MESSAGE FROM THE CHAIR

Welcome to the last 2017 issue of Cognitia!

This is also my last newsletter message to you as TG Chair. I have enjoyed serving in various positions for the last 10 years and want to thank all of you for making CEDM a great TG. We continue to be the largest and most active TG and that wouldn’t be possible without all of our members willingness to help out by submitting proposals, serving as reviewers for both the regular program and best student paper contest, serving as mentors to our many student members, and sharing your research. I have always received a large and quick response when I have asked for volunteers. Thank you!!

I am leaving but we have elected several new officers to continue on. We have a new TG Chair-Elect, Program Chair-Elect, Secretary-Treasurer, and Electronic Communications Director. We had three very qualified candidates for the Secretary-Treasurer position and I would like to thank all the candidates for volunteering to take on the effort of being an officer for the CEDM TG. I would also like to thank all the members who took the time to vote.

Our new officers are:
Heather Lum as TG Chair-Elect,
Michael Dorneich as Program Chair-Elect,
Tristan Endsley as Secretary-Treasurer, and
Audrey Reinert as Electronic Communications Director.

Congratulations to all of them. They will be joining Karen Feigh (new TG Chair), Stephen Gilbert (new Program Chair), Priya Pennathur (Newsletter Editor) and Kylie Molinaro (Student Awards and Affairs Officer). Best wishes to our new officers!

Of course, we owe a big thank you to our outgoing Electronic Communications Director, Dev Minotra. Thank you, Dev, for keeping everything up to date and running smoothly on the electronic front!

The HFES Annual Meeting is fast approaching. I hope many of you are planning to join us to enjoy the CEDM program put together, with help from many of you, by our Program Chair, Mark Pfaff, and Program Chair-Elect, Stephen Gilbert. You can find details on the CEDM sessions in this newsletter.

This year we are trying two new initiatives at the Annual Meeting. One that you have already heard about is the New Results/New Ideas in 5 Minutes session (CE15). This is a chance to share your late breaking research results or new research concepts with the CEDM community. There will be up to 15 presenters with 5 minutes each to share their work. The session is on Friday, October 13, from 11:00 am to 12:30 pm. We already have several folks signed up but still have openings as I am writing this. Please contact me (jennifer.ockerman@jhuapl.edu) if you would like to present.

The second initiative is an augmentation to our CEDM Mentor program. This year we will send $10 Starbucks e-gift cards to each of the mentors to share a drink with their mentee at their mutual convenience.

Visit the CEDM website to view announcements, job postings, newsletters, and more!
http://tg.hfes.org/cedm/

Please also visit (and join!) the CEDM-TG on LinkedIn -
http://www.linkedin.com/groups?gid=44516&trk=myg_ugrp_ovr
during the annual meeting. Thank you for participating in the program and enhancing our shared social network.

Please plan to attend the CEDM Business Meeting on Wed, Oct 11 from 3:45 to 4:30pm. We will have food, a cash bar (supposedly closer to our meeting room than last year's), and up to date news on HFES and CEDM activities. Hope to see you soon in Austin!!

As always, please let me, or any of the other officers, know if you have any questions, concerns, or suggestions.

Jennifer Ockerman, Ph.D.
CEDM Technical Group Chair

CEDM ON LINKEDIN & FACEBOOK

By Dev Minotra
CEDM-TG Electronic Communications Director

The CEDM technical group's LinkedIn community has a membership of 2,624 members. As mentioned earlier, members are encouraged to invite more colleagues and friends into the LinkedIn group. Members are encouraged to post discussion topics, news related to CEDM, announcements for job opportunities, or to elicit participation in surveys. We would especially like to receive news updates about solutions being developed for challenging problems related to human-automation interaction, autonomous vehicles, aviation, cyber security, situation awareness, work analysis, teamwork, display design, and other areas within CEDM.

Recent announcements in the LinkedIn community include -

- 2017 Inter-University Workshop
- Messages about the book 'What Matters?: Putting Common Sense to Work'
- Announcement of a recent article on systems engineering in sociotechnical systems safety.

To ensure proper usage of the media, TG executives regularly monitor posts and requests to join. They also invite colleagues into the LinkedIn group.

The CEDM TG also maintains a Facebook community (URL is 'www.facebook.com/groups/7636301315/'), which currently has 279 members. This is a small increase since the release of the previous newsletter. Additionally, the CEDM TG website (URL is ‘tg.hfes.org/cedm/’) provides regular news updates, job announcements, and access to the newsletter archive. Old announcements and job postings are usually removed from the website.

As a reminder, the CEDM TG listserv is for TG-related announcements only. Discussion should be carried out in the LinkedIn or Facebook communities of the technical group. TG members who are not LinkedIn users but are interested in joining can visit the following URL - ‘www.linkedin.com/reg/join’. Please note that the CEDM TG does not control enrollment on the listserv and can neither add nor remove recipients. All members of the CEDM TG are automatically added to the TG mailing list. Those wishing to leave the list must contact HFES Member Services (info@hfes.org).

ANNEouCetMCfENTS

New Books from CEDM Members

By Priya Pennathur, PhD
CEDM Newsletter Editor

CEDM colleagues have recently published some interesting books. "What Matters?: Putting Common Sense to Work", a new book written by Drs. John Flach and Fred Voorhorst on human technology systems from the perspectives of a cognitive psychologist and industrial design engineer aim to bridge the gap between lab based studies of technologies, and actual experiences of people working everyday with technology.

Dr. Gary Klein’s influential book, “Sources of Power” on intuition and decision making had its 20th Anniversary edition released recently. The book highlights the relevance of naturalistic decision making even 20 years after the original version was written. The naturalistic model of decision making has been adopted in various fields including law enforcement and petrochemical plant operations.

Dr. Robert Hoffman and colleagues have published an exciting book on expertise in weather forecasting titled “Minding the Weather: How Expert Forecasters Think”. The book draws on knowledge from diverse fields such as cognitive psychology, meteorology, and computer science, and argues that human expertise is essential in forecasting.

Drs. John Lee, Chris Wickens, Yili Liu and Linda Ng Boyle have published the third edition of: “Designing for People: An Introduction to Human Factors Engineering”, a frequently used textbook for introductory human factors engineering courses. The new edition includes over 70 design principles, discussion integrating research and theory underlying guidelines, examples of successful and unsuccessful designs, and exercises to link principles to applications.

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Inter-University Workshop at the University of Buffalo

The 2017 Inter-University Workshop is being held at the University at Buffalo on November 11, 2017.

This is a conference organized by students, for students to provide a low stress and friendly environment for students to gain presentation experience. Presented work does not have to be completed research, and can even be used to get feedback on a research idea. This event also has free admission.


Please let Kylie Molinaro (kyliemol@buffalo.edu) know if you have any questions. *

Call for Papers: IEEE Transactions on Automation Science and Engineering Special Issue on Automation Science and Engineering for Smart and Interconnected Healthcare Delivery Systems

There has been growing interest in managing healthcare delivery systems worldwide coupled with a recent influx of funding into the area. Automation is important for healthcare systems engineering. In recent years, the significant changes in healthcare delivery systems and the rapidly development in information technology, data analytics, wearable devices, etc., have generated numerous opportunities for innovation in automation for healthcare delivery systems. In addition, many new challenges have emerged in order to apply and implement these innovations. Such opportunities and challenges have significantly expanded the scopes of traditional automation science and engineering. The goal of this special issue on recent advances in automation science and engineering for healthcare delivery systems is to bring together researchers, clinicians, and healthcare practitioners into a forum, to show the state-of-the-art research and applications in the general area of automation science and engineering for healthcare delivery systems, by presenting efficient scientific and engineering solutions, addressing the needs and challenges for integration with new technologies, and providing visions for future research and development.

The central theme of the proposed special issue is on emerging opportunities and future directions in automation science and engineering for healthcare delivery systems, where information technology based modeling, analysis, control and optimization are the focus areas, and broad aspects and issues will be well discussed.

All papers are to be submitted through the IEEE’s Manuscript Central for Transactions on Automation Science and Engineering.

http://mc.manuscriptcentral.com/t-ase. Please select “Special Issue” under Manuscript Category of your submission. All manuscripts must be prepared according to the IEEE Transactions on Automation
In addition to the traditional abstract and presentation, two other options are available for presenting your work: an extended abstract and a full paper.

**Extended Abstract.** A new feature at this year’s conference, the extended abstract is intended as a mechanism to explain the author's work in more detail than the standard conference abstract allows. An extended abstract can include problem descriptions, technical details, and a brief analysis of the conclusions reached in the study or the impact of the engineering work to be discussed at the conference. Extended abstracts will be limited to three pages and will be judged based on correctness (e.g., accuracy of the statements made, relationships to other problems in the field), professionalism (e.g., quality of grammar and figures, adherence to formal writing standards), and content (e.g., sufficiency of information convey beyond the standard conference abstract). Extended abstracts must contain citations where appropriate, and may not plagiarize (or self-plagiarize) other work in the literature. Authors will be able to claim these works as refereed extended abstracts, which will be publicly viewable. They will not be copyrighted or indexed in the official conference proceedings, and therefore there is no limitation on reusing extended abstract material for other purposes (e.g., toward the publication of journal papers or subsequent conference proceedings).

**Full Paper.** Like previous years, full papers should contain results that are significant and have archival value to the industrial and systems engineering research and practitioner community. Full papers have a six-page limit and will undergo a double-blind peer review process with more rigor relative to the extended abstract. Accepted papers will be copyrighted and indexed in the conference proceedings. Authors of rejected papers will be given the opportunity to resubmit their work as an extended abstract.

**Important deadlines** for the conference are as follows (NOTE: THERE WILL BE NO EXTENSIONS)
- Abstract Submission Deadline: November 7, 2017
- Notification of Decision on Abstract: November 28, 2017
- Submission of Extended Abstracts and Full Papers (optional): January 16, 2018
If your abstract, extended abstract, or full paper is accepted: (a) the presenting author must register for the conference by March 13, 2018 (presentations without the presenting author registered for the conference will be withdrawn from the program and the proceedings); (b) the presenting author must attend and present the paper at the conference (presenting authors who fail to attend will have their paper withdrawn from the proceedings); and (c) all authors who submit an extended abstract or a full paper are expected to review two extended abstracts or full papers (as appropriate) for fellow authors. There are also opportunities to organize invited sessions, panels, and tutorials. In addition to research and practitioner presentations, the annual conference offers many opportunities for attendees, including plant tours, networking, and keynote speakers. We look forward to seeing you in Orlando!

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**RESEARCH NEWS**

**Cognitive Engineering Research Group (CERG)**
The University of Queensland, Brisbane, Australia

*By Penelope Sanderson*

CERG focuses on the design of work environments and information displays to support more effective human performance. Our two main current areas of investigation are the impact of interruptions in the healthcare workplace, and the design of auditory displays for patient monitoring.

In the area of interruptions in healthcare, we collaborate with Tobias Grundgeiger at University of Wuerzburg, and Sid Dekker at Griffith University in Brisbane. We have recently performed a major observation study of interruptions with a local intensive care unit (ICU) and a major high-fidelity simulation study exploring the connection between interruptions and errors.

In the area of auditory and other ‘continuously informing’ displays, we collaborate with Robert “Butch” Loeb at University of Florida-Gainesville and Simon Li at Lingnan University Hong Kong. We have recently developed and evaluated enhancements to the tone of the pulse oximetry device to better convey information to the clinician about their patient’s well-being.

Other recent or current projects reflect our broad range of cognitive systems engineering interests and applications. For example, we collaborate with Boeing on human-system integration aspects of UASs, with Mater Mothers Hospital on teamwork in neonatal resuscitation, and with the Australian Passport Office on the introduction of new technology for passport eligibility adjudication.

The CERG community currently includes 2 research engineers, 6 PhD students, and 5 honors students. Our research activities and publications are detailed at [http://www.itee.uq.edu.au/cerg/home](http://www.itee.uq.edu.au/cerg/home) and our research laboratory is described at [http://www.uqul.uq.edu.au](http://www.uqul.uq.edu.au).

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**Business Technology Management Lab**

*By Kimberly Stowers, Ph.D.*

Kimberly Stowers, Ph.D., has recently joined the Management Department at University of Alabama’s Culverhouse College of Commerce. In her role as a tenure-track assistant professor, she has founded the Business Technology Management Lab, which researches human-technology interaction and decision making across various organizational contexts. Lab members contribute expertise from a variety of fields, including psychology, business, and computer science. It is expected that this interdisciplinary lab will bring human factors research to the forefront of business interests. Interested students and professionals are welcome to reach out via email to kstowers@cba.ua.edu. *
NHanCE Research Lab at Purdue University

By Brandon Pitts, Ph.D.

Dr. Brandon J. Pitts is an assistant professor in Industrial Engineering at Purdue University – West Lafayette, IN and a faculty associate with the Center on Aging and the Life Course (CALC). At Purdue, he supervises the Next-Generation Human-systems and Cognitive Engineering (NHanCE) Laboratory. Through effective (re)design, the primary goals of the lab are to enhance (1) the performance of operators in complex environments (e.g., automotive, aviation, healthcare, and manufacturing) and (2) interactions with daily technologies. The research group has particular interests in aging populations.

NHanCE seeks to better understand the implications that perceptual and cognitive challenges have on the development of future human-machine interfaces. Ongoing research projects are in the areas of interface design (i.e., multimodal displays), autonomous systems (i.e., driving and various workplaces), and needs assessment and technology acceptance.

Interested students should contact Dr. Pitts at bjpitts@purdue.edu. The application deadline to begin the Industrial Engineering PhD program in Fall 2018 is December 15, 2017 (for funding considerations).

Resilience Engineering Association’s Young Talent Program

By Sudeep Hegde and Gesa Praetorius

The Resilience Engineering Association’s (REA) 7th biennial symposium was held at the University of Liege in Belgium, this year from 26th to 29th of June. The symposium featured a one-day ‘Young Talents Program’ (YTP) workshop on Monday, 26th June. The workshop is designed for Masters and PhD students, to present and discuss their research plans before a panel of mentors, including thought leaders in resilience such as Sidney Dekker, David Woods, and Richard Cook. The aim of the program is to foster a community of young resilience engineering scholars and to stimulate theoretical and methodological discussions across the borders of universities and countries and school of thoughts.

This was the third YTP workshop in the symposium’s history. Ten participants were selected from a pool of applicants from all over the world, among others the US, Australia, Singapore and Italy, for sponsored travel to the workshop and the symposium. The students’ research domains included maritime traffic management, health care, critical infrastructures and the aviation domain. Mentors had diverse backgrounds including industrial safety, aviation, human factors and health care. Students had the ability to ask specific questions to mentors about their current and proposed work. True to its legacy, the workshop saw lively, intense and highly insightful discussions centered on each student’s presentation. The workshop was organized by the YTP Organizing Committee comprising previous workshop participants.

The discussions from the workshop were presented during a plenary session at the 7th REA Symposium on resilience engineering. In the true spirit of resilience, the students presented both criticism and key lessons learned from the workshop. As always, the presentation of the Young Talents was very well received and highly appreciated by the resilience community at large. The next YTP workshop will be held at the 2019 REA symposium at a venue still to be decided. Call for proposals will be sent out early next year.

EMPLOYMENT OPPORTUNITIES

Human Factors Engineer
The Armstrong Institute for Health Care Human Factors
Johns Hopkins University School of Medicine

Tenure Track Positions
Design Lab
University of California San Diego
Tenure Track Position
Department of Mechanical and Industrial Engineering
University of Massachusetts Amherst
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Post-Doctoral Fellow
Beckman Institute for Advanced Science and Technology
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Tenure Track Positions
School of Industrial and Systems Engineering
University of Oklahoma
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Tenure Track Position
Department of Industrial and Systems Engineering
University of Wisconsin-Madison
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Post-Doctoral Position
Army Research Laboratory
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Tenure-Track Positions
Department of Industrial, Systems and Manufacturing Engineering
Wichita State University
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Open Rank Faculty Positions
Department of Industrial and Enterprise Systems Engineering
University of Illinois at Urbana-Champaign
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Newsletter of the Cognitive Engineering and Decision Making Technical Group

Cognitia is published by the CEDM-TG of the Human Factors and Ergonomics Society. For membership information, see the HFES website at hfes.org.

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Principal Cognitive Systems Engineer
Johns Hopkins University Applied Physics Laboratory
Laurel, MD, USA

Technical Group Chair Elect: Karen Feigh
Associate Professor, School of Aerospace Engineering
Georgia Institute of Technology, Atlanta, GA, USA

Program Chair: Mark S. Pfaff
Lead Human Centered Engineer
The MITRE Corporation, Bedford, MA, USA

Program Chair Elect: Stephen B. Gilbert
Assistant Professor, Industrial & Manufacturing Systems Engineering
Iowa State University, Ames, IA, USA

Secretary & Treasurer: Michael Dorneich
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Electronic Communications Director: Dev Minotra
Post-Doctoral Fellow, Aerospace Engineering
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Student Awards and Affairs Officer: Kylie Molinaro
PhD Student, Department of Industrial and Systems Engineering, State University of New York at Buffalo, Buffalo, NY

For previous editions of this newsletter, please visit http://tg.hfes.org/cedm/newsletter.htm

Questions? Comments? Suggestions? Submissions?
Please contact us at http://tinyurl.com/CognitiaTalk2us
Tuesday, 10 October 2017

**CE1: Invited Address** by T. Oron-Gilad - On Pedestrian Behavior, Drivers, Hazard Awareness, and Why This Is Important for Autonomous Vehicles

*Chair: Stacy Balk*

### Wednesday, 11 October 2017

**CE2: Human-Human Interactions, 9:15 AM – 10:45 AM, Room 203**

*Chair: Emily Stelzer  Co-Chair: Heejin Jeong*

- D. Illingworth, R. Thomas, A. Rozga, C. Smith: Cue Use in Distal Autism Spectrum Assessment: A Lens Model analysis of the Efficacy of Telehealth Technologies


*Chair: Cynthia Dominguez*

*Panelists: P. McDermott, M. Ryan, C. Bonaceto, S. Potter, P. Savage-Knopshield, W. Kosnik, C. Dominguez*

**CE4: Decision Making in Multiple Domains, 11:00 AM – 12:30 PM, Room 203**

*Chair: Barry Goettl  Co-Chair: Melissa Scheldrup*

- V. Chattaraman, W. Kwon, W. Eugene, J. Gilbert: Developing and Validating a Naturalistic Decision Model for Intelligent Language-Based Decision Aids
- M. Pfaff, G. Klein, J. Egeth: Characterizing Crowdsourced Data Collected Using DESIM (Descriptive to Executable Simulation Modeling)
- S. Shah, J. Bliss: Does Accountability and an Automation Decision Aid's Reliability Affect Human Performance in a Visual Search Task?

**CE5: Discussion Panel: Making Brittle Technologies Useful, 11:00 AM – 12:30 PM, Brazos**

*Chair: Mike Rayo*

*Panelists: M. Rayo, P. Smith, E. Roth, N. Sarter, K. Mosier, C. Miller*
Printable Summary of the Technical Sessions and Activities of the Cognitive Engineering and Decision Making (CEDM) Technical Group for the 2017 HFES Annual Meeting

### CE6: New CEDM Methods and Measures, 2:00 PM – 3:30 PM, Room 203

**Chair:** Brandon Pitts  
**Co-Chair:** Keith Karn

- G. Matthews, L. Reinerman-Jones, R. Wohleber, E. Ortiz: Eye Tracking Metrics for Insider Threat Detection in a Simulated Work Environment

**CEDM Networking/ Business Meeting and Reception, 3:45 PM – 4:30 PM, Lone Star Salon H (Level 3). TG News will be shared and winners of the best student paper competition will be announced. Light refreshments will be served.**

**Thursday 12 October, 2017**

### CE8: Human-Agent Interactions, 9:15 AM – 10:45 AM, Brazos

**Chair:** Joe Manganelli  
**Co-Chair:** Sara Riggs

- N. Hertz, E. Wiese: Social Facilitation with Non-Human Agents: Possible or Not?
- C. Gay, B. Horowitz, J. Elshaw, P. Bobko, I. Kim: Operator Suspicion and Decision Responses to Cyber-Attacks on Unmanned Ground Vehicle Systems
- J. Walliser, P. Mead, T. Shaw: The Perception of Teamwork With an Autonomous Agent Enhances Affect and Performance Outcomes
- M. Demir, P. Amazeen, N. McNeese, A. Likens, N. Cooke: Team Coordination Dynamics in Human-Autonomy Teaming

### CE9: Cognitive Engineering of Air and Space, 11:00 AM – 12:30 PM, Room 203

**Chair:** Mary Fendley  
**Co-Chair:** Cheryl Bolstad

- D. Minotra, K. Feigh: Eliciting Knowledge from Helicopter Pilots: Recommendations for Revising the ACTA Method for Helicopter Landing Tasks
- G. Tokadli, M. Dorneich: Development of a Functionality Matrix for a Cognitive Assistant on Long Distance Space Missions
CE10: Discussion Panel: The Role of Visual Inspection in the 21st Century, 11:00 AM – 12:30 PM, Brazos

Chair: Judi See
Panelists: J. See, C. Drury, A. Speed, A. Williams, N. Khalandi

CE11: Analyzing Teams, 2:00 PM – 3:30 PM, Brazos

Chair: Nathan McNeese       Co-Chair: Dominique Engome Tchupo

- J. Eaton, M. Sangster, M. Renaud, D. Mendonca, W. Gray: Carrying the Team: The Importance of One Player's Survival for Team Success in League of Legends
- J. Kitchin, C. Baber: The Dynamics of Distributed Situation Awareness

CE12: Visualizing and Summarizing Information, 3:45 PM – 5:15 PM, Brazos

Chair: Harvey Smallman       Co-Chair: X. Yang

- B. Wong, J. Gulden: Risk Map as a Library Management Information Dashboard: A Case Study in Adapting a Configural Display
- S. Miran, C. Ling, J. James, A. Gerard, L. Rothfusz: Effective Method to Convey Threat Information for Tornado: Probabilistic Hazard Information vs. Deterministic Hazard Information
- A. Pugh, C. Wickens, N. Herdner, B. Clegg, C. Smith: Effect of Visualization on Spatial Trajectory Prediction Under Uncertainty
- K. Fletcher, M. Bartlett, S. Cockshell, J. McCarley: Visualizing Probability of Detection to Aid Sonar Operator Performance

CE13: Trust in Automation, 9:15 AM – 10:45 AM, Room 203

Chair: Erin Chiou       Co-Chair: Samuel Levulis

- E. Kalthenbach, I. Dolgov: On the Dual Nature of Transparency and Reliability: Rethinking Factors That Shape Trust in Automation
- C. Pearson, C. Mayhorn: The Effects of Pedigree and Source Type on Trust in a Dual Adviser Context
CE14: Perception’s Effect on Performance, 11:00 AM – 12:30 PM, Room 203

Chair: Liziao Huang  Co-Chair: Shelby Long

- J. Ralph, J. Gabriel, S. O’Donnell: Criterion Variability in Binary Periscope Observation Decisions
- M. Svärd, G. Markkula, J. Engström, F. Granum, J. Bärgman: A Quantitative Driver Model of Pre-Crash Brake Onset and Control
- N. Herdener, C. Wickens, B. Clegg, C. Smith: Spatial Anchoring and Adjustment Under Mental Workload

CE15: New Results/New Ideas in 5 Minutes, 11:00 AM – 12:30 PM, Brazos

Alternative Format
Chair: Jennifer Ockerman
Co-Chair: Stephen Gilbert
Position Title: Human Factors Engineer/User Researcher & Designer

The Armstrong Institute Center for Health Care Human Factors (www.hopkinsmedicine.org/armstrong/humanfactors) at the Johns Hopkins University School of Medicine is recruiting a human factors specialist. The ideal applicant will have experience in human factors engineering, cognitive systems engineering, human computer interaction, interaction design, or a related field. The ideal applicant will have experience with knowledge elicitation methods (e.g., interviews, focus groups, and contextual inquiry), data driven design, iterative design processes, user-centered design, prototyping, and usability evaluations. Experience or interest in both qualitative and quantitative analysis methods is also desired.

Primary Responsibilities:
- Work collaboratively with study team to develop design requirements and design concepts for prototype health IT
- Assist in study recruitment and data collection (knowledge elicitation & usability evaluations)
- Assist in the analysis and management of data
- Assist in the preparation of study protocols and materials (e.g., IRB) and other essential functions
- Conduct literature reviews and summarize findings
- Assist in writing manuscripts

Education:
- Master’s (MS/MFA) or PhD level degrees are strongly preferred; exceptional Bachelor’s level candidates will also be considered.

Experience & Required Skills:
- An individual with formal training and experience in human factors, cognitive systems engineering, human computer interaction, interaction design, sociotechnical systems design, or a related field.
- An understanding of human cognition and usability design principles as they pertain to the design of technology to support and facilitate work (individual work and teamwork)
- Ability to synthesize knowledge elicitation data, and usability evaluation results into design requirements.
- Experience with prototyping methods and prototyping software (Adobe Creative Suite, PowerPoint, Balsamiq etc.)
- An understanding of research processes and qualitative methodologies for data collection & analysis (e.g. interviews and thematic analysis)
- Ability to work independently as well as collaboratively as part of a small research team
- Excellent problem solving, organizational, writing and communication skills
- Interest to work on an AHRQ-funded research project aimed at developing the next generation health IT to support work and care transitions during pediatric trauma care using human factors engineering and user-centered design methods.

Nice to Have:
- Knowledge/experience in ecological interface design and related design philosophies
- Knowledge of sociotechnical system approaches to research and design
- Knowledge/experience with software/coding languages appropriate for the development of interfaces/health IT
Experience with conducting usability evaluations (formative & summative)
Experience in research processes and qualitative methodologies for data collection & analysis, with corresponding software experience (e.g. semi-structured interviews, and thematic analysis with NVivo)
Familiarity with quantitative analysis methods and corresponding software experience (e.g., statistical analysis with SPSS)
Familiarity with the healthcare domain and experience conducting research in healthcare.

**Application deadline:**
- No specific deadline. However, applicants are encouraged to apply for the position as soon as possible. This position has an immediate starting date.

**Materials to submit:**
- Curriculum Vitae/Resume
- Names and contact information for three references.

**Contact Information:**
- Please email materials and questions to humanfactors@jhmi.edu or Dr. Ayse Gurses (agurses1@jhmi.edu).

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**Assistant or early Associate Professor In Design**

The Design Lab at UC San Diego (http://designlab.ucsd.edu), in collaboration with multiple departments in the Jacobs School of Engineering, Social Sciences, and Health Sciences, seeks candidates for Assistant or early Associate Professor faculty positions. Candidates must demonstrate excellent research credentials and will be expected to establish a vigorous program of high-quality design research. Note that two positions are available.

For this group, the position in Infectious Disease and Global Health is of most relevance. I include the entire advertisement because the readership may also contain people interested in other areas.

Note that the design lab must hire all faculty through a collaborating department. Nine departments are interested, 5 from Engineering, 3 from Social Sciences, and 1 from Health Science. Candidates must indicate the department(s) for which they have the requisite experience and skills in addition to their skills in human-centered design.

**Engineering:** Bioengineering, Computer Science (CSE), Electrical Engineering (ECE), Mechanical and Aeronautical Engineering (MAE), Structural Engineering

**Social Science:** Anthropology, Cognitive Science, Education Studies

**Health Science:** Division of Infectious disease and Global Health.

A terminal degree (or advancement to candidacy) such as a PhD, MD, MFA, MDes, or equivalent in their area of expertise is required. Teaching university students will be required in
this position. Salary and rank will be commensurate with qualifications in conformance with University of California policies. Applications received by December 2, 2017 will be given full consideration in the first review period. Applications received by January 2, 2018 will be given full consideration in the second review period. The position will remain open until filled. UCSD is an AA/EOE/M/F/D/V

To apply see the job description and three URLs for applications: two for assistant professors: for engineering and for social science or health science; one for beginning associate professors in any of the nine areas.

http://designlab.ucsd.edu/join-us/faculty/

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The Department of Mechanical and Industrial Engineering (MIE) at the University of Massachusetts Amherst invites applications for a faculty position at the Assistant Professor level in the area of Human Factors.

STARTING DATE: September 1, 2018

REQUIREMENTS AND QUALIFICATIONS: Candidates must have an earned doctorate in Industrial Engineering or a related field at the time of appointment. Potential areas of research expertise include, but are not limited to: health systems engineering, transportation, human-technology interaction, and/or product design.

RESPONSIBILITIES: Successful candidates are expected to teach both undergraduate and graduate courses, supervise graduate students and postdoctoral fellows, contribute significantly to the advance of basic science and engineering, as evidenced by scholarly publications, develop a nationally recognized program of sponsored research, and have an understanding of diversity issues and their educational importance.

APPLICATION PROCESS: The search committee will begin reviewing applications on November 15, 2017. The search will continue until the position is filled. You should provide the following in your application package:

1) Your current curriculum vitae
2) A research statement, including your vision for your research program, how your prior research supports this vision, and how interdisciplinary collaborations will support your work
3) A teaching statement, including your approach to teaching, how previous teaching experiences or training have influenced your teaching approach, and what undergraduate and graduate courses you feel prepared to teach
4) A representative recent original research article
5) Full contact information for at least four references

For a complete position announcement, including application instructions, please go to:https://www.interviewexchange.com/jobofferdetails.jsp?JOBID=89446

The university is committed to active recruitment of a diverse faculty and student body. The
University of Massachusetts Amherst is an Affirmative Action/Equal Opportunity Employer of women, minorities, protected veterans, and individuals with disabilities and encourages applications from these and other protected group members. Because broad diversity is essential to an inclusive climate and critical to the University's goals of achieving excellence in all areas, we will holistically assess the many qualifications of each applicant and favorably consider an individual’s record working with students and colleagues with broadly diverse perspectives, experiences, and backgrounds in educational, research or other work activities. We will also favorably consider experience overcoming or helping others overcome barriers to an academic degree and career.

Best,
Jenna Marquard
Associate Professor of Industrial Engineering
University of Massachusetts Amherst

Call now open for recent and soon-to-be-graduated PhD students in all areas of science and engineering: the Beckman Institute Postdoctoral Fellowship programs are now accepting applications. Learn more and apply online at: https://beckman.illinois.edu/research/fellows-and-awards/postdoctoral

Contact:
Patricia M. Jones, Ph.D.
Associate Director for Research
Beckman Institute for Advanced Science and Technology
University of Illinois at Urbana-Champaign
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The School of Industrial and Systems Engineering at the University of Oklahoma invites applications for three faculty positions: Pitman Professor and Director, Tenure-track Assistant Professor, and Assistant Professor of Practice. Detailed descriptions of each position are provided below.

University of Oklahoma Norman Campus: Gallogly College of Engineering
**Pitman Professor and Director in the School of Industrial and Systems Engineering (ISE)**
*Location: Norman OK*

The University of Oklahoma Gallogly College of Engineering invites applicants for Pitman Professor and Director in the School of Industrial and Systems Engineering (ISE). This leadership appointment offers the opportunity to guide strong growth of an innovative program. The director shall be committed to pursuing excellence in teaching, research, service and broad
participation of traditionally underrepresented groups. ISE is known for strong programs in operations research and management science, manufacturing, cognitive ergonomics and quality assurance. The ISE strategy is focused on two emergent societal domains: cyber-physical-social systems and health and medical systems. The rapidly growing and nationally ranked MS degree program in data science and analytics is offered both online and on campus in collaboration with the OU School of Computer Science.

The University of Oklahoma is a Carnegie-R1 comprehensive public research university known for excellence in teaching, research, and community engagement, serving the educational, cultural, economic and health-care needs of the state, region, and nation from three campuses: the main campus in Norman, the Health Sciences Center in Oklahoma City, and the Schusterman Center in Tulsa. OU enrolls over 30,000 students and has more than 2,700 full-time faculty members. Norman is a culturally rich and vibrant town located in the Oklahoma City metro area. With outstanding schools, amenities, and a low cost of living, Norman is a perennial contender on the “Best Places to Live” rankings. Visit soonerway.ou.edu for more information.

QUALIFICATIONS
This position requires a doctoral degree in industrial and systems engineering or closely related field. A proven record of effective leadership is strongly preferred.

APPLICATION INSTRUCTIONS
Confidential review of nominations, indications of interest and applications will begin November 1, 2017. Candidates are invited to submit a letter of interest, vision statements of research and education, detailed curriculum vita, and names of three references who will be contacted only upon approval from the applicant. Application packages should be submitted via http://apply.interfolio.com/44997 and all application information and inquiries should be directed to the search committee chair: Dean Thomas Landers, Ph.D., P.E - Phone: (405) 325-2621; E-mail: landers@ou.edu.

University of Oklahoma Norman Campus: Gallogly College of Engineering: School of Industrial and Systems Engineering
Tenure track: Assistant Professor in Health and Medical Systems Engineering
Location: Norman, OK

The School of Industrial and Systems Engineering (ISE) at the University of Oklahoma invites applications for a tenure track position at the assistant professor level beginning in August 2018. We seek a passionate individual who will contribute to the growing research in health and biomedical systems at our university. The desired research and teaching areas of interest include fundamental tools and methods in systems engineering and modeling, manufacturing, data analytics, operations research, and human factors. Topical (applied) areas of interest include medical systems scalability, clinical quality and costs of care, digital and personalized medicine, implant and cell factory capabilities, and drug delivery systems. This position aligns well with biomedical engineering and data science and analytics, which are strategic research initiatives in the Gallogly College of Engineering (GCoE). This position is also part of a cluster hire in Health and Medical Systems in partnership with the Stephenson School of Biomedical Engineering and the School of Aerospace and Mechanical Engineering.

The University of Oklahoma is a Carnegie-R1 comprehensive public research university known
for excellence in teaching, research, and community engagement, serving the educational, cultural, economic and health-care needs of the state, region, and nation from three campuses: the main campus in Norman, the Health Sciences Center in Oklahoma City, and the Schusterman Center in Tulsa. OU enrolls over 30,000 students and has more than 2,700 full-time faculty members. Norman is a culturally rich and vibrant town located in the Oklahoma City metro area. With outstanding schools, amenities, and a low cost of living, Norman is a perennial contender on the “Best Places to Live” rankings. Visit soonerway.ou.edu for more information.

QUALIFICATIONS
Applicants should hold a Ph.D. in Industrial Engineering, Systems Engineering, or a related discipline. Successful candidates are expected to develop a strong externally funded collaborative research program in the area of Health and Medical Systems. The successful candidate must support a diverse student body through excellence in teaching undergraduate and graduate curricula and mentoring M.S. and Ph.D. students in the School of ISE and the GCoE’s Data Science and Analytics (DSA) program.

APPLICATION INSTRUCTIONS
The application package should include: (i) single page cover letter describing the motivation in pursuing this position, (ii) curriculum vitae, (iii) teaching and research statements, and (iv) list of at least three references. Application packages should be submitted using the Apply Now button below (http://apply.interfolio.com/44461). Inquiries about the position can be addressed to Professor Shivakumar Raman, chair of the search committee at raman@ou.edu. We encourage applicants to apply by November 1, 2017, though application packages will be accepted until the position is filled.
QUALIFICATIONS
Areas of special interest for teaching include CAD, human factors, production systems, manufacturing, quality control, operations research, project management, and engineering economics. This position will not be eligible for tenure but will otherwise have faculty rights and privileges. Applicants must hold an earned doctorate. Applicants with doctorates in Industrial Engineering, Systems Engineering, or a related field are especially desired. Applicants must be committed to excellence in the practice and teaching of Industrial and Systems Engineering. Applicants with demonstrated experience as a (i) practicing engineer in industry and/or (ii) instructor of college level courses will be given preference during initial screening.

APPLICATION INSTRUCTIONS
The application package should include: (i) single page cover letter describing the motivation in pursuing this position, (ii) current resume or vita, (iii) statement of teaching philosophy and practice, (iv) statement of experience and perspective, (v) professional development plan, and (vi) list of at least three references. Items (iii), (iv), and (v) should be no longer than 5000 words each. Application packages should be submitted using the Apply Now button below (https://apply.interfolio.com/44441).

Inquiries about the position can be addressed to Dr. Shivakumar Raman, chair of the search committee, at raman@ou.edu. We encourage applicants to apply by December 1, 2017, although application packages will be accepted until the position is filled.

The Department of Industrial and Systems Engineering at the University of Wisconsin-Madison invites applications for a tenure-track or tenured faculty position beginning August 2018 or later to complement our existing research programs in health systems engineering, manufacturing and production systems, decision sciences/operations research, and human factors.

At this time, we are specifically interested in candidates who can contribute to our department's vision of building, analyzing, and leveraging smart, interconnected systems in health care.

Areas of interest include but are not limited to smart and connected patient-centered care; smart automation and technologies for screening, diagnosis, and treatment; modeling, analysis and improvement of health care for patient safety; healthcare analytics; the design and measurement of healthcare work systems for high-quality and cost-effective care delivery; and human-centered design of health information technology.

For additional details, please see the full position description, requirements, and application instructions in the official position vacancy listing: https://www.ohr.wisc.edu/weblisting/External/PVLSummaryPrint.aspx?pvl_num=91953

The review process will begin immediately, and the deadline for ensuring full consideration for the position is November 1, 2017.

The College of Engineering is currently recruiting Assistant Professors in the area of sensors and sensing. Anticipated start date is August 2018. Application deadline is December 1, 2017.
There is a specific focus on smart and connected healthcare. Details can be found here: http://jobs.hr.wisc.edu/cw/en-us/job/496063/assistant-professor-sensors-and-sensing-grainger-institute-for-engineering

Post-Doctoral Position – Army Research Laboratory, Human-Agent Teaming

The United States Army Research Laboratory (ARL) is seeking applications for one post-doctoral position to support research in the development of an adaptive synthetic teammate to the Soldier. ARL is a basic and applied science and technology laboratory, which aims to understand and predict cognitive, affective, and social behaviors. This position is with the Multilingual Computing and Analysis Branch (MCAB), Computational and Information Sciences Directorate. The MCAB team conducts research to better understand the Army customer’s needs, understand insight generation, situational understanding, and human-agent teaming in a military setting.

The post-doc position requires conducting basic research to inform theoretical and empirical principles for developing algorithms designed to interact with humans in simulated, and eventually physical environments. Potential topics of research include: (1) deep learning, reinforcement learning, human-computer/robot interaction, adaptive computation, or cognitive computing, (2) modeling cognitive processes, developing computational models of human behavior, or (3) mathematical models of physical systems.

U.S. citizenship is required. The successful candidate has or will complete a doctorate in the near term, in one of the following or related disciplines: cognitive psychology, artificial intelligence, computer science, engineering psychology, electrical engineering, physics, systems engineering, statistics, mathematical modeling, or a related field. Strong computational and data analysis skills are required. Programming or research experience involving data visualization is highly preferred, but not necessary.

The postdoctoral position is located at Aberdeen Proving Ground, MD, which sits on the Chesapeake Bay, and is about 40 miles north of Baltimore and 70 miles north of Washington, D.C. This position is a minimum of 2 years with a potential 3rd year extension that offers $80,000/year salary, plus benefits. Relocation assistance may be provided. In addition, funds are available for professional development and travel to meetings and conferences. For more information about postdoctoral positions with ARL see: http://www.arl.army.mil/www/default.cfm?page=177

To apply for this position, please send a current copy of your CV to:
Derrik Asher, Ph.D.
Multilingual Computing and Analysis Branch,
Computational and Information Sciences Directorate,
U. S. Army Research Laboratory
Derrik.E.Asher.civ@mail.mil
Assistant Professor Positions of Industrial, Systems and Manufacturing Engineering

The ISME department at Wichita State University invites applications for three tenure-track assistant professors positions. Candidates are required to have a strong research background in one of the emerging areas of Industrial Engineering.

Position #1: Candidates with expertise in reliability and risk analysis with application to data analytics, supply chain, cyber security or other related areas. (Position #: 997598)

Position #2: Candidates with expertise in Operations Research, Analytics, Data Science, or related fields with applications to analysis and design of complex systems, industrial Internet of things, cyber security, energy systems, or risk-based decision-making are preferred. (Position #: 998355)

Position #3: Candidates with expertise and a strong research background in advanced manufacturing with applications to industrial IoT/cyber physical systems, dynamics and control of robots and automation systems, micro/nano fabrication, metals-based additive manufacturing, high temperature materials/coatings. (Position #: 998434)

Candidates must have the potential to teach and advise undergraduate and graduate (including PhD level) students, secure and conduct funded research, publish scholarly works, and develop industry-based research and outreach educational opportunities for local industries.

Candidates should have:

(i) Earned a PhD or other terminal degree in a related field;
(ii) A strong track record of publications in one of the emerging areas of importance in *operations research, analytics, and data science*;
(iii) Excellent written and oral communication skills in English;
(iv) Commitment to diversity and ability to work with a diverse population;
(v) At least one degree from an institution with ABET accredited programs;
(vi) Eligibility to work in the United States.

Preference will be given to candidates with evidence of effective teaching, industrial experience in their research area, research background in aviation manufacturing, experience in commercialization of research, laboratory development experience, and experience promoting experiential learning.

Applicants should submit:

1. A cover letter,
2. Curriculum vitae,
3. Contact information for three professional references, and
4. Applicant’s contact information. Applications and supporting materials should be uploaded electronically.
Review of applications will begin November 7, 2017 and will continue until the position is filled. Target start date is as early as January 2018 and the latest start date is August 2018. To view the complete job description and apply, please visit https://jobs.wichita.edu

Wichita State University does not discriminate in its employment practices, educational programs or activities on the basis of age, color, disability, gender, gender expression, gender identity, genetic information, marital status, national origin, political affiliation, pregnancy, race, religion, sex, sexual orientation, or status as a veteran. Retaliation against an individual filing or cooperating in a complaint process is also prohibited. Sexual misconduct, relationship violence and stalking are forms of sex discrimination and are prohibited under Title IX of the Education Amendments Act of 1972. Complaints or concerns related to alleged discrimination may be directed to the Director of Equal Opportunity or the Title IX Coordinator, Wichita State University, 1845 Fairmount, Wichita KS 67260-0138; telephone (316) 978-3187. Offers of employment are contingent upon completion of a satisfactory criminal background check as required by Board of Regents policy.

Questions regarding this posting should be directed to
Dr. Krishna K Krishnan
Phone: (316)-978-5903
e-mail: krishna.krishnan@wichita.edu

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University of Illinois at Urbana-Champaign
Department of Industrial and Enterprise Systems Engineering
Multiple Open Rank Faculty Positions

The Department of Industrial and Enterprise Systems Engineering at the University of Illinois at Urbana-Champaign invites applications for full-time open rank faculty positions with an emphasis in the areas of Healthcare Systems Engineering and Cognitive Engineering, Internet of Things/Analytics/Big Data, and Physical Ergonomics/Biomechanics. Endowed Chairs and Professorships for distinguished candidates are available in all research areas of the department including operations research, data analytics, decision and control systems, design and manufacturing, and financial engineering.

Successful candidates are expected to direct graduate students in research, teach in the undergraduate and graduate programs, and develop a strong externally-funded research program. Successful junior candidates must exhibit exceptional promise and have interests in interdisciplinary research. Mid-career candidates are expected to be emerging leaders in their field, exhibit a strong record of publication and externally funded research, and participate in interdisciplinary collaborations. Senior candidates must have outstanding track records. Salary will be commensurate with qualifications and experience. All candidates must have a PhD in Industrial Engineering, Systems Engineering, Mechanical Engineering, or a closely related discipline by the appointment start date.

Qualified senior candidates may also be considered for tenured full Professor positions as part of the Grainger Engineering Breakthroughs Initiative, which is backed by a $100-million gift from
the Grainger Foundation. Over the next few years, more than 35 new endowed professorships and chairs will be established, which will provide incredible opportunities for world-renowned researchers. The two main research areas are Big Data and Bioengineering. More information regarding the Grainger Initiative can be found at: http://graingerinitiative.engineering.illinois.edu.

Application materials must be submitted to http://jobs.illinois.edu. The application package should include a statement of teaching and research interests, a curriculum vitae with email contact address, a publication list, and names and contact information of four references (no letters) all in a single .pdf file. Review of applications will begin on November 1, 2017, and will continue until the positions are filled. The proposed start date is August 16, 2018. Questions should be referred to Cheryl Gerber, cgerber@illinois.edu, (217) 244-5070.

The University of Illinois conducts criminal background checks on all job candidates upon acceptance of a contingent offer. The University of Illinois is an Equal Opportunity, Affirmative Action employer. Minorities, women, veterans and individuals with disabilities are encouraged to apply. For more information, visit http://go.illinois.edu/EEO. To learn more about the University commitment to diversity, please visit http://www.inclusiveillinois.illinois.edu. We have an active and successful dual-career partner placement program and a strong commitment to work-life balance and family-friendly programs for faculty and staff (http://provost.illinois.edu/faculty-affairs/work-life-balance/).