At the forefront of patient safety

An international symposium that expands your knowledge of human factors/ergonomics applied to health-care devices, environments, and end-users!

- Get insights on the latest science and best practices
- Understand innovations in the safety of health-care providers and patients
- Sharpen the focus of your HF/E initiatives
- Improve your regulatory approaches

The Health-Care Symposium offers leading human factors experts, pharmaceutical and medical device companies, biomedical engineers, health-care providers, FDA representatives, and patient safety researchers the opportunity to share knowledge and find solutions for issues and challenges in health-care.

The symposium has four tracks that concentrate on:

- **Consumer and Clinical Health-Care IT**
- **Hospital Environments**
- **Medical and Drug-Delivery Devices**
- **Patient Safety Research and Initiatives**

It also features workshops, presentations, and interactive posters in a format that allows for interaction and exchange among participants and presenters.

**Keynote Speaker: Rafael Grossmann, MD.**
A health-care futurist, technology innovator, and surgeon, Grossmann has focused on tapping the paradoxical power of technology to coexist with a better, more humane medical care. He was the first physician to use Google Glass during live surgery and is an advocate of telemedicine, mobile health, and digital medicine.

Learn more at bit.ly/2017HealthCareSymposium
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Alphonse Chapanis Best Student Paper Award
HFES COUNCIL OF TECHNICAL GROUPS
WALDEMAR KARWOWSKI

Student Lounge
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(Tuesday)

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Exhibitors (As of August 22, 2016)

Booths 27  AMTI
Booth 9    BIOPAC Systems, Inc.
Tabletop 5  Board of Certification in Professional Ergonomics
Booths 11, 12 & 13  CRC Press/Taylor & Francis Group
Tabletop 4  Foundation for Professional Ergonomics (FPE)
Booth 14    HFES Upcoming Meetings
Booth 15    NASA Human Systems Integration Division
Booth 16    Noldus Information Technology
Booth 18    Penn State Department of Industrial and Manufacturing Engineering
Booth 17    SAGE Publishing
Booth 10    SensoMotoric Instruments, Inc.
Booth 20    Smart Eye
Booth 24    Tobii Pro
Tabletop 1  University of Michigan Center for Ergonomics
Booths 25 & 26  U.S. Department of Transportation
Booth 23    Xsens
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Registration & Facilities

Meeting Facilities
All Annual Meeting functions other than technical tours and some networking events will be held in the Washington Hilton unless otherwise noted in the program. A map of the meeting space may be found on page 60. Electronic signage is also available.

Registration Counter Location and Hours
Registration is open during the following hours in the Concourse Foyer:

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

On-Site Event Tickets
For those events not sold out or canceled, tickets for tours and social events 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.

Refreshments
Beverage breaks will take place each morning (10:00–10:30) and afternoon (3:00–3:30) in the following locations:

- Monday: Crystal Ballroom Foyer (Concourse Level)
- Tuesday morning: International Terrace (Terrace Level)
- Tuesday afternoon: International Center (Exhibit Hall, Concourse Level)
- Wednesday–Thursday: International Center (Exhibit Hall, Concourse Level)
- Friday morning: Concourse (Concourse Level) & Terrace (Terrace Level) Foyers
Resources

HFES Services
Members of the HFES team will be present in the Concourse (Concourse Level) to provide information on membership, publications, and services. Nonmembers who are registered for the full week are entitled to HFES member prices on publication orders.

Career Center
The Career Center is located in International East (Concourse Level) and is open during the following hours:

- Monday: 1:00–6:00 p.m.
- Tuesday: 8:30 a.m.–6:00 p.m.
- Wednesday: 8:30 a.m.–5:30 p.m.
- Thursday: 8:30 a.m.–5:00 p.m.

Employers who have a current job posting or are registered to search résumés on the HFES Online Career Center may reserve interview 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 HFES Services Desk. The scheduling of 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
Companies that wish to post a job in the on-site Career Center, and are not interviewing, may opt to have HFES staff collect résumés and mail them after the meeting. The charge 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 $75 fee. Job seekers will be directed to send their résumés directly to the organization advertising the position.

Internet Café
Computers with Internet access will be available in the Concourse Foyer. Please limit your time to 10 minutes per session.

Internet Access
For registered guests, complimentary Internet is available in the Washington Hilton main lobby and the hotel’s TDL Bar.

Message Boards
A cork message boards will be available in the Concourse Foyer for posting hard-copy messages and announcements about meetings and events.

News and Announcements
Notifications and news alerts will be sent via the mobile program app and Twitter.

Follow Us on Twitter @HFES
Check out the Twitter feed @HFES and post at #HFES.

Mobile App
Download the HFES 2016 Annual Meeting mobile app from Google Play and the App Store. The app provides details about technical sessions, workshops, tours, events, and more.

Updates to the program will be provided via push notifications through the mobile program app.

Student Lounge
The Student Lounge, located in the Cabinet room (Concourse Level), has been set aside for students to meet, network, participate in special student activities, and relax. Hours are Tuesday through Thursday, 8:00 a.m. to 7:00 p.m.

Audiovisual Preview Room
The Coat room (Terrace Level, Monday–Wednesday) and the Oaklawn room (Lobby Level, Thursday–Friday) has been reserved for presenters who wish to preview their audiovisual materials. Computers will be available for AV preview only. Preview hours are as follows:

- Monday–Tuesday: 7:00 a.m.–6:00 p.m.
- Wednesday: 7:30 a.m.–5:30 p.m.
- Thursday: 7:30 a.m.–5:00 p.m.
- Friday: 7:30 a.m.–12:00 noon

Birds of a Feather Room
The Embassy room (Terrace Level) 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.

Volunteers Assignment Room
Student volunteers who have been assigned duties should check in with Volunteer Coordinators Thomas Gable and Sarah Williams in the Boundary room (Terrace Level).
Exhibits

Location and Hours
All attendees are encouraged to visit the exhibits, located in International Center (Concourse Level). Refreshment breaks will be held in the Exhibit Hall on Tuesday afternoon and on Wednesday and Thursday morning and afternoon. Exhibition hours are as follows:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>3:00–6:00 p.m.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>10:00 a.m.–5:00 p.m.</td>
</tr>
<tr>
<td>Thursday</td>
<td>10:00 a.m.–3:30 p.m.</td>
</tr>
</tbody>
</table>

Exhibitor List
The list of exhibitors appears on page 1.

Prize Drawings in the Exhibit Hall
HFES will be giving away two 2017 membership renewals and two registrations for the 2017 Annual Meeting, to be held in Austin, Texas, October 9–13, 2017. To enter a drawing to win these prizes, fill out the entry slip found in your portfolio bag and deposit it in the appropriate box inside the Exhibit Hall.

Drawings will be held on Wednesday and Thursday during both the morning and afternoon refreshment breaks (10:00–10:30 a.m. and 3:00–3:30 p.m.). Names of winners will be posted on a sign board in the Exhibit Hall. You must be present to claim your prize.

Event Highlights

MONDAY, SEPTEMBER 19

Student Career & Professional Development Day
The HFES Student Affairs Committee is pleased to offer a special day devoted to events of interest to students on Monday in Columbia 9 (Terrace Level). See page 9 for a schedule of events.

National Ergonomics Month Expo
Celebrate National Ergonomics Month! All HFES meeting attendees and their guests are invited to a special 90-minute NEM Expo, to be held on Monday from 4:45 to 6:15 p.m. in the International Terrace (Terrace Level). The Expo will feature several entertaining and interactive booths with live demonstrations illustrating successful human factors/ergonomics outreach activities. Stop by any time during the session to peruse the booths and learn how you can participate in NEM this year.

Opening Reception
Join friends and colleagues in Heights Courtyard (outdoors, Lobby Level) from 6:30 to 9:30 p.m. for this festive kickoff reception. See old friends and meet new ones while you enjoy beverages and hors d’oeuvres. Guest tickets are available to those not attending the annual meeting. All guest tickets must be purchased at the Registration Counter prior to 7:00 p.m. on Monday.

TUESDAY, SEPTEMBER 20

Mentor-Mentee Brown Bag Luncheons (Tuesday–Thursday)
A series of mentor-mentee luncheons will be held to assist students and early-career professionals and those in career transition to develop mentoring relationships with established professionals in the HF/E field. These small-group, dynamic, interactive sessions enable students and young professionals to meet in an informal setting and discuss their concerns and interests.

The luncheons will be held from 12:00 noon to 1:30 p.m. on Tuesday, Wednesday, and Thursday in the Morgan room for those who reserved a space with Haydee Cuevas prior to the meeting. A waiting list will be available at HFES Services near the Registration Counter (Concourse Foyer).

Early-Career Professionals Luncheon
During this networking lunch on Tuesday from noon to 1:30 p.m. in Columbia 1 (Terrace Level), early-career professionals will have the opportunity to dine and converse with established academic, industry, and government professionals. Attendance is by prior reservation.

Special Invited Sessions
Tuesday from 3:30 to 5:00 p.m. has been set aside for four sessions showcasing guest speakers discussing current topics addressing a broad range of HF/E areas. All rooms are on the Concourse Level.

Session 1: Automated and Driverless Cars: Separating Myth From Reality.
Alain L. Kornhauser (director, Princeton Transportation Program), and others will discuss and debate the human factors issues specific to the proliferation of automated driving and so-called driverless cars on our roads. What issues must we address for safe and successful integration of these technologies and vehicles? The session will take place in International West.

Former NASA Astronaut Sandra Magnus, Sam Scimemi, director of the International Space Station program, and others will discuss and debate the particular challenges of prolonged space flight and occupation, as well as NASA’s current plan to send astronauts to Mars in the 2030s. This session will be held in Jefferson.

Session 3: Human Factors in Cybersecurity.
A panel of experts will provide an overview of the unique human factors underpinnings of cybersecurity breaches, the needed human factors agenda to address the rapid growth of cybersecurity...
applications (e.g., hospital medical records, government data, driverless cars, smart appliances), and the current funding opportunities in this area. Panelists include Peter Hancock (University of Central Florida), David Schuster (San Jose State University), Ben Sawyer (MIT), and others to be announced. The session will be held in Monroe.

Session 4: HFES Journal Awards Showcase. This session will feature presentations by recipients of the Human Factors Prize and best paper awards for Human Factors, Journal of Cognitive Engineering and Decision Making, and Ergonomics in Design. This session will take place in Lincoln West.

Posters Reception
All technical and university lab posters will be presented in a dedicated session on Tuesday from 5:00 to 6:30 p.m. in the Exhibit Hall (International Center, Concourse Level).

HFES Annual Business Meeting
The Business Meeting will be held on Tuesday from 6:30 p.m. to 7:00 p.m. in Columbia 9 (Terrace Level).

WEDNESDAY, SEPTEMBER 21

User Experience Day
User Experience Day is a dedicated track of programming specifically geared for user experience professionals. The event will take place on Wednesday from 8:30 a.m. to 8:00 p.m. in various locations. See http://userexperiencedayhfes.com for a summary of the day’s activities.

Interactive Demonstration Session
Five interactive demonstrations will be presented in the Exhibit Hall (International Center, Concourse Level) on Wednesday from 8:30 to 10:00 a.m. The presenters will repeat their demonstrations as attendees move from one demo to the next throughout the 90-minute session.

Fellows Poster Session
HFES Fellows will once again display posters of some of their latest work. The session will be held on Wednesday from 10:00 to 11:00 a.m. in the Exhibit Hall (International Center, Concourse Level).

Student Reception
All students attending the Annual Meeting are invited to a reception on Wednesday from 5:30 to 6:30 p.m. in the International Terrace (Terrace Level). Snacks, beverages, and a no-host bar will be provided, and student awards will be presented.

Early-Career Professionals Reception
If you indicated at registration that you would attend this event, join your early-career colleagues in the Gunston room (Terrace Level) on Wednesday from 5:30 to 7:00 p.m. The reception is intended for professionals in their first five years following graduation who are working in industry and academia. In addition to networking with one another and with prominent HFES members, a short program will target specific topics of interest to early-career professionals.

Policies

Attendee Badges
All persons attending workshops, technical sessions, exhibits, tours, receptions, and other events must wear their registration badges. Attendees may register for Annual Meeting events at the Registration Counter (Concourse Foyer).

Photography and Recording Policies
Attendees may take photos and/or make audio or video recordings of speakers or their visual aids, or exhibitors and their displays, only with permission from HFES and the speakers or exhibitors. Permission forms are available at HFES Services near the Registration Counter. Please complete a form for each presentation you wish to record, obtain the speaker(s)’ signature(s), and return it to HFES Services.

HFES reserves the right to use photographs of attendees for promotional purposes. If you do not want HFES to use your photo, please send an opt-out message to Lois Smith at lois@hfes.org.

Cell Phones
Please mute mobile devices (cell phones, tablets, etc.) while attending sessions.

Nonsmoking Policy
Smoking is not permitted inside the Washington Hilton or on technical tours.

Proceedings
All registered attendees have been provided with a flash drive containing the proceedings. Those who reserved a CD-ROM at registration will be provided with a disc.

A computer and printer are located at the Internet Café (Concourse Foyer) for attendees who wish to print papers from the proceedings. For printing needs not associated with obtaining printouts of papers from the proceedings, visit the Business Center, located on the Terrace Level, across from the Embassy room.

Annual Meeting proceedings papers are also available free to HFES members via SAGE Journals Online. To access the content, log in at http://hfes.org with your user name and password and select the appropriate link on the Welcome page.
MEETINGS

HFES Groups

All meetings are on the Terrace Level.

SUNDAY–MONDAY, SEPTEMBER 18–19

HFES Executive Council
7:30 a.m.–6:00 p.m.
Gunston

TUESDAY, SEPTEMBER 20

Human Factors Editorial Board
(Lunch)
12:00 noon–1:15 p.m.
Gunston East

Local Chapter Presidents (Lunch)
12:00 noon–1:15 p.m.
Gunston West

HFES Annual Business Meeting
6:30–7:00 p.m.
Columbia 9

WEDNESDAY, SEPTEMBER 21

HFES Scientific Publications Committee (Breakfast)
7:15–8:15 a.m.
Albright

Outreach Division
7:30–8:30 a.m.
Embassy

Ergonomics in Design Editorial Board (Lunch)
12:00 noon–1:15 p.m.
Albright

Student Chapter Presidents (Lunch)
12:00 noon–1:15 p.m.
Cardozo

THURSDAY, SEPTEMBER 22

Education & Training Committee (Breakfast)
7:00–8:15 a.m.
Albright

ISO and ANSI Standards Committees

All meetings are on the Terrace Level.

TUESDAY, SEPTEMBER 20

U.S. TAG to ISO/TC 159/SC4
10:30–11:30 a.m.
Albright

WEDNESDAY, SEPTEMBER 21

ANSI/HFES 100
8:30–10:00 a.m.
Albright

Technical Standards Division
3:00–4:00 p.m.
Albright

U.S. TAG to ISO/TC 159/SC3
4:00–5:00 p.m.
Albright

Other Groups

All meetings are on the Terrace Level.

MONDAY, SEPTEMBER 19

Foundation for Professional Ergonomics
8:30 a.m.–4:30 p.m.
Du Pont

TUESDAY, SEPTEMBER 20

Board of Certification in Professional Ergonomics Reception
6:30–7:30 p.m.
Gunston

WEDNESDAY, SEPTEMBER 21

SAE International G45 Human Systems Integration Committee Meeting
1:00–5:00 p.m.
Du Pont

FRIDAY, SEPTEMBER 23 / SATURDAY, SEPTEMBER 24

Board of Certification in Professional Ergonomics Business Meeting
7:30 a.m.–5:00 p.m.
Albright

Journal of Cognitive Engineering and Decision Making Editorial Board (Lunch)
12:00 noon–1:15 p.m.
Albright

FRIDAY, SEPTEMBER 23

Education Division (Breakfast)
7:00–8:00 a.m.
Embassy

Technical Program Committee (Breakfast)
8:15–10:15 a.m.
Du Pont
Technical Groups

MONDAY, SEPTEMBER 19

Council of Technical Groups
3:30–5:00 p.m.
Georgetown East (Concourse Level)

TUESDAY, SEPTEMBER 20

Training
6:30–7:30 p.m.
Columbia 11 (Terrace Level)

Product Design (Reception)
7:00–9:00 p.m.
Bistro Bistro (Off site)

WEDNESDAY, SEPTEMBER 21

Aerospace Systems (Reception)
3:30–5:30 p.m.
Jefferson West (Concourse Level)

Aging (Lunch)
12:00–1:30 p.m.
Gunston West (Terrace Level)

Augmented Cognition
3:30–5:15 p.m.
Georgetown West (Concourse Level)

Cognitive Engineering & Decision Making (Reception)
3:30–5:15 p.m.
Columbia 9 (Terrace Level)

Communications
3:30–4:30 p.m.
Jefferson East (Concourse Level)

Computer Systems / Internet
4:30–5:30 p.m.
Lincoln West (Concourse Level)

Education (Breakfast)
7:00–8:30 a.m.
Gunston East (Terrace Level)

Environmental Design / Macroergonomics (Reception)
3:45–5:00 p.m.
Fairchild (Terrace Level)

Forensics Professional (Reception)
4:30–5:30 p.m.
Jefferson East (Concourse Level)

Health Care (Reception)
5:30–6:30 p.m.
Columbia 11 (Terrace Level)

Human Performance Modeling
5:30–6:30 p.m.
Fairchild (Terrace Level)

Individual Differences in Performance
3:30–4:30 p.m.
Columbia 11 (Terrace Level)

Internet / Computer Systems
4:30–5:30 p.m.
Lincoln West (Concourse Level)

Macroergonomics / Environmental Design (Reception)
3:45–5:00 p.m.
Fairchild (Terrace Level)

Occupational Ergonomics
4:30–6:00 p.m.
Off site

Perception & Performance
4:00–6:00 p.m.
Georgetown East (Concourse Level)

Product Design
3:30–4:30 p.m. (Business Meeting)
Lincoln East (Concourse Level)

Safety
5:30–6:30 p.m.
Jefferson East (Concourse Level)

Surface Transportation (Reception)
5:30–9:30 p.m.
Off site

System Development (Lunch)
12:00–1:30 p.m.
Off site

Test & Evaluation
5:30–6:30 p.m.
Georgetown West (Concourse Level)

Virtual Environments
3:00–4:00 p.m.
Georgetown East (Concourse Level)

THURSDAY, SEPTEMBER 22

Technical Group Program Chairs
5:15–6:30 p.m.
Albright (Terrace Level)

Social Events

MONDAY, SEPTEMBER 19

Opening Reception
6:30–9:30 p.m.
Heights Courtyard (outdoors,
Lobby Level)

WEDNESDAY, SEPTEMBER 21

Early-Career Professionals Reception
5:30–7:00 p.m.
Gunston (Terrace Level)

Student Reception
5:30–6:30 p.m.
International Terrace (Terrace Level)
Technical Tours

Buses will begin loading on T Street, outside the doors on the Terrace Level 15 minutes prior to the departure times listed below. Tickets for events not sold out may be purchased at the Registration Counter. Tickets must be presented when buses are loading.

At press time, the following tours were scheduled to take place; however, please check the mobile program app and the poster boards in the registration area for updates about canceled events. Tours with low attendance are subject to cancellation.

WEDNESDAY, SEPTEMBER 21

Tour T1 – George Mason University Labs – The Arch Lab
9:00 a.m.–12:30 p.m.

Tour T2 – Federal Highway Administration Turner-Fairbank Highway Research Center, Human Factors Lab
12:00 noon–3:30 p.m. (Lunch included)

12:00 noon–4:00 p.m. (Lunch included)

THURSDAY, SEPTEMBER 22

12:00 noon–4:00 p.m. (Lunch included)

Tour T5 – U.S. Nuclear Regulatory Commission
1:00–5:00 p.m.

Tour T6 – MedStar – National Center for Human Factors in Healthcare
1:45–5:30 p.m.

Technical Program

At press time, the following workshops were scheduled to take place. However, check the mobile program app for updates.

Monday, September 19
8:30 a.m.–12:00 noon

MORNING WORKSHOP

WK1 – Designing and Doing HF/E Fieldwork in Home and Community Settings
Richard J. Holden, Indiana U.; Rupa S. Valdez, U. of Virginia
Monday, September 19, 8:30 a.m.–12:00 noon
Lincoln East (Concourse Level)

Monday, September 19
1:30–5:00 p.m.

AFTERNOON WORKSHOPS

WK3 – Risk Management Workshop for HF/E Practitioners
George Samaras and Elizabeth Averill Samaras, Samaras & Assoc., Inc.
Monday, September 19, 1:30–5:00 p.m.
Lincoln East (Concourse Level)

WK4 – Cogulator: Introduction to Simple Workload Models Using Cogulator
Steven Estes, MITRE Corp.
Monday, September 19, 1:30–5:00 p.m.
Lincoln West (Concourse Level)

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
ED  Education
ED  Environmental Design
FP  Forensics Professional
GS  General Sessions
HC  Health Care
HP  Human Performance Modeling
ID  Individual Differences in Performance
I  Internet
ME  Macroergonomics
OE  Occupational Ergonomics (formerly Industrial Ergonomics)
PL  Plenary Session
PP  Perception & Performance
PD  Product Design
POS  Interactive 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
MONDAY, SEPTEMBER 19

WK5 – Teaching Insights and Success in Academia for Pretenure and Potential Academics
Nicholas J. Kelling, U. of Houston-Clear Lake; Heather C. Lum, Penn State Erie, The Behrend College; Anne Collins McLaughlin, North Carolina State U.; Michael Bartha and Christy Harper, Hewlett Packard; S. Camille Peres, Texas A&M U.; Peter A. Hancock, U. of Central Florida; Andrew Muddimer, Workplace Sense
Monday, September 19, 1:30–5:00 p.m.
Georgetown West (Concourse Level)

Monday, September 19
9:00 a.m.–4:30 p.m.
ALL-DAY WORKSHOPS

WK6 – ShadowBox Approach to Cognitive Skills Training
Gary Klein, MacroCognition LLC; Laura Militello, Applied Decision Science, LLC
Monday, September 19, 9:00 a.m.–4:30 p.m.
Jefferson West (Concourse Level)

WK7 – Human-Systems Integration Workshop
Lawrence G. Shattuck and Nita Lewis Shattuck, Naval Postgraduate School
Monday, September 19, 9:00 a.m.–4:30 p.m.
Monroe (Concourse Level)

Monday, September 19
10:30 a.m.–5:00 p.m.

SF1 – Student Career and Professional Development Day
STUDENT AFFAIRS COMMITTEE
Monday, September 19, 10:30 a.m.–5:00 p.m.
Columbia 9 (Terrace Level)
Discussion Panel/Alternate Format

10:30–11:45 a.m.
Session 1: Mentors and Mentees
Chair: Farzan Sasangohar, Texas A&M U.
Panelists: Ryan McKendrick, Northrop Grumman; Wendy Baccus, George Mason U.; Haydee Cuevas, Embry-Riddle Aeronautical U.; Christy Harper, HP
The relationship between an academic or professional mentor and a mentee is a complicated, special, and extremely important one to understand and nurture. During this session, a panel of speakers from all stages of their academic or professional careers will discuss the importance of mentorship, from the perspectives of both mentors and mentees.

1:30–2:45 p.m.
Session 2: Building a Better Network Through Speed Networking
Chair: Bridget Lewis, George Mason U.
Speed networking is an increasingly popular activity that is a way to enhance the networking experience at professional events. Whether you have a position to fill, are trying to find a job, are looking to collaborate, or just want to meet new people in the HF/E community, speed networking during Career Day will be a fun and simple way to enlarge your professional network. During this session we will offer tips for successful networking and then engage the audience in speed networking.

3:30–5:00 p.m.
Session 3: Teaching Excellence and Fostering Industry — Academic Collaborations (a joint session with the workshop, “Teaching Insights and Success in Academia”)
This session will focus on techniques to develop collaborations between academia and industry, including industry grants and direct research. Presenters include academics and those in industry with successful experiences in such collaborations. The session will also address best practices and lessons learned for achieving excellence in teaching. HFES Fitts Education Award winners will lead small-group discussions about their general teaching tips and how to maintain a passion for teaching throughout your career.

Monday, September 19
4:45–6:15 p.m.

SS1 – National Ergonomics Month Expo
SPECIAL SESSIONS
Monday, September 19, 4:45–6:15 p.m.
International Terrace (Terrace Level)

Monday, September 19
6:30–9:30 p.m.

Opening Reception
6:30–9:30 p.m.
Heights Courtyard (Lobby Level)
Tuesday, September 20
8:00–10:00 a.m.

PL1 – Opening Plenary Session
Tuesday, September 20, 8:00–10:00 a.m.
International Center (Concourse Level)
Plenary
The Opening Plenary session features the presidential address by William S. Marras, “RELEVANCE: Where Are We Going, Anyway?”; the keynote address, “Caution: This Machine Operated by Humans,” by Norman R. Augustine; and the presentation of newly elected Fellows and Society-wide awards. Also on view will be the winning videos from the HFES YouTube Video Contest. The Human Factors Prize and awards for best papers published in HFES journals will be presented in Special Invited Session 4: HFES Journal Awards Showcase, on Tuesday from 3:30 to 5:00 p.m. in the Lincoln West room.

Tuesday, September 20
10:30 a.m.–12:00 noon

AS1 – Air Traffic Management Problems and Solutions
AEROSPACE SYSTEMS
Tuesday, September 20, 10:30 a.m.–12:00 noon
Lincoln East (Concourse Level)
Lecture
Chair: Lee Sciarini, Naval Postgraduate School; Cochair: Angela Sebok, Alion Science & Technology Corp.
2. Kelly A. Burke and David J. Wing, NASA Langley Research Center; Mark Haynes, Advanced Aerospace Solutions, Flight Test Assessments of Pilot Workload, System Usability, and Situation Awareness of TASAR
3. Alicia Fernandes and Juan Rebollo, Mosaic ATM, Inc., An Oceanic Trajectory-Based Operations Concept Shaped by Operational Influences

C1 – Improving Communication Systems
COMMUNICATIONS; COSPONSORED BY COGNITIVE ENGINEERING AND DECISION MAKING
Tuesday, September 20, 10:30 a.m.–12:00 noon
Lincoln West (Concourse Level)
Lecture
Chair: Harry E. Blanchard, AT&T
1. Jessica Parker and Christopher Best, Defence Science and Technology Group; Gregory J. Funke and Adam J. Strang, U.S. Air Force Research Lab; Kaye Marion, Royal Melbourne Inst. of Technology, An Investigation of Coding Schemes for Sample Entropy Analysis of Communications Data
2. Kimberly C. Preusse and Christina Gipson, Georgia Tech, Dispatching Information in 911 Teams: A Case Study

COMPUTER SYSTEMS; COSPONSORED BY INTERNET
Tuesday, September 20, 10:30 a.m.–12:00 noon
Monroe (Concourse Level)
Discussion Panel
Chair: Keith Deaven, Mediabarn, Inc.; Cochair: Jay Elkerton, Emerson Process Management

GS1 – Recent Trends in Human-Systems Integration
GENERAL SESSIONS
Tuesday, September 20, 10:30 a.m.–12:00 noon
Columbia 9 (Terrace Level)
Discussion Panel
Chair: William Kosnik, U.S. Air Force Research Lab
Panelists: John Plaga, U.S. Air Force Research Lab; Frank C. Lacson, Pacific Science and Engineering Group; Jeffrey Thomas, U.S. Army Research Lab; Mihriban Whitmore, NASA Johnson Space Center
ME1 – Conceptualizing Sociotechnical System Boundaries in Health-Care Settings: Within and Across Teams, Organizations, Processes, and Networks
MACROERGONOMICS
Tuesday, September 20, 10:30 a.m.–12:00 noon
Columbia 12 (Terrace Level)
Discussion Panel
Chair: Nicole Werner, U. of Wisconsin, Madison

OE1 – Research to Practice to Research – Part 1: Practitioner’s Perspective
OCCUPATIONAL ERGONOMICS
Tuesday, September 20, 10:30 a.m.–12:00 noon
Jefferson East (Concourse Level)
Alternative Format
Chair: Christopher R. Reid, Boeing; Cochair: David Rempel, U. of California, Berkeley
1. Carisa Harris Adamson, U. of California, San Francisco; Emma Lam, Stephen Hill, and Andrew Smith, Samuel Merritt U., Evaluation of Hotel Bed Making While Using a Mattress Lift Tool and a Fitted Sheet
2. Gwendolyn Malone and Ryan Porto, General Motors Co., General Motors Global Ergonomic Manufacturing Engineering Process
3. Christopher R. Reid, Boeing Co.; David Rempel, U. of California, Berkeley; Richard Gardner, Boeing Co.; Sheree L. Gibson, Ergonomics Applications; Patrick G. Dempsey, National Inst. for Occupational Safety and Health; Cindy Whitehead, U.S. Naval Surface Warfare Center, Research to Practice to Research: Part 1 – A Practitioner’s Perspective

PP1 – Elements of Human Performance
PERCEPTION AND PERFORMANCE
Tuesday, September 20, 10:30 a.m.–12:00 noon
Jefferson West (Concourse Level)
Lecture
Chair: Erin Alves, Honeywell; Cochair: Ben D. Lawson, U.S. Army Aeromedical Research Lab
1. Benjamin Sheffield, U.S. Army Public Health Center; Douglas S. Brungart and Amy Blank, Walter Reed National Military Medical Center, The Effects of Hearing Impairment on Fire Team Performance in Dismounted Combat
3. Martin G. Helander and Halimahtun M. Khalid, Damai Sciences, Analysis of Disaster Risk Attitudes in Situation Awareness: A Cultural and Gender Perspective

S1 – Safety Culture and System Safety
SAFETY
Tuesday, September 20, 10:30 a.m.–12:00 noon
International West (Concourse Level)
Lecture
Chair: Mahiyar Nasarwanji, National Inst. of Occupational Safety and Health; Cochair: Barry Strauch, National Transportation Safety Board
1. Chris Langer, CIRAS, Improving Safety Culture With Confidential Reporting
3. Morgan J. Tear and Tom W. Reader, London School of Economics and Political Science; Steven Shorrock and Barry Kirwan, EUROCONTROL, Divergent Perceptions of Safety Culture Between Occupational Groups: The Role of National Culture
SD1 – Development and Design in Test and Evaluation
SYSTEM DEVELOPMENT
Tuesday, September 20, 10:30 a.m.–12:00 noon
Columbia 11 (Terrace Level)
Lecture
Chair: Petra Alfred, Pacific Science and Engineering Group; Cochair: Pamela Savage-Knepshield, U.S. Army Research Lab

T1 – Research Advances in Training Teams, Students, and Drivers
TRAINING
Tuesday, September 20, 10:30 a.m.–12:00 noon
Georgetown East (Concourse Level)
Lecture
Chair: Linda Pierce, Federal Aviation Admin.
3. Thomas A. Stokes, Douglas J. Gillan, and Jeffery P. Braden, North Carolina State U., Establishing the Link Between Usability and Student Satisfaction in Adaptive Online Learning
4. Oleksandra Krasnova, Brett Molesworth, and Ann Williamson, U. of New South Wales, Understanding the Effect of Feedback on Young Drivers’ Speeding Behavior
5. Tingru Zhang, U. of Massachusetts-Amherst; Jinzheng Li and Hugh Thai, Arbella Insurance; Tracy Zafian, Siby Samuel, and Donald L. Fisher, U. of Massachusetts-Amherst, Evaluation of the Effect of a Novice Driver Training Program on Citations and Crashes

TE1 – Evaluating Human-System Interaction
TEST AND EVALUATION; COSPONSORED BY SYSTEM DEVELOPMENT
Tuesday, September 20, 10:30 a.m.–12:00 noon
Georgetown West (Concourse Level)
Lecture
Chair: David Hullinger, U.S. Army Research Lab; Cochair: Rachel Lund, U.S. Naval Systems Warfare Center Dahlgren Div.
1. Moritz Körber, Jonas Radlmayr, and Klaus Bengler, Technical U. of Munich, Bayesian Highest Density Intervals of Take-Over Times for Highly Automated Driving in Different Traffic Densities
2. Mark Chignell, Diba Kaya, and Leon Zucherman, U. of Toronto; Jie Jiang, TELUS Communications Co., Assessment of Technical Quality of Online Video Using Visualization in Place of Experience
3. Yevgeniy B. Sirotin and Jacob A. Hasselgren, Scitor, an SAIC Co.; Arun Vemury, DHS Science and Technology Directorate, Usability of Biometric Iris-Capture Methods in Self-Service Applications
5. Seyed M. Miran, Chen Ling, and Joseph J. James, U. of Akron; Lans Rothfus, National Oceanic and Atmospheric Admin., Comparing Effectiveness of Four Graphical Designs for Probabilistic Hazard Information for Tornado Threat

VE1 – Me and My VE
VIRTUAL ENVIRONMENTS
Tuesday, September 20, 10:30 a.m.–12:00 noon
Fairchild (Terrace Level)
Alternative Format
Chair: Laura Strater, Raytheon IIS
Presenters: Christina M. Frederick, Embry-Riddle Aeronautical U.; Monifa Vaughn-Cooke, U. of Maryland; James P. Bliss, Old Dominion U.; Smruti Shah, Old Dominion U.
Tuesday, September 20
1:30–3:00 p.m.

A1 – Aging
AGING
Tuesday, September 20, 1:30–3:00 p.m.
Fairchild (Terrace Level)
Lecture
Chair: Sharon Joines, North Carolina State U.
1. Joseph Sharit, Jessica Taha, Ronald W. Berkowsky, and Sara J. Czaja, U. of Miami, Seeking and Resolving Complex Online Health Information: Age Differences in the Role of Cognitive Abilities
2. Anne C. Grego-Nagel and Malgorzata J. Rys, Kansas State U., Exploring the Adoption of Telecommunication Services by Older Adults
4. Ben D. Sawyer, Joonbum Lee, Jonathan Dobres, Bruce Mehler, Joseph F. Coughlin, and Bryan Reimer, Massachusetts Inst. of Technology, Effects of a Voice Interface on Mirror Check Decrements in Older and Younger Multitasking Drivers

GS2 – Board on Human-Systems Integration Panel – Human Factors and the Federal Government: Improving Human Performance in Forensic Sciences
GENERAL SESSIONS
Tuesday, September 20, 1:30–3:00 p.m.
Columbia 9 (Terrace Level)
Discussion Panel
Chair: Poornima Madhavan, National Academy of Sciences
Panelists: Fay Lomax Cook, National Science Foundation; Melissa Taylor, National Inst. of Standards and Technology; Jonathan McGrath, U.S. Department of Justice; Deborah A. Boehm-Davis, George Mason U.

HC1 – Teams in Health Care
HEALTH CARE; COSPONSORED BY MACROERGONOMICS
Tuesday, September 20, 1:30–3:00 p.m.
Lincoln East (Concourse Level)
Lecture
Chair: Joseph R. Keebler, Embry-Riddle Aeronautical U.; Cochair: Victoria Lew, Embry-Riddle Aeronautical U.
2. Spencer C. Kohn, Ewart J. de Visser, and Gershon Weltman, Perceptronics Solutions, Inc.; Nichole Bosson and Marianne Gausche-Hill, Los Angeles County EMS Agency; Ross Donaldson, Harbor-UCLA Medical Center, Emergency Medical Team Coordination in Mass Casualty Incidents: A Study of the Los Angeles Emergency Medical System
3. Yaqiong Li, Pascale Carayon, Ann Schoofs Hundt, and Peter Hoonakker, U. of Wisconsin-Madison, Team Interactions and Health IT Use During Hospital Multidisciplinary Rounds

HP1 – Workload
HUMAN PERFORMANCE MODELING
Tuesday, September 20, 1:30–3:00 p.m.
Monroe (Concourse Level)
Lecture
Chair: Joseph Houpt, Wright-State U.
2. Kelene A. Fercho, Doug Peterson, and Lee A. Baugh, U. of South Dakota, A Rested Development: Effort Regulation Strategy Maintains Task Performance but Alters ERPs in Task-Induced Cognitive Fatigue
4. Jung Hyup Kim, Xiaonan Yang, and Monika Putri, U. of Missouri, Multitasking Performance and Workload During a Continuous-Monitoring Task
5. Wenbi Wang, Defence Research and Development Canada, Development of a Baseline Workload Model for Future Submarine Sonar Crewing Analysis

OE2 – Research to Practice to Research: Part 2 – An Academic’s Perspective
OCCUPATIONAL ERGONOMICS; COSPONSORED BY TRAINING
Tuesday, September 20, 1:30–3:00 p.m.
Jefferson East (Concourse Level)
Discussion Panel
Chair: William S. Marras, Ohio State U.; Cochair: Christopher R. Reid, Boeing Co.
Panelists: David Rempel, U. of California, Berkeley; James G. Borchardt, Construction Ergonomics, LLC; Sang D. Choi, U. of Wisconsin-Whitewater; Hector Silva, Chevron; Fadi Fathallah and Victor Duraj, U. of California, Davis; Michelle M. Robertson, Liberty Mutual Research Inst. for Safety; Donald Goddard, U.S. Army Public Health Center
**PD1 – Presentation of the Stanley H. Caplan User-Centered Product Design Award**

**PRODUCT DESIGN**
Tuesday, September 20, 1:30–3:00 p.m.
Lincoln West (Concourse Level)
Alternative Format
Chair: Stanley Caplan, Usability Assoc., LLC; Cochair: Dianne McMullin, Boeing Co.
Award will be presented to the 2016 recipient, followed by a presentation on the winning product.

**PP2 – Auditory and Multimodal Displays**

**PERCEPTION AND PERFORMANCE**
Tuesday, September 20, 1:30–3:00 p.m.
Jefferson West (Concourse Level)
Lecture
Chair: Jason McCarley, Flinders U.
2. Edin Sabic and Jing Chen, New Mexico State U., Threshold of Spearon Recognition for Auditory Menus
5. Amit Barde, HIT Lab NZ; Matthew Ward and William S. Helton, U. of Canterbury; Mark Billington, U. of South Australia; Gun Lee, HIT Lab NZ, Attention Redirection Using Binaurally Spatialized Cues Delivered Over a Bone-Conduction Headset

**S2 – Warning Signs and Labels**

**SAFETY**
Tuesday, September 20, 1:30–3:00 p.m.
International West (Concourse Level)
Lecture
Chair: Katie Berry, Fort Hill Group; Cochair: Raymond Lim, Pierce College
4. Mayuko Ueda, Kazushige Wada, and Yohei Morimoto, West Japan Railway Company; Shinnosuke Usui, Osaka U., The Designs of Warning Signs Changes Drivers’ Behavior
5. Jessica Cruit and Beth L. Blickensderfer, Embry-Riddle Aeronautical U.; Amit Barde, HIT Lab NZ, Threshold of Spearon Recognition for Auditory Menus
6. Asaf Degani, Claudia V. Goldman, Omer Deutsch, and Anuj Pradhan, U. of Michigan, Computational Modeling of Finger-Swipe Gestures on Touchscreen: Application of Fitts’ Law in 3-D Space

**SD2 – Informing System Design With Modeling and Simulation**

**SYSTEM DEVELOPMENT**
Tuesday, September 20, 1:30–3:00 p.m.
Columbia 11 (Terrace Level)
Lecture
Chair: Frank Lacson, Pacific Science & Engineering Group; Cochair: Holly Handley, Old Dominion U.
1. Holly A. H. Handley, Matthew Amissah, and Cansu Kandemir, Old Dominion U., Levels of SysML Compatibility for Collaborative Human System Development
3. Heejin Jeong and Yili Liu, U. of Michigan, Computational Modeling of Finger-Swipe Gestures on Touchscreen: Application of Fitts’ Law in 3-D Space
4. Jessica Cruit and Beth L. Blickensderfer, Embry-Riddle Aeronautical U.; Edin Sabic and Jing Chen, New Mexico State U., Threshold of Spearon Recognition for Auditory Menus
7. Amit Barde, HIT Lab NZ; Matthew Ward and William S. Helton, U. of Canterbury; Mark Billington, U. of South Australia; Gun Lee, HIT Lab NZ, Attention Redirection Using Binaurally Spatialized Cues Delivered Over a Bone-Conduction Headset

**ST1 – Automation and Behavior Measures**

**SURFACE TRANSPORTATION**
Tuesday, September 20, 1:30–3:00 p.m.
Columbia 12 (Terrace Level)
Lecture
Chair: Anuj Pradhan, U. of Michigan Transportation Research Inst.; Cochair: Liza Josias, American Insts. for Research
1. Stacy A. Balk and Steven Jackson, Leidos; Brian H. Philips, U.S. Federal Highway Admin., Cooperative Adaptive Cruise Control and Driver Merge Type
2. Wesley J. Kumfer, Samuel J. Levulis, Megan D. Olson, and Richard A. Burgess, Texas Tech U., A Human Factors Perspective on Ethical Concerns of Vehicle Automation
3. Holly A. H. Handley, Matthew Amissah, and Cansu Kandemir, Old Dominion U., Levels of SysML Compatibility for Collaborative Human System Development
4. Kelly Funkhouser and Frank Drews, U. of Utah, Putting the Brakes on Autonomous Vehicle Control: Responding to System Breakdowns
6. Asaf Degani, Claudia V. Goldman, Omer Deutsch, and Omer Tsimhoni, General Motors Co., On Sensitivity and Holding in Automotive Systems: The Case of the Climate Control System
T2 – Live, Virtual and Constructive Training Fidelity (LVC TF) Special Session
TRAINING
Tuesday, September 20, 1:30–3:00 p.m.
Georgetown East (Concourse Level)
Discussion Panel
Chair: Katherine P. Tucker, Naval Air Warfare Center Training Systems Division

TE2 – Assessing the User Experience
TEST AND EVALUATION; COSPONSORED BY SYSTEM DEVELOPMENT; TRAINING
Tuesday, September 20, 1:30–3:00 p.m.
Georgetown West (Concourse Level)
Lecture
Chair: Kelly Neville, U.S Army Research Lab; Cochair: Julia Wright, U.S. Navy

Tuesday, September 20
3:30–5:00 p.m.
Special Invited Sessions

These four sessions will showcase guest speakers discussing current topics addressing a broad range of HF/E areas.

PL2 – Special Invited Session 1: Automated and Driverless Cars: Separating Myth From Reality
SPECIAL INVITED SESSION
Tuesday, September 20, 3:30–5:00 p.m.
International West (Concourse Level)
Discussion Panel
Chair: Anthony D. Andre, Interface Analysis Assoc.
Panelists: Donald A. Norman, U. of California, San Diego; Alain L. Kornhauser, Princeton U.; Others TBA

PL3 – Special Invited Session 2: Deep Space Exploration: New Human Factors Horizons
SPECIAL INVITED SESSION
Tuesday, September 20, 3:30–5:00 p.m.
Jefferson (Concourse Level)
Discussion Panel
Chair: Mica R. Endsley, SA Technologies
Panelists: Sandra Magnus, American Inst. of Aeronautics and Astronautics; Sam Scimemi, International Space Station Program; Others TBA

PL4 – Special Invited Session 3: Human Factors in Cybersecurity
SPECIAL INVITED SESSION
Tuesday, September 20, 3:30–5:00 p.m.
Monroe (Concourse Level)
Discussion Panel
Chair: Peter A. Hancock, U. of Central Florida
Panelists: David Schuster, San Jose State U.; Ben D. Sawyer, Massachusetts Inst. of Technology; Others TBA

PL5 – Special Invited Session 4: HFES Journal Awards Showcase
SPECIAL INVITED SESSION
Tuesday, September 20, 3:30–5:00 p.m.
Lincoln West (Concourse Level)
Chair: C. Melody Carswell, Chair, Scientific Publications Division
This session will feature presentations by recipients of the Human Factors Prize and best paper awards for Human Factors, Journal of Cognitive Engineering and Decision Making, and Ergonomics in Design.
Tuesday, September 20
5:00–6:30 p.m.

All technical and university lab posters are presented during a reception in the Exhibit Hall.

POS – Interactive Posters Session and Reception
INTERACTIVE SESSIONS
Tuesday, September 20, 5:00–6:30 p.m.
International Center (Concourse Level)
Poster Session
Chair: Ronald Boring, Idaho National Lab; Cochair: Thomas Ulrich, U. of Idaho

Aerospace Systems Posters
2. Garrin Ross, Embry-Riddle Aeronautical U.; Linda Tomko, Purdue U., Confusion in the Cockpit: Typology, Antecedents, and Sources
6. Javier Rivera, Camilo Jimenez, and Florian Jentsch, U. of Central Florida, Combining Flight Procedures Training With Mental Flexibility Training

Augmented Cognition Posters
8. Michael W. Boyce, Benjamin Goldberg, and Jason D. Moss, U.S. Army Research Lab, Electrodermal Activity Analysis for Training of Military Tactics

Cognitive Engineering and Decision Making Posters
9. Katherine Labonté, Sébastien Tremblay, and François Vachon, Université Laval, Effects of a Warning on Interruption Recovery in Dynamic Settings
13. Samantha Zybak, Mark W. Scerbo, and Amanda Ashdown, Old Dominion U., System Reliability, Trust, and Complacency in Fetal Heart Rate Monitoring
14. Timothy J. Wright, U. of Massachusetts-Amherst; William J. Horrey and Mary F. Lesch, Liberty Mutual Research Inst. for Safety; Md Mahmudur Rahman, Mississippi State U., Drivers’ Trust in an Autonomous System: Exploring a Covert Video-Based Measure of Trust
15. Terence Hines and Adam Ranello, Pace U., TV Channel Cards and Office Directories Are Searched Faster When Alphabetized

Communications Posters

Computer Systems Posters

**Education Posters**


25. Angela Yoo and Richard Catrambone, Georgia Tech, The Influence of Situational Interest on Learning Outcomes for Science Videos

**General Sessions Posters**


**Health Care Posters**

28. Jenna Garafalo and Dan Nathan-Roberts, San Jose State U., Assessment of the Impacts From the Addition of Novel Assistive Technologies in Mental Health Care


**Human Performance Modeling Posters**


31. Phillip Jasper, Clemson U.; Ciara Sibley and Joseph Coyne, U.S. Naval Research Lab, Using Heart Rate Variability to Assess Operator Mental Workload in a Command-and-Control Simulation of Multiple Unmanned Aerial Vehicles


**Individual Differences in Performance Posters**

34. Alexis R. Dewar, Kody L. Denues, and James L. Szalma, U. of Central Florida, Motivation Is Important in Game-Based Memory Recall


36. Linda G. Pierce, Cristina L. Byrne, Melissa Beben, and Elaine Pfeiderer, FAA Civil Aerospace Medical Inst., Using a Multidimensional Pairwise Preference Measure of Personality to Predict Training Success of Air Traffic Control Specialists


38. Tarah N. Schmidt-Daly and Jennifer M. Riley, Design Interactive, Inc.; Charles R. Amburn, U.S. Army Research Lab; Kelly S. Hale, Design Interactive, Inc.; P. David Yacht, Design Interactive, Inc., Video Game Play and Effect on Spatial Knowledge Tasks Using an Augmented Sand Table

39. Anna Sumner and Leo Gugerty, Clemson U., Individual Differences in Use of Effective Troubleshooting Strategies


**Internet Posters**

41. Philip T. Kortum and Claudia Ziegler Acemyan, Rice U., The Relationship Between User Mouse-Based Performance and Subjective Usability Assessments

42. Michelle Hester, Steffen Werner, Cassie Greenwald, and Jessica Gunning, U. of Idaho, Exploring the Effects of Text Length and Difficulty on RSVP Reading

**Macroergonomics Posters**

43. Nancy J. Cooke and Nathan J. McNeese, Arizona State U.; Steven M. Shope, Sandia Research Corp, Human-Systems Integration: A 28,000-Foot View

44. Cristina L. Byrne and Linda G. Pierce, U.S. Federal Aviation Admin., An Examination of the Impact of Option Preference on Success in FAA ATC Academy Training

**Occupational Ergonomics Posters**

46. Ibukun A. Sonaike, Oluwatosin A. Bewaji, Paul Ritchey, and S. Camille Peres, Texas A&M U. Health Science Center, The Ergonomic Impact of Swype
47. Carolyn M. Sommerich, Jing Li, Shasank Nagavarupu, Douglas Palmer, Sriya Ngo, Radin Zaid Radin Umar, Dana Keester, and Jennifer Dickerson, Ohio State U., A Pilot Study of an Articulating Support Arm System for Reducing Sustained Posture and Muscular Effort While Performing Echocardiograms

**Perception and Performance Posters**

48. Erin Gannon and Jibo He, Wichita State U.; Xuefei Gao, Max Planck Inst. for Psycholinguistics; Barbara Chaparro, Wichita State U.; RSVP Reading on a Smart Watch
50. Kaifeng Liu, U. of Hong Kong; Foon-Yee Chan, New Territories Cluster Hospital Authority; Calvin Ka-Lun Or, U. of Hong Kong; David Tin-Fung Sun, Mavis Wai-See Lai, and Hing-Yu So, New Territories Cluster Hospital Authority, Nurses’ Perceived Ease of Use, Mental Effort, and Likelihood of Programming Errors for Four Infusion Pumps
52. Victor S. Finomore, Christopher K. McClernon, Jason R. Amick, and Derrick Pee, U.S. Air Force Academy; Gregory J. Funke and Joel S. Warm, U.S. Air Force Research Lab, Short Vigilance Tasks Are Hard Work Even If Time Flies

**Product Design Posters**

56. Ilsun Rhiu, Sung Hee Ahn, Donggun Park, Wonjoon Kim, and Myung Hwan Yun, Seoul National U., An Analysis of User Experience of Smartphone Based on Product Smartness Utilizing Social Media Data
57. Michelle A. Sublette, C. Melody Carswell, Michael Lee, and T. Kent, U. of Kentucky, Toward a Taxonomy for Classifying Intuitive Usability Prediction Strategies in Nonexperts

**Safety Posters**

60. Daphne E. Whitmer, Valerie K. Sims, Shannon K. T. Bailey, and Bradford L. Schroeder, U. of Central Florida, Time to Decide: To Call or Not to Call 911 During Weather Crises

**Surface Transportation Posters**

62. Steven J. Kass, Alex Jarstad, and Lisa VanWormer, U. of West Florida, Effects of Mobile Phone Dependence on Driver Distraction
64. Michael A. Nees, Lafayette College, Acceptance of Self-Driving Cars: An Examination of Idealized Versus Realistic Portrayals With a Self-Driving Car Acceptance Scale

**System Development Posters**

67. Gregory M. Costedoat and Dan Nathan-Roberts, San Jose State U., The Effects of Night Work on Nurses and an Analysis of Countermeasures

**Test and Evaluation Posters**

70. Phillip Jasper, Adam Hoover, and Eric Muth, Clemson U., Determining the Utility of a Laboratory Eating Paradigm to Explore Social Eating
71. Gayle Schwark, Arizona State U.; Stephen Rice, Embry-Riddle Aeronautical U.; Lisa Busche, Crown College; David Trafigum, New Mexico State U., Recognizing the Role of Consistency in a Delayed Memory Task


74. Michael Hildebrandt and Alexandra Fernandes, Inst. for Energy Technology, Micro Task Evaluation of Analog vs. Digital Power Plant Control Room Interfaces

75. Yasmin Diederiks and Ivonne Figueroa, George Mason U., The Usability of Academic Advising Forms

**Training Posters**

76. Keaton A. Fletcher and Wendy L. Bedwell, U. of South Florida, An Initial Look at the Effects of Interruptions on Strain

77. Jake R. Mathwich, Keaton A. Fletcher, and Wendy L. Bedwell, U. of South Florida, You’ve Got Mail: Examination of a Brief Online Email Training

78. Matthew D. Marraffino and Cheryl I. Johnson, U.S. Navy Air Warfare Center Training Systems Division, Applying Multimedia Learning Principles to Design Effective Mobile Training

79. Scott Ososky, Keith Brawner, Benjamin Goldberg, and Robert A. Sottileare, U.S. Army Research Lab, GIFT Cloud: Improving Usability of Adaptive Tutor Authoring Tools Within a Web-Based Application

80. Martha J. Sanders, Quinnipiac U., Examining Children’s Concepts of Health Related to Backpack Safety


**Virtual Environments Posters**

82. Janet Wu Chastain and Dan Nathan-Roberts, San Jose State U., Recommendations for Virtual Teamwork Based on Human Factors Research

83. Travis M. Kent, Bo Fu, Brittany D. Walls, Will Seidelman, Michelle A. Sublette, Michael Lee, C. Melody Carswell, and Ruigang Yang, U. of Kentucky, Does an Abstract Weld Pool Visualization Help Novice Welders Assess the Performance of a Weldbot?

84. Preston Brown, Kallan Christensen, and David Schuster, San Jose State U., An Investigation of Trust in a Cyber Security Tool


**University Lab Posters**

86. Arizona State U, Human Systems Engineering Labs
87. Embry-Riddle Aeronautical U., Game-Based Education & Advanced Research Studies (GEARS) Lab
88. Georgia Tech, Human Factors and Aging Lab, Cognitive Ergonomics Lab, Decision Process Lab, Knowledge and Skill Lab, Problem Solving and Educational Technology Lab, & Sonification Lab
89. Michigan State U., Usability / Accessibility Research and Consulting and the Department of Media and Information
90. PUC-Rio Pontifical Catholic U. of Rio de Janeiro, Brazil, LEUI Lab of Ergodesign and Usability of Interfaces
91. Texas Tech U., Visual Perception & Human Factors Lab; Stress, Workload, & Performance Lab; Jones Lab; Greenlee Lab
92. U. of Southern California, Health Systems Improvement Collaborative
93. Ulsan National Inst. of Science and Technology (UNIST), Korea, Department of Human Factors Engineering
94. U. of Central Florida, Machines in Thought / Minds in Technology (MIT) Lab
95. U. of Houston – Clear Lake, PANDA Lab & DAAnG Lab
96. U. of Louisville, Center of Ergonomics
97. U. of Michigan, Center for Ergonomics
98. Virginia Tech, The Cogent Lab
99. U. of South Dakota, Heimstra Human Factors Labs

**Tuesday, September 20**

6:30–9:00 p.m.

**HFES Annual Business Meeting**
6:30–7:00 p.m.
Columbia 9 (Terrace Level)

**Training Technical Group Networking/Business Meeting**
6:30–7:30 p.m.
Columbia 11 (Terrace Level)

**Product Design Technical Group Reception**
7:00–9:00 p.m.
Off site
Wednesday, September 21
7:30−8:30 a.m.

Education Technical Group Networking/Business Meeting (Breakfast)
7:00−8:30 a.m.
Gunston East (Terrace Level)

Wednesday, September 21
8:30−10:00 a.m.

CE1 – User Interface Design for Unmanned Systems
COGNITIVE ENGINEERING AND DECISION MAKING; COSPONSORED BY AEROSPACE SYSTEMS
Wednesday, September 21, 8:30–10:00 a.m.
International West (Concourse Level)
Lecture
Chair: Amy R. Pritchett, Georgia Tech; Cochair: Joey C. Y. So, John Deere
2. Samuel J. Levulis, Texas Tech U.; So Young Kim, General Electric; Patricia R. DeLucia, Texas Tech U., Effects of Touch, Voice, and Multimodal Input on Multiple-UAV Monitoring During Simulated Manned-Unmanned Teaming in a Military Helicopter
3. Dorrit Billman and Shu-Chieh Wu, San Jose State U.; Chengcheng Fan, Stanford U., Representing Work for Device Design and Evaluation Using Biclustering

CS2/I – When The Walls Have Ears: Designing for Privacy in the Age of Smart COMPUTER SYSTEMS; COSPONSORED BY INTERNET
Wednesday, September 21, 8:30–10:00 a.m.
Lincoln West (Concourse Level)
Invited Address
Chair: Juan Gilbert, U. of Florida; Cochair: Ania Rodriguez, Key Lime Interactive
Invited Speaker: Faith A. McCreary, Intel Corp.

DEM – Interactive Demonstrations
INTERACTIVE SESSIONS
Wednesday, September 21, 8:30−10:00 a.m.
International Center (Concourse Level)
Demonstrations
Chair: Ronald Boring, Idaho National Lab
NOTE: Demonstrations will be repeated throughout the session.
2. Christopher Scott Fahey, Embry-Riddle Aeronautical U.; Devin Platte, SpaceX; Trevor Rizzo, Spencer Mowrey, William Smith, Lonnie Marts, Arthur Hinsvark, Skylor Wieland, and Nathan A. Sonnenfeld, Embry-Riddle Aeronautical U., Game Development Process of The Hauntlet
4. Kelly Burke and David Wing, NASA Langley Research Center, Demonstration of the Traffic Aware Planner: The Software Application for the NASA TASAR Concept
5. Ciara Sibley and Joseph Coyne, U.S. Naval Research Lab; Jim Thomas, EOIR Technologies, Demonstrating the Supervisory Control Operations User Testbed (SCOUT)

E1 – Human Factors in the Classroom and Beyond
EDUCATION
Wednesday, September 21, 8:30−10:00 a.m.
Monroe (Concourse Level)
Lecture
Chair: Tonya L. Smith-Jackson, North Carolina A&T State U.; Cochair: Christopher Via, Embry-Riddle Aeronautical U.
1. Lawton Pybus, Allaire K. Welk, and Douglas J. Gillan, North Carolina State U., Differences in Mental Model Development Among Psychology and Engineering Students of a Human Factors Course
3. Esa M. Rantanen, Rochester Inst. of Technology, Trends in Knowledge and Skill Expectations for New Human Factors Professionals
5. Desmond Bonner and Michael Dorneich, Iowa State U., Development of Game-Based Learning Requirements to Increase Female Middle-School Students’ Interest in Computer Science
GS3 – Peculiarities in Human Factors Consulting on Government Projects
GENERAL SESSIONS; COSPONSORED BY INTERNET
Wednesday, September 21, 8:30–10:00 a.m.
Columbia 9 (Terrace Level)
Discussion Panel
Chair: Dick Horst, UserWorks, Inc.
Panelists: Sean Fitzpatrick, Aquilent; Cory Lebson, Lebsontech, LLC; Rich Panzer, IQ Solutions; Jeff Pass, Aquilent

HC2 – Cognitive Engineering in Health Care
HEALTH CARE
Wednesday, September 21, 8:30–10:00 a.m.
Columbia 11 (Terrace Level)
Lecture
Chair: Carrie Reale, Vanderbilt U. Medical Center; Cochair: Laura Barg-Walkow, Georgia Tech
1. Tara McCurdie and Penelope Sanderson, U. of Queensland; Leanne M. Aitken, Griffith U.; David Liu, U. of Queensland, Interruptions in the Health-Care Workplace: An Alternative Approach
3. Tobias Grundgeiger and Christoph Klöffel, Julius-Maximilians-Universität Würzburg; Sophia Mohme, Thomas Wurmb, and Oliver Happel, U. Hospital Würzburg, Visual Attention in Anesthesiology: The Effect of the Environment (Simulated vs. Real) and Expertise (Junior vs. Senior)

ME2 – This Changes Everything: Macroergonomics and the Future of Sustainability
MACROERGONOMICS
Wednesday, September 21, 8:30–10:00 a.m.
Georgetown West (Concourse Level)
Discussion Panel
Chair: Andrew Thatcher, U. of the Witwatersrand
Panelists: Patrick Waterson, Loughborough U.; Peter A. Hancock, U. of Central Florida; Matthew C. Davis, Leeds U.; Klaus J. Zink, U. of Kaiserslautern; Antony Hilliard, U. of Toronto

OE3 – Ergonomics of Task Design and Space Engineering
OCCUPATIONAL ERGONOMICS; COSPONSORED BY SAFETY
Wednesday, September 21, 8:30–10:00 a.m.
Jefferson West (Concourse Level)
Alternative Format
Chair: Christopher R. Reid, Boeing Co.
3. Saad Alabdulkarim, Maury A. Nussbaum, Ehsan Rashedi, Sunwook Kim, and Michael Agnew, Virginia Tech; Richard Gardner, Boeing Co., Impact of Task Design on Productivity and Quality

PP3 – Monitoring
PERCEPTION AND PERFORMANCE
Wednesday, September 21, 8:30–10:00 a.m.
Lincoln East (Concourse Level)
Lecture
Chair: Carryl Baldwin, George Mason U.; Cochair: Julie Stark, ONR Global
4. Michael Pascale, Penelope Sanderson, David Liu, Ismail Mohamed, and Birgit Brecknell, U. of Queensland; Robert Loeb, U. of Arizona, Continuous Information Displays for Multiple Patient Monitoring
5. Emma McNulty, Dannielle Brown, Chiara Santomauro, Mia McLanders, Jimmy Tran, and Penelope Sanderson, U. of Queensland, Vibrotactile Displays of Pulse Oximetry: Exploratory Studies of Three Novel Designs
S3 – Driving and Safety
SAFETY
Wednesday, September 21, 8:30–10:00 a.m.
Jefferson East (Concourse Level)
Lecture
Chair: James G. Borchardt, Construction Ergonomics LLC; Cochair: William Perez, Leidos
1. Maranda McBride, North Carolina A&T State U.; Lemuria Carter, Virginia Commonwealth U., Teen Texting While Driving: Factors Influencing This Epidemic Behavior
2. Donald L. Fisher, U. of Massachusetts-Amherst; Emily Nodine and Andrew Lam, Volpe National Transportation Systems Center; Christian Jerome and Chris Monk, National Highway Traffic Safety Admin.; Wassim Najm, Volpe National Transportation Systems Center, Effects on Drivers' Behavior of Forward Collision Warning System Alerts
4. Yousif Abulhassan, Jerry Davis, Richard Sesek, Sean Gallagher, Mark C. Schall, Jr., and Aimee Callender, Auburn U., Relating the Strength Capabilities of Children to the Design of School Bus Emergency Roof Hatches

Wednesday, September 21
10:00–11:00 a.m.

SS2 – Posters With Fellows
SPECIAL SESSIONS
Wednesday, September 21, 10:00–11:00 a.m.
International Center (Concourse Level)
View and discuss the work of some of the Society's most distinguished members.

1. Thomas J. Armstrong, U. of Michigan
2. Ann M. Bisantz, U. at Buffalo, SUNY
3. Deborah A. Boehm-Davis, George Mason U.
5. Stanley H. Caplan, Usability Associates
7. Kermit G. Davis, U. of Cincinnati
8. Valerie J. Gawron, MITRE Corp.
10. Daniel Gopher, Technion-IIT
11. Wayne D. Gray, Rensselaer Polytechnic Institute
12. Joel S. Greenstein, Clemson U.
13. M. Susan Hallbeck, Mayo Clinic
14. Peter A. Hancock, U. of Central Florida
16. Edmond W. Israelski, Abbvie
17. Brian M. Kleiner, Virginia Tech
18. John D. Lee, U. of Wisconsin, Madison
19. Arnold M. Lund, Amazon Lab126
20. Thomas B. Malone, Carlow International Inc.
21. William S. Marras, Ohio State U.
22. Kathleen L. Mosier, San Francisco State U.
23. Y. Ian Noy, Liberty Mutual Research Inst. for Safety
24. Robert W. Proctor, Purdue U.
25. Ronald G. Shapiro, Consultant
26. Matthew B. Weinger, Vanderbilt U.
27. Christopher D. Wickens, Alion Science & Technology

AC1 – Augmented Cognition
AUGMENTED COGNITION
Wednesday, September 21, 10:30 a.m.–12:00 noon
Georgetown East (Concourse Level)
Lecture
Chair: Ashley Hughes, Baylor College of Medicine; Cochair: Yueqing Li, Lamar U.
1. Sherif M. Abdelfattah, Kathryn E. Merrick, and Hussein A. Abbass, U. of New South Wales, Theta-Beta Ratios Are Prominent EEG Features for Visual Tracking Tasks
2. Simon R. H. Davies, Urmila Mistry, Laura Millen, Lee Skrypchuk, and Jim Braithwaite, Jaguar Land Rover, Ltd., Evaluation of an EEG/Electrodermal Hybrid Device to Ascertain a User’s Attentional State
5. Joseph Coyne and Ciara Sibley, U.S. Naval Research Lab, Investigating the Use of Two Low-Cost Eye-Tracking Systems for Detecting Pupillary Response to Changes in Mental Workload
CE2 – Teamwork
COGNITIVE ENGINEERING AND DECISION MAKING
Wednesday, September 21, 10:30 a.m.–12:00 noon
Columbia 9 (Terrace Level)
Lecture
Chair: Frank Hannigan, Quantum Improvements Consulting; Cochair: Nathan J. McNeese, Arizona State U.
3. Timothy J. Neville, Paul M. Salmon, and Gemma J. M. Read, U. of the Sunshine Coast, Toward a Model for Measuring Teamwork in Australian Rules Football Officials

E2 – Global Perspectives on Human Factors & Ergonomics
EDUCATION
Wednesday, September 21, 10:30 a.m.–12:00 noon
Monroe (Concourse Level)
Discussion Panel
Chair: Heather Lum, Penn State Erie, The Behrend College
Panelists: Megan Olson, Texas Tech U.; Sami Durrani, UL-Wiklund; William S. Helton, U. of Canterbury; Halimahtun M. Khalid, Damai Sciences; Simon Y. W. Li, Lingnan U.; Patrick Waterson, Loughborough U.

CE3 – From Cognitive Theory to Operational Transition: One Program's Path Across the Valley of Death
COGNITIVE ENGINEERING AND DECISION MAKING
Wednesday, September 21, 10:30 a.m.–12:00 noon
International West (Concourse Level)
Discussion Panel
Chair: Wayne W. Zachary, CHI Systems, Inc.

CS3/I – Guerilla Usability: An Exercise Employing Rapid, Iterative Testing in the Wild
COMPUTER SYSTEMS; COSPONSORED BY INTERNET
Wednesday, September 21, 10:30 a.m.–12:00 noon
Lincoln West (Concourse Level)
Alternative Format
Chairs: Bridget Lewis, George Mason U.; Lara Cheng, Purdue U.; Jay Elkerton, Emerson Process Management
Participants will be given a mobile interface (Web page or application) to evaluate, redesign, and test using Guerilla testing methods. The interface and guidelines will be released and announced just prior to the Annual Meeting, and interested participants will have two days to test and iterate, culminating in a presentation of their findings and experiences during this session.

HC3 – Enhancing Provider Performance
HEALTH CARE; COSPONSORED BY COGNITIVE ENGINEERING AND DECISION MAKING
Wednesday, September 21, 10:30 a.m.–12:00 noon
Columbia 11 (Terrace Level)
Lecture
Chair: Kermit G. Davis, U. of Cincinnati; Cochair: Farzan Sasangohar, Texas A&M U.
1. Kristen Lise Welsh, Joseph R. Keebler, Agnes Fagerlund, Victoria Lew, and Elizabeth Lazzara, Embry-Riddle Aeronautical U., Communication Theories Applied to Transitions of Care
2. Yuval Bitan and Yisrael Parmet, Ben-Gurion U. of the Negev; Geva Greenfield, Imperial College London; Shelly Teng, U. of Pennsylvania; Mark Nunnally, U. of Chicago, The Cognitive Task of Medication Reconciliation – Clinicians’ Approaches to the Arrangement of Medical Condition and Medication History Information
3. Adjhaporn Khunlertkit and Nichole Jantzi, Johns Hopkins U., Using the SEIPS Framework to Reveal Hidden Factors That Can Complicate a Vaccine Documentation Process
HC4 – Advanced Technologies in Health Care
HEALTH CARE
Wednesday, September 21, 10:30 a.m.–12:00 noon
Jefferson East (Concourse Level)
Lecture
Chair: Shilo Anders, Vanderbilt U.; Cochair: Kristen Welsh, Embry-Riddle Aeronautical U.
3. Abigail R. Wooldridge, Pascale Carayon, and Peter Hoonakker, U. of Wisconsin-Madison; Albert Musa and Philip Bain, Dean Health System, Technology-Mediated Communication Between Patients and Primary Care Clinicians and Staff: Ambiguity in Secure Messaging
4. Stuart Marshall, Monash U.; Benjamin Warren, Owen Roedenburg, and Frank Smolenaers, Alfred Health; Graciela Leon, Melbourne U.; Amy McKimm, Martin Keogh, Josh Stuart, and Maria Logan, Alfred Health; Andrew Stripp, Monash Health, An Electronic Task Management (ETM) System for After-Hours Hospital Work and Subsequent Socially Mediated Effects of Task Completion

PD2 – Ergonomic Advances
PRODUCT DESIGN
Wednesday, September 21, 10:30 a.m.–12:00 noon
Lincoln East (Concourse Level)
Lecture
Chair: Natalia Russi-Vigoya, Hewlett-Packard Inc.; Cochair: Han Zhang
1. Laura A. Matalenas, Tengwen Hu, Vishnu Veeramachaneni, and John Muth, North Carolina State U., A Cane for More Than Walking: The Design of a Smart Cane for Physical Therapy
3. Wonsup Lee, Delft U. of Technology; Hayoung Jung, Pohang U. of Science and Technology; Ilgeun Bok, Chulwoo Kim, and Ochae Kwon, Samsung Electronics; Teukgyu Choi, Humanopia, Co. Ltd.; Heecheon You, Pohang U. of Science and Technology, Measurement and Application of 3-D Ear Images for Earphone Design

VE2 – A Collection of Virtual Environments
VIRTUAL ENVIRONMENTS
Wednesday, September 21, 10:30 a.m.–12:00 noon
Fairchild (Terrace Level)
Lecture
Chair: Christopher Via, Embry-Riddle Aeronautical U.
1. Michael A. Rupp, James Kozachuk, Jessica R. Michaelis, Katy L. Odette, Jana N. Smither, and Daniel S. McConnell, U. of Central Florida, The Effects of Immersiveness and Future VR Expectations on Subjective Experiences During an Educational 360-Degree Video
4. Tyler J. Renshaw, Nathan A. Sonnenfeld, and Matthew D. Meyers, Embry-Riddle Aeronautical U., Fundamentals for a Taming Test of Virtual Reality
5. Benjamin Goldberg and Robert A. Sottileare, U.S. Army Research Lab, To Embed or Not to Embed, That Is the Question: Pedagogical Agents Effect on Flow in Game-Based Training

Wednesday, September 21
12:00 noon–1:30 p.m.
Technical Group Networking/ Business Meetings
Aging Technical Group Networking/Business Meeting (Lunch)
12:00 noon–1:30 p.m.
Gunston West (Terrace Level)
System Development Technical Group Networking/ Business Meeting (Lunch)
12:00 noon–1:30 p.m.
Off site
Wednesday, September 21
1:30–3:00 p.m.

CE4 – Expert Decision Making
COGNITIVE ENGINEERING AND DECISION MAKING
Wednesday, September 21, 1:30–3:00 p.m.
Columbia 9 (Terrace Level)
Lecture
Chair: Laura Militello, Applied Decision Science, LLC;
Cochair: Nathan Lau, Virginia Tech
2. B. L. William Wong and Neesha Kodagoda, Middlesex U., How Analysts Think: Anchoring, Laddering, and Associations

CE5 – Is Functional Near-Infrared Spectroscopy (fNIRS) Appropriate for Your Research?
COGNITIVE ENGINEERING AND DECISION MAKING
Wednesday, September 21, 1:30–3:00 p.m.
International West (Concourse Level)
Discussion Panel
Chair: Ranjana Mehta, Texas A&M U.
Panelists: Hasan Ayaz, Drexel U.; Ryan McKendrick, George Mason U.; Kurtulus Izzetoglu, Drexel U.; Ben Willems, FAA William J. Hughes Technical Center; Matthias Ziegler, Lockheeed Martin

CS4/I – Marc Resnick Best Paper Competition
COMPUTER SYSTEMS; COSPONSORED BY INTERNET
Wednesday, September 21, 1:30–3:00 p.m.
Lincoln West (Concourse Level)
Lecture
Chair: Jay Elkerton, Emerson Process Management;
Cochair: Robert Pastel, Michigan Technological U.
1. Aliping Xiong, Robert Proctor, Weining Yang, and Ninghui Li, Purdue U, Ineffectiveness of Domain Highlighting as a Tool to Help Users Identify Phishing Web Pages
3. Lauren Menke and Rebecca Brown, Ball Aerospace & Technologies Corp., Coordinated Displays to Assist Cyber Defenders

OE4 – Ergonomics Research Funding: What Does the Future Hold?
OCCUPATIONAL ERGONOMICS
Wednesday, September 21, 1:30–3:00 p.m.
Jefferson West (Concourse Level)
Discussion Panel
Chair: Kermit G. Davis, U. of Cincinnati; Cochair: William S. Marras, Ohio State U.
Panelists: Brian Lawrence, Hill-Rom; Brian Baird, Founder and President, 4Pir2 communication; Timothy Vinopal, Boeing Co.; Winston R. Bennett, U.S. Air Force

OE5 – Characterizing Risk of Vibration
OCCUPATIONAL ERGONOMICS
Wednesday, September 21, 1:30–3:00 p.m.
Columbia 11 (Terrace Level)
Lecture
Chair: Jack T. Dennerlein, Northeastern U.; Cochair: Patrick Dempsey, National Inst. of Occupational Safety & Health
PD3 – Influences of the Modern Age on Design and Usability
PRODUCT DESIGN
Wednesday, September 21, 1:30–3:00 p.m.
Lincoln East (Concourse Level)
Lecture
Chair: Xinhui Zhu, Oregon State U.; Cochair: Denny Yu, Purdue U.
1. Vivian Genaro Motti, George Mason U.; Kelly Caine, Clemson U., Toward a Visual Vocabulary for Privacy Concepts
2. Qinge Wu, Kelli Sum, and Dan Nathan-Roberts, San Jose State U., How Fitness Trackers Facilitate Health Behavior Change
5. Swaroop Dinakar, Crash Safety Research Center, LLC; Kathryn G. Tippey, Trey Roady, Julien Edery, and Thomas K. Ferris, Texas A&M U., Using Modern Social Network Techniques to Expand Link Analysis in a Nuclear Reactor Console Redesign

PP4 – Vigilance and Fatigue: A Double-Sided Coin?
PERCEPTION AND PERFORMANCE
Wednesday, September 21, 1:30–3:00 p.m.
Monroe (Concourse Level)
Discussion Panel
Chair: Jesse Lee Eisert, George Mason U

S4 – Arnold M. Small Lecture in Safety
SAFETY
Wednesday, September 21, 1:30–3:00 p.m.
Jefferson East (Concourse Level)
Invited Address
Chair: Tonya L. Smith-Jackson, North Carolina A&T State U.
Invited Speaker: Elliot Kaye, Chair, U.S Consumer Product Safety Comm. The Importance of Human Factors Expertise in Consumer Product Safety

SF2 – Autonomy and Trust
STUDENT FORUM
Wednesday, September 21, 1:30–3:00 p.m.
Georgetown East (Concourse Level)
Lecture
Chair: Anthony Baker, Embry-Riddle Aeronautical U.; Cochair: Cheryl Johnson, Naval Air Warfare Center Training Systems Div.
1. W. G. Volante, Tracy L. Sanders, D. Dodge, V. A. Yerdon, and Peter A. Hancock, U. of Central Florida, Specifying Influences That Mediate Trust in Human-Robot Interaction
2. Tracy L. Sanders, U. of Central Florida; Kathryn E. Schafer, U. of Illinois; William G. Volante, Ashley Reardon, and Peter A. Hancock, U. of Central Florida, Implicit Attitudes Toward Robots
5. Prerana Rane, Hyungil Kim, Juan Lopez Marcano, and Joseph L. Gabbard, Virginia Tech, Virtual Road Signs: Augmented Reality Driving Aid for Novice Drivers

ST2 – Distraction and Mitigation
SURFACE TRANSPORTATION
Wednesday, September 21, 1:30–3:00 p.m.
Fairchild (Terrace Level)
Lecture
Chair: Clive D’Souza, U. of Michigan, Ann Arbor; Cochair: Bochen Jia, U. of Michigan, Dearborn
1. Joonbum Lee, Bruce Mehler, Bryan Reimer, and Joseph F. Coughlin, Massachusetts Inst. of Technology, Sensation Seeking and Drivers’ Glance Behavior While Engaging in a Secondary Task
4. Maryam Merrikhpour and Birsen Donmez, U. of Toronto, Toward Mitigating Teenagers’ Distracted-Driving Behaviors: Comparison of Real-Time and Post-Drive Feedback in a Simulator Study

T3 – Training Effectiveness and Return on Investment: Perspectives From Military, Training, and Industry Communities
TRAINING
Wednesday, September 21, 1:30–3:00 p.m.
Georgetown West (Concourse Level)
Discussion Panel
Chair: Jason Moss, U.S. Army Research Lab
Panelists: Jay A. Brimstin, U.S. Army Maneuver Center of Excellence; Roberto Champney, Design Interactive, Inc.; Arwen H. DeCostanza, U.S. Army Research Lab; J. D. Fletcher, Inst. for Defense Analyses; Gregory Goodwin, U.S. Army Research Lab
Wednesday, September 21
5:30–7:00 p.m.

Student Reception
5:30–6:30 p.m.
International Terrace (Terrace Level)

Early-Career Professionals Reception
5:30–7:00 p.m.
Gunston (Terrace Level)

Wednesday, September 21
3:30–9:30 p.m.

Technical Group Networking/ Business Meetings

Aerospace Systems Networking/ Business Meeting and Reception
3:30–5:30 p.m.
Jefferson West (Concourse Level)

Augmented Cognition Networking/ Business Meeting
3:30–5:15 p.m.
Georgetown West (Concourse Level)

Cognitive Engineering and Decision Making Networking/ Business Meeting and Reception
3:30–5:15 p.m.
Columbia 9 (Terrace Level)

Communications Networking/ Business Meeting
3:30–4:30 p.m.
Jefferson East (Concourse Level)

Computer Systems/Internet Networking/ Business Meeting and Reception
4:30–5:30 p.m.
Lincoln West (Concourse Level)

Education Networking/ Business Meeting and Breakfast
7:00–8:30 a.m.
Gunston East (Terrace Level)

Environmental Design/ Macroergonomics Networking/ Business Meeting and Reception
3:45–5:00 p.m.
Fairchild (Terrace Level)

Forensics Professional Group Networking/ Business Meeting and Reception
4:30–5:30 p.m.
Jefferson East (Concourse Level)

Health Care Networking/ Business Meeting and Reception
5:30–6:30 p.m.
Columbia 11 (Terrace Level)

Human Performance Modeling Networking/ Business Meeting
5:30–6:30 p.m.
Fairchild (Terrace Level)

Individual Differences in Performance Networking/ Business Meeting
3:30–4:30 p.m.
Columbia 11 (Terrace Level)

Internet/Computer Systems Networking/ Business Meeting
4:30–5:30 p.m.
Lincoln West (Concourse Level)

Macroergonomics/Environmental Design Networking/ Business Meeting and Reception
3:45–5:00 p.m.
Fairchild (Terrace Level)

Occupational Ergonomics Networking/ Business Meeting and Reception
4:30–6:00 p.m.
Off site

Perception & Performance Networking/ Business Meeting
4:00–6:00 p.m.
Georgetown East (Concourse Level)

Product Design Networking/ Business Meeting
3:30–4:30 p.m.
Lincoln East (Concourse Level)

Safety Networking/ Business Meeting
5:30–6:30 p.m.
Jefferson East (Concourse Level)

Surface Transportation Networking/ Business Meeting and Reception
5:30–9:30 p.m.
Off site

Test & Evaluation Networking/ Business Meeting
5:30–6:30 p.m.
Georgetown West (Concourse Level)

Virtual Environments Networking/ Business Meeting
3:00–4:00 p.m.
Georgetown East (Concourse Level)
Thursday, September 22
8:30–10:00 a.m.

AS2 – Aviation Hodgepodge
AEROSPACE SYSTEMS
Thursday, September 22, 8:30–10:00 a.m.
Georgetown West (Concourse Level)
Lecture
Chair: Amy R. Pritchett, Georgia Tech; Cochair: Navaneethan Sivagnanasundaram, Wichita State U.
1. Miwa Hayashi, NASA Ames Research Center; Victoria L. Dulchinos, San Jose State U. Foundation, Cardiac-Activity Measures for Assessing Airport Ramp-Tower Controller’s Workload
2. Dennis B. Beringer, FAA Civil Aerospace Medical Inst., An Exploratory Evaluation of General Aviation Pilot Performance and Preferences Using Synthetic Vision Displays for Approaches and Missed Approaches in Flat and Challenging Terrain
3. Arik-Quang V. Dao, James R. Parkinson, and Steven J. Landry, Purdue U., Identifying Human-Machine Interaction Problems in Continuous-State Data

CE7 – Cyberspace Operations and the People Who Perform Them
COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 8:30–10:00 a.m.
International West (Concourse Level)
Discussion Panel
Chair: Stoney Trent, U.S. Cyber Command; Cochair: Robert Hoffman, Inst. for Human and Machine Cognition
Panelists: Tony Leota, Robert Frost, and Danielle Gonzalez, Cyber National Mission Force

E3 – Fork in the Road: Deciding Between Academia and Industry
EDUCATION
Thursday, September 22, 8:30–10:00 a.m.
Fairchild (Terrace Level)
Discussion Panel
Chair: Nicholas Kelling, U. of Houston-Clear Lake
Panelists: Ryan Z. Amick, Lockheed Martin; Gregory M. Corso, Morehead State U.; Christy Harper, Hewlett-Packard; Andrew Muddimer, Workplace Sense; S. Camille Peres, Texas A&M U.

HC5 – Usability and Design in Health Care
HEALTH CARE; COSPONSORED BY MACROERGONOMICS
Thursday, September 22, 8:30–10:00 a.m.
Columbia 11 (Terrace Level)
Lecture
Chair: SQ Yin, Changi General Hospital Singapore; Cochair: Bethany Lowndes, Mayo Clinic
1. Amro Abdelrahman, Mayo Clinic; Denny Yu, Purdue U.; Tara Cohen, Embry-Riddle Aeronautical U.; M. Susan Hallbeck and Sandra Woolley, Mayo Clinic, Comparison of Provider Experience With Two Patient Examination Tables
2. Charlotte Leape, Allan Fong, and Raj M. Rattani, MedStar Health, Heuristic Usability Evaluation of Wearable Mental State Monitoring Sensors for Health-Care Environments
3. Alexandra Doggett, Dustin T. Weiler, and Jason J. Saleem, U. of Louisville, A Comparative Usability Study of Independent Web-Based Personal Health Records
5. Carolyn M. Sommerich, Alex S. Pires, Steven A. Lavender, Elizabeth B.-N. Sanders, Kevin D. Evans, Jing Li, and Emily S. Patterson, Ohio State U., Architects’ and Interior Designers’ Perspectives on Hospital Patient Rooms Designed by the People Who Work in These Rooms

CE6 – Trust in Automation
COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 8:30–10:00 a.m.
Jefferson East (Concourse Level)
Lecture
Chair: Linda Pierce, Federal Aviation Admin.; Cochair: Jing Chen, New Mexico State U.
1. Xi Jessie Yang, U. of Michigan; Christopher D. Wickens, Alion Science & Technology; Katja Höttä-Otto, Aalto U., How Users Adjust to Trust in Automation: Contrast Effect and Hindsight Bias
3. Melissa A. Smith, M. Mowafak Allaham, and Eva Wiese, George Mason U., Trust in Automated Agents Is Modulated by the Combined Influence of Agent and Task Type
HC6 – Advanced Measurement Techniques in Health Care
HEALTH CARE
Thursday, September 22, 8:30–10:00 a.m.
Columbia 9 (Terrace Level)
Lecture
Chair: Denny Yu, Purdue U.; Cochair: William Muto, Abbott Labs
1. Wil-Johneen Ardoin, W. Sloane Hoyle, Oluwatosin A. Bewaji, Thomas K. Ferris, and S. Camille Peres, Texas A&M U.; M. Susan Hallbeck and Revelee Kaplan, Mayo Clinic; Peter A. Brady, Mayo Clinic, Real-Time Remote Physiological Monitoring: The Role of Communication in Three Paradigms of Inpatient Care
2. Scott M. Betza, Katherine A. Jurewicz, David M. Neyens, and Sara Lu Riggs, Clemson U.; James H. Abernathy and Scott T. Reeves, Medical U. of South Carolina, Anesthesia Maintenance and Vigilance: Examining Task-Switching
3. Mary Yovanoff and David Pepley, Pennsylvania State U.; Katelin Mirkin, Penn State Hershey Medical Center; Jason Moore, Pennsylvania State U.; David Han, Penn State Hershey Medical Center; Scarlett Miller, Pennsylvania State U., Improving Medical Education: Simulating Changes in Patient Anatomy Using Dynamic Haptic Feedback
4. Da Tao and Fenglian Shao, Shenzhen U.; Shuang Liu, China Inst. of Marine Technology & Economy; Tieyan Wang, Xi’an Polytechnic U.; Xingda Qu, Shenzhen U., Predicting Factors of Consumer Acceptance of Health Information Technologies: A Systematic Review
5. Tiffany Tong, Mark Chignell, and Mary C. Tierney, U. of Toronto; Marie-Josée Siros, Centre Hospitalier Universitaire de Québec; Judah Goldstein, Nova Scotia Health Authority; Marcel Émond, Université Laval; Kenneth Rockwood, Dalhousie U.; Jacques Lee, Sunnybrook Research Inst., Tablet-Based Frailty Assessments in Emergency Care for Older Adults

I1/CS – Security/Web Page Design
INTERNET; COSPONSORED BY COMPUTER SYSTEMS
Thursday, September 22, 8:30–10:00 a.m.
Lincoln West (Concourse Level)
Lecture
Chair: Lara Cheng, Purdue U.; Cochair: Courtney Johnson, Google
2. Yee-Yin Choong and Kristen K. Greene, National Inst. of Standards and Technology, What’s a Special Character, Anyway? Effects of Ambiguous Terminology in Password Rules
5. Marc Resnick (deceased); William Albert, and Yunzhi Huang, Bentley U., The Attention-Grabbing Salience of Viscerally Engaging Images

ME3 – Macroergonomics Across Domains
MACROERGONOMICS
Thursday, September 22, 8:30–10:00 a.m.
Cardozo (Terrace Level)
Lecture
Chair: Christiane Schubert, Lorna Linda U.; Cochair: Abigail Wooldridge, U. of Wisconsin-Madison
1. Yushi Yang, U. of Wisconsin-Madison; A. Joy Rivera, Children’s Hospital of Wisconsin, A Qualitative Observational Study in Pediatric ICUs: The Use of Hands-Free Device for Interruptions
2. Sara Pazell and Robin Burgess-Limerick, U. of Queensland; Tim Horberry, Monash U., Application of Functional Resonance Analysis Method to Sustain Human-Centered Design Practice in Road Construction
3. Nita Lewis Shattuck, Lawrence G. Shattuck, and Panagiotis Matsangas, Naval Postgraduate School, Combat Effectiveness and Sleep Patterns in U.S. Marines
4. Nita Lewis Shattuck and Panagiotis Matsangas, Naval Postgraduate School, Comparison of the 3/9 and 6/6 Watchstanding Schedules for Crewmembers of a U.S. Navy Destroyer
5. Jia-Hua Lin and Stephen Bao, Washington State Dept. of Labor and Industries, Sit-Stand Workstations: Are They the Solution for Musculoskeletal Stress?

OE6 – Biomechanics of the Neck, Back, and Trunk
OCCUPATIONAL ERGONOMICS
Thursday, September 22, 8:30–10:00 a.m.
Lincoln East (Concourse Level)
Lecture
Chair: Maury Nussbaum, Virginia Tech; Cochair: Jeffrey Schiffman, Liberty Mutual Research Inst. for Safety
1. Jie Zhou, U. of California, Davis; Xiaopeng Ning, West Virginia U., Comparison of LumboPelvic Coordination Between Trunk Flexion and Extension
2. Faisal M. Alessa and Xiaopeng Ning, West Virginia U., Lumbar Posture and Tissue Loading During Short-Term Static Posture Holding
<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
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<tbody>
<tr>
<td>7:00–10:00 a.m.</td>
<td>10:30 a.m.–12:00 noon</td>
<td>8:00–10:00 a.m.</td>
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<td>8:30 a.m.–12:00 noon</td>
<td>PL  Opening Plenary Session, International Center</td>
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<td>Morning Workshops</td>
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<tr>
<td>WK1</td>
<td>Fieldwork in Home &amp; Community Settings</td>
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<td>9:00 a.m.–4:30 p.m.</td>
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<td>WK6</td>
<td>ShadowBox Approach to Cognitive Skills Training</td>
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<td>WK7</td>
<td>Human-Systems Integration</td>
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<td>3:30–5:00 p.m.</td>
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<td>All-Day Workshops continue</td>
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<td>10:30 a.m.–12:00 noon</td>
<td>SF1  Student Career and Professional Development Day, Second Half of Teaching Insights Workshop, Columbia 9</td>
<td>10:30 a.m.–12:00 noon</td>
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<td>Morning-Only Workshops continue</td>
<td>AS1  Air Traffic Management, Lincoln E.</td>
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<td>All-Day Workshops continue</td>
<td>C1  Improving Communication Systems, Lincoln W.</td>
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<td>CS1/I  GoodGovUX, Monroe</td>
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<td>GS1  Recent Trends in HSI, Columbia 9</td>
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<td>ME1  Boundaries in Health Care, Columbia 12</td>
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<td>OE1  Research to Practice: Practitioner Perspective, Jefferson E.</td>
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<td>PP1  Elements of Human Performance, Jefferson W.</td>
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<td>S1  Safety Culture, International W.</td>
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<td>SD1  Development and Design, Columbia 11</td>
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<td>T1  Research Advances, Georgetown E.</td>
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<td>PP2  Auditory &amp; Multimodal Displays, Jefferson W.</td>
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<td>S2  Warning Signs &amp; Labels, International W.</td>
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<td>SD2  Modeling &amp; Simulation, Columbia 11</td>
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<td>ST1  Automation &amp; Behavior Measures, Columbia 12</td>
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<td>T2  LVC Training Fidelity, Georgetown E.</td>
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<td>TE2  Assessing User Experience, Georgetown W.</td>
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<td>PL1  User-Centered Product Design Award, Lincoln W.</td>
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<td>PL2  Automation &amp; Driverless Cars, International W.</td>
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<td>PL3  Deep Space Exploration, Jefferson</td>
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<td>PL4  Cybersecurity, Monroe</td>
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<td>PL5  Journal Awards Showcase, Lincoln W.</td>
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<td>12:00 noon–1:30 p.m.</td>
<td>Lunch break</td>
<td>12:00 noon–1:30 p.m.</td>
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<td>Morning Workshops</td>
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<td>Afternoon Workshops</td>
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<td>1:30–5:00 p.m.</td>
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<td>WK3</td>
<td>Risk Management for HF/E Practitioners</td>
<td>A1  Aging, Fairchild</td>
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<td></td>
<td>Lincoln E.</td>
<td>GS2  Improving Human Performance (BOHSI), Columbia 9</td>
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<td>WK4</td>
<td>Cogulator</td>
<td>HP1  Workload, Monroe</td>
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<td>Lincoln W.</td>
<td>OE2  Research to Practice: Academic Perspective, Jefferson E.</td>
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<tr>
<td>WK5</td>
<td>Teaching Insights and Success in Academia</td>
<td>PD1  User-Centered Product Design Award, Lincoln W.</td>
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<td>Georgetown W.</td>
<td>PP2  Auditory &amp; Multimodal Displays, Jefferson W.</td>
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<td>3:30–5:00 p.m.</td>
<td>All-Day Workshops continue</td>
<td>S2  Warning Signs &amp; Labels, International W.</td>
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<td>Student Career and Professional Development Day continues</td>
<td>SD2  Modeling &amp; Simulation, Columbia 11</td>
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<td>3:30–5:00 p.m.</td>
<td>ST1  Automation &amp; Behavior Measures, Columbia 12</td>
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<td>All-Day Workshops continue</td>
<td>T2  LVC Training Fidelity, Georgetown E.</td>
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<td>TE2  Assessing User Experience, Georgetown W.</td>
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<td>PL2  Automation &amp; Driverless Cars, International W.</td>
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<td>PL4  Cybersecurity, Monroe</td>
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<td>PL5  Journal Awards Showcase, Lincoln W.</td>
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<tr>
<td>Evening</td>
<td>National Ergonomics Month Expo</td>
<td>Evening</td>
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<td>4:45–6:15 p.m.</td>
<td>Interactive Posters Session and Reception</td>
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<td>International Terrace</td>
<td>5:00–6:30 p.m., International Center</td>
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<td>Opening Reception</td>
<td>HFES Annual Business Meeting</td>
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<td>6:30–9:30 p.m.</td>
<td>6:30–7:00 p.m., Columbia 9</td>
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<td>Heights Courtyard</td>
<td>Product Design Technical Group Reception</td>
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<td>7:00–9:00 p.m., Off site</td>
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**Wednesday**

7:00–8:30 a.m.
Education TG Networking/Business Meeting, Gunston E.

8:30–10:00 a.m.

<table>
<thead>
<tr>
<th>CE1</th>
<th>UX Design for Unmanned Systems, International W.</th>
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</thead>
<tbody>
<tr>
<td>CE2</td>
<td>Designing for Privacy, Lincoln W.</td>
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<tr>
<td>DEM</td>
<td>Demonstrations, International Center</td>
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<tr>
<td>E1</td>
<td>HF in the Classroom, Monroe</td>
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<tr>
<td>GS3</td>
<td>Consulting on Government Projects, Columbia 9</td>
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<tr>
<td>HC2</td>
<td>Cog Engineering in Health Care, Columbia 11</td>
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<tr>
<td>ME2</td>
<td>ME and Sustainability, Georgetown W.</td>
</tr>
<tr>
<td>OE3</td>
<td>Task Design &amp; Space Engineering, Jefferson W.</td>
</tr>
<tr>
<td>PP3</td>
<td>Monitoring, Lincoln E.</td>
</tr>
<tr>
<td>S3</td>
<td>Driving &amp; Safety, Jefferson E.</td>
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10:00–11:00 a.m.

Posters With Fellows, International Center

10:30 a.m.–12:00 noon

| AC1 | Augmented Cognition, Georgetown E.               |
| CE2 | Teamwork, Columbia 9                             |
| CE3 | From Theory to Operation, International W.      |
| CS3/I| Guerilla Usability, Lincoln W.                  |
| E2  | Global Perspectives on HF/E, Monroe             |
| ED1 | Environmental Design in Education, Georgetown W.|
| HC3 | Enhancing Provider Performance, Columbia 11     |
| HC4 | Advanced Technologies, Jefferson E.             |
| PD2 | Ergonomic Advances, Lincoln E.                  |
| VE2 | Collection of Virtual Environments, Fairchild   |

12:00 noon–1:30 p.m.

Aging TG Networking/Business Meeting, Gunston W.
System Development TG Networking/Bus. Mtg., Off site

1:30–3:00 p.m.

| CE4 | Expert Decision Making, Columbia 9             |
| CE5 | Is fnRS Appropriate? International W.          |
| CS4/I| Resnick Best Paper Competition, Lincoln W.     |
| OE4 | Ergonomics Research Funding, Jefferson W.      |
| OE5 | Risk of Vibration, Columbia 11                 |
| PD3 | Influences on Design & Usability, Lincoln E.   |
| PP4 | Vigilance & Fatigue, Monroe                    |
| S4  | Arnold Small Lecture, Jefferson E.             |
| SF2 | Autonomy & Trust, Georgetown E.                |
| ST2 | Distraction & Mitigation, Fairchild            |
| T3  | Training Effectiveness & ROI, Georgetown W.    |

3:00–9:30 p.m.

Technical Group Networking/Business Meetings

3:30–5:00 p.m.

| AS4 | HF in the U.S. Military, Monroe                |
| CE11| Politeness in HMI, International W.           |
| E6  | Diversity Task Force, Fairchild               |
| FP2 | Forensics Issues, Lincoln E.                  |
| HC10| Future of Cancer Care, Columbia 9             |
| HC11| FDA & Usability Testing Ethics, Columbia 11    |
| IA/CS| Usage Analysis, Lincoln E.                    |
| OE10| Caregiver Health Risk, Jefferson W.           |
| OE11| MSDS and Performance, Jefferson E.            |
| SF5 | Measuring SA, Georgetown W.                   |
| ST5 | Training & Performance, Georgetown E.         |
| TE4 | Marksmanship as a Task, Gunston               |
| VE3 | Electronic Sports, Cardozo                     |

5:30 to 7:00 p.m.

Student Reception
5:30–6:30 p.m.
International Terrace

Early Career Professionals Reception
5:30–7:00 p.m.

**Thursday**

8:30–10:00 a.m.

| AS2 | Aviation Hodgetpoge, Georgetown W.             |
| CE6 | Trust in Automation, Jefferson E.             |
| CE7 | Cyberspace Operations, International W.       |
| E3  | Academia or Industry? Fairchild               |
| HC5 | Usability & Design, Columbia 11               |
| HC6 | Advanced Measurement, Columbia 9              |
| IC/CS| Security/Web Design, Lincoln W.               |
| ME3 | ME Across Domains, Cardozo                    |
| ME6 | Neck, Back, Trunk, Lincoln E.                 |
| OE7 | Computer Vision, Jefferson W.                 |
| PD4 | Evaluation Strategies, Georgetown E.         |
| S5  | Safety Potpourri, Monroe                      |
| SD3 | Technical & Managerial Factors, Gunston       |

10:00–11:00 a.m.

Posters With Fellows, International Center

10:30 a.m.–12:00 noon

| AS3 | USA Mishaps, Monroe                           |
| CE8 | Context-Based Decision Support, International W|
| E4  | HF Applications in Education, Fairchild       |
| ED2 | ED Potpourri, Gunston                         |
| GS4 | Multitask Performance, Columbia 9             |
| HC7 | Cognitive Support, Columbia 11                |
| ME8 | Medical Alarms, Jefferson E.                  |
| HP2 | Human Performance Modeling, Georgetown E.     |
| I2/CS| Gaps in Cyber Defense, Lincoln W.             |
| ID1 | Orienting & Navigating Tasks, Cardozo         |
| OE6 | NIOSH Lifting Equation Part 2, Jefferson W.   |
| PL6 | Conversation with Dan Mote, Lincoln E.        |
| SF3 | Student Research, Georgetown W.               |

12:00 noon–1:30 p.m.

Lunch break

1:30–3:00 p.m.

| CE9 | Interruptions & Workload, International W.    |
| CE10| Simulations & Microworlds, Columbia 9        |
| E5  | Education of Future HF Professionals, Fairchild|
| FP1 | Mock Trial, Lincoln E.                        |
| HC9 | HF in the Wild, Columbia 11                    |
| IS/CS| Mobile Interfaces, Lincoln E.                 |
| ID2 | ID in Performance, Cardozo                    |
| OE9 | NIOSH Lifting Equation Part 2, Jefferson W.   |
| PP6 | Visual Attention & Search, Jefferson E.       |
| SF4 | Aging & Health Care, Georgetown W.            |
| ST3 | Workload & Stress, Monroe                     |
| ST4 | Perception & Performance, Georgetown E.       |
| TE3 | Measuring Performance, Gunston                |

3:30–5:00 p.m.

| AS4 | HF in the U.S. Military, Monroe                |
| CE11| Politeness in HMI, International W.           |
| E6  | Diversity Task Force, Fairchild               |
| FP2 | Forensics Issues, Lincoln E.                  |
| HC10| Future of Cancer Care, Columbia 9             |
| HC11| FDA & Usability Testing Ethics, Columbia 11    |
| IA/CS| Usage Analysis, Lincoln E.                    |
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| OE11| MSDS and Performance, Jefferson E.            |
| SF5 | Measuring SA, Georgetown W.                   |
| ST5 | Training & Performance, Georgetown E.         |
| TE4 | Marksmanship as a Task, Gunston               |
| VE3 | Electronic Sports, Cardozo                     |

5:30 to 7:00 p.m.

Student Reception
5:30–6:30 p.m.
International Terrace

Early Career Professionals Reception
5:30–7:00 p.m.

**Friday**

8:30–10:00 a.m.

| CE12| Attention & Alerts, Columbia 9               |
| CE13| Ethics, Trust & Autonomous Systems, Int’l W.  |
| CS5/I| User Feedback at Scale, Georgetown W.        |
| E7  | Reaching the Youth, Cardozo                   |
| ED3 | Sit or Stand, Georgetown W.                   |
| HC12| Usability in Health IT, Jefferson E.          |
| HC13| Patient Work in HF/E, Jefferson W.           |
| HP3 | State Representation & SA, Fairchild         |
| OE12| Fatigue Assessment, Lincoln E.               |
| PP6 | Psychophysics, Lincoln W.                    |
| ST6 | Automation Role in Transportation, Columbia 11|
| ST7 | Multitasking & Safety, Monroe                |
| TE5 | Assessment Tools & Techniques, Gunston        |

10:30 a.m.–12:00 noon

AC2 | Gathering Data from Novices, Georgetown E.   |
AS5 | Improving Air Traffic Control, Monroe        |
CE14| Prediction & Decision Making, Columbia 9     |
E8  | Future of HF Education, Cardozo              |
HC14| Promoting Patient Safety, International W.   |
HC15| Bringing Safety II to Health Care, Jefferson E|
HP4 | Model-Based Assessment, Fairchild            |
I5/CS| Touch/Mouse Input, Lincoln W.                |
OE13| Occupational Ergonomics, Lincoln E.          |
OE14| Ergonomics of Aging & Obesity, Jefferson W.  |
SF8  | Teen Drivers, Columbia 11                    |
TE6 | Voice-Based In-Vehicle Interfaces, Georgetown |

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           |
I   | Internet                                        |
ME  | Macroergonomics                                 |
OE  | Occupational Ergonomics (formerly Industrial Ergonomics) |
PL  | Plenary Session                                 |
PP  | Perception & Performance                        |
PD  | Product Design                                  |
PQS | Posters & Demonstrations                        |
S   | Safety                                          |
SS  | Special Sessions                                |
SF  | Student Forum                                   |
ST  | Surface Transportation                         |
SD  | System Development                              |
TE  | Test & Evaluation                               |
T   | Training                                        |
VE  | Virtual Environments                            |
WK  | Workshops                                       |

**PROGRAM AT A GLANCE**
OE7 – Computer Vision and Occupational Ergonomics

OCCUPATIONAL ERGONOMICS
Thursday, September 22, 8:30–10:00 a.m.
Jefferson West (Concourse Level)
Discussion Panel
Chair: Robert Radwin, U. of Wisconsin-Madison

PD4 – Evaluation Strategies and Practices

PRODUCT DESIGN
Thursday, September 22, 8:30–10:00 a.m.
Georgetown East (Concourse Level)
Lecture
Chair: Stephen B. Wilcox, Design Science; Cochair: Jo Rain Jardina, Wichita State U.

S5 – Safety Potpourri

SAFETY
Thursday, September 22, 8:30–10:00 a.m.
Monroe (Concourse Level)
Lecture
Chair: H. Harvey Cohen, Error Analysis; Cochair: Jeffrey Muttart, Crash Safety Research Center, LLC
1. Mahiyar F. Nasarwanji, National Inst. for Occupational Safety and Health, Contributing Factors to Slip, Trip, and Fall Fatalities at Surface Coal and Metal/Nonmetal Mines
2. Natasha A. Batista, Luiz Felipe Bruder Bertuluce Bertani, and Justin G. Young, Kettering U., Handhold Location and Utilization During Bathtub Ingress/Egress and Sit-to-Stand Tasks: A Pilot Study
3. Lauren Reinerman-Jones, U. of Central Florida; Niav Hughes and Amy D’Agostino, U.S. Naval Surface Warfare Center Dahlgren Division, A Comparison of Displays and Associated Workload on Nuclear Power Plant Tasks
4. Man-Wa Ng and Simon Y. W. Li, Lingnan U., An Analysis of Aircraft Maintenance Incidents Using Psychological and Cognitive Engineering Knowledge
5. Philippa Dodshon and Maureen Hassall, U. of Queensland, Incorporation of Human and Organizational Factors in Incident Investigation Processes – The Practitioner’s Perspective

SD3 – Technical and Managerial Factors of System Design and Development

SYSTEM DEVELOPMENT
Thursday, September 22, 10:30 a.m.–12:00 noon
Gunston (Terrace Level)
Lecture
Chair: Jeffrey A. Thomas, U.S. Army Research Lab; Cochair: Frank C. Lacson, Pacific Science and Engineering Group
1. Angelia Sebok and Brett Walters, Alion Science & Technology, The Identification and Application of Human-System Integration Software Tools to Support the Systems Engineering Lifecycle and the Acquisition Process
2. Colin Corbridge, Defence Science & Technology Lab UK; Mark Anthony, Defence Equipment & Support UK; David McNeish, Defence Science & Technology Lab UK; Gareth Shaw, BAE Systems Defence Information UK, A New UK Defence Standard for Human Factors Integration (HFI)

Thursday, September 22
10:30 a.m.–12:00 noon

AS3 – UAS Mishaps

AEROSPACE SYSTEMS
Thursday, September 22, 10:30 a.m.–12:00 noon
Monroe (Concourse Level)
Discussion Panel
Chair: Scott Scheff
Panelists: Alan Hobbs, San Jose State U. Foundation; Linda Connell, NASA Ames Research Center

CE8 – Approaches to Context-Based Proactive Decision Support

COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 10:30–12:00 noon
International West (Concourse Level)
Invited Symposium
Chair: Wayne W. Zachary, CHI Systems, Inc.

4. Joanna Brown, Boston Fusion; Sylvain Bruni and Joseph Bennett, Aptima Inc.; Connie Fournelle, Boston Fusion; Christopher Hanna, Lisa Lucia, and Danielle Ward, Aptima Inc.; Benjamin Woodward, Boston Fusion, Characterizing Mission and User Context for Proactive Decision Support

5. Catherine Inibhunu and Scott Langevin, Uncharted Software, Adaptive Visualization of Complex Networks With FocalPoint: A Context-Aware Level of Details Recommender System

E4 – Human Factors Applications in Education

EDUCATION
Thursday, September 22, 10:30 a.m.–12:00 noon
Fairchild (Terrace Level)
Lecture
Chair: Frank Lacson, Pacific Science & Engineering Group; Cochair: Nathan Sonnenfeld, Embry-Riddle Aeronautical U.
4. Marti Reinvee, Estonian U. of Life Sciences; Mati Paasuke, U. of Tartu, Estonia, Overview of Contemporary Low-Cost sEMG Hardware for Applications in Human Factors and Ergonomics

ED2 – Environmental Design Potpourri

ENVIRONMENTAL DESIGN
Thursday, September 22, 10:30 a.m.–12:00 noon
Gunston (Terrace Level)
Lecture
Chair: Clive R. D’Souza, U. of Michigan; Cochair: Beth Phillips, StaCon Services Group
2. Martha J. Sanders, Quinnipiac U., Age-Related Changes and Environmental Modifications for Healthy Older Workers in Manufacturing: A Multiple-Case Study

GS4 – Multitask Performance

GENERAL SESSIONS; COSPONSORED BY INDIVIDUAL DIFFERENCES IN PERFORMANCE; HUMAN PERFORMANCE MODELING; VIRTUAL ENVIRONMENTS
Thursday, September 22, 10:30 a.m.–12:00 noon
Columbia 9 (Terrace Level)
Lecture
Chair: Rick Thomas, Georgia Tech
1. Shijing Liu, Amy Wadeson, Na Young Kim, and Chang S. Nam, North Carolina State U., Effects of Working Memory Capacity, Task Switching, and Task Difficulty on Multitasking Performance
2. Stephanie A. Morey, Jason S. McCarley, and Nicole A. Thomas, Flinders U., Unchanging Capacity: Dual-Task Effects on Peripheral Target Detection
4. Audrey E. Dorris, Peter M. Quesada, and Jason J. Saleem, U. of Louisville, Effects of Vocal and Instrumental Music on Running

HC7 – Cognitive Support and Assistive Technologies

HEALTH CARE
Thursday, September 22, 10:30 a.m.–12:00 noon
Columbia 11 (Terrace Level)
Lecture
Chair: Josh Singer, National Center for Human Factors in Healthcare; Cochair: Tina Mirchi, Pacific Science & Engineering Group
2. Estrella Paterson and Penelope Sanderson, U. of Queensland; Neil Paterson, Lady Cilento Children’s Hospital; David Liu, U. of Queensland; Robert Loeb, U. of Arizona, The Effect of a Secondary Task on Identification Accuracy of Oxygen Saturation Ranges Using an Enhanced Pulse Oximetry Sonification: A Laboratory Study
3. Anna Hickling, Penelope Sanderson, and Birgit Brecknell, U. of Queensland; Robert Loeb, U. of Arizona, Using Earcons to Monitor Multiple Patients
HC8 – Current Issues With Medical Alarms
HEALTH CARE
Thursday, September 22, 10:30 a.m.–12:00 noon
Jefferson East (Concourse Level)
Invited Symposium
Chair: Judy Edworthy, Plymouth U.; Cochair: Carryl Baldwin, George Mason U.
1. Judy Edworthy, Plymouth U.; Carryl L. Baldwin, George Mason U., Medical Audible Alarms and IEC 60601-1-8
5. Joseph Schlesinger, Vanderbilt U. Medical Center, Utilizing Multisensory Integration to Improve Monitoring in the ICU

HP2 – Human Performance Modeling
HUMAN PERFORMANCE MODELING
Thursday, September 22, 10:30 a.m.–12:00 noon
Georgetown East (Concourse Level)
Lecture
Chair: Michael Miller, U.S. Air Force Inst. of Technology
1. Linda L. M. Bossi, Defence Research and Development Canada; Monica L. H. Jones, U. of Michigan; Alison Kelly and David W. Tack, HumanSystems Inc., A Preliminary Investigation of the Effect of Protective Clothing Weight, Bulk, and Stiffness on Combat Mobility Course Performance
3. Halimahtun M. Khalid and Liew Wei Shiung, Damai Sciences; Parham Nooralishani and Zeeshan Rasool, U. of Malaya; Martin G. Helander, Damai Sciences; Loo Chu Kiong and Chin Ai-Vyrn, U. of Malaya, Exploring Psychophysiological Correlates to Trust: Implications for Human-Robot-Human Interaction

I2/CS – Addressing Human Factors Gaps in Cyber Defense
INTERNET; COSPONSORED BY COMPUTER SYSTEMS, COMMUNICATIONS
Thursday, September 22, 10:30 a.m.–12:00 noon
Lincoln West (Concourse Level)
Discussion Panel
Chair: Alex Vieane, Colorado State U.; Cochair: Kelly Hale, Design Interactive, Inc.
Panelists: Gregory J. Funke, U.S. Air Force Research Lab; Robert Gutzwiller, Space and Naval Warfare Systems Center Pacific; Vincent Mancuso, MIT Lincoln Lab; Ben D. Sawyer, MIT AgeLab; Christopher D. Wickens, Colorado State U.

ID1 – Individual Differences in Orienting and Navigating Tasks
INDIVIDUAL DIFFERENCES IN PERFORMANCE
Thursday, September 22, 10:30 a.m.–12:00 noon
Cardozo (Terrace Level)
Lecture
Chair: Andy Dattel, Embry-Riddle Aeronautical U.; Cochair: Rachel Phillips, Chowan U.

OE8 – Panel Discussion in Honor of Dr. Tom Waters – The NIOSH Lifting Equation – Part 1: A Review of Its Validation and Implications for Interpretation
OCCUPATIONAL ERGONOMICS
Thursday, September 22, 10:30 a.m.–12:00 noon
Jefferson West (Concourse Level)
Discussion Panel
Chair: Robert R. Fox, General Motors; Cochair: Wayne Maynard, Liberty Mutual Research Inst. for Safety
PL6 – Past President’s Forum: A Conversation With National Academy of Engineering President Dan Mote: Human Factors and Ergonomics Contribution to the NAE Grand Challenges

GENERAL SESSIONS
Thursday, September 22, 10:30 a.m.–12:00 noon
Lincoln East (Concourse Level)
Plenary
Chair: Andrew S. Imada, A. S. Imada Assoc.
Invited Speaker: C. D. Mote, Jr., National Academy of Engineering

SF3 – Student Research Medley
STUDENT FORUM
Thursday, September 22, 10:30 a.m.–12:00 noon
Georgetown West (Concourse Level)
Lecture
Chair: Eva Rodriguez, U. of Central Florida; Cochair: Brittany Neilson, Texas Tech U.
1. Jayde M. King, Yolanda Ortiz, and Beth L. Blickensderfer, Embry-Riddle Aeronautical U., ATC Weather Knowledge & Skills: A Contributor to the General Aviation Weather Problem?
2. Emily C. Anania, Joseph R. Keebler, Katlin M. Anglin, and Jason P. Kring, Embry-Riddle Aeronautical U., Using the Cooperative Board Game Pandemic to Study Teamwork
3. Ali Momen, Catholic U. of America; M. Mowafak Allaham, George Mason U.; Marc M. Sebrechts, Catholic U. of America, Virtual Agents as a Support for Feedback-Based Learning
4. Drew M. Morris, Robert B. Powell, and June J. Pilcher, Clemson U., Antarctica: Cold-Stress Risks During Occupational and Leisure Activities

Thursday, September 22 1:30–3:00 p.m.

CE9 – Interruptions and Workload
COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 1:30–3:00 p.m.
International West (Concourse Level)
Lecture
Chair: Birsen Donmez, U. of Toronto; Cochair: Yueqing Li, Lamar U.
1. Cyrus K. Foroughi, George Mason U.; Nicole E. Werner, U. of Wisconsin-Madison; Deborah A. Boehm-Davis, George Mason U., Are Individuals Sensitive to Changes in Performance When Interrupted?
2. Chiara Santomauro and Penelope Sanderson, U. of Queensland, Conducting Comparable Research in Representative Worlds: An Interruptions Case Study
5. Nathan Aguiar and Kevin Zish, George Mason U.; J. Malcolm McCurry, Harris Corp.; J. Gregory Trafton, U.S. Naval Research Lab, Interruptions Reduce Performance Across All Levels of Signal Detection When Estimations of Confidence Are Highest

CE10 – Simulations and Microworlds
COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 1:30–3:00 p.m.
Columbia 9 (Terrace Level)
Lecture
Chair: Susan Kirschenbaum, U.S. Naval Undersea Warfare Center; Cochair: Shelby Long, Old Dominion U.
1. Timothy J. Wright and SiBy Samuel, U. of Massachusetts-Amherst; Avinoam Borowsky, Ben-Gurion U. of the Negev; Shlomo Zilberstein and Donald L. Fisher, U. of Massachusetts-Amherst, Experienced Drivers Are Quicker to Achieve Situation Awareness Than Inexperienced Drivers in Situations of Transfer of Control Within a Level 3 Autonomous Environment
3. François Vachon and Benoît R. Vallières, Université Laval; Joel Suss, Wichita State U.; Jean-Denis Thériault and Sébastien Tremblay, Université Laval, The CSSS Micro-world: A Gateway to Understanding and Improving CCTV Security Surveillance
4. Wayne C. W. Giang, Lavinia Hui, and Birsen Donmez, U. of Toronto; Mahvareh Aghhari and Russell D. MacDonald, Ornge, Dispatch Decision Making in an Air Medical Transport System
5. Katherine E. Walker, David D. Woods, and Michael F. Rayo, Ohio State U., Multiple Systemic Contributors Versus Root Cause: Learning From a NASA Near Miss

E5 – Education of Future Human Factors Professionals
EDUCATION
Thursday, September 22, 1:30–3:00 p.m.
Fairchild (Terrace Level)
Discussion Panel
Chair: Esa Rantanen, Rochester Inst. of Technology
Panelists: Deborah A. Boehm-Davis, George Mason U.; Linda Boyle, U. of Washington; Daniel Hannon, Tufts U.; John D. Lee, U. of Wisconsin-Madison

FP1 – Mock Trial: A Demonstration of Human Factors Professionals Testifying on a Children’s Transportation Safety Product
FORENSICS PROFESSIONAL
Thursday, September 22, 1:30–3:00 p.m.
Lincoln East (Concourse Level)
Alternative Format
Chair: Ilene Zackowitz, Vredenburgh & Assoc., Inc.; Cochair: David Lenorovitz, Lenpro Services, Inc.
Testifying for the plaintiff: Stephanie Borzendowski, Applied Building Sciences, Inc.; Valerie Rice, General Ergonomics
Counsel for the plaintiff: Cheryl Feeley and Julia Milewski, Holland & Knight
Counsel for the defense: Jessica Farmer, Holland & Knight
Trial commentator: Lynn Calkins, Holland & Knight

HC9 – Human Factors in the Wild: Getting the Human Factors Foot in the Health-Care Door
HEALTH CARE
Thursday, September 22, 1:30–3:00 p.m.
Columbia 11 (Terrace Level)
Discussion Panel
Chair: Adjhaporn Khunlertkit, Johns Hopkins Medicine
Panelists: A. Joy Rivera, Children’s Hospital of Wisconsin; Shangling (SQ) Yin, KK Women’s & Children’s Hospital, Singapore; Catherine Dulude, Children’s Hospital of Eastern Ontario; Susan Harkness Regli, U. of Pennsylvania Health System; Laurie Wolf, Barnes-Jewish Hospital

I3/CS – Mobile Interfaces
INTERNET; COSPONSORED BY COMPUTER SYSTEMS
Thursday, September 22, 1:30–3:00 p.m.
Lincoln West (Concourse Level)
Lecture
Chair: Robert Pastel, Michigan Technological U.; Cochair: Ken Ohnemus, Red Moon Interactive
1. Jing Chen, New Mexico State U.; Huangyi Ge, Robert W. Proctor, Ninghui Li, and Weining Yang, Purdue U., Display of Major Risk Categories for Mobile Apps
3. Jonathan R. Zadra, U. of Utah; Jeremy Gleed, Salt Lake City Veterans Health Administration; Frank A. Drews, U. of Utah, Handheld EHRs: Choosing a Mobile Device
4. Sean T. Hayes, Charleston Southern U.; Julie A. Adams, Vanderbilt U., Device Motion via Head Tracking for Mobile Interaction
5. Han Zhang and Alan Hedge, Cornell U., The Effect of Temperature Change Rate on User Thermal Sensation and Its Implication for Tablet Computer Heat Dissipation Design

ID2 – Individual Differences in Performance
INDIVIDUAL DIFFERENCES IN PERFORMANCE
Thursday, September 22, 1:30–3:00 p.m.
Cardozo (Terrace Level)
Lecture
Chair: Anne Sinatra, U.S. Army Research Lab; Cochair: Andy Dattel, Embry-Riddle Aeronautical U.
2. Soo-Chan Jee, Seoul National U.; Ye Lim Rhie, Republic of Korea Air Force Headquarters; Minjee Kim, Yong Min Kim, Sung Hee Ahn, and Myung Hwan Yun, Seoul National U., Use of Hand Biometric Information in Gender Identification: Integration of Anthropometric and Electromyographic Data
OE9 – In Honor of Dr. Tom Waters – The NIOSH Lifting Equation – Part 2: Exploring Proposed Extensions and Beyond
OCCUPATIONAL ERGONOMICS
Thursday, September 22, 1:30–3:00 p.m.
Jefferson West (Concourse Level)
Discussion Panel
Chair: Robert R. Fox, General Motors; Cochair: Rammohan V. Maikala, Providence Regional Medical Center
Panelists: Enrico Occhipinti and Daniela Colombini, Research Unit, EPMIES; Enrique Alvarez-Casado, Centro de Ergonomía Aplicada; Sean Gallagher, Auburn U.

PP5 – Visual Attention, Eye Movements, and Search
PERCEPTION AND PERFORMANCE
Thursday, September 22, 1:30–3:00 p.m.
Jefferson East (Concourse Level)
Lecture
Chair: Kelly Steelman, Michigan Tech U.; Cochair: Nicole Karpinsky, Old Dominion U.
5. Kelly S. Steelman and Hannah North, Michigan Technological U., Predicting Detection Times With Perceptual Euclidian Distance

SF4 – Aging and Health Care
STUDENT FORUM
Thursday, September 22, 1:30–3:00 p.m.
Georgetown West (Concourse Level)
Lecture
Chair: Emily Anania, Embry-Riddle Aeronautical U.; Cochair: Frank Lacson, Pacific Science and Engineering Group
1. Natalee K. Baldwin and Richard Pak, Clemson U., The Effects of Olfactory Environmental Cues on Prospective Memory
2. Jessica J. Crumley-Bryon and Richard Pak, Clemson U., Older Adults’ Perceptions of Memory Aid Use and Meta-Memory Accuracy: A Focus Group Study
3. Sean A. McGlynn, Denise Geiskkivitch, Tracy L. Mitzner, and Wendy A. Rogers, Georgia Tech, PARO’s Stress-Reduction Potential for Older Adults
4. Shraddhaa Narasimha, Sruthy Agnisarman, Kapil Chalil Madathil, and Anand K. Gramopadhye, Clemson U.; Brandon Welch and James McElligott, Medical U. of South Carolina, An Investigation of the Usability Issues of Home-Based Video Telemedicine Systems with Geriatric Patients
5. Mina Ostovari, Denny Yu, Shan Xie, Qing Ye, and Bhagyashree Katare, Purdue U.; Mohammad Adibuzzaman, and Kenneth J. Musselman, Regenstrief Center for Healthcare Engineering; Roshanak Nateghi, Cleveland G. Shields, and Yuehwern Yih, Purdue U., Bridging the Gap Between Population Needs and Barriers Into Onsite Clinic Use

ST3 – Workload and Stress
SURFACE TRANSPORTATION
Thursday, September 22, 1:30–3:00 p.m.
Monroe (Concourse Level)
Lecture
Chair: Thomas K. Ferris, Texas A&M U.; Cochair: John Gaspar, U. of Iowa
1. William J. Horrey, Mary F. Lesch, and Yulan Liang, Liberty Mutual Research Inst. for Safety, Drivers’ Calibration in Self-Evaluated Performance: The Role of Task-Related Workload and Scale Specificity
5. Ying Wang, Xiang Guo, Yueyan Zhu, and Jianqiao Zhang, Beihang U., Color Block Task: A New Surrogate Secondary Task to Measure the Impact of Drivers’ Incrementally Increased Workload

ST4 – Perception and Performance
SURFACE TRANSPORTATION
Thursday, September 22, 1:30–3:00 p.m.
Georgetown East (Concourse Level)
Lecture
Chair: James Jenness, Westat; Cochair: Fred Feng, U. of Michigan, Ann Arbor
2. Stacy A. Balk and Steven Jackson, Leidos; Jim Shurbutt, U.S. Federal Highway Admin., Evaluation of New Lane Reduction Markings


THURSDAY, SEPTEMBER 22

3:30–5:00 p.m.

AS4 – Human Factors and the United States Military: A 75-Year Partnership
AEROSPACE SYSTEMS
Thursday, September 22, 3:30–5:00 p.m.
Monroe (Concourse Level)
Discussion Panel
Chair: Chad Tossell, U.S. Air Force Academy

CE11 – Politeness in Machine-Human and Human-Human Interaction
COGNITIVE ENGINEERING AND DECISION MAKING
Thursday, September 22, 3:30–5:00 p.m.
International West (Concourse Level)
Discussion Panel
Chair: Joachim Meyer, Tel Aviv U.
Panelists: Chris Miller, SIFT; Peter A. Hancock, U. of Central Florida; Ewart J. de Visser, Perceptronics Solutions, Inc.; Michael C. Dorneich, Iowa State U.
HC11 – Will The New FDA Human Factors Guidance Help Curb Ethical Dilemmas in Health-Care Usability Testing?
HEALTH CARE
Thursday, September 22, 3:30–5:00 p.m.
Columbia 11 (Terrace Level)
Discussion Panel
Chair: Josh Singer, National Center for Human Factors in Healthcare, MedStar Inst. for Innovation

I4/CS – Usage Analysis
INTERNET; COSPONSPORED BY COMPUTER SYSTEMS
Thursday, September 22, 3:30–5:00 p.m.
Lincoln West (Concourse Level)
Lecture
Chair: Nizar Saqqar, Bold; Cochair: Mallorie Bradlau, Purdue U.
1. Kimberly C. Preusse and Wendy A. Rogers, Georgia Tech, Error Interpretation During Everyday Automation Use
2. Mark E. Becker, Jacob R. Bevitt, and Dick L. Horst, UserWorks, Inc., User Research to Enhance the U.S. Postal Service Web Site
5. Shelby K. Long and James P. Bliss, Old Dominion U., The Effect of Control Device on Performance in a Robotic Arm Task

OE11 – Musculoskeletal Disorders and Human Performance
OCCUPATIONAL ERGONOMICS
Thursday, September 22, 3:30–5:00 p.m.
Jefferson East (Concourse Level)
Lecture
Chair: Ryan Z. Amick, Lockheed Martin; Cochair: Sean Gallagher, Auburn U.
1. Sean Gallagher and Mark C. Schall, Jr., Auburn U., The Biomechanical Relevance of Stress Range and Mean Stress in the Analysis of Variable Loading on Musculoskeletal Tissues
2. Mohini Dutt, Steven A. Lavender, Carolyn M. Sommerich, and Ajit M. W. Chaudhari, Ohio State U., Relationships Between Lower-Extremity Musculoskeletal Disorders Symptoms and Tibial Acceleration Measures in Distribution Center Workers

SF5 – Measuring Situation Awareness and Internal States
STUDENT FORUM
Thursday, September 22, 3:30–5:00 p.m.
Georgetown West (Concourse Level)
Lecture
Chair: Kate Kapolo, U. of Central Florida; Cochair: David Schuster, San Jose State U.
1. Ashley A. Cain, Tamsyn Edwards, and David Schuster, San Jose State U., A Quantitative Measure for Shared and Complementary Situation Awareness
4. William G. Volante, M. Merz, Kimberly Stowers, and Peter A. Hancock, U. of Central Florida, Sleep, Workload, and Boredom: Subject Matter Expert Insights
5. Dustin T. Weiler and Jason J. Saleem, U. of Louisville, Identifying an Effect of Simulation Role Assignment on Critical Thinking Development in Baccalaureate Nursing Students: A Proof of Concept

**ST5 – Training and Performance**

**SURFACE TRANSPORTATION**

Thursday, September 22, 3:30–5:00 p.m.

Georgetown East (Concourse Level)

Lecture

Chair: Tina B. Sayer, Toyota Technical Center; Cochair: Joonbum Lee, Massachusetts Inst. of Technology

1. Craig Schneider, Foroogh Hajiseyedjavadi, and Jingyi Zhang, U. of Massachusetts-Amherst; Matthew R. E. Romoser, Western New England U.; Siby Samuel, Michael Knodler, and Donald L. Fisher, U. of Massachusetts-Amherst, Use of Micro-Scenarios to Reduce the Effects of Simulator Sickness in Training Intervention Studies


5. Heishiro Toyoda, Tina B. Sayer, and Josh E. Domeyer, Toyota Technical Center, Applying the Risk Appraisal Model to Following-Distance Feedback and Implications From the Pilot Study

**TE4 – Marksmanship as a Critical Military Occupational Task: Issues, Approaches and Methods for Optimal Performance and Equipment Design**

**TEST AND EVALUATION; COSPONSORED BY SYSTEM DEVELOPMENT**

Thursday, September 22, 3:30–5:00 p.m.

Gunston (Terrace Level)

Discussion Panel

Chair: K. Blake Mitchell, U.S. Natick Soldier Research, Development and Engineering Center


**VE3 – Exploring Electronic Sports: An Interdisciplinary Approach**

**VIRTUAL ENVIRONMENTS**

Thursday, September 22, 3:30–5:00 p.m.

Cardozo (Terrace Level)

Discussion Panel

Chair: James Kozuchuk, U. of Central Florida

Panelists: Cyrus K. Foroughi, George Mason U.; Guo Freeman, U. of Cincinnati
Friday, September 23
8:30–10:00 a.m.

**CE12 – Attention and Alerts**
**COGNITIVE ENGINEERING AND DECISION MAKING**
Friday, September 23, 8:30–10:00 a.m.
Columbia 9 (Terrace Level)
Lecture
*Chair:* Sylvain Bruni, Aptima, Inc.; *Cochair:* Jung Kim

1. Cindy Chamberland, Université Laval; Helen M. Hodgetts, Cardiff Metropolitan U.; Benoit R. Vallières, François Vachon, and Sébastien Tremblay, Université Laval, *Pip and Pop: When Auditory Alarms Facilitate Visual Change Detection in Dynamic Settings*


5. Rebecca Wiczorek, Technische Universität Berlin; Joachim Meyer, Tel Aviv U., *Asymmetric Effects of False-Positive and False-Negative Indications on the Verification of Alerts in Different Risk Conditions*

**CE13 – Matters of Ethics, Trust, and Potential Liability for Autonomous Systems**
**COGNITIVE ENGINEERING AND DECISION MAKING**
Friday, September 23, 8:30–10:00 a.m.
International West (Concourse Level)
Discussion Panel
*Chair:* J. Christopher Brill, U.S. Army Research Lab
*Panelists:* James P. Bliss, Old Dominion U.; Peter A. Hancock, U. of Central Florida; Dietrich H. Manzey, Technische Universität Berlin; Joachim Meyer, Tel Aviv U.; Alison Vredenburg, Vredenburg & Assoc., Inc.

**CS5/I – User Feedback at Scale: Spotlight on UX Research for Enterprise Systems**
**COMPUTER SYSTEMS; COSPONSORED BY INTERNET**
Friday, September 23, 8:30–10:00 a.m.
Georgetown West (Concourse Level)
Discussion Panel
*Chair:* Danielle Smith, Sentier Strategic Resources; *Cochair:* Ania Rodriguez, Key Lime Interactive
*Panelists:* Steve Fadden, Salesforce; Melissa Meingast, Hewlett Packard Enterprise; Michelle Peterson, Sentier Strategic Resources; Anna Rowe, SolarWinds

**E7 – Reaching the Youth – Creating Entertaining and Educational HF/E Outreach Activities for Grades K–12**
**EDUCATION**
Friday, September 23, 8:30–10:00 a.m.
Cardozo (Terrace Level)
Alternative Format
*Chair:* Angela Avera, U. of Houston-Clear Lake
*Panelists:* Michael Merta, Pamela Fournier, Ruben DeLeon, Nicholas J. Kelling, and Steven C. Sutherland, U. of Houston-Clear Lake

**ED3 – Environment Design: Sit or Stand?**
**ENVIRONMENTAL DESIGN**
Friday, September 23, 8:30–10:00 a.m.
Georgetown East (Concourse Level)
Lecture
*Chair:* Martha Sanders, Quinnipiac U.

1. Alan Hedge, Cornell U., *What Am I Sitting on? User Knowledge of Their Chair Controls*

2. Gourab Kar and Alan Hedge, Cornell U., *Effects of Sitting and Standing Work Postures on Short-Term Typing Performance and Discomfort*


4. Rachel Marie Cunningham, Embry-Riddle Aeronautical U., *Technology in Organizations: How Structure and Expectations Have Changed*

**HC12 – Usability in Health IT: Beyond Compliance to Meaningful Design and Assessment**
**HEALTH CARE**
Friday, September 23, 8:30–10:00 a.m.
Jefferson East (Concourse Level)
Discussion Panel
*Chair:* Ann M. Bisantz, U. at Buffalo, SUNY
*Panelists:* Rollin J. (Terry) Fairbanks, Aaron Zachary Hettinger, and Raj M. Ratwani, MedStar Health; Emily S. Patterson, Ohio State U.; Emilie Roth, Roth Cognitive Engineering

**HC13 – Patient Work as a Maturing Approach Within HF/E: Moving Beyond Traditional Self-Management Applications**
**HEALTH CARE**
Friday, September 23, 8:30–10:00 a.m.
Jefferson West (Concourse Level)
Discussion Panel
*Chair:* Rupa Valdez, U. of Virginia
HP3 – State Representation and Situation Awareness in Human Performance Models
HUMAN PERFORMANCE MODELING
Friday, September 23, 8:30–10:00 a.m.
Fairchild (Terrace Level)
Lecture
Chair: Dario Salvucci, Drexel U.
1. Ehsan B. Khosroshahi and Dario D. Salvucci, Drexel U.,
   A Model of Visual Location Learning
2. Angus H. Rupert, Ben D. Lawson, and Jared E. Basso,
   U.S. Army Aeromedical Research Lab, Tactile Situation Awareness System: Recent Developments for Aviation
3. Atefeh Katrahmani and Matthew R. E. Romoser, Western New England U.; Siby Samuel, U. of Massachusetts-Amherst,
   Investigating a Noninvasive Method of Measuring the Quality of Latent Hazard Schemas of Novice Teen and Experienced Adult Drivers: A New Perspective Using Traditional Tools
4. Bethany Bracken, Noa Palmon, Lee Kellogg, Seth Elkin-Frankston, and Mike Farry, Charles River Analytics,
   A Cross-Domain Approach to Designing an Unobtrusive System to Assess Human State and Predict Upcoming Performance Deficits

OE12 – Fatigue Assessment and Management
OCCUPATIONAL ERGONOMICS; COSPONSORED BY HEALTH CARE
Friday, September 23, 8:30–10:00 a.m.
Lincoln East (Concourse Level)
Alternative Format
Chair: Ranjana Mehta, Texas A&M U.; Cochair: S. Camille Peres, Texas A&M U.
1. Ehsan Rashedi and Maury A. Nussbaum, Virginia Tech,
   History Dependency of Muscle Strength Recovery From a Fatiguing Intermittent Task
2. Susan E. Kotowski, Joseph Niehaus, Alyssa Ofat, Michael Presnell, Alena Regelski, and Bradley Rockwell, U. of Cincinnati,
   Effect of Prior Mental or Physical Fatigue on the Biomechanical Response During a Lifting Task
   Fatigue Monitoring and Management Across Different Industries

PP6 – Psychophysics
PERCEPTION AND PERFORMANCE
Friday, September 23, 8:30–10:00 a.m.
Lincoln West (Concourse Level)
Lecture
Chair: William Kosnik, U.S. Air Force; Cochair: Yusuke Yamani, Old Dominion U.
1. Missie Smith, Valerie Kane, and Joseph L. Gabbard, Virginia Tech; Gary Burnett and David R. Large, U. of Nottingham,
   Augmented Mirrors: Depth Judgments When Augmenting Video Displays to Replace Automotive Mirrors
3. Taylor B. Murphy and Alexander Morison, Ohio State U., Affordances as a Means to Assess Human-Sensor-Robot Performance
5. Kylie Gomes and Sara Lu Riggs, Clemson U., Crossmodal Matching: A Comparison of Two Methods

ST6 – The Evolving Role of Automation in Transportation: Human Factors Lessons Learned From the Different Modes
SURFACE TRANSPORTATION
Friday, September 23, 8:30–10:00 a.m.
Columbia 11 (Terrace Level)
Discussion Panel
Chair: Maura Lohrenz, Volpe National Transportation Systems Center
ST7 – Multitasking and Safety
SURFACE TRANSPORTATION
Friday, September 23, 8:30–10:00 a.m.
Monroe (Concourse Level)
Lecture
Chair: John Sullivan, U. of Michigan Transportation Research Inst.; Cochair: Cheryl Bolstad, Touchstone Evaluations
2. Daniela Barragán, Daniel M. Roberts, Steven D. Chong, and Carryl L. Baldwin, George Mason U., Exploring Mind Wandering While Driving
3. Yuexin Xiong and Guozhen Zhao, Chinese Academy of Science, Taxi-Hailing Apps: Negative Impacts on Taxi Driver Performance

TE5 – Assessment Tools and Techniques
TEST AND EVALUATION; COSPONSORED BY SYSTEM DEVELOPMENT
Friday, September 23, 8:30–10:00 a.m.
Gunston (Terrace Level)
Lecture
Chair: Jeffrey Thomas, U.S. Army Research Lab
1. Michael Minge, Manfred Thüring, and Ingmar Wagner, Technische Universität Berlin, Developing and Validating an English Version of the meCUE Questionnaire for Measuring User Experience

Friday, September 23
10:30 a.m.–12:00 noon

AC2 – Gathering Meaningful Data From Novices and/or in Simplified Operating Environments to Inform Us About Highly Complex Operational Environments
AUGMENTED COGNITION
Friday, September 23, 10:30 a.m.–12:00 noon
Georgetown East (Concourse Level)
Discussion Panel
Chair: Niav Hughes, U.S. Nuclear Regulatory Commission
Panelists: Amy D’Agostino, U.S. Nuclear Regulatory Commission; Jordan Multer, U.S. Dept. of Transportation; Michael Hildebrandt, Inst. for Energy Technology; Peter A. Hancock and Lauren Reimer-Jones, U. of Central Florida; Linda Elliot, U.S. Army Research Lab

AS5 – Methods and Tools for Improving Air Traffic Control
AEROSPACE SYSTEMS
Friday, September 23, 10:30 a.m.–12:00 noon
Monroe (Concourse Level)
Lecture
Chair: Steven Landry, Purdue U.; Cochair: Jennifer Ludvigsen, U. of Central Florida
2. Kathleen McGarry, MITRE Corp.; Lynne Martin, San Jose State U.; Kevin Witzberger, NASA Ames Research Center, Terminal Controller Feedback on an Automated Sequencing and Spacing Tool
4. Adriana Miramontes and Jillian Keeler, California State U., Long Beach; Roberta L. Zimmerman and Valerie J. Gawron, MITRE Corp.; Vernol Battiste, NASA Ames Research Center; Thomas Strybel and Kim-Phuong L. Vu, California State U., Long Beach, Examining the Effectiveness of a Traffic Flow Management Course for Air Traffic Control Students
CE14 – Prediction and Decision Making
COGNITIVE ENGINEERING AND DECISION MAKING
Friday, September 23, 10:30 a.m.–12:00 noon
Columbia 9 (Terrace Level)
Lecture
Chair: Joel Suss, Wichita State U.; Cochair: Matylda Ludwiki Gerber
2. David LaVergne and Judith Tiferes, U. at Buffalo, SUNY; Michael Jenkins, Charles River Analytics; Geoff Gross, Modus Operandi; Ann M. Bisantz, U. at Buffalo, SUNY, Linguistic Estimations of Human Attributes
3. Nicholas Hertz and Eva Wiese, George Mason U., Influence of Agent Type and Task Ambiguity on Conformity in Social Decision Making
4. Yeti Li and Catherine M. Burns, U. of Waterloo; Rui Hu, Microsoft Corp., Representing Stages and Levels of Automation on a Decision Ladder: The Case of Automated Financial Trading

E8 – Exploring the Future of Human Factors Education: Online Learning, MOOCs, Next-Generation Standards, and the Technological Skills We Need to Impart
EDUCATION
Friday, September 23, 10:30 a.m.–12:00 noon
Cardozo (Terrace Level)
Discussion Panel
Chair: Megan Olson, Texas Tech U.
Panelists: Heather C. Lum, Penn State Erie, The Behrend College; Kelly S. Steelman, Michigan Technological U.; Christina M. Frederick and Nathan A. Sonnenfeld, Embry-Riddle Aeronautical U.; Susan Amato-Henderson, Michigan Technological U.; Thomas J. Smith, U. of Minnesota

HC14 – Promoting Patient Safety With Human Factors Methods: Practical Approaches to Current Medication Management Issues
HEALTH CARE
Friday, September 23, 10:30 a.m.–12:00 noon
International West (Concourse Level)
Discussion Panel
Chair: Carrie Reale, Vanderbilt U. Medical Center
Panelists: Jason J. Saleem, U. of Louisville; Emily S. Patterson, Ohio State U.; Aaron Zachary Hettinger, Georgetown U.; Shilo Anders, Vanderbilt U. Medical Center; Anne Miller, eHealth New South Wales

HC15 – Bringing Safety II to Health Care: Barriers and Facilitators
HEALTH CARE
Friday, September 23, 10:30 a.m.–12:00 noon
Jefferson East (Concourse Level)
Discussion Panel
Chair: Michael Rayo, Ohio State U.
Panelists: David D. Woods, Ohio State U; Robert L. Wears, U. of Florida; Rollin J. (Terry) Fairbanks, MedStar Health; Gerard Castro, The Joint Commission; Shawna Perry, U. of Florida

HP4 – Model-Based Assessment
HUMAN PERFORMANCE MODELING
Friday, September 23, 10:30 a.m.–12:00 noon
Fairchild (Terrace Level)
Lecture
Chair: David Kieras, U. of Michigan
1. Michael T. Tolston, Oak Ridge Inst. for Science and Education; Adam J. Strang, Gregory J. Funke, and Brent Miller, U.S. Air Force Research Lab; Rebecca Brown and Lauren Menke, Ball Aerospace & Technologies Corp., Evaluating the Relationship Between Team Performance and Joint Attention With Longitudinal Multivariate Mixed Models
2. Fred Feng, Shan Bao, James Sayer, and David LeBlanc, U. of Michigan Transportation Research Inst., Spectral Power Analysis of Drivers’ Gas Pedal Control During Steady-State Car-Following on Freeways
3. Hanshu Zhang and Joseph W. Houpt, Wright State U., Assessing Multispectral Image Fusion With Systems Factorial Technology
5. Y. Harari, Ben-Gurion U. of the Negev; A. Bechar, Agriculture Research Organization; R. Riemer, Ben-Gurion U. of the Negev, An Investigation of Workplace Design and the Worker’s Anthropometrics Influence on Work Pace During Manual Material Handling Tasks
I5/CS – Touch/Mouse Input
INTERNET; COSPONSORED BY COMPUTER SYSTEMS
Friday, September 23, 10:30 a.m.–12:00 noon
Lincoln West (Concourse Level)
Lecture
Chair: Jay Elkerton, Emerson Process Management; Cochair: Anson Ho, Microsoft
1. Boyi Hu and Xiaopeng Ning, West Virginia U., Effects of Touch Screen Interface Parameters on User Task Performance
2. Sean T. Hayes, Charleston Southern U.; Julie A. Adams, Vanderbilt U., Adaptive Control-Display Ratios for Smartphones
4. Tara M. Young, Jing Chen, and Zhange Shentu, New Mexico State U., Effect of Cursor Orientation on Left- and Right-Hand Mouse Control
5. Patrick Mead, David Keller, and Megan Kozub, U.S. Naval Surface Warfare Center Dahlgren Division, Point With Your Eyes, Not With Your Hands: Using Eye-Tracking to Enhance Performance of Gross-Motor Gestural Controls

OE13 – Occupational Ergonomics
OCCUPATIONAL ERGONOMICS
Friday, September 23, 10:30 a.m.–12:00 noon
Lincoln East (Concourse Level)
Lecture
Chair: Richard Gardner, Boeing; Cochair: Denny Yu, Purdue U.
1. Robert Granzow, Mark C. Schall, Jr., and Mathew Smidt, Auburn U., Full Shift Physical Activity Among Reforestation Hand Planters: A Feasibility Study
2. Montana Haygood and Bruce N. Walker, Georgia Tech, Temporary and Permanent Hearing Loss Among College-Aged Drumline Members
4. Seobin Choi and Gwanseob Shin, Ulsan National Inst. of Science and Technology, Center of Mass Location of Stick Vacuum Cleaners Affects Physical Demands During Floor Vacuuming
5. Sara Pazell and Robin Burgess-Limerick, U. of Queensland; Tim Horberry, Monash U., Case Study: Participatory Ergonomics in Road Construction and an Occupational Perspective of Health

OE14 – Ergonomics of Aging and Obesity
OCCUPATIONAL ERGONOMICS
Friday, September 23, 10:30 a.m.–12:00 noon
Jefferson West (Concourse Level)
Lecture
Chair: Carolyn Sommerich, Ohio State U.; Cochair: Monica Jones, U. of Michigan
2. Jian Liu, Xiaozong Wu, James McIntosh, and Yi-Po Chiu, Marshall U., Aging Effect on Gait Symmetry After Perturbation Training
3. Monica L. H. Jones, Sheila Ebert, Riley Horn, and Matthew P. Reed, U. of Michigan Transportation Research Inst., Development of Three-Dimensional Anthropometry Methods for Patients With High Body Mass Index
5. Ranjana K. Mehta and Joohyun Rhee, Texas A&M U.; Lora A. Cavuoto, U. at Buffalo, SUNY, Muscle Oxygenation Correlates of Handgrip Fatigue With Obesity

ST8 – What Will Happen to the Teen Drivers of Today?
A Triage of Research and Intervention Issues
SURFACE TRANSPORTATION
Friday, September 23, 10:30 a.m.–12:00 noon
Columbia 11 (Terrace Level)
Discussion Panel
Chair: Jeff Caird, U. of Calgary

TE6 – Evaluating Demands Associated with the Use of Voice-Based In-Vehicle Interfaces
TEST AND EVALUATION; COSPONSORED BY SURFACE TRANSPORTATION
Friday, September 23, 10:30 a.m.–12:00 noon
Georgetown West (Concourse Level)
Discussion Panel
Chair: Bryan Reimer, Massachusetts Inst. of Technology
Panelists: Linda Angell, Touchstone Evaluations; David L. Strayer, U. of Utah; Louis Tijerina, Ford Motor Co.; Bruce Mehler, Massachusetts Inst. of Technology
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Dee H. Andrews has been a training developer, researcher, and human factors psychologist since 1976. He finished his 34-year career with the Department of Defense as a Directorate Senior Scientist for Training with the 711th Human Performance Wing of the Air Force Research Laboratory (AFRL).

Scotty D. Craig is an assistant professor in the Human Systems Engineering Program within the Ira A. Fulton Schools of Engineering at Arizona State University (ASU). He is also the supervising faculty member for the ASU Cognitive-Based Applied Learning Technology Laboratory (www.cobaltlab.org).
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Volume 1, Users’ Guides to Human Factors and Ergonomics Methods

By Philip Kortum

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Alan Hedge is president of HumanUse Inc. He directs the Cornell Human Factors and Ergonomics Research Group (CHFERG) and is a tenured professor in the Department of Design and Environmental Analysis at Cornell. His research and teaching activities have focused on design and workplace ergonomics as these affect the health, comfort, and productivity of workers.

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