Rhodes, U. of Wisconsin-Madison, **A Hand-Held Data Tool Design for Teachers**
3. Ute Fischer, Deepak Jagdish, and Abbas Attarwala, Georgia Tech, **“ECOVERD”—A Tablet PC-Based Tool to Support Observational Studies**
4. Frank T. Durso, Eric J. Stearman, and Scott Robertson, Georgia Tech, **NextSim: A Portable Human Factors Research Simulator for Future ATC Concepts**

## **GS2 – BORED BEYOND BELIEF: HOW AUTOMATION IS BORING US TO DISTRACTION**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Seacliff A (Bay Level)

General Sessions

*Chair:* William S. Marras; *Moderator:* Mary L.

Cummings, Massachusetts Inst. of Technology

*Panelists:* Nancy J. Cooke, Arizona State U.; Joel S. Warm, U.S. Air Force Research Lab; Peter A. Hancock, U. of Central Florida

## **HC2 – ELECTRONIC HEALTH RECORDS: PHYSICIANS’ PERSPECTIVE ON USABILITY**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Robert Schumacher, User Centric, Inc.; *Cochair:* Lacey Colligan, U. of Virginia

*Panelists:* Lyle Berkowitz, Northwestern Memorial Physicians Group; Paul Abramson, My Doctor Medical Group; David Liebovitz, Northwestern Medical Faculty Foundation

## **IE2 – ANTHROPOMETRY**

Lecture

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Bayview Room B (Bay Level)

Industrial Ergonomics

*Chair:* David Cochran, U. of Nebraska; *Cochair:* Peter Johnson, U. of Washington

1. Kyle Saginus, Richard Marklin, and Stephen Freier, Marquette U.; Patricia Seeley, Ergonomics Solutions LLC; Amy Stone, Marquette U., **Comparison of Anthropometry of U.S. Electric Utility Field Workers to North American General Population Databases**
2. Stephen Freier, Marquette U.; Patricia Seeley, Ergonomic Solutions; Richard Marklin and Kyle Saginus, Marquette U., **Application of Electric Utility Workers’ Anthropometry to Clearance Between Vehicle Pedals and Adjacent Structures**
3. Enrique de la Vega Bustillos, Karla Lucero-Duarte, and Octavio López Millán, Instituto Tecnológico de Hermosillo, **Mexican Practical Anthropometry of Automotive Industry Workers**
4. Sean Hwang and Peter W. Johnson, U. of Washington, **Computer Input Devices—Race and Gender: Is There a Mismatch Between Anthropometry and Input Device Design?**

## **MEI – MANAGEMENT PERSPECTIVES ON CREATING AND BUILDING USER EXPERIENCE DEPARTMENTS**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Hospitality Room (Atrium Lobby Level)

Macroergonomics

*Chair:* Carl W. Turner, Railinc Corp.; *Cochair:*

Christopher B. Mayhorn, North Carolina State U.

*Panelists:* Ravi S. Adpathya, GE Healthcare; Mark S. Hoffman, Business Strategy Group, Inc.; Arnold M. Lund, Microsoft Corp.; Ronald G. Shapiro, Human Factors Consultant; Leslie G. Tudor, SAS Inst.

## **PD2 – DESIGNING PRODUCTS TO EVOKE AN EMOTIONAL CONNECTION IN USERS**

Discussion Panel

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Marina Room (Bay Level)

Product Design

*Chair:* Melroy D'Souza, Microsoft Corp.

*Panelists:* Peter A. Hancock, U. of Central Florida; H. C. M. (Jettie) Hoonhout, Philips Research Labs; Kelly Krout, Microsoft Corp.; Phillip J. Ohme, Intuit, Inc.; Erin K. Walline, Dell, Inc.

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## **POSI – POSTERS I**

Poster Session

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Pacific Concourse A–C (Pacific Concourse Level)

Posters

*Chair:* A. Joy Rodriguez, U. of Wisconsin, Madison;

*Cochair:* Heather Lum, U. of Central Florida

Poster sessions are 90 minutes only; presenters are

required to be present throughout the session.

*Aging*

1. Jennifer C. Romano, U.S. Census Bureau, **Using Eye Tracking to Examine Age-Related Differences in Web Site Performance**
2. Rajeev Senapati, Grisel Ventura, Luis Diaz, Luis Rene Contreras, Arunkumar Pennathur and Julia Bader, U. of Texas at El Paso, **Test-Retest Reliability of Functional Anthropometry and OARS Survey Among Older Mexican-American Adults**

*Ergonomics*

3. Xingda Qu and Xinyao Hu, Nanyang Technological U., **Effects of Visual Input on Standing Balance Control When Back-Carrying External Loads**
4. Molly B. Johnson, Washington U. School of Medicine; Richard E. A. Van Emmerik, U. of Massachusetts, **The Impact of Head Orientation on Multisegmental Torso Coordination During the Transition From Sitting to Standing**

*Interface/Product Design*

5. Christopher A. Sanchez, Russell J. Branaghan, and James Z. Goolsbee, Arizona State U., **Learning From Small Devices: Deficits in Problem-Solving Performance But Not Factual Recall**
6. David Sharek and Michael Wogalter, North Carolina State U., **Show-All Links: Identifying Hyperlinks in Web Pages That Use Non-standard Formatting**
7. Sangwoo Bahn and Joobong Song, Seoul National U.; Taebeum Ryu, Hanbat National U.; Myung Hwan Yun, Seoul National U., **Affective Characterization of Touch and Look-and-Feel From Multivariate Analysis of Questionnaire Responses**
8. J. Bern Jordan and Gregg C. Vanderheiden, U. of Wisconsin-Madison, **Accessibility Experience Lab: Discovering the Impact of Design on Disabilities**
9. Christine M. Covas-Smith, Kenneth D. Jackson, Russell J. Branaghan, and Craig Eidman, U.S. Air Force Research Lab, **Menu Design Based on Expert Knowledge Structures: A Validation**
10. Chonyoon Chung and Esa Rantanen, Rochester Inst. of Technology, **Gestural Interaction With In-Vehicle Audio and Climate Controls**
11. Daniel Hor, Igor Dolgov, Jeremy Schwark, and William Graves, New Mexico State U., **Click This! A Study on Optimizing Toolbar Placement in Computer Graphical User Interfaces**
12. Harry Zhang, Claudia Guerrero, David Wheatley, and Young Seok Lee, Motorola Applied Research Ctr., **Privacy Issues and User Attitudes Toward Targeted Advertising: A Focus Group Study**
13. Javier Rivera, Fleet Davis, and Mustapha Mouloua, U. of Central Florida; Pascal Alberti, U. de Technologie de Compiègne, **Usability Evaluation of Two Social Networking Sites**
14. Silke M. Witt, Walter Rolandi, Elaine Zuber, Ted Brooks, and Araceli Master, TiVox, Inc.; Rebecca Loose, Cisco Systems, Inc.; James Hubbell, **Optimizing Successful Turn-Taking in Spoken Dialog Systems**
15. Will Seidelman, C. Melody Carswell, Cindy H. Lio, Russell C. Grant, Michelle Sublette, Matt Field, Brent Seales, and Duncan Clarke, U. of Kentucky, **Potential Performance Costs Associated With Large-Format Tiled Displays for Surgical Visualization**

*Potpourri*

16. Matthew Wood, InSciTech; Thomas J. Ayres, Consultant; Rajeev Kelkar and Rajeeb Khatua, InSciTech, **Walking and Jogging: An Analysis of Pedestrian Stopping Times and Distances**
17. Hongtae Kim, Seong Na, Hyejin Kim, and Wookhyun Ha, Korea Ocean Research & Development Inst., **Marine Accident Investigation and Analysis With Focus on Human Factors**
18. Jessi L. Kane, Virginia Tech, **Influence of LOC and Ethnicity on Adoption Decisions in the Use of Safety Technologies and Training in the Roofing Industry**
19. Kristin E. Oleson, Valerie K. Sims, Matthew G. Chin, Heather C. Lum, and Anne Sinatra, U. of Central Florida, **Developmental Human Factors: Children's Mental Models of Computers**
20. Cheryl L. Coyle, Lisa Whitman, and Leslie Tudor, SAS Inst., Inc., **Organizing a Human Factors Educational Event at SAS**
21. Harry Litaker and Shelby Thompson, Lockheed Martin Corp.; Robert Howard, NASA Johnson Space Ctr., **Human Habitation in a Lunar Electric Rover During a 14-Day Field Trial**
22. Morgan J. Tear, Matthew B. Thompson, and Jason M. Tangen, National ICT Australia, **The Importance of Ground Truth: An Open-Source Biometric Repository**
23. Patricia R. Ferrara and John D. Lee, U. of Wisconsin-Madison, **Poultry Growers' Control Strategies and Their Evolution**

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## **SF2 – STUDENT RESEARCH IN APPLIED VENUES: AVIATION, FARMING, AND MEDICINE**

Lecture

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Seacliff D (Bay Level)

Student Forum

*Chair:* Marita O'Brien, U. of Alabama at Huntsville;

*Cochair:* Rosemarie Yagoda, North Carolina State U.

1. Ziho Kang and Landry J. Steven, Purdue U., **Capturing and Analyzing Visual Groupings of Multiple Moving Targets in an Aircraft Conflict Detection Task Using Eye Movements**
2. Matthew K. Miller and Sandra K. Garrett, Clemson U., **Investigating Mechanic Injuries During Aircraft Maintenance Using Human Error Frameworks**
3. Christie P. Boone and Scott N. MacKinnon, Memorial U. of Newfoundland, **Evaluation of Management Practices as a Result of an Implementation of a Participatory Ergonomics Program in a Poultry Processing Plant**
4. Anuja Patil, David Gilkey, John Rosecrance, and David Douphrate, Colorado State U., **Risk Exposure Assessment of Dairy Parlor Workers**
5. Nicole Bryn Percival, Andrew K. Mayer, and Jeff K. Caird, U. of Calgary, **A Heuristic Evaluation of Three Automated External Defibrillators**

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## **STI – IN-VEHICLE DECISION SUPPORT SYSTEMS**

Lecture

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Seacliff B (Bay Level)

Surface Transportation

*Chair:* Myra Blanco, Virginia Tech.; *Cochair:* Phillip

Tretten, Luleå U. of Technology

1. James Whitmire II, U. of Central Florida; J. F. Morgan, Virginia Tech Transportation Inst.; Tal Oron-Gilad, Ben-Gurion U. of the Negev; P. A. Hancock, U. of Central Florida, **The Effect of In-Vehicle Warning Systems on Speed Compliance in Work Zones**
2. Daniel A. Drew and Caroline C. Hayes, U. of Minnesota, **In-Vehicle Decision Support to Reduce Crashes at Rural Thru-Stop Intersections**
3. Christopher Nowakowski, Jessica O'Connell, Steven E. Shladover, and Delphine Cody, U. of California, Berkeley, PATH Program, **Cooperative Adaptive Cruise Control: Driver Acceptance of Following Gap Settings Less Than One Second**
4. Kip Smith, Cognitive Engineering and Decision Making, Inc., **Quantifying Active Safety System Performance at Pedestrian Detection**
5. Nathan Medeiros-Ward, Joel M. Cooper, Andrew J. Doxon, David L. Strayer, and William R. Provancher, U. of Utah, **Bypassing the Bottleneck: The Advantage of Fingertip Shear Feedback for Navigational Cues**

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## **TI – MAKING THE IMPLICIT EXPLICIT**

Invited Symposium

Tuesday, September 28, 2010, 1:30 to 3:00 p.m.

Garden Room A (Atrium Lobby Level)

Training

*Chair:* Denise Nicholson U. of Central Florida,

*Cochair:* Sae Schatz, U. of Central Florida

1. Denise Nicholson and Sae Schatz, U. of Central Florida, **Making the Implicit Explicit: Operationalizing Tacit Facets of Scenario-Based Training—Symposium Overview**
2. William Becker, Naval Postgraduate School; Sae Schatz, U. of Central Florida, **Higher-Order Cognitive Skills Training in Support of Contemporary Military Operations**
3. Jennifer Fowlkes, CHI Systems, Inc.; Sae Schatz, U. of Central Florida; Kevin C. Stagl, CHI Systems, Inc.; Joseph W. Norman, Florida Atlantic U., **Domain Ontology for Advanced Skills Training**
4. Stephen M. Fiore and Jennifer J. Vogel-Walcott, U. of Central Florida, **Making Metacognition Explicit: Developing a Theoretical Foundation for Metacognitive Prompting During Scenario-Based Training**
5. Robb Dunne, Sae Schatz, Stephen M. Fiore, Glenn Martin, and Denise Nicholson, U. of Central Florida, **Scenario-Based Training: Scenario Complexity**
6. Kevin C. Stagl, CHI Systems, Inc.; Sae Schatz, U. of Central Florida; Jennifer Fowlkes and Thomas Santarelli, CHI Systems, Inc., **Design Specifications for the Scenario-Based Training Automated Collection and Evaluation System (SBT-ACES)**

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## **Tuesday, September 28**

**3:30 to 5:00 p.m.**

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## **AI – SAFETY AND PHYSICAL PERFORMANCE WITH AGING**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Marina Room (Bay Level)

Aging

*Chair:* Mary E. Sesto, U. of Wisconsin-Madison;

*Cochair:* Curt B. Irwin, U. of Wisconsin-Madison

1. Curt B. Irwin, Craig C. Kage, Kreg G. Gruben, and Mary E. Sesto, U. of Wisconsin-Madison, **Examination of Older Females' Grip Characteristics**
2. Grisel Ventura, Rajeev Senapati, Luis Diaz, Arunkumar Pennathur, Luis Rene Contreras, and Julia Bader, U. of Texas at El Paso, **Comparative Analyses of Functional Reaches of Older Mexican-American Adults**
3. Robert A. Hall, Consultant; Paul J. Compation, Sandra L. Carpenter, and Pamela O'Neal, U. of Alabama Huntsville, **A Low-Cost Intervention to Prevent Falls in Active Older Women**

4. Richard R. Goodenough, Johnell O. Brooks, and Matthew C. Crisler, Clemson U.; William L. Logan, Palmetto Health, **Developing a New Driving Simulator Task to Assess Drivers' Functional Object Detection**

5. Soyun Kim, Michael S. Wogalter, and Christopher B. Mayhorn, North Carolina State U., **Older and Younger Drivers' Beliefs About Motor Vehicle Features to Benefit Their Safe Driving**

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## **ACI – RESEARCH AND METHODS PERTAINING TO EEG**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Seacliff A (Bay Level)

Augmented Cognition

*Chair:* Lee W. Sciarini, Naval Air Warfare Ctr.; *Cochair:* Irwin Hudson, U.S. Army Research Lab

1. Ronald H. Stevens and Trysha L. Galloway, UCLA School of Medicine, IMMEX Project; Chris Berka and Adrienne Behneman, Advanced Brain Monitoring, Inc., **Temporal Sequences of Neurophysiologic Synchronies Can Identify Changes in Team Cognition**

2. Grant Taylor and Lauren Reiner-Jones, U. of Central Florida; Keryl Cosenzo, U.S. Army Research Lab; Denise Nicholson, U. of Central Florida, **Comparison of Multiple Physiological Sensors to Classify Operator State in Adaptive Automation Systems**

3. Daniel M. Roberts, Brian A. Taylor, Jane H. Barrow, Geoffrey Robertson, and George Buzzell, George Mason U.; Ciara Sibley and Anna Cole, Strategic Analysis Inc.; Joseph Coyne, U.S. Naval Research Lab; Carryl Baldwin, George Mason U., **EEG Spectral Analysis of Workload for a Part-Task UAV Simulation**

4. Deepika Dasari, Chris Crowe, Chen Ling, Min Zhu, and Lei Ding, U. of Oklahoma, **EEG Pattern Analysis for Physiological Indicators of Mental Fatigue in Simulated Air Traffic Control Tasks**

5. Justin R. Estep, Jason W. Monnin, and James C. Christensen, U.S. Air Force Research Lab; Glenn F. Wilson, Physiometrix, Inc., **Evaluation of a Dry Electrode System for Electroencephalography: Applications for Psychophysiological Cognitive Workload Assessment**

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## **AS3 – NEXTGEN: UNDER CONSTRUCTION—WORKS IN PROGRESS TO ENHANCE AVIATION OPERATIONS**

Discussion Panel

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Grand Ballroom C (Street Level)

Aerospace Systems

*Chair:* Amy Alexander, Aptima Inc.

*Panelists:* Paul Picciano, Aptima Inc.; Thomas B. Sheridan, Massachusetts Inst. of Technology; Laura Strater, SA Technologies; Nathan Schurr, Aptima Inc.;

John-Paul Clarke, Georgia Tech; Vikram Manikonda, Intelligent Automation, Inc.

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## **CE3 – WORKLOAD AND SITUATION AWARENESS**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Lisa Jo Elliott, New Mexico State U.; *Cochair:* Jennifer Riley, SA Technologies

1. Jason Ralph, Wayne D. Gray, and Michael J. Schoelles, Rensselaer Polytechnic Inst., **Squeezing the Balloon: Analyzing the Unpredictable Effects of Cognitive Workload**

2. Rosemarie E. Yagoda, North Carolina State U., **Development of the Human-Robot Interaction Workload Measurement Tool (HRI-WM)**

3. Haydee M. Cuevas and Cheryl A. Bolstad, SA Technologies, **Influence of Team Leaders' Situation Awareness on Their Team's Situation Awareness and Performance**

4. Lelyn D. Saner, U. of Maryland; Cheryl A. Bolstad, SA Technologies; Cleotilde Gonzalez, Carnegie Mellon U.; Haydee M. Cuevas, SA Technologies, **Predicting Shared Situation Awareness in Teams: A Case of Differential SA Requirements**

5. Anand Tharanathan, Honeywell ACS Labs; Peter Bullemer, Human Centered Solutions, LLC; Jason Laberge, Honeywell ACS Labs; Dal Vernon Reising and Rich McInnis, Human Centered Solutions, LLC, **Functional Versus Schematic Overview Displays: Impact on Operator Situation Awareness in Process Monitoring**

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## **FPI – FORENSICS CHALLENGES IN HUMAN FACTORS AND ERGONOMICS**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Seacliff B (Bay Level)

Forensics Professional

*Chair:* Erin Alves, Raytheon; *Cochair:* Tonya Smith-Jackson, Virginia Tech

1. Shelley Waters Deppa, Safety Behavior Analysis, Inc.; Carol Pollack-Nelson, Independent Safety Consulting; Elaine D. Allen, Safety Behavior Analysis, Inc., **So Your Consumer Product Complies With the Voluntary Safety Standard—Now What?**

2. Genevieve M. Heckman and Erin M. Harley, Exponent Failure Analysis; Irving Scher, Guidance Engineering and Applied Research; Douglas E. Young, Exponent Failure Analysis, **Helmet Use in Sledding: Do Users Comply With Manufacturers' Warnings?**

3. Kenneth Nemire, HFE Consulting, LLC; David A. Thompson, Portola Assoc., Inc.; H. Harvey Cohen, Error Analysis, Inc., **Stick-and-Fall: A Previously Unstudied Type of Fall**

4. Kenneth Nemire, HFE Consulting LLC, **Case Study: Wheelchair Conspicuity at Night**

5. Farheen S. Khan, Joseph B. Sala, and Steven R. Arndt, Exponent Failure Analysis, **Reducing Subjectivity When Attempting Auditory Scene Recreation in Accident Reconstruction**

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## **HC3 – SUPPORTING COGNITION AND DECISION MAKING IN CLINICAL WORK**

Discussion Panel

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Paul Gorman, Oregon Health & Science U.; *Cochair:* Elizabeth Canzone, Old Dominion U.

*Panelists:* Joshua Richardson, Oregon Health & Science U.; Alissa Russ, Roudebush VA Medical Ctr.; Laura G. Militello, U. of Dayton Research Inst.; Yan Xiao, Baylor Health Care System

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## **IDI – INDIVIDUAL DIFFERENCES IN AFFECTIVE TRAITS AND STATES**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Seacliff D (Bay Level)

Individual Differences in Performance

*Chair:* Carryl Baldwin, George Mason U.

1. James L. Szalma and Grace W. L. Teo, U. of Central Florida, **The Joint Effect of Task Characteristics and Neuroticism on the Performance, Workload, and Stress of Signal Detection**

2. Almira Kustubayeva, Kazakh National U.; April Rose Panganiban and Gerald Matthews, U. of Cincinnati, **Affective Biases in Information Search During Tactical Decision Making**

3. Paula Desmond, Lauren Margulieux, Addison English, and Alexandra Burbey, Southwestern U.; Gerald Matthews, U. of Cincinnati, **Emotional Intelligence and Driver Stress**

4. Joel Suss and Paul Ward, Michigan Technological U., **Skill-Based Differences in the Cognitive Mechanisms Underlying Failure Under Stress**

5. Tak C. Woo, William S. Helton, and Paul N. Russell, U. of Canterbury, **The Role Emotion and Gender Play in the Choice of Commuting by Bicycle: A Preliminary Study From Christchurch, New Zealand**

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## **PD3 – NINTH ANNUAL USER-CENTERED PRODUCT DESIGN AWARD SESSION**

Alternative Format

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Grand Ballroom A (Street Level)

Product Design

*Chair:* Dianne L. McMullin, Boeing Co.; *Cochair:* Stanley H. Caplan, Usability Assoc.

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## **PPI – PERCEPTION & PERFORMANCE POTPOURRI I**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Bayview Room B (Bay Level)

Perception & Performance

*Chair:* Paul R. Havig, U.S. Air Force Research Lab

1. Wayne Giang, U. of Waterloo; Allan Keefe, Defence Research and Development Canada; Jocelyn Keillor, National Research Council of Canada, **Effect of Brightness of Assisted Target Detection Cues in a Simulated Search and Rescue Task**

2. Katherine A. Tarling and Duncan P. Brumby, U. College London, **Density Guides Visual Search: Sparse Groups Are First Even When Slower**

3. Thomas Ferris, Kiana Stringfield, and Nadine Sarter, U. of Michigan, **Tactile “Change Blindness” in the Detection of Vibration Intensity**

4. Yarden Moskovitch, Myoungsoon Jeon, and Bruce N. Walker, Georgia Tech, **Enhanced Auditory Menu Cues on a Mobile Phone Improve Time-Shared Performance of a Driving-Like Dual Task**

5. Kelly S. Steelman-Allen, Donald Talleur, Ronald Carbonari, Yusuke Yamani, and Jason McCarley, U. of Illinois at Urbana-Champaign; Ashley Nunes, CSSI, Inc., **Effects of Data Link Display Format and Position on Flight Performance**

6. Tracy L. Mitzner, Georgia Tech; Dayna R. Touron, U. of North Carolina-Greensboro; Wendy A. Rogers and Christopher Hertzog, Georgia Tech, **Checking It Twice: Age-Related Differences in Double-Checking During Visual Search**

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## **SI – SAFETY COMMUNICATIONS: DO YOU GET IT?**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Seacliff C (Bay Level)

Safety

*Chair:* William Vigilante, Jr., Robson Forensic, Inc.; *Cochair:* Kathryn Woodcock, Ryerson U.

1. Robert G. Hesse, Nicholas H. Steele, and Michael J. Kalsher, Rensselaer Polytechnic Inst.; Claudia Mont'Alvão, Pontifical Catholic U. of Rio de Janeiro, **Evaluating Hazard Symbols for the Globally Harmonized System (GHS) for Hazard Communication**

2. Michael S. Wogalter, Jesseca R. I. Taylor, Soyun Kim, Emily R. Morgan, Kwamoo M. Coleman, and Julianne West, North Carolina State U., **Hazard Connotation of Fire Safety Terms**

3. Raymond W. Lim, Pierce College; William J. Vigilante, Robson Forensic, Inc., **Consumers' Interpretation of the Statement: “Do Not Leave [Insert Product Here] Unattended”**

4. Jeffrey J. Smith, IBM; Michael S. Wogalter, North Carolina State U., **Behavioral Compliance to In-Manual and On-Product Warnings**

5. Eric J. Boelhouwer and Jerry Davis, Auburn U., **Effects of GHS Hazard Category, Signal Words, and Pictograms on an Individual's Assessment of Perceived Risk**

## **SD2 – HUMAN-SYSTEMS ENGINEERING: STANDARDS, SPEED, AND SIMPLICITY**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Hospitality Room (Atrium Lobby Level)

**System Development**

*Chair:* Alley Kochan, L-3 Communications; *Cochair:* Pamela Savage-Knepshield, U.S. Army Research Lab

1. Andrew Mikutel, Jr., James Pharmer, Charles Tucker, and Karen Holness, Naval Air Warfare Ctr., **Issues With Applying MIL-STD-1472F Standards in the Context of a Large-Screen Display Assessment**
2. Jake Wetzel and Angie Hernandez, Basic Commerce and Industries, Inc.; Daniel F. Wallace, Naval Sea Systems Command, **Effects of Display Media Type, Ambient Lighting, Viewing Distance, Viewing Offset, Object Type, and Object Size on Large-Screen Display Legibility**
3. Lavie Pinchas Golenberg, Richard Darin Ellis, and Gary Witus, Wayne State U., **A Rapid Methodology for Rank Ordering of Ergonomic Preferences: Application to Input Device Selection**
4. William Kosnik and Hector Acosta, U.S. Air Force Research Lab, **HSI as a Method for Embedding Human-Centered Design in Air Force Rapid Acquisition Programs**
5. Farzan Sasangohar, Kristopher Thornburg, and M. L. Cummings, Massachusetts Inst. of Technology; Amy D'Agostino, Nuclear Regulatory Commission, **Mapping Complexity Sources in Nuclear Power Plant Domains**

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## **T2 – TRAINING VIGILANCE, STRESS, AND MULTITASKING**

Lecture

Tuesday, September 28, 2010, 3:30 to 5:00 p.m.

Garden Room A (Atrium Lobby Level)

**Training**

*Chair:* Michelle Harper-Sciarini, APRISE; *Cochair:* Camilla Knott, Aptima Inc.

1. James P. Bliss and Eric Chancey, Old Dominion U., **The Effects of Alarm System Reliability and Reaction Training Strategy on Alarm Responses**
2. David Schuster, Javier Rivera, Brittany Sellers, Stephen M. Fiore, and Florian Jentsch, U. of Central Florida, **Individually Adaptive Discrimination Training for Improvised Explosive Detection**
3. Monica Z. Weiland, MITRE Corp., **Field Evaluation of Advanced Training Technologies in Terminal Air Traffic Control**
4. Christopher K. McClernon, U.S. Air Force Research Lab; Michael E. McCauley and Paul E. O'Connor, Naval Postgraduate School; Joel S. Warm, U.S. Air Force Research Lab, **Stress Training Enhances Pilot Performance During a Stressful Flying Task**
5. David B. Boles and Caryn E. Penn, U. of Alabama, **Resource Training Using Alternating Tasks**

# **Tuesday, September 28**

## **5:00 to 7:00 p.m.**

### **Technical Group Networking/ Business Meetings**

**System Development**

Hospitality Room (Atrium Lobby Level)

5:00 to 6:00 p.m.

**Product Design**

Marina Room (Bay Level)

5:30 to 7:00 p.m.

## Wednesday, September 29

7:00 to 8:30 a.m.

### Technical Group Networking/ Business Meeting

#### Education

*Sponsored by the Boren Family Foundation*

Pacific Concourse M (Pacific Concourse Level)

7:00 to 8:30 a.m. (breakfast)

#### Early-Morning Madness

7:15 to 8:00 a.m.

Grand Ballroom B (Street Level)

## Wednesday, September 29

8:30 to 10:00 a.m.

### AS4 – BRIDGING THE GAP BETWEEN HUMAN-AUTOMATION INTERFACE ANALYSIS AND FLIGHT DECK DESIGN GUIDANCE

Discussion Panel

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Seacliff A (Bay Level)

Aerospace Systems

*Chair:* Michael Feary, NASA Ames Research Ctr.

*Panelists:* Thomas McCloy, Federal Aviation Admin.;

Christopher Wickens, Alion Science and Technology;

David Kaber, North Carolina State U.; Amy Pritchett,

Georgia Tech; Lance Sherry, George Mason U.

### CE4 – DECISION-MAKING AND DECISION STRATEGIES

Lecture

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Richard Pew, BBN; *Cochair:* John Flowers, U. of

Nebraska-Lincoln

1. Lisa A. Rehak and Barb Adams, Humansystems Inc.; Micheline Belanger, Defence Research and Development Canada, **Mapping Biases to the Components of Rationalistic and Naturalistic Decision Making**

2. Patricia C. Brennan and Poornima Madhavan, Old Dominion U., **Application of the Dual-Process Theory of Decision Making to Threat Detection During Airport Security Screening**

3. Angela Tan and Martin G. Helander, Nanyang Technological U.; Boon Kee Soh, DSO National Labs, **Motivation-Expectation Space as a Representative Structure for Decision Strategies**

4. Roland Gasser, U. of Toronto, **Decision Strategy Types and Situation-Contingent Selection Mechanisms: A Review and Some Field Data**

5. Shaun Hutchins and Patricia McDermott, Alion Science and Technology; Michael Barnes, U.S. Army Research Lab, **A Comparison of Asset Versus Criteria Allocation Decisions in Military Decision Making**

### CS2 – PHYSICAL ISSUES IN COMPUTER SYSTEMS

Lecture

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Seacliff C (Bay Level)

Computer Systems; cosponsored by Internet

*Chair:* Ken Ohnemus

1. Matt J. Camilleri, U. of California, Berkeley; Michael C. Bartha and Cynthia J. Purvis, Hewlett-Packard Co.; David M. Rempel, U. of California, San Francisco, **Neck Biomechanics and Multiple Wide Computer Displays**

2. Brian R. Johnson, Regan Hanson, Nick Andrew, and D. Craig Tennant, Naval Air Warfare Ctr.; Jeffrey P. Gay, Tekla Research, **Fatigue Evaluation of a MH-60 Helicopter Input Device**

3. Alan Hedge, David Feathers, and Kimberly Rollings, Cornell U., **Ergonomic Comparison of Slanted and Vertical Computer Mouse Designs**

4. Sacha N. Duff, Curt B. Irwin, Jenny L. Skye, Mary E. Sesto, and Douglas A. Wiegmann, U. of Wisconsin-Madison, **The Effect of Disability and Approach on Touch Screen Performance During a Number Entry Task**

5. Donghun Lee, Cheolhyun Jeong, and Min K. Chung, Pohang U. of Science and Technology, **Effects of User Age and Zoomable User Interfaces on Information Searching Tasks in a Map-Type Space**

### ED2 – RETHINKING ELDER DESIGN

Discussion Panel

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Garden A (Atrium Lobby Level)

Environmental Design

*Chair:* Rani Lueder, Humanics ErgoSystems, Inc.

*Panelists:* Daryle Gardner-Bonneau, Bonneau and Assoc.; Wendy A. Rogers, Georgia Tech; Neil Charness, Florida State U.

### GS3 – HEAD TO HEAD: REMOTE USABILITY TESTING TAKES ON LIVE USABILITY TESTING IN THE HFES ULTIMATE FIGHTING CHALLENGE

Alternative Format

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Pacific Concourse O (Pacific Concourse Level)

General Sessions; cosponsored by Internet

*Chair:* Marc Resnick, Bentley U.; *Cochair:* Ania

Rodriguez, Keylime Interactive

### HC4 – JUST WHAT THE DOCTOR ORDERED? THE ROLE OF COGNITIVE DECISION SUPPORT SYSTEMS IN CLINICAL DECISION- MAKING AND PATIENT SAFETY

Discussion Panel

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Elizabeth Lazzara, U. of Central Florida; Sallie

Weaver, U. of Central Florida

*Panelists:* Ben-Tzion Karsh, U. of Wisconsin-Madison;

Stephanie Guerlain, U. of Virginia; David Metcalf, U.

of Central Florida; Jenna L. Marquard, U. of Massa-

chusetts Amherst; Paul Gorman, Oregon Health and

Science U.

### IE3 – PIONEERS OF ERGONOMICS: KARL KROEMER AND COLIN DRURY

Invited Address

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Grand Ballroom C (Street Level)

Industrial Ergonomics

*Chair:* Sean Gallagher, National Inst. for Occupational

Safety and Health; *Cochair:* Kermit Davis, U. of

Cincinnati

1. Karl Kroemer, Virginia Tech, **Human Engineering the Keyboard—40 Years Later**

2. Colin G. Drury, U. at Buffalo, SUNY, **HF/E and Service Industries: New Directions for IETG?**

### SF3 – WAYFINDING, MEMORY, AND WORKLOAD: STUDENT RESEARCH IN COGNITION

Lecture

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Seacliff D (Bay Level)

Student Forum

*Chair:* Anne McLaughlin, North Carolina State U.;

*Cochair:* Thomas Ferris, U. of Michigan

1. Elliot P. Fenech, Frank A. Drews, and Jonathan Z. Bakdash, U. of Utah, **The Effects of Acoustic Turn-by-Turn Navigation on Wayfinding**

2. Daniel Nystrom, Adrian Musters, and Frank Drews, U. of Utah, **The Effect of Interruption Similarity in Planning Tasks**

3. Kevin T. Waicekaskas, Thomas G. Kannampallil, Katie Kopren, Pei-Hsiu Tan, Wai-Tat Fu, and Daniel Morrow, U. of Illinois at Urbana-Champaign, **Collaborative Tools in a Simulated Patient-Provider Medication Scheduling Task**

4. Seongsik Jo and Rohae Myung, Korea U.; Daesub Yoon, Electronics and Telecommunications Research Inst., **A Proposed Methodology for the Theory-Based Prediction of Mental Workload With a Cognitive Architecture**

5. Shanqing Yin, Nanyang Technological U.; Jason Laberge, Honeywell Inc., **How Process Control Operators Derive, Update, and Apply Mental Models**

### ST2 – SAFE DRIVING IN THE MULTITASKING GENERATION

Discussion Panel

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Seacliff B (Bay Level)

Surface Transportation

*Chair:* James W. Jenness, Westat, Inc.

*Panelists:* Luis Ricardo Prada, Google Inc.; Neil D.

Lerner, Westat, Inc.; Clifford I. Nass, Stanford U.;

Daniel V. McGehee, U. of Iowa; John D. Lee, U.

Wisconsin-Madison

### TE2 – HOW WOULD YOU TEST THIS? TEST AND EVALUATION WORKS-IN-PROGRESS FORUM

Alternative Format

Wednesday, September 29, 2010, 8:30 to 10:00 a.m.

Hospitality Room (Atrium Lobby Level)

Test & Evaluation

*Chair:* Rebecca A. Grier, U.S. Navy

*Panelists:* Gisela Susanne Bahr, Florida Inst. of

Technology; Sally Stader, U.S. Army Research Inst.;

Nicholas Kelling, Marshall U.; Ernesto A.

Bustamante, U. of Idaho

## Wednesday, September 29

10:30 a.m. to 12:00 noon

### AC2 – THE BASIC VERSUS APPLIED RESEARCH DILEMMA

Discussion Panel

Wednesday, September 29, 2010, 10:30 a.m. to

12:00 noon

Grand Ballroom C (Street Level)

Augmented Cognition

*Chair:* Lauren Reinerman-Jones, U. of Central Florida

*Panelists:* Raja Parasuraman, George Mason U.; Robert

W. Proctor, Purdue U.; Joel S. Warm, U.S. Air Force

Research Lab; Peter A. Hancock, U. of Central

Florida; Christopher D. Wickens, Private Consultant;

Waldemar Karwowski, U. of Central Florida

### CE5 – COGNITIVE ENGINEERING IN HEALTH CARE

Lecture

Wednesday, September 29, 2010, 10:30 a.m. to

12:00 noon

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making;

cosponsored by Health Care

*Chair:* Shilo Anders, Vanderbilt U.; *Cochair:* Robert

Wears, U. of Florida

1. Manida Swangnetr, Biwen Zhu, Kinley B. Taylor, and David B. Kaber, North Carolina State U., **Assessing the Effects of Humanoid Robot Features on Patient Emotion During a Medicine Delivery Task**

2. Paul Ward, Michigan Technological U.; Jason Torof, James Whyte, and David W. Eccles, Florida State U.; Kevin R. Harris, Austin Peay State U., **Option Generation and Decision Making in Critical-Care Nursing**

3. Rollin J. Fairbanks and Theresa K. Guarrera, U. of Rochester; Ann Bisantz, U. at Buffalo, SUNY; Michael Venturino, Carestream Health; Per-Lennart Westesson U. of Rochester, **Opportunities in IT Support of Workflow and Information Flow in the Emergency Department Digital Imaging Process**
4. Linsey M. Barker and Kalyan S. Pasupathy, U. of Missouri, **Identification of Relationships Between Work System Parameters and Fatigue in Registered Nurses: A Data Mining Approach**
5. Frank A. Drews and David Fawcett, U. of Utah, **Why Health Care Is Not Like Aviation: Control of Natural and Technical Systems**

## **DEM 2 – REAL-WORLD HUMAN FACTORS DEMONSTRATIONS**

Demonstrations

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom A (Street Level)

Demonstrations

*Chair:* Ron Boring, INL

1. Christopher A. Miller, Jeffrey M. Rye, and Peggy Wu, Smart Information Flow Technologies, **Reasoning About Information Needs Versus Information Conveyed: Computational Design, Evaluation, and Consistency Analysis**
2. David Rempel, Alan Barr, and Ira Janowitz, U. of California, Berkeley, **Interventions for Overhead Drilling: A Demonstration**
3. Bum Chul Kwon and Ji Soo Yi, Purdue U., **ReadingMate: The Impact of a Content Stabilization Technique on Reading-While-Running Performance**

## **E2 – THE FUTURE OF HUMAN FACTORS EDUCATION: PRACTICES AND NEEDS FROM THE PERSPECTIVES OF ACADEMIA, GOVERNMENT, AND INDUSTRY**

Discussion Panel

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Seacliff A (Bay Level)

Education

*Chair:* Christopher Brill, Old Dominion U.

*Panelists:* Anthony D. Andre, Interface Analysis Assoc.; Barry Beith, HumanCentric, Inc.; Deborah A. Boehm-Davis, George Mason U.; Valerie J. Gawron, MITRE Corp.; Christopher B. Mayhorn, North Carolina State U.

## **GS4 – TRANSFORMING THE ENERGY ECONOMY—THE ROLE OF BEHAVIORAL AND SOCIAL SCIENCE**

Discussion Panel

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Seacliff B (Bay Level)

General Sessions

*Chair:* Thomas Sanquist, Pacific Northwest National Lab

*Panelists:* Mithra Moezzi, Portland State U.; Edward Vine, Alan Meier, and Rick Diamond, Lawrence Berkeley National Lab; Thomas Sheridan, Massachusetts Inst. of Technology

## **HP2 – HUMAN PERFORMANCE MODELING IN THE AEROSPACE DOMAIN**

Lecture

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Seacliff C (Bay Level)

**Human Performance Modeling; cosponsored by Aerospace Systems**

*Chair:* Charneta Samms, U.S. Army Research Lab;

*Cochair:* Robert Pastel, Michigan Technological U.

1. Arne Norlander, Swedish Armed Forces Joint Concept Development & Experimentation Ctr., **Integrating Systems Theory, Cognitive Systems Engineering, and Psychophysiology in Performance Analysis**
2. Douglas T. Wong, NASA Johnson Space Ctr.; Brett Walters, Alion Science and Technology; Lisa Fairey, Lockheed Martin Space Systems Co., **Validating Human Performance Models of the Future Orion Crew Exploration Vehicle**
3. Michael C. Dorneich, Jeff A. Lancaster, Christopher J. Hamblin, Olu Olofinboba, and Robert E. DeMers, Honeywell Labs, **Deriving Cursor Control Device Expectations for the Orion Crew Exploration Vehicle**
4. Ryan M. Hope and Esa M. Rantanen, Rochester Inst. of Technology; Lauri Oksama, U. of Turku, **Multiple Identity Tracking and Entropy in an ATC-Like Task**
5. Aaron S. Dietz, Sallie J. Weaver, Mary Jane Sierra, Wendy L. Bedwell, Eduardo Salas, Stephen M. Fiore, and Kimberly Smith-Jentsch, U. of Central Florida; James Driskell, Florida Maxima Corp. **Unpacking the Temporal and Interactive Effects of Stress on Individual and Team Performance**

## **II – HARVESTING INNOVATION IN THE INDUSTRY: PRESCRIPTIONS FOR BREAKTHROUGH PRODUCTS**

Discussion Panel

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Bayview B (Bay Level)

**Internet; cosponsored by Computer Systems**

*Chair:* Felix Portnoy, U. of North Carolina at Chapel Hill; *Cochair:* Marc Resnick, Bentley U.

*Panelists:* Victoria Bellotti, Palo Alto Research Ctr.; Arnie Lund, Microsoft Corp.; Dan Russell, Google Inc.; Kristian Simsarian, IDEO; Luke Wroblewski, Yahoo! Inc.

## **ME2 – HEALTH CARE RECOVERY: HOW THE SCIENCE OF HUMAN FACTORS IS CHALLENGING HEALTH CARE TO MOVE PATIENT SAFETY FORWARD**

Discussion Panel

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Seacliff D (Bay Level)

**Macroergonomics; cosponsored by Health Care**

*Chair:* Sallie J. Weaver, U. of Central Florida; *Cochair:* Deborah DiazGranados, U. of Central Florida

*Panelists:* Robert L. Wears, U. of Florida; Emily S. Patterson, Ohio State U.; Michael A. Rosen, Booz Allen Hamilton, Inc.; Rhona Flin, U. of Aberdeen; Paul Gorman, Oregon Health and Science U.

## **PD4 – NEW CONCEPTS IN PRODUCT DESIGN**

Lecture

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Hospitality Room (Atrium Lobby Level)

Product Design

*Chair:* Enid Montague, U. of Wisconsin-Madison;

*Cochair:* Sharon Joines, North Carolina State U.

1. Tareq Z. Ahram and Waldemar Karwowski, Inst. for Advanced Systems Engineering; Ben Amaba, IBM Industry Solutions, **User-Centered Systems Engineering & Knowledge Management Framework for Design & Modeling of Future Smart Cities**
2. Bertina Lee and Carolyn G. MacGregor, U. of Waterloo, **The Emotional Impact of Surface and Prototyping Properties in Product Design**
3. Yusuke Yamani, Jason S. McCarley, and Deana McDonagh, U. of Illinois at Urbana-Champaign, **Transgenerational Communication Through Affective Imagery in Mood Boards**
4. Danielle Lottridge and Mark Chignell, U. of Toronto, **Sliders Rate Valence But Not Arousal: Psychometrics of Sliders for Self-Reported Emotion**
5. Hugh E. McLoone, Microsoft Corp., **Product Archetype of Personal Computers as an Expression of the Collective Unconsciousness of People on Their Hero's Journey**

## **POS2 – POSTERS 2**

Poster Session

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Pacific Concourse A–C (Pacific Concourse Level)

Posters

*Chair:* Kristin Oleson, U. of Central Florida; *Cochair:* Rajaram Bhagavathula, Virginia Tech

Poster sessions are 90 minutes only; presenters are required to be present throughout the session.

### **Robotics/Uninhabited Vehicles**

1. Webb Stacy, Aptima Inc.; Joseph V. Cohn, Defense Advanced Research Projects Agency; Alexandra Geyer, Aptima Inc.; Tracey Wheeler, System Planning Corp., **A Cognition-Based Control System for Autonomous Robots**
2. Elizabeth Phillips, Javier Rivera, Thomas Fincannon, Aaron S. Dietz, and Ariel Afek, U. of Central Florida, **The Relationship of Closure Speed and Training on Target Identification for Unmanned Vehicle Operators**
3. Jessie Y. C. Chen and Michael J. Barnes, U.S. Army Research Lab, **Supervisory Control of Robots Using RoboLeader**
4. Jessie Y. C. Chen, U.S. Army Research Lab; Razia N. V. Oden, National Research Council; Caitlin Kenny, U. of Central Florida; John O. Merritt, The Merritt Group, **Stereoscopic Displays for Robot Teleoperation and Simulated Driving**
5. Michael J. Barnes, U.S. Army Research Lab; Florian Jentsch, U. of Central Florida; Jessie Y. C. Chen, Ellen Haas, and Keryl A. Cosenzo, U.S. Army Research Lab, **Soldier-Robot Teams: Six Years of Research**

### **Automation**

6. Tyler Shaw, Adam Emfield, Andre Garcia, and Ewart de Visser, George Mason U.; Chris Miller, Smart Information Flow Technologies; Raja Parasuraman, George Mason U.; Lisa Fern, NASA Ames/San Jose State U. Research Foundation, **Evaluating the Benefits and Potential Costs of Automation Delegation for Supervisory Control of Multiple UAVs**
7. Jeremy Schwark, Igor Dolgov, William Graves, and Daniel Hor, New Mexico State U., **The Influence of Perceived Task Difficulty and Importance on Automation Use**
8. Rylan Clark, Aana M. Ingebritsen, and Ernesto A. Bustamante, U. of Idaho, **Differential Effects of Likelihood Alarm Technology and False-Alarm vs. Miss-Prone Automation on Decision-Making Accuracy and Bias**
9. Randy B. Davenport and Ernesto A. Bustamante, U. of Idaho, **Effects of False-Alarm vs. Miss-Prone Automation and Likelihood Alarm Technology on Trust, Reliance, and Compliance in a Miss-Prone Task**

### **Aviation**

10. Rosemarie Reynolds, Elizabeth L. Blickensderfer, Adria Martin, and Kevin Rossignon, Embry Riddle Aeronautical U., **Human Factors Training in Aviation Maintenance: Impact on Incident Rates**
11. Kathleen L. Mosier, Paula Rettenmaier, Matthew McDearmid, Jordan Wilson, Stanton Mak, and Lakshmi Raj, San Francisco State U.; Judith Orasanu, NASA Ames Research Ctr., **Pilot/ATC Communication Conflicts: Implications for NextGen**
12. Kara Latorella, NASA Langley; Kyle Ellis, U.Iowa; William Lynn, NASA Langley; Dennis Frasca, PSI International Inc.; Daniel Burdette, Lockheed Martin Inc.; Alan Douglas, PSI International Inc., **Dual Oculometer System for Aircraft Crew Assessment**

### **Driving and Transportation Safety/Research**

13. George D. Park, Claremont Graduate U.; Catherine L. Reed, Claremont McKenna College, **Distribution of Peripheral Vision for a Driving Simulator Functional Field of View Task**
14. Yi-Ching Lee, Children's Hospital of Philadelphia, **Measuring Drivers' Frustration in a Driving Simulator**

15. Michael E. Rakauskas, Justin S. Graving, and Michael P. Manser, U. of Minnesota; James W. Jenness, Westat, **Determining the Accuracy and Acceptance of Using Driver Interface Display Components and Fuel Economy Information Types**
16. Mustapha Mouloua, Amber Ahern, and Edward Rinalducci, U. of Central Florida; Pascal Alberti, U. de Technologie de Compiègne; J. Christopher Brill, Old Dominion U.; Adrian Quevedo, NFB Research Labs, Inc., **The Effects of Text Messaging on Driver Distraction: A Bio-Behavioral Analysis**
17. Justin S. Graving, Michael E. Rakauskas, and Michael P. Manser, U. of Minnesota; James W. Jenness, Westat, Inc., **A Binary Response Method to Determine the Usability of Seven In-Vehicle Fuel Economy Displays**
18. Andre Garcia, Carryl Baldwin, and Matt Dworsky, George Mason U., **Gender Differences in Simulator Sickness in Fixed-Versus Rotating-Base Driving Simulator**

#### *Ergonomics*

19. Massimiliano Pau, Federica Corona, Bruno Leban, Elisa Priolo, and Marco Pau, U. of Cagliari, **Postural Sway and Foot-Ground Relationship Are Significantly Modified by Backpack Carriage During Upright Stance: A Study on Primary Schoolchildren**

#### *Modeling and Simulation*

20. Ming-I Brandon Lin, National Cheng Kung U., **Predicting Human Pulmonary Ventilation Using Artificial Neural Network**

#### *University Lab Posters*

Central Michigan U.  
Driver Evaluation, Education, and Research Center

Clemson U.  
Human Factors in Complex Environments Lab

Georgia Tech  
Problem Solving and Educational Technology Lab

Human Factors and Aging Lab

New Mexico State U.  
Perception, Action, and Cognition in Mediated, Artificial, and Naturalistic Environments Lab

Purdue U.  
Group Performance Environments Research Lab

Texas Tech U.  
Human Factors Psychology Program Lab

U. of Michigan  
Center for Ergonomics

## **VE2 – LEARNING IN VIRTUAL ENVIRONMENTS**

### Lecture

Wednesday, September 29, 2010, 10:30 a.m. to 12:00 noon

Garden A (Atrium Lobby Level)

### Virtual Environments

*Chair:* Laura Strater, SA Technologies; *Cochair:* Heather Lum, U. of Central Florida

1. Zhiqiang Luo, Nanyang Technological U.; Christopher D. Wickens, Alion Science and Technology; Henry Been-Lirn Duh, National U. of Singapore; I-Ming Chen, Nanyang Technological U., **Integrating Route and Survey Learning in Complex Virtual Environments: Using a 3-D Map**
2. Davin Pavlas, Kyle Heyne, Wendy Bedwell, Elizabeth Lazzara, and Eduardo Salas, U. of Central Florida, **Game-Based Learning: The Impact of Flow State and Videogame Self-Efficacy**
3. Michael J. Singer, and John Barnett, U.S. Army Research Inst.; Grant Taylor, Consortium Research Fellow, **Military Training in Virtual Environments: User Interface Evaluations**
4. Sandro Scielzo, Fleet Davis, Jennifer M. Riley, and John Hyatt, SA Technologies; Donald Lampton, U.S. Army Research Inst.; James Merlo, U.S. Military Academy, **Leveraging Serious Games and Advanced Training Technologies for Enhanced Cognitive Skill Development**
5. Alexandra Proaps and James Bliss, Old Dominion U., **Team Performance as a Function of Task Difficulty in a Computer Game**

## **Wednesday, September 29**

**12:00 noon to 1:30 p.m.**

### Technical Group Networking/ Business Meetings

#### **Aging**

Marina Room (Bay Level)

12:00 noon to 1:30 p.m. (lunch)

#### **Perception and Performance**

Pacific Concourse L (Pacific Concourse Level)

12:00 noon to 1:30 p.m. (lunch)

## **Wednesday, September 29**

**1:30 to 3:00 p.m.**

## **AS5 – AIR TRAFFIC CONTROL AND FLIGHT DECK STRATEGIES**

### Lecture

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff A (Bay Level)

### Aerospace Systems

*Chair:* Lori McDonnell, NASA Ames Research Ctr.;

*Cochair:* Veronika Prinzo, Federal Aviation Admin.

1. Deepti Surabattula, Michael Kaplan, and Steven J. Landry, Purdue U., **Controller Interventions to Mitigate Potential Air Traffic Conflicts**
2. Esa M. Rantanen, Rochester Inst. of Technology; Christopher D. Wickens, Alion Science and Technology, **Are There Standard Conflict Resolution Maneuvers in Air Traffic Control?**
3. Julian Sanchez and Elly C. Smith, MITRE Corp., **Tower Controllers' Response Behavior to Runway Safety Alerts**
4. Sarah V. Ligda and Arik-Quang V. Dao, NASA Ames/San Jose State U. Research Foundation; Kim-Phuong Vu and Thomas Z. Strybel, California State U., Long Beach; Vernol Battiste, NASA Ames/San Jose State U. Research Foundation; Walter Johnson, NASA Ames Research Ctr., **Impact of Conflict Avoidance Responsibility Allocation on Pilot Workload in a Distributed Air Traffic Management System**
5. Yaniv Minkov, Yuval Lerner, Ronny Ophir, and Tal Oron-Gilad, Ben-Gurion U. of the Negev, **Display Type Effects in Military Operational Tasks Using UAV Video Images: Comparison Between Two Types of UAV Feeds—Mini and MALE (Medium Altitude Long Endurance) UAVs**

## **CI – FROM VOCAL CORDS TO MOBILE COMPUTING: UNDERSTANDING HOW WE COMMUNICATE**

### Lecture

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff B (Bay Level)

### Communication

*Chair:* Sehchang Hah, Federal Aviation Admin.;

*Cochair:* Kristi Schmidt Bauerly, Apple

1. Christopher K. McClernon, Mathew A. Middendorf, Gregory J. Funke, Michael J. Harter, and Benjamin A. Knott, U.S. Air Force Research Lab, **Infrasonic Measures as an Index of Workload**
2. Bonny Parke and Alan Hobbs, NASA Ames/San Jose State U. Research Foundation; Barbara Kanki, NASA Ames Research Ctr., **Passing the Baton: An Experimental Study of Shift Handover**
3. Joshua B. Hurwitz, David J. Wheatley, Keshu Zhang, and Young Seok Lee, Motorola, Inc., **Using Location History to Identify Patterns in Mobile Users' Visits to Establishments**
4. Alan B. Poole, Georgia Tech; Kelly E. Caine, Indiana U.; Arthur D. Fisk and Wendy A. Rogers, Georgia Tech, **Errors of Disclosure in Computer-Mediated Systems**
5. Jennifer Cloud-Buckner, Jennie J. Gallimore, and Rosalyn Scott, Wright State U., **Theoretical Discussion of CAMOCS and RIAS Communication Models to Support Health Care Information Technology Development**

## **GS5 – ARNOLD M. SMALL LECTURE IN SAFETY**

### Invited Address

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom A (Street Level)

### General Sessions; cosponsored by Safety

*Chair:* Michael J. Kalsher, Rensselaer Polytechnic Inst.

*Invited Speaker:* Matthew B. Weinger, Director, Ctr. for Perioperative Research in Quality and Norman Ty Smith Chair in Patient Safety and Medical Simulation, Vanderbilt U. Medical Ctr., **If Not By You, Then Whom? Human Factors Contributions to Perioperative Patient Safety**

## **GS6 – BLASPHEMY OR PRAGMATICS? WHEN NOT TO FOLLOW USER-CENTERED DESIGN TECHNIQUES**

### Discussion Panel

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Bayview B (Bay Level)

### General Sessions

*Chair:* Anthony D. Andre, Interface Analysis Assoc.

*Panelists:* Jay Elkerton, Emerson Process Management; Steve Portigal, Portigal Consulting; Cordell Ratzlaff, Cisco; Dan Saffer, Kicker Studio; Dan Rosenberg, SAP

## **HC5 – HEALTH CARE WORKFLOW, RESEARCH IMPLICATIONS**

### Lecture

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Garden Room B (Atrium Lobby Level)

### Health Care

*Chair:* Adam Pickens, TAMHSC-School of Rural Public Health; *Cochair:* Christopher Lee, U. of Central Florida

1. Rupa Sheth Valdez, Edmond Ramly, and Patricia Flatley Brennan, U. of Wisconsin-Madison, **Development of a Research Agenda at the Intersection of Industrial and Systems Engineering and Health Care: Implications for Human Factors and Ergonomics**
2. Tobias Grundgeiger and Penelope M. Sanderson, U. of Queensland; Cristina Beltran Orihuela and Andera Thompson, Princess Alexandra Hospital; Hamish G. MacDougall, U. of Sydney; Leo Nunnink, Princess Alexandra Hospital; Balasubramanian Venkatesh, U. of Queensland, **Distractions and Interruptions in the Intensive Care Unit: A Field Observation and a Simulator Experiment**
3. Alissa L. Russ, Jason J. Saleem, M. Sue McManus, Richard M. Frankel, and Alan J. Zillich, Roudsbush VA Medical Ctr., **The Workflow of Computerized Medication Ordering in Primary Care Is Not Prescriptive**
4. Leigh A. Baumgart, Ellen J. Bass, and Jason A. Lyman, U. of Virginia; Sherry Springs, North Carolina A&T State U.; John Voss, Gregory F. Hayden, Martha A. Hellems, Tracey R. Hoke, Katharine Schlag, and John Schorling, U. of Virginia, **Supporting Physicians' Practice-Based Learning and Improvement (PBLI) and Quality Improvement Through Exploration of Population-Based Medical Data**
5. Cakil Sarac, Rhona Flin, Kathryn Mearns, and Jeanette Jackson, U. of Aberdeen, **Measuring Hospital Safety Culture: Testing the HSOP-SC Scale**

## **ID2 – INDIVIDUAL DIFFERENCES IN COGNITIVE SKILLS AND ABILITIES**

Lecture

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff D (Bay Level)

**Individual Differences in Performance**

*Chair:* Peter Khooshabeh, USC Inst. for Creative Technologies

1. Gerald Matthews, U. of Cincinnati; Joel S. Warm, U.S. Air Force Research Lab; Tyler H. Shaw, George Mason U.; Victor S. Finomore, U.S. Air Force Research Lab, **A Multivariate Test Battery for Predicting Vigilance**
2. Laurie Larsen Quill and Kristie Nemeth, U. of Dayton Research Inst.; Lynn Caldwell and Regina Schmidt, U.S. Air Force; Jason Parker, Kettering Health Network; Brian Taylor, George Mason U.; Nicole Arbuckle, U. of Dayton Research Inst., **Predicting Complex Spatial Working Memory Fatigue Vulnerability Based on Individual Differences in fMRI Images**
3. Jane H. Barrow and Carryl L. Baldwin, George Mason U., **Allowing for Individual Differences in Auditory Warning Design: Who Benefits From Spatial Auditory Alerts?**
4. Ewart de Visser, Tyler Shaw, Amira Mohamed-Ameen, and Raja Parasuraman, George Mason U., **Modeling Human-Automation Team Performance in Networked Systems: Individual Differences in Working Memory Count**
5. Susan G. Campbell and Kent L. Norman, U. of Maryland, **Cognitive Abilities and the Measurement of World Wide Web Usability**

## **IE4 – OCCUPATIONAL SAFETY: THE PAST, PRESENT, AND FUTURE**

Invited Address

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom C (Street Level)

**Industrial Ergonomics; cosponsored by Safety, the Council of Technical Groups, and Liberty Mutual Research Institute for Safety**

*Chair:* Richard Marklin, Marquette U.; *Cochair:*

Thurmon Lockhart, Virginia Tech

*Invited speakers:* M. M. Ayoub, Texas Tech; D. B. Chaffin, U. of Michigan; C. G. Drury, State U. at Buffalo, SUNY; A. Garg, U. of Wisconsin; G. Herrin,

U. of Michigan; K. H. E. Kroemer, Virginia Tech; S. H. Snook, Harvard School of Public Health

## **PP2 – GETTING THE BUZZ: WHAT'S NEXT FOR TACTILE INFORMATION DELIVERY?**

Discussion Panel

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom B (Street Level)

**Perception & Performance**

*Chair:* Karla Allan, U.S. Army Natick Soldier

Research, Development and Engineering Ctr.

*Panelists:* Timothy White, U.S. Army Research Lab;

Lynette Jones, Massachusetts Inst. of Technology

AgeLab; James Merlo, U.S. Military Academy; Ellen

Haas, U.S. Army Research Lab; Gary Zets, Engineer-

ing Acoustics, Inc.; Angus Rupert, U.S. Army Aero-

medical Research Lab

## **S2 – SAFETY IN MOTION**

Lecture

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff C (Bay Level)

**Safety**

*Chair:* Julianne Cummings, Exponent Failure Analysis

Assoc.; *Cochair:* Noelle Brunelle, Sikorsky Aircraft Corp.

1. Laurie Reiprich, Jan Berkhout, and Kelene Fercho, U. of South Dakota, **An Examination of Traffic Accidents Occurring Within Highway Work Zones in the State of South Dakota**
2. Sameer A. Khan, U. of Iowa, **Work Zone Safety: Perceptual Countermeasures to Speeding Using Synchronized Warning Lights**
3. Andrew K. Mayer, Jeff K. Caird, Shaunna L. Milloy, Nicole B. Percival, and Amanda D. Ohlhauser, U. of Calgary, **Passing Parked Police Cars: Speed as a Function of Emergency Lighting, Police Car Orientation, and Driver Experience**
4. Brenda R. Santos, William L. Porter, and Alan G. Mayton, National Inst. for Occupational Safety and Health, **An Analysis of Injuries to Haul Truck Operators in the U.S. Mining Industry**
5. Kathryn Woodcock and Zahrah Dyaljee, Ryerson U., **Human Factors Antecedents in California Amusement Ride Accident Investigations**

## **SD3 – ESTABLISHING REQUIREMENTS FOR HUMAN FACTORS ENGINEERING AND HSI: WHY DO WE FEEL LIKE WE'RE BANGING OUR HEADS AGAINST A WALL?**

Discussion Panel

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Hospitality Room (Atrium Lobby Level)

**System Development**

*Chair:* John Winters, BCI; *Cochair:* Curtis Fey, U.S.

Air Force

*Panelists:* Bridget Simpkins, U.S. Air Force Human

Systems Integration Office; Stephen Merriman,

Boeing Co.; Eric Stohr, BCI, James A. Pharmer, Naval

Air Warfare Ctr.

## **T3 – TRAINING ISSUES IN MILITARY AND DEFENSE**

Invited Symposium

Wednesday, September 29, 2010, 1:30 p.m. to 3:00 p.m.

Garden A (Atrium Lobby Level)

**Training**

*Chair:* Poornima Madhavan, Old Dominion U.

1. Poornima Madhavan, Old Dominion U., **Training Issues in Military and Defense: Symposium Overview**
2. Randall D. Spain, U.S. Army Research Inst. for the Behavioral and Social Sciences, **A Game-Based Training Application to Support the Development of Commanders' Skills in Counterinsurgency Operations**
3. Susan S. Kirschenbaum and Jason H. Wong, Naval Undersea Warfare Ctr.; Stanley Peters, Stanford U., **Tutoring Ship-Handling Skills: Intelligent Tutor and Expert Model in a Simulation**
4. Kara L. Orvis, Aptima Inc.; Gregory Ruark, U.S. Army Research Inst. for the Behavioral and Social Sciences; Kathryn L. Engel, Financial Industry Regulatory Authority; Krista Langkamer Ratwani, Aptima Inc., **Training Leaders on Emotion Management Skills: Challenges in Designing a Blended Learning Program**
5. Peggy Wu and Christopher Miller, Smart Information Flow Technologies, **The Current Bottleneck for Computer-Based Culture Training—Who Cares About Etiquette?**

# Wednesday, September 29

## 3:00 to 6:30 p.m.

### Technical Group Networking/ Business Meetings

**Aerospace Systems**

Seacliff A (Bay Level)

3:30 to 5:30 p.m.

**Augmented Cognition**

Seacliff C (Bay Level)

3:30 to 5:30 p.m.

**Cognitive Engineering and Decision Making**

Grand Ballroom B (Street Level)

4:30 to 5:30 p.m.

**Communications**

Seacliff B (Bay Level)

3:30 to 4:30 p.m.

**Computer Systems (with Internet)**

Bayview B Foyer (Bay Level) – *Usability & HCI Day*

*Reception & Networking*

3:30 to 5:00 p.m.

Bayview B (Bay Level) – *Meeting*

5:00 to 5:30 p.m.

**Environmental Design (with Macroergonomics)**

Seacliff D (Bay Level)

3:45 to 5:00 p.m.

**Forensics Professional (with Safety)**

Seacliff C (Bay Level)

5:30 to 6:30 p.m.

**Health Care**

Garden Room B (Atrium Lobby Level)

3:00 to 4:30 p.m.

**Human Performance Modeling**

Seacliff D (Bay Level)

5:30 to 6:30 p.m.

**Industrial Ergonomics**

Market Street Foyer (Street Level) – *Reception*

3:00 to 4:00 p.m.

Grand Ballroom C (Street Level) – *Meeting*

4:00 to 5:30 p.m.

**Internet (with Computer Systems)**

Bayview B (Bay Level)

5:00 to 5:30 p.m.

**Macroergonomics (with Environmental Design)**

Seacliff D (Bay Level)

3:45 to 5:00 p.m.

**Safety (with Forensics Professional)**

Seacliff C (Bay Level)

5:30 to 6:30 p.m.

**Surface Transportation**

Hospitality Room (Atrium Lobby Level)

5:00 to 6:30 p.m.

**Training**

Garden A (Atrium Lobby Level)

3:30 to 4:30 p.m.

**Virtual Environments**

Hospitality Room (Atrium Lobby Level)

3:30 to 4:30 p.m.

## Thursday, September 30

7:15 to 8:00 a.m.

### Early-Morning Madness

7:15 to 8:00 a.m.

Grand Ballroom B (Street Level)

## Thursday, September 30

8:30 to 10:00 a.m.

### A2 – AGING AND COGNITIVE FUNCTION

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Bayview B (Bay Level)

Aging

*Chair:* Christopher Mayhorn, North Carolina State U.

1. Paul Y. Kim and Christopher B. Mayhorn, North Carolina State U., **Exploring Age-Related Differences in Prospective Memory Inside and Outside of the Lab**
2. Ann E. Lambert, Jason M. Watson, Joel M. Cooper, and David L. Strayer, U. of Utah, **The Roles of Working Memory Capacity, Visual Attention, and Age in Driving Performance**
3. Sara E. McBride, Wendy A. Rogers, and Arthur D. Fisk, Georgia Tech, **Do Younger and Older Adults Differentially Depend on an Automated System?**
4. Laura D'Andrea, Dan Morrow, and Elizabeth Stine-Morrow, U. of Illinois at Urbana-Champaign; Matthew Shake, St. Bonaventure U.; Sven Bertel, Katie Kopren, and Jessie Chin, U. of Illinois at Urbana-Champaign; Thembi Connor-Garcia and James Graumlich, U. of Illinois College of Medicine; Michael Murray, Purdue U., **Impact of Health Knowledge on Older Adults' Comprehension of Multimedia Health Information**
5. Christopher M. Kelley and Anne Collins McLaughlin, North Carolina State U., **Feedback Requirements for Older Adult Learning: Do Cognitive Abilities Matter?**

### CE6 – HUMAN-AUTOMATION INTERACTION

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Ernesto Bustamante, U. of Idaho; *Cochair:*

Priyadarshini Pennathur, U. at Buffalo, SUNY

1. Juliane Reichenbach, Linda Onnasch, and Dietrich Manzey, Berlin Inst. of Technology, **Misuse of Automation: The Impact of System Experience on Complacency and Automation Bias in Interaction With Automated Aids**
2. Shih-Yi Chien, Huadong Wang, and Michael Lewis, U. of Pittsburgh, **Human Versus Algorithmic Path Planning for Search and Rescue by Robot Teams**
3. Thomas Robinson and Catherine Burns, U. of Waterloo, **A Learning Process: Old Strategies, New Tools**
4. Christopher D. Wickens, Alion Science and Technology; Huiyang Li, U. of Michigan; Amy Santamaria and Angelia Sebok, Alion Science and Technology; Nadine Sarter, U. of Michigan, **Stages and Levels of Automation: An Integrated Meta-Analysis**
5. Robert L. Wears, U. of Florida, **Exploring the Dynamics of Resilience**

### CS3 – USABILITY AND EVALUATION

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Garden A (Atrium Lobby Level)

Computer Systems; cosponsored by Internet

*Chair:* Joseph Goldberg, Oracle Corp.; *Cochair:* H. C.

Neil Ganey, Lenovo

1. Martin L. Fracker, IBM Interactive, **Scaling Usability in Terms of Requirements: A Method for Evaluating User Interfaces**
2. Curt B. Irwin, Sacha N. Duff, Jenny L. Skye, Douglas A. Wiegmann, and Mary E. Sesto, U. of Wisconsin-Madison, **Disability and Orientation-Specific Performance During a Reciprocal Tapping Task**
3. Asanka S. Rodrigo and Ravindra S. Goonetilleke, Hong Kong U. of Science and Technology, **Designing Flight Information Displays for Quick Information Access: A Case Study of an International Airport**
4. Joseph H. Goldberg and Jonathan I. Helfman, Oracle Corp., **Identifying Aggregate Scanning Strategies to Improve Usability Evaluations**
5. Martin L. Fracker, Michael Heck, and George Goeschel, IBM, **When a User Interface Is Good Enough: User Ratings in UI Design**

### E3 – TEACHING, LEARNING, OR BOTH

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Seacliff D (Bay Level)

Education

*Chair:* Nancy Stone, Missouri U. of Science & Technology; *Cochair:* Randa Shehab, U. of Oklahoma

1. Anne Collins McLaughlin, North Carolina State U.; Wendy A. Rogers, Georgia Tech, **Learning by Doing: Understanding Skill Acquisition Through Skill Acquisition**
2. Kim Graves Wolfenbarger, U. of Oklahoma, **A New Approach to Laboratory-Based Learning in an Introductory Ergonomics Course**
3. Joseph R. Keebler, Scott Ososky, Florian Jentsch, and Thomas Fincannon, U. of Central Florida, **Gaining Ground: Merging Cognitive Load Theory With Human Factors Principles**
4. Sahika Vatan Korkmaz and Carolyn M. Sommerich, Ohio State U., **Teaching Healthy Computing Skills to High School Students via Participatory Ergonomics**
5. Michelle L. Rogers, Drexel U., **Teaching HCI Design Principles Using Culturally Current Media**

### GS7 – FACILITATING UNIVERSITY-INDUSTRY COLLABORATIONS IN HUMAN FACTORS AND ERGONOMICS

Discussion Panel

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Seacliff B (Bay Level)

General Sessions

*Chair:* Wendy A. Rogers, Georgia Tech

*Panelists:* Barry H. Beith, HumanCentric; Jerry R.

Duncan, Deere & Co.; Mica R. Endsley, SA

Technologies; Peter A. Hancock, U. of Central Florida

### HC6 – PATIENT SAFETY IN THE OPERATING THEATRE

Invited Symposium

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Tanja Manser, U. of Aberdeen; *Cochair:* Heidi

Manijeh Mehrzad, Embry-Riddle Aeronautical U.

1. Tanja Manser and Rhona Flin, U. of Aberdeen, **Patient Safety in the Operating Theatre: Symposium Overview**
2. Michaela Kolbe and Barbara Künzle, ETH Zurich; Enikő Zala-Mező, Pädagogische Hochschule Zurich; Michael J. Burtscher, ETH Zurich; Johannes Wacker, U. Hospital Zurich; Donat R. Spahn, U. Hospital Zurich; Gudela Grote, ETH Zurich, **The Functions of Team Monitoring and "Talking to the Room" for Performance in Anesthesia Teams**
3. Lucy Mitchell, Rhona Flin, and Steven Yule, U. of Aberdeen; Janet Mitchell, Aberdeen Royal Infirmary; Kathy Coutts and George Youngson, Royal Aberdeen Children's Hospital, **Thinking Ahead of the Surgeon: Developing a Behavioral Rating System for Scrub Practitioners' Non-Technical Skills (SPLINTS)**
4. Sarah Henrickson Parker, Steven Yule, and Rhona Flin, U. of Aberdeen; Aileen McKinley, Aberdeen Royal Infirmary, **A Preliminary Investigation of Surgeons' Leadership in the Operating Room**
5. Douglas A. Wiegmann, U. of Wisconsin-Madison, **Analysis of Error Management Strategies During Cardiac Surgery: Theoretical and Practical Implications**
6. Steven K. Howard and James I. Fann, Stanford U. School of Medicine, **Improving Patient Safety in the Heart Room Through Simulation**

### IES – HAND TOOL ERGONOMICS—PAST AND PRESENT

Discussion Panel

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Grand Ballroom A (Street Level)

Industrial Ergonomics

*Chair:* Thomas J. Armstrong, U. of Michigan

*Panelists:* David J. Cochran and Peter A. Bleed, U. of

Nebraska; Jia-Hua Lin, Liberty Mutual Research Inst.

for Safety; Andris Freivalds, Pennsylvania State U.;

Robert G. Radwin, U. of Wisconsin-Madison; David M.

Rempel, U. of California, Berkeley

### ME3 – THE VIEW FROM THE TOP: MACROERGONOMICS IN ACTION

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Marina Room (Bay Level)

Macroergonomics

*Chair:* Valerie J. Rice, U.S. Army Research Lab;

*Cochair:* Petra E. Alfred, U.S. Army Research Lab

1. Annette Shtivelband and John Rosecrance, Colorado State U., **Gaining Organizational Buy-In: Lessons Learned From Fifty Ergonomists**
2. Celal Gungor, Auburn U., **Company Size and Human Factors and Ergonomics Awareness**
3. Sara Kraemer and Elisabeth Geraghty, U. of Wisconsin-Madison; Deborah Lindsey and Cynthia Raven, Milwaukee Public Schools, **School Leadership View of Human and Organizational Factors in Performance Management: A Comparative Analysis of High- and Low-Performing Schools**
4. Natalie Schwatka, Erica Ermann, Krista Hoffmeister, John Rosecrance, and David Gilkey, Colorado State U., **Safety Climate in Agriculture**
5. Ari Antonovsky, Clare Pollock, and Leon Straker, Curtin U. of Technology, **Identification of the Human Factors Contributing to Maintenance Failures in a Petroleum Operation**

### PD5 – METHODOLOGY FOR CREATING AN ANTHROPOMETRIC DATABASE FOR WORKSTATION SETUP USING CAESAR, NATICK, AND NHANES

Discussion Panel

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Seacliff A (Bay Level)

Product Design

*Chair/Presenter:* Scott Openshaw, Allsteel Inc.;

*Cochair/Presenter:* David Trippany, Steelcase, Inc.

### SD4 – HUMAN FACTORS STANDARDS FOR U.S. GOVERNMENT AGENCIES

Discussion Panel

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Hospitality Room (Atrium Lobby Level)

System Development

*Chair:* Barry Tillman, Lockheed Martin/NASA

*Panelists:* Vicki Ahlstrom, Federal Aviation Admin.;

John Lockett, U.S. Dept. of Defense; Janis Connolly

and Dane Russo, NASA

### ST3 – DRIVER WORKLOAD

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Grand Ballroom C (Street Level)

Surface Transportation

*Chair:* Gregory Fitch, Virginia Tech Transportation Inst.; *Cochair:* Carryl Baldwin, George Mason U.

1. Bryan Reimer, Bruce Mehler, Ying Wang, and Joseph F. Coughlin, Massachusetts Inst. of Technology AgeLab, **The Impact of Systematic Variation of Cognitive Demand on Drivers' Visual Attention Across Multiple Age Groups**
2. Kathy J. Sifrit, National Highway Traffic Safety Admin.; Jane Stutts and Carol Martell, U. of North Carolina at Chapel Hill; Loren Staplin, TransAnalytics, LLC, **Intersection Crashes Among Drivers in Their 60s, 70s, and 80s**
3. Bruce Mehler, Bryan Reimer, and Joseph F. Coughlin, Massachusetts Inst. of Technology AgeLab, **Physiological Reactivity to Graded Levels of Cognitive Workload Across Three Age Groups: An On-Road Evaluation**
4. Nathan Medeiros-Ward, Janelle Seegmiller, Joel Cooper, and David Strayer, U. of Utah, **Dissociating Eye Movements and Workload on Lateral Lane Position Variability**
5. Susan T. Chrysler, Texas Transportation Inst.; Dillon Funkhouser, U. of Michigan Transportation Research Inst.; Kay Fitzpatrick, and Marcus Brewer, Texas Transportation Inst., **Driving Performance and Driver Workload at High Speeds: Results From On-Road and Test Track Studies**

### T4 – METHODS FOR IMPROVING TRAINING

Lecture

Thursday, September 30, 2010, 8:30 to 10:00 a.m.

Seacliff C (Bay Level)

Training

*Chair:* Patricia McDermott, Alion Science and Technology; *Cochair:* Beth Atkinson, NAVAIR

1. Elizabeth H. Lazzara, Aaron S. Dietz, Sallie J. Weaver, Davin Pavlas, Kyle Heyne, and Eduardo Salas, U. of Central Florida; Sowmya Ramachandran, Stottler Henke Assoc., **Guidelines for Training Adaptive Expertise**
2. Tristan Plank and Scott Scheff, HF Designworks, Inc.; Angelia Sebok, Alion Science and Technology, **Capturing Insights to Reduce Future Warfighter Fatalities**
3. Carla R. Landsberg, U. of Central Florida; Wendi L. Van Buskirk and Randy S. Astwood, Jr., Naval Air Warfare Ctr., **Does Feedback Type Matter? Investigating the Effectiveness of Feedback Content on Performance Outcomes**
4. Susan M. Stevens-Adams, Justin D. Basilico, Robert G. Abbott, Charlie J. Gieseler, and Chris Forsythe, Sandia National Labs, **Using After-Action Review Based on Automated Performance Assessment to Enhance Training Effectiveness**
5. Kevin B. Oden, Lockheed Martin Corp., **Distributed Team Training: Effective Feedback**

## Thursday, September 30

## 10:30 a.m. to 12:00 noon

### AC3 – TRANSFER: FROM THE LABORATORY TO THE REAL WORLD

Invited Symposium

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom C (Street Level)

Augmented Cognition

*Chair:* Lauren Reinerman-Jones, U. of Central Florida; *Cochair:* Denise Nicholson, U. of Central Florida

1. Lauren Reinerman-Jones and Denise Nicholson, U. of Central Florida, **Transfer: From the Laboratory to the Real World—Symposium Overview**
2. Gerald Matthews, U. of Cincinnati; Joel S. Warm, U.S. Air Force Research Lab; Lauren E. Reinerman-Jones, U. of Central Florida; Lisa K. Langheim and Svyatoslav Guznov, U. of Cincinnati; Tyler H. Shaw, George Mason U.; Victor S. Finomore, U.S. Air Force Research Lab, **Functional Fidelity, Context-Matching, and Individual Differences in Performance**
3. Ernesto A. Bustamante, U. of Idaho, **Theoretical Implications and Practical Applications of the a-b Signal Detection Theory Model for Human-Automation Interaction**
4. Kim Sprouse, Lauren Reinerman-Jones, and Denise Nicholson, U. of Central Florida, **Training Transfer Design Theories Revisited for Application to Virtual Environments**
5. James L. Merlo, Nathaniel Drake, and Benjamin J. Schmidt, U.S. Military Academy, **Asynchronous Multimodal Communications About Shared Images: A Comparison Between Microsoft's PowerPoint and CWS's PointnTalk for Creating and Using Directional Instructions**
6. William S. Helton and Simon Kemp, U. of Canterbury, **What Basic-Applied Issue Is There?**

### AS6 – AVIATOR PERFORMANCE AND DISPLAYS

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Bayview B (Bay Level)

Aerospace Systems

*Chair:* Sehchang Hah, Federal Aviation Admin.; *Cochair:* Walter Johnson, NASA Ames Research Ctr.

1. Jeffrey Armentrout, David C. Hansen, and Terri L. Hall, Lockheed Martin Aeronautics Co., **Pilot Performance-Based Selection of Engine Display Features**
2. Karl A. Kaufmann and David B. Kaber, North Carolina State U., **The Influence of Individual Differences in Perceptual Performance on Pilot Perceptions of Head-Up Display Clutter**
3. Dennis B. Beringer and Kali Holcomb, Civil Aerospace Medical Inst., **Factors Influencing the Effectiveness of Simple Obstacle-Related Graphical Depictions for Head-Mounted Displays**
4. Kristen L. Casto, U.S. Army Aeromedical Research Lab; John G. Casali, Virginia Tech, **Effect of Communications Headset, Hearing Ability, Flight Workload, and Communications Signal Quality on Pilot Performance in an Army Black Hawk Helicopter Simulator**
5. William Knecht, Jerry Ball, and Michael Lenz, Federal Aviation Admin., **Effects of Video Weather Training Products, Web-Based Weather Briefing, and Local Versus Non-Local Pilots on GA Pilot Weather Knowledge and Flight Behavior**

### C2 – TEAM COMMUNICATIONS

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Seacliff A (Bay Level)

Communication

*Chair:* Daryle Gardner-Bonneau, Bonneau and Assoc.; *Cochair:* Elliot Entin, Aptima Inc.

1. Arwen E. Hunter and Linda G. Pierce, U.S. Army Research Inst. for the Behavioral and Social Sciences, **Information Sharing in Distributed Teams**
2. Mary Dzindolet, Mercedes Spencer, Lani Malcolm, Brittney Wigley, and Courtney Glazer, Cameron U.; Linda G. Pierce, U.S. Army Research Inst. for the Behavioral and Social Sciences, **The Effect of Affective State on Virtual and Face-to-Face Group Performance**
3. Rachana S. Ranade and Joel S. Greenstein, Clemson U., **Effectiveness of Team-Building and Teamwork in Virtual Worlds**
4. Bart Brickman, Northrop Grumman Information Systems; Tanya Yuditsky, Federal Aviation Admin., **Hold the Phone: Automating Telephone Coordination in Traffic Flow Management**
5. Chad C. Tossell, Philip T. Kortum, Clayton W. Shepard, Ahmad Rahmati, and Lin Zhong, Rice U., **Assessing the Performance of Common Tasks on Handheld Mobile Computers**

### CE7 – ACCELERATED LEARNING: PROSPECTS, ISSUES, AND APPLICATIONS

Discussion Panel

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Robert Hoffman, Inst. for Human and Machine Cognition; *Cochair:* Dee Andrews, U.S. Air Force Research Lab

*Panelists:* Stephen M. Fiore, U. of Central Florida; Stephen Goldberg, U.S. Army Research Inst.; Terrence S. Andre, TiER1 Performance Solutions; Jared Freeman, Aptima Inc.; J. Dexter Fletcher, Inst. for Defense Analysis; Gary Klein, Klein Assoc.

### FP2 – THE CURRENT STATE OF LEGAL, DESIGN, AND RESIDENTIAL USABILITY ISSUES FOR PEOPLE WITH VARIOUS DISABILITIES

Discussion Panel

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Hospitality Room (Atrium Lobby Level)

Forensics Professional

*Chair:* Michael Wogalter, North Carolina State U.; *Cochair:* Tonya L. Smith-Jackson, Virginia Tech

*Panelist:* Alison Vredenburgh, Vredenburgh & Assoc., Inc.; Lynn Calkins, Holland & Knight; David Kessler, Kessler McGuinness & Associates, LLC

### GS8 – SLEEP ACROSS MILITARY ENVIRONMENTS

Discussion Panel

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Seacliff B (Bay Level)

General Sessions

*Chair:* Petra Alfred, U.S. Army Research Lab; *Cochair:* Gary Boykin, U.S. Army Research Lab

*Panelists:* Lynn Caldwell, U.S. Air Force Research Lab; Harris Lieberman, U.S. Army Research Inst. of Environmental Medicine; Panigiotis Matsangas and Nita Miller, Naval Postgraduate School; Valerie Rice, U.S. Army Research Lab; Nancy Wesensten, Walter Reed Army Inst. of Research

### HC7 – HUMAN FACTORS IN THE OPERATING ROOM

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Sam Zheng, Siemens Corporate Research; *Cochair:* Shadeequa Miller, U. of Wisconsin-Madison

1. Renaldo C. Blocker, Ashley Eggman, Robert Zemple, Chi-Tao Elise Wu, and Douglas A. Wiegmann, U. of Wisconsin-Madison, **Developing an Observational Tool for Reliably Identifying Work System Factors in the Operating Room That Impact Cardiac Surgical Care**
2. Sacha N. Duff, U. of Wisconsin-Madison; T. Christopher Windham, Florida Hospital; Douglas A. Wiegmann, U. of Wisconsin-Madison; Jason Kring, Jennifer D. Schaus, Robert Malony, and Albert Boquet, Embry-Riddle Aeronautical U., **Identification and Classification of Flow Disruptions in the Operating Room During Two Types of General Surgery Procedures**
3. Maria Luz, Berlin Inst. of Technology; Stefan Mueller, Gero Strauss, Andreas Dietz, and Juergen Meixensberger, U. Hospital Leipzig; Dietrich Manzey, Berlin Inst. of Technology, **Automation in Surgery: The Impact of Navigated-Control Assistance on the Performance, Workload, and Situation Awareness of Surgeons**
4. Emily A. Hildebrand, Phoenix VA Health Care System; Russell J. Branaghan, Qiawen Wu, Jonathan Jolly, Theodore B. Garland, Mistey Taggart, and Monica A. Nguyen, Arizona State U.; Dana Epstein, Phoenix VA Health Care System; Judith Babcock-Parziale and Victoria Brown, Southern Arizona VA Health Care System, **Exploring Human Factors in Endoscopy Reprocessing**

Matthew Marshall, Rochester Inst. of Technology; Matthew Lux and Jean Joseph, U. of Rochester Medical Ctr., **Anthropometric Assessment of the da Vinci Surgical Robot**

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### **HP3 – MODELING HUMAN PERFORMANCE DIMENSIONS IN DYNAMIC TASKS AND ENVIRONMENTS**

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Marina Room (Bay Level)

Human Performance Modeling

*Chair:* Yili Liu, U. of Michigan; *Cochair:* Matthew Bolton, U. of Virginia

1. Christopher D. Wickens, John W. Keller, and Ronald L. Small, Alion Science and Technology, **Left, No, Right! Development of the Frame of Reference Transformation Tool (FORT)**
2. D. Benjamin Hellar, Next Century Corp.; Michael McNeese, Pennsylvania State U., **NeoCITIES: A Simulated Command and Control Task Environment for Experimental Research**
3. Christian J. Lebiere and James J. Staszewski, Carnegie Mellon U., **Expert Decision Making in Landmine Detection**
4. Michael D. Byrne, Marcia K. O'Malley, Melissa A. Gallagher, Sagar N. Purkayastha, and Nicole Howie, Rice U.; Joel C. Huegel, Inst. Tecnológico y de Estudios Superiores de Monterrey, **A Preliminary ACT-R Model of a Continuous Motor Task**
5. Helen J. A. Fuller, Matthew P. Reed, and Yili Liu, U. of Michigan, **Integrating Physical and Cognitive Human Models to Represent Driving Behavior**

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### **POS3 – POSTERS 3**

Poster Session

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Pacific Concourse A–C (Pacific Concourse Level)

Posters

*Chair:* A. Joy Rodriguez, U. of Wisconsin, Madison;

*Cochair:* Heather Lum, U. of Central Florida

Poster sessions are 90 minutes only; presenters are required to be present throughout the session.

*Medical/Health Care*

1. Rebekkah F. W. Beeco and Johnell O. Brooks, Clemson U.; William Logan, Palmetto Health; Elaine Cress, U. of Georgia; Victor Hirth, Palmetto Health; Joshua A. Gomer, Human Factor Engineering, LLC; Linnea F. Smolentzov, Clemson U., **Creation of User-Centered Reports for Patients and Medical Professionals**
  2. S. H. Koch, M. Görges, and C. Weir, U. of Utah, **Evaluation of an Ambient Color-Coded Display to Communicate Changes in the Patient's Condition to ICU Nurses and Improve the Therapeutic Environment**
  3. Cindy H. Lio, INNOVA Design & Development; C. Melody Carswell, Stephen E. Strup, John S. Roth, and Russell Grant, U. of Kentucky, **The Operating Room as Classroom: Understanding Cognitive Challenges Facing Surgical Trainees**
  4. Jason Andrew Telner, Liana Kiff, and John Beane, Honeywell; Greg Lillegard, and Cameron Brackett, Honeywell HomMed LLC, **The Elements of a Hand-Held Device for Nurse Access to Home Health Care Monitors**
  5. Michelle Sublette, C. Melody Carswell, Qiong Han, Rusty Grant, and Cindy H. Lio, U. of Kentucky; Gysung Lee, U. of Maryland; Matt Field, Dan Staley, W. Brent Seales, and Duncan Clarke, U. of Kentucky, **Dual-View Displays for Minimally Invasive Surgery: Does the Addition of a 3-D Global View Decrease Mental Workload?**
  6. Kerry McGuire, Pascale Carayon, Peter Hoonakker, Adjhaporn Khunlertkit, and Douglas Wiegmann, U. of Wisconsin-Madison, **Communication in the Tele-ICU**
  7. Julia Faucett, Robert Newcomer, Taewoon Kang, and Rani Eversley, U. of California, San Francisco, **The Home Care Work Environment for Personal Assistance Service Workers**
  8. Denny Yu, U. of Michigan; Steve J. Kasten, U. of Michigan Hospital; Thomas J. Armstrong, U. of Michigan, **Development of a Hierarchical Taxonomy for Standardization of Microvascular Surgery**
  9. Nicole Fink, Richard Pak, Brock Bass, Michael Johnston, and Dina Battisto, Clemson U., **A Survey of Nurses Self-Reported Prospective Memory Tasks: What Must They Remember and What Do They Forget?**
- Teams*
10. Sébastien Tremblay and François Vachon, U. Laval; Daniel Lafond, Defence R&D Canada – Valcartier; Helen M. Hodgetts, Cardiff U., **Does Teaming Up Make You Less Vulnerable to Task Interruption?**
  11. Genevieve Dube and Sébastien Tremblay, U. Laval; Simon Banbury, CAE Professional Services; Vincent Rousseau, U. de Montréal, **Team Performance and Adaptability in Crisis Management: A Comparison of Cross-Functional and Functional Teams**
  12. Thomas D. Fincannon, Scott Ososky, Florian Jentsch, Joseph Keebler, and Elizabeth Phillips, U. of Central Florida, **Some Good and Bad With Spatial Ability in Three-Person Teams That Operate Multiple Unmanned Vehicles**
  13. Simon Banbury, CAE Professional Services; Shaun Helman, Transport Research Lab; James Spearpoint, QinetiQ; Sébastien Tremblay, U. Laval, **Cracking the Bullwhip: Team Collaboration and Performance Within a Simulated Supply Chain**
- Training*
14. Nancy J. Cooke, Cynthia Hosch, and Steven Banas, Arizona State U.; Bruce P. Hunn, U.S. Army Research Lab; James Staszewski, Carnegie Mellon U.; John Fensterer, Battelle, **Expert Detection of Improvised Explosive Device Emplacement Behavior**
  15. Michael T. Curtis, Crystal Maraj, Monica Ritman, and Florian Jentsch, U. of Central Florida, **Investigation of the Impact of Feedback on Decision Accuracy and Reaction Time in a Perceptual Training Task**
  16. David Schuster, Brittany Sellers, Javier Rivera, Stephen M. Fiore, and Florian Jentsch, U. of Central Florida, **Component Versus Holistic Visual Search Training for Improvised Explosive Detection**
  17. Katherine Hamilton and Susan Mohammed, Pennsylvania State U., **The Differential Impact of Two Training Strategies on Team Performance**
  18. Brittany Sellers, Javier Rivera, Stephen M. Fiore, David Schuster, and Florian Jentsch, U. of Central Florida, **Assessing X-Ray Security Screening Detection Following Training With and Without Threat-Item Overlap**

*University Lab Posters*

Mississippi State U.

Human Systems Engineering Lab

U. of Wisconsin-Madison

Human-Computer Interaction Lab

Center for Quality and Productivity Improvement

Cognitive Systems Lab

Center for Health Enhancement Systems Studies

Health Systems Lab

Wichita State U.

Software Usability Research Lab

Decision-Making Research Lab

Aviation Human Factors Lab

Quantitative Modeling Lab

Visual Perception & Cognition Lab

Visual Psychophysics Lab

Perception & Attention Lab

Yale U.

Human-Machine Interface Lab

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### **PP3 – PERCEPTION & PERFORMANCE**

**POTPOURRI 2**

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Garden A (Atrium Lobby Level)

Perception & Performance

*Chair:* Paul R. Havig, U.S. Air Force Research Lab

1. Matthew Johnston, Kelly Hale, and Par Axelsson, Design Interactive Inc., **Results From Empirical Testing of the System for the Tactile Reception of Advanced Patterns (STRAP)**
2. Xiao Dong and Thomas A. Stoffregen, U. of Minnesota, **Postural Activity and Motion Sickness Among Drivers and Passengers in a Console Video Game**
3. Matthew E. Funke, U. of Cincinnati; Joel S. Warm, U.S. Air Force Research Lab; Gerald Matthews and Michael Riley, U. of Cincinnati; Victor Finomore, Jr., Gregory J. Funke, Benjamin Knott, and Michael Vidulich, U.S. Air Force Research Lab, **A Comparison of Cerebral Hemovelocity and Blood Oxygen Saturation Levels During Vigilance Performance**
4. M. Sage Jessee, U.S. Army Research Lab, **Ocular Activity as a Measure of Mental and Visual Workload**
5. Maura C. Lohrenz, U.S. Naval Research Lab; Melissa R. Beck, Louisiana State U., **Evidence of Clutter Avoidance in Complex Scenes**

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### **SF4 – TECHNOLOGY AND COMPUTING**

**EXPERIENCE: CUTTING-EDGE STUDENT RESEARCH**

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Seacliff D (Bay Level)

Student Forum

*Chair:* Richard Pak, Clemson U.; *Cochair:* Chris Kelley, North Carolina State U.

1. Shreya Kothaneth, Virginia Tech, **A Pilot Study on the Cross-Cultural Acceptance of Technology**
2. Patrick G. Nyeste and Christopher B. Mayhorn, North Carolina State U., **Training Users to Counteract Phishing**
3. Jeremy Mendel, Clemson U.; Christopher B. Mayhorn and Jefferson B. Hardee, North Carolina State U.; Ryan T. West, Dell Inc.; Richard Pak, Clemson U., **The Effect of Warning Design on User Compliance in Computer Security Dialogs**
4. Margaux M. Price and Richard Pak, Clemson U., **Information Visualizations as Complex Decision Support Systems**
5. Andrea Goncher, Shreya Kothaneth, and Aditya Johri, Virginia Tech, **Team Communication and Innovative Design Practices: The Effect of Team Adoption and Implementation of the Tablet PC**

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### **SS2 – DEBATE: IS THERE LOW-HANGING FRUIT IN HEALTH CARE HUMAN FACTORS?**

Alternative Format

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom A (Street Level)

Special Sessions; cosponsored by Health Care

*Chair:* F. Jacob Seagull, U. of Maryland, Baltimore

*Presenters:* Yan Xiao, Baylor Health Care System;

David Eibling, U. of Pittsburgh School of Medicine;

Paul Gorman, Oregon Health & Science U. School of Medicine

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### **TE3 – TECHNIQUES FOR USABILITY TESTING**

Lecture

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Seacliff C (Bay Level)

Test & Evaluation

*Chair:* James A. Pharmed, Naval Air Warfare Ctr.

Training Systems Div.; *Cochair:* Lee Sciarini, Naval Air Warfare Ctr. Training Systems Div.

1. Kevin Durkee, Michael Paley, and Kathy Kudzma, Aptima Inc.; Dirk Reinert, U. of Louisiana-Lafayette, **Evaluation of 2-D and 3-D Displays to Validate the Integration of Human Performance Analysis Methods Into Submarine Acquisitions**

- Hans-Juergen Hoermann, Dirk Schulze-Kissing, and Oliver Zierke, German Aerospace Ctr. (DLR), **Evaluation of a Transfer of Control Concept for Airborne Self-Separation**
- Eeva Raita and Antti Oulasvirta, Helsinki Inst. for Information Technology, **Too Good To Be Bad: The Effect of Favorable Expectations on Usability Perceptions**
- Laura G. Militello, Kristie Nemeth, Nicole B. Arbuckle, and Laurie L. Quill, U. of Dayton Research Inst., **Self-Report Methods for Cambridge Neurological Test Battery (CANTAB) Strategies**
- Mark Becker, Dana Douglas, and Dick Horst, UserWorks, Inc., **Evaluating the Usability of Federal Student Aid Print Publications With Representative Users**

## Thursday, September 30

1:30 to 3:00 p.m.

### AS7 – TRAINING AND MEASUREMENT AT THE EXTREMES: DEVELOPING AND SUSTAINING EXPERT TEAM PERFORMANCE IN ISOLATED, CONFINED, EXTREME ENVIRONMENTS

Discussion Panel

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Bayview B (Bay Level)

Aerospace Systems

*Chair:* Sallie Weaver, U. of Central Florida

*Panelists:* Eduardo Salas, U. of Central Florida; Kathryn E. Keeton, NASA Behavioral Health and Performance Research Element; Judith M. Orasanu, NASA Ames Research Ctr.; Stephen M. Fiore, U. of Central Florida; Jason P. Kring, Embry-Riddle Aeronautical U.; Jeffrey Bradshaw, Inst. for Human and Machine Cognition

### CE8 – DESIGN AND EVALUATION OF HUMAN-SYSTEM INTERFACES

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Ute Fischer, Georgia Tech; *Cochair:* Laura Strater, SA Technologies

- John O'Hara and James Higgins III, Brookhaven National Lab; Stephen Fleger and Valarie Barnes, U.S. Nuclear Regulatory Commission, **Guidance for Human-System Interfaces to Automatic Systems**
- Phillip L. Morgan and John Patrick, Cardiff U., **Designing Interfaces That Encourage a More Effortful Cognitive Strategy**
- Gloria Calhoun, Lamar Warfield, Nicholas Wright, and Sarah Spriggs, U.S. Air Force Research Lab; Heath Ruff, Ball Aerospace & Technologies Corp., **Automated Aid Evaluation for Transitioning UAS Camera Views**
- An T. Oskarsson and C. Reed Hodgins, AlphaTRAC, Inc., **The AlphaACT Decision Support System for Emergency Responders**
- Daniel S. Hall, U.S. Military Academy; Lawrence G. Shattuck, Naval Postgraduate School; Kevin B. Bennett, Wright State U., **Evaluation of an Ecological Interface Designed for Military Command and Control**

### E4 – VISUALIZING INNOVATIVE USES OF TECHNOLOGY AND DEVICES FOR ENGAGING COLLEGE STUDENTS IN ACTIVE LEARNING

Alternative Format

Thursday, September 30, 2010, 10:30 a.m. to 12:00 noon

Seacliff D (Bay Level)

Education

*Chair:* Carolyn Sommerich, Ohio State U.

*Presenters:* Richard Sesek, Auburn U.; Nancy Stone, Missouri U. of Science and Technology; Sharon Joines, North Carolina State U.; Tonya Smith-Jackson, Virginia Tech; Eric Wiebe, North Carolina State U.

### ED3 – INFORMATION TECHNOLOGY AND DESIGN: THE BIG PICTURE

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff A (Bay Level)

Environmental Design; cosponsored by Macroergonomics

*Chair:* Michelle M. Robertson, Liberty Mutual Research Inst. for Safety; *Cochair:* Petra E. Alfred, U.S. Army Research Lab

- Paul Allie, Kokot and Allie Assoc.; Michael C. Bartha, Hewlett Packard Co.; Douglas Kokot, Kokot and Allie Assoc.; Cynthia Purvis, Hewlett Packard Co., **A Field Observation of Display Placement Requirements for Presbyopic and Prepresbyopic Computer Users**
- Nancy A. Baker, U. of Pittsburgh, **The Relationship Between Computer-Related Discomfort and Everyday Activities**
- Rupa S. Valdez, U. of Wisconsin-Madison, **Designing Culturally Informed Consumer Health IT: An Exploration and Proposed Integration of Contrasting Methodological Perspectives**
- Nancy A. Baker, U. of Pittsburgh; Karen Jacobs, Boston U., **Tele-Ergonomics: A Novel Approach to Computer Workstation Ergonomic Assessment and Modification**

### GS9 – GENERAL ERGONOMICS

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff B (Bay Level)

General Sessions

*Chair:* Lelyn Saner, U. of Maryland CASL

- Likun Zhang and Caroline G. L. Cao, Tufts U., **The Effect of Image Orientation on a Dynamic Laparoscopic Task**
- Shi-Hyun Park, U. of Nebraska at Omaha; Jesun Hwang, Pennsylvania State U.; Brian D. Lowe, National Inst. for Occupational Safety and Health; Andris Freivalds, Pennsylvania State U., **Optimal Handle Size to Minimize Internal Impact of Flexor Tendons**
- Neal Wiggermann and Monroe Keyserling, U. of Michigan, **Effect of Flooring on Discomfort and Behavioral Responses to Prolonged Standing**
- Patrick Waterson and Cara Pilcher, Loughborough U.; Siân Evans and Jill Moore, Rail Safety and Standards Board, **Developing Safety Signs for Children on Board Trains: Findings From Great Britain**
- Elizabeth Phillips, Brittany Sellers, and Stephen M. Fiore, U. of Central Florida, **Human-Centric Environmentalism: Opportunities for the Human Factors Community to Contribute to Global Environmental Solutions**

### HC8 – PROCESS IMPROVEMENT IN HEALTH CARE

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Arathi Sethmudhaven, Medtronic; *Cochair:* Thomas Ferris, U. of Michigan

- Scott D. Wood and James P. Bagian, VA National Ctr. for Patient Safety, **A Cognitive Analysis of Color-Coded Wristband Use in Health Care**
- T. Xiao, P. M. Sanderson, and M. Lee, U. of Queensland, **Patient Transport Cards Support Formal and Informal Coordination in a Hospital Department**
- Anne Collins McLaughlin, Grace E. Anxieter, and Amanda T. Hemmer, North Carolina State U., **Nurses' Hand Hygiene Practices: Effects of Scenario, Knowledge, and Locus of Control**
- Justin Rousek, U. of Nebraska; Ann Polich, Chris Masek, Jon Knezevich, and Gale Etherton, Nebraska Western Iowa VA Health Care System; M. Susan Hallbeck, U. of Nebraska, **Preventing Hospital-Acquired Venous Thromboembolism by Utilizing Clinical Pathway Methodology to Reduce Cognitive Errors**
- Laura Lin Gosbee, Red Forest Consulting, LLC, **Chronic Disease Management: Improving Continuity of Care With Human Factors Engineering**

### I2 – INTERNET AND SOCIAL SYSTEMS

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Garden A (Atrium Lobby Level)

Internet; cosponsored by Computer Systems

*Chair:* Jeffrey Smith, IBM; *Cochair:* John W. Ruffner, SERCO

- Davin Pavlas, Heather Lum, and Eduardo Salas, U. of Central Florida, **The Influence of Aesthetic and Usability Web Design Elements on Viewing Patterns and User Response: An Eye-Tracking Study**
- Kapil Chalil Madathil, Githin F. Alapatt, and Joel S. Greenstein, Clemson U., **An Investigation of the Usability of Image-Based CAPTCHAs**
- John W. Ruffner and Anne C. Brodie, Serco, Inc.; Christine L. Holiday and Timothy H. Isenberg, Defense Ammunition Ctr., **Selecting and Utilizing Metrics for an Internet-Based Community of Practice**
- Tyler Campbell and Bruce N. Walker, Georgia Tech, **Increasing Trust in Online Shopping Environments Increases Purchasing Behavior**
- Scott A. Russell, Jason J. Saleem, David A. Haggstrom, Alissa L. Russ, and Neale R. Chumbler, Roudebush VA Medical Ctr., **A Novel Tool to Track and Analyze Qualitative Usability Data: Lessons Learned From the VA's Personal Health Record**

### IE6 – GAIT AND STABILITY

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom A (Street Level)

Industrial Ergonomics

*Chair:* Gary Mirka, Iowa State U.; *Cochair:* Sai Vikas Yalla, U. of Wisconsin-Milwaukee

- Sean Gallagher, Jonisha Pollard, and William L. Porter, National Inst. for Occupational Safety and Health, **Characteristics of Gait in Restricted Vertical Space Versus Unrestricted Walking**
- Xiaoyue Zhang and Thurmon E. Lockhart, Virginia Tech, **The Impairment and Recovery of Dynamic Walking Stability During Virtual Environment Exposure in the Elderly**
- Justin G. Young, Michael E. Sackllah, and Thomas J. Armstrong, U. of Michigan, **Force Distribution at the Hand/Handle Interface for Grip and Pull Tasks**
- Haluk Ay, Anthony Luscher, and Carolyn Sommerich, Ohio State U., **Design and Development of a Torque Tool Testing Rig That Simulates Human Operator-Tool-Task Interactions**
- Monica L. H. Jones, Matthew P. Reed, and Don B. Chaffin, U. of Michigan, **The Effect of Bracing Availability on Force-Exertion Capability in One-Hand Isometric Pulling Tasks**

### SD5 – FUTURE CHALLENGES FOR THE EFFECTIVE UTILIZATION OF ROBOTICS ASSETS IN MILITARY ENVIRONMENTS

Discussion Panel

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Hospitality Room (Atrium Lobby Level)

System Development

*Chair:* A William Evans III, U.S. Army Research Lab

*Panelists:* Michael J. Barnes, Keryl A. Cosenzo, Tal Oron-Gilad, Troy Kelley, and Mark Draper, U.S. Air Force Research Lab

## ST4 – COLLISIONS AND MITIGATION

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Grand Ballroom C (Street Level)

Surface Transportation

*Chair:* Laura Stanley, Montana State U.; *Cochair:* Jason Telner, University Health Network

1. Gregory M. Fitch, Myra Blanco, Justin F. Morgan, and Amy E. Wharton, Virginia Tech Transportation Inst., **Driver Braking Performance to Surprise and Expected Events**
2. Shaunna L. Milloy, Jeff K. Caird, Amanda D. Ohlhauser, and Aimée M. Pearson, U. of Calgary, **Do Responses Differ Between Novice and Experienced Drivers When a Late Yellow Light Is Encountered?**
3. David G. Kidd, Erik T. Nelson, and Carryl L. Baldwin, George Mason U., **The Effects of Repeated Exposures to Collision Warnings on Drivers' Willingness to Engage in a Distracting Secondary Task**
4. Makoto Itoh, Tatsuya Horikome, and Toshiyuki Inagaki, U. of Tsukuba, **Effectiveness and Driver Acceptance of a Semi-Autonomous Forward Obstacle Collision Avoidance System**
5. Reates Curry, Mike Blommer, Louis Tijerina, Jeff Greenberg, Dev Kochhar, Craig Simonds, and David Watson, Ford Motor Co., **A Mental Model Perspective of a Driver Workload System**

## T5 – TRAINING THEORY AND APPLICATION

Lecture

Thursday, September 30, 2010, 1:30 p.m. to 3:00 p.m.

Seacliff C (Bay Level)

Training

*Chair:* Ryan Kilgore, Charles River Analytics; *Cochair:* David Schuster, U. of Central Florida

1. Cleotilde Gonzalez and Varun Dutt, Carnegie Mellon U., **Instance-Based Learning Models of Training**
2. Christopher D. Wickens, Shaw L. Ketels, Alice F. Healy, Carolyn J. Buck-Gengler, and Lyle E. Bourne, Jr., U. of Colorado at Boulder, **The Anchoring Heuristic in Intelligence Integration: A Bias in Need of De-Biasing**
3. Benjamin A. Clegg, Colorado State U.; Eric D. Heggstad, U. of North Carolina – Charlotte; Lisa Durrance Blalock, Colorado State U., **The Influences of Automation and Trainee Aptitude on Training Effectiveness**
4. Dina Burkolter, Annette Kluge, and Matthias Brand, U. of Duisburg-Essen, **Individual Differences in Complex Task Performance: Interaction Effects of Risk-Taking Behavior and Cognitive Variables**
5. Elizabeth H. Lazzara, Davin Pavlas, Stephen Fiore, and Eduardo Salas, U. of Central Florida, **A Framework to Develop Task Complexity**

# Thursday, September 30

## 3:30 to 5:00 p.m.

## AS8 – HUMAN-TECHNOLOGY INTERACTION IN AIR TRAFFIC CONTROL OPERATIONS

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Bayview B (Bay Level)

Aerospace Systems

*Chair:* Ashley Nunes, CSSI; *Cochair:* Ericka Rovira, West Point

1. Daniel J. Hannon, U.S. Dept. of Transportation Volpe Ctr., **Air Traffic Controller Performance in a Human-in-the-Loop Virtual Tower Simulation**
2. Sehchang Hah and Ben Willems, Federal Aviation Admin.; Kenneth Schulz, Hi-Tec Systems, Inc., **The Evaluation of Data Communication for the Future Air Traffic Control System (NextGen)**
3. Hayley J. Davison Reynolds, Richard A. DeLaura, and Michael Robinson, Massachusetts Inst. of Technology, Lincoln Lab, **Field and (Data) Stream: A Method for Functional Evolution of the Air Traffic Management Route Availability Planning Tool (RAPT)**
4. Ferne Friedman-Berg and Kenneth Allendoerfer, Federal Aviation Admin.; Atul Deshmukh, Hi-Tec Systems, **Developing Target Symbions for the Future Terminal Air Traffic Control Environment**
5. Eric Jason Stearman, Vlad L. Pop, and Frank T. Durso, Georgia Tech, **Effects of Age-of-Flight on Situation Awareness in En Route Air Traffic Control**

## CE9 – SUPPORTING TEAMS AND COMMUNITIES OF PRACTICE

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Gina Thomas, Wright-Patterson AFB; *Cochair:* Paul Gorman, Oregon Health and Science U.

1. Adam Euerby and Catherine M. Burns, U. of Waterloo, **Advancing Complex Sociotechnical Systems Design Using the Community of Practice Concept**
2. Katherine Hamilton, Vincent Mancuso, Dev Minotra, Rachel Hoult, Susan Mohammed, Alissa Parr, Guarav Dubey, Eric McMillan, and Michael McNeese, Pennsylvania State U., **Using the NeoCities 3.1 Simulation to Study and Measure Team Cognition**
3. Rick Van der Kleij, TNO Defence, Security and Safety; Maarten Hoeppermans and Christel Rutte, U. of Tilburg, **How Performance Feedback and Reflection Affect Transactive Memory**
4. Pei-Ju Lee, Huadong Wang, Shih-Yi Chien, and Michael Lewis, U. of Pittsburgh; Paul Scerri, Prasanna Velagapudi, Katia Sycara, and Breelyn Kane, Carnegie Mellon U., **Teams for Teams: Performance in Multi-Human/Multi-Robot Teams**
5. Susan G. Hutchins and Tony Kendall, Naval Postgraduate School, **Understanding Cognition in Team Collaboration Through Use of Communications Analysis**

## CS4 – INPUT AND DISPLAY

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Garden A (Atrium Lobby Level)

Computer Systems

*Chair:* Lorraine Normore, U. of Tennessee; *Cochair:* Tonya Johnson, LexisNexis

1. Richard C. Omanson, Infogix; Craig S. Miller, Elizabeth Young, and David Schwantes, DePaul U., **Comparison of Mouse and Keyboard Efficiency**
2. Yi Wang, Wei Dong, and Wai-Tat Fu, U. of Illinois at Urbana-Champaign, **To Customize or Not To Customize? The Use of a Customization Tool to Augment Information Indexing in a Computer Desktop Environment**
3. Mohamed Sheik-Nainar, Synaptics, Inc., **Contact Location Offset to Improve Small Target Selection on Touchscreens**
4. Lauren Ogren and Jason H. Wong, Naval Undersea Warfare Ctr., **An Analysis of Game Controller and Touchscreen Devices for Input Into a Complex High-Information Display**
5. Thomas Tullis and Marisa Siegel, Fidelity Investments, **Comparison of Date Entry Methods: An Update for the Internet Age**

## GS10 – MONITORING AND SIGNAL DETECTION

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Seacliff B (Bay Level)

General Sessions

*Chair:* Poornima Madhavan, Old Dominion U.

1. William S. Helton and Paul N. Russell, U. of Canterbury, **The Short Stress State Questionnaire and High-Event-Rate Target Detection**
2. Sian Miles and Bill Macken, Cardiff U., **The Role of Monitoring and Control in Similar Nontarget/Target Discrimination**
3. Hanna Stelmaszewska and B. L. William Wong, Middlesex U.; Penelope M. Sanderson, U. of Queensland, **Methods for Gathering and Analyzing Information-Seeking Behavior in Electronic Resource Discovery Systems**

## HC9 – HOW DESIGN IMPACTS HEALTH CARE

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Linsey Barker, U. of Missouri; *Cochair:* William Lee, MITRE Corp.

1. Elise Teteris and Jeff K. Caird, U. of Calgary, **Medication Container Look-Alikes: Does Color Matter?**
2. Stephanie Guerlain, U. of Virginia; Evan T. Edwards and Eric S. Edwards, Intelliject, Inc., **Design of a New Epinephrine Auto-Injector to Minimize Use Errors**
3. S. H. Koch, N. Staggers, C. Weir, J. Agutter, D. Liu, and D. R. Westenskow, U. of Utah, **Integrated Information Displays for ICU Nurses: Field Observations, Display Design, and Display Evaluation**
4. Jonas Shultz and Susan Chisholm, Alberta Health Services, **Supportive Living Resident Suite Evaluation: Using Simulation to Evaluate a Mock-Up**
5. Corey Johnson and Aga Bojko, User Centric, Inc., **How Much Is Too Much? Using Magnitude Estimation for User Experience Research**

## ME4 – TRUST IN SOCIOTECHNICAL SYSTEMS

Discussion Panel

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Marina Room (Bay Level)

Macroergonomics

*Chair:* Enid N. H. Montague, U. of Wisconsin-Madison; *Cochair:* Jenna L. Marquard, U. of Massachusetts Amherst

*Panelists:* Kerry McGuire, U. of Wisconsin-Madison; Steven Fiore, U. of Central Florida; Rich Holden, U. of Wisconsin-Madison; Gregory M. Fitch, Virginia Tech Transportation Inst.; John Lee, U. of Wisconsin-Madison

## **PD6 – ERGONOMICS AND**

### **ANTHROPOMETRICS IN PRODUCT DESIGN**

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Seacliff A (Bay Level)

Product Design

*Chair:* W. Kyle Dooley, Case New Holland; *Cochair:* Thomas J. Albin, High Plains Engineering Services, LLC

1. Wonsup Lee, Sunghye Yoon, and Heecheon You, Pohang U. of Science and Technology, **Development of a 3-D Semiautomatic Measurement Protocol for Hand Anthropometric Measurement**
2. Bernadette J. Brown-Clerk, Justin B. Rousek, and Bethany R. Lowndes, U. of Nebraska-Lincoln; Sandra M. Eikhout, TNO Work and Employment; Bradley J. Balogh and M. Susan Hallbeck, U. of Nebraska-Lincoln, **Novel Electrosurgical Hand Controls Integrated Into a Standard Laparoscopic Grasper**
3. Joonho Chang, Kihyo Jung, Jesun Hwang, Yuncheol Kang, Seokgi Lee, and Andris Freivalds, Pennsylvania State U., **Determination of Bicycle Handle Diameters Considering Hand Anthropometric Data and User Satisfaction**
4. Peter W. Johnson and Ling Cui, U. of Washington, **Postural Benefits for Children and Adults When Using the Mouse Next to a Small Keyboard**
5. Sharon Joines, Siwen Liu, and Ashley Vercoe, North Carolina State U., **Grip Span and Aging: Does the Grip Strength-Span Relationship Change With Age?**

## **POS4 – POSTERS 4**

Poster Session

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Pacific Concourse A–C (Pacific Concourse Level)

Posters

*Chair:* Rajaram Bhagavathula, Virginia Tech; *Cochair:* Kristin Oleson, U. of Central Florida

Poster sessions are 90 minutes only; presenters are required to be present throughout the session.

### *Perception and Performance*

1. Kristin Moore, Space and Naval Warfare Systems Ctr. Atlantic; Leo Gugerty, Clemson U., **Development of a Novel Measure of Situation Awareness: The Case for Eye Movement Analysis**
2. Jacquelyn Cr  bolder, Defence Research and Development Canada; Joshua P. Salmon and Raymond M. Klein, Dalhousie U., **The Cost of Location Switching During Visual Alerting: Effects of Experience and Age**
3. James L. Szalma and Peter A. Hancock, U. of Central Florida, **A Meta-Analytic Review of the Effects of Noise on Performance: Moderating Effects of Task and Noise Characteristics**
4. Eric J. Adamic, Joseph Behre, and Brian P. Dyre, U. of Idaho, **Attentional Locus and Ground Dominance in Control of Speed During Low-Altitude Flight**
5. Gayle Hunt, Stephen Rice, Kasha Geels, and David Trafimow, New Mexico State U., **Analyzing Suboptimal Human-Automation Performance Across Multiple Sessions**
6. Anthony R. Selkowitz and Valerie K. Sims, U. of Central Florida, **The Mental Rotation of Objects Presented in an Underwater Environment**

### *Individual Differences*

7. Svyatoslav Guznov, Gerald Matthews, and Joel Warm, U. of Cincinnati, **Team Member Personality, Performance, and Stress in a RoboFlag Synthetic Task Environment**

### *Workload*

8. Daniel N. Cassenti and Troy D. Kelley, U.S. Army Research Lab; Richard A. Carlson, Pennsylvania State U., **Modeling the Workload-Performance Relationship**
9. Philip Kortum, Rice U.; S. Camille Peres, U. of Houston Clear Lake; Kurt Stallmann, Rice U., **Mental Workload Measures of Auditory Stimuli Heard During Periods of Waiting**
10. Kakuichi Shiomi, Electronic Navigation Research Inst., **Workload Causes Chaotic Fluctuation of Human Voice**
11. Grace W. L. Teo and James L. Szalma, U. of Central Florida, **The Effect of Spatial and Temporal Task Characteristics on Performance, Workload, and Stress**
12. Michelle Sublette, C. Melody Carswell, Rusty Grant, Will Seidelman, Duncan Clarke, and Brent Seales, U. of Kentucky, **Anticipating Workload: Which Facets of Task Difficulty Are Easiest to Predict?**
13. Allan Fong and Ciara Sibley, U.S. Naval Research Lab; Anna Cole, Strategic Analysis, Inc.; Carryl Baldwin, George Mason U.; Joseph Coyne, U.S. Naval Research Lab, **A Comparison of Artificial Neural Networks, Logistic Regressions, and Classification Trees for Modeling Mental Workload in Real Time**

### *Decision Making*

14. Alan S. Boydston, L-3 Communications; Robert E. Patterson and Byron J. Pierce, U.S. Air Force Research Lab; Lisa M. Park and Jodi Shannan, L-3 Communications, **On the Development of Training Principles for Intuitive Decision Making**
15. Joseph Juhnke and Dan Delaney, Tanagram Partners; Tracey Wheeler, System Planning Corp.; Brian R. Johnson, Naval Air Warfare Ctr.; Joseph Cohn, Defense Advanced Research Projects Agency, **Aiding Complex Decision Making Through Augmented Reality**
16. Rebecca Wiczorek and Dietrich Manzey, Berlin Inst. of Technology, **Is Operators' Compliance With Alarm Systems a Product of Rational Consideration?**
17. Elizabeth A. Schmidlin and Keith S. Jones, Texas Tech U., **Tele-Operation Through Apertures: Mission Impassable or Mission Undrivable?**

### *Modeling and Simulation*

18. Muneo Kitajima and Masato Nakajima, National Inst. of Advanced Industrial Science and Technology; Makoto Toyota, T-Method, **Cognitive Chrono-Ethnography: A Method for Studying Behavioral Selections in Daily Activities**
19. Priyadarshini R. Pennathur and Ann M. Bisantz, U. at Buffalo, SUNY, **A Novel Information Trail Model for Information Transformation in Cognitive Work Systems**
20. Youngjoo Jeon, Korea U., **Revised GOMS Operator for Drag and Drop**

### *University Lab Posters*

Carnegie Mellon U.

Dynamic Decision Making Lab

George Mason U.

Arch Lab

Georgia Tech

Cognitive Engineering Center

Ohio State U.

Institute for Ergonomics

U. of Houston-Clear Lake

Research on the Interaction between Humans and Machines

## **S3 – SAFETY APPLICATIONS AND THEORIES**

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Hospitality Room (Atrium Lobby Level)

Safety

*Chair:* John DeRosia, Medical College of Wisconsin; *Cochair:* Brenda Santos, National Inst. for Occupational Safety and Health

1. Soyun Kim, Christopher B. Mayhorn, and Michael S. Wogalter, North Carolina State U., **Use of Information Sources Referenced in and Attitudes About Televised DTC Prescription Drug Advertisements**
2. Christopher B. Mayhorn, North Carolina State U.; Richard C. Goldsworthy, **The Academic Edge, Messages, and Medical Behaviors: DTCA's Influence on Health Care Consumer Thinking and Doing, and How We Can Help**
3. Yiyun Peng and Linda Ng Boyle, U. of Washington; David M. Neyens, U. of Iowa; Jeffrey Short, American Transportation Research Inst., **Management's Attitudes Toward Safety in Commercial Vehicle Operations**
4. Annette Kluge and Bj  rn Badura, U. of Duisburg-Essen; Leon Urbas, Technical U. Dresden; Dina Burkolter, U. of Duisburg-Essen, **Violations-Inducing Framing Effects of Production Goals: Conditions Under Which Goal-Setting Leads to Neglecting Safety-Relevant Rules**
5. Katherine A. Berry, Paris F. Stringfellow, and Scott A. Shappell, Clemson U., **Examining Error Pathways: An Analysis of Contributing Factors Using HFACS in Nonaviation Industries**

## **SF5 – EXPLORING ISSUES WITH VISUAL PERCEPTION IN HUMAN FACTORS STUDENT RESEARCH**

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Seacliff D (Bay Level)

Student Forum

*Chair:* Kelly Caine, Indiana U.; *Cochair:* Hongbo Zhang, Virginia Tech

1. Molly M. Liechty and Poornima Madhavan, Old Dominion U., **An Eye Movement Analysis of Evolving User Preferences During Internet Search**
2. Yi-Fang D. Tsai, Songhee Kang, and Matthew S. Peterson, George Mason U., **Effects of Individual Differences on Visual Search Task Performance**
3. Mary G. Luong and Anne Collins McLaughlin, North Carolina State U., **Learning to Solve a Visuospatial Problem: The Effect of Visual Cues on Overcoming Errors**
4. Aren C. Hunter and Avi Parush, Carleton U., **Where Did They Go? Recovering Dynamic Objects After Interruptions**
5. Nantakrit Yodpijit and Thurmon E. Lockhart, Virginia Tech, **Investigating Dynamics of Dark Focus of the Human Eye in Young Adults**

## **VE3 – HUMAN PERFORMANCE IN VIRTUAL ENVIRONMENTS**

Lecture

Thursday, September 30, 2010, 3:30 to 5:00 p.m.

Seacliff C (Bay Level)

Virtual Environments

*Chair:* Hari Thiruvengada, Honeywell Labs; *Cochair:* Yingzi Lin, Northeastern U.

1. John S. Barnett, U.S. Army Research Inst. for the Behavioral and Social Sciences; Grant S. Taylor, U. of Central Florida, **Desktop and Wearable Game-Based Simulations: A Usability Study**
2. Per-Anders Oskarsson, Staffan N  hlinder, and Erland Svensson, Swedish Defence Research Agency, **A Meta Study of Transfer of Training**
3. Magnus Axholt, Martin Skoglund, Stephen D. Peterson, Matthew D. Cooper, Thomas B. Sch  n, Fredrik Gustafsson, and Anders Ynnerman, Link  ping U.; Stephen R. Ellis, NASA Ames Research Ctr., **Optical See-Through Head-Mounted Display Direct Linear Transformation Calibration Robustness in the Presence of User Alignment Noise**
4. Steven Underwood and Jennie J. Gallimore, Wright State U., **One-Handed Versus Two-Handed Six Degree-of-Freedom Compensatory Tracking in 3-D, and the Effects of Practice**
5. Hua Cai and Yingzi Lin, Northeastern U., **Tuning Trust Using Cognitive Cues for Better Human-Machine Collaboration**

**Thursday, September 30**

**5:15 to 6:30 p.m.**

**Technical Group Networking/  
Business Meeting**

**Technical Group Program Chairs**

Pacific Concourse M (Pacific Concourse Level)

5:15 to 6:30 p.m.

## Friday, October 1

7:15 to 8:00 a.m.

### Early-Morning Madness

Grand Ballroom B (Street Level)

7:15 to 8:00 a.m.

## Friday, October 1

8:30 to 10:00 a.m.

### AC4 – MEASURING WORKLOAD USING PHYSIOLOGICAL MEASURES SUCH AS TRANSCRANIAL DOPPLER ULTRASONOGRAPHY (TCD)

Lecture

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Grand Ballroom C (Street Level)

Augmented Cognition

*Chair:* Joseph Cohn, Defense Advanced Research Projects Agency; *Cochair:* Michael Lowe, U.S. Navy

1. L. M. Cerruti, J. R. Estep, W. D. Miller, and J. C. Christensen, Wright-Patterson Air Force Base, **Transcranial Doppler Assessment of Workload Transition in a Complex Task**
2. Tyler H. Shaw, Laura Guagliardo, Ewart de Visser, and Raja Parasuraman, George Mason U., **Using Transcranial Doppler Sonography to Measure Cognitive Load in a Command and Control Task**
3. Roger Lew, Brian P. Dyre, Terence Soule, Stuart A. Ragsdale, and Steffen Werner, U. of Idaho, **Assessing Mental Workload From Skin Conductance and Pupillometry Using Wavelets and Genetic Programming**
4. Katie C. Ewing and Stephen H. Fairclough, Liverpool John Moores U., **The Effect of an Extrinsic Incentive on Psychophysiological Measures of Mental Effort and Motivational Disposition When Task Demand Is Varied**
5. Glenn F. Wilson, U.S. Air Force Research Lab; Christopher A. Russell, Archinoetics, LLC; Jason W. Monnin, Justin R. Estep, and James C. Christensen, U.S. Air Force Research Lab, **How Does Day-to-Day Variability in Psychophysiological Data Affect Classifier Accuracy?**

### AS9 – THE NEXT GENERATION AIR TRANSPORTATION SYSTEM: DATA COMMUNICATION

Invited Symposium

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Garden Room A (Atrium Lobby Level)

Aerospace Systems

*Chair:* Beth L. Blickensderfer, Embry-Riddle Aeronautical U.; *Cochair:* Danny Benbassat, Booz Allen Hamilton

1. Danny Benbassat, Booz Allen Hamilton Inc.; Levent Ileri, Federal Aviation Admin., **Next Generation Air Transportation System: Data Communications**
2. Kenneth R. Allendoerfer, Todd R. Truitt, and Ben Willems, Federal Aviation Admin., **Evaluations of Data Communications in Tower, TRACON, and En Route Air Traffic Control**
3. James R. Comstock and Brian T. Baxley, NASA Langley Research Ctr.; Robert M. Norman, Boeing Co.; Kyle K. E. Ellis, U. of Iowa; Cathy A. Adams, Kara A. Latorella, and William Lynn, NASA Langley Research Ctr., **The Impact of Data Communications Messages in the Terminal Area on Flight Crew Workload and Eye Scanning**
4. Deborah A. Boehm-Davis, Sara K. Gee, Kelley Baker, and Maricel Medina Mora, George Mason U., **Effect of Party Line Loss and Delivery Format on Crew Performance and Workload**
5. Elizabeth L. Blickensderfer, Albert J. Boquet, Ryan Blanding, Tripp J. E. Driskell, Clyde Rinkinen, and Martin Lauth, Embry-Riddle Aeronautical U., **Service-for-Equipage Impact Assessment**

### CE10 – INTERRUPTIONS AND TASK SWITCHING

Lecture

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Erik Connors, SA Technologies; *Cochair:* Beth L. Blickensderfer, Embry-Riddle Aeronautical U.

1. David M. Cades, Nicole E. Werner, Deborah A. Boehm-Davis, and Zara Arshad, George Mason U., **What Makes Real-World Interruptions Disruptive? Evidence From an Office Setting**
2. Marie P. Panepinto, North Carolina State U., **Voluntary Versus Forced Task Switching**
3. David M. Cades, David G. Kidd, Eden B. King, Patrick E. McKnight, and Deborah A. Boehm-Davis, George Mason U., **Factors Affecting Interrupted Task Performance: Effects of Adaptability, Impulsivity, and Intelligence**
4. Jennifer M. Chen and Raj M. Ratwani, George Mason U.; J. Gregory Trafton, U.S. Naval Research Lab, **The Effect of Interruptions and Global Placekeeping on Postcompletion Error Rates**
5. Mark F. St. John and Mary Ann King, Pacific Science & Engineering Group, Inc., **The Four-Second Supervisor: Multitasking Supervision and Its Support**

### HC10 – HEALTH CARE HANDOVER AND PATIENT SAFETY

Invited Symposium

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Garden Room B (Atrium Lobby Level)

Health Care

*Chair:* Tanja Manser, U. of Aberdeen; *Cochair:* Steven Howard, Stanford U. School of Medicine

1. Tanja Manser, U. of Aberdeen; Steven K. Howard, Stanford U., **Health Care Handover and Patient Safety: Symposium Overview**
2. Emily S. Patterson, Ohio State U. College of Medicine, **Social Norms on Deviations From Prescriptive Handoff Practices**
3. Robert Wears, U. of Florida; Shawna Perry, Virginia Commonwealth U., **Discourse and Process Analyses of Shift Change Handoffs in Emergency Departments**
4. Matthew B. Weinger, Jason M. Slagle, Audrey Kuntz, Arna Banerjee, Jonathan S. Schildcrout, Nathaniel D. Mercaldo, Dan France, Theodore Speroff, Jim Bills, and Ken Wallston, Vanderbilt U. Medical Ctr., **Improving Actual Handover Behavior With a Simulation-Based Training Intervention**
5. Avi Parush, Yolande Simoneau, and Tara Foster-Hunt, Carleton U.; Margot Thomas and Judy Rashotte, Children's Hospital of Eastern Ontario, **The Use of Resources During Shift Handoffs in a Pediatric Intensive Care Unit**
6. Michelle A. Raduma-Tomás, Rhona Flin, and Steven Yule, U. of Aberdeen; Steven Close, Aberdeen Royal Infirmary, **Doctors' Handovers in an Acute Medical Assessment Unit: A Hierarchical Task Analysis**

### IE8 – MEDICAL APPLICATIONS

Lecture

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Bayview Room B (Bay Level)

Industrial Ergonomics

*Chair:* Stephen Lavender, Ohio State U.; *Cochair:* Monica Johnson, Ohio State U.

1. Allen S. Yagjian, U. of California, Davis, **Risk Assessment and Application of Engineering Controls to Reduce the Number of Occupational Related Musculoskeletal Disorders in a Large Pharmaceutical Production Facility**
2. Ashish D. Nimbarte, West Virginia U.; Fereydoun Aghazadeh, Louisiana State U.; Yun Sun, West Virginia U., **Understanding the Physical Risk Factors Affecting Cervical Musculoskeletal Disorders**
3. David L. Lee, David Rempel, and Alan B. Barr, U. of California, San Francisco; Amandeep Shergill, San Francisco Veterans Affairs Medical Ctr., **Ergonomics of Colonoscopy: Wrist Postures of Gastroenterologists Performing Routine Colonoscopy**
4. Carolyn Sommerich, Stephen Lavender, and Elizabeth Sanders, Ohio State U.; Sabrina Lamar, Consultant; Kevin Evans, Ohio State U.; Sharon Joines, North Carolina State U.; Wei-Ting Yen, Ohio State U., **Participatory Ergonomics Applied to Mammographers' Work**
5. Ying (Jean) Zheng and John B. Morrell, Yale U., **Cognitive Load Assessment of a Vibrotactile Posture Feedback Chair**

### PD7 – USER-CENTERED METHODS FOR NEW PRODUCT CONCEPT DEVELOPMENT

Discussion Panel

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Seacliff A (Bay Level)

Product Design

*Chair:* Stanley H. Caplan; *Cochair:* H. C. M. (Jettie) Hoonhout

*Panelists:* William Green, Leicester U.; Jennifer Watts-Perotti, Xerox Innovation Group; Wendy A. Rogers, Georgia Tech

### SF6 – GENERAL TOPICS IN STUDENT RESEARCH: CROWDS, TASK ANALYSES, AND BIOMECHANICS

Lecture

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Seacliff D (Bay Level)

Student Forum

*Chair:* David Kaber, North Carolina State U.; *Cochair:* Katie Berry, Clemson U.

1. Victoria L. Kendrick and Roger A. Haslam, Loughborough U., **The User Experience of Crowds—A Human Factors Challenge**
2. Sarah K. Felipe, Anne E. Adams, Wendy A. Rogers, and Arthur D. Fisk, Georgia Tech, **Training Novices on Hierarchical Task Analysis**
3. Young J. Chun, Texas Tech U., **A Biomechanical Study on the Effects of Hatha Yoga Basic Poses on Muscle Activities**
4. Neal Wiggermann, Monroe Keyserling, and Benjamin Pokorney, U. of Michigan, **The Effect of Flooring Characteristics on Plantar Pressures on the Foot During Standing**
5. Rahul Soangra, Baron Jones, and Thurmon E. Lockhart, Virginia Tech, **Effects of Antifatigue Flooring on Gait Parameters**

### ST5 – SIMULATION AND METHODS IN TRANSPORTATION

Lecture

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Bayview Room A (Bay Level)

Surface Transportation

*Chair:* Nick Kelling, Marshall U.; *Cochair:* Farheen Khan, Exponent

1. Avinoam Borowsky, Anat Meir, Tal Oron-Gilad, David Shinar, and Yisrael Parmet, Ben Gurion U. of the Negev, **The Effect of Hazard Perception Training on Traffic-Scene Movies Categorization**
2. Robert McCall and Frank Schieber, U. of South Dakota, **Validating the Effectiveness of Recursive Blur Enhancement of Symbol Signs Using Static and Dynamic Protocols**
3. Michael Jones, Federal Railroad Admin.; Christopher Plott, Melvin Jones, and Thomas Olthoff, Alion Science and Technology; Steven Harris, Rational, LLC, **The Cab Technology Integration Lab: A Locomotive Simulator for Human Factors Research**

4. Joel M. Cooper and Nathan Medeiros-Ward, U. of Utah, **Conversation Impairs the Expression of Learned Sequence Information in a Simulated Driving Environment**

5. Shannon C. Roberts and John D. Lee, U. of Wisconsin-Madison; Joshua D. Hoffman, Deere & Co., **Using Capacity Analysis to Evaluate the Effect of MP3 Player Usage on Driver Behavior**

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## **TE4 – OPPORTUNITIES FOR HUMAN FACTORS MEASURES IN MILITARY OPERATIONAL TEST AND EVALUATION**

Discussion Panel

Friday, October 1, 2010, 8:30 to 10:00 a.m.

Seacliff C (Bay Level)

Test & Evaluation

*Chair:* Jennifer Ockerman, Johns Hopkins U. Applied Physics Lab

*Panelists:* David Roberts, SimIS, Inc.; Albert A. Sciarretta, CNS Technologies, Inc.; Dennis Folds, Georgia Tech Research Inst.; Susana McKee, U.S. Air Force; Reta Morgan Reynolds, U.S. Army; Rebecca Grier, Inst. for Defense Analysis

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## **Friday, October 1 10:30 a.m. to 12:00 noon**

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## **ASI0 – HUMAN FACTORS RESEARCH FOR SPACE EXPLORATION: MEASUREMENT, MODELING, AND MITIGATION**

Discussion Panel

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Garden Room A (Atrium Lobby Level)

Aerospace Systems

*Chair:* Mary Kaiser, NASA Ames Research Ctr.

*Panelists:* Christopher S. Allen, NASA Johnson Space Ctr.; Immanuel Barshi, NASA Ames Research Ctr.;

Dorrit Billman, San Jose State U.; Kritina L. Holden, Lockheed Martin Corp.

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## **CEI1 – JUDGMENT AND DECISION MAKING BEHAVIOR IN COMPLEX SYSTEMS**

Lecture

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Grand Ballroom B (Street Level)

Cognitive Engineering & Decision Making

*Chair:* Sylvain Bruni, Aptima Inc.; *Cochair:* Steve Shute, Lockheed Martin Corp.

1. Elliot E. Entin and Daniel Serfaty, Aptima Inc, **Information Source, Sequential Revision of Belief, and the Order Effect**

2. Matthew B. Thompson, Jason M. Tangen, Renee Treloar, and Kathleen Ivison, U. of Queensland, **Humans Matching Fingerprints: Sequence and Size**

3. Christian P. Janssen, Duncan P. Brumby, and Rae Garnett, U. College London, **Natural Break Points: Utilizing Motor Cues When Multi-tasking**

4. Christopher A. Miller, Tammy Ott, Peggy Wu, and Vanessa Vakili, Smart Information Flow Technologies, **Politeness Effects in Directive Compliance: Effects With Power and Social Distance**

5. Maia B. Cook, Harvey S. Smallman, Frank C. Lacson, and Daniel I. Manes, Pacific Science and Engineering Group, Inc., **Situation Displays for Dynamic UAV Replanning: Intuitions and Performance for Display Formats**

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## **E5 – TEACHING FUTURE HUMAN FACTORS AND ERGONOMICS PROFESSIONALS TO SOLVE PRACTICAL PROBLEMS**

Discussion Panel

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Seacliff D (Bay Level)

Education

*Chair:* Beth L. Blickensderfer, Embry-Riddle Aeronautical U.

*Panelists:* Albert J. Boquet, Embry-Riddle Aeronautical U.; Noelle D. Brunelle, Sikorsky Aircraft; James A. Pharmed, Naval Air Warfare Ctr.; Scott A. Shappell, Clemson U.

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## **HP4 – ADVANCES IN MODELING SITUATION AWARENESS, DECISION MAKING, AND PERFORMANCE IN COMPLEX OPERATIONAL ENVIRONMENTS**

Discussion Panel

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Seacliff B (Bay Level)

Human Performance Modeling

*Chair:* Cheryl Bolstad, SA Technologies; *Cochair:* Haydee Cuevas, SA Technologies

*Panelists:* Erik S. Connors, SA Technologies; Peter W. Foltz, Pearson Knowledge Technologies; Cleotilde González, Carnegie Mellon U.;

Nathan Ka Ching Lau, U. of Toronto; Walter J. Warwick, Alion Science and Technology

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## **IE9 – CONSTRUCTION AND WAREHOUSES**

Lecture

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Bayview Room B (Bay Level)

Industrial Ergonomics

*Chair:* Richard Marklin, Marquette U.; *Cochair:* Riley Splittstoesser, Ohio State U.

1. Xiaolu Jing, Scott Fulmer, and Priyadarshini Dasgupta, U. of Massachusetts Lowell; Lu Yuan, Southeastern Louisiana U.; Bryan Buchholz, U. of Massachusetts Lowell, **Quantitative Ergonomics Exposure Assessment for Floor Coverers in the Greater Boston Area**

2. Scott Fulmer and Xiaolu Jing, U. of Massachusetts Lowell; Lu Yuan, Southeastern Louisiana U.; Priyadarshini Sengupta Dasgupta and Brad Schugardt, U. of Massachusetts Lowell; Ann Marie Dale, Washington U.; Laura Punnett and Bryan Buchholz, U. of Massachusetts Lowell, **Biomechanical Risk Factors for Knee Disorders in Carpenters**

3. Steven A. Lavender, Carolyn M. Sommerich, Monica R. Johnson, and Zaid Radin, Ohio State U., **Developing Ergonomic Interventions to Reduce Musculoskeletal Disorders in Grocery Distribution Centers**

4. Monica R. Johnson, Steven A. Lavender, and J. Mac Crawford, Ohio State U.; Paul A. Reichelt, U. of Illinois at Chicago; Antonio R. Fernandez, Ohio State U., **Understanding Factors That Affect the Adoption of Ergonomic Interventions Among EMS Workers**

5. Carisa Harris, U. of California, Berkeley; Jia-Hua Lin, Liberty Mutual Research Inst. for Safety, **Effect of Hand-Handle Interface on Exertion, Efficiency, and Physical Demands in Pallet Jack Operations**

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## **PD8 – USER-CENTERED APPROACHES TO PRODUCT DESIGN**

Lecture

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Seacliff A (Bay Level)

Product Design

*Chair:* Ismail El Maach, MEA Forensic; *Cochair:* Dianne McMullin, Boeing

1. Dan Nathan-Roberts and Yili Liu, U. of Michigan, **Investigation of Relative Mobile Phone Size Preference Using Interactive Genetic Algorithms**

2. Jangwoon Park, Sujin Kim, and Heecheon You, Pohang U. of Science and Technology, **An Analysis of Natural Motion for Product Design: Refrigerator Half-Guard Installation Part Design**

3. Liang Zeng, Robert W. Proctor, and Gavriel Salvendy, Purdue U., **Harnessing the User's Mental Power to Enhance Web Site Creativity: The Meta-Design Approach to Web Personalization**

4. Sarah Endicott, Abir Mullick, Gourab Kar, and Marisa Topping, Georgia Tech, **Development of the Inclusive Indoor Play Design Guidelines**

5. Marita A. O'Brien, U. of Alabama in Huntsville; Wendy A. Rogers and Arthur D. Fisk, Georgia Tech, **Understanding the Role of Experience in Younger and Older Adults' Interactions With a Novel Technology**

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## **SD6 – HUMAN-SYSTEMS INTEGRATION IN THE FEDERAL GOVERNMENT**

Discussion Panel

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Garden Room B (Atrium Lobby Level)

System Development

*Chair:* Patricia Jones, NASA Ames Research Ctr.;

*Cochair:* Gaye L. Graves, NASA Ames Research Ctr.

*Panelists:* Terry Allard, Office of Naval Research; Jack Blackhurst, U.S. Air Force Research Lab; David J. Fitts, NASA Johnson Space Ctr.;

Sean Peters, U.S. Nuclear Regulatory Commission; Dino Piccione, Federal Aviation Admin.;

Lawrence Shattuck, Naval Postgraduate School

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## **T6 – TRAINING IN THE WILD: STUDIES OF APPLICATION AND TRANSFER**

Lecture

Friday, October 1, 2010, 10:30 a.m. to 12:00 noon

Seacliff C (Bay Level)

Training

*Chair:* Emily Wiese, Aptima Inc.; *Cochair:* Heather Stoner, Realtime Technologies, Inc.

1. Laura A. Whitlock, Anne Collins McLaughlin, and Jason C. Allaire, North Carolina State U., **Training Requirements of a Video Game-Based Cognitive Intervention for Older Adults: Lessons Learned**

2. Ryan M. Kilgore and J. Alex Godwin, Charles River Analytics, Inc., **Pictorial Mnemonic-Based Tools for Procedural Training: Application to the Battlefield First-Aid Domain**

3. Allyson R. Hall and Keith S. Jones, Texas Tech U., **Distance Estimation Training: A Proposed Model of Transfer**

4. Grant S. Taylor, U. of Central Florida; John S. Barnett, U.S. Army Research Inst. for the Behavioral and Social Sciences, **Training Effectiveness of Wearable and Desktop Simulator Interfaces**

5. Mark W. Scerbo, T. Robert Turner, and Elizabeth Newlin-Canzone, Old Dominion U.; Dwight Meglan, Robert Waddington, Dan King, and Howard Champion, SimQuest, LLC, **A Preliminary Evaluation of a Burr Hole Drilling Simulator for Craniotomy**