



News from the Health Care Technical Group

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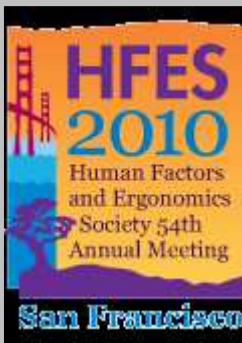
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HCTG Website

www.hfes.org/hctg/



54th Annual Meeting
San Francisco,
September 27 –
October 1, 2010

Message from the Chair

Ayse P. Gurses, PhD

For academics, the fall is always a great time to reflect on what might take place over the coming year. An undergraduate student will hear about HFE for the first time, a graduate student will present his or her work at the annual meeting, a colleague will start a new faculty position, and new HFE leaders will bring fresh ideas to the field. In each of these cases, we will gain thoughtful, well-trained colleagues who become fruitful practitioners and researchers, and will advance the knowledge and skills of those already in the field.

I am so excited to continue the HCTG's successful presence at the annual meeting. Our Program Chair, Dr. Stephanie Guerlain, has coordinated 10 great sessions that cover topics related to patient safety, clinical decision making, design and usability, and process improvement. The meeting gives the HCTG a chance to reflect on the important work and accomplishments of our peers and an opportunity to look forward to how HFE can further be used to improve health care quality and safety.

Thanks to HFE tools and methods (and diligent researchers and practitioners), we have a much better grasp on what operational and design problems exist in our health care system than we did 10 years ago. However, one of the key challenges facing this group is in the move from problem discovery to thoughtfully redesigning health care systems based on those discoveries. As our field continues to mature in this area, our impact will rest partly in our ability to develop, implement and evaluate the impact of interventions that are scientifically sound and at the same time practical enough to fit the realities of health care delivery.

As you plan your conference itinerary, I encourage each of you to search for and attend at least one session offered by another TG. As you attend these sessions, be especially mindful of how the insights of those researchers and practitioners can affect the way you think about your work and the work of other HCTG members. Think of the breadth of new insights the HCTG can amass if each one of us gleans a single insight from researchers and practitioners in TGs such as Macroergonomics, Cognitive Engineering, Safety, or Virtual Environments.

We need an interdisciplinary approach that borrows ideas from various scientific disciplines to improve health care quality and safety. Hence, I would suggest making this be a year of purposeful learning from other disciplines as well as within our discipline, to create innovative ideas. Learn from your colleagues in other academic environments, your coworkers in other business units, your students, and your own care providers. Go to the seminars offered by different departments, take courses from other relevant fields, and listen carefully to the issues raised by front-line health care workers. Learn from what you see others doing and saying and use it in your research and work!

Finally, I would like to thank our officers Stephanie Guerlain (Program Chair), Jenna Marquard (Newsletter Editor) and Adam Shames (Website Master) for their hard and diligent work over the last year for the HCTG. Most important of all, I wish to thank 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 health care quality and safety. I'm looking forward to a successful and productive annual meeting in San Francisco!

Ayse

Ayse P. Gurses, PhD
 Chair, Healthcare Technical Group
 Human Factors and Ergonomics Society
 Assistant Professor
 School of Medicine and
 Bloomberg School of Public Health
 Johns Hopkins University

2010 Conference Sessions

It's that time of year! Thank you to our 2010 Program Chair Stephanie Guerlain for coordinating the review of conference submissions. Thank you also to those who submitted papers and to those who reviewed submissions. The HCTG sessions listed below span a number of diverse perspectives, from cognition to workflow and from design and usability to process improvement. Of the 10 HCTG sessions this year, four are panels, four are lecture format, and two are invited symposia.

- HC1 - Human Factors Contributions To Medication Safety
- HC2 - Electronic Health Records: Physician's Perspective on Usability
- HC3 - Supporting Cognition and Decision Making in Clinical Work
- HC4 - Just What the Doctor Ordered? The Role of Cognitive Decision Support Systems in Clinical Decision Making and Patient Safety
- HC5 - Health Care Workflow, Research Implications
- HC6 - Patient Safety in the Operating Theatre
- HC7 - Human Factors in the Operating Room
- HC8 - Process Improvement in Health Care
- HC9 - How Design Impacts Health Care
- HC10 - Health Care Handover and Patient Safety

Mark your calendar for the [HCTG Business Meeting](#), to be held Wednesday, September 29, 3:00-4:30 p.m.

The HFES Product Design and Healthcare Technical Groups (PDTG and HCTG) will be co-hosting a [networking event](#) on the evening of September 28th from 7-9pm during the Annual Meeting. Many of our members are involved with the development/design of medical products so the idea is to develop synergy between our two groups. An email announcement will

follow to the TG mailing lists with details on the location. Please join us! We currently have one corporate sponsor, Usability Associates, but are looking for several more. Please email Stan Caplan (scaplan@usabilityassociates.com) to inquire about becoming a corporate sponsor.

Book Review

Gosbee, J. and Gosbee, L.L. (Eds.). (2010) Using Human Factors Engineering to Improve Patient Safety (2nd ed.), Oakbrook Terrace, IL: Joint Commission Resources.

Reviewed by Ayse P. Gurses, PhD

This book provides a practical look at using human factors engineering to improve patient safety. It is divided into two parts. In Part I, the editors first review basic theory and principles of human factors engineering that can be used to identify and solve human factors problems. Next, several introductory human factors methods and tools are introduced and their application to the design and improvement of medical devices is demonstrated with real-life examples. The editors then share some personal experiences in teaching human factors engineering to clinicians and leaders, which consisted of human factors workshops and some other training programs. They also provide useful advice regarding what a health care organization should look for when hiring human factors engineers. Part I ends with an Appendix that provides various human factors engineering resources such as a list of textbooks, journals, and Internet resources which can be quite useful to beginners in the field. Part II consists of case studies from various organizations explaining how they learned about and began integrating human factors engineering as described by health care leaders and human factors experts who have worked in these organizations.

Overall, the book does an excellent job in introducing basic principles and methods of human factors engineering. Ample examples and case studies drawn from the literature and anecdotes from experts and leaders in the field provide a great insight for the readers who do not have much experience in the field regarding what it takes to incorporate human factors engineering into health care organizations. The high potential of human factors engineering in improving patient safety is particularly emphasized. The book's inclusion of individual experiences concerning the human factors

awareness levels in health care organizations and proposed methods to increase this awareness deserve high praise. Real-life examples indicating the variety of processes in an organization that can benefit from human factors engineering are also very informative.

The book is a very easy read, with clear language and effectively used tables and figures. It is a great resource for clinicians and health care leaders to get acquainted with the field of human factors engineering in health care context. It can also be useful for human factors, biomedical engineering and health care administration students interested in a career focus in patient safety and/or medical device design. Human factors professionals interested in changing their career focus to health care will also appreciate the book as a realistic and concise overview of the field. A great addition to the human factors and patient safety library.

Note: The book is scheduled for release in August, and orders are now being accepted. HFES members can enjoy a 20% discount for this book through October 31, 2010 due to a special offer from the Joint Commission Journal on Quality and Patient Safety. When ordering, enter the promotion code UHFE60. Place your order at <http://www.jcrlinc.com>

If you want to contribute a book review or special article, please send an email to Jenna Marquard at jmarquard@ecs.umass.edu

Announcements and Member News

Upcoming Conferences

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.

International Conference on Commercial Driver Health and Wellness

November 8-10, 2010
Baltimore, MD
www.TRB.org/Conferences/HealthWellness2010.aspx

This conference features a dynamic program designed to educate and enlighten attendees on the increasingly important subject of health and wellness of commercial drivers. Keynote addresses will be made by leaders in the commercial transportation and occupational health fields and presentations and discussion panels will be presented on nearly 40 peer-reviewed papers by experts in research and the practice of occupational health.

1st ACM International Health Informatics Symposium

November 11-12, 2010
Arlington, VA
<http://ihi2010.sighi.org>

IHI 2010 is the inaugural symposium on health informatics promoted by the Association for Computing Machinery (ACM). IHI is designed to run as an annual showcase for exciting and innovative research on techniques and technologies developed in universities, hospitals, research labs, and companies all over the world.

IHI 2010 will feature about 120 contributions from more than 30 countries, including regular 10-page papers, short 5-page papers, and demonstrations. The symposium will cover the breadth of problems faced by the community: health informatics education, telemedicine, systems for decision support, human-centered design, information retrieval techniques for health applications, accessibility to personalized predictive modeling techniques, and so on.

American Medical Informatics Association Annual Meeting

November 13-17, 2010
Washington, DC
<https://www.amia.org/meetings/upcoming.asp>

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.

***Society for Health Systems Conference & Expo 2011
"Building Better Healthcare Systems"***

Feb. 17-20, 2011

Orlando, Florida

<http://www.iinet2.org/shs/conference/>

As the nation continues to focus on the costs and viability of the U.S. healthcare system, it is now more important than ever that we engage ALL clinical, quality and performance improvement professionals in the effort to create a sustainable, efficient and low-cost system. At the Society for Health Systems, we feel that the BEST WAY to achieve these goals is the inclusion of engineering principles, concepts, and methodologies in the efforts to optimize system performance and increase patient safety.

We invite participants from throughout the healthcare industry to join us in sharing and learning the latest and most successful efforts to create better delivery system for all! The Society for Health Systems Conference and Expo is your source for the the latest in operational and quality improvement tools, methodologies and concepts such as lean, Six Sigma, productivity, benchmarking, simulation and project management.

***10th International Symposium on Human Factors
in Organizational Design and Management***

April 4-6, 2011

Grahamstown, South Africa

<http://www.ru.ac.za/static/conferences/odam2011/index.php?pagename=Home>

The 10th International Symposium of Human Factors in Organisational Design and Management, "Research for the missing link" is devoted to the management of the complex involvement of humans in their environment. The different approaches of designing work life have to meet at one focus point: the human being. The symposium will provide interdisciplinary platforms to discuss recent developments of managing the human environment system in theory and in practice, aiming for sustainable and effective performance. This includes different environments and cultures, such as in

industrially advanced and industrially developing countries, as well as different forms of employment and different production and service industry sectors. Special attention will be drawn to the area of system design and theory-practice transfer. Students and junior researchers are particularly encouraged to participate with reduced fees and economic accommodation.

Position Postings

UVa Ph.D. graduate study, postdoctoral research fellow and short-term mentored research experience

The Medical Informatics/Systems Engineering training program at the University of Virginia (UVa MINDSET) is seeking to fill two funded positions in each of the following categories: Ph.D. graduate study, postdoctoral research fellow and short-term mentored research experience. Selected fellows will conduct research in the general area of human-automation interaction in the healthcare domain mentored by both researchers with expertise in systems engineering (including human factors, haptics, modeling, simulation, training, formal methods, control theory, and algorithm development) and by researchers in the healthcare field (including pediatrics, internal medicine, urology, emergency medicine, diabetes, cancer, global health, and nursing). Ideal candidates will have a background in systems engineering, computer science, cognitive science, or a closely related discipline and have strong software development skills, excellent writing skills, and a demonstrated ability to participate in interdisciplinary collaborations. Those with a healthcare background but strong aptitude for engineering will also be considered. US Citizenship or permanent residency is required. For further information regarding these positions, please see

<http://www.sys.virginia.edu/healthcare>

Industrial Engineers, Fellows

The MidWest Mountain Veteran's Engineering Resource Center (administratively based in Omaha, NE) is seeking two industrial engineers, human factors or Lean experience preferred.

http://jobview.usajobs.gov/GetJob.aspx?JobID=89799133&JobTitle=Industrial+Engineer&cn=&rad_units=mile_s&brd=3876&pp=50&bf574=VA*&vw=b&re=0&FedEmp=N&FedPub=Y&caller=advanced.aspx&pg=1&wher

[e=68105&rad=0&AVSDM=2010-08-04+00%3a03%3a00](http://www.va.gov/opa/pressrel/2010/080400%3a03%3a00)

The VERC is also seeking to start a fellowship program (modeled after a medical school residency). Participating Fellows will:

- a) Work with industrial engineers at the Omaha VA and throughout the country;
- b) Gain additional skills by completing "champion" and "facilitator" workshops (specialized Lean/ health care training) and accompanying projects;
- c) Develop their project management and team skills by working with various clinicians and other VA stakeholders;
- d) Engage in lively discussions on current research in health care.

Fellowship requirements include a master's degree or PhD in engineering (human factors background would be great!) as well as US citizenship. A stipend is provided by the VA Office of Academic Affiliations; fellows with a master's degree earn approximately \$30,000 and fellows with a PhD earn approximately \$45,000, both with full benefits. For more information, please contact Bryan Gamble at Bryan.gamble2@va.gov.

Post-doctoral research associate in health care and patient safety

Location: Center for Quality and Productivity Improvement at the University of Wisconsin-Madison

Full-time salary rate: minimum \$40,000 annual (12 months), depending on qualifications

Start date: April 15, 2011

Degree and area of specialization: Ph.D. required; preferably in Industrial and Systems Engineering, Health Services Research or closely related field.

In a project funded by the Agency for Healthcare Research and Quality, we will design, implement and evaluate an intervention aimed at engaging families in bedside rounds for hospitalized children. The successful candidate for this position will work with Professor Carayon (CQPI and Department of Industrial and Systems Engineering-ISyE), and Dr. Cox (School of Medicine and Public Health, Department of Pediatrics) on this project related to human factors in health care and patient safety.

Experience required: Research experience in human factors and ergonomics, health care, organizational change, and systems engineering. The preferred candidate should excel in effective and positive communication; be able to work collaboratively as well as independently; have experience in working on large scale research projects; have experience in writing publications. The preferred candidate should have significant training and expertise in the discipline of human factors and ergonomics and its application to health care and patient safety. S/he should be familiar with quantitative and qualitative research methods, data collection and analysis, and summarizing and publishing research findings. The ideal candidate will be looking to lead their own project, publish extensively and develop new research ideas.

For more information, please contact Professor Pascale Carayon, Director of the Center for Quality and Productivity Improvement:

Tel: +1-608-265-0503 / +1-608-263-2520

Fax: +1-608-263-1425

Email: carayon@engr.wisc.edu

Software Engineer

Location: Johns Hopkins School of Medicine

The software engineer will apply data mining, processing, and analytics, software development and computer programming skills to several projects in the Department of Emergency Medicine. The software engineer must have a strong programming skill set which spans data processing, analysis of large data sets, statistical programming and software analysis, design, development and testing. The software engineer will be expected to work independently to translate research models and algorithms that use health information gathered from multiple clinical information systems to software tools capable for use in clinical practice. They will also be responsible for creating and integrating large databases comprised of health information and applying analytical methods to this data.

Education: A bachelor's degree in a computer science, engineering, mathematics or related field required. A master's degree is preferred, but not necessary. Experience may substitute for educational requirements. The successful candidate will have experience using the following software applications and/or programming languages:

Required: SQL (SQL Server Preferred), JAVA, C/C++, Matlab

Preferred: PHP, Python, CSS, JavaScript, HTML

For more information, please contact Scott Levin, PhD
Assistant Professor
Johns Hopkins School of Medicine
Emergency Medicine
Email: SLEVIN33@JHMI.EDU

Human Factors Researcher

An exciting new position is being established at Baylor Health Care System for applying and developing human factors principles in improving patient safety. Expected starting time is October 1, 2010, with the title of "Human Factors Researcher." This job is located in Dallas, Texas.

The incumbent will work in the corporate Office of Patient Safety and report to Director of Patient Safety Research. The candidate should have a Masters degree in applicable field with significant (preferably 2-4 years) experience. The candidate is expected to be trained and/or have industry experience in field research, human factors data analysis, and iterative process/technology design and evaluation. The candidate should be experienced in usability techniques such as creating user scenarios, rapid prototyping, and user-centered design. Familiarity with safety critical health care environments is highly desirable. The candidate will be expected to liaise closely with physicians and nurses, and to work with informatics consultants, programmers, and management engineers. The candidate is expected to conduct quantitative and qualitative research, such as analysis and dissemination of findings. The candidate should have an in-depth understanding of the theories, principles, and data associated with human performance capabilities as well as design and development limitations. Actual work activities will vary depending on each project's scope and status.

For more information, please contact Yan at
Yan.Xiao@BaylorHealth.Edu

Post Doc/Research Associate, Health Care Research in Human Factors/Cognitive Psychology

Division of General Internal Medicine, Northwestern University, Feinberg School of Medicine is seeking a

candidate to join their growing program of research in the areas of human factors, cognitive psychology, medical errors and health information systems. The potential candidate will be in a unique and exciting position to contribute their knowledge and expertise to bolster research in areas including but not limited to use of electronic health records, medical errors (especially diagnostic errors), clinical decision-making, electronic communication and other patient safety/health information technology related domain areas.

Candidates, early in their research career and/or completing PhD, are welcome to apply. Protected research time will be offered for up to 2 years by which time the candidate will be expected to obtain additional research funding. Expertise in both human factors and cognitive psychology highly preferred.

For more information about the program go to:
<http://www.medicine.northwestern.edu/divisions/general-internal-medicine/use-hit>

To apply for this position

Please go to: www.northwestern.edu/hr/jobs and apply for JobID #16204

Member Announcements

Two HCTG members, George and Barbara Peters, recently published the book *Medical Error and Patient Safety: Human Factors in Medicine*.

Thank You 2009-2010 Officers

I would like to extend a special thank you to our 2009-2010 officers who graciously served the Health Care TG in a variety of capacities.

Chair

Ayse P Gurses, PhD.
University of Minnesota
gurse001@umn.edu

Program Chair

Stephanie Guerlain, PhD
University of Virginia
guerlain@virginia.edu

ListServ Moderator/Manager

Stephanie Guerlain, PhD
University of Virginia
guerlain@virginia.edu

Webmaster

Adam R. Shames
Design Science
adam@dscience.com

Newsletter Editor

Jenna L. Marquard
University of Massachusetts Amherst
jmarquard@ecs.umass.edu

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