the development of performance requirements for both mandatory and voluntary standards. Current standards development efforts in which lab staff are involved include upholstered furniture, bath seats, bed rails, apparel, mattresses, and camping heaters, in which a variety of human factors issues come into consideration. Tour attendees will view areas in which tests are conducted, such as flammability of apparel and upholstered furniture, toys, children's products (e.g., baby walkers, bunk beds), and mechanical (lighters, helmets), electrical, and combustion products. We will divide the tour group into subgroups and rotate through a series of testing labs.

#T8 ■ National Federation of the Blind International Braille and Technology Center

Thursday, October 4, 9:30 a.m. to 12:30 p.m., $25
Maximum attendance: 20; ADA accessible

This hands-on tour of the International Braille and Technology Center, operated by the National Federation of the Blind, will include a discussion of assistive technology development. The Technology Center is the world's most extensive demonstration and evaluation center for computer-related technology serving the needs of blind persons. Housed in the National Center for the Blind, the center has 5500 square feet of laboratory space with $2.5 million worth of equipment, which is used to better assess, support, and ensure objectivity in the evaluation of assistive technologies. Tour participants will also view the new Jernigan Institute, including the Independence Market and the Jacobus tenBroek Library.

#T9 ■ Uniformed Services University of the Health Sciences (USUHS) National Capital Area Medical Simulation Center

Thursday, October 4, 10:00 a.m. to 1:00 p.m., $20
Maximum attendance: 28; ADA accessible; requires official U.S. government-issued identification (valid driver's license or passport)

See description for #T4.

#T10 ■ Consumer Product Safety Commission (CPSC) Testing Laboratory

Thursday, October 4, 11:45 a.m. to 4:45 p.m., $28
Maximum attendance: 40 (four groups of 10); not fully ADA-accessible; business casual dress, no open-toed shoes

See the description for #T7.

#T11 ■ UserWorks, Inc. Usability Lab and Focus Group Facility

Thursday, October 4, 12:30 to 4:30 p.m., $25
Maximum attendance: 20; ADA accessible

UserWorks is a small business specializing in user research, interaction design, and usability engineering. The facility features a fully equipped usability lab and instrumented focus group room. Digital video recording technology and Web-based application sharing have transformed these facilities in recent years. UserWorks staff will demonstrate typical approaches to usability testing Web sites and information technology devices, including office equipment, medical gadgetry, mobile devices, and biometric workstations. In addition to exercising the in-house lab facilities, these demonstrations will utilize UserWorks' portable usability lab, remote usability testing (interacting with remotely located users and observers), and online focus groups. Attendees can play the role of the study moderator, the participant(s), or interested observers, whether in person or remotely located.

Workshops

Sign up for workshops on the Registration Form by circling the appropriate number. Indicate second choice where applicable. Workshop fees include handout materials and vary depending on computer and audiovisual equipment supplied. ***ALL WORKSHOPS ARE ON MONDAY, October 1.*** *Attendance is limited to 40 persons per workshop. Workshops may be canceled if minimum attendance is not achieved by August 27, 2007.*

Expertise levels are as follows: ***Beginner*** *has no prior knowledge or experience;* ***Novice*** *is acquainted with the topic but has no detailed knowledge;* ***Experienced*** *has good working knowledge with hands-on experience;* ***Expert*** *has extensive knowledge and experience.*

All registered workshop participants automatically receive Continuing Education Units (CEUs) from North Carolina State University, an authorized International Association for Continuing Education Training (IACET) provider. Earn 0.3 unit for half-day workshops and 0.6 unit for full-day workshops. Proof of CEU credit may be obtained after the meeting by ordering a transcript from NCSU ($5; details provided with the workshop handouts).

Monday, October 1
Morning Only, 8:30 a.m. to 12:00 noon

1. ■ Stairway Usability and Safety, Part 1: Uses and Falls by Individuals

Jake Pauls, Consulting Services in Building Use and Safety
LEVEL: Novice to Expert; FEE: $225 members, $260 nonmembers, $75 students.

Stairways are one of the most demanding and dangerous products or environmental elements, but ergonomic considerations in their design, construction, regulation, maintenance, use, and safety are not widely appreciated. This workshop, the first of two on stairways (see Workshop 3), covers essential environmental considerations within the scope of work by practicing ergonomists, designers, builders, public safety authorities, injury prevention practitioners, and attorneys. Participants will gain an appreciation for the size and nature of the problem, a detailed understanding of leading fall scenarios, knowledge of quick and detailed techniques for inspecting stairways, and an improved basis for meaningful participation in model code development, adoption, and enforcement. Participants should have several years of professional experience in one or more of the aforementioned fields. Because a major focus of the workshop is the technical quality of regulatory documents, participants are asked to bring a copy of a recent-edition (e.g., 2003) model building code or standard with which they work (e.g., the IBC, IRC, NFPA 5000 or NFPA 101).

2. ■ Test and Evaluation Methods Supporting Successful Implementation of Ergonomic Improvements

Peter Vink, Ergonomics and Innovation Department, TNO
LEVEL: Novice to Expert; FEE: $225 members, $260 nonmembers, $75 students.

It's not easy to develop ergonomic solutions that are implemented. Test and evaluation involves employing questionnaires and other tools to measure posture, work pace, usability, and workload, among other things. In this workshop, participants will learn the most crucial

elements of a successful test and evaluation approach. The presenter will share the mistakes he has made in past projects. Participants will experience ways of doing tests and evaluations that can block successful implementation and ways in which the chances of successful implementation can be improved. Cases from the construction industry, office work, assembly work, and hand tool design will be described. Participants will be asked to develop solutions in small groups and should have some experience in participatory ergonomics or in improving working conditions.

Monday, October 1
Afternoon Only, 1:30 to 5:00 p.m.

3. ■ Stairway Usability and Safety, Part 2: Egress Performance and Crowd Safety

Jake Pauls, Consulting Services in Building Use and Safety
LEVEL: Novice to Expert; FEE: $225 members, $260 nonmembers, $75 students.

Stairways are problematic yet essential components of a building's means of egress, but ergonomic considerations in their design, construction, regulation, management, use, and safety are not widely appreciated. This workshop, the second of two on stairways (see Workshop 1), covers essential environmental and management considerations within the scope of work by practicing ergonomists, designers, builders, facility managers, public safety authorities, fire protection engineers, and code consultants. The workshop will cover critical human factors considerations in means of egress using stairs, key inadequacies in means of egress technology, and advocacy for the facilitation and utilization of systematic studies in people movement on stairs. Participants should have several years of professional experience in one or more of the aforementioned fields. Because a major focus of the workshop is the technical quality of regulatory documents, participants are asked to bring a copy of a recent-edition (e.g., 2003) model building code or standard with which they work (e.g., the IBC, IRC, NFPA 5000 or NFPA 101).

4. ■ Office of the Future

Jerome J. Congleton, Texas A&M University
LEVEL: Novice to Expert; FEE: $225 members, $260 nonmembers, $75 students.

In this workshop, the presenter explains the ramifications of technology on office designs of the future. What is the impact of ergonomics and human factors considerations? What type of workforce will be utilizing office spaces of the future? What type of work will they be doing? The workshop content answers these questions and more. Participants will learn to look past current fads and politically correct issues to examine broad-based cultural changes that must be combined with physiological and anthropometric considerations of the human design to predict the issues that will most strongly influence future product design and office spaces. Participants will learn to identify the risk factors associated with long-term seated postures specifically associated with trends and technologies that are changing the modern workplace. The curriculum provides an overview of the body's preferred posture and covers concepts such as static loading of the muscles, cumulative trauma, and traditional risk factors such as repetition/frequency, vibration, temperature, and force/pressure. At the end of the workshop, participants will understand the traditional risk factors and will become proactive in their prevention and minimization of those risk factors in work space and product designs of the future.

Monday, October 1
All-Day Sessions, 9:00 a.m. to 4:30 p.m.

5. ■ Test and Evaluation of Complex Systems

Darren S. Cole & Lt. James C. Walliser, U.S. Air Force Flight Test Center
LEVEL: Beginner to Expert. FEE: $295 members, $335 nonmembers, $125 students.

Test and evaluation is a necessary component in the life cycle of any product. Participants in this workshop will be immersed in a hands-on experience that will take them step by step through the process of test design for complex systems. They will learn how to create measurable requirements, decompose the mission of a system into broad tasks, perform a task analysis, model task workload, define test variables, and choose the correct methodologies to evaluate requirements. Although the example used in the workshop is a complex system, concepts from the workshop can easily be applied to simple systems. This workshop will benefit anyone, from those new or interested in the field of human factors to experienced practitioners looking to enhance their skill set. No specific educational background is required, but knowledge of human factors, psychology, or engineering will be helpful.

6. ■ Cognitive Work Analysis for Design

Gavan Lintern, General Dynamics
LEVEL: Novice to Experienced. FEE: $275 members, $315 nonmembers, $115 students.

Cognitive work analysis constitutes a set of tools for knowledge acquisition and knowledge representation that are specifically tailored to the analysis and design of large-scale information systems. In this workshop, participants will be introduced to the major analytic tools and their representational products. Approximately 60% of the workshop will be devoted to participatory exercises in analysis and design. The key focus is to give participants experience with the more challenging methods of cognitive work analysis and to show them how to use the resulting analytic products for design. The exercises will be tutorial in nature and oriented specifically toward abstracting and clarifying the central concepts of cognitive work analysis. The explanations and exercises will be pitched at a level suitable for participants with a prior interest in some area of cognitive engineering or human factors design. Those with at least an undergraduate-level knowledge in cognitive science, anthropology, product design, or engineering will also be able to benefit from the workshop.

7. ■ Impacting System Design through Human Performance Modeling

Charneta L. Samms & John F. Lockett III, U.S. Army Research Laboratory
LEVEL: Beginner to Novice; FEE: $550 members, $590 nonmembers, $160 students.

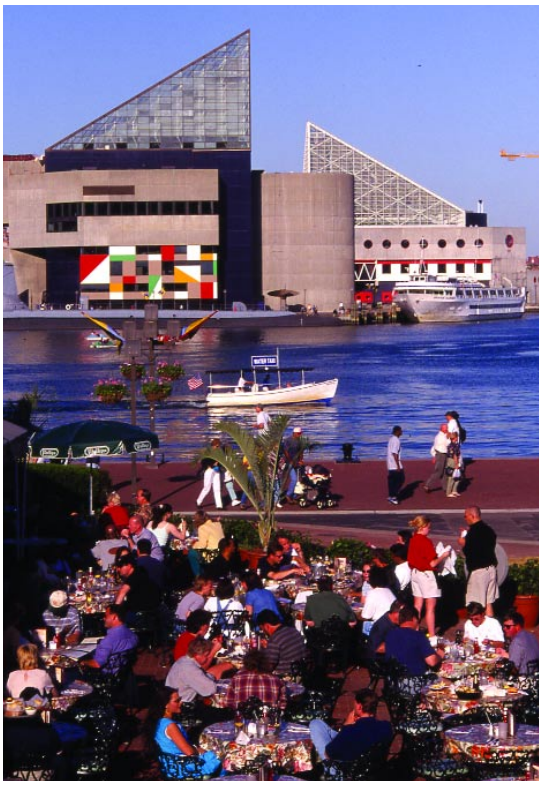
This workshop combines lecture and hands-on activity to teach participants how to conduct human performance modeling in a way that influences system design. They will learn a modeling approach that incorporates the principles of experimental design and the power of simulation to produce predictive results about system performance that will influence decisions regarding system design. Using example analyses, participants will learn the basics of human performance modeling using the Improved Performance Research Integration Tool and

will then work together as a project team to conduct their own step-by-step analysis on a problem relating to driving and Global Positioning System navigation. Although intended for human factors professionals in the U.S. government and government contractors and those who work on future system designs or major system redesigns, the workshop will also be helpful for anyone interested in these areas. Experience with hierarchical task analysis is desirable; no other expertise beyond basic computer skills within a Windows environment is required.

8. ■ Guide for Selecting Performance and Workload Measures

Valerie Gawron, General Dynamics
LEVEL: Beginner to Novice. FEE: $275 members, $315 nonmembers, $115 students.

The cornerstone of human factors engineering is performance measurement. The proficiency with which operators perform tasks is used to guide design from concept to production, to select among alternative training systems, to select personnel for jobs, and to support research on human perception, decision making, and response execution. All human factors engineers need both solid scientific and practical knowledge of human performance measurement. This workshop is designed to provide both, in lecture and hands-on exercises drawn from hundreds of the presenter's projects. However, measuring performance is not sufficient; systems must also be designed for optimum workload. To meet this need, this workshop will define workload; provide performance, subjective, simulation, and physiological measures of workload; and give guidance on how to select the right workload measure. For situational awareness, four types of measures will be presented: subjective, observational, physiological, and measures of situational awareness ability. Engineers, scientists, program managers, and marketing specialists will find this workshop invaluable in providing real insight into developing, evaluating, and selecting any system for optimum workload and situational awareness.



Dining along the Inner Harbor.

9. ■ Designing to Enhance Situation Awareness

Mica R. Endsley & Debra G. Jones, SA Technologies, Inc.
LEVEL: Beginner to Expert. FEE: $275 members, $315 nonmembers, $115 students.

This workshop will provide attendees with an overview of the central role of situation awareness (SA) in the operation of complex systems and the factors that act to challenge SA for many operators. To combat these problems, the presenters have developed the SA-Oriented Design process, providing tools and principles for ensuring that system designs supported this critical and central aspect of cognition. Through examples and exercises, they will address its three main components: SA Requirements Analysis, SA-Oriented Design Principles, and SA Measurement and Validation. The workshop is suitable for anyone, including those who are new to the human factors/ergonomics field and experienced human factors engineers seeking methods for addressing SA through integrated systems design. The workshop will not assume any knowledge prerequisite other than an interest in the topic.

10. ■ Systems Engineering for the Human Factors Practitioner

George Samaras, Samaras & Associates, Inc.
LEVEL: Beginner to Expert. FEE: $275 members, $315 nonmembers, $115 students.

Systems engineering (SE) provides a structured, systematic approach to business and technical risk reduction and hazard mitigation. The function of SE is to guide the engineering of complex systems. Disciplined application of SE, incorporating the human factors engineer throughout the full development, deployment, and disposal lifecycle, facilitates human-systems integration. Participants will learn how SE can inform them and help integrate their activities with the rest of the product/process development team. They will learn about the SE space and lifecycle; standard methods to obtain user needs, wants, and desires; the purpose of the iterative risk analyses; and the importance of implementing and using the corrective and preventative action process. Requirements are the foundation of the SE process; quantitative validation of these permits one to refute or corroborate compliance and decide whether or not to certify a system. System-focused requirements satisfice all stakeholders, inform designers, and provide a complete and correct basis for quantitative validation. Participants will gain knowledge of what constitutes a system-focused user requirement and how to formulate it from identified stakeholder needs, wants, and desires. They will learn the form of various basic experimental designs for validating requirements (e.g., screening, full & fractional factorial, Taguchi, Shainin) and how these may be applied to their own validation efforts.

11. ■ The TRIZ Problem-Solving and Design Process for Overcoming Contradictions in Human Factors Engineering

Jack Hipple, Innovation-TRIZ, Inc.
LEVEL: Novice; FEE: $275 members, $315 nonmembers, $115 students.

The basics of TRIZ (Russian acronym for "the theory of solving problems inventively") problem solving (inventive principles derived from the study of the patterns of invention in the global patent literature) will be reviewed and then applied to human factors in system design. Participants will learn the TRIZ principles of ideality, resource utilization, contradiction analysis, and problem solving using the 40 TRIZ inventive principles, the four separation principles, and "reverse" TRIZ for failure prediction. These problem-solving principles will

then be applied to current human factors problems and design. Examples from real applications will be included. Participants should be practicing human factors designers and problem solvers who are interested in learning a new technique useful for difficult human factors product design issues.

12. ■ Human Performance Modeling as a Tool for Human Factors Analysis

John Keller, Alion Science and Technology, MA&D Operation
LEVEL: Beginner to Expert. FEE: $400 members, $450 nonmembers, $155 students.

The purpose of this workshop is to provide individuals who are considering the use of computer modeling and simulation with an understanding of what simulation is, when it might be useful, and what specific considerations and approaches should be employed when using simulation to solve problems. Participants will hear presentations and then will perform a series of hands-on exercises with prebuilt Micro Saint Sharp computer models. They will use the models to solve real-world design problems, including evaluating the necessary word recognition rate to make computer speech input more efficient than mouse input and determining the optimal makeup of a team given task demands and function allocation. Also, they will receive hands-on Micro Saint Sharp model-building experience through the construction of a simple model of a human driving while using a cell phone. No specific educational background is necessary, but participants should have knowledge of human factors, workplace design, workload analysis, and cognitive processing, as well as basic computer skills with the Windows operating system.

Fort McHenry

13. ■ Current Topics in Computer Workstation Furniture and Environments and Implications for Future HFES Standards Work

Tom Albin, Auburn Engineers; Teresa Bellingar, Haworth; Mark Benden, Neutral Posture Furniture, Inc.; Claire Gordon, Consortium for Science, Policy & Outcomes; Gretchen Gscheidle, Herman Miller, Inc.; Doug Kokot, KOALA Consulting, LLC; Scott Openshaw, Allsteel, Inc,; & Dave Trippany, Steelcase, Inc.
LEVEL: Novice to Expert; FEE: $275 members, $315 nonmembers, $115 students.

HFES plays a leading role in the development of technical standards for the design of computer workstations and for computer workstation furniture and environments. However, change in the science and art of computer workstation furniture and working environment design outpaces the rate of development of technical standards. This workshop will familiarize participants with current HFES standards recommendations and requirements for furniture and environments and with emerging issues for the science and practice of design and use of furniture and environments. It will also offer an opportunity to identify the need for new or expanded furniture and environments. The workshop should be of use to any ergonomics or human factors professional whose practice encompasses the design or use of computer workstation furniture and environments. No prerequisite knowledge is required for participation, but participants should be familiar with HF/E design issues regarding computer furniture and environments.

14. ■ Design Chautauqua 2007 – Design Ethnography

Steven M. Belz, AT&T Laboratories
LEVEL: Novice; FEE: $295 members, $335 nonmembers, and $125 students.

This all-day design experience will provide participants with an opportunity to gain perspective on design ethnography from leading professionals in the area of product design through a combination of tours and presentations. The morning session will be a hands-on introduction to ethnography led by Robby Blinkoff, an anthropologist and founding partner of ContextResearch, a leading context-based research group located in Baltimore. Participants will explore the fundamentals of ethnography through visiting two Baltimore marketplaces. The afternoon session will explore a variety of ethnographic case studies in a discussion setting. Presenters include Pat Patterson (Texas Tech), who will discuss ethnographic work conducted in order to improve the kitchen work environment for aging populations; Brian Stonecipher (Design Continuum), who will describe Continuum's use of ethnographic methods and case studies; and Edie Adams (Microsoft), who will describe the impact of various ethnographic and early user research methods and their impact on Microsoft's product development work. Participants should have an educational or practice-based background that includes human factors.

Technical Sessions

The preliminary program for the HFES 51st Annual Meeting is available at the HFES Web site, ***http://hfes.org.*** It can be searched by author name, keyword in title, technical group, and date/time. The itinerary builder assists in creating a personal schedule for the meeting.