

Human Factors and Ergonomics Society 53rd Annual Meeting



October 19–23, 2009
San Antonio, Texas
USA

PROGRAM



Volume 5 Just Released!

The HFES annual series, *Reviews of Human Factors and Ergonomics*, condenses HF/E knowledge in specific subject areas into a form that provides readers with a comprehensive understanding of each topic — its current state, important new research findings and technology, and current issues and research needs. Chapters note ways in which research results inform theory or methodology for future research and also emphasize the practical implications of the research that is reviewed. Chapter authors are among the most prominent HF/E professionals in their respective subject areas. Reviews volumes are broader in scope than handbooks and deeper in detail than encyclopedias. They are designed to inform both researchers and practitioners. All chapters include extensive references.



Volume 5 Contents

- Preface: Use-Inspired Basic Research** – Francis T. Durso
Chapter 1. Performance in Nursing – Patricia R. DeLucia, Tammy E. Ott, & Patrick A. Palmieri
Chapter 2. Human Factors of Information Visualization – George Robertson, Mary Czerwinski, Danyel Fisher, & Bongshin Lee
Chapter 3. Aviation Automation: General Perspectives and Specific Guidance for the Design of Modes and Alerts – Amy R. Pritchett
Chapter 4. Intercepting Moving Objects: Fundamental Principles Learned From Baseball – Rob Gray
Chapter 5. Expertise: Acquisition, Limitations, and Control – Stephan Lewandowsky & Jacqueline L. Thomas
Chapter 6. Principles for Designing Effective and Efficient Training of Complex Cognitive Skills – Fred Paas & Tamara van Gog
Chapter 7. Augmented Cognition: An Overview – Kay Stanney, Dylan Schmorrow, Matthew Johnston, Sven Fuchs, David Jones, Kelly Hale, Ali Ahmad, & Peter Young
Chapter 8. Human Performance Modeling – Michael Byrne & Richard Pew
About the Authors
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53rd Annual Meeting
October 19–23, 2009**

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Student Reception

Aerospace Systems Technical Group

Cognitive Engineering and Decision Making Technical Group

Computer Systems Technical Group

Industrial Ergonomics Technical Group

Macroergonomics Technical Group

Perception & Performance Technical Group

Safety Technical Group

Student Lounge

Human Performance Modeling Technical Group

Product Design Technical Group

U.S. Border Patrol

Mentor-Mentee Luncheons

EXHIBITORS

(As of September 15, 2009)

Alion Science & Technology	Booth 24
Applied Human Factors, Inc.	Tabletop 11
Ashgate Publishing Company.	Booth 10
Board of Certification in Professional Ergonomics (BCPE)	Tabletop 8
ErgoGenesis, LLC.	Booth 1
HFES Institute.	Booths 27–28
Userzoom/Key Lime Interactive.	Tabletop 12
LC Technologies/Eyegaze Systems.	Tabletop 7
NASA Ames Research Center	Booths 3–4
The National Academies: Committee on Human-Systems Integration	Booth 15
Neutral Posture, Inc.	Booth 6
Noldus Information Technology	Booth 5
SAGE Publications	Booth 12
Seeing Machines	Booth 23
SensoMotoric Instruments	Booth 19
Smart Eye	Booth 26
Taylor & Francis Group	Booths 16–18
Tobii Technology	Booth 11
University of Michigan	Tabletop 1

Plan to attend:

HFES 54th Annual Meeting

September 27–October 1, 2010

Hyatt Regency Embarcadero
San Francisco, California, USA

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REGISTRATION & FACILITIES

Meeting Facilities

All Annual Meeting functions (other than tours) will be held at the Grand Hyatt San Antonio on Levels Two, Three, and Four. A map of the meeting space may be found on the inside back cover of this program and is displayed on signs throughout the hotel.

Registration Desk Location and Hours

All persons attending workshops, technical sessions, tours, receptions, and other events, as well as their guests, must wear their registration badges. Attendees and guests may register for Annual Meeting events at the Registration Counter on Level Two.

Registration is open during the following hours:

Sunday	3:00 to 6:00 p.m.
Monday & Tuesday	7:00 a.m. to 6:00 p.m.
Wednesday	7:30 a.m. to 5:30 p.m.
Thursday	7:30 a.m. to 5:00 p.m.
Friday	8:00 a.m. to 12:00 noon

On-Site Event Tickets

For tours and events not sold out in advance, tickets may be purchased at the Registration Counter during registration hours. No waiting lists will be established; tickets will be sold on a first-come, first-served basis.

Locator File

A list of meeting registrants is available at the Registration Counter.

Room Capacity

Room selection for sessions is based on estimated attendance and facility restrictions. All efforts have been made to ensure that room capacity is adequate.

Nonsmoking Policy

Smoking is not permitted inside the Grand Hyatt San Antonio or on technical tours.

Pagers and Cell Phones

Please turn off or mute all pagers and cell phones while attending sessions.

Refreshments

Beverage breaks will take place each morning (10:00–10:30) and afternoon (3:00–3:30). On Monday morning and afternoon, Tuesday morning, and Friday morning, beverage breaks will be held adjacent to meeting rooms. The Exhibit Hall (Lone Star Ballroom A–C, Level Two) will be the location for the after-

noon break on Tuesday and for both morning and afternoon breaks on Wednesday and Thursday.

RESOURCES

HFES Central

Staff from the HFES central office will be present at an information counter on Level Two near the Registration Counter to provide information on membership, publications, and services. Nonmembers who submit applications and payment on site are entitled to the member price on all orders and purchases made at the meeting.

Career Center

The Career Center is located in the Lone Star Ballroom F (Level Two) and is open the following hours:

Monday	1:00 to 6:00 p.m.
Tuesday & Wednesday	8:30 a.m. to 6:00 p.m.
Thursday	8:30 a.m. to 5:00 p.m.

Subscribers to the HFES online Career Center may reserve booths and/or tables at the on-site Career Center, subject to availability. If you have not already reserved space, you may sign up at the Career Center. The scheduling of formal or informal interviews at the Annual Meeting is the sole responsibility of the employer.

HFES members: You may post your résumé in the online Career Center free of charge. Visit hfes.org and click “Career Center.”

Job Notices at the Annual Meeting

HFES will collect résumés for companies with a job posting in the Career Center but not interviewing at the Annual Meeting. The charge for this service is \$150.

Organizations not interviewing in the Career Center or collecting résumés during the meeting may post a “for information only” job notice at the on-site Career Center for a \$100 fee. Job seekers will be directed to send their résumés directly to the organization advertising the job.

Any company that wishes to post a job in the on-site Career Center, has no plans to interview, but wants HFES to collect résumés to be mailed to them after the meeting can do so for a charge of \$150.

Internet Café

Computers with Internet access will be available on Level Two during the following hours: Sunday, 3:00–6:00 p.m.; Monday and Tuesday, 7:00 a.m.–6:00 p.m.; Wednesday and Thursday, 7:00 a.m.–5:30 p.m. and Friday, 7:30 a.m.–12:00 p.m. A time limit of 10 minutes per attendee will be enforced.

Cork message boards will also be available for posting hard-copy messages and meeting and event announcements.

Newsletter

The daily newsletter, *Riverwalk Tribune*, containing important information about the meeting program and events, is available in the registration area, Career Center, Exhibit Hall, and various other locations on Levels Two, Three, and Four. Articles or news items may be dropped off at the Registration Counter. The newsletter editorial office is located in Crockett A (Level Four).

Student Lounge

The Student Lounge, located in Crockett B (Level Four), has been set aside for students to meet, network, socialize, participate in special student activities, and relax. Hours are Monday through Thursday, 8:00 a.m. to 7:00 p.m., and Friday, 8:00 a.m. to 12:00 noon. HFES thanks the Technical Groups listed on page iii for their sponsorship.

Birds of a Feather Room

The Goliad room (Level Two) has been set aside Monday through Thursday from 7:00 a.m. to 8:00 p.m. and on Friday from 7:00 a.m. to 12:00 noon for individuals with mutual interests to discuss pertinent topics or conduct meetings. A sign-up sheet is provided at the room for advance reservations. Meeting times are allocated on a first-come, first-served basis, although a few meetings have been preserved.

Audiovisual Preview Room

Crockett C (Level Four) has been reserved for presenters who wish to preview their audiovisual materials. Computers will be available for AV preview only. Preview hours on Monday–Thursday are 7:00 a.m. to 6:00 p.m. and on Friday from 7:00 a.m. to noon.

Volunteers Assignment Room

Student volunteers who have been assigned duties should check in with Volunteers Coordinators John Morris and Felix Portnoy in the Independence room (Level Three).

Proceedings CD-ROM

All registered attendees have been provided with a CD-ROM containing the proceedings. Workstations are available in the Internet Café near the Registration Counter for viewing the CD-ROM and printing out individual papers. If supplies allow, additional CD-ROMs may also be purchased at HFES Central.

EXHIBITS

Location and Hours

All attendees are encouraged to visit the exhibits, located in Lone Star Ballroom A–C (Level Two). Coffee breaks will be held in the Exhibit Hall on Tuesday afternoon and on Wednesday and Thursday morning and afternoon.

Exhibition hours are as follows:

Tuesday	3:00–6:00 p.m.
Wednesday	9:00 a.m.–5:00 p.m.
Thursday	9:00 a.m.–3:30 p.m.

Exhibitor List

The list of exhibitors appears on page iv.

Prize Drawings

HFES will be giving away two 2010 membership renewals and two registrations for the 54th Annual Meeting in San Francisco, California, September 27–October 1, 2010. To enter a drawing to win these prizes, fill out the entry slips found in your portfolio bag and deposit them in the appropriate box inside the main entrance of the Exhibit Hall. In addition, some exhibitors will be offering prizes for the drawing; entry slips for these prizes may be obtained at each participating exhibitor's booth. Names of winners will be posted on a sign in the Exhibit Hall. You must be present at the meeting to claim your prize. Prizes are not transferable and must be claimed by 3:00 p.m. on Thursday, October 22.

EVENTS

Human Performance in Extreme Environments 7th Annual Meeting

The HPEE meeting sessions will be held on Sunday and Monday in Bonham D (Level Three).

Student Career and Professional Development Day

The HFES Student Affairs Committee is pleased to offer a special day devoted to events of interest to students, in Lone Star Ballroom E (Level Two). See page 7 for a schedule of presentations.

First-Timers Reception

If this is your first HFES Annual Meeting, you're invited to attend a reception on Monday, October 19, from 5:30 to 6:30 p.m. in Texas Ballroom D (Level Four), just prior to the Gala Opening Reception. Come and meet Society leaders as you enjoy light refreshments.

Mentor-Mentee Luncheons

A series of mentor-mentee luncheons will be held during the meeting to provide students and early-career and transitional professionals with information and opportunities to develop mentoring relationships with established professionals in the HF/E field. HFES thanks our sponsors (see page iii).

The luncheons will be held from 12:00 noon to 1:30 p.m. on Tuesday, Wednesday, and Thursday, October 20–22.

Complimentary lunch will be provided to all attendees who reserved a space with Haydee Cuevas prior to the Annual Meeting. The mentor-mentee lunch sessions will be held each day at Achiote Restaurant – Private Dining Room (Level One).

Student Reception

All students attending the Annual Meeting are invited to a reception on Tuesday, October 20, from 5:00 to 6:00 p.m. in Texas Ballroom A (Level Four). Snacks and soft drinks will be provided along with a no-host bar. The reception is sponsored by the HFES Council of Technical Groups.

National Ergonomics Month Event

All attendees and their guests and families are invited to attend the 2009 HFES National Ergonomics Month event on Monday, October 19, from 4:45 to 6:15 p.m., in Lone Star Ballroom E (Level Two).

PROGRAM REMINDERS

Poster Sessions

Posters are available for viewing in the Lone Star Ballroom Corridor (Level Two) in three 90-minute sessions: Tuesday, Wednesday, and Thursday. See the program schedule on the following pages for lists of the posters to be presented.

University Lab Posters

University lab posters will be on display in the posters hall on Tuesday and Thursday from 1:30 to 3:00 p.m. See pages 13 and 31–32 for the list of labs on display.

Annual Meeting Survey

The Annual Meeting Survey will be sent via e-mail to all attendees immediately after the meeting. Please watch your e-mail for the link to the survey.

Audiotaping and Videotaping Policies

Attendees are not permitted to audiotape or videotape any session without prior permission from the Human Factors and Ergonomics Society and all speakers participating in the session. Permission forms are available

at HFES Central (Level Two). Please complete a form for each presentation you wish to tape, obtain the speaker(s)' signature(s), and return it to HFES Central.

MEETINGS AND TOURS

Committee Meetings

Saturday, October 17

HFES Executive Council
Seguin (Level Four)
8:00 a.m. to 5:00 p.m.

Sunday, October 18

HFES Executive Council
Seguin (Level Four)
8:00 a.m. to 5:00 p.m.

Human Performance in Extreme Environments
7th Annual Meeting
Bonham D (Level Three)
9:00 a.m. to 5:00 p.m.

ISO/TC 159/SC5/WG4
Crockett D (Level Four)
9:00 a.m. to 12:00 noon

ISO/TC 159/SC5/WG5
Crockett D (Level Four)
1:00 to 5:00 p.m.

Monday, October 19

ISO/TC 159/SC5/WG5
Crockett D (Level Four)
9:00 to 11:00 a.m.

Human Performance in Extreme Environments
7th Annual Meeting
Bonham D (Level Three)
9:00 a.m. to 5:00 p.m.

ISO/TC 159/SC5
Crockett D (Level Four)
11:30 a.m. to 5:00 p.m.

Technical Group Newsletter Editors
Mission B (Level Two)
1:30 to 2:30 p.m.

Council of Technical Groups
Lone Star Ballroom D (Level Two)
3:30 to 5:00 p.m.

Tuesday, October 20

Human Factors Standardization Working Group
Bonham D (Level Three)
10:30 a.m. to 12:00 noon

Human Factors Editorial Board
Texas Ballroom A (Level Four)
12:00 noon to 1:30 p.m. (lunch)

Local Chapter Presidents
Bonham E (Level Three)
12:00 noon to 1:30 p.m. (lunch)

U.S. TAG to ISO/TC 159/SC4
Bonham D (Level Three)
1:30 to 5:00 p.m.

HFES Business Meeting
Republic B (Level Four)
6:00 to 7:00 p.m.

BCPE Reception
Texas Ballroom B (Level Four)
7:00 p.m. to 9:00 p.m.

Wednesday, October 21

HFES Publications Committee
Crockett D (Level Four)
7:15 to 8:15 a.m. (breakfast)

HFES Awards Committee
Mission B (Level Two)
7:15 to 8:30 a.m.

HFES 100 Committee
Bowie C (Level Two)
8:00 a.m. to 4:00 p.m.

HFES Institute Board of Supervisors
Bonham D (Level Three)
8:30 to 10:00 a.m.

U.S. TAG to ISO/TC 159
Bonham D (Level Three)
10:30 a.m. to 12:00 p.m.

Chapter Revitalization Subcommittee
Crockett D (Level Four)
10:30 a.m. to 12:00 noon

Ergonomics in Design Editorial Board
Texas Ballroom D (Level Four)
12:00 noon to 1:30 p.m. (lunch)

Student Chapter Presidents
Mission B (Level Two)
12:00 noon to 1:30 p.m. (lunch)

GEIA Meeting
Crockett D (Level Four)
3:00 p.m. to 5:00 p.m.

Journal of Cognitive Engineering and Decision Making
Editorial Board
Lone Star Ballroom D (Level Two)
3:30 to 4:30 p.m.

Thursday, October 22

ISO/TC 159/WG2
Crockett D (Level Four)
9:00 a.m. to 5:00 p.m.

Education and Training Committee
Presidio B (Level Three)
12:00 noon to 1:30 p.m. (lunch)

Technical Group Program Chairs
Presidio B (Level Three)
5:15 to 6:30 p.m.

Friday, October 23

Board of Certification in Professional Ergonomics
Presidio A (Level Three)
8:00 a.m. to 5:00 p.m.

Technical Program Committee
Presidio B (Level Three)
8:15 to 10:15 a.m. (breakfast)

ISO/TC 159/WG2
Crockett D (Level Four)
9:00 a.m. to 5:00 p.m.

Saturday, October 24

Board of Certification in Professional Ergonomics
Presidio A (Level Three)
8:00 a.m. to 5:00 p.m.

ISO/TC 159/WG2
Crockett B (Level Four)
9:00 a.m. to 1:00 p.m.

Technical Group Business Meetings

Monday, October 19

Technical Group Newsletter Editors
Mission B (Level Two)
1:30 to 2:30 p.m.

Council of Technical Groups
Lone Star Ballroom D (Level Two)
3:30 to 5:00 p.m.

Tuesday, October 20

Augmented Cognition
Lone Star Ballroom E (Level Two)
5:00 to 7:00 p.m.

Individual Differences in Performance
Crockett D (Level Four)
12:00 noon to 1:30 p.m. (lunch)

Product Design
Bowie B (Level Two)
5:00 to 7:00 p.m.

System Development
Bowie C (Level Two)
5:00 to 6:00 p.m.

Test and Evaluation
Crockett D (Level Four)
7:30 to 8:30 a.m. (breakfast)

Wednesday, October 21

Aerospace Systems
Republic B (Level Four)
3:00 to 5:00 p.m.

Aging
Bonham E (Level Three)
12:00 noon to 1:30 p.m. (lunch)

Cognitive Engineering and Decision Making
Lone Star Ballroom D (Level Two)
4:30 to 6:00 p.m.

Communications
Seguin (Level Four)
3:30 to 4:30 p.m.

Computer Systems (with Internet)
Seguin (Level Four)
5:30 to 6:30 p.m.

Education
Mission A (Level Two)
7:00 to 8:30 a.m. (breakfast)

Environmental Design (with Macroergonomics)
Lone Star Ballroom E (Level Two)
3:15 to 4:30 p.m.

Forensics Professional (with Safety)
Republic A (Level Four)
3:30 to 4:30 p.m.

Health Care
Travis A/B (Level Three)
3:15 to 4:30 p.m.

Human Performance Modeling
Travis A/B (Level Three)
5:30 to 6:30 p.m.

Industrial Ergonomics
Travis C/D (Level Three)
4:00 to 5:30 p.m.

Internet (with Computer Systems)
Seguin (Level Four)
5:30 to 6:30 p.m.

Macroergonomics (with Environmental Design)
Lone Star Ballroom E (Level Two)
3:15 to 4:30 p.m.

Perception & Performance
Mission A (Level Two)
12:00 noon to 1:30 p.m. (lunch)

Safety (with Forensics Professional)
Republic A (Level Four)
3:30 to 4:30 p.m.

Surface Transportation
Republic A (Level Four)
5:00 to 6:30 p.m.

Training
Bowie B (Level Two)
3:30 to 4:30 p.m.

Virtual Environments
Bowie A (Level Two)
3:30 to 4:30 p.m.

Social Events**Monday, October 19**

First-Timers Reception
Texas Ballroom D (Level Four)
5:30 to 6:30 p.m.

Gala Opening Reception (ticket required)
Texas Ballroom D/E/F (Level Four)
6:30 to 9:00 p.m.

Tuesday, October 20

Student Reception
Texas Ballroom A (Level Four)
5:00 to 6:00 p.m.

Technical Tours

Buses will begin loading from the Market Street entrance of the hotel 15 minutes prior to the departure times listed on the next page. Tickets for events not sold out may be purchased at the Registration Counter. Tickets must be presented when buses are loading. At press time, seven tours were scheduled to take place; however, please check the daily on-site newsletter and the poster boards in the registration area for updates about canceled events.

Wednesday, October 21

T1, USAF 711th Human Performance Wing

7:30 a.m. to 1:00 p.m.

T3, TransGuide Operations Center

9:00 to 11:30 a.m.

T4, Army Medical Department Center and School/

Center for the Intrepid

9:30 a.m. to 12:45 p.m.

T5, Johnson Center for Surgical Innovation

1:30 to 4:30 p.m.

Thursday, October 22

T6, San Antonio Shoes Shoemaking Factory

8:45 to 10:45 a.m.

T8, Army Medical Department Center and School/

Center for the Intrepid

9:30 a.m. to 12:45 p.m.

T9, AT&T Labs/Whole Foods Flagship Location/

H-E-B Retail Support Center

8:00 a.m. to 5:30 p.m.

TECHNICAL PROGRAM

Monday, October 19

8:30 a.m. to 5:00 p.m.

Workshops

Note: Workshops 1, 7, 8, and 11 were canceled prior to the meeting.

Morning-Only Workshop

8:30 a.m. to 12:00 noon

WK2 – Cognitive Crash Dummies: Predictive Human Performance Modeling for Interactive System Design

Bonnie E. John, Carnegie Mellon U.

Monday, October 19, 2009, 8:30 a.m. to 12:00 noon

Republic B (Level Four)

Afternoon-Only Workshops

1:30 to 5:00 p.m.

WK3 – Engineering Resilience to Create Safety

David D. Woods, Ohio State U.

Monday, October 19, 2009, 1:30 to 5:00 p.m.

Republic B (Level Four)

WK4 – Communications Analysis for Assessing Collaboration

Nancy J. Cooke, Arizona State U.; Jamie C.

Gorman, Cognitive Engineering Research Inst.

Monday, October 19, 2009, 1:30 to 5:00 p.m.

Bowie A (Level Two)

Full-Day Workshops

9:00 a.m. to 4:30 p.m.

WK5 – User Interface Design Prototyping Using Adobe Flash

Sav Shrestha, Amanda Smith, Justin W. Owens,

and Barbara S. Chaparro, Wichita State U.

Monday, October 19, 2009, 9:00 a.m. to 4:30 p.m.

Travis C/D (Level Three)

WK6 – Case Studies in Cognitive Systems Engineering

Laura Militello, U. of Dayton Research Inst.;

Cynthia Oakes Dominguez and Corey Fallon,

Klein Associates Division of Applied Research

Associates; Gavan Lintern, General Dynamics;

Gary Klein, Klein Associates Division of Applied

Research Associates

Monday, October 19, 2009, 9:00 a.m. to 4:30 p.m.

Bowie C (Level Two)

Key to 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

**WK9 – How To Be an Effective Human Factors/
Ergonomics Expert Witness**
Marc L. Resnick, Florida International U.; Andy
LeCocq and David Thompson, Consultants; H.
Harvey Cohen, Error Analysis, Inc.
Monday, October 19, 2009, 9:00 a.m. to 4:30 p.m.
Seguin B (Level Four)

WK10 – Human-Centered Systems Engineering
George M. Samaras, Samaras & Associates, Inc.
Monday, October 19, 2009, 9:00 a.m. to 4:30 p.m.
Republic A (Level Four)

**WK12 – An Approach to Rapid In-Depth Task
Analysis Techniques**
Avi Parush, Carleton U.
Monday, October 19, 2009, 9:00 a.m. to 4:30 p.m.
Travis A/B (Level Three)

Monday, October 19 8:30 a.m. to 4:30 p.m.

Forums

HCF – Health Care Forum: Human Factors and Ergonomics Practical Applications to Improve Hospital Health Care Delivery Systems

Moderator: Andrew S. Imada, A. S. Imada & Associates
Panelists: Ben-Tzion Karsh, U. of Wisconsin – Madison;
Margaret (Marnie) Myhre, Fairview Health Systems;
Lynda Enos, Oregon Nurses Assn.
Monday, October 19, 2009, 8:30 a.m. to 4:30 p.m.
Bonham E (Level Three)

PDF – Teaching Human Factors and Ergonomics: A Professional Development Forum

Chair: Francis T. Durso, Georgia Tech
Panelists: Patricia R. DeLucia, Texas Tech U.;
Elizabeth Blickensderfer, Embry-Riddle Aeronautical
U.; Steven M. Casey, Ergonomic Systems Design, Inc.;
John D. Lee, U. of Wisconsin – Madison; Kathleen
Mosier, San Francisco State U.; Ronald G. Shapiro,
Consultant; Thomas J. Smith, U. of Minnesota;
Deborah A. Boehm-Davis, George Mason U.; Gavriel
Salvendy, Purdue U.; Arthur D. Fisk, Georgia Tech;
Raja Parasuraman, George Mason U.; Joel Warm, Air
Force Research Lab; & Russ Branaghan, Arizona
State U.
Monday, October 19, 2009, 8:30 a.m. to 4:30 p.m.
Bowie B (Level Two)

Monday, October 19 9:00 a.m. to 4:00 p.m.

SFI – STUDENT CAREER AND PROFESSIONAL DEVELOPMENT DAY

Alternative Format
Monday, October 19, 2009, 9:00 a.m. to 4:00 p.m.
Lone Star Ballroom E (Level Two)
Student Forum

Part I: The Art of Getting Published 9:00 to 10:15 a.m.

Chair: Sandra K. Garrett, Clemson U./HFES Student
Affairs Chair

Participants: Nancy J. Cooke, Arizona State U.; Peter A.
Hancock, U. of Central Florida

Part II: How to Find (and Secure) Funding 10:30 a.m. to 12:00 noon

Chair: Sandra K. Garrett, Clemson U./HFES Student
Affairs Chair

Participants: Ben-Tzion Karsh, U. of Wisconsin –
Madison; others TBA

Group lunches organized on site.

Part III: Multidisciplinary Teams: Speaking a Common Language and Avoiding Pitfalls

Cohosted by the HFES Old Dominion U. and U. of
Idaho Student Chapters

1:30 to 4:00 p.m.

Chair: T. Robert Turner, HFES Old Dominion U.
Student Chapter President; *Cochair:* Rylan M. Clark,
HFES U. of Idaho Student Chapter President
Participants: Gerard Torenvliet, Esterline/CMC
Electronics; Jason Telner, Honeywell Labs; Ginger
Watson, Old Dominion U.; Arnold Lund, Microsoft;
Elizabeth Gibson, AT&T Mobility

Monday, October 19 1:30 to 5:00 p.m.

Technical Group Business Meetings

Technical Group Newsletter Editors

Mission B (Level Two)
1:30 to 2:30 p.m.

Council of Technical Groups

Lone Star Ballroom D (Level Two)
3:30 to 5:00 p.m.

Monday
Oct. 19

Monday, October 19
4:45 to 6:15 p.m.

NEM – NATIONAL ERGONOMICS MONTH

Alternative Format

Monday, October 19, 2009, 4:45 to 6:15 p.m.

Lone Star Ballroom E (Level Two)

Chair: Raegan M. Hoeft, NEM Committee Chair

Steven M. Casey, “The Good, the Bad, and the Ugly” in the Promotion of Ergonomics...with Sincere Apologies to Sergio Leone and Clint Eastwood

Interactive Games

Presentation of winners of the NEM 2009 Best Action Plan Contest

Tuesday, October 20
7:30 to 8:30 a.m.

Technical Group Business Meeting

Test and Evaluation

Crockett D (Level Four)

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

Tuesday, October 20
8:00 to 10:15 a.m.

PL – OPENING PLENARY SESSION

Plenary

Tuesday, October 20

Texas Ballroom A/B/C (Level Four)

8:00 to 10:15 a.m.

Chair: Cheryl A. Bolstad, HFES Technical Program Committee Chair

1. **Keynote Address: Border Security Mission – All Threats Environment**, John C. Pfeifer, U.S. Border Patrol
2. **Presentation of HFES Fellows**
3. **Presentation of HFES Awards**
4. **Presidential Address: Assessing Human Factors/Ergonomics: How Are We Doing as a Discipline?** Paul A. Green, HFES President

Tuesday, October 20
10:30 a.m. to 12:00 noon

Technical Sessions

ASI – DISPLAYS AND HUMAN PERFORMANCE IN AIR TRAFFIC CONTROL

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Republic A (Level Four)

Aerospace Systems

Chair: Ernesto Bustamante, U. of Idaho; *Cochair:* Sehchang Hah, Federal Aviation Admin.

1. Francis T. Durso and Jacob Fleming, Georgia Tech; Brian Johnson, Texas Tech U.; Jerry Crutchfield, Federal Aviation Admin., **What Information Is Needed in Today’s Control Tower: From Information Requests to Display Design**
2. Arathi Sethumadhavan, Texas Tech U., **Effects of Automation Types on Air Traffic Controller Situation Awareness and Performance**
3. Esa M. Rantanen, Rochester Inst. of Technology, **Measurement of Temporal Awareness in Air Traffic Control**
4. Hendrik Oberheid, Bernhard Weber, and Michael Rudolph, German Aerospace Center (DLR), **Visual Controller Aids to Support Late Merging Operations for Fuel-Efficient and Noise-Reduced Approach Procedures**
5. Krista Oinonen and Lauri Oksama, U. of Turku; Esa M. Rantanen, Rochester Inst. of Technology; Jukka Hyönä, U. of Turku, **Do Velocity Vectors Support Multiple Object Tracking?**

CEI – HUMAN-ROBOT INTERACTION: ISSUES IN THE DESIGN OF INTERFACES FOR WORK IN DISTANT ENVIRONMENTS

Invited Symposium

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Douglas J. Gillan, North Carolina State U.; *Cochair:* Marc Gacy, Alion Science & Technology MA&D Operation

1. Douglas J. Gillan, North Carolina State U., **Human-Robot Interaction: Issues in the Design of Interfaces for Work in Distant Environments**
2. Roger A. Chadwick and Joseph C. Vargas, New Mexico State U., **Map and Ground View Integration in UGV Systems: A Structured Observational Analysis**

3. Jennifer M. Riley, Laura D. Strater, Fleet Davis, Sean Strater, and Laurie Faulkner, SA Technologies, Inc., **Situation Awareness and Team Communication in Robot Control**
4. Patricia L. McDermott and Alia Fisher, Alion Science & Technology MA&D Operations, **The Trade-Off of Frame Rate and Resolution in a Route-Clearing Task: Implications for Human-Robot Interaction**
5. Shaun Hutchins, Alion Science & Technology MA&D Operations; Keryl Ann Cosenzo, U.S. Army Research Lab; Patricia L. McDermott, Alion Science & Technology MA&D Operations; Theo-Dric Feng and Michael Barnes, U.S. Army Research Lab; Marc Gacy, Alion Science & Technology MA&D Operations, **An Investigation of the Tactile Communications Channel for Robotic Control**

FPI – HF/E PRACTICE FROM THE PERSPECTIVE OF FORENSIC CONSULTING FIRMS

Discussion Panel

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Bowie A (Level Two)

Forensics Professional

Chair: Tonya L. Smith-Jackson, Virginia Tech

Panelists: H. Harvey Cohen, Error Analysis, Inc.; William Vigilante, Robson Forensic, Inc.; Timothy Rhoades, Applied Safety and Ergonomics, Inc.; Steven Arndt, Exponent Failure Analysis Assoc., Inc.

GSI – PRESIDENT’S FORUM: THE HF/E SHOW STARRING JEFF KELLEY

Alternative Format

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Lone Star Ballroom E (Level Two)

General Sessions

John F. (“Jeff”) Kelley, IBM Corp. & HFES Past President

HCI – HEALTH INFORMATION TECHNOLOGIES AND HUMAN FACTORS

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Travis A/B (Level Three)

Health Care

Chair: Emily Patterson, Ohio State U.

1. Alissa L. Russ and Jason J. Saleem, Roudebush VA Medical Center; Connie F. Justice, Indiana U.; Heather Hagg, Roudebush VA Medical Center; Peter A. Woodbridge, VA Nebraska Western Iowa Health Care System; Bradley N. Doebbeling, Roudebush VA Medical Center, **Health Care**

Workers’ Perceptions of Information in the Electronic Health Record

2. Geva Vashitz, Ben Gurion U. of the Negev; Harel Gilutz, Soroka U. Medical Center; Joachim Meyer, Ben Gurion U. of the Negev, **Physicians’ Bypass Enrollment Suggestions Into a Clinical Reminders Intervention**
3. Julia DeBlasio and Bruce N. Walker, Georgia Tech, **Documentation in a Medical Setting: Effects of Technology on Perceived Quality of Care**
4. Timothy R. McEwen, Wright State U.; Nancy Elder, U. of Cincinnati; John M. Flach, Wright State U., **Lessons for Electronic Medical Records From Family Medical Practices**
5. Alissa L. Russ, Jason J. Saleem, M. Sue McManus, Alan J. Zillich, and Bradley N. Doebbeling, Roudebush VA Medical Center, **Computerized Medication Alerts and Prescriber Mental Models: Observing Routine Patient Care**

IEI – TRUNK AND LOW BACK

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon

Seguin (Level Four)

Industrial Ergonomics

Chair: Carol Stuart-Buttle, Consultant; *Cochair:* David Cochran, U. of Nebraska

1. Susan E. Kotowski, Kermit G. Davis, and Lisa Lemen, U. of Cincinnati, **An Objective Measure of the Subjective Pain Response Resulting From Lumbar Muscle Fatigue Due to Lifting**
2. Sue A. Ferguson, William S. Marras, W. Gary Allread, Gregory G. Knapik, Kimberly A. Vandlen, Riley E. Splittstoesser, and Gang Yang, Ohio State U., **Musculoskeletal Disorder Risk Associated With Auto Rotation Angle During an Assembly Task**
3. William S. Marras, Steven A. Lavender, Sue A. Ferguson, Riley E. Splittstoesser, and Gang Yang, Ohio State U., **Dynamic Load Moment Exposure and Spine Function Impairment**
4. Steven A. Lavender and Monica Johnson, Ohio State U., **Is There a Lateral Transfer Distance That Minimizes the Twisting and Lateral Bending Motions of the Spine During Box Transfers?**
5. Steven A. Lavender, William S. Marras, Sue A. Ferguson, Riley E. Splittstoesser, Gang Yang, and Pete Schabo, Ohio State U., **Identifying Safe Load Moment Exposures for the Back**

Tuesday
Oct. 20

PDI – SPEAKER LECTURE – SPARKING INNOVATION: HOW USER-CENTERED PROFESSIONALS CAN GET A SEAT AT THE BUSINESS STRATEGY TABLE

Invited Address

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon
Bowie B (Level Two)

Product Design

Chair: Stanley H. Caplan, Usability Associates;

Cochair: Patrick E. Patterson, Texas Tech U.

Nelson Soken, Medtronic, Inc., **Sparkling Innovation: How User-Centered Professionals Can Get a Seat at the Business Strategy Table**

PPI – VIGILANCE PERFORMANCE

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon
Republic B (Level Four)

Perception & Performance

Chair: Barry Goettl, U.S. Air Force Research Lab;

Cochair: Curtis Craig, Texas Tech U.

1. Brian Taylor, Nicole Arbuckle, and David Kancler, U. of Dayton Research Inst.; Paul Havig, Wright-Patterson Air Force Base; Scott Galster, Aptima, Inc., **Maintaining Vigilance With Auditory and Visual Cues in Command and Control Environments**
2. William S. Helton, Rosalie P. Kern, and Donieka R. Walker, Michigan Technological U., **Speed-Accuracy Trade-Offs and the Role of Emotional Stimuli on the Sustained Attention to Response Task (SART)**
3. Victor S. Finomore, U.S. Air Force Research Lab; Tyler H. Shaw, George Mason U.; Joel S. Warm, U.S. Air Force Research Lab; Gerald Matthews, U. of Cincinnati; Dave Weldon, JXT Application, Inc.; David B. Boles, U. of Alabama, **On the Workload of Vigilance: Comparison of the NASA-TLX and the MRQ**
4. Tyler H. Shaw, Raja Parasuraman, and Siddhartha Sikdar, George Mason U.; Joel S. Warm, U.S. Air Force Research Lab, **Knowledge of Results and Signal Salience Modify Vigilance Performance and Cerebral Hemovelocity**
5. Joel S. Warm and Victor S. Finomore, U.S. Air Force Research Lab; Tyler H. Shaw, George Mason U.; Matthew E. Funke, Michelle J. Hausen, Gerald Matthews, and Purcell Taylor, U. of Cincinnati; Michael A. Vidulich and Daniel W. Repperger, U.S. Air Force Research Lab; James L. Szalma and Peter A. Hancock, U. of Central Florida, **Effects of Training with Knowledge of Results on Diagnosticity in Vigilance Performance**

SDI – HUMAN FACTORS IMPACTING DESIGN

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon
Travis C/D (Level Three)

System Development

Chair: James A. Pharmer, U.S. Naval Air Warfare Center Training Systems Division; *Cochair:* Debra Clark, U.S. Naval Surface Warfare Center Dahlgren

1. Hope E. J. Nesteruk, U.S. Army Research Lab, **Assessing the Human Factors of a Human Engineering Standard**
2. G. Fletcher and E. Forrest, Systems Engineering & Assessment Ltd., **Incorporating Social and Organizational Factors Into Defense Human Factors Integration**
3. Carroll Thronesbery, S&K Aerospace; Debra Schreckenghost, TRACLabs, Inc.; Arthur Molin, S&K Aerospace, **Concept of Operations Story-board Tool**
4. Les Ainsworth, Synergy Consultants, **A Task Analysis of the Task Analysis Process**

TI – COGNITIVE FACTORS IN TRAINING

Lecture

Tuesday, October 20, 2009, 10:30 a.m. to 12:00 noon
Republic C (Level Four)

Training

Chair: Ericka Rovira, U.S. Military Academy; *Cochair:* Jeff Beaubien, Aptima, Inc.

1. Michael B. Dillard and David B. Boles, U. of Alabama, **Interference Between Visuospatial Dual Tasks and the Effects of Training**
2. Chad C. Tossell, Rice U.; Brent A. Smith, U.S. Air Force Academy; Roger W. Schvaneveldt, Arizona State U., Polytechnic, **The Influence of Rating Method on Knowledge Structures**
3. Jessica M. Ray, Consortium Research Fellows Program; John S. Barnett, U.S. Army Research Inst. for the Behavioral & Social Sciences, **An Evolution of Tutoring and Training From Humans to Intelligent Systems: Human Factors Considerations**
4. Davin Pavlas, C. Shawn Burke, Stephen M. Fiore, and Eduardo Salas, U. of Central Florida; Randy Jensen and Dan Fu, Stottler Henke Associates, Inc., **Enhancing Unmanned Aerial System Training: A Taxonomy of Knowledge, Skills, Attitudes, and Methods**
5. David Schuster, Michelle Harper-Sciarini, Michael Curtis, Florian Jentsch, and Ron Swanson, U. of Central Florida, **The Relationship Between Conceptual Understanding and Performance**

Tuesday, October 20
12:00 noon to 1:30 p.m.

Technical Group Business Meeting

Individual Differences

Presidio A (Level Three)

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

Tuesday, October 20
1:30 to 3:00 p.m.

CE2 – COMPARING, MERGING, AND ADAPTING METHODS OF COGNITIVE TASK ANALYSIS

Discussion Panel

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Robert R. Hoffman, Inst. for Human & Machine Cognition; *Cochair:* Ann M. Bisantz, U. at Buffalo, SUNY

Panelists: Birsan Donmez, Massachusetts Inst. of Technology; Julie A. Adams, Vanderbilt U.; David B. Kaber, North Carolina State U.; Ann M. Bisantz, U. at Buffalo, SUNY; Emilie Roth, Roth Cognitive Engineering

CSI – COLLABORATION, TRUST, AND SECURITY

Lecture

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Sequin (Level Four)

Computer Systems; cosponsored by Internet

Chair: Lorraine Normore, U. of Tennessee, Knoxville; *Cochair:* Douglas Fox, Wichita State U.

1. Eric Bier, Dorrit Billman, Kyle Dent, and Stuart K. Card, Palo Alto Research Corp., **Collaborative Sensemaking Tools for Task Forces**
2. Marc L. Resnick, Florida International U., **Overcoming Bias in the Deliberations of Distributed Teams**
3. William Albert, William Gribbons, and Jindrich Almadras, Bentley U., **Preconscious Assessment of Trust: A Case Study of Financial and Health Care Web Sites**
4. Deborah L. Nelson and Kim-Phuong L. Vu, California State U., Long Beach, **Use of Image-Based Mnemonic Techniques to Enhance the Memorability of User-Generated Passwords**

5. Peter Hoonakker, U. of Wisconsin – Madison; Nis Bornoe, IT U. of Copenhagen; Pascale Carayon, U. of Wisconsin – Madison, **Password Authentication From a Human Factors Perspective: Results of a Survey Among End-Users**

DEMI – DEMONSTRATIONS I

Demonstrations

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Republic A/B (Level Four)

Special Sessions

Chair: Ronald Laurids Boring, Sandia National Labs;

Cochair: Johanna Oxstrand, Vattenfall Ringhals AB

Note: Short demonstrations will be repeated throughout the 90-minute session. Attendees are encouraged to go from room to room to view demos.

1. Shane D. Pinder and T. Claire Davies, Auckland U. of Technology, **Bimodal Aircraft Cockpit User Interface of the TABI/A (Republic B)**
2. Tiffany S. Jastrzembski and Kevin A. Gluck, U.S. Air Force Research Lab; Stuart Rodgers, AGS TechNet, **The Predictive Performance Optimizer: An Adaptive Analysis Cognitive Tool for Performance Prediction (Republic A)**

GS2 – THE FUTURE OF HUMAN FACTORS/ ERGONOMICS RESEARCH: ADAPT OR DIE

Discussion Panel

Committee on Human-Systems Integration

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom E (Level Two)

General Sessions

Chair: William S. Marras, Ohio State U.

Panelists: Nancy J. Cooke, Arizona State U.; Joel S. Warm, U.S. Air Force Research Lab; Waldemar Karwowski, U. of Central Florida; Thomas B. Sheridan, Massachusetts Inst. of Technology; Matthew Rizzo, U. of Iowa; John D. Lee, U. of Wisconsin – Madison; Bradford W. Hesse, National Cancer Inst.

HPI – 100 YEARS OF QUEUING THEORY: IMPLICATIONS FOR HF ENGINEERING

Discussion Panel

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Travis A/B (Level Three)

Human Performance Modeling

Chair: Yili Liu, U. of Michigan

Panelists: Richard W. Pew, BBN Technologies; Wayne D. Gray, Rensselaer Polytechnic Inst.; John D. Lee, U. of Wisconsin – Madison; R. Darin Ellis, Wayne State U.; Changxu Wu, U. at Buffalo, SUNY

Tuesday
Oct. 20

MEI – CRITICAL CARE TECHNOLOGY: CAN'T LIVE WITH IT, CAN'T LIVE WITHOUT IT

Discussion Panel

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Travis C/D (Level Three)

Macroergonomics; cosponsored by Health Care

Chair: Carla J. Alvarado, U. of Wisconsin – Madison;

Cochair: Nancy L. J. Larson, 3M Corp.

Panelists: Pascale Carayon, U. of Wisconsin – Madison; Rolin (Terry) J. Fairbanks, U. of Rochester; Shawna J. Perry, VCU Health Systems; Dean F. Sittig, U. of Texas – Memorial Hermann Center for Healthcare Quality and Safety; Ben-Tzion Karsh, U. of Wisconsin – Madison

POSI – POSTERS I

Poster Session

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom Corridor (Level Two)

Chair: Jessica M. Ray, U. of Central Florida; *Cochair:*

Robin A. N. Littlejohn, Mississippi State U.

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

Health Care

1. Ila J. Elson, Abbott Labs, **Human Factors Research Plan for Designing Automated Testing Equipment for Blood Collection Centers**
2. Justin R. Estep, James C. Christensen, and Jason W. Monnin, U.S. Air Force Research Lab; Iris M. Davis, Ball Aerospace & Technologies Corp.; Glenn F. Wilson, Physiometrix, Inc., **Validation of a Dry Electrode System for EEG**
3. Anthony Vacher, Biomedical Military Research Inst.; Guillaume de Saint Maurice, Emmanuelle Stainmesse, and Nasser Amamou, Military Teaching Hospital Percy; Marie-Pierre Fornette, Biomedical Military Research Inst.; Rene Amalberti, French National Authority for Health; Yves Auroy, Military Teaching Hospital Percy, **Study of Rule-Related Behavioral Migrations in an Anesthesiology Department**
4. Cindy H. Lio, C. Melody Carswell, and Q. Han, U. of Kentucky; Adrian Park, U. of Maryland; Stephen Strup, W. B. Seales, and Duncan Clarke, U. of Kentucky; G. Lee, U. of Maryland; J. Hoskins, U. of Kentucky, **Using Formal Qualitative Methods to Guide Early Development of an Augmented Reality Display System for Surgery**
5. Martina I. Klein, Texas Tech U.; Cindy Hui-Lio, Russel C. Grant, C. Melody Carswell, and Stephen Strup, U. of Kentucky, **A Mental Workload Study on the 2-D and 3-D Viewing Conditions of the da Vinci Surgical Robot**

Training

6. Russell C. Grant, C. Melody Carswell, Cindy Hui-Lio, W. B. Seales, and Duncan Clarke, U. of Kentucky, **Verbal Time Production as a Secondary Task: Which Metrics and Target Interval Are Most Sensitive to Workload for Fine Motor Laparoscopic Training Tasks?**
7. Vanessa Johnson, Auburn U. Consortium Research Fellows Program; Robert J. Pleban and Jennifer S. Tucker, U.S. Army Research Inst. for the Behavioral & Social Sciences, **Investigating the Effects of Desktop Computer Simulation Training on Situation Awareness (SA) and Adaptive Decision-Making Skills**
8. Brittany Sellers, Stephen M. Fiore, Javier Rivera, and Florian Jentsch, U. of Central Florida, **Research Issues for Collaborative Versus Individual Training in the X-Ray Security Screening Task**
9. Alexander D. Walker, Thomas L. Carpenter, Jason D. Moss, Fred S. Switzer, Adam W. Hoover, and Eric R. Muth, Clemson U., **The Evaluation of Virtual Environment Training for a Building Clearing Task**
10. Heather C. Lum, Valerie K. Sims, Moshe Feldman, Kimberly A. Smith-Jentsch, and Nicholas C. Lagattuta, U. of Central Florida, **Emotion Regulation Training and Scene Understanding Are Related to Eye Movements During a Computer-Based Interactive Simulation**

Modeling and Simulation

11. Julia A. Kalish, Purdue U., **Simulation of Pregnant Workers Performing a Standing Assembly Task**
12. Daniel Lafond, Defence Research & Development Canada; Julie Champagne, Guillaume Herve, Jean-François Gagnon, and Sébastien Tremblay, Université Laval; Robert Rousseau, Neosapiens, Inc., **Decision Analysis Using Policy-Capturing and Process-Tracing Techniques in a Simulated Naval Air Defense Task**
13. Daewoo Park, Thomas J. Armstrong, Charles B. Woolley, and Christopher J. Best, U. of Michigan, **Skin and Bone Surfaces for a Three-Dimensional Kinematic Hand Model**

Aging

14. Anne Collins McLaughlin, Laura M. Fletcher, and John F. Sprufera, North Carolina State U., **The Aging Farmer: Human Factors Research Needs in Agricultural Work**
15. Arunkumar Pennathur, Luis Rene Contreras, Odi Ikpe, and Julia Bader, U. of Texas at El Paso, **Functional Anthropometry and Ranges of Motion of Older Mexican-American Adults**

University Lab Posters

Clemson U.

Human Factors in Complex Environments
Research Lab

Georgia Tech

Problem Solving and Educational Technology Lab
Human Factors and Aging Lab

Iowa State U.

Physical Ergonomics and Injury Prevention Lab
and Cognitive Ergonomics and Augmented
Human Performance Lab

Ohio State U.

Institute for Ergonomics

Purdue U.

Human Performance Lab
Human Integrated Systems Engineering Lab
Healthcare and Interactive Visual Engineering Lab

Texas Tech U.

Visual Performance and Health Care Lab
Performance, Stress, and Workload in Health
Care Lab and Human-Robot Interaction Lab
Industrial Engineering Ergonomics Lab

U. of Oklahoma

Cognitive Assessment and Systems Engineering
Lab and Intelligent Transportation Systems Lab

Virginia Tech

Assessment and Cognitive Ergonomics Lab, Lab
for User-Centric Innovations in Design, and
Human-Computer Interaction Lab
Industrial Ergonomics and Biomechanics Lab,
Locomotion Research Lab, and Safety
Engineering Lab

Macroergonomics and Group Decision Systems
Lab, Auditory Systems Lab, and Vehicle
Research and Simulation Lab

Wichita State U.

Software Usability Research Lab
Decision Making Research Lab, Perception and
Attention Lab, and Visual Psychophysics Lab
National Inst. of Aviation Research Human
Factors Lab, Perception and Cognition Lab,
and Quantitative Lab

SI – HUMAN FACTORS IN WEAPONS SAFETY

Discussion Panel

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Bowie A (Level Two)

Safety

Chair: Valerie J. Rice, AMEDD Center and School

Panelists: Richard J. Hornick, Hornick & Assoc.;
Hal W. Hendrick, Hendrick & Assoc.; Raymond M.
Bateman, U.S. Army Research Lab–HRED–AMEDD
FE; Peter A. Hancock, U. of Central Florida

STI – DISTRACTION AND WORKLOAD

Lecture

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Bowie B (Level Two)

Surface Transportation

Chair: Michael E. Rakauskas, U. of Minnesota;

Cochair: James Jenness, Westat

1. Frank A. Drews and David L. Strayer, U. of Utah,
Text Messaging During Simulated Driving
2. David Rodrick, Vaithianathan Jothi, and Vivek
Bhise, U. of Michigan – Dearborn, **Effects of
Driving and Secondary Tasks on Lane-
Changing Performance**
3. Jason A. Telner, David L. Wiesenthal, and Ellen
Bialystok, York U., **Video Gamer Advantages
in a Cellular Telephone and Driving Task**
4. Joel M. Cooper, Nate Medeiros-Ward, Janelle
Seegmiller, and David L. Strayer, U. of Utah,
**Shifting Eyes and Thinking Hard Keep Us in
Our Lanes**
5. Bryan Reimer, Bruce Mehler, Vincent Lammers,
Ying Wang, and Joseph F. Coughlin, Massachu-
setts Inst. of Technology, **A Comparison of
Three Manual Destination Entry Methods
on Their Impact on Visual Attention and
Driving Performance: An On-Road Evaluation**

TEI – HOW WOULD YOU TEST THIS?

**WORKS-IN-PROGRESS FORUM FOR HUMAN
FACTORS/ERGONOMICS TEST AND
EVALUATION INITIATIVES**

Alternative Format

Tuesday, October 20, 2009, 1:30 to 3:00 p.m.

Bowie C (Level Two)

Test & Evaluation

Chair: Rebecca A. Grier, U.S. Naval Sea Systems
Command; *Cochair:* Karla Eve Allan, U.S. Army
Natick Soldier Research, Development, &
Engineering Center

Panelists: Emily M. Stelzer, Aptima, Inc.; Daniel W.
Mauney, HumanCentric; Gisela Susanne Bahr, Florida
Inst. of Technology

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Tuesday, October 20
3:30 to 5:00 p.m.

AC1 – ADVANCED COGNITIVE STATE ESTIMATION AND PSYCHOPHYSIOLOGY FOR AUGMENTED COGNITION

Lecture

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Lone Star Ballroom E (Level Two)

Augmented Cognition

Chair: Cali M. Fidopiastis, U. of Central Florida;

Cochair: Denise M. Nicholson, U. of Central Florida

1. Glenn F. Wilson, Physiometrix, Inc.; Justin R. Estepp, U.S. Air Force Research Lab; Iris M. Davis, Ball Aerospace & Technologies Corp., **A Comparison of Performance and Psychophysiological Classification of Complex Task Performance**
2. Lee W. Sciarini, Cali Fidopiastis, and Denise Nicholson, U. of Central Florida, **Toward a Modular Cognitive State Gauge: Assessing Spatial Ability Utilization With Multiple Physiological Measures**
3. Joseph R. Keebler, Lee W. Sciarini, Cali Fidopiastis, Florian Jentsch, and Denise Nicholson, U. of Central Florida, **Use of Functional Near-Infrared Imaging to Investigate Neural Correlates of Expertise in Military Target Identification**
4. Mark St. John and Matthew R. Risser, Pacific Science & Engineering Group, **Sustaining Vigilance by Activating a Secondary Task When Inattention Is Detected**
5. Grant S. Taylor and James L. Szalma, U. of Central Florida, **The Effects of the Adaptability and Reliability of Automation on Performance, Stress, and Workload**

CE3 – SUPPORTING COMPLEX WORK: SYSTEM DESIGN AND EVALUATION

Lecture

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Jennifer Riley, SA Technologies, Inc.; *Cochair:* Julie Adams, Vanderbilt U.

1. Maia B. Cook, Harvey S. Smallman, Frank C. Lacon, and Daniel I. Manes, Pacific Science & Engineering Group, **Design and Validation of a Synthetic Task Environment to Study Dynamic Unmanned Aerial Vehicle Replanning**

2. Gloria L. Calhoun and Mark H. Draper, 711 Human Performance Wing; Heath A. Ruff, Ball Aerospace & Technologies Corp., **Effect of Level of Automation on Unmanned Aerial Vehicle Routing Task**
3. Ronald Scott, BBN Technologies; Emilie Roth, Roth Cognitive Engineering; Robert Truxler, BBN Technologies; Jeffrey Wampler, U.S. Air Force Research Lab, **Techniques for Effective Collaborative Automation for Air Mission Replanning**
4. Priyadarshini R. Pennathur and Dapeng Cao, U. at Buffalo, SUNY; Zheng Sui, Terra Technology; Ann M. Bisantz and Li Lin, U. at Buffalo, SUNY; Rolin (Terry) J. Fairbanks, U. of Rochester; Theresa K. Guarrera, U. at Buffalo, SUNY; Jennifer L. Brown, St. Joseph Hospital; Shawna J. Perry, VCU Health Systems; Robert L. Wears, U. of Florida – Jacksonville, **Evaluating Emergency Department Information Technology Using a Simulation-Based Approach**
5. Heather F. Neyedli, U. of Toronto; Justin G. Hollands, Defence Research & Development Canada; Greg A. Jamieson, U. of Toronto, **Human Reliance on an Automated Combat ID System: Effects of Display Format**

FP2 – ISSUES IN FORENSICS RESEARCH AND PRACTICE

Lecture

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Bowie A (Level Two)

Forensics Professional

Chair: Tonya L. Smith-Jackson, Virginia Tech

1. Kenneth Nemire, HFE Consulting, **Avoiding Misrepresentation in Forensic Human Factors**
2. Daniel A. Johnson, Daniel A. Johnson, Inc., **Forensic Human Factors Results in Increased Pedestrian Safety**
3. Marc L. Resnick, Florida International U., **When Performance Management Fails: Forensic Case Studies From the Front Lines**
4. Carol Pollack-Nelson, Independent Safety Consulting; Shelley Waters Deppa, Safety Behavior Analysis, Inc., **The Role and Limitations of Voluntary Standards in Consumer Product Safety**
5. David Curry, ITC Expert Services; Anne Mathias and Valerian Skawinski, Packer Engineering, **Slip Sliding Away – Slip Resistance of Athletic Socks on Indoor Flooring**

HC2 – MEDICAL INFORMATICS:WHAT CONTRIBUTIONS CAN HUMAN FACTORS MAKE?

Discussion Panel

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Travis A/B (Level Three)

Health Care

Chair: Michael W. Smith, Ohio State U.

Panelists: Alissa L. Russ, Roudebush VA Medical Center; Robert L. Wears, U. of Florida; Emily Patterson, Ohio State U.; Anne Miller, Vanderbilt U.; Laura Militello, U. of Dayton Research Inst.; Shilo Anders, Vanderbilt U.; Ben-Tzion Karsh, U. of Wisconsin – Madison

IE2 – BIOMECHANICAL ANALYSIS TOPICS

Lecture

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Seguin (Level Four)

Industrial Ergonomics

Chair: Angela DiDomenico, Liberty Mutual Research Inst. for Safety; *Cochair:* Naira Campbell-Kyureghyan, U. of Louisville

1. Cheng-Jhe Lin, Siying Li, and Gwanseob Shin, U. at Buffalo, SUNY, **Effects of Low Back Flexibility on Muscle Activities During Weight Holding**
 2. Kermit G. Davis, Susan E. Kotowski, Balaji Sharma, Donald Herrmann, and Anita P. Krishnan, U. of Cincinnati Medical Center, **Combating the Effects of Sedentary Work: Postural Variability Reduces Musculoskeletal Discomfort**
 3. Christopher R. Reid, Pamela McCauley Bush, and Waldemar Karwowski, U. of Central Florida; Dianne L. McMullin, Ergonomics Applications, **The Need for a Lower Extremity Risk Assessment Model**
 4. Hongbo Zhang, Virginia Tech, **The Identification of Ankle and Hip Coordination Following the Ankle and Trunk Localized Muscle Fatigue**
 5. Jian Liu, U. of Houston; Thurmon E. Lockhart, Virginia Tech, **Trunk Angular Kinematics During Slip-Induced Falls and Activities of Daily Living – Toward Developing a Fall Detector**
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ME2 – ADVANCING SAFETY IN CONSTRUCTION:AN ORGANIZATIONAL, SYSTEMIC,AND CULTURAL APPROACH

Discussion Panel

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Travis C/D (Level Three)

Macroergonomics

Chair: Maria J. Brunette, U. of Massachusetts, Lowell
Panelists: Carlos Evia, Virginia Tech; Peter Hoonakker, U. of Wisconsin – Madison; Brian M Kleiner, Elizabeth Haro, and Tonya L. Smith-Jackson, Virginia Tech

PD2 – EIGHTH ANNUAL USER-CENTERED PRODUCT DESIGN AWARD SESSION

Alternative Format

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Bowie B (Level Two)

Product Design

Chair: Stan Caplan, Usability Associates; *Cochair:* Steven Belz, AT&T Bell Labs

Winner to be announced, followed by a presentation about the winning design.

SF2 – TOWARD A STABLE CAREER IN AN UNSTABLE JOB MARKET

Discussion Panel

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Republic B (Level Four)

Student Forum

Chair: Ronald G. Shapiro, Consultant

Panelists: Anthony D. Andre, Interface Analysis Associates; Robert M. Schumacher, User Centric, Inc.; David T. Windell, IBM Systems & Technology Group; Courtney I. Schur, California State U., Northridge

T2 – ADOPTING THE TRAINING CYCLE FOR TRUST TRAINING IN SWIFTLY STARTING ACTION TEAMS

Invited Symposium

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Republic C (Level Four)

Training

Chair: Stephen M. Fiore, U. of Central Florida; *Cochair:* Elizabeth H. Lazzara, U. of Central Florida

1. Jessica L. Wildman, Marissa L. Shuffler, Stephen M. Fiore, Elizabeth H. Lazzara, Michael A. Rosen, Luiz F. Xavier, Samuel R. Wooten II, and Eduardo Salas, U. of Central Florida, **Adopting the Training Cycle for Trust Training in Swift-Starting Action Teams**

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2. Nate Self, Praevius Group, **Trust on the Battlefield**
3. Elizabeth H. Lazzara, Stephen M. Fiore, Jessica L. Wildman, Marissa L. Shuffler, and Eduardo Salas, U. of Central Florida, **Managing Trust in Swiftly Starting Action Teams**
4. Gregory A. Ruark, U.S. Army Research Inst. for the Behavioral & Social Sciences; Kara L. Orvis, Zachary Horn, and Krista L. Langkamer, Aptima, Inc., **Trust as Defined by U.S. Army Soldiers**
5. Sena Garven, U.S. Army Research Inst., **Trusting the Trust Literature: What Applied and Theoretical Literatures Have in Common**

VEI – LEVERAGING VIRTUAL REALITY AND COMPUTER-BASED GAMES FOR TRAINING

Invited Symposium

Tuesday, October 20, 2009, 3:30 to 5:00 p.m.

Republic A (Level Four)

Virtual Environments

Chair: Laura D. Strater, SA Technologies, Inc.

1. Laura D. Strater, SA Technologies, Inc.; Donald Lampton, U.S. Army Research Inst.; James P. Bliss and Karin Orvis, Old Dominion U.; Jason Kring, Embry-Riddle Aeronautical U.; Stephanie Lackey and Denise Nicholson, U. of Central Florida; William J. Becker, U.S. Naval Postgraduate School; Jennifer M. Riley, Sandro Scielzo, Fleet Davis, and John Hyatt, SA Technologies, Inc., **Leveraging Virtual Reality and Computer-Based Games for Training**
2. Stephanie Lackey and Denise Nicholson, U. of Central Florida; William J. Becker, U.S. Naval Postgraduate School, **What Can VR Do for U? Virtual Reality for Training Uninhabited Aircraft Systems**
3. Donald Lampton, U.S. Army Research Inst.; James P. Bliss and Karin Orvis, Old Dominion U.; Jason Kring, Embry-Riddle Aeronautical U.; Glenn A. Martin, U. of Central Florida, **A Distributed Game-Based Simulation Training Research Testbed**
4. Jennifer M. Riley, Sandro Scielzo, John Hyatt, Fleet Davis, and Daniel Colombo, SA Technologies, Inc., **Situation Awareness and Performance Feedback Toward Enhancing Learning With Game Trainers: An Approach and Lessons Learned**
5. Davin Pavlas, Wendy Bedwell, Samuel R. Wooten II, Kyle Heyne, and Eduardo Salas, U. of Central Florida, **Investigating the Attributes in Serious Games That Contribute to Learning**

Tuesday, October 20

5:00 to 7:00 p.m.

Technical Group Business Meetings

System Development

Bowie C (Level Two)

5:00 to 6:00 p.m.

Augmented Cognition

Lone Star Ballroom E (Level Two)

5:00 to 7:00 p.m.

Product Design

Bowie B (Level Two)

5:00 to 7:00 p.m.

Wednesday, October 21

7:00 to 8:30 a.m.

Technical Group Business Meeting

Education

Mission A (Level Two)

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

Wednesday, October 21

8:30 to 10:00 a.m.

Technical Sessions

AI – THE ROLE OF HUMAN FACTORS IN OLDER WORKER RETENTION: WHAT DO WE KNOW AND WHAT WILL WE NEED TO KNOW?

Discussion Panel

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Bowie B (Level Two)

Aging

Chair: Anne Collins McLaughlin, North Carolina State U.; *Cochair:* Randa L. Shehab, Oklahoma State U.

Panelists: Carrie Bruce, Georgia Tech; Sheree Gibson, Ergonomics Applications; Jon Sanford, Georgia Tech; Diana Schwerha, Ohio U.; Diane Spokus, Pennsylvania State U.; Harry S. Whiting, Ohio State U.

AS2 – FLIGHT DISPLAY DESIGN AND PILOT PERFORMANCE

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Republic B (Level Four)

Aerospace Systems

Chair: Daniel Eksuzian, ARINC Engineering Services, LLC; *Cochair:* Gloria Calhoun, Wright-Patterson Air Force Base

1. Amy L. Alexander and Emily M. Stelzer, Aptima, Inc.; Sang-Hwan Kim, U. of Michigan – Dearborn; David B. Kaber, North Carolina State U.; Lawrence J. Prinzel, NASA Langley Research Center, **Data and Knowledge as Predictors of Perceptions of Display Clutter, Subjective Workload, and Pilot Performance**
2. Dennis B. Beringer, Civil Aerospace Medical Inst.; Terri Luke, Allison Quate, and Elizabeth Walters, U. of Oklahoma, **Helicopter Pilot Use of a See-Through, Head-Mounted Display With Pathway Guidance for Visually Guided Flight: Observations of Navigation Behavior and Obstacle Avoidance**
3. Nathan K. Bulkley, Brian P. Dyre, Roger Lew, and Kristin Caufield, U. of Idaho, **A Peripherally Located Virtual Instrument Landing Display Affords More Precise Control of Approach Path During Simulated Landings Than Traditional Instrument Landing Displays**
4. Sang-Hwan Kim, U. of Michigan – Dearborn; David B. Kaber, North Carolina State U., **Assessing the Effects of Conformal Terrain Features in Advanced Head-Up Displays on Pilot Performance**

CE4 – HUMAN-COMPUTER ETIQUETTE: RECENT WORK FROM THE ETIQUETTE PERSPECTIVE

Discussion Panel

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Christopher Miller, Smart Information Flow Technologies; *Cochair:* Caroline Hayes, U. of Minnesota
Panelists: Helen Altman Klein, Wright State U.; David Kaber, North Carolina State U.; James P. Bliss, Old Dominion U.; Kip Smith, Linköping U.; Peggy Wu, Smart Information Flow Technologies

CE5 – RASMUSSEN'S S-R-K 30 YEARS LATER: IS HUMAN FACTORS BEST IN 3'S?

Discussion Panel

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Lone Star Ballroom E (Level Two)

Cognitive Engineering & Decision Making

Chair: David D. Woods, Ohio State U.; *Cochair:* Penelope M. Sanderson, U. of Queensland
Panelists: John M. Flach, Wright State U.; Christopher Nemeth, ARA Klein Associates; Kathleen Mosier, San Francisco State U.; Shawn A. Weil, Aptima, Inc.

GS3 – GENERAL SESSIONS POTPOURRI I

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Travis C/D (Level Three)

General Sessions

Chair: Cleotilde Gonzalez, Carnegie Mellon U.;

Cochair: Gretchen Anderson, Boeing

1. William S. Helton, U. of Canterbury, **Canines as Perceptual Workers**
2. Jon Holbrook, San Jose State U. Foundation/NASA Ames Research Center; Key Dismukes, NASA Ames Research Center, **Prospective Memory in Everyday Tasks**
3. Cheng-Jhe Lin and Changxu Wu, U. at Buffalo, SUNY, **Detecting Typing Errors in a Numerical Typing Task With Linear Discriminant Analysis of Single Trial EEG**
4. Hohyun Lee, Lesley Strawderman, and John M. Usher, Mississippi State U., **Analyzing Pedestrian Traffic Behavior Using Video Footage, Zone of Comfort, and Situation Awareness**
5. Samuel J. Brougner and Esa M. Rantanen, Rochester Inst. of Technology, **Creativity and Design: Creativity's New Definition and Its Relationship to Design**

HC3 – HUMAN FACTORS IN SURGERY – I

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Travis A/B (Level Three)

Health Care

Chair: Anne Miller, Vanderbilt U.

1. S. Henrickson Parker, U. of Aberdeen; A. Laviana, Georgetown U.; T. M. Sundt, Mayo Clinic; D. A. Wiegmann, U. of Wisconsin, **Developing a Tool for Reliably Identifying Distractions and Interruptions During Surgery**

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2. Ranieri Yung Ing Koh, Xi Yang, and Shanqing Yin, Nanyang Technological U.; Lay Teng Ong, KK Women's and Children's Hospital; Yoel Donchin, Hadassah Medical Center, Jerusalem; Taezoon Park, Nanyang Technological U., **Measuring Attention Patterns and Expertise of Scrub Nurses in the Operating Theatre in Relation to Reducing Errors in Surgical Counts**
3. Jason M. Slagle, Shilo Anders, Charles Calderwood, and Matthew B. Weinger, Vanderbilt U., **Significant Physiological Disturbances in Cases With and Without Nonroutine Events: An Analysis of Videotaped Anesthetics**
4. J. Elin Bahner-Heyne and S. Roettger, Berlin Inst. of Technology; D. Schulze-Kissing, German Aerospace Center (DLR); Dietrich Manzey, Berlin Inst. of Technology, **Automation in Surgery: The Surgeons' Perspective on Human Factors Issues of Image-Guided Navigation**
5. S. Henrickson Parker, U. of Aberdeen; R. Wadhwa, Cambridge U.; D. A. Wiegmann, U. of Wisconsin; T. M. Sundt, Mayo Clinic College of Medicine, **The Impact of Protocolized Communication During Cardiac Surgery**

IDI – INDIVIDUAL DIFFERENCES IN PERCEPTION, COGNITION, AND PERFORMANCE

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Republic A (Level Four)

Individual Differences

1. Tyler H. Shaw, George Mason U.; Gerald Matthews, U. of Cincinnati; Victor S. Finomore, Oak Ridge Inst. for Science and Education; Joel S. Warm, U.S. Air Force Research Lab, **Predicting Vigilance Performance and Stress With Individual Difference Measures**
2. April Rose Panganiban and Gerald Matthews, U. of Cincinnati; Eva Hudlicka, Psychometrix Associates, **Trait Anxiety and Affective Bias in Tactical Decision Making**
3. Bo Ou, Changxu Wu, and Guozhen Zhao, U. at Buffalo, SUNY, **P300 Amplitude and Latency Reflect Individual Difference of Navigation Performance in a Driving Task**
4. Meike Jipp and Essameddin Badreddin, U. of Heidelberg, **A Comparison of the Relevance of Between-Subject and Within-Subject Variance for an Intention Estimation Behavior for Wheelchair Users**
5. Heather C. Lum, Valerie K. Sims, Matthew G. Chin, and Nicholas C. Lagattuta, U. of Central Florida, **Perceptions of Humans Wearing Technology**

ME3 – APPLICATIONS IN MACROERGONOMICS

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Bowie A (Level Two)

Macroergonomics

Chair: Holly S. Wick, 3M Co.

1. Elizabeth Haro, Yu-Hsiu Hung, and Hyun Seung Yoo, Virginia Tech; Robin Littlejohn, Mississippi State U., **Implicit Biases in Blame Allocation of Accidents Across Organizational Components (Worker, Supervisor, and Organization)**
2. Teresa Zayas-Cabán, Agency for Healthcare Research and Quality; Jenna L. Marquard, U. of Massachusetts, Amherst, **A Holistic Human Factors Evaluation Framework for the Design of Consumer Health Informatics Interventions**
3. Sandra K. Garrett, Clemson U.; Barrett S. Caldwell, Purdue U.; Shawn T. Collins, Rolls-Royce, **Supporting Expertise Coordination in Multidisciplinary Project Teams**
4. Alison R. Heller-Ono, County of Monterey, **21st Century Ergonomics: A Lean Approach to Ergonomics Process Design and Management**
5. Valerie J. Berg Rice, U.S. Army Research Lab, **Evaluating and Designing Education: A Collaborative Effort Between Educators and Ergonomists**

SD2 – FOCUS ON HUMAN-SYSTEMS INTEGRATION

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Republic C (Level Four)

System Development

Chair: Shannon Foley, U.S. Naval Surface Warfare Center Dahlgren; Melissa Weaver, BCI, Inc.

1. Darren P. Wilson, Dept. of Homeland Security; Thomas B. Malone, Carlow International Inc.; Janae Lockett-Reynolds, Dept. of Homeland Security; Elizabeth L. Wilson, Caden James Enterprises, **A Vision for Human-Systems Integration in the U. S. Department of Homeland Security**
2. Raegan M. Hoefl and Helena M. Mentis, Lockheed Martin, **Beyond User-Centered Design: Applicable Concepts from Complementary Approaches**
3. Tareq Ahram and Waldemar Karwowski, U. of Central Florida, **Human-Systems Integration Modeling Using Systems Modeling Language**

ST2 – DRIVER PERCEPTION AND RISKY BEHAVIOR

Lecture

Wednesday, October 21, 2009, 8:30 to 10:00 a.m.

Seguin (Level Four)

Surface Transportation

Chair: Carryl L. Baldwin, George Mason U.; *Cochair:* Michael Manser, U. of Minnesota

1. Anand Tharanathan, Honeywell ACS Labs, **Effects of Constant and Nonconstant Velocity Motion on Judgments of Collision-Avoidance Action Gap**
2. Guozhen Zhao, Changxu Wu, Rebecca J. Houston, and Whitney Creager, U. at Buffalo, SUNY, **The Effects of Heavy Drinking and Socioeconomic Status on Driving Behavior**
3. Michael E. Rakauskas, U. of Minnesota, **A Speed Production Methodology for the Assessment of Perceived Egospeed**
4. Michelle Yeh and Jordan Multer, U.S. Dept. of Transportation Volpe Center; Thomas Raslear, Federal Railroad Admin., **An Application of Signal Detection Theory for Understanding Driver Behavior at Highway-Rail Grade Crossings**
5. David G. Kidd and Christopher A. Monk, George Mason U., **Are Unskilled Drivers Aware of Their Deficiencies? How Driving Skills Influence the Accuracy of Driving Performance Estimates**

Wednesday, October 21 10:30 a.m. to 12:00 noon

DEM2 – DEMONSTRATIONS 2

Demonstrations

Wednesday, October 21, 2009, 10:30 a.m. to

12:00 noon

Republic A/B/C (Level Four)

Special Sessions

Chair: Ronald Laurids Boring, Sandia National Labs;
Cochair: Michael Hildebrandt, OECD Halden Reactor Project

Note: Short demonstrations will be repeated throughout the 90-minute session. Attendees are encouraged to go from room to room to view demos.

1. Shane D. Pinder and T. Claire Davies, Auckland U. of Technology, **AUDEO: Audification of Ultrasound for the Detection of Environmental Obstacles (Republic A)**

2. James C. Christensen and Justin R. Estep, U.S. Air Force Research Lab; Glenn F. Wilson, Physiometrix, Inc.; Iris M. Davis, Ball Aerospace & Technologies Corp., **A Demonstration of a Dry/No Preparation Electrode System for EEG (Republic B)**
3. Evan W. Patton, Wayne D. Gray, and Michael J. Schoelles, Rensselaer Polytechnic Inst., **SANLab-CM – The Stochastic Activity Network Laboratory for Cognitive Modeling (Republic C)**

POS2 – POSTERS 2

Poster Session

Wednesday, October 21, 2009, 10:30 a.m. to 12:00 noon

Lone Star Ballroom Corridor (Level Two)

Chair: Jessica M. Ray, U. of Central Florida; *Cochair:* Robin A. N. Littlejohn, Mississippi State U.

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

Visual Search/Attention

1. Peter Squire, Pamela Greenwood, and Raja Parasuraman, George Mason U., **Is Visuospatial Attention Controlled by a Unitary Process or Separate Processes?**
2. Philip Kortum, Rice U.; Lauren V. F. Scharff, U.S. Air Force Academy, **How Subtle Changes in Navigation Links Affect Users' Search Strategies**
3. Keith A. Kline and Richard Catrambone, Georgia Tech, **The Influence of Spatial Ability on Multimedia Learning**
4. Jeffrey Andre, Michael Hicks, and Caroline Chevalier, James Madison U., **Exploring Potential Gender Differences When Scanning Maps and Providing Directions**
5. Justin W. Owens, Saurav Shrestha, and Barbara S. Chaparro, Wichita State U., **Effects of Text Saliency on Eye Movements While Browsing a Web Portal**
6. Saurav Shrestha, Justin W. Owens, and Barbara S. Chaparro, Wichita State U., **The Effect of Location and Congruency of Text Ads on Information Search**
7. Doug Fox and Amanda Smith, Wichita State U.; A. Dawn Shaikh, Google, Inc.; Barbara S. Chaparro, Wichita State U., **Optimizing Presentation of AdSense Ads Within Blogs**
8. Jeremy Mendel, Denzil Jeykumar, Sundararajan Parthasarathy, and Andrew Duchowski, Clemson U., **Cultural Differences in Visual Attention: An Eye-Tracking Comparison of U.S. and Indian Individuals**

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Ergonomics

9. Xiaolu Jing, Scott Fulmer, and Bryan Buchholz, U. of Massachusetts, Lowell, **Posture, Activities, Tools, and Handling Analysis for Floor Coverers Focusing on the Knee**
10. Symone A. Miguez and Peter Vink, Delft U. of Technology; M. Susan Hallbeck, U. of Nebraska – Lincoln, **Participatory Ergonomics Generates New Product to Assist Rural Workers in Greenhouses**
11. Aishwarya Yalamarty, Varun V. Jampana, Naira H. Campbell-Kyureghyan, and Karen N. Cooper, U. of Louisville, **Effect of Electric Utility Lineman Gloves on Strength and Efficiency**
12. Karla Eve Allan, U.S. Army Natick Soldier Research, Development, & Engineering Center, **Evaluating Suitability of a Military Duty Glove for Use in a Multilayered Chemical-Biological Protective Glove System**

Teams

13. Heather A. Priest, U.S. Army Research Inst.; C. Shawn Burke and Eduardo Salas, U. of Central Florida, **Initial, Individual Decisions to Trust in Newly Forming Teams: What Is the Impact of “Not Knowing”?**
14. Michael A. Rosen, Eduardo Salas, Stephen M. Fiore, Davin Pavlas, and Heather C. Lum, U. of Central Florida, **Team Cognition and External Representations: A Framework and Propositions for Supporting Collaborative Problem Solving**
15. Thomas D. Fincannon, A. William Evans, Florian Jentsch, Elizabeth Phillips, and Joseph R. Keebler, U. of Central Florida, **Effects of Sharing Control of Unmanned Vehicles on Backup Behavior and Workload in Distributed Operator Teams**

Auditory Topics

16. Bradley M. Davis, U.S. Army Research Lab; Woodrow W. Winchester and Jason D. Zedlitz, Virginia Tech, **Auditory Visualization of Landmine Detector Sensor Data**
17. Cheng Li Wei and Chua Wei Liang Kenny, DSO National Labs, **Association Testing – A Methodology for Selecting and Evaluating Audio Alert**
18. Jaimie L. Gilbert, Kelly S. Steelman-Allen, Charissa R. Lansing, Jason S. McCarley, and Arthur F. Kramer, U. of Illinois at Urbana-Champaign, **Effect of Overheard Conversations on Bystander Productivity**

Complex Environments

19. Peter Squire, U.S. Naval Surface Warfare Center; Jane H. Barrow, Kevin T. Durkee, Mac Smith, Jennifer Moore, and Raja Parasuraman, George Mason U., **Runway Incursion Monitoring,**

Detection, and Alerting System (RIMDAS): A Proposed System Design for Reducing Runway Incursions

20. Jamie C. Gorman, Nancy J. Cooke, and Jasmine L. Duran, Arizona State U.; Kimberly McGrane and Noel Rima, Cognitive Engineering Research Inst., **Representing Workflow Within the Air Operations Center: The Lifecycle of a Dynamic Target**
21. Jacquelyn M. Crebolder and Jeffrey Beardsall, Defence Research & Development Canada, **Visual Alerting in Complex Command and Control Environments**

Driving

22. J. Christopher Brill, Michigan Technological U.; Mustapha Mouloua and Edwin Shirkey, U. of Central Florida; Pascal Alberti, Université de Technologie de Compiègne, **Predictive Validity of the Aggressive Driver Behavior Questionnaire (ADBQ) in a Simulated Environment**
23. Lisa Durrance Blalock and Benjamin D. Sawyer, Colorado State U.; Ariana Kiken, California State U., Long Beach; Benjamin A. Clegg, Colorado State U., **The Impact of Load on Dynamic Versus Static Situational Knowledge While Driving**
24. Mary F. Lesch and William J. Horrey, Liberty Mutual Research Inst. for Safety; Ying Wang, Wei Zhang, and Chang-Rong Chen, Tsinghua U., **Impact of Feedback on Drivers' Attitudes Toward Driving While Distracted: A Study in China**
25. Laura Stanley and Jessica Mueller, Montana State U., **Effectiveness of a Multistage Driver Education Program for Novice Drivers**
26. David Libbey and Alex Chaparro, Wichita State U., **Text Messaging Versus Talking on a Cell Phone: A Comparison of Their Effects on Driving Performance**

Potpourri

27. Felix Portnoy and Poornima Madhavan, Old Dominion U., **Current Trends in Human Factors and Ergonomics Employment**
28. A. Blechko, I. T. Darker, and A. G. Gale, Loughborough U., **The Role of Emotion Recognition From Nonverbal Behavior in Detection of Concealed Firearm Carrying**
29. Nash S. Stanton, Stuart A. Ragsdale, and Ernesto A. Bustamante, U. of Idaho, **The Effects of System Technology and Probability Type on Trust, Compliance, and Reliance**
30. Jeffrey J. Smith and Edward J. Grenchus, IBM Corp., **Beyond the First User: Human Factors and Risk Communication for Reuse, Recycling, Disassembly, and Product End-of-Life**

31. Elizabeth H. Lazzara, Marissa Shuffler, Michael A. Rosen, Luiz Xavier, Samuel R. Wooten II, and Eduardo Salas, U. of Central Florida; Steve Zaccaro, George Mason U.; Rita Hilton, Mirum Corp., **Identifying the Best Practices for Critical Social Thinking and Metacognitive Thinking Training**
32. M. Sublette, C. Melody Carswell, Russel C. Grant, M. Klein, W. B. Seales, and Duncan Clarke, U. of Kentucky, **Anticipated Versus Experienced Workload: How Accurately Can People Predict Task Demand?**
33. Jasmine L. Duran, Zach Goolsbee, Nancy J. Cooke, and Jamie C. Gorman, Arizona State U., **Embedded Collaboration Metrics in the MacroCog Synthetic Task Environment**

Wednesday, October 21

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

Technical Group Business Meetings

Aging

Bonham E (Level Three)

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

Perception and Performance

Mission A (Level Two)

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

Wednesday, October 21

1:30 to 3:00 p.m.

Technical Sessions

CE6 – JUDGMENT, DECISION MAKING, AND EXPERTISE

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Jennifer Ockerman, Johns Hopkins U.; *Cochair:* Mark St. John, Pacific Science and Engineering Group

1. Dapeng Cao, Theresa K. Guarrera, Michael Jenkins, Priyadarshini R. Pennathur, and Ann M. Bisantz, U. at Buffalo, SUNY; Richard T. Stone, Iowa State U.; Michael Farry and Jonathan Pfautz, Charles River Analytics, Inc.; Emily Roth, Roth Cognitive Engineering, **Evaluating the Creation and Interpretation of Causal Influence Models**

2. C. Dominik Güss, U. of North Florida; Jarrett Evans, Florida State U.; Devon Murray, U. of North Florida; Harald Schaub, IABG mbH and Otto-Friedrich Universität Bamberg, **Conscious Versus Unconscious Processing in Dynamic Decision-Making Tasks**
3. Jennifer Tsai and Alex Kirlik, U. of Illinois at Urbana-Champaign, **Expert Judgment in a Heterogeneous Task Environment**
4. Jonathan Pfautz, David Koelle, and Eric Carlson, Charles River Analytics, Inc.; Emilie Roth, Roth Cognitive Engineering, **Complexities and Challenges in the Use of Bayesian Belief Networks: Informing the Design of Causal Influence Models**
5. Lawrence G. Shattuck, Nita Lewis Miller, and Kacey Kemmerer, U.S. Naval Postgraduate School, **Tactical Decision Making Under Conditions of Uncertainty: An Empirical Study**

CE7 – INTERACTING WITH SINGLE AND MULTIPLE AUTOMATED AIDS

Invited Symposium

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom E (Level Two)

Cognitive Engineering & Decision Making

Chair: Poornima Madhavan, Old Dominion U.

1. Poornima Madhavan, Old Dominion U., **Interacting With Single and Multiple Automated Aids**
2. Ernesto A. Bustamante, U. of Idaho, **A Reexamination of the Mediating Effect of Trust Among Alarm Systems' Characteristics and Human Compliance and Reliance**
3. David Keller and Stephen Rice, New Mexico State U., **How Is the Reliability of Automated Aids Determined Using System-Wide Trust?**
4. Ellen Haas, Susan Hill, Christopher Stachowkiak, and MaryAnne Fields, U.S. Army Research Lab, **Designing and Evaluating a Multimodal Interface for Soldier-Swarm Interaction**
5. Penelope M. Sanderson, U. of Queensland, **Auditory Alarms for Medical Equipment: How Do We Ensure They Convey Their Meanings?**
6. James P. Bliss, Old Dominion U., **Faith Versus Trust: The Influence of Situational Experience on Perceived Signal Credibility, and a Distinction Between Constructs**

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EDI – ENVIRONMENTAL DESIGN: OFFICE ENVIRONMENT CONSIDERATIONS & STUDENT ISSUES

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Republic A (Level Four)

Environmental Design

Chair: Conne Bazley, JimConna Inc.; *Cochair:* Michelle Robertson, Liberty Mutual Research Inst. for Safety

1. Alan Hedge and Daniel E. Gaygen, Cornell U., **Office Environmental Conditions and Computer Work Performance**
2. Paul Allie and Douglas Kokot, Kokot and Allie Associates, LLC; Cynthia Purvis and Michael C. Bartha, Hewlett-Packard Co., **Computer Display Placement for Progressive Addition Lens Wearers: A Field Observation of Multiple Display Conditions**
3. Karen Jacobs, Victoria Hall, Erin Brownson, Elizabeth Ansong, Jackie Markowitz, Matt McKinnon, Sofia Steinberg, Alexander Ing, and Ellen Wuest, Boston U.; Peter Johnson, U. of Washington; Jack T. Dennerlein, Harvard U., **The Notebook Computing Experience Among University Students**
4. H. C. M. (Jettie) Hoonhout, Philips Research; M. Knoop, Philips Lighting; Ruben VanPol, U. of Maastricht, **Colored Lighting in Offices the New Caffeine? Looking into Performance Effects of Colored Lighting**
5. Ruth A. K. Loewenhardt, Elegant Ergo, **A Case Study on the Backpack Weight of School Students**

GS4 – ARNOLD M. SMALL LECTURE IN SAFETY

Invited Address

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Travis C/D (Level Three)

General Sessions; cosponsored by Safety

Chair: Michael J. Kalsher, Rensselaer Polytechnic Inst.
Rebekah A. Salazar, U.S. Border Patrol

HP2 – MODELING HUMAN PERFORMANCE IN THE ENVIRONMENTAL CONTEXT

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Republic C (Level Four)

Human Performance Modeling

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

Cochair: Linda Boyle, U. of Iowa

1. Matthew L. Bolton and Ellen J. Bass, U. of Virginia, **A Method for the Formal Verification of Human-Interactive Systems**

2. Christopher D. Wickens, Alion Science & Technology MA&D Operations; Jason S. McCarley and Kelly S. Steelman-Allen, U. of Illinois at Urbana-Champaign; Angelia Sebok and Julie Bzostek, Alion Science & Technology MA&D Operations; Nadine Sarter, U. of Michigan, **NT-SEEV: A Model of Attention Capture and Noticing on the Flight Deck**
3. Kelly S. Steelman-Allen and Jason S. McCarley, U. of Illinois at Urbana-Champaign; Christopher D. Wickens, Angelia Sebok, and Julie Bzostek, Alion Science & Technology MA&D Operations, **N-SEEV: A Computational Model of Attention and Noticing**
4. Michael Lewis, U. of Pittsburgh; Jijun Wang, Quantum Leap Innovations, Inc., **Measuring Coordination Demand in Multirobot Teams**
5. Steven J. Landry, Purdue U., **A Belief-Based Model of Air Traffic Controllers Performing Separation Assurance**

II – NAVIGATION

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Seguin (Level Four)

Internet; cosponsored by Computer Systems

Chair: Marc L. Resnick, Florida International U.;

Cochair: John Ruffner, Serco, Inc.

1. Marc L. Resnick and Amir Baker, Florida International U., **The Effect of Scent on User Recall and Navigation**
2. John W. Ruffner and Nina P. Deibler, Serco, Inc.; Christine L. Holiday, Timothy H. Isenberg, and Angela J. Hutton, Defense Ammunition Center, **The Hyperbolic Browser as a Tool for Information Visualization, Discovery, and Retrieval on the Web and Enterprise Intranets**
3. Byung Don Kong, Jung Sang Min, and RoHae Myung, U. of Korea, **Menu Design for Touchscreen Interfaces**
4. Ralph H. Cullen, Marita A. O'Brien, Wendy A. Rogers, and Arthur D. Fisk, Georgia Tech, **The Persistence of Content Knowledge**
5. Keena S. Byrd, Intel Corp.; Barrett S. Caldwell, Purdue U., **From UMPCs to Cell Phones: How Does Diminishing Screen Real Estate Affect Screen Access and Working Memory?**

PD3 – PRACTICAL APPLICATIONS OF PRODUCT DESIGN TOOLS

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Bowie B (Level Two)

Product Design

Chair: Steven Belz, AT&T; *Cochair:* Jason A. Droll, Exponent

1. Kihyo Jung, POSTECH; Ochaee Kwon, Samsung Electronics; Heecheon You, POSTECH, **Development of the Boundary Zone Method for Generation of Representative Human Models**
2. Barbara Jex Courter, Aerospace Corp.; Ellen M. Ellis, U.S. Air Force, **Human Factors Considerations in Global Positioning System (GPS) Receiver Technology: Contrasting Military Technical Requirements With User Expectations**
3. Craig P. Conner, Design Concepts, Inc., **Iterative Qualitative Research Used to Inform and Validate the Design of a Commercial Floor Finish Applicator**
4. Craig P. Conner and Curt B. Irwin, Design Concepts, Inc., **EMG and Heart Rate Used to Validate Ergonomic Benefits of a Bent-Handled Floor Finish Applicator**
5. Manuel Meza and Patrick Patterson, Texas Tech U.; Hidetoshi Nakayasu, Konan U., **Useful Field of View of Aging Drivers as a Product Design Tool for In-Vehicle Visual Aids**

PP2 – AUDITORY PERCEPTION AND PERFORMANCE

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Republic B (Level Four)

Perception & Performance

Chair: Paul Havig, U.S. Air Force Research Lab; *Cochair:* Felix Portnoy, Old Dominion U.

1. Jane H. Barrow and Carryl L. Baldwin, George Mason U., **Semantic Versus Spatial Audio Cues: Is There a Downside to Semantic Cueing?**
2. Chua Wei Liang Kenny and Cheng Li Wei, DSO National Labs, **An Evaluation of Icon, Tone, and Speech Cues for Detecting Anomalies and Auditory Communications for Onboard Military Vehicle Displays**
3. Myounghoon Jeon and Bruce N. Walker, Georgia Tech, **“Spindex”: Accelerated Initial Speech Sounds Improve Navigation Performance in Auditory Menus**

4. Raymond M. Stanley and Bruce N. Walker, Georgia Tech, **Intelligibility of Bone-Conducted Speech at Different Locations Compared to Air-Conducted Speech**
5. T. Claire Davies, U. of Auckland; Shane D. Pinder, Auckland U. of Technology; Catherine M. Burns, U. of Waterloo, **How Far Is That Wall? Judging Distance With Audification**

SF3 – STUDENT RESEARCH IN HEALTH CARE

Lecture

Wednesday, October 21, 2009, 1:30 to 3:00 p.m.

Travis A/B (Level Three)

Student Forum; cosponsored by Health Care

Chair: Ewart de Visser, George Mason U.; *Cochair:* Sarah Grigg, Clemson U.

1. Thomas Ferris and Nadine Sarter, U. of Michigan, **Supporting Anesthetic Monitoring Through Tactile Display of Physiological Parameters**
2. Nicole Fink, Richard Pak, and Dina Battisto, Clemson U., **Prospective Memory in the Nursing Environment: Effects of Type of Prospective Task and Prospective Load**
3. Margaux M. Price and Richard Pak, Clemson U.; Hendrik Muller and Aideen Stronge, Google, Inc.; Jesse Breedlove, Clemson U., **Examining Noncritical Health Information Seeking: A Needs Analysis for Personal Health Records**
4. P. P. Morita, U. of Campinas; Catherine M. Burns, U. of Waterloo; S. J. Calil, U. of Campinas, **The Influence of Strong Recommendations, Good Incident Reports, and a Monitoring System Over an Incident Investigation System for Health Care Facilities**

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Wednesday, October 21 3:00 to 6:30 p.m.

Technical Group Business Meetings

Aerospace Systems

Republic B (Level Four)

3:00 to 5:00 p.m.

Cognitive Engineering and Decision Making

Lone Star D (Level Two)

4:30 to 6:00 p.m.

Program at a Glance

Monday

Tuesday

8:30 – 10:00 a.m.

SF1 Student Career and Professional Development Day, *Lone Star Ballroom E*

Forums, 8:30 a.m. – 4:30 p.m.

HCF Health Care Forum, *Bonham E*

PDF Professional Development Forum, *Bowie B*

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

WK2 Cognitive Crash Dummies, *Republic B*

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

WK5 User Interface Design Prototyping, *Travis C/D*

WK6 Cognitive Systems Engineering, *Bowie C*

WK9 Be an Effective HF/E Expert Witness, *Seguin B*

WK10 Human-Centered Systems Engineering, *Republic A*

WK12 Rapid In-Depth Task Analysis, *Travis A/B*

8:00 – 10:15 a.m.

PL Opening Plenary Session, *Texas Ballroom A/B/C*

10:30 – 12:00 noon

Student Career and Professional Development Day continues

Forums continue

Morning-Only Workshop continues

Full-Day Workshops continue

ASI Air Traffic Control, *Republic A*

CEI Human-Robot Interaction, *Lone Star Ballroom D*

FPI Forensic Consulting Firms, *Bowie A*

GS1 President's Forum, *Lone Star Ballroom E*

HCI Health Information Technologies, *Travis A/B*

IE1 Trunk & Low Back, *Seguin*

PD1 Sparking Innovation, *Bowie B*

PPI Vigilance Performance, *Republic B*

SD1 HF Impacting Design, *Travis C/D*

TI Cognitive Factors in Training, *Republic C*

1:30 – 3:00 p.m.

Student Career and Professional Development Day continues

Forums continue

Full-Day Workshops continue

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

WK3 Engineering Resilience, *Republic B*

WK4 Communications Analysis, *Bowie A*

CE2 Cognitive Task Analysis, *Lone Star Ballroom D*

CS1 Collaboration, Trust, & Security, *Seguin*

DEMI Demonstrations Session 1, *Republic A/B*

GS2 Future of HF/E Research, *Lone Star Ballroom E*

HPI 100 Years of Queuing Theory, *Travis A/B*

ME1 Critical Care Technology, *Travis C/D*

POS1 Technical & Lab Posters, *Lone Star Ballroom Corridor*

S1 Human Factors in Weapons Safety, *Bowie A*

ST1 Distraction & Workload, *Bowie B*

TE1 How Would You Test This? *Bowie C*

3:30 – 5:00 p.m.

Student Career and Professional Development Day continues

Forums continue

Full-Day Workshops continue

Afternoon-Only Workshops continue

AC1 Augmented Cognition, *Lone Star Ballroom E*

CE3 Supporting Complex Work, *Lone Star Ballroom D*

FP2 Issues in Forensics, *Bowie A*

HC2 Medical Informatics, *Travis A/B*

IE2 Biomechanical Analysis, *Seguin*

ME2 Construction Safety, *Travis C/D*

PD2 User-Centered Design Award, *Bowie B*

SF2 Stable Career in Unstable Market, *Republic B*

T2 Training Cycle for Trust Training, *Republic C*

VE1 Virtual Reality for Training, *Republic A*

Evening

4:45 – 6:15 p.m.

National Ergonomics Month Session, *Lone Star E*

5:30 – 6:30 p.m.

First-Timers Reception, *Texas Ballroom D*

6:30 – 9:00 p.m.

Gala Opening Reception, *Texas Ballroom D/E/F*

5:00 – 6:00 p.m.

Student Reception, *Texas Ballroom A*

6:00 – 7:00 p.m.

HFES Business Meeting, *Republic B*

Wednesday

A1 Older Worker Retention, *Bowie B*
AS2 Flight Display Design, *Republic B*
CE4 Human-Computer Etiquette, *Lone Star Ballroom D*
CE5 Rasmussen's S-R-K, *Lone Star Ballroom E*
GS3 General Sessions Potpourri I, *Travis C/D*
HC3 Human Factors in Surgery I, *Travis A/B*
ID1 Individual Differences, *Republic A*
ME3 Macroergonomics, *Bowie A*
SD2 Human-Systems Integration, *Republic C*
ST2 Driver Perception, *Seguin*

DEM2 Demonstrations Session 2, *Republic A/B/C*
POS2 Technical Posters, *Lone Star Ballroom Corridor*

CE6 Judgment, Decision Making & Expertise, *Lone Star Ballroom D*
CE7 Automated Aids, *Lone Star Ballroom E*
ED1 Office Environments, *Republic A*
GS4 Arnold Small Lecture in Safety, *Travis C/D*
HP2 Modeling Human Performance, *Republic C*
II Navigation, *Seguin*
PD3 Product Design Tools, *Bowie B*
PP2 Auditory Perception & Performance, *Republic B*
SF3 Student Research in Health Care, *Travis A/B*

3:00 – 6:30 p.m.

Technical Group Business Meetings (see pp. 4–5)

Thursday

A2 Aging Potpourri, *Bowie B*
CE8 Team Performance, *Lone Star Ballroom D*
GS5 Human Reliability, *Bowie C*
HC4 Ambulatory/Outpatient Care, *Travis A/B*
HP3 Synthetic Agents, *Seguin*
ME4 HF in Academic Settings, *Travis C/D*
PP3 Visual Search, *Republic B*
S2 Safety Potpourri, *Bowie A*
SD3 HF Across Business Sectors, *Republic C*
T3 Simulation-Based Training, *Republic A*

AS3 Cognitive Factors in ATC, *Republic A*
C1 Communications From Near & Afar, *Seguin*
CE9 Human-Automation Interaction, *Lone Star Ballroom D*
HC5 User-Created Cognitive Artifacts, *Travis A/B*
ME5 HF in Organizational Complexity, *Travis C/D*
PD4 Deconstructing Product Design, *Bowie B*
S3 Managing Safety, *Bowie A*
SF4 Student Research Potpourri, *Republic B*
ST3 HMI & Road Infrastructure, *Lone Star Ballroom E*

CE10 Analyzing Cognitive Work, *Lone Star Ballroom D*
ED2 Aging & Disability Considerations, *Travis C/D*
FP3 FP Research to Practice, *Bowie A*
GS6 General Sessions Potpourri II, *Bowie C*
HC6 HF in Patient-Centered Care, *Travis A/B*
HP4 Integrative Models, *Seguin*
IE3 Upper Extremities, *Lone Star Ballroom E*
POS3 Technical & Lab Posters, *Lone Star Ballroom Corridor*
PP4 Performing via Interfaces, *Republic B*
TE2 Test & Evaluation Potpourri, *Bowie B*
VE2 Methodologies & Techniques, *Republic A*

AS4 Impact of Displays, *Republic A*
CE11 Human-Automation Interaction, *Lone Star Ballroom D*
E1 Methods, Projects, & Pedagogy, *Bowie C*
ED3 Environmental Design Potpourri, *Travis C/D*
HC7 Human Factors in Surgery – II, *Travis A/B*
I2 Input & Output, *Seguin*
S4 Safety & Risk Communications, *Bowie A*
SD4 HF Requirements, *Republic C*
SF5 Student Research in Physical Ergonomics, *Republic B*
ST4 Warnings & In-Vehicle Systems, *Lone Star Ballroom E*

Friday

CE12 Displays & Controls, *Lone Star Ballroom A*
HC8 Health Care Potpourri, *Seguin*
IE4 Applications of Industrial Ergonomics, *Lone Star Ballroom B*
ME6 Macroergonomics in Education, *Republic A*
PD5 Usability Evaluation Environment, *Bowie B*
PP5 Perception & Performance Potpourri, *Republic B*
SF6 Student Research On Memory & Attention, *Lone Star Ballroom C*
T4 Enhancing Training Effectiveness, *Bowie A*

AS5 System Factors in Aerospace Ops, *Republic B*
CE13 Complex Environments, *Lone Star Ballroom A*
CE14 Cognitive Factors, *Lone Star Ballroom B*
HC9 Interruptions in Health Care, *Seguin*
HP5 Human Performance Modeling Potpourri, *Republic A*
PD6 Improving Product Design, *Bowie B*
S5 Construction & Mining Safety, *Bowie A*

Communications

Seguin (Level Four)
3:30 to 4:30 p.m.

Computer Systems (with Internet)

Seguin (Level Four)
5:30 to 6:30 p.m.

Environmental Design (with Macroergonomics)

Lone Star E (Level Two)
3:15 to 4:30 p.m.

Forensics Professional (with Safety)

Republic A (Level Four)
3:30 to 4:30 p.m.

Health Care

Travis A/B (Level Three)
3:15 to 4:30 p.m.

Human Performance Modeling

Travis A/B (Level Three)
5:30 to 6:30 p.m.

Industrial Ergonomics

Travis C/D (Level Three)
4:00 to 5:30 p.m.

Internet (with Computer Systems)

Seguin (Level Four)
5:30 to 6:30 p.m.

Macroergonomics (with Environmental Design)

Lone Star E (Level Two)
3:15 to 4:30 p.m.

Safety (with Forensics Professional)

Republic A (Level Four)
3:30 to 4:30 p.m.

Surface Transportation

Republic A (Level Four)
5:00 to 6:30 p.m.

Training

Bowie B (Level Two)
3:30 to 4:30 p.m.

Virtual Environments

Bowie A (Level Two)
3:30 to 4:30 p.m.

Thursday, October 22

8:30 to 10:00 a.m.

Technical Sessions

A2 – AGING POTPOURRI

Lecture

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Bowie B (Level Two)

Aging

Chair: Richard Pak, Clemson U.; *Cochair:* Christopher Mayhorn, North Carolina State U.

1. Jessie Chin, Laura D'Andrea, Dan Morrow, and Elizabeth A. L. Stine-Morrow, U. of Illinois at Urbana-Champaign; Thembi Conner-Garcia and James Graumlich, U. of Illinois College of Medicine; Michael Murray, U. of North Carolina, **Cognition and Illness Experience Are Associated With Illness Knowledge Among Older Adults With Hypertension**
2. Carryl L. Baldwin, George Mason U., **Hearing Levels Affect Higher-Order Cognitive Performance**
3. Sara J. Czaja, U. of Miami Miller School of Medicine; Joseph Sharit, U. of Miami; Sankaran N. Nair and Chin Chin Lee, U. of Miami Miller School of Medicine, **Older Adults and Internet Health Information Seeking**
4. Jenay M. Beer, Arthur D. Fisk, and Wendy A. Rogers, Georgia Tech, **Emotion Recognition of Virtual Agents' Facial Expressions: The Effects of Age and Emotion Intensity**
5. Neta Ezer, Arthur D. Fisk, and Wendy A. Rogers, Georgia Tech, **More Than a Servant: Self-Reported Willingness of Younger and Older Adults to Having a Robot Perform Interactive and Critical Tasks in the Home**

CE8 – MEASURING AND SUPPORTING TEAM PERFORMANCE

Lecture

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Lone Star Ballroom D (Level Two)

Cognitive Engineering & Decision Making

Chair: Richard Stone, Iowa State U.; *Cochair:* Jennifer Tsai, U. of Illinois at Urbana-Champaign

1. Heather C. Lum, Valerie K. Sims, Nicholas C. Lagattuta, Michael A. Rosen, and Eduardo Salas, U. of Central Florida, **Eye Movements and Reliance on External Memory Aids Predict Team Success in a Military Planning Task**

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2. R. Dirk Beer, Harvey S. Smallman, and Frank C. Lacson, Pacific Science & Engineering Group, **Cue Validity, Availability, and Strategies: Finding Experts in Networked Teams Using the Team Map Tool**
3. Matthieu Branlat, Ohio State U.; Lisa Fern, NASA Ames Research Center; Martin Voshell, Ohio State U.; Stoney Trent, U.S. Military Academy, **Understanding Coordination Challenges in Urban Firefighting: A Study of Critical Incident Reports**
4. Sandro Scielzo, Laura D. Strater, and Michelle L. Tinsley, SA Technologies, Inc.; Diane M. Ungvarsky, U.S. Army Research Lab; Mica R. Endlsey, SA Technologies, Inc., **Developing a Subjective Shared Situation Awareness Inventory for Teams**
5. Bimal Balakrishnan, U. of Missouri; Mark S. Pfaff, Indiana U. – Indianapolis; Michael D. McNeese and Varun Adibhatla, Pennsylvania State U., **NeoCITIES Geo-Tools: Assessing Impact of Perceptual Anchoring and Spatially Annotated Chat on Geo Collaboration**

GS5 – IS HUMAN RELIABILITY RELEVANT TO HUMAN FACTORS?

Discussion Panel

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Bowie C (Level Two)

General Sessions

Chair: Ronald Laurids Boring, Sandia National Labs;
Cochair: Sherry Chappell, SA Technologies, Inc.
Panelists: Emilie Roth, Roth Cognitive Engineering; Oliver Straeter, U. of Kassel; Karin Laumann, Norwegian Technical and Science U.; Harold S. Blackman, Idaho National Lab; Johanna Oxstrand, Vattenfall Ringhals AB; Julius J. Persensky, U.S. Nuclear Regulatory Commission

HC4 – BEYOND THE HOSPITAL: HUMAN FACTORS AND ERGONOMICS ISSUES IN THE AMBULATORY/OUTPATIENT CARE SETTING

Discussion Panel

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Travis A/B (Level Three)

Health Care

Chair: Carla J. Alvarado, U. of Wisconsin – Madison
Panelists: Ben-Tzion Karsh, U. of Wisconsin – Madison; Meghan M. Dierks, Harvard Medical School; Christopher Nemeth, Klein Associates Division of Applied Research Associates; Robert L. Wears, U. of Florida; Tosha Wetterneck, U. of Wisconsin

HP3 – SYNTHETIC AGENTS AS FULL-FLEDGED TEAMMATES

Discussion Panel

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Seguin (Level Four)

Human Performance Modeling; cosponsored by Cognitive Engineering & Decision Making

Chair: Christopher W. Myers, Cognitive Engineering Research Inst.

Panelists: Wayne Zachary, CHI Systems, Inc.; Nancy J. Cooke, Arizona State U.; Michael Lewis, U. of Pittsburgh; Michael D. McNeese, Pennsylvania State U.; Bradley Best, Adaptive Cognitive Systems, LLC

ME4 – HUMAN FACTORS APPLICATIONS IN ACADEMIC SETTINGS

Discussion Panel

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Travis C/D (Level Three)

Macroergonomics; cosponsored by Education

Chair: Petra Alfred, U.S. Army Research Lab–HRED

Panelists: Carita DeVilbiss, Donald Headley, and Valerie J. Rice, U.S. Army Research Lab–HRED; Conne Bazley, JimConna, Inc.; Karen Jacobs, Boston U.; Nancy Vause, MPMC

PP3 – VISUAL SEARCH

Lecture

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Republic B (Level Four)

Perception & Performance

Chair: Gretchen Anderson, Boeing; *Cochair:* John Morris, Texas Tech U.

1. Douglas J. Gillan, North Carolina State U.; Douglas Sorensen, U. of Idaho, **Minimalism and the Syntax of Graphs: II. Effects of Graph Backgrounds on Visual Search**
2. Kenneth Hailston, Georgia Tech, **The Effects of Multiple-Feature Priming on Identifying and Localizing Visual Targets**
3. Robert Rauschenberger, James Jeng-Weei Lin, Xianjun Sam Zheng, and Chris Lafleur, Siemens Corporate Research, **Subset Search for Icons of Different Spatial Frequencies**
4. Jason S. McCarley, U. of Illinois at Urbana-Champaign, **Response Criterion Placement Modulates the Benefits of Graded Alerting Systems in a Simulated Baggage-Screening Task**

Thursday
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- 5 Evan M. Palmer, Christopher M. Brown, and Carolina F. Bates, Wichita State U.; Philip J. Kellman, U. of California, Los Angeles; Timothy C. Clausner, U. of Maryland, **Perceptual Cues and Imagined Viewpoints Modulate Visual Search in Air Traffic Control Displays**

S2 – SAFETY POTPOURRI: PHYSICAL WORK CAPACITY; AVIATION SAFETY

Lecture

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Bowie A (Level Two)

Safety

Chair: Dennis B. Beringer, Federal Aviation Admin.;

Cochair: William Vigilante, Robson Forensic, Inc.

1. Jia-Hua Lin, Raymond W. McGorry, and Wayne Maynard, Liberty Mutual Research Inst. for Safety, **One-Handed Pull Strength Capacity for the Male Population**
2. Michael A. Rodriguez, InfoPrint Solutions Co., **How Much Can a Person Really Lift? Tailoring Lifting Guidelines for Specific Tasks**
3. Kenneth Nemire, HFE Consulting, **Usage Factors Affecting Backpack Use and Pain Reports in Adolescent Students**
4. Jeffrey B. Phillips, Rita G. Simmons, John P. Florian, Dain S. Horning, Renee A. Lojewski, and Joseph F. Chandler, U.S. Naval Aerospace Medical Research Lab, **Moderate Intermittent Hypoxia: Effect on Two-Choice Reaction Time Followed by a Significant Delay in Recovery**
5. Suzanne K. Kearns, U. of Western Ontario, **e-CRM: The Advantages and Challenges of Computer-Based Pilot Safety Training**

SD3 – HUMAN FACTORS ACROSS BUSINESS SECTORS: SIMILARITIES AND DIFFERENCES

Discussion Panel

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Republic C (Level Four)

System Development

Chair: Rebecca Grier, U.S. Naval Sea Systems Command

Panelists: Gretchen Lizza, U.S. Naval Sea Systems Command; Aaron Bangor, AT&T Labs; Michael J. Patterson

T3 – ADVANCING THE SCIENCE OF TRAINING IN SIMULATION-BASED TRAINING

Invited Symposium

Thursday, October 22, 2009, 8:30 to 10:00 a.m.

Republic A (Level Four)

Training

Chair: Jennifer J. Vogel-Walcutt, U. of Central Florida

1. Denise Nicholson, Stephen M. Fiore, Jennifer J. Vogel-Walcutt, and Sae Schatz, U. of Central Florida, **Advancing the Science of Training in Simulation-Based Training**
2. Jennifer Fowlkes and Joseph W. Norman, CHI Systems, Inc.; Sae Schatz, U. of Central Florida; Kevin C. Stagl, CHI Systems, Inc., **Contrasting Cases: A Strategy for Advanced Learning Using Simulation-Based Training**
3. Jennifer J. Vogel-Walcutt, Stephen M. Fiore, Clint Bowers, and Denise Nicholson, U. of Central Florida, **Embedding Metacognitive Prompts During SBT to Improve Knowledge Acquisition**
4. Sae Schatz, Clint Bowers, and Denise Nicholson, U. of Central Florida, **Advanced Situated Tutors: Design, Philosophy, and a Review of Existing Systems**
5. Glenn A. Martin, Sae Schatz, Clint Bowers, and Charles E. Hughes, U. of Central Florida; Jennifer Fowlkes, CHI Systems, Inc.; Denise Nicholson, U. of Central Florida, **Automatic Scenario Generation Through Procedural Modeling for Scenario-Based Training**
6. Timothy Kotnour, U. of Central Florida; Kay Stanney, Design Interactive; Rafael Landaeta, Old Dominion U.; Laura Milham, Design Interactive; Julie Drexler and Denise Nicholson, U. of Central Florida, **Developing Impact Assessment for Training Systems Research & Development: A Case Study of the Strategic Approach for the NEWIT System**

Thursday
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McNay Art Museum, San Antonio

Thursday, October 22

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

AS3 – COGNITIVE FACTORS IN PILOTS AND AIR TRAFFIC CONTROLLERS

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Republic A (Level Four)
Aerospace Systems

Chair: Roni Prinzo, Federal Aviation Admin.; *Cochair:* Esa Rantanen, Rochester Inst. of Technology

1. Steven J. Landry and Hyo-Sang Yoo, Purdue U., **Modeling Operator Responses to Alerts**
2. Michael W. Sawyer and Scott A. Shappell, Clemson U., **Eye-Tracking Analysis of the Effects of Experience and Training on Pilots' Ability to Identify Adverse Weather Conditions**
3. Kelene Fercho and Douglas Peterson, U. of South Dakota, **The Effects of Geographic Familiarity and Map Complexity on Mental Rotation**
4. Shayne Loft, U. of Western Australia; Rebekah E. Smith, U. of Texas at San Antonio; Adella Bhaskara, U. of Queensland, **Designing Memory Aids to Facilitate Intentions to Deviate From Routine in an Air Traffic Control Simulation**

CI – COMMUNICATIONS FROM NEAR AND AFAR

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Seguin (Level Four)
Communication

Chair: Miranda Capra, HumanCentric Inc.; *Cochair:* Aaron Bangor, AT&T Labs, Inc.

1. Mark S. Pfaff, Indiana U. – Indianapolis, **Emotional Conversations in Command and Control: The Impact of Mood and Stress on Computer-Mediated Team Communication Behaviors**
2. Thomas D. Fincannon, William Evans, Elizabeth Phillips, Florian Jentsch, and Joseph R. Keebler, U. of Central Florida, **The Influence of Team Size and Communication Modality on Team Effectiveness With Unmanned Systems**
3. James P. Beno, San Jose State U., **Effects of Telepresence Light Height and Ambient Light on Glare and Appearance**
4. Joshua B. Hurwitz, Motorola, **The Effect of Mobile Advertising Presentation Parameters on Brand Memory**

5. Sangwon Lee, Pennsylvania State U.; Richard J. Koubek, Louisiana State U., **Communicative NGOMSL: An Extension of NGOMSL to Analyze a Text-Based Communication System**

CE9 – CURRENT CONCEPTS AND TRENDS IN HUMAN-AUTOMATION INTERACTION

Discussion Panel

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Lone Star Ballroom D (Level Two)
Cognitive Engineering & Decision Making

Chair: Ernesto Bustamante, U. of Idaho; *Cochair:* Poornima Madhavan, Old Dominion U.

Panelists: Christopher D. Wickens, Alion Science & Technology MA&D Operations; Raja Parasuraman, George Mason U.; Dietrich Manzey and J. Elin Bahner-Heyne, Berlin Inst. of Technology; Joachim Meyer, Ben Gurion U. of the Negev; James P. Bliss, Old Dominion U.; John D. Lee, U. of Wisconsin – Madison; Stephen Rice, New Mexico State U.

HCS – USER-CREATED COGNITIVE ARTIFACTS: WHAT CAN THEY TEACH US ABOUT DESIGN OF INFORMATION TECHNOLOGY?

Discussion Panel

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Travis A/B (Level Three)
Health Care

Chair: Yan Xiao, U. of Maryland – Baltimore

Panelists: Rolin (Terry) J. Fairbanks, U. of Rochester; Ayse P. Gurses, Johns Hopkins U.; Christopher Nemeth, Klein Associates Division of Applied Research Associates; Emilie Roth, Roth Cognitive Engineering; Robert L. Wears, U. of Florida; Paul Gorman, Oregon Health and Science U.

MES – HUMAN FACTORS IN ORGANIZATIONAL COMPLEXITY

Invited Symposium

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Travis C/D (Level Three)
Macroergonomics

Chair: Hal W. Hendrick, Hendrick & Assoc.

1. Hal W. Hendrick, Hendrick & Assoc., **Human Factors in Organizational Complexity**
2. Hal W. Hendrick, Hendrick & Assoc., **A Socio-technical Systems Model of Organizational Complexity and Design and Its Relation to Employee Cognitive Complexity**

Thursday
Oct. 22

3. Larry Browning, U. of Texas at Austin; G. H. Morris, California State U., San Marcos, **Complexity, Communication, and Design**
4. Hal W. Hendrick, Hendrick & Assoc.; Najmedin Meshkati, U. of Southern California, **A Lesson From Complex Systems' Successes and Failures**
5. Nancy Larson, 3M Corp., **Ergonomics Programs: A Case Study in Complexity**

PD4 – DECONSTRUCTING PRODUCT DESIGN: VARIOUS APPROACHES

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Bowie B (Level Two)

Product Design

Chair: Tonya L. Smith-Jackson, Virginia Tech; *Cochair:* Kristi Bauerly, Apple, Inc.

1. Christopher A. Miller, Peggy Wu, Eric Engstrom, Jeff Rye, and Kimberly Ferguson-Walter, Smart Information Flow Technologies; Debra Schreckenghost, TRAC Labs, Inc., **A Multi-Model Aid for Interface Design (MAID): Helping Designers Reason About Information Match**
2. Stanley Caplan, Usability Associates, **User-Centered Generation of New Product Concepts: A Case Study of Human Factors and Industrial Design Collaboration**
3. Liang Zeng, Robert W. Proctor, and Gavriel Salvendy, Purdue U., **Integrating Creativity in IT Product and Service Development Into Ergonomic Design Practices**
4. Wonsup Lee, Kihyo Jung, Jangwoon Park, Sujin Kim, Sunghye Yoon, Moonsung Kim, and Heecheon You, POSTECH, **Development of a Quantitative and Comprehensive Usability Evaluation System Based on User Needs**

S3 – MANAGING SAFETY: ACCIDENT TRENDS, RELIABILITY, & RESILIENCE

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Bowie A (Level Two)

Safety

Chair: Christopher Mayhorn, North Carolina State U.; *Cochair:* Jay Pollack, Crown Equipment Corp.

1. Katherine A. Berry, Paris F. Stringfellow, and Scott A. Shappell, Clemson U., **Considering Trends Among Industrial Accidents: A Preliminary Meta-Analysis of HFACS Causal Factors Across Industries**
2. Michael Hildebrandt, OECD Halden Reactor Project; Johanna Oxstrand, Ringhals AB; Ronald Laurids Boring, Sandia National Labs, **Living HRA: Building New Communities of Practice for Proactive Safety Management**

3. Ronald Laurids Boring, Sandia National Labs; Johanna Oxstrand, Vattenfall Ringhals AB; Michael Hildebrandt, OECD Halden Reactor Project, **Human Reliability Analysis for Control Room Upgrades**
4. Ronald Laurids Boring, Sandia National Labs, **Reconciling Resilience With Reliability: The Complementary Nature of Resilience Engineering and Human Reliability Analysis**

SF4 – STUDENT RESEARCH POTPOURRI OF DISPLAYS, AGING, AND COGNITION

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Republic B (Level Four)

Student Forum

Chair: Thomas Ferris, U. of Michigan; *Cochair:* Jennifer Cowley, North Carolina State U.

1. Jeremy Mendel and Richard Pak, Clemson U., **The Effect of Interface Consistency and Cognitive Load on User Performance in an Information Search Task**
2. Mary G. Luong and Anne Collins McLaughlin, North Carolina State U., **Bar Graphs and Small Screens: Mitigating Cognitive Load in Mobile Visualizations**
3. Shameem Hameed and Nadine Sarter, U. of Michigan, **Context-Sensitive Information Presentation: Integrating Adaptive and Adaptable Approaches to Display Design**
4. Christopher M. Kelley and Anne Collins McLaughlin, North Carolina State U., **Feedback Requirements for Learning in Younger and Older Adults: The Role of Cognitive Resources and Task Demand**
5. Katherine E. Olson, Arthur D. Fisk, and Wendy A. Rogers, Georgia Tech, **Collaborative Automated Systems: Older Adults' Mental Model Acquisition and Trust in Automation**

ST3 – HMI & ROAD INFRASTRUCTURE/SYSTEM

Lecture

Thursday, October 22, 2009, 10:30 a.m. to 12:00 noon
Lone Star Ballroom E (Level Two)

Surface Transportation

Chair: Susan Chrysler, Texas Transportation Inst.; *Cochair:* Laura Higgins, Texas Transportation Inst.

1. Phillip Tretten, Industrial Design; Carl Jörgen Normark and Anita Gärling, Human Work Sciences, **Where Should Driver Information Be Placed? A Study on Display Layout**
2. Shelby Thompson and Harry Litaker, Lockheed Martin; Robert Howard, NASA, **Determining Window Placement and Configuration for the Small Pressurized Rover (SPR)**

3. David R. Hunter, Artis, LLC; Christopher A. Monk, George Mason U.; Elisa Hurwitz, Artis, LLC, **Effects of a Motion-Coupled Visual Display on Motion Sickness and Task Performance**
4. Kurt Ising, MEA Forensic; Marc Green, Visual Expert, **The Distribution of Visibility Levels at Target Detection in a Modified Adrian/CIE Visibility Model**
5. Jason A. Droll, Tate Kubose, Su-Wei Huang, Doris Trachtman Aharoni, and Douglas Young, Exponent, **An Analysis of Low-Speed Pedestrian Crashes Involving Electric-Powered and Combustion-Powered Vehicles**

Thursday, October 22
1:30 to 3:00 p.m.

CE10 – ANALYZING COGNITIVE WORK: METHODS AND EXAMPLES

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.
 Lone Star Ballroom D (Level Two)
 Cognitive Engineering & Decision Making

Chair: Dapeng Cao, U. of New York, SUNY

1. David Close, Kari Babski-Reeves, Nick Younan, and Noel Schultz, Mississippi State U., **Cognitive Task Analysis of Power Grid Monitors**
2. Jan Maarten Schraagen and Josine van de Ven, TNO Defence; Robert R. Hoffman, Inst. for Human and Machine Cognition; Brian M. Moon, Perigean Technologies, Inc., **Using a Knowledge Elicitation Method to Specify the Business Model of a Human Factors Organization**
3. Catherine M. Burns, U. of Waterloo; Gerard Torenvliet, Esterline/CMC Electronics; Bruce Chalmers, Defence Research & Development Canada – Atlantic; Stacey D. Scott, U. of Waterloo, **Work Domain Analysis for Establishing Collaborative Work Requirements**
4. Neesha Kodagoda, B. L. William Wong, and Nawaz Khan, Middlesex U., **Cognitive Task Analysis of Low and High Literacy Users: Experiences in Using Grounded Theory and Emergent Themes Analysis**
5. Robert R. Hoffman and Morris Marx, Inst. for Human and Machine Cognition; Patricia L. McDermott, Alion Science & Technology: MA&D Operations; Raid Amin, U. of West Florida, **The Metrics Problem in the Study of Cognitive Work and a Proposal for a Family of Solutions**

ED2 – ENVIRONMENTAL DESIGN: AGING & DISABILITY CONSIDERATIONS

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.
 Travis C/D (Level Three)
 Environmental Design

Chair: Paul Allie, Koala LLC; *Cochair:* Alan Hedge, Cornell U.

1. Alison G. Vredenburg and Ilene B. Zackowitz, Vredenburg and Associates, Inc., **Evaluating Common Approaches Used to Accommodate People With Disabilities Residing in Existing Multi-Family Housing**
2. Lubomir Popov, Bowling Green State U., **A Conceptual Framework for Guiding Data Collection in Facilities Programming**
3. Abir Mullick, Rachna Khare, Sarah A. Endicott, and Marisa Topping, Georgia Tech, **Designing Inclusive Educational Spaces With Reference to Autism**
4. Cara Bailey Fausset, Georgia Tech; Andrew K. Mayer, U. of Calgary; Wendy A. Rogers and Arthur D. Fisk, Georgia Tech, **Understanding Aging in Place for Older Adults: A Needs Analysis**

FP3 – APPLICATIONS OF EMPIRICAL RESEARCH TO FORENSICS PRACTICE

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.
 Bowie A (Level Two)
 Forensics Professional

Chair: Tonya L. Smith-Jackson, Virginia Tech

1. Jason A. Young and Gabriel Reina, Giffin Koerth Forensic Engineering, **Visibility of Tractor Trailer Reflective Strips at Small Viewing Angles in Collision Reconstruction**
2. Daniel A. Johnson, Daniel A. Johnson, Inc., **Improper Construction Results in Dangerous Stairs: Large Top Runs Produce Fall Hazard**
3. Joseph Cohen & H. Harvey Cohen, Error Analysis, Inc., **“Spontaneous Combustion” of Oil-Based Wood-Finishing Products: Hidden or Obvious Hazard?**

Thursday
 Oct. 22

GS6 – GENERAL SESSIONS POTPOURRI II

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Bowie C (Level Two)

General Sessions

Chair: Erik Connors, SA Technologies, Inc.; *Cochair:*

Linda Ellis, SA Technologies, Inc.

1. Karen N. Cooper and Naira H. Campbell-Kyureghyan, U. of Louisville; Carolyn M. Sommerich, Ohio State U., **Comparative Study of Computer Usage Patterns and Prevalence of Musculoskeletal Symptoms Among College Students**
2. Hyeg-Joo Choi, Oak Ridge Inst. for Science and Education; Gregory F. Zehner, Wright-Patterson Air Force Base; Jeffrey A. Hudson, InfoSciTex; Scott M. Fleming, Wright-Patterson Air Force Base, **Trends in Anthropometric Measures in U.S. Air Force Aircrew Survey Data**
3. Meike Jipp, Christian Bartolein, and Essameddin Badreddin, U. of Heidelberg, **Quantitative Comparison of a Joystick and a Two-Switch Control Mode When Steering a Wheelchair Through a Realistic Environment**
4. Kageyu Noro, Waseda U.; Takayuki Sasaki and Daisuke Kaku, Asahi Glass Co., Ltd., **Mattress Development Through a Participatory Ergonomics Approach**

HC6 – ROLE OF HUMAN FACTORS IN PATIENT-CENTERED CARE

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Travis A/B (Level Three)

Health Care

Chair: Sandra Garrett, Clemson U.

1. Molly Follette Story, Human Spectrum Design, LLC; Adam C. Luce, Boston U.; David M. Rempel, U. of California, Berkeley, **Accessibility and Usability of Diabetes Management Devices for Users With Vision Disabilities**
2. Kirsten A. Peters, Thomas F. Green, and Robert M. Schumacher, User Centric, Inc., **Improving the User Interface and Adoption of Online Personal Health Records**
3. Stephen E. Douglas and Barrett S. Caldwell, Purdue U., **Improving Communication of Health Status Information**
4. Jackie Binnersley, Andree Woodcock, and Louise Wallace, Coventry U.; Panayiotis Kyriacou, City U., **Establishing User Requirements for a Patient-Held Electronic Record System in the United Kingdom**

5. Tracy L. Mitzner, Jenay M. Beer, Sara E. McBride, Wendy A. Rogers, and Arthur D. Fisk, Georgia Tech, **Older Adults' Needs for Home Health Care and the Potential for Human Factors Interventions**

HP4 – TOWARD INTEGRATIVE MODELS OF COGNITIVE, MOTOR, AND VISUAL PERFORMANCE

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Seguin (Level Four)

Human Performance Modeling

Chair: Erin Alves, Raytheon Integrated Defense Systems; *Cochair:* Steven Landry, Purdue U.

1. Bonnie E. John, Carnegie Mellon U.; Marilyn Hughes Blackmon, Peter G. Polson, and Karl Fennell, U. of Colorado; Leonghwee Teo, Carnegie Mellon U., **Rapid Theory Prototyping: An Example of an Aviation Task**
2. Dario D. Salvucci, Drexel U.; Christopher A. Monk, George Mason U.; J. Gregory Trafton, U.S. Naval Research Lab, **A Process-Model Account of Task Interruption and Resumption: When Does Encoding of the Problem State Occur?**
3. Ron Stevens and Trysha Galloway, U. of California, Los Angeles; Chris Berka, Advanced Brain Monitoring, Inc.; Marcia Sprang, Esperanza High School, **Neurophysiologic Collaboration Patterns During Team Problem Solving**
4. Satoru Tokuda, Evan M. Palmer, Edgar Merkle, and Alex Chaparro, Wichita State U., **Using Saccadic Intrusions to Quantify Mental Workload**
5. Elizabeth K. Bowman and Jeffrey A. Smith, U.S. Army Research Lab, **An Analysis Capability for System of Systems Research**

IE3 – UPPER EXTREMITIES

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom E (Level Two)

Industrial Ergonomics

Chair: Kermit Davis, U. of Cincinnati; *Cochair:* Riley Splittstoesser, Ohio State U.

1. Vincent M. Ciriello, Rammohan V. Maikala, Patrick G. Dempsey, and Niall V. O'Brien, Liberty Mutual Research Inst. for Safety, **Cart-Pushing Capabilities for Males and Females: An Update**
2. Kyle A. Saginus, Richard W. Marklin, and Philip A. Voglewede, Marquette U., **Dynamic Modeling of Hand Push Force to Close a Disconnect Switch at Switching Stations and Substations**

3. Christopher Blackledge, Daniel Carruth, Kari Babski-Reeves, and David Close, Mississippi State U.; Marianne Wilhelm, Lawrence Technological U., **Effects of Body Armor Design on Upper-Body Range of Motion**
4. David Close, Kari Babski-Reeves, Daniel Carruth, and Christopher Blackledge, Mississippi State U.; Marianne Wilhelm, Lawrence Technological U., **Assessment of Body Armor Design Impacts on User Perceptions**
5. David L. Lee, U. of California, San Francisco; Jack T. Dennerlein, Harvard U.; Nancy A. Baker, U. of Pittsburgh, **Interrater Reliability of the Mouse-Personal Computer Style Instrument (M-PeCS)**

POS3 – POSTERS 3

Poster Session

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Lone Star Ballroom Corridor (Level Two)

Chair: Jessica M. Ray, U. of Central Florida; *Cochair:* Robin A. N. Littlejohn, Mississippi State U.

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

Human-Robot Interaction

1. Matthew S. Prewett, Kristin N. Saboe, Ryan C. Johnson, and Michael D. Covert, U. of South Florida; Linda R. Elliott, U.S. Army Research Lab, **Workload in Human-Robot Interaction: A Review of Manipulations and Outcomes**
2. Ryan C. Johnson, Kristin N. Saboe, Matthew S. Prewett, and Michael D. Covert, U. of South Florida; Linda R. Elliott, U.S. Army Research Lab, **Autonomy and Automation Reliability in Human-Robot Interaction: A Qualitative Review**
3. Julian Sanchez, MITRE Corp., **Conceptual Model of Human-Automation Interaction**
4. Deborah R. Billings, U. of Central Florida; Paula J. Durlach, U.S. Army Research Inst., **Mission Completion Time Is Sensitive to Teleoperation Performance During Simulated Reconnaissance Missions With a Micro-Unmanned Aerial Vehicle**
5. Rosemarie Yagoda, North Carolina State U.; Michael D. Covert, U. of South Florida, **Modeling Human-Robot Interaction With Petri-Nets**
6. Valerie K. Sims, Matthew G. Chin, and Heather C. Lum, U. of Central Florida; Linda Upham Ellis, SA Technologies, Inc.; Tatiana Ballion and Nicholas C. Lagattuta, U. of Central Florida, **Robots' Auditory Cues Are Subject to Anthropomorphism**

7. Anne M. Sinatra, Matthew G. Chin, Valerie K. Sims, Heather C. Lum, Nicholas C. Lagattuta, Mark Spitzer, Catherine Mobley, and Matthew Marraffino, U. of Central Florida, **Free-Form Verbal Communication Toward Robotic Entities Versus Live Entities**
8. Scott Osofsky, A. William Evans III, and Florian Jentsch, U. of Central Florida, **From the Lab to the Field: Observations From Unmanned System Field Research and Comparisons to Laboratory Counterparts**
9. Richard T. Stone, Iowa State U.; Ann M. Bisantz, James Llinas, and Victor Paquet, U. at Buffalo, SUNY, **Improving Telerobotic Navigation Through Augmented Reality Devices**
10. Lindsay O. Long, Joshua A. Gomer, Kristin S. Moore, and Christopher C. Pagano, Clemson U., **Investigating the Relationship Between Visual Spatial Abilities and Robot Operation During Direct Line of Sight and Teleoperation**
11. Harry Litaker and Shelby Thompson, Lockheed Martin; Robert Howard, NASA, **A Comparison of the Unpressurized Rover and Small Pressurized Rover During a Desert Field Evaluation**

Human-Computer Interaction

12. Peiyi Ko, David Li, Pia Hoenig, Ian Bailey, and David M. Rempel, U. of California, Berkeley, **Effect of Computer Monitor Distance on Visual Symptoms and Changes in Accommodation and Binocular Vision**
13. Chris Powell, S. Camille Peres, Vickie Nguyen, Kate E. Bruton, and Lindsey Muse, U. of Houston – Clear Lake, **Using the Keyboard to Issue Commands: The Relation of Observing Others Using Efficient Techniques on the Weightings of the Costs and Benefits**
14. Rochelle E. Evans and Philip Kortum, Rice U., **Voice Personalities Inducing Trust and Satisfaction in a Medical Interactive Voice Response System**
15. Andy Su and Philip Kortum, Rice U., **Ethnographic Study of On-Hold Caller Multitasking Behavior**
16. Muhammet S. Gulum and Susan L. Murray, Missouri U. of Science & Technology, **Evaluation of the Effectiveness of a Mass Emergency Notification System**

University Lab Posters

Auburn U.

Biomechanics Lab and Human Factors Lab

Arizona State U.

Human Factors Labs

California State U., Long Beach

Center for the Study of Advanced Aeronautic Technologies

Center for Usability in Design and Accessibility

Thursday
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Central Michigan U.
Engineering Psychophysiology Lab and Driving
Evaluation Education Research Center

Clemson U.
Psychology Labs

George Mason U.
Human Factors and Ergonomics Lab

Massachusetts Inst. of Technology
Humans and Automation Lab

Mississippi State U.
Human Systems Engineering Lab

Missouri Western State U.
Psychology of Design Lab

North Carolina State U.
Industrial and Systems Engineering Ergonomics
Lab

Ohio U.
Human Factors and Ergonomics Lab

Old Dominion U.
Applied Sensory Psychology Lab

Pennsylvania State U.
Ben Neibel Work Design Lab

Rochester Inst. of Technology
Multidisciplinary Vision Research Lab, Lab for
Computer-Human Interaction and Performance
Support, and Human Performance Lab

U. of Central Florida
Team Performance Lab

U. of Michigan
Center for Ergonomics

U. of Virginia
Human-Automation Interaction Lab, Human
Performance Modeling Lab, and Tactile
Modeling and Simulation Lab

PP4 – PERCEIVING AND PERFORMING VIA INTERFACES

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Republic B (Level Four)

Perception & Performance

Chair: Harvey S. Smallman, Pacific Science & Engineering Group; *Cochair:* Allyson Hall, Texas Tech U.

1. T. Robert Turner and Mark W. Scerbo, Old Dominion U.; Dwight Meglan and Robert Waddington, SimQuest, LLC, **Evaluating Visual and Haptic Feedback on a Virtual Reality Simulator for Orthopedic Bone Pinning**
2. Brittany L. Anderson, Mark W. Scerbo, and Lee A. Belfore, Old Dominion U.; Alfred Z. Abuhamad, Eastern Virginia Medical School, **Detecting Critical Patterns in Maternal-Fetal Heart Rate Tracings Over Time**
3. Douglas J. Gillan, North Carolina State U., **Judging the Lengths of Curved Lines**
4. Morgan J. Tear, William J. Harrison, Matthew B. Thompson, and Penelope M. Sanderson, U. of

Queensland, **Head-Mounted Displays and Multisensory Integration: Replications and Challenges**

5. Alexander M. Morison, David D. Woods, and James W. Davis, Ohio State U., **How Panoramic Visualization Can Support Human Supervision of Intelligent Surveillance**

TE2 – TEST & EVALUATION POTPOURRI

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Bowie B (Level Two)

Test & Evaluation

Chair: James Pharmed, NAVAIR; *Cochair:* Christopher Arbak, Boeing Co.

1. Alvah C. Bittner, Bittner & Associates; Rachel C. L. Bittner, Seattle Children's Research Inst., **"Right-Sizing" Research Studies: Assuring Adequate, Not Grossly Overlarge Sample Sizes**
2. Pamela A. Savage-Knepshield, U.S. Army Research Lab-HRED, **Usability Testing: Making It Work for the Army**
3. Sam O. Nagashima, Gregory K. W. K. Chung, and Paul D. Espinosa, CRESST/U. of California, Los Angeles; Chris Berka, Advanced Brain Monitoring, Inc., **Validity Evidence for a Model of Rifle Marksmanship Skill Performance Using Sensor-Based Measures**
4. Yoon Suk Lee, Tonya L. Smith-Jackson, and Maury A. Nussbaum, Virginia Tech, **Multidimensional Training System Evaluation Using the Revised Bloom's Taxonomy**
5. Jennifer A. Cowley and Heather Youngblood, North Carolina State U., **Subjective Response Differences Between Visual Analogue, Ordinal, and Hybrid Response Scales**

VE2 – METHODOLOGIES AND INTERACTION TECHNIQUES IN VIRTUAL REALITY

Lecture

Thursday, October 22, 2009, 1:30 to 3:00 p.m.

Republic A (Level Four)

Virtual Environments

1. E. Jacob Seagull, Peter Miller, and Ivan George, U. of Maryland; Paul Mlyniec, Digital ArtForms; Adrian Park, U. of Maryland, **Interacting in 3-D Space: Comparison of a 3-D Two-Handed Interface to a Keyboard-and-Mouse Interface for Medical 3-D Image Manipulation**
2. Roger J. Chapman, Collaborative Work Systems, Inc.; Dawn L. Riddle, Organizational Systems Design, Inc.; James L. Merlo, U.S. Military Academy, **Techniques for Supporting the Author of Outdoor Mobile Multimodal Augmented Reality**

3. Grant Taylor, U. of Central Florida; Michael J. Singer, U.S. Army Research Inst. for the Behavioral & Social Sciences; Christian J. Jerome, Strategic Analysts, Inc., **Development and Evaluation of the Game-Based Performance Assessment Battery (GamePAB) and Game Experience Measure (GEM)**
4. Shelley Roberts, CAE PS Canada Inc.; Avi Parush, Carleton U., **Roles of Landmark Size and Location in Wayfinding and Spatial Cognition in Virtual Environments**
5. Magnus Axholt and Stephen D. Peterson, Linköping U.; Stephen R. Ellis, NASA Ames Research Center, **Visual Alignment Accuracy in Head-Mounted Optical See-Through AR Displays: Distribution of Head Orientation Noise**

Thursday, October 22
3:30 to 5:00 p.m.

AS4 – IMPACT OF DISPLAYS ON PERFORMANCE IN DIVERSE AEROSPACE DOMAINS

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.
 Republic A (Level Four)
 Aerospace Systems

Chair: Dennis B. Beringer, Federal Aviation Admin.;

Cochair: John Ruffner, Serco, Inc.

1. Kevin M. Long and Kathleen A. McGarry, MITRE/CAASD, **Why Are Those Lights Flashing? Direct-to-Pilot Warnings for Preventing Runway Incursions**
2. Sean L. Guarino, Charles River Analytics, Inc.; Dahai Liu, Embry-Riddle Aeronautical U.; Emilie Roth, Roth Cognitive Engineering; Karen Harper, Charles River Analytics, Inc.; Dennis Vincenzi, U.S. Naval Air Warfare Center Training Systems Division, **Adaptive Boundary Aids in Complex Air Combat Scenarios**
3. Yaniv Minkov and Tal Oron-Gilad, Ben-Gurion U. of the Negev, **Display Type Effects in Military Operational Tasks Using UAV Video Images**
4. G. Robert Arrabito, Geoffrey Ho, Heidi Au, Jocelyn M. Keillor, Mark Rutley, Annie Lambert, and Ming Hou, Defence Research & Development Canada – Toronto, **Proposed Techniques for Extending Ecological Interface Design to Tactile Displays: Using Tactile Cues to Enhance UAV Interface Design**

5. Keshav Chintamani, Alex Cao, R. Darin Ellis, Chin-An Tan, and Abhilash K. Pandya, Wayne State U., **Systematic Teleoperation With Augmented Reality Path Planned Navigation Cues in Cluttered Environments**

CEI I – DESIGNING FOR HUMAN-AUTOMATION INTERACTION

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.
 Lone Star Ballroom D (Level Two)
 Cognitive Engineering & Decision Making

Chair: Erik Connors, SA Technologies, Inc.

1. Dietrich Manzey, Juliane Reichenbach, and Linda Onnasch, Berlin U. of Technology, **Human Performance Consequences of Automated Decision Aids in States of Fatigue**
2. Rachel R. Phillips and Poornima Madhavan, Old Dominion U., **Effects of Secondary Task Processing Code on Human-Automation Interaction in a Cross-Modal Experimental Paradigm**
3. Randall D. Spain and Poornima Madhavan, Old Dominion U., **The Role of Automation Etiquette and Pedigree in Trust and Dependence**
4. Randall D. Spain and James P. Bliss, Old Dominion U., **The Effects of Automation Expertise and System Confidence on Trust Behaviors**
5. Rylan M. Clark, Gordon G. Peyton, and Ernesto A. Bustamante, U. of Idaho, **Differential Effects of Likelihood Alarm Technology and False Alarm Versus Miss-Prone Automation on Decision Making**

EI – METHODS, PROJECTS, AND PEDAGOGY IN HUMAN FACTORS EDUCATION

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.
 Bowie C (Level Two)

Education

Chair: Nancy Stone, Missouri U. of Science and Technology; *Cochair:* Rebecca Boren, Arizona State U.

1. Matthew Marshall, Elizabeth DeBartolo, and Daniel Phillips, Rochester Inst. of Technology, **Incorporating Human Factors Into a Capstone Senior Design Program to Benefit Individuals With Disabilities**
2. Brian E. Tidball, Randall W. Gibb, Terence S. Andre, and Chad C. Tossell, U.S. Air Force Academy, **Undergraduate Human Factors Curriculum at the United States Air Force Academy**
3. Jonathan M. Histon and Stacey D. Scott, U. of Waterloo, **Expert Panels as a Means of Engaging Students in the Applications of Human Factors**

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4. Steven L. Johnson, U. of Arkansas, **Managing Ergonomic Course Projects in Operational Facilities So That Everyone Benefits**
5. Thomas J. Smith, U. of Minnesota, **Usability Analysis of Learning Environments – Needs and Realities**

ED3 – ENVIRONMENTAL DESIGN POTPOURRI

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Travis C/D (Level Three)

Environmental Design

Chair: Claudia Mont'Alvão, PUC – Rio; *Cochair:* Karen Jacobs, Boston U.

1. Scott Haynes, Carrie Bruce, and Jon Sanford, Georgia Tech, **Model Integrating Assistive Technology Use and Human Performance for People With Disabilities**
2. Justin B. Rousek, Sonja Koneczny, and M. Susan Hallbeck, U. of Nebraska – Lincoln, **Simulated Visual Impairment to Detect Hospital Way-finding Difficulties**
3. Alan Hedge, Cornell U.; H. Ezzat Khalifa and J. Zhang, Syracuse U., **On the Control of Environmental Conditions Using Personal Ventilation Systems**
4. Kyeong-Ah Jeong, Robert W. Proctor, and Gavriel Salvendy, Purdue U., **A Survey of Smart Home Interface Preferences for U.S. and Korean Users**

HC7 – HUMAN FACTORS IN SURGERY – II

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Travis A/B (Level Three)

Health Care

Chair: Michelle L. Rogers, Drexel U.

1. Gyusung Lee, U. of Maryland; Yassar Youssef, Sinai Hospital of Baltimore; C. Melody Carswell and Cindy Hui-Lio, U. of Kentucky; Ivan George and Adrian Park, U. of Maryland, **Ergonomic Safety of Surgical Techniques and Standing Positions Associated with Laparoscopic Cholecystectomy**
2. Avi Parush, Carleton U.; Kathryn Momtahan, Ottawa Hospital; Tara Foster-Hunt, Chelsea Kramer, and Aren Hunter, Carleton U.; Howard Nathan, U. of Ottawa Heart Inst., **A Communication Analysis Methodology for Developing a Cardiac Operating Room Team-Oriented Display**

3. D. Liu and Penelope M. Sanderson, U. of Queensland; S. A. Jenkins, Royal Adelaide Hospital; M. O. Watson, U. of Queensland; W. J. Russell, Royal Adelaide Hospital, **Patient Monitoring in Anesthesia With a Head-Mounted Display: Simulator Studies and a Clinical Trial**
4. Mi Zhou and Caroline G. L. Cao, Tufts U., **Vibrotactile Feedback Improves Laparoscopic Palpation Skills**

I2 – INPUT AND OUTPUT

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Seguin (Level Four)

Internet; cosponsored by Computer Systems

Chair: Richard Henneman, Internet Security Systems; *Cochair:* Wayne Shebilske, Wright State U.

1. Robert Pastel, Michigan Technological U., **Investigating the Difficulty of One Degree of Freedom Positioning: Associating Movement Phases With Regions**
2. Curtis M. Humphrey and Julie A. Adams, Vanderbilt U., **General Visualization Abstraction Algorithm for Geographic Map-Based Directable Interfaces**
3. Jo Rain Jardina, S. Camille Peres, Vickie Nguyen, Ashitra Megasari, Katherine R. Griggs, Rosalinda Pinales, and April N. Amos, U. of Houston – Clear Lake, **Keyboard Shortcut Users: They Are Faster at More Than Just Typing**
4. Deborah C. Russell and Rex Bryan, Dell, Inc., **To Touch or Not to Touch: A Brief Guide for Designing or Selecting Touch Screen Computers and Touch Software for Consumer Use**
5. Wayne Shebilske, Ganesh Alakke, and Shruti Narakesari, Wright State U., **University Students Using a Screen Reader for Education Tasks**

S4 – SAFETY & RISK COMMUNICATIONS

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Bowie A (Level Two)

Safety

Chair: Michael J. Kalsher, Rensselaer Polytechnic Inst.; *Cochair:* Alison Vredenburgh, Vredenburgh & Associates, Inc.

1. Eric J. Boelhouwer, Adam K. Piper, and Jerry Davis, Auburn U., **The Use of Hazard and Precautionary Symbols on GHS Safety Data Sheets**
2. Daniel J. Shorr, Kyoto U.; Neta Ezer, Arthur D. Fisk, and Wendy A. Rogers, Georgia Tech, **Comprehension of Warning Symbols by Younger and Older Adults: Effects of Visual Degradation**

3. Richard C. Goldsworthy, Academic Edge, Inc.; Christopher B. Mayhorn, North Carolina State U., **On Warning Symbols, Text, and “Getting It Right”**: The Iterative Refinement of a Teratogenic Pharmaceutical Label
4. Christopher B. Mayhorn, North Carolina State U.; Richard C. Goldsworthy, Academic Edge, Inc., **Borrowing Prescription Medication: Implications for Health Care Warnings and Communications**
5. Soyun Kim and Michael S. Wogalter, North Carolina State U., **Habituation, Dishabituation, and Recovery Effects in Visual Warnings**

SD4 – HUMAN FACTORS REQUIREMENTS: BEING INVOLVED IN THE FIRST STAGE OF SYSTEM DEVELOPMENT

Discussion Panel

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Republic C (Level Four)

System Development

Chair: Rebecca Grier, U.S. Naval Sea Systems Command

Panelists: Gretchen Lizza, U.S. Navy; Michael

Linegang, Federal Aviation Admin.; Philip Kortum,

Rice U.

SF5 – STUDENT RESEARCH IN PHYSICAL ERGONOMICS

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Republic B (Level Four)

Student Forum; cosponsored by Industrial Ergonomics

Chair: Elizabet Haro, Virginia Tech; *Cochair*: Matthew Miller, Clemson U.

1. Ranjana Mehta, Sarrah Harrop, and Michael J. Agnew, Virginia Tech, **Effects of Physical and Mental Demands on Muscle Activity of the Upper Extremity**
2. Heon-Jeong Kim and Bernard J. Martin, U. of Michigan, **Effects of Posture and Movement on Vibration Transmissibility Affecting Human Reach Performance Under Vehicle Vibration**
3. Courtney Ann Haynes and Thurmon E. Lockhart, Virginia Tech, **Effects of Exercise Training on Slip Severity in Adults with Mental Retardation**
4. Xiaoyue Zhang and Thurmon E. Lockhart, Virginia Tech, **A Reliability Study of Three Functional Mobility Assessment Tools in Fall Risk Evaluation**

5. Prakriti Parijat, Courtney Ann Haynes, and Thurmon E. Lockhart, Virginia Tech; Jon Antin, Virginia Tech Transportation Inst., **Investigation of Biomechanical Characteristics of Older Adults: Effects of Gender and Driving Status**

ST4 – WARNINGS & ADVANCED IN-VEHICLE SYSTEMS

Lecture

Thursday, October 22, 2009, 3:30 to 5:00 p.m.

Lone Star Ballroom E (Level Two)

Surface Transportation

Chair: John D. Lee, U. of Wisconsin – Madison;

Cochair: Jay Pollack, Crown Equipment Corp.

1. Justin F. Morgan, Virginia Tech Transportation Inst.; Peter A. Hancock and Timothy J. Smoker, U. of Central Florida, **Cueing to Impending Increases in Driving Task Demand**
2. Muneo Kitajima and Motoyuki Akamatsu, National Inst. of Advanced Industrial Science and Technology; Yasunori Maruyama, Kouichi Kuroda, Kazuhiko Katou, and Satoshi Kitazaki, Nissan Motor Co., Ltd.; Yosuke Minowa, Kazuyoshi Inagaki, and Tadahiko Kajikawa, U’eyes Design, Inc., **Information for Helping Drivers Achieve Safe and Enjoyable Driving: An On-Road Observational Study**
3. David Alexander Dickie and Linda Ng Boyle, U. of Iowa, **Drivers’ Understanding of Adaptive Cruise Control Limitations**
4. Scott McIntyre, Clemson U., **Capturing Attention to Brake Lamps in a Single Fixation**
5. Nicola Fricke, Transportation Active Safety Inst.; Manfred Thuring, TU Berlin, **Complementary Audiovisual Collision Warnings**

**Friday, October 23
8:30 to 10:00 a.m.**

CE12 – DISPLAYS AND CONTROLS FOR ROBOTS, NAVIGATION, AND PROCESS CONTROL

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Lone Star Ballroom A (Level Two)

Cognitive Engineering & Decision Making

Chair: Laura Millitello, U. of Dayton Research Inst.;

Cochair: Priyadarshini Pennathur, U. at Buffalo, SUNY

1. Felix Portnoy and Poornima Madhavan, Old Dominion U., **Using Persistence Display to Increase Change Detection in Process Control Graphical Gauges**

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2. Daniel N. Cassenti, Troy D. Kelley, Jennifer C. Swoboda, and Debra J. Patton, U.S. Army Research Lab, **The Effects of Communication Style on Robot Navigation Performance**
3. Huadong Wang, Michael Lewis, and Shih-Hsiang Chien, U. of Pittsburgh; Prasanna Velagapudi, Carnegie Mellon U., **Scaling Effects for Synchronous Versus Asynchronous Video in Multirobot Search**
4. Douglas J. Gillan, North Carolina State U., **Effects of Depth Cues on Perceived Height: The General Form of Emmert's Law**
5. Will Rodes, Leo Gugerty, Johnell Brooks, and Claudio Cantalupo, Clemson U., **The Effects of Electronic Map Displays and Spatial Ability on Performance of Navigational Tasks**

HC8 – HEALTH CARE POTPOURRI

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Seguin (Level Four)

Health Care

Chair: Enid Montague, U. of Wisconsin – Madison

1. Patricia R. DeLucia and Tammy E. Ott, Texas Tech U.; Patrick A. Palmieri, Duke U., **Interruptions and Cognitive Processes in Nursing: Review, Analysis, Recommendations**
2. Michael J. Vredenburg, Carlsbad High School, **Public Health: An Epidemiological Study to Explore the Relationship Between Literacy, Language, Aging, and Familiarity on Comprehension of Health Information**
3. Monifa Vaughn-Cooke, Pennsylvania State U., **Development of an Integrated Model for Predicting Patient Compliance**
4. Heidi S. Kramer, Laverne A. Snow, Frank Drews, and Matthew Samore, U. of Utah, **Structuring the Puzzle: Protocol Use in Disease Outbreak Investigations**
5. T. Grundgeiger and Penelope M. Sanderson, U. of Queensland; H. G. MacDougall, U. of Sydney; B. Venkatesh, Princess Alexandra and Wesley Hospital, **Distributed Prospective Memory: An Approach to Understanding How Nurses Remember Tasks**

IE4 – APPLICATIONS OF INDUSTRIAL ERGONOMICS

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Lone Star Ballroom B (Level Two)

Industrial Ergonomics

Chair: M. Susan Hallbeck, U. of Nebraska – Lincoln;

Cochair: Richard Marklin, Marquette U.

1. Caroline Joseph, U. at Buffalo, SUNY; Daniel Imbeau, École Polytechnique de Montréal; Iuliana Nastasia, Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST), **Impact of Externally and Internally Driven Modifications to a Workstation: A Case Study in the Fish-Processing Industry**
2. Di Liu, Carolyn M. Sommerich, Elizabeth B.-N. Sanders, and Steven A. Lavender, Ohio State U., **Application of a Participatory Methodology for Investigating Personal Fall Arrest System (PFAS) Usage in the Construction Industry**
3. Stephen Freier, Richard W. Marklin, and Paula Papanek, Marquette U., **Effect of Inverted V-Shaped Backrest of an Office Chair on Ventilatory and Cardiovascular Efficiency**
4. David R. Burnett, Sai V. Yalla, and Naira H. Campbell-Kyureghyan, U. of Louisville, **Do Stabilizing Forearm Braces Affect Elbow and Spine Posture During Wheelbarrow-Pushing Tasks?**
5. Thomas J. Armstrong, J. Young, Charles B. Woolley, J. Ashton-Miller, and H. Kim, U. of Michigan, **Biomechanical Aspects of Fixed Ladder Climbing: Style, Ladder Tilt, and Carrying**

ME6 – MACROERGONOMICS IN EDUCATION: ON YOUR MARK, SET, GO!

Discussion Panel

Friday, October 23, 2009 8:30 to 10:00 a.m.

Republic A (Level Four)

Macroergonomics

Chair: Jeffery Watson, U. of Wisconsin – Madison

Panelists: Thomas J. Smith, U. of Minnesota; Sara Kraemer, and Richard Halverson, U. of Wisconsin – Madison; Andrée Woodcock, Coventry School of Art and Design

PD5 – PRACTICAL TIPS FOR DESIGNING A USABILITY EVALUATION ENVIRONMENT: WHAT EQUIPMENT AND SOFTWARE DO YOU REALLY NEED?

Discussion Panel

Friday, October 23, 2009 8:30 to 10:00 a.m.

Bowie B (Level Two)

Product Design

Chair: Daniel W. Mauney, HumanCentric; *Cochair:* Joy Rivera, U. of Wisconsin – Madison

Panelists: Miranda Capra, HumanCentric; Terence S. Andre, TiER 1 Performance Solutions; Jeff Brandt, AT&T Labs; Ian Collingwood, Amberlight Partners Ltd; Joy Kempic, Whirlpool Corp.

PP5 – PERCEPTION AND PERFORMANCE POTPOURRI

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Republic B (Level Four)

Perception & Performance

Chair: Anand Tharanathan, Honeywell ACS Labs;

Cochair: Jane Barrow, George Mason U.

1. Christopher A. Monk and Erik T. Nelson, George Mason U., **Undershoot Bias in Lead-Vehicle Motion Extrapolation**
2. Jibo He, Ensar Becic, Yi-Ching Lee, and Jason S. McCarley, U. of Illinois at Urbana-Champaign, **Identifying Mind-Wandering Behind the Wheel**
3. J. Christopher Brill, Michigan Technological U.; Mustapha Mouloua, U. of Central Florida; Samantha D. Hendricks, Michigan Technological U., **Compensatory Strategies for Managing the Workload Demands of a Multimodal Reserve Capacity Task**
4. Bin Zheng, U. of British Columbia; Christine L. MacKenzie, Simon Fraser U., **A Comparison of Human Performance in Grasping Virtual Objects by Hand and With Tools of Different Length Ratios**
5. Shaheen Ahmed and Kari Babski-Reeves, Mississippi State U., **Analysis of Subjective Body Discomfort Ratings During Simulated Prolonged Driving Tasks: What Measures Are Most Effective?**

SF6 – STUDENT RESEARCH ON MEMORY AND ATTENTION

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Lone Star Ballroom C (Level Two)

Student Forum

Chair: Kelly Caine, Georgia Tech; *Cochair:* Kim Gausepohl, Virginia Tech

1. Aren C. Hunter and Avi Parush, Carleton U., **Using Eye Movements to Uncover Conflict Detection Strategies**
2. Laura A. Whitlock and Anne Collins McLaughlin, North Carolina State U., **The Role of Effortful Attention in Effective Spatial Training**
3. Pei-Hsiu Tan and Yi-Ching Lee, U. of Illinois at Urbana-Champaign, **Effect of Perceptual and Cognitive Loads on Drivers' Attention and Resistance to Distractors**
4. Shane Paul Otvos, Adrian Musters, and Frank A. Drews, U. of Utah, **Strategies in Working Memory and Interrupted Task Performance**
5. Timothy J. Smoker, Carrie E. Murphy, and Alison K. Rockwell, U. of Central Florida, **Comparing Memory for Handwriting Versus Typing**

T4 – ENHANCING TRAINING EFFECTIVENESS: DELIVERY METHODS AND TRAINEE CHARACTERISTICS

Lecture

Friday, October 23, 2009 8:30 to 10:00 a.m.

Bowie A (Level Two)

Training

Chair: Benjamin Knott, Air Force Research Lab;

Cochair: April Rose Panganiban, Air Force Research Lab

1. Arash Salehi, Lesley Strawderman, Yunchen Huang, Shaheen Ahmed, and Kari Babski-Reeves, Mississippi State U., **Effectiveness of Three Training Delivery Methods in a Voluntary Program**
2. Andrew R. Dattel, Texas Tech U.; Francis T. Durso, Georgia Tech; Raynald Bédard, Embry-Riddle Aeronautical U., **Procedural or Conceptual Training: Which Is Better for Teaching Novice Pilots Landings and Traffic Patterns?**
3. Dina Burkolter, Annette Kluge, Sinan German, and Britta Grauel, U. of Duisburg-Essen, **Waste Water Treatment Simulation (WaTr Sim): Validation of a New Process Control Simulation Tool for Experimental Training Research**
4. Paul O'Connor, U.S. Naval Postgraduate School; Doug Jones, Task Force Competency Development, **The Crew Resource Management Attitudes of U.S. Naval Aviators**

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- Patricia C. Brennan and Poornima Madhavan, Old Dominion U.; Cleotilde Gonzalez, Carnegie Mellon U.; Frank C. Laeson, Pacific Science & Engineering Group, **The Impact of Performance Incentives During Training on Transfer of Learning**

Friday, October 23

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

AS5 – SYSTEM FACTORS IN AEROSPACE OPERATIONS

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Republic B (Level Four)

Aerospace Systems

Chair: Barry P. Goettl, Lackland Air Force Base;

Cochair: Paul Havig, Wright-Patterson Air Force Base

- Christopher D. Wickens, Alion Science & Technology: MA&D Operations; Rebecca L. Hooey and Brian F. Gore, San Jose State U. Foundation/NASA Ames Research Center; Angelia Sebok and Corey Koenecke, Alion Science & Technology: MA&D Operations; Ellen Salud, San Jose State U. Foundation/NASA Ames Research Center, **Predicting Pilot Performance in Off-Nominal Conditions: A Meta-Analysis and Model Validation**
- Stephen Rice, David Keller, and Jamie Hughes, New Mexico State U., **False Alerts in the ATC Conflict Alert System: Is There a Cry Wolf Effect?**
- Anthony D. Andre, Interface Analysis Associates; Jimmy Krozel, Metron Aviation, **Human Factors Issues in the Design of Super-Dense Operations Airspace**
- Jeffrey D. Onken and Barrett S. Caldwell, Purdue U., **Toward Information Coordination and Reduced Team Size in Space Flight Mission Operations**
- Ronald Small, Christopher Plott, and Patricia L. McDermott, Alion Science & Technology: MA&D Operations; Hector Acosta, Robert Lindberg, and Kathi-Ann MacLeod, U.S. Air Force Research Lab, **The Use of Concept Maps to Support Human-System Integration Requirements: Highlighting the Human Touch Points**

CE13 – COGNITIVE ENGINEERING FOR COMPLEX ENVIRONMENTS

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Lone Star Ballroom A (Level Two)

Cognitive Engineering & Decision Making

Chair: Michael Lewis, U. of Pittsburgh; *Cochair:* Felix Portnoy, Old Dominion U.

- Yao Hu and David Mendonca, New Jersey Inst. of Technology, **Divergent and Convergent Thinking in Emergency Response Organizations**
- Nathan Perry, U. of Western Sydney; Mark Wiggins, Macquarie U.; Merilyn Childs, Charles Sturt U.; Gerard Fogarty, U. of Southern Queensland, **Reduced Processing Decision Support for Competent Firefighters**
- Frank A. Drews, Adrian Musters, Laura Siebeneck, and Thomas Cova, U. of Utah, **Decision Making of Wildland Fire Incident Commanders**
- Varun Dutt and Cleotilde Gonzalez, Carnegie Mellon U., **Human “Mis”-Perceptions of Climate Change**
- Varun Adibhatla, Alice Shapiro, and Michael D. McNeese, Pennsylvania State U.; Bimal Balakrishnan, U. of Missouri, **Design and Development of a Transactive Memory System Prototype for Geocollaborative Crisis Management**

CE14 – COGNITIVE FACTORS FOR COGNITIVE ENGINEERING

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Lone Star Ballroom B (Level Two)

Cognitive Engineering & Decision Making

Chair: Leo Gugerty, Clemson U.; *Cochair:* Daniel N. Cassenti, U.S. Army Research Lab

- Mark T. Jodlowski, Sandstorm Design; Gary L. Bradshaw, Mississippi State U., **In Support of a Comprehension-Based Model of Dynamic Environments**
- Nicole E. Werner, David M. Cades, Deborah A. Boehm-Davis, and Matthew S. Peterson, George Mason U., **Resuming After Interruption: Exploring the Roles of Spatial and Goal Memory**
- Jason Ralph, Wayne D. Gray, and Michael J. Schoelles, Rensselaer Polytechnic Inst., **The Functional Resource Hypothesis as a Basis for Understanding Cognitive Workload in Immediate Interactive Behavior**
- Raj Ratwani, Malcolm McCurry, and Greg Trafton, U.S. Naval Research Lab, **Validating a Predictive Model of Postcompletion Errors**

5. Alyssa Andrews, George Mason U.; Raj Ratwani and J. Gregory Trafton, U.S. Naval Research Lab, **Recovering From Interruptions: Does Alert Type Matter?**

HC9 – INTERRUPTIONS IN HEALTH CARE SETTINGS: FRIEND OR FOE?

Discussion Panel

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Seguin (Level Four)

Health Care

Chair: Douglas A. Wiegmann, U. of Wisconsin – Madison

Panelists: Sandra K. Garrett, Clemson U.; Joy Rivera, U. of Wisconsin; Sarah Henrickson Parker, Aberdeen U.; Frank Drews, U. of Utah

HP5 – HUMAN PERFORMANCE MODELING POTPOURRI

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Republic A (Level Four)

Human Performance Modeling

Chair: Esa Rantanen, Rutgers Inst. of Technology;

Cochair: Matthew Bolton, U. of Virginia

1. Diane Kuhl Mitchell and Charneta Samms, U.S. Army Research Lab, **Workload Warriors: Lessons Learned From a Decade of Mental Workload Prediction Using Human Performance Modeling**
2. Huiping Zhou, Makoto Itoh, and Toshiyuki Inagaki, U. of Tsukuba, **Effects of Cognitive Distraction on Checking Traffic Conditions for Changing Lanes**
3. Douglas J. Gillan, North Carolina State U., **A Componential Model of Human Interaction with Graphs: VII. A Review of the Mixed Arithmetic-Perceptual Model**
4. Shin-Yuan Yu and Bernard J. Martin, U. of Michigan, **Movement Control Phases of Upper-Body Coordination in Visually Guided Reach Movements**
5. Farzan Sasangohar, U. of Waterloo; I. Scott MacKenzie, York U.; Stacey D. Scott, U. of Waterloo, **Evaluation of Mouse and Touch Input for a Tabletop Display Using Fitts' Reciprocal Tapping Task**

PD6 – IMPROVING PRODUCT DESIGN THROUGH EMOTIONS & OBSERVATIONS

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Bowie B (Level Two)

Product Design

Chair: Joy Kempic, Whirlpool Corp.; *Cochair:* Keena S. Byrd, Intel Corp.

1. Jeffrey J. Smith, Daniel P. Kelaher, and David T. Windell, IBM Corp., **Gathering User Feedback From Internal Sources to Supplement Formal Usability Studies**
2. Sarah A. Endicott, Gourab Kar, and Abir Mullick, Georgia Tech, **Inclusive Indoor Play: Children at Play**
3. Marisa Topping, Wooyoung Sung, and Abir Mullick, Georgia Tech, **Inclusive Indoor Play – Using Children's Drawings and Narratives to Gain an Understanding of Children's Indoor Play Preferences**
4. Abir Mullick and R. L. Grubbs, Georgia Tech, **Inclusive Indoor Play: Play and Playthings**
5. Danielle Lottridge and Mark Chignell, U. of Toronto, **Emotrace: Tracing Emotions through Human-System Interaction**

S5 – CONSTRUCTION AND MINING SAFETY

Lecture

Friday, October 23, 2009 10:30 a.m. to 12:00 noon
Bowie A (Level Two)

Safety

Chair: Jia-Hua Lin, Liberty Mutual Research Inst. for Safety; *Cochair:* Ronald Laurids Boring, Sandia National Labs

1. John G. Casali and Khaled Alali, Virginia Tech, **Vehicle Backup Alarm Localization (or Not): Effects of Passive and Electronic Hearing Protectors, Ambient Noise Level, and Backup Alarm Spectral Content**
2. J. R. Bartels, C. C. Jobes, J. P. Ducarme, and T. J. Lutz, NIOSH, **Evaluation of Work Positions Used by Continuous Miner Operators in Underground Coal Mines**
3. Angela DiDomenico and Raymond W. McGorry, Liberty Mutual Research Inst. for Safety, **Perceptions of Stability Upon Standing From Working Postures Used in the Construction Industry**
4. Yu-Hsiu Hung, Woodrow W. Winchester, Tonya L. Smith-Jackson, Thomas Mills, and Brian M. Kleiner, Virginia Tech; Kari Babski-Reeves, Mississippi State U., **Fall Protection Training: Needs Analysis for Small Residential Roofing Subcontractors**

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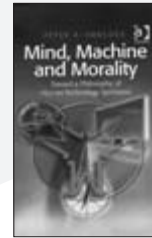


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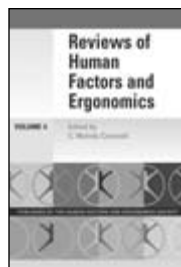
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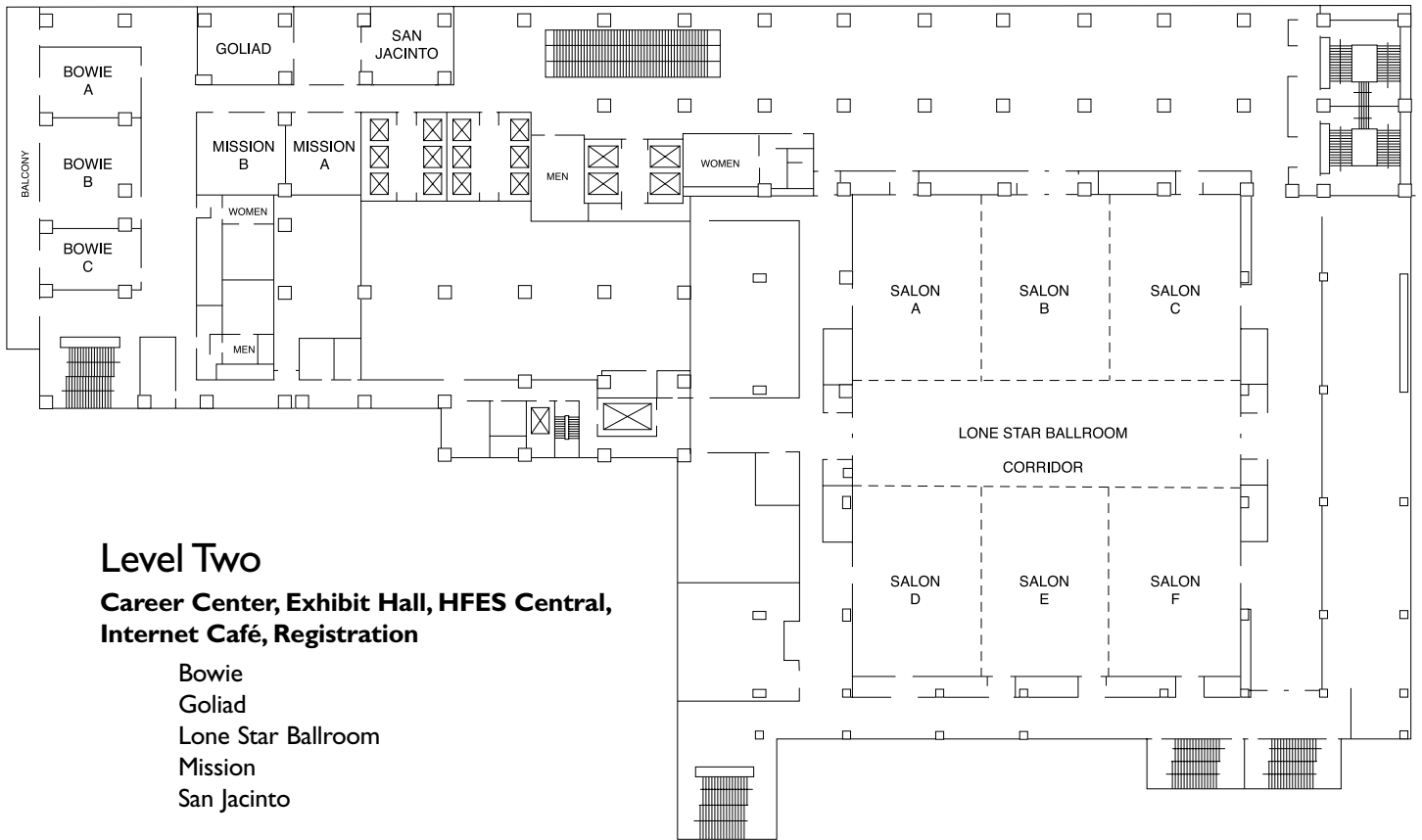
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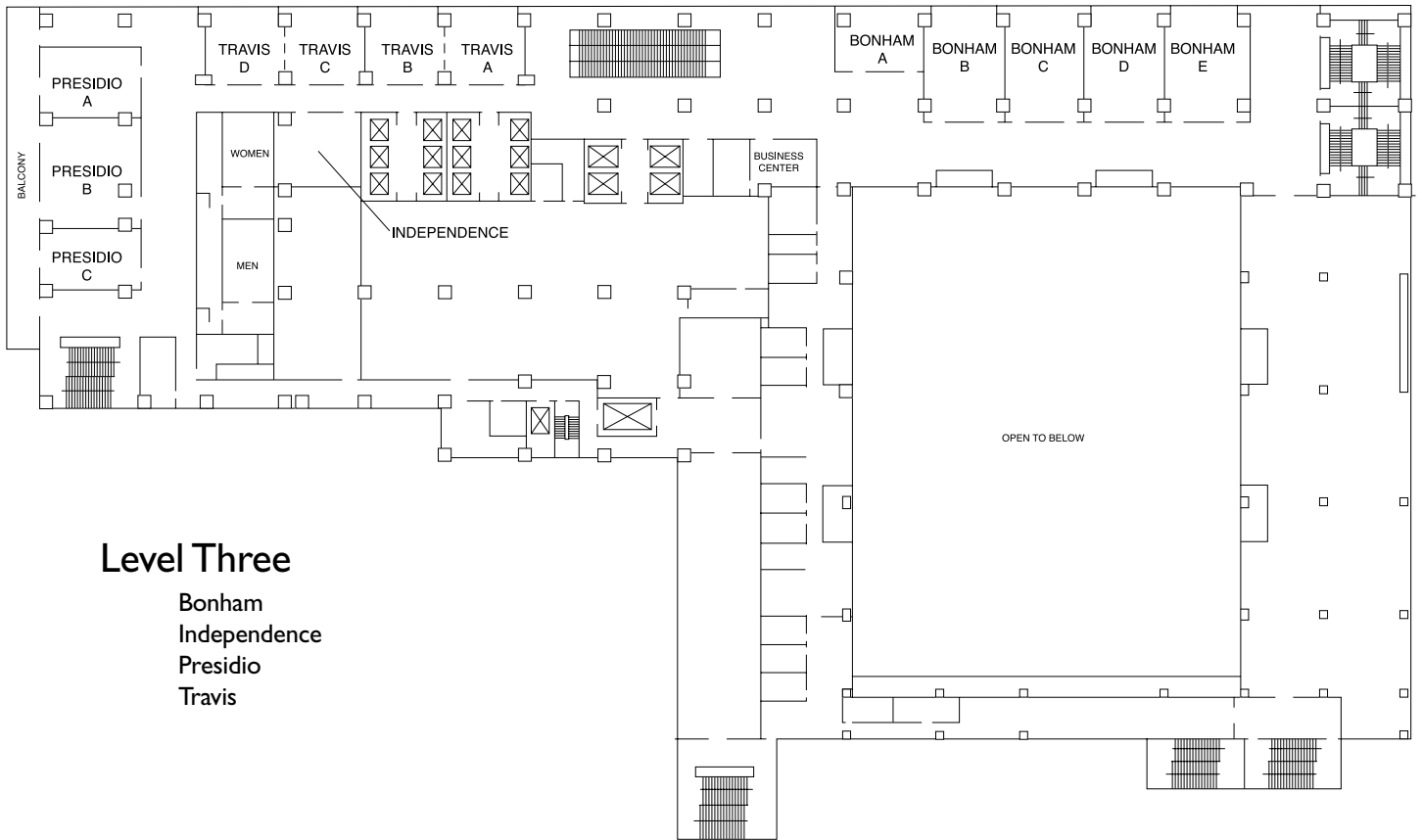
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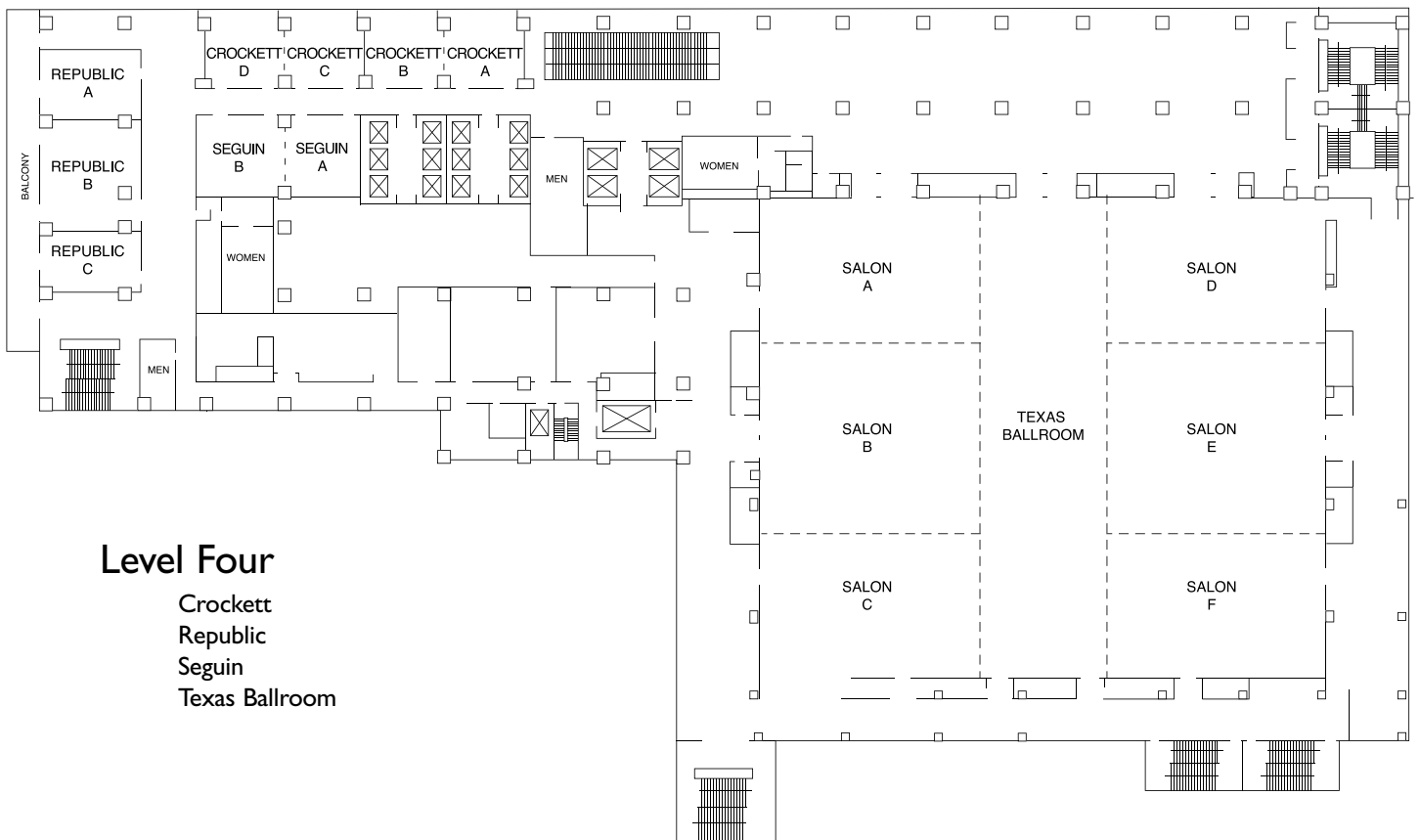
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