Human Factors and Ergonomics in Health Care:

March 26–28, 2018

Marriott Copley Place
Boston, Massachusetts

PRELIMINARY PROGRAM

(As of March 13, 2018)

HFES is pleased to present the preliminary program for the 2018 Health-Care Symposium. Information is subject to change.

Register at http://bit.ly/HCS2018_Register.

View workshop information at https://www.hfes.org/Security/ContentPages/?Id=%202669.

PROGRAM

SUNDAY, MARCH 25

REGISTRATION SERVICES
7:00 a.m.–6:30 p.m.
Location: Registration Desk B

REFRESHMENT SERVICE
7:30–8:00 a.m.
For Workshop Attendees Only
Location: Salon H

PRE-SYMPOSIUM FDA MORNING WORKSHOP:
Validation of Combination Drug Products: An FDA Workshop
(separate registration fees apply)
Sunday, March 25, 8:00 a.m.–12:00 p.m.
Location: Salon H
Chair: Anthony D. Andre, Interface Analysis Associates
Presetners: Irene Z. Chan, PharmD, BCPS, CDR, U.S. Public Health Service, Deputy Director, Division of Medication Error Prevention and Analysis, FDA/CDER/OSE/OMEPRM/DMEPA; Nicole Garrison, PharmD, BCPS, Safety Evaluator, Division of Medication Error Prevention and Analysis, FDA/CDER/OSE/OMEPRM/DMEPA

REFRESHMENT BREAK
10:00–10:30 a.m.
For Workshop Attendees Only
Location: Salon H

LUNCH BREAK
12:00–1:15 p.m.

PRE-SYMPOSIUM FDA AFTERNOON WORKSHOP: Improving the Safety and Effectiveness of Medical Devices Through Human Factors Considerations: An Interactive Workshop
(separate registration fees apply)
Sunday, March 25, 1:30–5:30 p.m.
Location: Salon H
Chair: Anthony D. Andre, Interface Analysis Associates
Presenters: Hanniebey Wiyor, LT, U.S. Public Health Service, Human Factors Reviewer, Human Factors Pre-market Evaluation Team, FDA/CDRH/DAGRID/HFPMET; Xin Feng, Human Factors Reviewer, HumanFactors Pre-market Evaluation Team, FDA/CDRH/DAGRID/HFPMET; Rita Lin (Human Factors Reviewer, Human Factors Pre-market Evaluation Team, FDA/CDRH/DAGRID/HFPMET

REFRESHMENT BREAK
3:00–3:30 p.m.
For Workshop Attendees Only
Location: Salon H

OPENING NETWORKING RECEPTION
5:30–6:30 p.m.
Location: 3rd Floor Atrium

MONDAY, MARCH 26

REGISTRATION SERVICES
7:00 a.m.–5:00 p.m.
Location: Registration Desk B

REFRESHMENT SERVICE
8:00–8:30 a.m.
Location: Grand Ballroom Foyer

OPENING PLENARY SESSION
Monday, March 26, 8:30–10:00 a.m.
Location: Salon F
Chairs: Joseph R. Keebler, Embry-Riddle Aeronautical U.; Anthony D. (Tony) Andre, Interface Analysis Associates
Keynote Address: Josie's Story: Family-Centered Approaches to Patient Safety, Sorrel King, Patient Safety Advocate

REFRESHMENT BREAK
10:00–10:30 a.m.
Location: Grand Ballroom Foyer

EXHIBITS
10:00 a.m.–6:00 p.m.
Location: Grand Ballroom Foyer

SESSIONS
10:30 a.m.–12:00 p.m.

CCIT1 – Cognitive Engineering Applications
Clinical and Consumer Health Care IT Track
Monday, March 26, 10:30 a.m.–12:00 p.m.
Location: Exeter
Lecture Session
Chair: Plinio Morata, U. of Waterloo
1. **Decision-Making for Alternative Procedures: Navigating the Tradeoffs Between Clinical Effectiveness, Patient Safety, Financial and Organizational Pressures, and Patient Comfort**, Mike Rayo, Chandni Pawar, Elizabeth Sanders, Beth Liston, and Emily Patterson, Ohio State U.

2. **Using Cognitive Engineering Methods to Evaluate IT Systems: Developing User Feedback Questionnaires Around Cognitive Support Design Objectives**, Emilie Roth, Roth Cognitive Engineering; Ann Bisantz, U. of Buffalo; A. Zachary Hettinger, Medstar Inst. for Innovation
3. **More Than Information Access: A Cognitive Work Analysis on Physician-Pharmacist Collaboration Through Electronic Medical Records,** Jessie Chin, U. of Illinois at Chicago; Melissa Yu, Kelly Grindrod, and Catherine Burns, U. of Waterloo

HE1 – Electronic Health Records
Hospital Environments Track
Monday, March 26, 10:30 a.m.–12:00 p.m.
Location: Arlington
Panel and Lecture
1. **Panel: Surveillance Methods for EHR Safety Risks: A Panel Discussion**
   Chair: Naveen Muthu, Children's Hospital of Philadelphia
   Panelists: Evan Orenstein, Children's Hospital of Philadelphia; Allan Fong and Aaron Zachary Hettinger, Medstar National Center for Human Factors in Healthcare; Lorraine Possanza, ECRI Inst.
2. **Lecture: Once More, With Feeling: Emotional Design,** Paul Weaver, Cerner
   Chair: Brandan Kennedy, Children's Mercy Kansas City

MDD1 – Demystifying HF Considerations – FDA's 2017 Generics and Interchangeable Biosimilars Guidance Documents
Medical and Drug-Delivery Devices Track
Monday, March 26, 10:30 a.m.–12:00 p.m.
Location: Salon F
Panel Session
Chairs: Rachel Aronchick and Allison Strochlic, UL-Wiklund
Panelists: Irene Z. Chan, FDA; Brian Holly, Pfizer; Valerie Fenster, Amgen; Lee Wood, medHF; Sherri Biondi, Genentech

PSRI1 – Human Factors Approaches to Improving Health Equity: Where Have We Been and Where Should We Go Next?
Patient Safety Research and Initiatives Track
Monday, March 26, 10:30 a.m.–12:00 p.m.
Location: Clarendon
Panel Session
Chair: Natalie Benda, MedStar Health
Panelists: Angela Thomas, MedStar Health; Rupa Valdez, U. of Virginia; Enid Montague, DePaul U.; Deliya Wesley, MedStar Health

LUNCH BREAK (Provided)
12:00–1:30 p.m.
Location: Salon G

SESSIONS
1:30–3:00 p.m.

CCIT2 – Understanding Work
Clinical and Consumer Health-Care IT Track
Monday, March 26, 1:30–3:00 p.m.
Location: Exeter
Lecture Session
Chair: Farzan Sasangohar, Texas A&M U.
1. **Optimizing Rounds in the ICU: Applying Workflow-Centric Human Factors to the Prototyping of a Decision-Support System,** Sylvain Bruni, Aptima
2. **Clinical Decision Making in a Sea of Displays,** MaryBeth Privitera, HS Design/U. of Cincinnati
3. **Improving Discharge Documents to Better Support Care Transitions,** Patrice Tremoulet, Rowan U.; Ramya Krishnan, ECRI Inst.
4. **Characterizing Workflow in Nursing Homes,** Mustafa Ozkaynak, Cynthia Drake, Blaine Reeder, and Peter Ferrarone, U. of Colorado-Anschutz Medical Campus; Barbara Trautner, Baylor College of Medicine; Heidi Wald, U. of Colorado-Anschutz Medical Campus

HE2 – Hospital Environments
Hospital Environments Track
Monday, March 26, 1:30–3:00 p.m.
Location: Arlington
Panel and Lecture Session
Chair: Raymond Chan, Children's Mercy Hospitals
1. **Panel: Survival and Success in Clinically Embedded Human Factors Practice**
   Panelists: Ken Catchpole, Medical U. of South Carolina; Tara Cohen, Cedars-Sinai Medical Center; Joy Rivera, Children's Hospital of Wisconsin; Brittany Anderson-Montoya, Carolinas HealthCare System; Shelley Jeffcott, National Health Service Scotland (NHSS)
2. **Lecture: Challenges in Pediatric Hospital Medicine–Transitions From Training and Challenges Within the Workforce,** Sophia Sterner and Lisa Carney, Children's Mercy Hospital and Clinics; Sonia Chaudhry, Connecticut Children's Medical Center; Heather Dahlquist, Yale-New Haven Children's Hospital; Angie Etzenhouser, Children's Mercy Hospital and Clinics; Alexander Hogan and Beth Natt, Connecticut Children's Medical Center

MDD2 – Artificial Pancreas Technologies

Medical and Drug-Delivery Devices Track
Monday, March 26, 1:30–3:00 p.m.
Location: Salon F
Lecture Session
Chair: Mike Dunkley, Continuum

1. **Designing Across the User Spectrum for the Hybrid-Closed-Loop Artificial Pancreas System,** Sandhya Pillalamarri, Insulet Corporation
2. **Using a Commercial, Off-the-Shelf Smartphone as the Primary User Interface for a Class 3 Medical Device,** Sabine Kabel-Eckes, Bigfoot Medical

PSRI2 – The Historic Scientific Contribution of the Late Robert Wears, MD

Patient Safety Research and Initiatives Track
Monday, March 26, 1:30–3:00 p.m.
Location: Clarendon
Panel Session
Chair: Shawna Perry, U. of Florida
Panelists: Ann Bisantz, U. at Buffalo, A. Zach Hettinger, National Center for Human Factors in Healthcare-MedStar Health; Pascale Carayon, U. of Wisconsin-Madison; Emilie Roth, Roth Cognitive Engineering; David Woods, Ohio State U.; Richard Cook, Ohio State U.

REFRESHMENT BREAK
3:00–3:30 p.m.
Location: Grand Ballroom Foyer

SESSIONS
3:30–4:30 p.m.

CCIT3 – Mobile Health Applications for Consumers Student Design Competition

Clinical and Consumer Health-Care IT Track
Monday, March 26, 3:30–4:30 p.m.
Location: Exeter
Lecture/Award Session
Chair: Richard Holden, Indiana U. - Indianapolis
Following presentation of the finalists listed below, the award will be presented.

1. **Care Connect,** Kristen Webster, Johns Hopkins
2. **EasyHealth – An Integrated Health Monitoring and Management App for Seniors,** Sommayah Soliman, Harshada Tupe, Mai Chee Vang, and Javy Wang, San Jose State U.
3. **RecorDr. – Facilitating Patient Self-Advocacy and Enabling Large-Scale Human Factors Research,** Marisa Grayson, Ohio State U.

HE3 – Burnout

Hospital Environments Track
Monday, March 26, 3:30–4:30 p.m.
Location: Arlington
Lecture Session
Chair: Raymond Chan, Children's Mercy Kansas City

1. **How LEAN Can Reduce Provider Stress as Well as Improve Organizational Efficiency,** Michael Beck, Penn State Pediatric Hospital Medicine
2. **Understanding Primary Care Clinician Burnout Through Physiologic Response, Workflow, and the Environment**, Akhila Iyer, MedStar Inst. for Innovation; Jordan Smith, Steelcase Health; Joseph Blumenthal, MedStar Inst. for Innovation; Michelle Ossmann, Steelcase Health

MDD3 – Increasing Realism in Human Factors Testing

Medical and Drug-Delivery Devices Track
Monday, March 26, 3:30–4:30 p.m.
Location: Salon F
Lecture Session
Chairs: Elizabeth Roche, Ximedica; Molly Story, Sanofi

1. **Leveraging AR/VR in Human Factors Research to Increase Realism and Reduce Time and Cost,** Laura Chang, Radius Innovation & Development
2. **Applying the Lens to the Examiner: Using Ethnography to Uncover and Correct Flaws in Validation Testing of Complex Robotic Systems,** Kathryn Rieger, Cognitive Design; Kate Knudsen and Daniel Nissenbaum, Intuitive Surgical, Inc.

PSRI3 – Communication

Patient Safety Research and Initiatives Track
Monday, March 26, 3:30–4:30 p.m.
Location: Clarendon
Lecture Session
Chairs: Allen Fong, National Center for Human Factors in Healthcare; Shilo Anders, Vanderbilt U.

1. **Identifying and Classifying Communication Failures in Healthcare: Developing Methods to Reduce Communication-Related Incidents,** Milisa Manojlovich, Elizabeth Umberfield, and Amir Ghaferi, U. of Michigan; Sarah Krein, Department of Veterans Affairs
2. **Neurodynamic and Communication Analysis of Healthcare Teams During Simulation Debriefings,** Ron Stevens, UCLA School of Medicine / The Learning Chameleon; Ann Willemsen-Dunlap, Order of Saint Francis Hospital; Jamie Gorman, Georgia Tech; Trysha Galloway, The Learning Chameleon, Inc.; Donald Halpin, Order of Saint Francis Hospital

3. **Information Management Goals and Process Failures During Home Visits for Older Adults Receiving Skilled Home Health Care Services After Hospital Discharge: A Multisite, Qualitative Study,** Alicia Arbaje and Ashley Hughes, Johns Hopkins U.; Nicole Werner, U. of Wisconsin-Madison; Bruce Leff and Ayse Gurses, Johns Hopkins U.

POSTER RECEPTION
4:30–6:00 p.m.
Location: Gloucester

CCIT-POS1 – Poster Reception
Clinical and Consumer Health-Care IT Track
Monday, March 26, 4:30–6:00 p.m.
Location: Gloucester

1. **Poorly Designed Health Apps Can Do More Harm Than Good,** Arathi Sethumadhavan and Adam Shames, Core Human Factors, Inc.
2. **Understanding Individual Differences in Use of Historical-Data-Based Decision Support Tools for Time Estimation in Medical Dispatch,** Wayne Giang, Canmanie Teresa Ponnambalam, Xiaonian He, Birsen Donmez, U. of Toronto
3. **Preoperative Medication Management: Reconciling Differences Across Clinical Sites,** Benjamin Duncan, Lu Zheng, Bradley Doebbeling, Andrew Solomon, and Stephanie K. Furniss, Arizona State U.; Adela Grando, Mayo Clinic; M. M. Burton, Arizona State U.; Karl A. Poterack, Timothy Miksch, and Richard A. Helmers, Mayo Clinic; David R. Kaufman, Arizona State U.
4. **Triage Nurses Decision Support Application Design,** Tamari Levis, Dagan Schwartz, and Yuval Bitan, Ben-Gurion U.
5. **Utilizing the User Centered Design Process to Build a Novel Interruption Management Tool for Noncritical Tasks in the Emergency Department,** Hannah O'Toole, CapTech Consulting; Jessica Howe, Katie Adams, Allan Fong, and Kathryn Kellogg, MedStar Inst. for Innovation
6. **Visualizing the Determinants of Health,** Edwin Choi, Involution Studios
7. **Evaluating the Persuasiveness of a Corporate Wellness Program's Web-Based Learning Interfaces,** L.S. Platt, SUNY Binghamton/UMNSystems; Huiyang Li, SUNY Binghamton; Catherine Bass, Onlife Health
8. **Design Thinking, As Applied to New Products in the Physician-Consumer Space,** Jack Fleming, athenahealth | Epocrates
9. **System Analysis of an Intervention to Improve Opioid Prescribing in Emergency Medicine,** Enid Montague and Mary Bungum, DePaul U.; D. Mark Courtney, Stephanie Gravenor, Ryan McConnell,

Alyssa Czerniak, and Mike Wolf, Northwestern U.; Lauren Sherman, DePaul U.; Danielle McCarthy, Northwestern U.

10. **Qualitatively Assessing Influences on the Medication Management Strategies of Older Adults With Hypertension,** Kenneth Blocker and Wendy Rogers, U. of Illinois at Urbana-Champaign
11. **The Development of the Healthcare Technology Acceptance Model (H-TAM) for Older Adults: A Conceptual Model,** Maurita T. Harris and Wendy A. Rogers, U. of Illinois at Urbana-Champaign
12. **Myoelectric Prosthesis Training for Children: A Gamification and User Experience Approach,** Paul Barclay, Matt Dombrowski, Peter Smith, and Ryan Buyssens, U. of Central Florida
13. **Minimizing the Impact of Interoperability Errors on Clinicians,** Jolie Dobre and Tippy Carter, CSRA; Jennifer Herout and Amanda Cournoyer, U.S. Department of Veterans Affairs
14. **How Human Factors Can Contribute to the Design of Standards for Ambient Assisted Living (AAL) Technology,** Laura Fadrique and Dia Rahman, U. of Waterloo; Helene Vaillancourt and Tania Donovska, CSA Group; Plinio Morita, U. of Waterloo
15. **"Too Busy to Tell Where the Alarms Are Coming From": A Study on the Relationship Between Workload and Alarm Localizability,** Judy Edworthy, Scott Reid, Katie Peel, Samantha Cox, Jessica Williams, Chloe Newbury, Joseph Foster, and Martin Farrington, Plymouth U.
16. **Using Smart Thermostat Data for Remote Monitoring,** Kirti Sundar Sahu, Arlene Oetomo, Raphael Nobrega, Marc Ryan Ting, and Plinio Morita U. of Waterloo
17. **Studio 1 Labs: User-Centered Evaluation of a Functional Bedsheet: Benefits, Change in the Routine, Impact, Behavior Change,** Laura Fadrique and Yevgeniy Davletshin, U. of Waterloo; Olivia Y-H Lin and Edward S. Shim, Studio 1 Labs; Plinio Morita, U. of Waterloo
18. **Information Fragmentation in the Electronic Health Record: The Case of Pulmonary Embolism Diagnosis in the ED,** Yudi Wang, U. of Wisconsin-Madison; Brian Patterson and Shashank Ravi, U. of Wisconsin-Madison School of Medicine and Public Health; Douglas Wiegmann, Ann Hundt, and Peter Hoonakker, U. of Wisconsin-Madison; Peter Kleinschmidt, U. of Wisconsin-Madison School of Medicine and Public Health; Megan Salwei, Emily Wirkus, and Pascale Carayon, U. of Wisconsin-Madison
19. **Parental Awareness of Schoolbag Carriage: A Comparative Study of Irish and United States Parents,** Karen Jacobs, Boston U.; Sara Dockrell,

School of Medicine, Trinity College; Dagny Barclay and Sabrina Rodriguez, Boston U.

20. **Toward the Design of mHealth Technologies to Support Holistic Wellness Among Older Adults,** Christina Harrington and Jon Sanford, Georgia Inst. of Technology; Wendy Rogers, U. of Illinois Urbana Champaign

21. **A Systematic Method for Using Critical Decision Method Interviews to Generate a Garden Path Scenario for Human-in-the-Loop Simulations for Training and Evaluation of New Technologies,** Laura Militello and Christen Sushereba, Unveil, LLC; Simon Fernandez, David Bahner, and Emily Patterson, Ohio State U.

22. **A Framework for Designing an Ergonomic Point of Care (POC) Cart for Medical Documentation Management,** Michelle Murphy, Partners Healthcare

23. **Design of a Multimodal Interface Solution to Facilitate Nonmedical User Mediation of TBI Screening Using Virtual Reality,** Michael Jenkins, David Young, and Arthur Wollocko, Charles River Analytics

HE-POS1 – Poster Reception
Hospital Environments Track
Monday, March 26, 4:30–6:00 p.m.
Location: Gloucester

24. **Patient Decompensation and Alarm Technology: An Observational Study,** Chelsea R. Horwood, Michael F. Rayo, Morgan Fitzgerald, E. Asher Balkin, and Susuan Moffatt-Bruce, Ohio State U.

25. **Understanding the Noise: Categorizing the Impact of Clinical Workflow, Behavioral and Environmental Factors on Physiological Sensors,** Tracy Kim and Kathryn Kellogg, National Center for Human Factors in Healthcare, MedStar Health; Matthew Nare, California State U.; Joseph Blumenthal and Allan Fong, National Center for Human Factors in Healthcare, MedStar Health

26. **Investigation of Ergonomic Guideline Awareness Among Surgeons,** Kiana Kia and Xinhui Zhu, Oregon State U.

27. **The Influence of Spatial Layouts on the Frequency of Usage of Hand Sanitizing Stations in Health-Care Environments,** Jun Rong Jeffrey Neo and Rana Sagha Zadeh, Cornell U.; Srisatish Devapatla and Ramesh Vidavalur, Cayuga Medical Center

28. **A Targeted Assessment of Hospitalists Simulation-Based Educational Needs,** Lisa Carney and Chris Kennedy, Children's Mercy Hospital

29. **Participatory Redesign of a NICU Feeding Delivery System,** Leah Konwinski and Leanne Wendt, Spectrum Health Helen DeVos Children's Hospital

30. **Collaborative Design: Interprofessional Perspectives on Incorporating Human Factors and Simulation in the Design and Renovation of Health-Care Facilities,** Jessica Ray and Stephanie Sudikoff, Yale New Haven Health; Smuckler Ben, Shepley Bulfinch; Peter Majewski, Bridgeport Hospital

31. **Evidence-Based Sourcing: How to Select Health Care Products Using Human Factors Techniques,** Helen Fuller, Timothy Arnold, and Tandi Bagian, Veterans Health Administration

32. **Bringing the UX Momentum to Health-Care Facilities – Be a Part of It!** Shannon Halgren and Jody Solem, Sage Research & Design

33. **Communicating Effectively With Clinical End-Users About Desired Performance Outcomes During the Health-Care Facility Design Process,** Anjali Joseph, Deborah Wingler, Herminia Machry, and Sara Bayramzadeh, Clemson U.

34. **Assessing Nontechnical Skills in Gastrointestinal Endoscopy: Do Better Skills Improve Patient Outcomes?** Charlotte Hitchins, Plymouth Hospitals NHS Trust; Judy Edworthy, Plymouth U.; Magdalena Metzner and Catherine Ward, Plymouth Hospitals NHS Trust

35. **I'm Lost: An Evaluation of An Interactive Wayfinding System,** Tyler Duke and Angie Avera, U. of Houston - Clear Lake; Christy Harper, End To End User Research; Andrea Crosser and Spencer Jefferies, U. of Houston - Clear Lake

36. **Understanding Medication Reconciliation in the Ambulatory Setting Using a Systems Approach,** Leah Konwinski and Emily D'Anna, Spectrum Health Helen DeVos Children's Hospital

37. **Developing and Testing a Pediatric Resuscitation Memory Prompt,** Robert Schremmer, Children's Mercy Hospital

38. **Future Scenarios: The Intersection of Design and Story,** Ryan Sohlden, Medtronic

39. **Interruptions as Experienced by Attendings, Nurses, and Residents in the Emergency Department: A Comparison,** Hunter J. Hawthorne, Katherine L. Forsyth, Renaldo C. Blocker, Mayo Clinic

40. **Developing Evidence-Based Ergonomics Guidelines for Med/Surg Patient Room Design to Meet the Needs of All Occupational Stakeholders, Patients, and Visitors,** Steven Lavender, Carolyn Sommerich, Elizabeth Sanders, Kevin Evans, Jing Li, and Emily Patterson, Ohio State U.

41. **Macrocognition: A Framework for Optimal ICU Design and Interprofessional Team Interactions - From Method to Theory Development – mHCBE,** Susan O'Hara, Clemson U.; Emily S. Patterson, Ohio

State U.; Robin Toft Klar, New York U.; Jim Fackler, Johns Hopkins U. School of Medicine; Judy Ascenzi, Johns Hopkins Hospital

42. **Feasibility and Acceptability of Text Messaging as a Supplementary Channel of Communication Between Parents and NICU Staff,** Hernan Sierra, Michelle Cora, Jose Urbina, Paula Zafra, Susie Kim, and Ben Gerber, UIC

MDD-POS1 – Poster Reception
Medical and Drug-Delivery Devices Track
Monday, March 26, 4:30–6:00 p.m.
Location: Gloucester

43. **Broaden Your Market: Follow Accessibility Standards,** Molly Story, Sanofi; Melissa Lemke, Agilis Consulting Group

44. **Developing and Testing User Interface Requirements,** Tara Feuerstein and Kelly GordonVaughn, Farm Design

45. **Overcoming Hospital Access Issues to Benefit Medical Device Design,** Natalie Abts and Rebecca Butler, MedStar Inst. for Innovation; Bidisha Roy, MedStar Inst. for Innovation, MedStar Health

46. **Anatomy of a Good Use Error Risk Assessment (UERA),** Wende Dewing, Usensus LLC; Elizabeth Volk, Phillips-Medisize, LLC

47. **How "Smart" Are IV Smart Pumps?** Karen Giuliano, Northeastern U.; Kristi Campoe, Pasco-Hernando State College; Kristy Fitzgerald, Adventist Health Central Valley Network

48. **An Autoinjector Hold Time Formative Study for Immunology Patients,** Kevin Cluff, AbbVie; Chuan Li, AbbVie; Bryan Manis, GfK

49. **Challenges and Solutions in Home Care Human Factors,** Russell Branaghan, Arizona State U.; Molly Story, Sanofi; Angela Muriset, Shire; Sami Durrani, Fresenius Medical Care; Keith Karn, Human Factors in Context LLC

50. **Anticipating and Addressing Sources of Transfer in the Design Process,** Matthew Marber, Limor Hochberg, and Merrick Kossack, UL-Wiklund

51. **Color, Typography, and Composition: Effective Design for Medical Device User Documents,** Isabel Campos-Noonan and Kyle Carbone, UL-Wiklund

52. **Maximizing the Benefits of Contextual Inquiry,** Chris White, Kinneir Dufort

53. **Expert Elicitation of Use Error Probabilities for Combination Product Risk Assessment,** Nicholas Zampa, Biogen

54. **Team Communication: A Persistent Problem Across Hospital Environments,** Emily Hildebrand, Research Collective; Matthew Johnson, Children's Mercy Kansas City; Elizabeth Lazzara, Embry-Riddle Aeronautical U.; Katherine Forsyth, Mayo Clinic

55. **Interaction With a Semi-Automated Hearing Aid: A Field Study,** Qi Yang, GN Advanced Science; Shira Hahn, Aural Analytics, LLC; Bill Chang and Gregory Olsen, GN Advanced Science

56. **Balancing Aesthetics and Usability in Medical Device User Interface Design,** Valerie Ng and Jon Tilliss, UL-Wiklund

57. **Fine Tuning Heuristic Evaluations for Medical Devices of all Shapes and Sizes,** David Powers, Susan McDonald, and Meredith Schwarz, Ximedica

PSRI-POS1 – Poster Reception
Patient Safety Research and Initiatives Track
Monday, March 26, 4:30–6:00 p.m.
Location: Gloucester

58. **Identifying and Classifying Flow Disruptions in Perioperative Orthopedic Care,** Jordan Hilgers, Embry-Riddle Aeronautical U.; Tracy Litzinger, Flagler College; Timothy Disher, Victoria Lew, Cristina Roy, Allison Larsen, Brett Nalezinski, and Albert Boquet, Embry-Riddle Aeronautical U.

59. **VET Education and Prevention,** Kristen Webster, Elliott Haut, Michael Streiff, Brandyn Lau, Dauryne Shaffer, and Peggy Kraus, Johns Hopkins U.

60. **A Systems Approach to Designing Safer Opioid Prescribing Processes in Primary Care,** Annie Shutt and James Benneyan, Healthcare Systems Engineering Inst. of Northeastern U.

61. **Evaluating Clinical Decision Support in Emergency Medical Services,** Logan Gisick and Barbara Chaparro, Embry-Riddle Aeronautical U.; Tiffany Leverenz and Paul Misasi, Wichita State U.

62. **Effects of Communication Processes on Handoff Efficiency,** Kristen Webster, Johns Hopkins U.; Elizabeth Lazzara and Joseph Keebler, Embry-Riddle Aeronautical U.

63. **Assessing the Usability and Cognitive Load of an Electronic Safety Dashboard in the Context of Opioid Prescribing: Preliminary Results,** Theresa Fuller, Brigham And Women's Hospital; Pamela M. Neri, Partners Healthcare Information Systems; Demetri Lemonias, Northeastern Healthcare Systems Engineering; Elizabeth Harry and Jeffrey L. Schnipper, Brigham and Women's Hospital; Erin Joyce, Thomas Martell, and Nicole Nehls, Northeastern Healthcare Systems Engineering; David W. Bates and Anuj K. Dalal, Brigham and Women's Hospital; James C. Benneyan, Northeastern Healthcare Systems Engineering

64. **Investigating Drivers of Clinician Workload in the Emergency Department: An Exploratory Study,** Natalie Benda, Joseph Blumenthal, Aaron Hettinger, Daniel Hoffman, and Ella Franklin, MedStar Health; David Lavergne, State U. of New York at Buffalo;

Emilie Roth, Roth Cognitive Engineering; Shawna Perry, U. of Florida - College of Medicine; Ann Bisantz, State U. of New York at Buffalo

65. **Using HFACS-Healthcare to Investigate Near-Miss Events During Surgery,** Tara Cohen and Sarah Francis, Cedars-Sinai Medical Center; Doug Wiegmann, U. of Wisconsin-Madision; Bruce Gewertz, Cedars-Sinai Medical Center

66. **These Aren't the Triads You're Looking For: Updating Clinician Mental Models of Acute Spinal Cord Compression,** Christine Jefferies, Danielle Mosby, Rebecca Kowalski, Joseph Blumenthal, and Allan Fong, MedStar Inst. for Innovation; Susan O'Mara, MedStar Washington Hospital Center; Rollin J. Fairbanks and Kristen Miller, MedStar Inst. for Innovation

67. **From Safety-I to Safety-II: Using Systems Engineering to Redesign a Hospital Care to Home Care Transition Process,** Ashley Holmes and James Benneyan, Northeastern U.

68. **Using Systems-Theoretic Process Analysis (STPA) to Design Safer Opioid Prescribing Processes,** Basma Bargal, Joseph Eisner, and Margo Jacobsen, Healthcare Systems Engineering Inst.; Alev Atalay, BWH; James Benneyan, Healthcare Systems Engineering Inst.

69. **It's Like Scanning the Spoon: Problems and Interventions in Insulin Pen Safety,** Susan Harkness Regli, Suzanna Ho, Margaret Yoho, Ilona Lorincz, Rebecca Stamm, Melissa Hibbs, and Terese Kornet, U. of Pennsylvania Health System

70. **Examples and Experiences Using FMEA to Design Better Healthcare Processes,** Ashley Holmes, Demetri Lemonias, Melissa Cyr, and James Benneyan, Northeastern U.

71. **Identifying Improvements in Healthcare System Engineering Models for Chronic Care and Precision Medicine Applications,** Michelle Jahn, Siobhan Heiden, and Barrett Caldwell, Purdue U.

72. **Now What? Determining and Implementing Solutions Post STS Analysis,** Vicki Lewis, Healthcare Safety Strategies, LLC; Andrea Fantegrossi and Jeremiah Schuur, Brigham and Women's Hospital

73. **Translating Error Detection Into Patient Safety Action,** Isaac Lynch, UT Southwestern Medical Center

74. **The Effects of Occupational Fatigue on Patient Handling Tasks Among Nurses and Patient Handlers,** Adam Piper and Lauren Estridge-Zwanzig, South Dakota School of Mines & Technology

75. **Usability and Effectiveness of Medial Checklist Designs,** Anna Clebone, U. of Chicago; Barbara Burian, NASA Ames Research Center

76. **Using Cooperative Advocacy to Resolve Conflicts Between Functionally Distinct Groups: A Mixed-Methods Approach to Tailoring Evidence-Based Guidance for Antibiotic Stewardship to a Hospital,** Emily Patterson, Courtney Dewart, Kurt Stevenson, Mark Lustberg, and Erinn Hade, Ohio State U.; Nirav Shah, Northshore U. Health System; Courtney Hebert, Ohio State U.

77. **Applications of Psychophysiological Measures in Clinical Settings: Studies in Simulation, Surgery, and the Lab,** Sarah Henrickson Parker and Lauren Kennedy, Virginia Tech Carilion Research Inst.; Scott Pappada, U. of Toledo; Nathan Lau, Virginia Tech; Thomas Papadimos, U. of Toledo College of Medicine and Life Sciences

78. **Examining the Event Review Process From a Patient Safety Professional's Point of View at MedStar Health,** Jessica Howe, Andrew Stets, and Kathryn Kellogg, MedStar Health

79. **Fall Proxy Identification With Biomechanical Characterization of Corrective Behaviors and Implications for Health Care for the Frail Elderly,** Dorothy Taylor, Andrew Merryweather, and Janice Morse, U. of Utah

80. **Improved Usability of a Multi-Infusion Setup Using a Centralized Control Interface,** Frank Doesburg, U. Medical Center Groningen

81. **Simulation as a Tool to Support Adaptive Capacity at the Frontline,** Mary Patterson, Children's National Medical Center; Ellen Deutsch, ECRI/ Pennsylvania Safety Authority

82. **Are EMS Providers Willing to Ride in a Self-Driving Ambulance?** Joseph Keebler, Stephen Rice, and Scott Winter, Embry-Riddle Aeronautical U.

83. **Application of a SHERPA-Based Safety Case Methodology for Managing Risks in Healthcare Medication Pathways,** David Embrey, Human Reliability Associates

84. **An Objective Method to Pain Measurement Based on Physiological Signals,** Yingzi Lin, Northeastern U.; Yan Xiao, U. of Texas at Arlington; Li Wang and Anas Abou Allaban, Northeastern U.; Richard Dutton, US Anesthesia Partners; Michael Ramsay, Baylor U. Medical Center; Richard Urman, Brigham and Women's Hospital

TUESDAY, MARCH 27

SESSIONS
8:30–10:00 a.m.

CCIT4 – Addressing Alarm Fatigue and Information Overload

Clinical and Consumer Health-Care IT Track
Tuesday, March 27, 8:30–10:00 a.m.
Location: Exeter
Lecture Session
Chair: Wayne Giang, U. of Toronto

1. **Updating an International Medical Device Standard: A Process for Audible Alarms,** Judy Edworthy, Plymouth U.; Richard Mcneer, Christopher Bennett, and Roman Dudaryk, U. of Miami
2. **Combating Alarm Fatigue in Medicine,** Trent Bryson, UT Southwestern
3. **EHR Copy and Paste: What Have We Learned and What Can We Do?** Lana Lowry and Mala Ramaiah, National Inst. of Standards and Technology

HE4 – Systems Engineering

Hospital Environments Track
Tuesday, March 27, 8:30–10:00 a.m.
Location: Arlington
Panel Session

1. **The Dirty Human Factors of Reprocessing: Best Practices in Design, IFU, and Testing**
   Chair: Russell Branaghan, Arizona State U. & Research Collective
   Panelists: Anthony Andre, Interface Analysis Associates; Stephanie Seraphina, Intuitive Surgical, Inc.; Emily Hildebrand, Research Collective; Hanniebey Wiyor, FDA
2. **Resilience Engineering: Evidence in the Health Care Setting**
   Chair: Renaldo C. Blocker, Mayo Clinic
   Panelists: Katherine L. Forsyth, Mayo Clinic; Elizabeth A. Lay, Applied Resilience; Shawna J. Perry, U. of Florida-Jacksonville

MDD4 – Human Factors in Design Process

Medical and Drug-Delivery Devices Track
Tuesday, March 27, 8:30–10:00 a.m.
Location: Salon F
Lecture Session
Chairs: Audra Wright, Halyard Health; Keith Karn, Human Factors in Context LLC

1. **Making Human Factors Affordable for Medical Device and Global Health Start-Ups,** Elizabeth Johansen, Spark Health Design, LLC
2. **Tackling the Daunting Task of Evaluating Legacy Devices for Compliance to IEC:62366-1:2015 per Annex C,** Staci Bienenfeld and Maria Swenson, Ximedica
3. **Fast Thinking, Slow Thinking, and Good Design: Are We Doing Enough to Apply the Learnings From Behavioral Economics to Medical Device Design?** Elizabeth Roche, Ximedica

PSRI4 – Root Cause Analysis: The HFE Practitioner's Journey from Individual Blame to System Fixes

Patient Safety Research and Initiatives Track
Tuesday, March 27, 8:30–10:00 a.m.
Location: Clarendon
Panel Session
Panelists: A. Joy Rivera, Children's Hospital of Wisconsin; Adjhaporn Khunlertkit, Bumrungrad International Hospital; Andrea Cooks, Cincinnati Children's Hospital Medical Center; Shanqing Yin, KK Women's & Children's Hospital, Singapore; Jessica L. Howe and Kathryn M. Kellogg, National Center for Human Factors in Healthcare, MedStar Inst. for Innovation; Mary Patterson, Children's National Medical Center; Ellen S. Deutsch, Pennsylvania Patient Safety Authority and Children's Hospital of Philadelphia; Joseph R. Keebler, Elizabeth Lazzara, and Elizabeth Blickensderfer, Embry-Riddle Aeronautical U.; Thomas D. Looke, Florida Hospital

SESSIONS
10:30 a.m.–12:00 p.m.

CCIT5 – eHealth and mHealth

Clinical and Consumer Health-Care IT Track
Tuesday, March 27, 10:30 a.m.–12:00 p.m.
Location: Exeter
Lecture Session
Chair: Ashley Hughes, U. of Illinois

1. **Evaluating Provider Use and Perceptions of a New Electronic Clinical Decision Support Mobile**

Application for Febrile Infant Decisions, Tiffany Leverenz, Wichita State U.; Sarah Fouquet, Ellen Kerns, and Russell McCulloh, Children's Mercy Kansas City

2. **Nursing Student Remote Performance Assessment Using a Novel Smartphone Application,** Uwe Reischl and Olga Salinas, Boise State U.; Ron Oberleitner, Behavior Imaging, Inc.; Budimir Mijovic, U. of Zagreb

3. **The Barriers and Opportunities Identified in Commercializing eHealth and mHealth Technology in Canada From a Human Factors Perspective,** Dia Rahman, U. of Waterloo; Eman Alanazi, Saudi Electronic U.; Plinio Morita, U. of Waterloo

HE5 – Interruptions and Environments
Hospital Environments Track
Tuesday, March 27, 10:30 a.m.–12:00 p.m.
Location: Arlington
Lecture Session
Chair: Matt Johnson, Children's Mercy Kansas City

1. **Interruptions Increase Time and Decrease Accuracy of Chest Radiograph Interpretation,** Rachel Wynn and Jessica Howe, MedStar Health Research Inst.; Linda Kelahan, Georgetown U. Medical Center; Allan Fong, MedStar Health Research Inst.; Ross Filice, Georgetown U. Medical Center; Raj Ratwani, MedStar Health Research Inst.

2. **Perceptions of Interruptions in the Emergency Department,** Katherine Forsyth, Hunter Hawthorne, and Renaldo Blocker, Mayo Clinic

3. **Optimizing Electronic Medical Record User Experience: A Human Factors Approach to Hardware Assessment and Design for Inpatient and Emergency Units,** Catherine Dulude (Campbell) (Children's Hospital of Eastern Ontario (CHEO) & Ottawa Children's Treatment Centre (OCTC)); Chantal Trudel, Carleton U.; W. James King, Karen Macaulay, and Jennifer Gillert, Children's Hospital of Eastern Ontario (CHEO) & Ottawa Children's Treatment Centre (OCTC), Leilla Czunyi and Sanaz Hafezi, Carleton U.

MDD5 – User Research in Device Design
Medical and Drug-Delivery Devices Track
Tuesday, March 27, 10:30 a.m.–12:00 p.m.
Location: Salon F
Lecture Session
Chair: Sami Durrani, Fresenius Medical Care; Susan McDonald,

1. **Tracking the User Over Time: How to Effectively Design for a Longitudinal Study and Best Practices for Observing in the Operating Room,** Kristyn Berry, Farm Design; Laurie Reed, Farm

2. **Conducting User Research in Emerging Markets,** Taryn Amatruda and Maureen Halligan, Cambridge Consultants

3. **Contextual Inquiry That Doesn't Break the Bank,** Lindsay Carrabine and Peter Sneeringer, Design Science

PSRI5 – Optimizing Team Performance and Resource Level in Diverse Healthcare Contexts: From Surgery in Rwanda to Medical Event Management in Deep Space
Patient Safety Research and Initiatives Track
Tuesday, March 27, 10:30 a.m.–12:00 p.m.
Location: Clarendon
Panel Session
Chair: Steven Yule, Harvard Medical School/Brigham & Women's Hospital
Panelists: Thoralf Sundt III, Harvard Medical School/ Massachusetts General Hospital; Roger Dias, David Meguerdichian, and Jamie Robertson, Harvard Medical School/ Brigham & Women's Hospital; and David Musson, Northern Ontario School of Medicine

LUNCH BREAK (Provided)
12:00–1:30 p.m.
Location: Salon G

SESSIONS
1:30–3:00 p.m.

CCIT6 – New Paradigms for Care Provision Using HIT
Clinical and Consumer Health-Care IT Track
Tuesday, March 27, 1:30–3:00 p.m.
Location: Exeter
Lecture Session
Chair: Kristen Miller, Medstar

1. **How I Learned to Stop Worrying & Love My Robot Doctor,** Juhan Sonin, MIT | goinvo

2. **Information Technology Gaps in Primary Care Management of Chronic Pain,** Shilo Anders, Vanderbilt U. Medical Center; Laura G. Militello, Applied Decision Science; Sarah M. Downs, Indiana U.; Robert W. Hurley, Wake Forest School of Medicine; Robert L. Cook, U. of Florida; Elizabeth C. Danielson and Christopher A. Harle, Indiana U.

3. **Role of Human Supervisors in Smarter Cold Chains,** Luca Bertuccelli, Sensitech

4. **Personal Health Records Buck Traditional Medical Culture,** Melinda Jenkins and Melinda Jenkins, Rutgers U.

HE6 – Decision Making
Hospital Environments Track
Tuesday, March 27, 1:30–3:00 p.m.
Location: Arlington
Panel Session
1. **It Takes a Village: Development, Dissemination, and Adoption of a Pediatric Decision Support Tool**
   Chair: Sarah Fouquet, Children's Mercy Kansas City
   Panelists: Angela Cunningham, Robert Schremmer, and Ellen Kerns, Children's Mercy Kansas City
2. **Macrocognition in the Health Care Built Environment: A New Model for Emergency Response Extending Macrocognition Results in the Inpatient Setting to the Mexico 2017 Earthquake Disaster**
   Chair: Susan O'Hara, Clemson U.
   Panelists: Nathan J. McNeese, Clemson U.; Robin Toft Klar, New York U.; Laura Chavira-Razo, National Inst. of Public Health Mexico; Zafiro Andrade-Romo, National Inst. of Public Health Mexico

MDD6 – Usability Testing
Medical and Drug-Delivery Devices Track
Tuesday, March 27, 1:30–3:00 p.m.
Location: Salon F
Lecture Session
Chairs: Korey Johnson, GfK; Evan Edwards
1. **Testing in Medical Device Acquisition: Beyond Usability,** Jason Flint, Aaron Nelson, and Dana Miletic, Air Force Medical Evaluation Support Activity
2. **Order Effect When Comparing Usability of Two Telehealth Remote Monitoring Solutions,** Juuso Leinonen and Erin Sparnon, ECRI Inst.; Patrice Tremoulet, Rowan U.
3. **Can We Combine Human Factors Validation and Clinical Testing to Save Time & Resources?** Shannon Clark and Denise Forkey, UserWise, Inc.

PSRI6 – The Patient in Patient Safety: Starting the Conversation
Patient Safety Research and Initiatives Track
Tuesday, March 27, 1:30–3:00 p.m.
Location: Clarendon
Panel Session
Chairs: Richard Holden, Indiana U. - Purdue U. Indianapolis; Rupa Valdez, U. of Virginia; Elizabeth Papautsky, U. of Illinois at Chicago
Panelists: Jeffery Belden, U. of Missouri Health, School of Medicine; Naveen Muthu, Children's Hospital of Philadelphia; Jenna Marquard, U. of Massachusetts Amherst; Robin Mickelson, Vanderbilt U.; Matthew Weinger, Vanderbilt U. Medical Center

REFRESHMENT BREAK
3:00–3:30 p.m.
Location: Grand Ballroom Foyer

SESSIONS
3:30–4:30 p.m.

CCIT7 – Distributed Cognition for Improving Cancer Care Coordination
Clinical and Consumer Health-Care IT Track
Tuesday, March 27, 3:30–4:30 p.m.
Location: Exeter
Panel Session
Chair: Brian Hazlehurst, Kaiser Permanente Northwest
Panelists: Gurvaneet Randhawa, National Cancer Inst.; Yan Xiao, U. of Texas at Arlington; Paul Gorman, Oregon Health & Science U.

HE7 – Research
Hospital Environments Track
Tuesday, March 27, 3:30–4:30 p.m.
Location: Arlington
Lecture Session
Chair: Bryant Foster, Research Collective
1. **Making the Most of Rapid Field Research: A Case Study in Acute Care,** Derek Dumolo and Adrienne Jones, Cambridge Consultants
2. **Examining Different Task-Based Layouts of an Anesthesia Workstation Based on Task Relationships and Task Sequencing,** Katherina Jurewicz and David Neyens, Clemson U.

MDD7 – Latest Advances in Human Factors for Surgical Robots
Medical and Drug-Delivery Devices Track
Tuesday, March 27, 3:30–4:30 p.m.
Location: Salon F
Panel Session
Chair: Beth Loring, Loring Human Factors, LLC
Panelists: Robert J. Stephens, Medtronic; Doug Teany, Corindus Vascular Robotics; Kate Knudsen, Intuitive Surgical

PSRI7 – Topics in Trauma
Patient Safety Research and Initiatives Track
Tuesday, March 27, 3:30–4:30 p.m.
Location: Clarendon
Lecture Session
Chairs: Ashley Hughes, U. of Illinois at Chicago; Natalie Benda, National Center for Human Factors in Healthcare
1. **Multilevel, Multidiscipline, and Temporally Diverse Handoffs in Traumatic Brain Injury Rehabilitation,** Siobhan Heiden and Barrett Caldwell, Purdue U.

2. **Methodology for Systematically Developing Data Driven Interventions in Trauma Care,** Victoria Lew, Embry-Riddle Aeronautical U.; Tracy Litzinger, Flager College; Timothy Disher, Embry-Riddle Aeronautical U.; Tara Cohen, Cedars-Sinai Medical Center; Jennifer Cabrera, Embry-Riddle Aeronautical U.; Kevin Captain, Florida Hospital; Albert Boquet, Embry-Riddle Aeronautical U.

3. **Trauma Resuscitation Using in Situ Simulation Team Training (TRUST): Identifying Latent Safety Threats via a Human Factors Informed Framework Analysis of Video Recordings,** Mark Fan, North York General Hospital; Andrew Petrosoniak, St. Michael's Hospital; Sonia Pinkney, U. Health Network; Christopher Hicks and Kari White, St. Michael's Hospital; Ana Paula Siquiera Silva Almeida, Universidade Federal de Itajuba´, Itajuba´; Douglas Campbell, Melissa McGowan, and Alice Gray, St. Michael's Hospital; Rodrigo Almeida, Universidade Federal de Itajuba´, Itajuba´; Patricia Trbovich, North York General Hospital

POSTER RECEPTION
4:30–6:00 p.m.
Location: Gloucester

CCIT-POS2 – Poster Reception
Clinical and Consumer Health-Care IT Track
Tuesday, March 27, 4:30–6:00 p.m.
Location: Gloucester

1. **Modeling the Problem Space of Smartphone Assisted Insulin Dose Self-Titration Interventions Targeting Patients With Type 2 Diabetes: A Human Factors Approach,** Hamzah Ibrahim, Claremont Graduate U.

2. **A Linguistic Approach for Facilitating Interpretation of HFES Proceedings: An Efficient Method for Real-Time Literature Review,** Tim Arnold and Helen Fuller, VA

3. **Real-World Methods to Improve EHR Usability: Creating a Change Package Toolkit,** Aaron Zachary Hettinger and Katharine Adams, National Center for Human Factors in Healthcare, MedStar Health; Jonathan Wald and Laura Marcial, RTI International; Tracy Kim, National Center for Human Factors in Healthcare, MedStar Health; Stephanie Rizk, RTI International; Anita Samarth, Clinovations Government + Health; Rollin J. Fairbanks and Raj Ratwani, National Center for Human Factors in Healthcare, MedStar Health

4. **Virtual Environments as a Rehabilitation Intervention for Topographical Disorientation in Memory-Impaired Individuals: A Scoping Review,** David Gafni, U. of Toronto

5. **Assessing Interaction Strategies for Health IT: An Entropy Based Approach,** Xiaomei Wang and Rebecca Berg, U. at Buffalo; Nicolette McGeorge, Johns Hopkins U.; David LaVergne, U. at Buffalo; Natalie Benda, MedStar Health; Ann Bisantz, U. at Buffalo

6. **Making Sense of Complexity: Using Causal Loop Diagramming in a Healthcare Context,** Athina Santaguida and Kathy Huynh, Healthcare Human Factors; Julian Goss, Baycrest Hospital; Mike Lovas, Healthcare Human Factors; Joseph A. Cafazzo, Healthcare Human Factors, U. Health Network

7. **Simulation-Based Usability Testing Methods Support Nurses' Safe Transition Between Bar-Code Medication Administration Systems,** Carrie Reale, Deborah Ariosto, Matthew B. Weinger, and Shilo Anders, Vanderbilt U. Medical Center

8. **Supporting Older Adults' Trust in Care Providers: Same for a Human or Robot Care Provider?** Rachel Stuck, Georgia Inst. of Technology; Wendy Rogers, U. of Urbana-Champaign

9. **Use and Acceptance of Mobile Technologies in Health Care,** Sarahfaye Dolman, MedStar Health Research Inst.; Kristen Miller, MedStar Health System; Susan Smola, Christiana Care Health System; Rebecca Kowalski, U. of Delaware

10. **Designing Technologies for Caregivers in Pregnancy,** Shilo Anders, Hannah Arron, Gretchen P. Jackson, and Laurie L. Novak, Vanderbilt U. Medical Center

11. **Patient Perception of Interactive Mobile Health Care Apps: A Regression Analysis,** Emily Anania, Mattie Milner, Nathan Walters, and Stephen Rice, Embry Riddle Aeronautical U.

12. **EHR-Supported Activities for VTE Prophylaxis: A Case Study,** Megan Salwei, Department of Industrial and Systems Engineering, U. of Wisconsin-Madison; Peter Kleinschmidt, School of Medicine and Public Health, U. of Wisconsin-Madison; Ann Hundt, U. of Wisconsin-Madison; Peter Hoonakker, U. of Wisconsin-Madison; Brian Patterson, School of Medicine and Public Health, U. of Wisconsin-Madison; Pascale Carayon, Department of Industrial and Systems Engineering, U. of Wisconsin-Madison

13. **A Paradigm Shift: Design and Testing of an Innovative Computerized Provider Order Entry System,** Pamela Neri Garabedian, Partners HealthCare System, Inc.; Isabella Newbury and Alejandra Salazar, Brigham and Women's Hospital; Kevin Kron and Katherine Forsythe, Partners HealthCare System, Inc.; Aaron W. Nathan, Brigham and Women's Hospital; Samuel Karmiy, Partners HealthCare System, Inc.; Sara Myers, Brigham and Women's Hospital; Lynn A. Volk, Partners HealthCare System, Inc.; Mary

G. Amato, Massachusetts College of Pharmacy and Health Sciences; Adam Wright, Brigham and Women's Hospital; Tewodros Eguale and Sarah McCord, Massachusetts College of Pharmacy and Health Sciences; Rosa Rodriquez Monguio, David W. Bates, and Gordon D. Schiff, Brigham and Women's Hospital

14. **Involving Patients to Improve Documentation Accuracy: A New EHR Screen Design,** Onur Asan, Bradley Crotty, and Jeanne Tyszka, Medical College of Wisconsin

15. **Designing Effective Dashboards for Healthcare Providers, Patients, and Family Caregivers to Patients With Diabetes,** Jennifer Teves, Veritas Technologies; Barbara Chaparro and Alex Chaparro, Embry-Riddle Aeronautical U.

16. **Cognitive Task Analysis of a Primary Care Team: Exploring Cognitive Requirements for Addressing Preventive Care,** Shimeng Du, Douglas Wiegmann, Randi Cartmill, Amanda Hoffmann, Linsey Steege, Laura Farrell, and Tosha Wetterneck, U. of Wisconsin-Madison

17. **Human Computer Interaction Trends in Healthcare: An Update and Call to Action,** Kimberly Stowers, U. of Alabama; Mustapha Mouloua, U. of Central Florida

18. **Lost in Translation: Factors Influencing Successful Implementation of Evidence-Based Guidelines Into Clinical Decision Support,** Christopher Saikalis, Danielle Mosby, Rebecca Kowalski, and Kristen Miller, National Center for Human Factors in Healthcare, MedStar Health

19. **Using a Narrative Format and Sociotechnical Systems Approach to Perform a User-Centered Problem Analysis of the HIT in Present-Day Clinical Environments,** Kurt Ruark, Danielle Hoover, and Jennifer Herout, VHA

20. **Exploring Primary Care RN & MA Cognitive Needs for EHR Design: A Qualitative Analysis,** Laura J. Farrell, Linsey M. Steege, Douglas A. Wiegmann, and Randi S. Cartmill, U. of Wisconsin-Madison; Amanda E. Hoffmann, U. of Wisconsin-Madison – School of Medicine and Public Health; Shimeng Du and Tosha B. Wetterneck, U. of Wisconsin-Madison

21. **All Hands on Deck: Health IT Usability and Safety Challenges During Medication Reconciliation,** Lana Lowry and Mala Ramaiah, National Inst. for Standards and Technology; Danielle Mosby, Kristen Miller, Bidisha Roy, and Raj Ratwani, National Center for Human Factors in Healthcare, MedStar Health

HE-POS2 – Poster Reception
Hospital Environments Track
Tuesday, March 27, 4:30–6:00 p.m.
Location: Gloucester

22. **Participatory Redesign of an Online Catalog for Laboratory Testing,** Leah Konwinski and Hayley Goward, Spectrum Health Helen DeVos Children's Hospital

23. **Establishing the Key Nontechnical Skills in Gastrointestinal Endoscopy: A Qualitative Study,** Charlotte Hitchins, Plymouth Hospitals NHS Trust; Judy Edworthy and Julie Griffin, Plymouth U.; Magdalena Metzner and Catherine Ward, Plymouth Hospitals NHS Trust

24. **ShadowBox Training to Advance Nursing Expertise: A Demonstration Project,** Helen Altman Klein, MacroCognition LLC; Emily Newsome, ShadowBox LLC

25. **Designing Wayfinding Systems for Hospitals,** Christy Harper, End to End User Research; Angie Avera, U. of Houston-Clear Lake; Andrea Crosser, End to End User Research; Tyler Duke, U. of Houston-Clear Lake; Spencer Jefferies, End to End User Research

26. **The Pediatric Psychosocial Environment: How Psychosocial Risk Factors Are Associated With MSD Pain and Functional Consequences,** Francesca Macaluso, Nancy Daraiseh, Lauren Summerville, and Maurizio Macaluso, Cincinnati Children's Hospital Medical Center

27. **Use Preferences for Continuous Cardiac and Respiratory Monitoring Systems in Hospitals: A Survey of Patients and Family Caregivers,** Emily Patterson, Chris Hritz, Liya Gebru, Kashvi Patel, Todd Yamokoski, and Susan Moffatt-Bruce, Ohio State U.

28. **Information Exchange in the Operating Room: Task Analysis and Multimodal Design Concepts,** Noemi Bitterman, Technion

29. **Preliminary Analysis of Surgeon Body Posture and Musculoskeletal Risk Based on Patient Positioning During Microsurgical Breast Reconstruction,** Jordyn Koenig, Amro Abdelrahman, Chris Curry, Anita Mohan, Valerie Lemaine, Shelley Noland, Susan Hallbeck, and Bethany Lowndes, Mayo Clinic

30. **Use of Friction Reducing Devices to Reduce the Spine Loads During Repositioning of Patients,** Susan Kotowski and Kermit Davis, U. of Cincinnati

31. **A Guide for Installing Wall Mounted Computers at Ergonomic Heights,** Aaron Ross, Partners Healthcare

32. **Cardiac Arrhythmia Simulations for Comparing Remote Telemetry Monitoring Systems,** Noa Segall, Duke U. Medical Center; Ron'Nisha Franklin, North Carolina State Veterans Home; Melanie Wright, Trinity Health and Saint Alphonsus Health System

33. **A Work Systems Analysis of Sterile Processing,** Myrtede Alfred (Medical U. of South Carolina), Emily Huffer, Clemson U.; Kevin Taafe and Lawrence Frendendall, Clemson U.; Ken Catchpole, Medical U. of South Carolina

34. **Impact of Interruptions on Mental Demand and Reaction Time by Clinician Role,** Anna R. Linden, St. Olaf College; Hunter J. Hawthorne and Katherine L. Forsyth, Mayo Clinic; Blake Young, U. of Minnesota-Rochester; Renaldo C. Blocker, Mayo Clinic

35. **Patterns of Resilience and Brittleness in Hospital-Based Emergency Care During Hurricane Harvey,** Changwon Son, Vu Hoang Le, S. Camille Peres, and Farzan Sasangohar, Texas A&M U.

36. **A Systems Approach to Sharps Disposal Safety in a Malawian Hospital,** Morven Millar and Evridiki Fioratou, U. of Dundee; Emma Thomson, Malawi College of Medicine

37. **Identifying Higher Ergonomic Risk During a Simulation Task,** Christopher Curry, Amro Abdelrahman, Bethany Lowndes, Melissa Morrow, and Susan Hallbeck, Mayo Clinic

38. **The Patient's World in Critical Care: People, Spaces, and Processes of Family's Interactions,** Ummesalmah Abdulbaseer and Elizabeth Papautsky, U. of Illinois at Chicago

39. **Workflow Analysis of Interprofessional Medical Education in the Clinical Learning Environments to Improve Learning Outcomes and Patient Safety,** Catarina Smith, Nicole Nehls, Adam Schleis, and Margo Jacobsen, Northeastern U.; Peter Bates, Robert Bing-You, Thomas Van der Kloot, and Paul Han, Maine Medical Center; Awatef Ergai and James Benneyan, Northeastern U.

40. **Effects of Workflow Interruptions on ED Providers' Stress: An Observational Study on ED Physicians and Nurses,** Matthias Weigl and Anna Schneider, U. Hospital of LMU Munich

41. **Thematic Issues in Analysis and Visualization of Hospital Emergency Department Patient Flow,** Benjamin Bauchwitz, Spencer Lynn, and Peter Weyhrauch, Charles River Analytics; Raj Ratwani, Danielle Mosby, and Jessica Howe, National Center for Human Factors in Healthcare, MedStar Health; James Niehaus, Charles River Analytics

42. **Outpatient Clinic Patient Exam Room - Provider Preferences,** Carolyn Sommerich, Steven Lavender, Kevin Evans, and Elizabeth Sanders, Ohio State U.

MDD-POS2 – Poster Reception
Medical and Drug-Delivery Devices Track
Tuesday, March 27, 4:30–6:00 p.m.
Location: Gloucester

43. **Applying Heuristics for Early Formative Evaluation: A New Structured Approach for Device User Interface Assessment,** Carolin A. Ruf, Katrin Rapp, and Florian Schauderna, Sanofi-Aventis Deutschland GmbH; Molly F. Story, Sanofi

44. **How to Integrate Human Factors Engineering With Complaint Management,** Shannon Clark, UserWise, Inc.

45. **Leveraging Efficiencies and Avoiding Pitfalls When Coupling a Human Factors Study With a Clinical Trial,** Cynthia Warman and Ross Lenzing, Ximedica

46. **Case Study: Is This the Solution You Are Looking for? A Cross-Functional Approach to Development and Evaluation of a Label-Based Mitigation,** Young J. Chun, Angela Muriset, and Bharat Arora, Shire

47. **How Can Human Factors Studies Conducted by a Medical Device Manufacturer Provide More Value for Pharmaceutical Companies to Succeed in their Combination Product Validations?** Karen Guerrero, Luc Marticou, and Sarah Baer, Becton Dickinson

48. **Noninvasive Wearable Sensors to Detect Onset of Hypoglycemia: A Literature Review,** Karim Zahed, Yibo Zhu, Farzan Sasangohar, Ranjana Mehta, Madhav Erraguntla, and Mark Lawley, Texas A&M U.

49. **Factors Affecting Consumers' Acceptance of Robotic Dentists,** Mattie Milner, Emily Anania, Nadine Ragbir, Matthew Pierce, Nathan Walters, and Stephen Rice, Embry Riddle Aeronautical U.

50. **KeyS, or How Not to Design for a Happy Flow,** Beant Kaur Dhillon and Jon Pluyter, Philips

51. **A Usability Perspective on Current Industry Practice of Reprocessing for Medical Device Development,** Tara Daugherty and Robert Stephens, Medtronic

52. **Investigating the HbA1c Assessment Methods for a Smart and Connected Diabetes System,** Alexa Gutierrez and Farzan Sasangohar, Texas A&M U.; Khalid Qaraqe, Texas A&M-Qatar; Mark Lawley, Texas A&M U.

53. **Pay No Attention to That Research Team Behind the One-Way Mirror: How to Transport Participants Into Simulations,** Samantha Sye, Jennifer Soosaar, and Marc Egeth, Core Human Factors, Inc.

54. **Employing Remote Usability Testing Methods to Conduct Summative Usability Testing,** Michael Jenkins, UL-Wiklund; Eric Smith, Ivenix; Erin Davis, UL-Wiklund

PSRI-POS2 – Poster Reception
Patient Safety Research and Initiatives Track
Tuesday, March 27, 4:30-6:00 p.m.
Location: Gloucester

55. **Usability Design for Multiple Clinical End-Users: An Evaluation of Medication Labels,** Matthew N. Jesso, Carilion Clinic; Sarah Henrickson Parker, Virginia Tech Carillon Research Inst.

56. **Preventing Accidental Falls of the Newborn In Hospitals: A Review of Systematic Implementation of Evidence-Based Practices and Ergonomic Devices That Support Parent/Infant Skin-to-Skin Behaviors In Hospital Settings,** Yamile Jackson, Nurtured by Design; Phaidra Harper, Sentier Strategic Resources

57. **Mobile Technology to Assess Balance During Sit to Stand Manuever Among Older Adults at Risk for Falling,** Deanna Gray-Miceli, Florida Atlantic U.; William Craelius and Kang Li, Rutgers U.

58. **Evaluating Situation Awareness During a Simulated Active-Shooter Mass Casualty Incident: Lessons Learned,** Tiffany Leverenz and Paul Misasi, Wichita State U.; Barbara Chaparro, Embry-Riddle Aeronautical U.

59. **First Human Factors Based Selection of Technology in the Spanish Healthcare System: Evaltec Project,** Laura Herrero, IDIVAL; Elena Rojo Santos, Hospital virtual Valdecilla; Marina Cano Iglesias, IDIVAL; Juan Pedraja Vidal, Hospital virtual Valdecilla; Lourdes Escobar Hoyos, Hospital Universitario Marqués de Valdecilla; José María Maestre, Hospital virtual Valdecilla; Carmen Sánchez Juan and Lorenzo Alonso Vega, Servicio Cántabro de Salud; Manuel Gómez Fleitas, Hospital Universitario Marqués de Valdecilla; Ignasi Maspons Molins, IDIVAL; Natalie Abts, Natalie Benda, and Lawrence Wolpert, MedStar Inst. for Innovation, MedStar Health; Ignacio del Moral Vicente-Mazariegos, Hospital virtual Valdecilla; Galo Peralta Fernández, IDIVAL

60. **Developing Predictive Models of Flow Disruption Effect on Bypass Time in Cardiovascular Operating Rooms,** Timothy Disher, Jordan Hilgers, Albert Boquet, and William MacKunis, Embry-Riddle Aeronautical U.

61. **The AHRQ Patient Safety Learning Laboratories: What Are We Learning?** James Benneyan, Healthcare Systems Engineering Inst., Northeastern U.

62. **Informing Patient & Family Centered Care: An HFE Approach to New Facility Design,** Ella Franklin and Akhila Iyer, National Center for Human Factors in Healthcare

63. **Increasing the Use of Evidence-Based Practices in Stroke Rehabilitation,** Joseph Laffoon and Dan Nathan-Roberts, San José State U.

64. **An Objective Battery of Sensorimotor and Cognitive Tests to Assess Effects of Work Shift Length on Healthcare Workers: A Proof-of-Principle Study,** Harsimran Baweja, Emily Carper, Natalie Dib, Candace Edwards, Jessica Fellow, Alex Harrington, Ariana Middleman, and Andrew Stewart, San Diego State U.; Daniel Goble, Oakland U.; Matthew Mahar, San Diego State U.; Megan Conrad, U. of Detroit Mercy

65. **Ergonomic Factors Contributing to Preventable Adverse Drug Events in Healthcare: A Grounded-Theory Approach,** Thomas Hilgers, Embry-Riddle Aeronautical U.

66. **A Novel Curriculum Framework for Education in Robotic Surgery,** Anthony Dwyer, David Crawford, Rayan Elkattah, and Richard Pearl, U. of Illinois College of Medicine

67. **Building the Best Operating Room Team: Lessons in Leadership & Teamwork,** Jennifer Hauck, Jonathan Mark, and Atilio Barbeito, Duke U. & VA Medical Center

68. **Optimization of EHR Clinical Data Visualization to Improve Clinical Accuracy and Patient Safety,** Vishal Patel, Christiana Care; Grace Tran, MedStar Health

69. **Time to Recognizing Out-of-Hospital Cardiac Arrest,** Omer Perry and Oren Wacht, Ben-Gurion U. of the Negev; Eli Yafe, Magen-David-Adom; Tzillah Sinuany-Shteren and Yuval Bitan, Ben-Gurion U. of the Negev

70. **Hybrid Usability Methods: Practical Techniques for Evaluating Health Information Technology in an Operational Setting,** Blake Lesselroth and Kathleen Adams, VA Portland Health Care System; Ginnifer Mastarone, Oregon Health & Science U.; Stephanie Tallett, VA Portland Health Care System

71. **Optimizing the Design of Visual Patterns for Label Design,** Greg Fukakusa and Paul Milgram, U. of Toronto; Yuval Bitan, Ben Gurion U. of the Negev

72. **Development of Virtual Simulations for Medical Team Training: An Evaluation of Key Features,** Jessica Howe, Joseph Puthumana, Daniel Hoffman, Rebecca Kowalski, Danielle Mosby, and Kristen Miller, MedStar Health; Peter Weyhrauch, James Niehaus, Benjamin Bauchwitz, and Ashley McDermott, Charles River Analytics; Raj Ratwani,MedStar Health

73. **Pilot Testing an Interruption Management Tool for Emergency Medicine Physicians,** Katharine Adams, Jessica Howe, and Kathryn Kellogg, MedStar Health

74. **Designing High Reliability Processes for Coordinating Perioperative Care for Medically Complex Children,** Joseph Salem and James Benneyan, Northeastern U.

75. **Innovative Approaches to Consult Tracking Within the Veterans Health Administration,** Kathleen Adams, VA Portland Health Care System; Ginnifer Mastarone, Oregon Health & Science U.; Victoria Church and Blake Lesselroth, VA Portland Health Care System

76. **Qualitative Review of Wrong-Site Surgeries: What Side Will My Surgery Take Place?** Anoosha Moturu, Baylor College of Medicine; Grace Tran and Jessica Howe, National Center for Human Factors in Healthcare, MedStar Inst. for Innovation

77. **Creativity in Practice: The Role of Human Factors for Innovating Patient Safety,** Sara Albolino, Giulia Dagliana, Giulio Toccafondi, and Riccardo Tartaglia, Centre for Clinical Risk Management and Patient Safety

78. **DVT Patient Education: Created for Patients, by Patients,** Brandyn D. Lau, Michael B. Streiff, Peggy S. Kraus, Dauryne L. Shaffer, Deborah B. Hobson, Kristen L. W. Webster, Oluwafemi P. Owodunni, Katherine L. Florecki, and Elliott R. Haut, Johns Hopkins

79. **Preventing DVT Through Nursing Education,** Dauryne L. Shaffer, Brandyn D. Lau, Michael B. Streiff, Peggy S. Kraus, Deborah B. Hobson, Kristen L. W. Webster, Oluwafemi P. Owodunni, Katherine L. Florecki, and Elliott R. Haut, Johns Hopkins

80. **Providing Resident Feedback to Improve DVT Risk Assessment and Prophylaxis Ordering,** Brandyn D. Lau, Michael B. Streiff, Peggy S. Kraus, Dauryne L. Shaffer, Deborah B. Hobson, Kristen L. W. Webster, Oluwafemi P. Owodunni, Katherine L. Florecki, and Elliott R. Haut, Johns Hopkins

RECEPTION
Sponsored by Ximedica
6:00–9:00 p.m.
Location: 3rd Floor Atrium
Attendees will receive one complimentary drink ticket.
Light appetizers will be served.

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WEDNESDAY, MARCH 28

REFRESHMENT SERVICE
8:00–8:30 a.m.
Location: Grand Ballroom Foyer/Back Bay Foyer

REGISTRATION SERVICES
8:00 a.m.–2:00 p.m.
Location: Registration Desk B

SESSIONS
8:30–10:00 a.m.

CCIT8 – Innovative Interactive Technologies
Clinical and Consumer Health-Care IT Track
Wednesday, March 28, 8:30–10:00 a.m.
Location: Exeter
Lecture Session
Chair: Changwon Son, TAMU

1. **Electronic Health Records: Solving the Little Data Problem,** John Flach, Phil Schanely, Luke Kuennke, Bennett Chidoro, Jad Mubaslat, and Brandon Howard, Mile Two LLC
2. **The Evaluation of Tactile Technology for Continuous Informing Displays in Anesthesia,** Kylie Gomes and Sara Riggs, Clemson U.
3. **Augmented Reality: The Future of Medic Training,** Laura Militello, Applied Decision Science, LLC; Christen Sushereba, Unveil, LLC

HE8 – Potpourri
Hospital Environments Track
Wednesday, March 28, 8:30–10:00 a.m.
Location: Arlington
Panel Session

1. **Inpatient Multidisciplinary Rounds for Medically Complex Pediatric Patients as an Example of Teamwork in Healthcare Settings**
   Chair: Irina Trifonova, Children's Mercy Hospital, Kansas City
   Panelists: Troy Richardson, Leah Jones, and Raymond Chan, Children's Mercy Hospital, Kansas City
2. **The Challenges and Rewards of Surgical Ergonomics**
   Chair: M. Susan Hallbeck, Mayo Clinic
   Panelists: Kristin Chrouser, U. of Minnesota Medical College; Victor Paquet, U. at Buffalo; Ladin Yurteri-Kaplan, Columbia U. Medical Center; Bethany Lowndes, Mayo Clinic

MDD8 – Emerging Innovations
Medical and Drug-Delivery Devices Track
Wednesday, March 28, 8:30–10:00 a.m.
Location: Salon F
Lecture Session
Chairs: Robert Stephens, Medtronic; David Eibling, U. of Pittsburgh

1. **Assessing Medical Device Usability With Eye-Tracking,** Jordan Hilgers, Embry-Riddle Aeronautical U.; Kevin Ten Brink, Intuitive Surgical Inc.
2. **Human Factors in Implantables,** Jayme Coates and Maria Jensen, iO life science
3. **Instructions for Use Development Using Heat Maps,** Katrin Rapp and Molly Story, Sanofi

PSRI8 – Patient Safety Potpourri I
Patient Safety Research and Initiatives Track
Wednesday, March 28, 8:30–10:00 a.m.
Location: Clarendon
Panel and Lecture Session

1. **Panel: Creative Research Approaches for Complex Questions in Prehospital Emergency Medicine**
   Chair: Yuval Bitan, Ben Gurion U.
   Panelists: Eli Jaffe, Magen David Adom in Israel; Logan Gisick, Embry-Riddle Aeronautical U.; Greg Hallihan, U. of Calgary; Joseph Keebler, Embry-Riddle Aeronautical U.

2. **Lecture: Emergency Usability Lab: Testing Usability of Products in Self-care Emergencies,** Peter Rasche, Katharina Schäfer, Sabine Theis, Christina Bröhl, Matthias Wille, and Alexander Mertens, Institut of Industrial Engineering and Ergonomics

REFRESHMENT BREAK
10:00–10:30 a.m.
Location: Grand Ballroom Foyer/Back Bay Foyer

SESSIONS
10:30 a.m.–12:00 p.m.

CCIT9 – UX and Usability
Clinical and Consumer Health-Care IT Track
Wednesday, March 28, 10:30 a.m.–12:00 p.m.
Location: Exeter
Lecture Session
Chair: Janey Barnes, User-View Inc.

1. **UX Strategies for Health Information Systems: UX of Medicare,** Elizabeth Rosenzweig, Bentley U.

2. **Safeuristics! Do Heuristic Violation Severity Ratings Correlate With Patient Safety Severity Ratings for a Native EHR Mobile Application?** Sarah Fouquet, Y. Raymond Chan, and Ellen Kerns, Children's Mercy Hospital Kansas City; Barbara Chaparro, Embrey-Riddle Aeronautical U.; Tiffany Leverenz, MA, Wichita State U.

3. **A Multisite Project to Promote Cognitive Support Technology Use and Employment Success Among Postsecondary Students With Traumatic Brain Injuries,** Karen Jacobs and Amanda Nardone, Boston U.; Phillip Rumrill and Deborah Minton, Kent State U.; DJ Hendricks and Elaine Sampson, West Virginia U.; Eileen Elias and Anne Leopold, JBS International, Inc.; Marcia Scherer, U. of Rochester

4. **How Much Time (and Effort) Does a Timeline Save? Usability Testing of a Patient Asthma History Timeline,** Dean Karavite, Jeritt Thayer, Jeritt Thayer, Daria Ferro, and Joseph Zorc, Children's Hospital of Philadelphia

HE9 – User Experience and Teams
Hospital Environments Track
Wednesday, March 28, 10:30 a.m.–12:00 p.m.
Location: Arlington
Lecture Session
Chair: Emily Hildebrand, Research Collective

1. **Engineering the Future of Sepsis Care: An Application of Fuzzy Logic Cognitive Mapping for Sepsis Diagnosis,** Kristen Miller, Danielle Mosby, and Joseph Blumenthal, MedStar Health; Kendall McKenzie, North Carolina State U.; Muge Capan and Ryan Arnold, Christiana Care Health System; Rebecca Kowalski, MedStar Health; F. Jacob Seagull, U. of Michigan; Ken Catchpole, Medical U. of South Carolina; Ella Franklin, MedStar Health; Russell Branaghan, Arizona State U.

2. **A Strategic Approach to Determining the Relative Impact of Team Behavior on Guideline Violations,** Aaron Ashby (Arizona State U.), Marshall Smith (Arizona State U.), Regina Gaines (Arizona State U.), David Kaufman (Arizona State U.)

3. **Unique Health and Safety Exposures in the Workplace: The Story of Home Healthcare Workers,** Kermit Davis (U. of Cincinnati), Noma Agbonifo (U. of Cincinnati), Beverly Hittle (U. of Cincinnati), Rassull Suarez (U. of Cincinnati), Susan Reutman (U. of Cincinnati)

MDD9 – FDA CDRH / CDER Panel: Medical Device Human Factors
Medical and Drug-Delivery Devices Track
Wednesday, March 28, 10:30 a.m.–12:00 p.m.
Location: Salon F
Panel Session
Chair: Anthony D. Andre, Interface Analysis Associates

1. CDER Panelists: Irene Z. Chan, PharmD, BCPS, CDR, U.S. Public Health Service, Deputy Director, Division of Medication Error Prevention and Analysis, FDA/CDER/OSE/OMEPRM/DMEPA; Nicole Garrison, PharmD, BCPS, Safety Evaluator, Division of Medication Error Prevention and Analysis, FDA/CDER/OSE/OMEPRM/DMEPA

2. CDHR Panelists: Hanniebey Wiyor, LT, U.S. Public Health Service, Human Factors Reviewer, Human Factors Pre-market Evaluation Team, FDA/CDRH/DAGRID/HFPMET; Xin Feng, Human Factors Reviewer, Human Factors Pre-market Evaluation Team, FDA/CDRH/DAGRID/HFPMET; *Rita Lin*, Human Factors Reviewer, Human Factors Pre-market Evaluation Team, FDA/CDRH/DAGRID/ HFPMET

PSRI9 – Patient Safety Potpourri II
Patient Safety Research and Initiatives Track
Wednesday, March 28, 10:30 a.m.–12:00 p.m.
Location: Clarendon
Lecture Session
Chairs: Rebecca Butler, National Center for Human Factors in Healthcare; Ella Franklin, National Center for Human Factors in Healthcare

1. **Co-Designing a Mobile Application for Patient Engagement: From Pain Points to Lessons Learned,** Sylvain Bruni, Aptima
2. **Are Patient Admission Handoffs From ED to MICU PARfect?** Imade Ihianle, Shirley Burton, and Joanna Abraham, U. of Illinois
3. **FUTURES: Forecasting the Unexpected Transfer to Upgraded REsources in Sepsis,** Rebecca Kowalski and Kristen Miller, MedStar Health; Muge Capan, Christiana Care Health System; Danielle Mosby, MedStar Health; Ryan Arnold, Christiana Care Health System
4. **How Nurses Identify Hospitalized Patients on Their Personal Notes: Findings From Analyzing "Brains" Headers With Multiple Raters,** Ritesh Sarkhel, Jacob Socha, Susan Moffatt-Bruce, Simon Fernandez, Kashvi Patel, Arnab Nandi, Austin Mount-Campbell, and Emily Patterson, Ohio State U.

POST-SYMPOSIUM WORKSHOPS
(Separate registration fees apply)

CANCELED – Workshop 1: How to Design Effective Safety Information for Medical Devices

Workshop 2: Innovation, Not Just Evaluation: Leveraging Human Factors Tools to Inspire Innovation
Wednesday, March 28, 1:00–6:00 p.m.
Location: Cambridge Consultants, Boston, MA, transportation provided
Presenters: Karen Unterman and Serge Roux, Cambridge Consultants

Workshop 3: You're Not Done Yet – Conducting a Residual Risk Analysis After a Summative Usability Test
Wednesday, March 28, 1:30–5:30 p.m.
Location: Clarendon
Presenters: Michael Wiklund, Erin Davis, and Andrea Dwyer, UL-Wiklund

Workshop 4: A Human Factors Approach to Root Cause Analysis
Wednesday, March 28, 1:30–5:30 p.m.
Location: Dartmouth
Presenters: Brittany Anderson-Montoya, Carolinas HealthCare System; Ken Catchpole, Medical U. South Carolina; T. Robert Turner, Anne Arundel Medical Center

REFRESHMENT BREAK
3:30–3:45 p.m.
Location: Back Bay Foyer
For Workshop Attendees Only