

Health Care TG News

Volume 21, Issue 1

Spring 2011

News from the Health Care Technical Group

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HCTG WEBSITE

www.hfes.org/hctg/



**55th Annual
Meeting**
Las Vegas,
September 19 -23,
2011

Message from the Chair

Ayse P. Gurses, PhD

I am thrilled about the increasing impact the Human Factors and Ergonomics (HFE) profession is having and hopefully will continue to have on the health care profession. There is an increasing awareness of the HFE field and its potential impact on improvement within the health care industry. More and more HFE professionals are hired in health care settings in different roles, such as patient safety director, clinical/usability engineer, quality improvement specialist, and risk management specialist. I am hopeful that one day HFE experts will be viewed as integral and indispensable part of health care institutions, just like clinicians and administrators. I am seeing more and more hospitals realizing that HFE expertise is crucial for being able to improve quality and safety and hiring HFE experts. This is likely to expand as health care settings have started to look for ways to reduce/eliminate preventable adverse events more aggressively, due to the recent developments regarding public reporting and pay-for-performance.

Several areas and processes in clinical care have received relatively less attention by the HFE community up to this point. An example would be radiation oncology. The news about the magnitude and severity of treatment errors in radiation therapy recently received attention by the media, FDA, and safety researchers. Interestingly, so far very few studies have investigated these safety problems in radiation oncology from a human factors point of view. HFE can also be invaluable in understanding diagnostic errors and developing appropriate solutions. However, only a handful of studies have attempted to investigate the causes of diagnostic errors using a human factors framework. Cognitive engineering and decision making theories and principles

can be especially beneficial to this somewhat “obscure” but enormously important patient safety problem.

There are also encouraging developments in the academic world. More and more HFE programs across the country are developing graduate programs with a focus in health care. A significant percentage of available HFE faculty positions are looking for those who have interest and experience in health care as their domain of application. Medical schools are beginning to realize the need of HFE experts as part of their faculty, just like they need faculty with expertise in basic sciences and clinical specialties.

However, there is still much to be done both by us as HFE experts and by clinicians and health care administrators to accelerate HFE adoption within health care. Only a handful of health care institutions have in-house HFE experts. Improving quality and safety in health care requires an interdisciplinary effort with cooperation and collaboration across many disciplines, one of which is HFE.

As HFE experts, we should be willing to share our knowledge and experiences with clinicians and administrators and develop solutions together, taking a multitude of opinions and expertise into consideration. Health care administrators and clinicians should gain a better understanding of how HFE can improve safety and at the same time reduce costs over the long run. It is up to us, HFE experts, to make the business case of HFE in Health Care as a concrete, visible, and profitable discipline. We should demonstrate the value of HFE by demonstrating its impact not only on processes of care and provider outcomes, but also on patient outcomes. We should collaborate with clinicians to identify hazards and implement meaningful interventions, and with outcomes researchers to evaluate the impact of these interventions on patient outcomes.

These goals are not easy to achieve, but are definitely possible and are urgently needed. It will then be possible to clearly demonstrate the value of HFE on outcomes and make a convincing argument to top-level care administrators of health care delivery organizations to invest in HFE expertise.

I am infinitely excited to see the significant growth of the HCTG within the last decade and very proud of and thankful for our members' significant contributions to human factors in patient safety. We are the third largest Technical Group within HFES, with 573 members (66 additional members compared to the previous year). The HCTG program in the Annual Meeting in San Francisco was a great success. We had 5 lectures, 2 invited symposia, 5 discussion panels, 9 poster presentations, and 1 debate session on various exciting topics including medication safety, HIT and usability, cognitive work and decision making in health care, health care workflow and process improvement, human factors in the operating room, clinical handoffs and human factors, and the role of design in improving health care. In addition, we had a very productive networking event with the Product Design TG members.

We look forward to similar success at the 55th Annual Meeting in Las Vegas. Particularly, I would like to thank Dr. Stephanie Guerlain (Program Chair), Dr. Jenna Marquard (Newsletter Editor) and Adam Shames (Website Master) for their excellent leadership and efforts. Most important of all, I wish to extend my sincere gratitude to you, our valuable TG members, for your continued commitment to raising the awareness of the role of HFE in health care and working hand-in-hand with clinicians to improve quality of care and quality of working life of care providers.

This is my last opportunity to write to you as the HCTG Chair. I would like to thank all of you for the wonderful support you provided for me and my colleagues in the last two years. It was a privilege to serve as the chair of this very active and growing technical group. Through this role, I had the opportunity to interact with and learn a great deal from many of you. In addition, it was a lot of fun. I am looking forward to being actively involved in the HCTG for many years to come.

See you all in Las Vegas! Ayse

Ayse P. Gurses, PhD
Assistant Professor

School of Medicine and
Bloomberg School of Public Health
Johns Hopkins University



2011 CONFERENCE SESSIONS

Stephanie Guerlain, PhD

The Healthcare TG had 65 submissions for the 2011 Annual Meeting: 1 invited session, 6 posters, 50 Lectures, and 8 Discussion Panels and, as a consequence, we are being allocated the most sessions at the conference. The program is still being finalized as we await final reviewer comments and the usual adjustments that go on to put on a great conference. We will likely have a joint session between our TG and the next larger TG, Cognitive Engineering and Decision Making, as we did last year. Of the submissions received, 71% were classified as "Research Oriented", the rest as "Practice Oriented" and 38% were classified as "Student Work" with the rest classified as "Non-student Work". Overall submission rates to this year's conference were down slightly from last year, but that was to be expected given last year's popular location of San Francisco and other factors such as the downturn in the economy. There are a number of excellent papers, panels and posters that will be presented. As always, I thank the pool of reviewers. Unlike many other conferences, HFES gives authors a chance to respond to detailed reviewer comments. I believe that all of the papers are greatly improved with this process. Thanks to all those who submitted and reviewed papers.

TEXTING AT WORK? YOU BET

Michelle Gray-Bernhardt & Robin West

Question: When is texting at work a good thing?

Answer: When it's used as a minimally invasive tool to keep nurses apprised of patient requests without leaving the patient bedside.

Intigued? That's the lesson learned at [Sentara Leigh Hospital](#) (SLH) in Norfolk, Va. The hospital implemented a house-wide text messaging system using Ascom wireless phones to keep its nurses at the bedside with few interruptions.

In the past, nurses at SLH were frustrated because they had ringing wireless phones that rang until the call was answered – this was problematic when the nurses were busy. In response, the SLH Six Sigma team and Nurse Practice Council proposed a new system. Now, when a patient calls, an administrative assistant answers the call light and sends the nurse a text message. The text page triggers a different beep that can be silenced with the push of a button. This allows the nurse to first complete whatever conversation or procedure they were conducting before reviewing the text.

However, if the call is not answered within two to three minutes, it continues to appear unanswered on the administrative assistant's computer screen. The assistant then resends the text, or finds an alternate person to answer the request. The staff wear tracer tags that cancel the call bell when they enter the room so the administrative assistant knows the staff went to the room to answer the call, and no further follow up texts are required.

In cases where the patient needs help getting to the bathroom, or other simple tasks, the message goes to assistive personnel, the rounder (a special position at SLH), and the nurse. The rounder or assistive personnel would be expected to answer these requests, but the nurse is kept apprised of the situation. In situations where the nurse is needed, having a text message allows her to prioritize requests without interrupting her current task. It's a win-win situation. The patient gets a fast response from hospital personnel, and the nurse appreciates the convenience of a text message versus a page.

Want to try this at your facility? Then consider using these tips:

- *Ensure you have the telecommunications and information technology staff and resources for the roll out and for subsequent usage monitoring.

- *Involve bedside staff in development and roll out phases.

- *Establish process guidelines to follow, then hold bedside staff accountable for ownership and for rolling it out on their units.

A nurse manager at SLH also offered the following advice: "We had a few instances in the beginning where staff did not think we could monitor the text messages. Once word got out that we really could track use based on those few incidents, staff compliance with expectations has not been a problem." They have also established goals around voice response and in person response, and generate weekly reports to monitor compliance.

Michelle Gray-Bernhardt is a Knowledge Consultant at the Healthcare Management Council, Inc.; Robin D. West BSN, RN, is a Clinical Manager at Sentara Leigh Hospital.

ANNOUNCEMENTS AND MEMBER NEWS

ABSTRACT SUBMISSION DEADLINE

International Ergonomics Association (IEA) 2012

April 15th Abstract submission deadline

February 12-16, 2012

Recife, Brazil

<http://www.iea2012.org/index.htm>

ACM SIG HIT

June 23, 2011 (abstract), June 30, 2011 (paper)

January 28-30, 2012

Miami, FL

<http://sites.google.com/site/web2011ihi/>

We cordially invite you to submit your contribution to the 2nd ACM SIGHIT International Health Informatics Symposium (IHI 2012). IHI 2012 is the main conference of the newly formed [ACM Special Interest Group on Health Informatics \(SIGHIT\)](#).

IHI 2012 is ACM's premier community forum concerned with the application of computer science principles, information science principles, information technology, and communication technology to address problems in healthcare, public health, and everyday wellness. The conference highlights the most novel technical contributions in computing-oriented health informatics and the related social and ethical implications. IHI 2012 will feature keynotes, a multi-track technical program including papers, demonstrations, and panels. New additions to the IHI 2012 program include tutorials and a doctoral consortium.

SUBMISSION AND PUBLICATION

The conference will accept both regular and short papers. Regular papers (6-10 pages in length) will describe more mature ideas, where a substantial amount of implementation, experimentation, or data collection and analysis will be described. Short papers (1-5 pages) can be less formal and will describe innovative ideas where a less

degree of validation and implementation have occurred. All papers will appear in the ACM Digital Library. The best papers of IHI 2012 will also be considered for journal publication in a special issue of the [ACM Transactions on Intelligent Systems and Technology \(TIST\)](#).

IHI 2012 has three tracks: analytics, systems, and human factors.

- The analytics track focuses on data analysis.
- The systems track focuses on building health informatics systems (e.g., architecture, framework, design, engineering, and application).
- The human factors track focuses on understanding users or context, interface design, and user studies of health informatics applications.

Design Competition

SMART Health App \$5000 Challenge

Submissions due May 31st

<http://www.smartplatforms.org/challenge/>

The challenge is to build an HTML5 app that provides value to patients or providers and runs in the SMART Reference EMR, where it can access patient demographics, medications, laboratory tests, and diagnoses using Web standards. You could, for example, build a medication manager, a health risk detector, a laboratory visualization tool, or an app that integrates external data sources (e.g., PubMed, CDC statistics, environmental data, financial data) with patient records in realtime.

Upcoming Conferences

Workshop on Human Factors for Medical Devices

May 9-11, 2011

Alexandria, VA

<http://www.aami.org/meetings/courses/humanfactors.html>

This 3 day course offers participants a comprehensive overview to human factors as it relates to medical devices. It includes regulatory requirements of FDA as they relate to human factors, and the process of applying human factors in design controls during the design of a medical device. A basic foundation for applying human factors will be set, with discussions on user models and task analysis; anatomy of use errors; and how task analysis forms the basis for planning

human factors efforts. Course content will also include a review of human factors methodologies – contextual inquiry, heuristic evaluations, formative studies, and summative studies. Relevant human factors standards are discussed as well as human factors in the post-market arena. There are hands on exercises as well as real life case studies illustrating the application of human factors to medical devices.

Conference on Safe Patient Handling

May 12, 2011

Chicago, IL

<http://guest.cvent.com/d/wdqt6r>

This conference will provide strategies and resources to design and sustain safe lifting and moving programs in acute care, long term care, community, and home care settings.

Participants will:

- Discover why safe lifting and moving programs are cost effective in reducing injuries among care givers and their patients/residents/clients
- Hear case examples of successful lifting and moving programs in acute care, long term care, and long term care settings
- Become familiar with the latest developments in assistive equipment and devices in health care
- Receive technical assistance in designing or sustaining lifting and moving programs
- Get updates on the safe lifting law in Illinois, national legislative trends and OSHA guidelines

Human Factors Engineering and Medical Device Workshop

May 18-19, 2011

Ann Arbor, MI

www.redforestconsulting.com

For questions, email: info@redforestconsulting.com

HealthCare Ergonomics Conference

June 7-8, 2011

Tacoma, WA

<https://osha.washington.edu/>

This conference is jointly presented by the Washington Safe Patient Handling Steering Committee, Oregon Coalition for Healthcare Ergonomics, and University of Washington Northwest Center for Occupational Health and Safety.

This event provides you opportunity to share information and evidence based practices and learn cost effective and

practical health care ergonomics strategies to address patient and employee safety issues.

This conference is for health care administrators and managers, safety, health and ergonomics professionals, nurses, aides & therapists, safe patient handling & safety committee members, support services staff, union representatives, educators and facility designers and managers.

Healthcare Systems Ergonomics and Patient Safety (HEPS)

June 22-24, 2011
Oviedo, Spain
www.heps2011.org

The third HEPS conference will focus on the challenges healthcare ergonomics faces in designing healthcare services as the co-product of the interaction between clinicians and patients. In particular, HEPS 2011 will have specific tracks dedicated to patient centered design of biomedical devices, intelligent information systems and clinical pathways for the acute and chronic conditions. HEPS 2011 will particularly focus on the ergonomic design of information systems and clinical pathways in the handover between hospitals and community healthcare services.

The 2011 Systems Engineering Initiative for Patient Safety (SEIPS) Short Course

Extended Part I – Human Factors and Sociotechnical Systems Engineering

August 15-18, 2011
Madison, WI

http://cqpi.engr.wisc.edu/shortcourse_home

This four-day course for professionals presents nationally recognized speakers discussing a variety of Human Factors Engineering (HFE) and Patient Safety topics and including:

- Human Factors Engineering
- Sociotechnical Systems and Macroergonomics
- Design of the Physical Environment and Ergonomics
- Cognitive Ergonomics
- And more....

This is not a human factors and patient safety conference but rather a University of Wisconsin-Madison sponsored short course. This short course is designed to provide an understanding of human factors and systems engineering and how this approach to patient safety can improve patient safety, performance and prevent harm and/or recover from error and mitigate further harm. At the end of our short course, the participants will have developed skills in human factors; they will have a good understanding of the basics of HF; therefore, they can better use the many different techniques and tools available. In addition to didactic lectures, we have the course organized with active participation, allowing for people to apply HF concepts and techniques.

This educational activity is designed for all physicians, nurses, physicians' assistants, pharmacists, information technologists, research scientists, quality improvement specialists, risk management professionals, patient safety officers, engineers, infection control professionals, CEOs, and other professionals interested in human factors engineering and patient safety.

5th International Symposium on Human Factors Engineering in Health Informatics

August 26-27, 2011
Trondheim, Norway
www.mie2011.org

The purpose of the event is to provide an arena for practitioners and researchers in Human Factors Engineering in Health Informatics to exchange experience on state-of-the art in the field, and thus to maintain and expand the existing international network. The symposium further provides an opportunity for young researchers to get feedback on their research from experienced researchers, and get their results disseminated.

Keynote speakers:

- * Marie-Catherine Beuschart-Zephir, PhD, Director of EvaLab at Lille University Hospital, France.
- * Peter L. Elkin, MD, MACP, FACMI, Professor of Medicine, Director, Center for Biomedical Informatics at Mount Sinai School of Medicine, New York, USA.

American Medical Informatics Association Annual Meeting

October 22-26, 2011
Washington, DC
<https://www.amia.org/amia2011>

The AMIA Annual Symposium is the world's most comprehensive annual meeting on biomedical and health informatics. The Annual Symposium provides a wide range of formats for education and discussion. Papers and posters present peer-reviewed state-of-the-art scientific and technical work. Demonstrations and Partnerships in Innovation allow for comprehensive presentation of advanced systems, including new developments and innovative uses of commercial systems. Panels, keynote presentations, tutorials, and workshops bring together thought leaders for in-depth and active audience exchange about critical issues of the day.

Position Postings

University of Virginia National Library of Medicine T15 training program

Predocctoral fellows are expected to earn a PhD degree in systems engineering with a focus on clinical informatics. Trainees receive an annual stipend starting at \$21,180 plus tuition, health insurance, and a travel stipend for attending the annual NLM training program conference.

The postdoctoral fellowship program is a one, two, or three year research fellowship program to prepare trainees for a faculty or clinical fellowship position in medical informatics. Trainees are awarded an annual stipend from \$37,740 to \$56,068 (depending on experience), plus tuition, health insurance, and a travel stipend for attending the annual NLM training program conference.

There are two types of postdoctoral candidates who will be considered for this program:

* Candidates who already hold Ph.D. degree in computer science, biology, nursing, medicine, systems engineering, or a similar degree.

* Candidates who hold a MD, RN or other healthcare related degree. Candidates in this category are encouraged to pursue a MS degree in systems engineering. At a minimum, trainees should be prepared to engage in academic training involving multivariate calculus, linear algebra, differential equations, probability, statistics and computer programming.

Short-term training opportunities for underserved populations involve an intensive three-month project. Trainees receive a \$5,295 stipend plus limited tuition and health insurance coverage, if applicable.

For more information, please contact:

Ellen J. Bass, Program Director of NLM T15 Training Grant
Associate Professor
Department of Systems and Information Engineering
University of Virginia
Phone: 434-243-5531
Email: ejb4n@virginia.edu

Ali Kulman, Program Manager for the MINDSET Program
Department of Systems and Information Engineering
University of Virginia
Phone: 434-924-3282
Email: alr3h@virginia.edu

Doctoral Summer Intern in Patient Safety

Pay Range: \$3000 for 9 weeks in summer
Internship period: June 1 - Aug 12, 2011
Application Deadline: April 8th, 2011; Phone interviews will be conducted in April. Final selection will be no later than May 2nd, 2011

The SAFHEST (Safer Care through Human Factors, Ergonomics and SysTems Engineering) research group focuses on improving safety and quality of care through development and application of human factors and systems engineering principles, methodologies and design solutions. Interdisciplinary research environment and access to a variety of healthcare settings offer opportunities to explore and study new and interesting human factors engineering principles and applications in the field. The intern will primarily be working with Dr. Ayse Gurses and Dr. Priya Pennathur on a research project aimed at improving handoffs/transitions of care between different hospital units. The intern will collaborate with human factors engineers, physicians, nurses, and other health care professionals to work on the assigned projects.

Education & Qualifications:

* PhD students with a specialization in human factors engineering are eligible to apply. Students in their first to

third year of their studies are preferred. Experience and/or interest in conducting research in the area of patient safety is a must.

- * Ability to balance and prioritize tasks, and delivers timely outcomes
- * Effective team management and communication skills
- * Excellent problem solving skills
- * Good understanding of the research process and methodologies

Duties and Responsibilities:

- * Conducting literature review and summarizing findings
- * Assistance with data collection in hospitals
- * Analysis of qualitative and quantitative data
- * Writing review and research manuscripts

Special Knowledge, Skills, and Abilities:

- * Basic understanding of healthcare systems
- * Experience in reviewing literature using common databases, and use of reference software such as Refworks and Endnote.
- * Experience in data collection protocols, IRB process.
- * Experience in qualitative analysis, and use of software such as NVivo, Excel.
- * Knowledge of tools such as Visio and other visualization tools

*** Materials to submit**

- o Curriculum Vitae
- o Research Statement (up to 2 pages) that describes your research experience, interests, and future goals.
- o Names and contact information of three references, including your PhD advisor.
- o International students should check with their University's International Student Services regarding their eligibility for this job before applying and provide a letter confirming their eligibility.

Please email materials to Dr. Ayse P. Gurses, Email: agurses1@jhmi.edu

Post-doctoral Fellowship

The VA Office of Academic Affiliations and National Center for Patient Safety (NCPS) together offer a one-year post-doc fellowship. NCPS bases patient safety problem solving in human factors engineering. The fellowship provides a stipend, offers the opportunity to work with physicians and other healthcare professionals, and establishes experience in the field of healthcare.

See <http://www.va.gov/oa/specialfellows/> and select “patient safety” for site listings and contact information.

Or contact:

Linda.Williams7@va.gov

VA National Center for Patient Safety
734 930-5890.

Assistant Professor in Industrial Engineering

Location: Clemson University

The Department of Industrial Engineering at Clemson University is now accepting applications for a tenure track faculty position at the assistant professor to begin in August 2011. Applicants of higher rank will also be considered.

The individual selected for this position will be expected to develop and sustain a funded research program and to contribute to the graduate and undergraduate teaching missions of the department. Successful candidates are expected to complement the faculty's research interests in one of three areas: 1) Human Factors and Safety in Healthcare and other Complex Environments, 2) Supply Chain, Optimization, and Logistics. More information on department activities within these areas is available at <http://www.ces.clemson.edu/ie>. Applicants must have an earned doctorate in industrial engineering or a closely related field, or be candidates for the degree with expected completion prior to assuming the position.

Applicants should submit a letter stating interest in the position that cites experience relevant to the above-noted candidate qualities, a curriculum vitae, and names and contact information for three references. Informal inquiries, applications, and nominations should be directed to Dr. Scott A. Shappell, Chair of the Search Committee, 110 Freeman Hall, Clemson University, Box 340920, Clemson, SC 29634-0920; Phone: 864-656-4662; Email: HFEng@clemson.edu.

All application materials received by April 15, 2011 will receive full consideration; however, the search will remain open until the position is filled.

Sr. Human Factors Engineer

This position provides the leadership and technical expertise for designing, developing and implementing product specific design using human factors and industrial design engineering principals of medical products undergoing design or manufacturing process changes. The candidate chosen for this position will be a team member on one or more project teams, interfacing with other members from Marketing, Quality, Regulatory, Engineering, Manufacturing, Service and others required for the particular project. Human Factor support is defined by, but not limited to product definition and customer requirements development through user needs assessment, prototyping, task analysis, product evaluation and inspection, usability testing participation in usability team meetings and product design review. This position requires system-level knowledge of embedded software-based electro-mechanical medical devices, with the ability to effectively communicate and test across multiple engineering disciplines, primarily the electrical, software, and mechanical realms.

This position supports monitoring products developed and manufactured by us. This position provides support for multiple facilities located in the U.S. and abroad and may require some travel.

Please direct inquiries directly to Rose Studer at RMStuder@comcast.net

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**THIS IS A PUBLICATION OF THE HEALTH
CARE TECHNICAL GROUP OF THE
HUMAN FACTORS & ERGONOMICS
SOCIETY.**

**THANK YOU 2010-2011
OFFICERS**

I would like to extend a special thank you to our 2010-2011 officers who graciously served the Health Care TG in a variety of capacities.

Chair

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