The National Center for Human Factors in Healthcare at MedStar Health is a multidisciplinary team of human factors engineers, psychologists, safety scientists, and clinicians, all located within a comprehensive healthcare delivery and research environment.

The Human Factors team:
• Identifies, tests and implements methods for preventing harm
• Conducts applied safety science and human factors research in health care
• Performs usability studies on medical devices and information technology
• Consults with hospitals, manufacturers and suppliers
• Carries out serious safety event consultations
• Advances health toward the goal of an ultra-safe patient care environment at MedStar Health and beyond

The National Center for Human Factors in Healthcare is situated within a rich environment of quality, safety, innovation, and research at MedStar Health:
• MedStar Institute for Quality and Safety
• MedStar Institute for Innovation - MI2.org
• MedStar Health Research Institute - MedStarResearch.org

MedStar Health
MedStar Health is the largest healthcare system in Maryland and the Washington, D.C., region with 10 hospitals, 30,000 associates, more than 150,000 inpatient admissions, and 3.8 million outpatient visits each year, as well as a comprehensive scope of health-related organizations.
Welcome to the HFES 2016 International Symposium on Human Factors and Ergonomics in Health Care: Shaping the Future. The symposium offers a unique program of human factors/ergonomics (HF/E) perspectives on health-care human factors, divided among four main tracks:

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

The meeting is designed to enable HF/E professionals to disseminate their science, principles, and best practices to the health-care community, and to enable the health-care community and medical device and pharma industries to provide HF/E professionals with the proper context, requirements, lessons learned, and perspectives to better focus HF/E efforts.

This year’s symposium theme, “Shaping the Future,” refers to the proactive role the science of HF/E can play in preventing adverse outcomes and creating user-centered health-care environments and solutions. It also reflects the increased role of technology in health care and the concomitant importance of HF/E research, principles, and methods applied to making technology usable, manageable, safe, and humane.

The 2016 program starts with our keynote speaker, famed cognitive neuroscientist Itiel Dror. His work focuses on how technology and training can enhance performance and outcomes. His presentation, “The Terror of Error: The Cognitive Advantages of Training for Error Recovery Instead of Error Prevention,” explores how to utilize the power of error information in training and the value of experiencing errors during the training process.

Finally, I would like to thank our symposium track chairs and their committee members for creating such a diverse and comprehensive program. Special thanks also to our sponsors, exhibitors, advertisers, student volunteers, session chairs, and all the other individuals who supported the effort to produce this symposium. I truly could not organize this event without the help of many others who are equally interested in showcasing HF/E science and application as they work to improve health-care products, services, and environments.

I hope that this year’s symposium enables professionals across the HF/E and health-care fields to reach new heights in applying the perspectives and science of human factors/ergonomics to the future of health care.

Anthony D. Andre, PhD, CPE
Symposium Founder and Chair
Principal, Interface Analysis Associates
Adjunct Professor, San Jose State U.
Past President and Fellow, Human Factors and Ergonomics Society
PROGRAM COMMITTEE

The Program Committee of the 2016 International Symposium on Human Factors and Ergonomics in Health Care: Shaping the Future consists of experts in a wide variety of domains and organizations.

CHAIR

Anthony D. Andre, Interface Analysis Associates/San Jose State U.

TRACK I: CLINICAL AND CONSUMER HEALTH-CARE IT

Lauren Zack, GfK – Cochair

Jenna Marquard, U. of Massachusetts, Amherst – Cochair

Committee Members

Laura Barnes, U. of Virginia
Janey Barnes, User-View
Ellen J. Bass, Drexel U.
Barrett S. Caldwell, Purdue U.
Jane M. Carrington, U. of Arizona
Roger J. Chapman, Collaborative Work Systems (CWS), Inc.
R. Darin Ellis, Wayne State U.
Ila J. Elson, Abbott Laboratories
A. Zachary Hettinger, MedStar Health – National Center for Human Factors in Healthcare
Richard J. Holden, Indiana U.-Purdue U. Indianapolis
Richard L. Horst, UserWorks, Inc.
Michael Kordek, Veterans Admin.
Heidi Kramer, U. of Utah
Michelle Lenox, SA Technologies/ Indiana U.-Purdue U. Indianapolis Health Informatics

Gregory Liddell, Human Interfaces
Karen Dunn Lopez, U. of Illinois, Chicago
Laura G. Militello, Applied Decision Science, LLC
Anne Miller, Vanderbilt U.
S. D. Miller, Siemens Healthcare HS Innovation Center
Prithima R. Mosaly, U. of North Carolina, Chapel Hill
Priya R. Pennathur, U. of Iowa
Michelle L. Rogers, Drexel U.
Mary (Molly) Schaeffer, Beyond the Box Solutions, Inc.
Robert Schumacher, GfK
Rupa S. Valdez, U. of Wisconsin-Madison
Wayne Zachary, CMZ Health Technologies
Teresa Zayas Cabán, Agency for Healthcare Research and Quality
Sam Zheng, Siemens Corporate Research

TRACK II: HEALTH-CARE ENVIRONMENTS

Kermit G. Davis, U. of Cincinnati – Cochair

Kristen Miller, Christiana Care Health System – Cochair

Committee Members

Albert J. Boquet, Embry-Riddle Aeronautical U.
Russell J. Branaghan, Arizona State U.
Ken Catchpole, Medical U. of South Carolina
Y. Raymond Chan, Children’s Mercy Hospitals and Clinics
Ellen S. Deutsch, The Children’s Hospital of Philadelphia
Savitri Dhiman, Steris
Cindy Dominguez, The MITRE Corporation
David Eibling, U. of Pittsburgh/VA Pittsburgh

Thomas Ferris, Texas A&M U.
Ayse P. Gurses, Johns Hopkins U.
M. Susan Hallbeck, Mayo Clinic/U. of Nebraska
Michael E. Kordek, Geisinger Medical Group
Gyusung Lee, Johns Hopkins U. School of Medicine
Huiyang Li, U. of Michigan
Kang Li, Rutgers U.
Bernadette McCrory, U. of Nebraska-Lincoln
Kathryn L. Momtahan, The Ottawa Hospital, U. of Ottawa
Jeff Morang, Ximedica, LLC
Avi Parush, Carleton U.
Farzan Sasangohar, Texas A&M U.
Scott A. Shappell, Embry-Riddle Aeronautical U.
Eric Shaver, Human Factors MD
Bruce D. Spiess, VCU Medical Center
Thoralf Sundt, Harvard Medical School/Massachusetts General Hospital
Matthew B. Weinger, Vanderbilt U.
Douglas A. Wiegmann, U. of Wisconsin, Madison
Linda C. Williams, VA National Center for Patient Safety
Jason Wise, GE Healthcare Surgery
Anping Xie, Armstrong Inst. for Patient Safety and Quality, Johns Hopkins U.
Shanqing "SQ" Yin, Changi General Hospital, Singapore
Denny Yu, Purdue U.

TRACK III: MEDICAL AND DRUG-DELIVERY DEVICES

Merrick Kossack, UL-Wiklund – Cochair
Michael Wiklund, UL-Wiklund – Cochair

Committee Members

Anthony D. Andre, Interface Analysis Associates/San Jose State U.
Pat Baird, Baxter Healthcare
Ellen Bass, Drexel U.
Eric Bergman, Fresenius Medical Care
Paul A. Blowers, Abbvie, Inc.
Joe Cafazzo, University Health Network
Christy Calder, Fiat Chrysler Automobiles
Conall Dempsey, Unilife
Julian Dixon, Team Consulting
James (Jay) E. Duhig, Abbott Labs
Sami Durrani, UL-Wiklund
Evan T. Edwards, Kaleo, Inc.
David Eibling, U. of Pittsburgh and VA Pittsburgh
Rollin (Terry) J. Fairbanks, MedStar Health – National Center for Human Factors in Healthcare
Valerie Fenster, Amgen
Erika Franzen, Philips Respiration
Daryle Gardner-Bonneau, Bonneau and Associates
John Gosbee, Red Forest Consulting, LLC
Michael Gross, Chimera Consulting
Reade Harpham, Battelle
Shannon Hoste, Stryker
Edmond W. Israelski, Abbvie, Inc.
Carolynn R. Johnson, GFK
Korey R. Johnson, User Centric
Michael Lau, Insight Product Development
Melissa R. Lemke, Human Ability Designs
Vicki R. Lewis, Healthcare Safety Strategies, LLC
Beth A. Loring, Radius
Zarla Ludin, Essentila, Inc.
Joy Matsumoto, Monterey Technologies
Natalia Mazaeva, Medtronic
Christina C. Mendat, Human Factors MD
Anne Mickelson, Equilogix, LLC
Cindy A. Miller, GE Healthcare
Robert A. North, Human Centered Strategies
A. Ant Ozok, U. of Maryland, Baltimore County
Janine A. Purcell, Philips Healthcare
Tim Reeves, Human Factors MD
Valerie J. Rice, U.S. Army
Dawn Rountree, Bayer HealthCare
John M. Rovnan, Bayer (MEDRAD)
George M. Samaras, Samaras & Associates, Inc.
Adam R. Shames, Core Human Factors, Inc.
Eric F. Shaver, Sonosite
S. Noel Simpson, Kimberly-Clark Corporation
Savannah Sleicher, Worrell Inc.
Olivier St-Cyr, University Health Network
Molly Follette Story, Sanofi
William Stubler, Pall Corporation
Melanie Turieo, Cambridge Consultants
Stephen B. Wilcox, Design Science
Jason Wise, GE Healthcare Surgery
Hanniebey D. Wiyor, U.S. Food and Drug Admin.
Steven A. Zilber, Zaza Consulting
TRACK IV: PATIENT SAFETY RESEARCH AND INITIATIVES

Joseph R. Keebler, Embry-Riddle Aeronautical U. – Cochair
Joanna Abraham, U. of Illinois, Chicago – Cochair

Committee Members

Shilo Anders, Vanderbilt U.
Wendy L. Bedwell, U. of South Florida
Yuval Bitan, Cognitive Technologies Lab at the U. of Chicago
Sacha Burn, Humanscale
Crustal Coan, OSF Saint Francis Medical Center
Joe Deeter, Rochester General Health System
Jay Duhig, Abbvie
Jason Fouts, Physio-Control
Arun Garg, U. of Wisconsin-Milwaukee
Paul Gorman, Oregon Health & Science U.
Emily Hildebrand, Arizona State U.
Thomas George Kannampallil, U. of Illinois at Chicago College of Medicine
Fran Kistner, Massachusetts College of Pharmacy and Health Services
Katie Law, U. of Wisconsin, Madison
Elizabeth H. Lazzara, U. of Kansas Medical Center
Frank Mazza, Seton Healthcare Family
Paul Misasi, Sedgwick County EMS & Wichita State U.
Kathy Montahan, The Ottawa Hospital and the Ottawa Hospital Research Inst.
Laura E. Moody, Mercer U.
Daniel G. Morrow, U. of Illinois, Urbana–Champaign
Paul O’Connor, National U. of Ireland, Galway
Emily S. Patterson, Ohio State U.
Mary Patterson, Children’s National Medical Center
John Rice, Retired
Michael Rosen, Johns Hopkins U. School of Medicine
Martha J. Sanders, Quinnipiac U.
Mark W. Scerbo, Old Dominion U.
F. Jacob Seagull, U. of Michigan
Jason Slagle, Vanderbilt U.
Michael W. Smith, Veterans Admin.
Monifa Vaughn-Cooke, U. of Maryland
Lisa M. Vizer, U. of Maryland Baltimore County
Nicole Werner, Johns Hopkins U. School of Medicine
Linda C. Williams, VA National Center for Patient Safety
Scott D. Wood, Veterans Admin.
Melanie C. Wright, Trinity Health

“MOBILE HEALTH APPLICATIONS FOR CONSUMERS” STUDENT DESIGN COMPETITION

Rupa Valdez, U. of Virginia – Cochair
Richard Holden, Indiana U.-Purdue U. Indianapolis – Cochair

STUDENT VOLUNTEERS

Taylor Andre, Oakwood High School
Sarah Brauer, U. of Idaho
Joshua Gray, U. of Southern California
Siobhan M. Heiden, Purdue U.
Karen Sanchez, California State U., Long Beach
David Strybel, San Jose State U.
HUMAN FACTORS AND ERGONOMICS SOCIETY OFFICERS

**President**
William S. Marras

**Immediate Past President**
Andrew S. Imada

**President-Elect**
Nancy J. Cooke

**Secretary-Treasurer**
Robert G. Radwin

**Immediate Past Secretary-Treasurer**
James P. Bliss

**Secretary-Treasurer-Elect**
S. Camille Peres

**Executive Council**

**At-Large Members**
Ann M. Bisantz
Pascale Carayon
Kermit G. Davis
Paul A. Green
M. Susan Hallbeck
David M. Rempel

HFES DIVISION CHAIRS

**Education**
Carolyn M. Sommerich

**Internal Affairs**
Jennifer M. Riley

**Outreach**
Karen Jacobs

**Scientific Publications**
C. Melody Carswell

**Technical Standards**
Robert R. Fox

HFES STAFF

**Executive Director**
Lynn Strother

**Administrative Assistant**
Susan Marschner

**Communications Director**
Lois Smith

**Senior Production Editor**
Steve Stafford

**Member Services Director**
Carlos de Falla

**Member Services Coordinator**
Stefanie Alexander
SPONSORS

HFES thanks the following organizations for their support:

AAMI WORKSHOP

Association for the Advancement of Medical Instrumentation

LANYARDS

MedStar Health – National Center for Human Factors in Healthcare

SUSTAINING SPONSOR

Board of Certification in Professional Ergonomics
REGISTRATION & FACILITIES

Registration Desk Location and Hours
Registration is open during the following hours in the Indigo Foyer registration desk:

- **Wednesday**: 10:00 a.m.–6:30 p.m.
- **Thursday**: 7:00 a.m.–5:00 p.m.
- **Friday**: 7:30 a.m.–5:00 p.m.
- **Saturday**: 8:00–10:30 a.m.

WiFi Access
Complimentary WiFi is provided in the meeting space for HFES attendees. View available wireless networks, connect to HFES HC, and enter password: hfeshc2016 (password is case sensitive).

Lunch and Coffee Breaks
Lunch and coffee breaks are included in the cost of registration and will take place at the following times and locations:

**Coffee Breaks**
- **Wednesday** – for Workshop attendees only:
  - Sapphire Ballroom A; 3:00–3:15 p.m.
- **Thursday–Friday**: Indigo West Foyer;
  - 8:00–8:30 a.m., 10:00–10:30 a.m., and 3:00–3:30 p.m.
- **Saturday**: Indigo West Foyer; 8:00–8:30 a.m.
  - and Indigo/Aqua Foyers; 10:00–10:30 a.m.

**Lunch**
- **Thursday and Friday**: Indigo C; 12:00–1:30 p.m.

Visit Our Exhibitors
The following companies invite you to visit their tabletop exhibits in the Indigo West Foyer from 10:00 a.m. to 6:00 p.m. on Thursday and from 8:00 a.m. to 6:00 p.m. on Friday.

- Healthcare Human Factors, Booth 1
- UL Wiklund R&D, Tabletop 2
- Medtronic, Tabletop 3

Poster Receptions
Poster receptions will be held from 4:30 to 6:00 p.m. on Thursday and Friday in Indigo West Foyer. All attendees are invited to network and view the posters.

POSTER RECEPTIONS
- **Thursday**: 4:30–6:00 p.m.
- **Friday**: 4:30–6:00 p.m.

RESOURCES

**HFES Member Services**
HFES staff will be present at the Indigo Foyer registration desk to provide information on membership, publications, and services.

**Job Notices and Other Materials**
Organizations that are offering positions may post a flyer on the corkboard adjacent to the Registration Counter. Attendees who are seeking a job may also post a one-page notice on the board.

A materials table is also provided in this area for attendees to place information about events, programs, and other activities of interest to other attendees.

Audiovisual Preview Room
Aqua Board Room has been reserved on Thursday and Friday and Sapphire Boardroom on Saturday for presenters who wish to preview their audiovisual materials. Computers will be available for AV preview only. Preview hours are as follows:

- **Thursday**: 8:00 a.m.–5:00 p.m.
- **Friday**: 7:30 a.m.–5:00 p.m.
- **Saturday**: 7:30–11:00 a.m.

POLICIES

**Attendee Badges**
All persons attending any event at the Symposium must wear their registration badges. Attendees and guests may register at the Indigo Foyer registration desk.

**Audiotaping, Photographing, and Videotaping Policies**
Attendees are not permitted to take photos or make audiotape or videotape recordings of speakers or their visual aids, or exhibitors and their displays, without prior written permission from HFES and the speakers or exhibitors. Please submit written permission at the Indigo Foyer registration desk.

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.

**Nonsmoking Policy**
Smoking is not permitted inside the Hilton San Diego Bayfront Hotel.
PROGRAM

WEDNESDAY, APRIL 13

Registration Open
Indigo Foyer
10:00 a.m.–6:30 p.m.

FDA Pre-Symposium Workshop (separate registration required) – Improving the Safety and Effectiveness of Medical Devices Through Human Factors Considerations: An Interactive Workshop with the FDA’s CDRH Human Factors Premarket Evaluation Team
Wednesday, April 13, 1:00 to 5:30 p.m.
Room: Sapphire Ballroom A
Presenters: Shannon Hoste, Hanniebey Wiyor, and Xin Feng, FDA’s Human Factors Premarket Evaluation Team
Chair/Moderator: Anthony D. Andre, Interface Analysis Assoc./San Jose State U.

Coffee Break
For Workshop Attendees Only
Room: Sapphire Ballroom A
3:00–3:15 p.m.

Opening Networking Reception
Promenade Plaza
5:30–6:30 p.m.
THURSDAY, APRIL 14

Registration Open
Indigo Foyer
7:00 a.m.–5:00 p.m.

Coffee Break
Indigo West Foyer
8:00–8:30 a.m.

Opening Plenary Session
Thursday, April 14, 8:30–10:00 a.m.
Room: Indigo C
Chair: Anthony D. Andre, Interface Analysis Assoc./San Jose State U.

Coffee Break
Indigo West Foyer
10:00–10:30 a.m.

Exhibits Open
Indigo West Foyer
10:00 a.m.–6:00 p.m.

Sessions – 10:30 a.m.–12:00 noon

Clinical and Consumer Health-Care IT Track
CCIT1 – Understanding, Designing, and Evaluating Real-World Clinical Health IT Solutions
Thursday, April 14, 10:30 a.m. to 12:00 noon
Room: Indigo 204
Lecture Session
Chair: Ila Elson, Abbott Laboratories

• Temporal Patterns in Cardiac Continuous Monitoring Alarms, Alex Vu, Susan Moffatt-Bruce, Michael Rayo, and Emily S. Patterson, Ohio State U.

• Developing a Workstation for Surgical Site Infection Surveillance, Dean Karavite, Jeremy Michel, Matthew Miller, and Rachel Ross, The Children’s Hospital of Philadelphia; Jeffrey Gerber and Susan Coffin, U. of Pennsylvania School of Medicine; Robert Grundmeier, The Children’s Hospital of Philadelphia

• Evidence of Salience: Burn ICU IT Evaluation Results, Christopher Nemeth, Applied Research Associates; Jeremy Pamplin, Army Inst. of Surgical Research; Josh Blomberg, Anthony Hamilton, and Dawn Laufersweiler, Applied Research Associates; Maria Serio-Melvin and Jose Salinas, Army Inst. of Surgical Research

Health-Care Environments Track
HCE1 – Innovative Ways to Quantify Caregiver Performance
Thursday, April 14, 10:30 a.m. to 12:00 noon
Room: Aqua A
Lecture Session
Chair: David Eibling, U. of Pittsburgh

• A Method for Developing Data Quality Metrics for Primary Care Data, Justin St-Maurice, Conestoga College IT AL; Catherine Burns, U. of Waterloo


• Quantifying Nursing Workload via Consumer Smartwatches, Dan Nathan-Roberts, San Jose State U.; Shanqing Yin, KK Women’s & Children’s Hospital; Kelli Sum, San Jose State U.

Medical and Drug-Delivery Devices Track
MDD1 – Meet the New CDRH Human Factors Premarket Evaluation Team
Thursday, April 14, 10:30 a.m. to 12:00 noon
Room: Aqua C
Panel Session
Chair: Michael Wiklund, UL-Wiklund
Panelists: Shannon Hoste, Haniebey Wiyor, and Xin Feng, FDA

The human factors team will introduce themselves; review key elements of the final guidance: human factors requirements for validation and approval or clearance of medical devices; and discuss ways to improve the quality of human factors submissions.
Patient Safety Research and Initiatives Track
PSRI1 – Hand-Offs: The Good, The Bad, and The Ugly
Thursday, April 14, 10:30 a.m. to 12:00 noon
Room: Aqua E
Panel Session
Chair: Joseph Keebler, Embry-Riddle Aeronautical U.
Panelists: Joanna Abraham, U. of Illinois, Chicago; Emily S. Patterson, Ohio State U.; Lee Ann Reisenberg, U. of Alabama; Robert Wears, U. of Florida

Lunch
(Complimentary for registered attendees)
Indigo C
12:00 noon–1:30 p.m.

Sessions – 1:30–3:00 p.m.

Clinical and Consumer Health-Care IT Track
CCIT2 – Improving Clinician and Team Decision-Making by Understanding Cognition
Thursday, April 14, 1:30 to 3:00 p.m.
Room: Indigo 204
Lecture Session
Chair: Laura Barnes, U. of Virginia
• Cognitive Challenges, Technological Factors, and Communication of Medical Referrals and Consultations, Michael Weiner and Barry Barker, Richard L. Roudebush VA Medical Center; Amanda Midboe, VA Palo Alto Health Care System; Brian Porter and Jasma Adams, Richard L. Roudebush VA Medical Center; Justina Wu, VA Palo Alto Health Care System; Mindy Flanagan, Indiana U.; April Savoy, Richard L. Roudebush VA Medical Center; Shakaib Rehman and Hamed Abbaszadegan, Phoenix VA Health Care System; Alissa Russ, Richard L. Roudebush VA Medical Center; Charles Thurmond, Phoenix VA Health Care System; David Haggstrom and Richard Frankel, Richard L. Roudebush VA Medical Center; Laura Militello, Applied Decision Science
• Understanding Complex Clinical Decision Tasks for Better Health Information Technology System Design, Roosan Islam, Guilherme Del Fiol, and Charlene Weir, U. of Utah; Mattew Samore, Salt Lake City VA Medical Center; John Hurdle and Yarden Livnat, U. of Utah

Health-Care Environments Track
HCE2 – Multidisciplinary Approach to Critical Care Design: Information Sources and Use During Morning Rounds
Thursday, April 14, 1:30 to 3:00 p.m.

Room: Aqua A
Panel Session
Chair: M. Susan Halbeck, Mayo Clinic
Panelists: Steve Harris, Rational, LLC; Yuval Bitan, Ben-Gurion U.; Keith Karn, User Research & Human Factors; Roy Ilan, Queens U.; Robert North, Human Centered Strategies, LLC

Medical and Drug-Delivery Devices Track
MDD2 – Understanding the State of Your Device
Thursday, April 14, 1:30 to 3:00 p.m.
Room: Aqua C
Lecture Session
Chair: Kathryn Rieger, Cognitive Design
• Generating Formative Usability Inputs From User Preference Studies, Sean Hägen, BlackHägen Design
• Yes, Usability Design Verification Is Needed, But Is Your Design Ready for Testing? Jeffrey Morang and Rebecca Miron, Ximedica, LLC.; Anthony D. Andre, Interface Analysis Associates/San Jose State U.
• Relationship Between Device Complexity and Use Error Patterns, Limor Hochberg and Sami Durrani, UL-Wiklund; Stephanie Bassock, Tufts U.; Michael Wiklund, UL-Wiklund

Coffee Break/Exhibits
Indigo West Foyer
3:00–3:30 p.m.

Sessions – 3:30–4:30 p.m.

Clinical and Consumer Health-Care IT Track
CCIT3 – mHealth Student Design Competition
Thursday, April 14, 3:30 to 4:30 p.m.
Room: Indigo 204
Lecture Session
Chair: Lee Ann Riesenber, U. of Alabama, Birmingham
Panelists: Vimla Patel, The New York Academy of Medicine; Thomas Kannampallil, U. of Illinois at Chicago; Vernon Smith, Mayo Clinic Hospital Arizona

Health-Care Environments Track
HCE2 – Multidisciplinary Approach to Critical Care Design: Information Sources and Use During Morning Rounds
Thursday, April 14, 1:30 to 3:00 p.m.

Room: Aqua A
Panel Session
Chair: M. Susan Halbeck, Mayo Clinic
Panelists: Steve Harris, Rational, LLC; Yuval Bitan, Ben-Gurion U.; Keith Karn, User Research & Human Factors; Roy Ilan, Queens U.; Robert North, Human Centered Strategies, LLC

Medical and Drug-Delivery Devices Track
MDD2 – Understanding the State of Your Device
Thursday, April 14, 1:30 to 3:00 p.m.
Room: Aqua C
Lecture Session
Chair: Kathryn Rieger, Cognitive Design
• Generating Formative Usability Inputs From User Preference Studies, Sean Hägen, BlackHägen Design
• Yes, Usability Design Verification Is Needed, But Is Your Design Ready for Testing? Jeffrey Morang and Rebecca Miron, Ximedica, LLC.; Anthony D. Andre, Interface Analysis Associates/San Jose State U.
• Relationship Between Device Complexity and Use Error Patterns, Limor Hochberg and Sami Durrani, UL-Wiklund; Stephanie Bassock, Tufts U.; Michael Wiklund, UL-Wiklund

Coffee Break/Exhibits
Indigo West Foyer
3:00–3:30 p.m.

Sessions – 3:30–4:30 p.m.

Clinical and Consumer Health-Care IT Track
CCIT3 – mHealth Student Design Competition
Thursday, April 14, 3:30 to 4:30 p.m.
Room: Indigo 204
Lecture Session
Chair: Rupa Valdez, U. of Virginia
In this session, the three finalists will present their designs. During the Poster Reception from 4:30 to 6:00 p.m. (see CCIT-POS1), the winner will be announced, and the finalists will display their work.
• Holistic Medication Management (Hmmed), Maithili Bade and Arian Haffezi, San Jose State U.
• Vital, Antonia Aguilar, Tiffany McKinley, Gowa Wu, and Tiffany H. Young, San Jose State U.
• LookUp – Away From Mobile for Good, Preethi Srinivas and Yuan Jia, Indiana U.-Purdue U. Indianapolis

Health-Care Environments Track
HCE3 – Give Me a Break, Let’s Be Productive
Thursday, April 14, 3:30 to 4:30 p.m.
Room: Aqua A
Lecture Session
Chair: Michael Kordek, Veterans Admin.
• Intraoperative Microbreaks: Do They Work?
  M. Susan Hallbeck, Bethany Lowndes, Amro Abdelrahman, and Julian Bingener, Mayo Clinic
• The Effects of Nested Interruptions on Task Resumption in Intensive Care, Farzan Sasangohar, Texas A&M U.; Birsen Donmez, U. of Toronto; Patricia L. Trbovich and Anthony C. Easty, Healthcare Human Factors
• Designing Health-Care Facilities to Maximize Productivity and Patient Outcomes, Kristen Miller, Sherry Monson, Susan Coffey Zern, Neil Jasani, and Eric Jackson, Christiana Care Health System

Medical and Drug-Delivery Devices Track
MDD3 – How Many Lives Could We Save by Spending $1 Billion More on HFE?
Thursday, April 14, 3:30 to 4:30 p.m.
Room: Aqua C
Panel Session
Chair: Michael Wiklund, UL-Wiklund
Panelists: Sean Hägen, BlackHägen Design; Shannon Hoste, FDA/CDRH; Stephen Wilcox, Design Science; Lawrence Wolpert, MedStar Health – National Center for Human Factors in Healthcare

Patient Safety Research and Initiatives Track
PSRI3 – Surgical Events
Thursday, April 14, 3:30 to 4:30 p.m.
Room: Aqua E
Lecture Session
Chair: Elizabeth Lazzara, Embry-Riddle Aeronautical U.
• Broken Windows in the CVOR: A Prospective Study of Disruptions During Cardiothoracic Surgery, Tara Cohen, Jennifer Cabrera, Erin Pohl, Olivia Sisk, and Kristen Welsh, Embry-Riddle Aeronautical U.; Scott Reeves and James Abernathy, Medical U. of South Carolina; Scott Shappell and Albert Boquet, Embry-Riddle Aeronautical U.
• Nonroutine Events in Ambulatory Surgery: Comparison of Analysis by Clinicians and Patients, Shilo Anders, Amanda Lorinc, Gina Whitney, Susan Morley, Jessica Pasley, Jason Slagle, and Matthew Weinger, Vanderbilt U.
• A Method for Identifying and Evaluating Potential Patient Safety Risks in a Patient-Facing Health-Care Portal, Hannah Kahler and Trisha Flanagan, athenahealth, Inc.

Posters Reception – 4:30–6:00 p.m.

Clinical and Consumer Health-Care IT Track
CCIT-POS1 – Clinical and Consumer Health-Care IT Posters Session 1
Thursday, April 14, 4:30 to 6:00 p.m.
Room: Indigo West Foyer

1. Building Bridges Between Physicians And Pharmacists: An Interprofessional Approach to Electronic Health Record Requirements, Damla Kerestecioglu, Catherine Burns, and Kelly Grindrod, U. of Waterloo
2. Comparing Training Effectiveness for an Interactive Whiteboard Used for Patient Triage and Care Planning, Brenda Sithidhah and Justin St-Maurice, Conestoga College ITAL
3. Building and Exchanging Competence Interdisciplinarily: Design Patterns as Mediator Between Domains, Peter Rasche, Matthias Wille, Sabine Theis, Christina Bröhl, Christopher M. Schlick, and Alexander Mertens, Inst. of Industrial Engineering and Ergonomics of RWTH Aachen
4. Increasing the Impact of Evidence-Based Clinical Practice Guidelines at the Point of Care, Monica Weiland, American College of Cardiology
5. Health Professional Network, Akansha Jain, Binghamton U.
7. Assessment and Diagnosis of Vestibular Indicators of Soldier Operational Readiness (ADVISOR), Arthur Wolloocko, Michael Jenkins, Michael Farry, and Scott Irvin, Charles River Analytics

Health-Care Environments Track
HCE-POS1 – Health-Care Environments Posters Session 1
Thursday, April 14, 4:30 to 6:00 p.m.
Room: Indigo West Foyer
1. Managing Coworkers, Carpal Tunnel Syndrome, and the BPS Model, Stella Rostkowski, Capella U.
2. Challenges Performing Delayed Cord Clamping and CPAP Resuscitation for Preterm Infants During C-Section or Vaginal Delivery, Wannasiri Lapcharoensap, Stanford U.; Douglas Schwandt, Jules Sherman, and Henry Lee, Stanford Medical School

3. Systematic Comparison of Longitudinal Brain Injury Care to Cancer Survivor and Diabetes Patient Chronic Care Models, Siobhan Heiden and Barrett Caldwell, Purdue U.

4. Navigating Through Carpal Tunnel Syndrome’s Physical, Social, and Emotional Crucibles in a Return-to-Work Program, Stella Rostkowski, Capella U.

5. Modeling Surgical Duration Based on Patient Factors With American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) Database, Bethany Lowndes, Cornelius Thiels, Elizabeth Habermann, Julianne Bingener, Amro Abdelrahman, M. Susan Hallbeck, and Denny Yu, Mayo Clinic


7. Connecting Performance and Processes During Bag Valve Mask Ventilation, Joel Mumma and Francis T. Durso, Georgia Tech; Michelle Dyes, Rogelio de la Cruz, Valerie Fox, and Mary Hoey, Navicent Health

8. Tailoring TeamSTEPPS, Kristen Welsh and Albert Boquet, Embry-Riddle Aeronautical U.

Medical and Drug-Delivery Devices Track

MDD-POS1 – Medical and Drug-Delivery Devices Posters Session 1
Thursday, April 14, 4:30 to 6:00 p.m.
Room: Indigo West Foyer

1. Integrating Usability into Medical Device Procurement: Overcoming Cost and Subjectivity Constraints, Natalie Abts, MedStar Health – National Center for Human Factors in Healthcare

2. Out-of-the-Box Medical Device Safety, Shannon Clark, UserWise, Inc.

3. Turning Qualitative Insights From User Research Into Value-Driven Business Opportunities, Cheryl Kwinn and Scott Woodruff, Farm Design, Inc.

4. Human Factors and the Health-Care Provider Medical Device Life Cycle, Michael Tanner, Gregory Megahan, and Rocco Ottolino, Beaumont Health

Patient Safety Research and Initiatives Track

PSRI-POS1 – Patient Safety Research and Initiatives Posters Session 1
Thursday, April 14, 4:30 to 6:00 p.m.
Room: Indigo West Foyer

1. Predictors of Road-Crossing Decisions in Pedestrians With Alzheimer’s Disease, Chenwen Fang, National Taiwan U. Hospital Yunlin Branch; Yang-Kun Ou, Southern Taiwan U. of Science and Technology

2. Examining Emergency Physician Cognitive Workload, Hunter Hawthorne, Renaldo Blocker, Tara Cohen, and Wesley Cammon, Mayo Clinic

3. Using Hierarchical Task Analysis for Standardization of Surgical Technique: Investigation of Adventitial Stripping, Jackie Cha, U. of Michigan; Denny Yu, Mayo Clinic; Steven Kasten, Cooper Green, and Thomas Armstrong, U. of Michigan


5. HCD-Mediated Interruptions: Understanding the Impact of System Factors, Yushi Yang, Clemson U.; A. Joy Rivera, Children’s Hospital of Wisconsin


7. Ergonomics and Prevention of Injuries From Needle Sticks and Sharps in the OR, Pramila Kalaga, CHI Health, Creighton U. Medical Center

8. Reducing Gossypiboma: Lessons Learned From Human Factors Research, Michelle Jahn, Mallorie Bradlau, Lara Cheng, and Barrett Caldwell, Purdue U.

9. Application of Systems Theory-Based Hazard Analysis to Health Care, Todd Pawlicki, U. of California, San Diego; Aubrey Samost and Nancy Leveson, Massachusetts Inst. of Technology
FRIDAY, APRIL 15

Registration Open
Indigo Foyer
7:30 a.m.–5:00 p.m.

Coffee Break
Indigo West Foyer
8:00–8:30 a.m.

Exhibits Open
Indigo West Foyer
8:00 a.m.–6:00 p.m.

Sessions – 8:30–10:00 a.m.

Clinical and Consumer Health-Care IT Track
CCIT4 – Understanding How to Use Complex Data in a Complex World
Friday, April 15, 8:30 to 10:00 a.m.
Room: Indigo 204
Lecture Session
Chair: Dan Nathan-Roberts, San Jose State U.
- Dammit Jim, I’m a Doctor Not a Human Factors Psychologist! Brandon Kennedy and Y. Raymond Chan, Children’s Mercy Hospital and Clinics
- UX Methods for Complex Domains: Researching and Designing Health-Care Interfaces, Aimee McCabe and Michelle Albert, athenahealth
- Are Your Users Confused? Dangerous Data Visualization Trends and User Research Techniques to Overcome Them, Clara Kliman-Silver and Richard Wang, athenahealth

Health-Care Environments Track
HCE4 – Redesign of The Neonatal ICU: Can It Be Done?
Friday, April 15, 8:30 to 10:00 a.m.
Room: Aqua A
Discussion Panel
Chair: Susan Kotowski, U. of Cincinnati
Panelists: Janene Fuerch, Nicole Yamada, and Louis Halamek, Stanford U.

Medical and Drug-Delivery Devices Track
MDD4 – Unique Applications of Human Factors Engineering
Friday, April 15, 8:30 to 10:00 a.m.
Room: Aqua C
Lecture Session
Chair: Tressa Daniels, illumina

Patient Safety Research and Initiatives Track
PSRI4 – Care Transitions: Current Practices
Friday, April 15, 8:30 to 10:00 a.m.
Room: Aqua E
Lecture Session
Chair: Joanna Abraham, U. of Illinois, Chicago
- Best Practices for Hand-Offs, Joseph Keebler, Elizabeth Lazzara, Kristen Welsh, and Agnes Fagerlund, Embry-Riddle Aeronautical U.
- Improving the Care Transition Process for Postoperative Cardiac Surgery Patients at Multiple Hospitals: A Participatory Ergonomics Approach, Anping Xie, Johns Hopkins U.; Mahiyar Nasarwanji, National Inst. for Occupational Safety and Health; Philip Greilich, U. of Texas Southwestern Medical Center; Rita Tonner, Suburban Hospital; Ananth Kashikar, Baystate Medical Center; Elizabeth Burgess, Bethesda North Hospital; Yea-Jen Hsu, Bickey Chang, David Thompson, Jill Marsteller, Michael Rosen, and Ayse P. Gurses, Johns Hopkins U.
- Multidisciplinary Hand-Over: An Observational Study of Common and Unique Content in General Internal Medicine, Surgery, and the ED, Kathy Momtahan, Ottawa Hospital Research Inst.; Catherine Burns, U. of Waterloo; Peggy Guilbeault, James Chan, Allen Huang, Jacinthe Lampron, Edmund Kwok, and Jordan Hudson, The Ottawa Hospital

Coffee Break
Indigo West Foyer
10:00–10:30 a.m.
Clinical and Consumer Health-Care IT Track
CCIT5 – Engaging Patients Through Technology
Friday, April 15, 10:30 a.m. to 12:00 noon
Room: Indigo 204
Lecture Session
Chair: Lauren Zack, GfK
• Computer Agents and Comprehension of Numeric Information in EHR Patient Portals, Dan Morrow, Mark Hasegawa-Johnson, and Thomas Huang, U. of Illinois, Urbana–Champaign; William Schuh, Carle Foundation Hospital; Rocio Garcia-Retamero, U. of Granada; Renato Azevedo, U. of Illinois, Urbana–Champaign
• Perception and Use of a Patient Interactive Care Window to Improve Care and Family Engagement in Pediatrics ICU, Onur Asan, Medical College of Wisconsin; Richard Holden, Indiana U.-Purdue U. Indianapolis; Kathryn Flynn and Matthew Scanlon, Medical College of Wisconsin
• Using Mobile Health Tools to Support Team-Based Approaches for Chronic Disease Care, Magaly Ramirez and Shinyi Wu, U. of Southern California; Barbara Vickrey, Mount Sinai; Amy Towfighi, Rancho Los Amigos National Rehabilitation Center; Jeremy Wacksman, Dimagi Inc.; Theresa Sivers-Teixeira, Rancho Los Amigos National Rehabilitation Center; Hilary Haber, Dimagi Inc.

Health-Care Environments Track
HCE5 – Complex World of Home Health Care
Friday, April 15, 10:30 a.m. to 12:00 noon
Room: Aqua A
Lecture Session
Chair: Denny Yu, Purdue U.
• Performance-Shaping Factors in Home Health Care: Perspectives of Home Health-Care Providers Transitioning Patients Into Home Health Care, Nicole E. Werner, U. of Wisconsin-Madison
• Patient-Oriented Human Factors in Home and Community Settings, Richard Holden, Indiana U.-Purdue U. Indianapolis; Rupa Valdez, U. of Virginia
• Physical Demands for Home Health-Care Workers, Kermit Davis, Beverly Hittle, Noma Agbonifo, and Rassull Suarez, U. of Cincinnati

Medical and Drug-Delivery Devices Track
MDD5 – Best Practices for Evaluating and Validating Medical Device and Combination Product Labeling
Friday, April 15, 10:30 a.m. to 12:00 noon
Room: Aqua C

Panel Session
Chair: Allison Strochlic, UL-Wiklund
Panelists: Sara McNew, Eli Lilly and Co.; Lee Wood, Roche Pharmaceuticals; Melissa Lemke, Agilis Consulting Group; John Battista, Medtronic

Patient Safety Research and Initiatives Track
PSR15 – Need for Human Factors Perspectives in Handoff Research
Friday, April 15, 10:30 a.m. to 12:00 noon
Room: Aqua E
Seminar
Chair: Joseph Keebler, Embry-Riddle Aeronautical U.
Presenter: Lee Ann Reisenberg, U. of Alabama

Lunch
(Complimentary for registered attendees)
Indigo C
12:00 noon–1:30 p.m.

Sessions – 1:30–3:00 p.m.

Clinical and Consumer Health-Care IT Track
CCIT6 – Best-Practices for Designing and Implementing Electronic Health Records
Friday, April 15, 1:30 to 3:00 p.m.
Room: Indigo 204
Lecture Session
Chair: A. Joy Rivera, Children’s Hospital of Wisconsin
• Let Doctors Be Doctors: How User Research Contributed to a Reimagined Physician Experience, Kaden Rushford, athenahealth

Health-Care Environments Track
HCE6 – Where to Treat: Home or Hospital? The Human Factors and Ergonomics Debate
Friday, April 15, 1:30 to 3:00 p.m.
Room: Aqua A
Debate
Chair: Kristen Miller, Value Inst. at Christiana Care Health System
Debaters: Kermit Davis and Susan Kotowski, U. of Cincinnati; Rupa Valdez, U. of Virginia; Joseph Keebler and Elizabeth Lazzara, Embry-Riddle Aeronautical U.
Medical and Drug-Delivery Devices Track
MDD6 – New Frontiers
Friday, April 15, 1:30 to 3:00 p.m.
Room: Aqua C
Lecture Session
Chair: Sean Hägen, BlackHägen Design
  • Designing for Users With Visual Impairment,
    Molly Story, Sanofi
  • Power and Value of Consumer Product
    Development Techniques When Applied to Medical
    Devices, Keith Karn, User Research & Human
    Factors; Andrew Golaszewski, Bresslergroup
  • From Devices to Platforms: Implications of the
    Internet of Things for Health Care, Hugh Dubberly,
    Dubberly Design Office; Stephen Wilcox, Design
    Science

Patient Safety Research and Initiatives Track
PSRI6 – Modeling for Patient Safety
Friday, April 15, 1:30 to 3:00 p.m.
Room: Aqua E
Lecture Session
Chair: Emily S. Patterson, Ohio State U.
  • Using Topic Modeling to Assist With Emergency
    Department Patient Safety Event Categorization,
    Allan Fong, Zach Hettinger, and Raj Ratwani,
    MedStar Health – National Center for Human Factors
    in Healthcare
  • Modeling Patient-Centered Cognitive Work for
    High-Value Care Goals, Stephanie Furniss and
    Matthew Burton, Arizona State U.; David Larson,
    Mayo Clinic; David Kaufman, Arizona State U.
  • Human Factors and Building a High-Reliability
    Organization (HRO): A Hospital’s Journey for
    Caring Safely, Joseph A. Cafazzo, Jennifer Jean, and
    Carleene Bañez, Healthcare Human Factors

  Coffee Break
  Indigo West Foyer
  3:00–3:30 p.m.

  Sessions – 3:30–4:30 p.m.

Clinical and Consumer Health-Care IT Track
CCIT7 – Advanced UX Research Methods
Friday, April 15, 3:30 to 4:30 p.m.
Room: Indigo 204
Lecture Session
Chair: Janey Barnes, User-View
  • Dispelling the Front Desk User Myth: Using
    Method Triangulation to Inform Holistic Design,
    Chloe Markley and Michael Montano, athenahealth

  Design Issues of the Existing Medical Image
  Segmentation Software: A Case Study Using
  Observational, Heuristic, and Think-Aloud
  Methods, Anjana Ramkumar and Yu Song, Delft U.
  of Technology; Wiro J. Niessen, Erasmus MC - U.
  Medical Center; Pieter Jan Stappers, Delft U. of
  Technology

Health-Care Environments Track
HCE7 – It Takes a Team To Be Successful
Friday, April 15, 3:30 to 4:30 p.m.
Room: Aqua A
Lecture Session
Chair: Linda Williams, National Center for Patient Safety
  • Disconnects in Design and Infection Prevention and
    Control (IPAC): A Study of Products and the
    Environment in a Neonatal Intensive Care Unit
    (NICU) and How They May Be Undermining Best
    Practice in Infection Prevention,
    Chantal Trudel, Carleton U.; Sue Cobb, U. of Nottingham; Kathryn
    Montahan and Janet Brintnell, The Ottawa Hospital;
    Ann Mitchell, Ottawa Hospital Research Inst.
  • Toward Objective Measures of Team Dynamics
    During Health-Care Simulation Training,
    Ronald Stevens and Trysha Galloway, The
    Learning Chameleon, Inc.; Ann Willemsen-Dunlap,
    Jump Training Simulation and Education Center;
    Jamie Gorman, Georgia Tech; Don Halpin, Jump
    Training Simulation and Education Center

Medical and Drug-Delivery Devices Track
MDD7 – CDER Perspective on the Role of Human
Factors in Combination Product Design and
Development
Friday, April 15, 3:30 to 4:30 p.m.
Room: Aqua C
Panel Session
Chair: Anthony D. Andre, Interface Analysis
  Associates/San Jose State U.
  Panelists: Irene Chan and Kellie Taylor, Division of
  Medication Error Prevention and Analysis at FDA/CDER/
  OSE/OMPRM/DMEPA

Patient Safety Research and Initiatives Track
PSRI7 – Applied Solutions/Interventions for Critical
Care
Friday, April 15, 3:30 to 4:30 p.m.
Room: Aqua E
Lecture Session
Chair: Beth Blickensderfer, Embry-Riddle Aeronautical U.
• Human Factors and Health-Care Professionals Collaboration to Reduce Alarm Fatigue in ICU Settings at a Large Academic Medical Center, Jennifer Mauney, User-View, Inc.; Celeste Mayer, UNC Health Care; Janey Barnes, User-View, Inc.

• Patient- and Family-Centered Care: Bridging the Gap Between Pediatric and Adult Critical Care, Ashimiyu Durojaiye, Paul Nyquist, Jim Fackler, Ayse P. Gurses, Peter Pronovost, and Anping Xie, Johns Hopkins U.

• A Method for Developing Data-Driven Interventions in a Level II Trauma Center, Tracy Litzinger, Jennifer Cabrera, Tara Cohen, and Scott Shappell, Embry-Riddle Aeronautical U.; Steven Miles, Michael Fabian, and Kevin Captain, Halifax Health Medical Center; Albert Boquet, Embry-Riddle Aeronautical U.

Posters Reception – 4:30–6:00 p.m.

Clinical and Consumer Health-Care IT Track
CCIT-POS2 – Clinical and Consumer Health-Care IT Posters Session 2
Friday, April 15, 4:30 to 6:00 p.m.
Room: Indigo West Foyer

1. Comparing the Usability of EHRs: Assessing the Cognitive Load in Two Different EHRs, Cynthia Kamishlian, athenahealth

2. Genomic Testing Decision Support for Pediatric Primary Care Providers, Dean Karavite, Edward Krause, Jeff Pennington, and Robert Grundmeier, The Children’s Hospital of Philadelphia

3. Bedside Nurses’ Perceptions of a Novel Health Information Technology Application in a Pediatrics ICU, Laila Azam, Kathryn Flynn, Matthew Scanlon, and Onur Asan, Medical College of Wisconsin

4. Capturing Patients’ Voices: Patient-Centered Use of EHRs, Onur Asan, Jeanne Tyszka, and Kathryn Fletcher, Medical College of Wisconsin

5. Association of Depression and Communication Patterns in Geriatric Visits, Yushi Yang and Sophie Rodriguez Pereira, Medical College of Wisconsin; Sojung Claire Kim, High Point U.; Onur Asan, Medical College of Wisconsin

6. How to Keep Your Cool: Development and Pilot Study of an Individually Tailored e-Learning Program for Burnout Prevention Within the Nursing Population, Nina Geuens and Erik Franck, Karel de Grote U. College; Peter Van Bogert, U. of Antwerp

7. Usability Testing a Redesigned Display Interface for an Electronic Preoperative Anesthesia Record, Richard Botney, Oregon Health and Science U.; Jenna Marquard, U. of Massachusetts, Amherst; Paul

Gorman, Oregon Health and Science U.

8. Tackling Prostate Cancer Through eHealth: The Unique Comparison of Ned and TrueNTH, Plinio P. Morita, Justin Kirkey, and Niusha Barmala, Healthcare Human Factors; Andrew Feifer, Trillium Health Partners; Arminee Kazanjian, U. of British Columbia; Jackie Bender, U. of Toronto; Damon Pfaff, Laura Parente, Melanie Yeung, and Joseph A. Cafazzo, Healthcare Human Factors


Health-Care Environments Track
HCE-POS2 – Health-Care Environments Posters Session 2
Friday, April 15, 4:30 to 6:00 p.m.
Room: Indigo West Foyer

1. Future Directions in Interruptions Research: Understanding Task Resumption, Laura Barg-Walkow and Wendy Rogers, Georgia Tech

2. Pediatric Dosing Device Contextual Inquiry Research, Paul Blowers, AbbVie, Inc.; Katie Hansbro and Matthew Cavanaugh, Design Science


5. Code Blue Team Performance Metric, Nancy Cooke and Sandra Hinski, Arizona State U.; Ayan Sen, The Mayo Clinic Hospital

6. An Assessment of Nursing Interruptions on Inpatients Units, Nkoli Agbazue and Indigo Johnson, Christiana Care Health System, Delaware State U.

8. Participatory Design Thinking in Radiation Oncology, Adam Rule, Erin Gillespie, Nadir Weibel, and Todd Pawlicki, U. of California, San Diego


Medical and Drug-Delivery Devices Track
MDD-POS2 – Medical and Drug-Delivery Devices Posters Session 2
Friday, April 15, 4:30 to 6:00 p.m.
Room: Indigo West Foyer
2. Testing With Secondary Users, Tara Feuerstein and Kristyn Berry, Farm Design
3. Out-of-Box Failures: MAUDE and Local Provider Experiences, Michael Tanner, Gregory Megahan, and Rocco Ottolino, Beaumont Health
4. How to Program Positive Medical Device User Experience Using Narratives, Storytelling, and Priming, Thomas Koester and Hanne Kierkegaard, FORCE Technology; Christian Bang, Teres Hospital Aarhus
5. Effect of Instructions for Use Formatting on User Performance, P. Keola Ching, San Jose State U.

Patient Safety Research and Initiatives Track
PSRI-POS2 – Patient Safety Research and Initiatives Posters Session 2
Friday, April 15, 4:30 to 6:00 p.m.
Room: Indigo West Foyer
1. Development and Validation of a Checklist to Assess Teams’ Nontechnical Skills, Leen Roes, Sarah De Schepper, Deborah Hilderson, and Erik Franck, Karel de Grote U. College
3. Using the RITE Method in Health IT to Design for Safe Outcomes, Kathleen Adams, VA Portland Health Care System
4. The Possibility Idea of Monitoring Life of Dementia Person in the Community, Mikio Murata, Kiyoshi Kubota, and Kiyomi Sadamoto, Yokohama U. of Pharmacy
5. The Idea of Monitoring Drug-Taking and Life in the Community, Kiyomi Sadamoto and Mikio Murata, Yokohama U. of Pharmacy; Shinya Aoki, Olive Community Nurse Station; Takaharu Sadamoto and Hiromi Matayoshi, Sadamoto Clinic; Kiyoshi Kubota, Yokohama U. of Pharmacy
6. Preoperative Care Workflow, Teamwork, and Technology Challenges, Beth Blickensderfer, Jessica Cruit, Jayde King, and Sarah Pilgren, Embry-Riddle Aeronautical U.; Thomas Looke, Florida Hospital Winter Park Research Center
7. The Learning Health-System: A New Frontier for Human Factors, Joshua Rubin and F. Jacob Seagull, U. of Michigan
10. Generic Virtual Simulation Modules to Emphasize Error Risk in Medication Order Entry, Tim Arnold and Helen Fuller, Veterans Health Admin.
11. Understanding Individual Differences and Error-Reporting Attitudes and Behavioral Intentions, Elizabeth Lazzaara, Embry-Riddle Aeronautical U.; Deborah DiazGranados, Virginia Commonwealth U.; Agnes Fagerlund, Embry-Riddle Aeronautical U.
12. Specifying Parameters for Real-Time Bio- and Cognitive Feedback During Acute Stress, Lauren Kennedy, Virginia Tech; Sarah Parker, Virginia Tech Carilion School of Medicine
14. Perceived Effects of Meaningful Use of Electronic Health Records on Clinical Workflow: A Preliminary Study, Courtney Denton, The New York Academy of Medicine; Gloria Nimo and Jason Shapiro, Mount Sinai Medical Center; Osman Sayan, Columbia U. Medical Center; Thomas Kannampallil, U. of Illinois, Chicago; Vimla Patel, The New York Academy of Medicine
SATURDAY, APRIL 16

Coffee Break
Indigo West Foyer
8:00–8:30 a.m.

Sessions – 8:30–10:00 a.m.

Clinical and Consumer Health-Care IT Track
CCIT8 – mHealth: Understanding and Incorporating Consumer Perspectives
Saturday, April 16, 8:30 to 10:00 a.m.
Room: Indigo 204
Lecture Session
Chair: Rupa Valdez, U. of Virginia
• Taking an (Even More) Holistic Approach to Consumer Health Informatics Design, Vanessa Martinez and Jenna Marquard, U. of Massachusetts, Amherst; Barry Saver, Swedish Medical Center; Lawrence Garber and Peggy Preusse, Reliant Medical Group
• Redesigning an mHealth Platform Leveraging Usage Data From Previous Generations and Persuasive Design Methods: The Experience With < 30 Days, Plinio P. Morita, Healthcare Human Factors; Ahmad Zbib and Loren Morone, Heart and Stroke Foundation; Joseph A. Cafazzo, Healthcare Human Factors
• Identifying User Preferences for Design of Phone Message-Based Prompting System to Activate Physical Activity and Social Support: Findings from a Discrete-Choice Experiment With Urban, Low-Income Hispanic Adults With Diabetes, Magaly Ramirez, Shinyi Wu, and Elizabeth Beale, U. of Southern California

Health-Care Environments Track
HCE8 – Improvement of Care Through System Engineering
Saturday, April 16, 8:30 to 10:00 a.m.
Room: Aqua A
Lecture Session
Chair: Russell Branaghan, Arizona State U.
• Decreasing Continuous Cardiac Monitoring to Increase System Resilience, Michael Rayo, Ohio State U.; Jerry Mansfield, Daniel Eiferman, and Traci Migner, Ohio State U. Wexner Medical Center; Emily S. Patterson and Susan White, Ohio State U.; Susan Moffatt-Bruce, Ohio State U. Wexner Medical Center

• Application of Systems Engineering and Participatory Design Methods in the Development and Validation of a Night-Lighting Intervention to Reduce Inpatient Falls, Satyan Chari, Metro North Hospital and Health Service; Simon Smith and Alex Black, Queensland U. of Technology; Mariana Figueiro, Lighting Research Center, Rensselaer Polytechnic Inst.; Alison Mudge, Metro North Hospital and Health Service; Marcus Watson, Queensland Health; Mark Devitt, Metro North Hospital and Health Service; Terry Haines, Monash U.
• Using Challenges-Associated Meaningful-Use Criteria to Prioritize Needed Changes in Electronic Health Records, G. Talley Holman and Steven Waldren, American Academy of Family Physicians; A. Joy Rivera, Children’s Hospital of Wisconsin; Lawrence D. Dardick, UCLA Health

Medical and Drug-Delivery Devices Track
MDD8 – Representing the Users
Saturday, April 16, 8:30 to 10:00 a.m.
Room: Aqua C
Lecture Session
Chair: Joe Cesa, Halyard Health
• FDA’s Perspective on Patient Preference Information and Implications for Industry, Tara Feuerstein and Cheryl Kwinn, Farm Design
• Human Factors Engineering and Requirements Engineering: Two Competing Disciplines? Florian Schauderna, Katrin Rapp, Daniel Kerkow, and Natalia Mazaeva, Sanofi
• Training Decay Selection for Usability Testing, Shannon Clark, UserWise, Inc.

Patient Safety Research and Initiatives Track
PSRI8 – Usability and Design for Patient Safety
Saturday, April 16, 8:30 to 10:00 a.m.
Room: Aqua E
Lecture Session
Chair: Thomas Kannampallil, U. of Illinois, Chicago
• Advancing Patient Safety Science Through the Creation of a Mobile Usability Lab, Kristen Miller, Susan Coffey Zern, Gwen Ebbert, John Learish, and Eric Jackson, Christiana Care Health System
• Effective, Lean Patient Safety Reviews During Iterative Development of Mobile Health-Care Software, Victoria Mile, Veterans Health Admin.; Roger Chapman, Collaborative Work Systems (CWS), Inc.
Coffee Break
Indigo/Aqua Foyers
10:00–10:30 a.m.

Sessions – 10:30 a.m.–12:00 noon

Clinical and Consumer Health-Care IT Track
CCIT9 – Health IT Pop-Up Conference
Saturday, April 16, 10:30 a.m. to 12:00 noon
Room: Indigo 204
Lecture Session
Chair: Lauren Zack, GfK
• Bursting with ideas? Ready to start turning thoughts into actions? Most conferences leave us inspired and ready to start integrating some new ideas, techniques, and approaches into our work. Let’s take this time to share with others what we’ve taken away from this year’s conference and what we plan to do with it. You can sign up for a 5-minute slot and informally use that time to share with the group what you’ve taken away, what you are excited about, and how you might use it. This casual pop-up conference session gives you a forum for sharing ideas right away and getting some immediate feedback from your colleagues. Please sign up by e-mailing Lauren Zack (Lauren.Zack@gfk.com), or via the sign-up sheet on the main bulletin board.

Health-Care Environments Track
HCE9 – Design and Usability of Medical Equipment
Saturday, April 16, 10:30 a.m. to 12:00 noon
Room: Aqua A
Lecture Session
Chair: Y. Raymond Chan, Children’s Mercy Hospitals and Clinics
• Evaluation of Ergonomically Redesigned Paramedic Bags: A Usability Study, Yuval Bitan, Ben-Gurion U.; Scott Ramey and Giselle Philp, Northumberland Paramedics; Paul Milgram, U. of Toronto
• Examination of Processes for Scope Labeling, Storage, and Selection, Elizabeth Papautsky, Applied Research Associates; Anna Grome, TiER1 Performance Solutions; Beth Crandall, Crandall Consulting; Derek Wheeler, Cincinnati Children’s Hospital Medical Center

Medical and Drug-Delivery Devices Track
MDD9 – Dear FDA
Saturday, April 16, 10:30 a.m. to 12:00 noon
Room: Aqua C
Panel Session
Chair: Tim Reeves, Human Factors MD, Inc.

Patient Safety Research and Initiatives Track
PSRI9 – Training Interventions
Saturday, April 16, 10:30 a.m. to 12:00 noon
Room: Aqua E
Lecture Session
Chair: Shilo Anders, Vanderbilt U.
• Use of Reflective Practice Training to Improve Diagnostic Outcomes: An Integrative Review, Martin Caliendo, Texas Tech U. Health Sciences Center at the Permian Basin; Joanna Abraham, U. of Illinois, Chicago
• Improving Health-Care Provider Patient Safety Practices Through Game-Based Training, Christine Kreutzer, Clint Bowers, Emily Gonzalez-Holland, and Soraya Allen, U. of Central Florida
• Mind the Gap: Team Training in Health Care, Sarah Henrickson Parker, Virginia Tech Carilion School of Medicine; Lillian Su and Mary Patterson, Children’s National Medical Center

AAMI Workshop – 1:30–5:00 p.m.

AAMI Post-Symposium Workshop (separate registration required) – Applying Human Factors to Improve Instructional Materials as Part of the User Interface
Saturday, April 16, 1:30 to 5:00 p.m.
Room: Aqua A
Presented by Pat Patterson, Renee Bailey, and Melissa Lemke, Agilis Consulting Group, LLC

SUNDAY, APRIL 17

AAMI Workshop – 7:00 a.m.–5:00 p.m.

AAMI Post-Symposium Workshop (separate registration required) – Applying Human Factors to Improve Instructional Materials as Part of the User Interface
Sunday, April 17, 7:00 a.m. to 5:00 p.m.
Room: Aqua A
Presented by Pat Patterson, Renee Bailey, and Melissa Lemke, Agilis Consulting Group, LLC
A collaborative and unique ergonomics conference!

ErgoX delivers practical, usable, and evidence-based solutions to the challenges faced by ergonomists and health and safety specialists in office and industrial settings.

At ErgoX, you will:

- Hear TED-style presentations from world-class experts in ergonomics and safety
- Gain the latest insights on procedures, tools, and approaches for on-the-job safety and wellness
- Network with industry leaders and make new strategic connections
- Find solutions to pressing issues in workplace ergonomics

A practical, solutions-based event that offers unique opportunities for collaboration and guidance.

“More useful information for the direct application of ergonomics in the workplace than I have encountered at any conference… over the past 25 years.”

Wm. G. (Bill) Elliott, MPH, MS, CPE

“Knowledge transfer at its best; evidence-based practice in motion.”

Sonia Paquette, OTR/L, CPE, ABVE-D

“I was very impressed with the inventiveness and high-quality content of ErgoX.”

Y. Ian Noy, Ph.D.
Liberty Mutual Research Institute for Safety

SAVE THE DATE!

HFES 2016 International Annual Meeting
September 19–23
Washington Hilton, Washington, DC

Top scientists and practitioners from around the world will gather at the 60th International Annual Meeting to deliver cutting-edge presentations of the latest research and practical applications in human factors/ergonomics in 23 technical areas of expertise.

You will walk away with
- Insights and techniques from more than 100 peer-reviewed sessions and interactive posters, demos, and skill-building workshops
- Increased career visibility and an expanded professional network
- Information, inspiration, and insights to move your career forward

It is knowledge you can use right away to lead, grow, and become an innovator in your field.

Keynote Speaker:
Norman R. Augustine, Retired Chairman and CEO of Lockheed Martin Corporation, former Undersecretary of the Army, and long-time proponent for ensuring the place of science and engineering on the nation’s list of priorities.

hfes.org
Health Informatics (MS)
Online Program

• This interdisciplinary program incorporates multiple perspectives to address the data, information and decision making challenges in the current health care landscape.

• Students in this program learn to design, analyze and evaluate health information systems, to address complex sociotechnical problems and to design solutions in diverse healthcare environments.

• Graduates are prepared for positions in clinical, research, management and community settings.

Information Studies (PhD)
On-campus Program

• Prepares PhD students to conduct original research as a springboard for careers as academics, researchers, consultants and technical managers in universities, institutes, industry and government.

Internationally recognized faculty advise students in research areas including:

- Computer-Supported Collaborative Work
- Data Analytics
- Digital Information Management and Curation
- Human-computer Interaction
- Human Factors
- Intelligent Systems
- Medical Informatics
- Privacy, security, trust, and automation
- Social Computing
- Ubiquitous Computing

BCPE welcomes you to the 2016 International Symposium on Human Factors and Ergonomics in Health Care

Why hire a Certified Professional? BCPE certified ergonomists/human factors/user experience professionals are credentialed based on their formal education, reviewed work products, and a comprehensive written examination. Professional certification provides employers:

• Independent verification of competency,
• Greater productivity and efficiency, and
• Higher quality of work.

Contact BCPE to find a Certified Professional today!

Contact BCPE or search the BCPE Directory at bcpe.org to find Certified Professionals by designation type, geographic location and areas of specialization and expertise.

Board of Certification in Professional Ergonomics · Bellingham · WA · Phone (888) 856-4685 · e-mail: bcpehq@bcpe.org
LOOKING TO MAKE YOUR MEDICAL PRODUCT MORE COMPETITIVE?

Battelle's Human Centric Design team can help.

We specialize in providing a value-driven approach that includes:

- Usability assessments
- Study efficiency
- Human factors testing, and iterative design and development
- A thorough understanding of regulatory compliance to help streamline your approval process

The result? Integrated design solutions where users, technologies and the operating environments are matched for optimal, safe and effective use and performance.

800.201.2011
solutions@battelle.org
www.battelle.org/human-centric-design

Battelle
The Business of Innovation
EXPERIENCE MATTERS

Human Factors MD has been providing human factors expertise exclusively to the medical device and pharmaceutical industries since others were still... well, you know.

We are a leading provider of human factors design and evaluation services. We’ve worked exclusively with medical device and pharmaceutical clients since our inception, 15 years ago. Our human factors experts have an average of 18 years experience working with medical devices and combination products. Our expertise includes:

Formative Usability Testing  HF Validation Testing
Use Error Analysis  Labeling Development
User Interface Design  Competitive Benchmarking
User Needs Analysis  Heuristic Evaluations
Sharps Handling  Regulatory Strategy

8041 Corporate Center Dr., Suite 200, Charlotte, NC 28226  (800) 639-7941  humanfactormd.com
Save the Date!

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
- Health-Care 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.

Learn more at www hfes org