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User Research in the Games Industry: Opportunities for Education

By Tim Nichols

Games present a curious usability problem. When was the last time you finished a video game, set the controller down, and thought to yourself, "That was straightforward, simple, and easy to complete… RAD!!" Games are carefully designed to present users with challenges, place blockers within tasks, and sometimes purposely create subterfuge and uncertainty. (It's probably not a good idea to design productivity software like this.)

With the focus on challenge and difficulty, games under development have the very real possibility of creating challenges that are "unbalanced" (e.g., too difficult or too easy). So in addition to usability testing, testing for fun and challenge is critically important. Traditionally in the relatively nascent games industry, this balancing has been done by folks who were working on the game… and I think you begin to see the problem. In the Games User Research group at Microsoft Game Studios, we conduct research on games with the eventual users of the software, using various user-testing methodologies to turn the game into a fun, enjoyable experience.

Goals of the Games User Research Group

Obviously, some aspects of games present classic usability problems, such as the game's menu system or the information presentation in a head-up display. I think of these features the same way I think about referees in the last two minutes of a basketball game: If they aren't attracting attention and aren't memorable, they're doing their job. The features of the game that should be getting all the attention from our users are the challenges and interactions that game designers create.

This leads to two primary kinds of testing in our group. (Keep in mind that these are very broad categories of tests, and many variations and specializations exist.) The goal of *usability testing* often is to remove any issues that may block users from engaging in the challenging aspects of the game. The goal of *playtesting* is to assess whether those challenging aspects are fun and balanced, and if they are not, why not?

The Games User Research group is tasked with identifying usability blockers and fun blockers. We accomplish this while working closely with the development and production teams, here referred to globally as *developers*. In reality, this includes many disciplines, from design to program management. These partnerships can often lead to – put tactfully – opportunities for education on usability and behavioral research.

Them and Us

Game developers love the thought of getting feedback from actual gamers, but they typically do not possess the expertise to collect valid data about users' opinions, perceptions, and behavior. Developers and their design teams may occasionally bring in consumers to test their games, but concepts such as response bias and control are foreign to them. In our group, we take a multifaceted approach to testing, and we are often inundated with data. (Nearly all of us have some graduate training in behavioral research, so this keeps us happy.) We employ converging measures to answer research questions and incorporate surveys, usability and RITE studies, playtests, experimental playtests, and so on.

Let's say, for example, a game developer wants to know how much fun the game is. Left to their own devices, developers would likely set up a session in which users play part of the game, then are asked to respond to a questionnaire that includes questions like "How fun is this game?" "What is fun (or not fun) about it?" and "Why is it fun?"

At first glance, this may seem a reasonable set of questions to ask users when they interact with your game. But "fun" is an enormously complicated thing to measure. There are dozens of variables that affect a user's fun rating, and many of these interact in complicated ways. A user may rate a game as "not fun" because she has not played many games within the current game's genre; for instance, games in the shooter genre typically employ several consistent features that games from a role-playing genre may not. This leads her to interpret the gun-aiming system incorrectly, which in turn causes her to perform poorly in the "shoot the things shooting you" level of the game.

Is the game, then, not fun? Of course not. But fixing the problem may not be as simple as giving better instructions or making the gun-aiming icon (or reticle) more salient. The solution may be to gain an understanding of how users are interpreting the gun-aiming system. Perhaps the objectives are first to understand what the developers' goals are for the "shoot the things shooting you" level, then to assess why some users are not using the aiming system in a way that optimally meets the developers' goals, and, finally, to redesign the whole system. Maybe users aren't using the right weapons, maybe they're not finding the right weapons, maybe they misinterpret some aspect of the interface, maybe their goal doesn't match the developers' goal. In all likelihood, obtaining an actionable understanding of this problem will require more than

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(continued from page 1)

a couple of answers from users to the developers' three questions about a game's global "fun" quotient.

Educating Game Developers

Because the games industry is still relatively immature, we often encounter excellent opportunities to educate our game developer partners. I find myself constantly explaining two lessons to my development partners: (1) Users are different from you (i.e., you play the game *this* way and users play the game *that* way), and (2) users are different from each other (they play in many different ways – you can't make assumptions from a single user). On the one hand, game developers are so deeply married to their games, that they truly do play, interpret, and behave differently from the vast majority of their eventual users. Of course, this doesn't mean that users play alike; individual differences result in multiple styles of play and a great variety of in-game behaviors.

Game developers have a keen understanding of how to create challenges, immersion, excitement, and enjoyment. Perhaps their greatest struggle is to maintain a clear view of how the typical gamer will experience a game. These developers are profoundly removed from the users for whom they are designing. Even the users they are most knowledgeable about (typically, gamers who espouse their opinions on game forums) are certainly not representative of the majority of game consumers.

The Games User Research group provides a reality check and reminds development teams of who their users really are. Unlike the majority of game developers, many consumers are casual gamers, playing a couple of hours a week, and many gamers have played only a select number of games. For instance, they don't recognize that the puzzle in one game can be solved in much the same way as the puzzle in that cult classic, *Obscure Game 2: The Unsold*. In addition, many gamers are female or under 14 years of age. And as gamers from the 1980s reach their 50s, the number of older game consumers will increase. Maintaining an accurate cross-section of gamers in our participant database is a primary concern so that we can avoid the biases that others in the industry may have.

I was sitting in a usability lab recently with a program manager, watching a user move his character in circles and have it bang against walls. Those of us on the team had been playing with the

wonky camera controls for months, and we'd gotten quite good at it. Predictably, the team member dismissively stated, "Oh, well she just doesn't know how to move the camera while moving her character" – as if to say, "As long as this lone, fatally flawed individual doesn't buy the game, we should be fine."

"The Plural of Anecdote Is Not Data"

Once I have trained my fellow team members to remember that the eventual consumers of our games will likely be very different from those of us working on the games, I then have to point out that the consumers will also be very different from each other – that is, "The plural of anecdote is not data" (quote attributed to Julian Sanchez). This is easily my favorite line to use with team members.

Often, developers will latch onto the feedback of a single user because it confirms their own hypotheses about the game, and they will ignore all users who don't raise that particular issue. In fact, now that we've been working together for some time, the designers with whom I interact know they should not get too excited when a participant lauds a particular feature because they'll hear the anecdote quote again. Anecdotal data are particularly problematic when dealing with users' perceptions. Perceptions and subjective impressions are important because games must be challenging and fun, not just usable. But conclusions obviously cannot be drawn from a single user in a usability lab shouting, "This is the best game I've ever played!" Opinions and subjective perceptions about the game are collected from much larger samples in our playtest labs.

As I mentioned, we run many studies and collect a wide range of data, and developers in the industry see this as a significant factor when selecting a publisher for their games. Once developers understand the wealth of valid data that we provide, they are generally very excited to work with us. User research is still, to many game developers, a novel and promising discipline within game development, and our group strives to continue to excite our development partners through new methodologies and through evangelizing the importance of user research in games.

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Tim Nichols received his Ph.D. in engineering psychology from the Georgia Institute of Technology in 2006. He has been with the Games User Research group at Microsoft Game Studios for over a year, working on titles including Mass Effect, Zoo Tycoon 2: Marine Mania, *and* Gears of War. *He may be contacted at tnichols@microsoft.com, or by his gamer tag, JakeAstroPower. For more information, visit* http://www.mgsuserresearch.com.

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Bulletin

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Annual Meeting Sponsorship Opportunities

The HFES 51st Annual Meeting gives organizations and companies the opportunity to promote their products and services. Members are encouraged to pass this information to their employers and other interested parties.

Increased Visibility

Recognition is provided in the pre- and postmeeting issues of the *HFES Bulletin*, the Annual Meeting Program, on-site signage, and the daily newsletter. Also, sponsors' logos will be included on the Sponsors page at the HFES Web site. Here are some of the sponsorship opportunities that are available.

NEW! Ice Cream Sundae Bar: $2,250/$4,500

This fun new feature is available for either two sponsors to share ($2,250 each) or a single sponsor ($4,500). The Ice Cream Sundae Bar serves the first 300 attendees on Wednesday, October 3, from 3:30 to 4:30 p.m., in the Exhibit Hall.

Portfolio Bags: $5,000

The rate for this exclusive sponsorship has been reduced. The sponsor's name and logo appear on the bags that are distributed to all meeting attendees.

Opening Plenary Session: $7,500

One sponsorship is available. The Opening Plenary Session on Tuesday, October 2, features the keynote and presidential addresses and recognition of HFES awardees and newly elected Fellows and Honorary Fellows. This session kicks off the four-day program and traditionally attracts 85–90% of the meeting's attendees. The sponsor will be acknowledged from the podium, and signs bearing the sponsor's name and logo will be placed at the door.

Student Lounge: $1,000/day or $5,000

This new feature of the annual meeting was launched in 2006 to great acclaim from students and professionals like. Five one-day sponsorships are available ($1,000/day) or a single sponsorship for the full week ($5,000).

Student Reception: $2,000

One sponsorship is available. About 200 students will gather on Tuesday evening (October 2) to enjoy refreshments, socializing, and award presentations. Signs bearing the sponsor's name and logo will be placed at the door.

To read about additional sponsorship opportunities, go to *http://www.hfes.org/web/HFESMeetings/07AMExhibitInvite.html*.

How to Reserve a Sponsorship

If you wish to reserve a sponsorship, please contact Dick Bublitz, 800/485-5029, fax 818/992-0366; dick-rcb@juno.com by **July 6, 2007**. A $500 deposit is required at the time sponsorships are reserved; the balance is due July 16, 2007. Sponsorships are allocated on a first-come, first-served basis on receipt of the deposit. Payment is accepted by check (US$ payable to the Human Factors and Ergonomics Society), MasterCard, VISA, or American Express.

General meeting support is also welcome. To discuss alternative sponsorship ideas, please contact Carlos de Falla at 310/394-1811, carlos@hfes.org.

Call for Student Volunteers

The HFES 51st Annual Meeting Host Committee is seeking Student Affiliate members to serve as student volunteers for the 51st Annual Meeting in Baltimore. Student volunteers perform many essential functions and help to ensure that the meeting runs smoothly. You must be preregistered for the annual meeting to serve as a student volunteer.

To volunteer, please send the following information to the address below:

- contact information: full name and e-mail address
- your first, second, and third choices from the list of key areas given below
- anticipated date of arrival at and departure from the meeting.

Address requests to Director of Member Services Carlos de Falla, carlos@hfes.org, HFES, P.O. Box 1369, Santa Monica, CA 90406-1369, 310/394-1811, fax 310/394-2410.

Help is needed in the following key areas:

- Workshops (October 1)
- On-Site Career Center (October 1–4)
- Daily on-site newsletter (October 1–3)
- Poster sessions (October 2–4)
- Technical tours (October 2–4)
- Internet station (October 1–5)
- Ribbons Desk (October 1–3)

You may request assignments in specific areas, and every effort will be made to ensure you receive your first or second choice. About 60 student volunteers are needed. Volunteer slots are limited and will be accepted on a first-come, first-served basis. Preregistration will be accepted through August 27.

Assignments will be made and instructions sent prior to the meeting. A student volunteer room will be available at the headquarters hotel for checking in for assignments, networking with other students, and obtaining signatures for completed work.

Volunteer positions are based on need, and not all positions are for eight hours. Students who volunteer for eight hours will receive a reimbursement of the full registration fee, and those who volunteer for four hours will be reimbursed half the registration fee. Refunds are processed after the meeting.

Special Meeting Space Requests

Groups that wish to conduct special meetings at the 51st

Annual Meeting are invited to submit requests for meeting space. Generally, meetings will be accommodated on a first-come, first-served basis; however, priority is given to meetings that are open to all interested attendees. Meetings that are open to members and attendees will be listed in the final program, which is distributed at the meeting.

To request a meeting time and space, contact HFES Executive Director Lynn Strother at 310/394-1811, lynn@hfes.org.

Items Wanted for Daily Newsletter

The HFES 2007 Annual Meeting newsletter, *The Seaport Sentinel*, is now accepting items for publication during the annual meeting. Topics may include

- descriptions of demonstrations
- descriptions of exhibits
- dates and places for university reunions/gatherings during the conference
- features on invited speakers, other special guests, or retiring HFES members
- previews of panels, debates, and unique sessions
- information on student-related sessions or activities
- announcements of new academic programs
- job advertising
- TG special session or business meeting information
- upcoming events, conferences, or books of interest to the attendees.

We encourage submissions by e-mail before the meeting to ensure we can accommodate space; however, we will also welcome submissions from all attendees during the conference. Please submit dates and locations for university reunions or other meetings as early as possible.

If you would like to submit an article or become involved with *The Seaport Sentinel*, please contact the newsletter chair, Kevin Durkee at kdurkee@gmu.edu, 309/369-7769, 250 S. Whiting St, #620, Alexandria, VA 22304.

The Seaport Sentinel also invites exhibitors and any other interested parties to advertise in the newsletter during the meeting. If you are interested, please contact HFES Communications Director Lois Smith at 310/394-1811, lois@hfes.org.

Book Your Annual Meeting Reservations Now!

It is not too early to start reserving rooms for the 51st Annual Meeting in Baltimore, to be held October 1–5. Go to *http://cwp. marriott.com/bwiwf/hfeswebsite* to reserve your room at the special HFES rate of $185/night. The Baltimore Marriott Waterfront Hotel is located at 700 Aliceanna St., Baltimore, MD 21202, 410/ 385-3000, fax 410/895-1900. ✪

Annual March Symposium: A Success Story

By Jerry Krueger

For the past two decades, the American Psychological Association's Division of Applied Experimental and Engineering Psychology (APA Division 21) has sponsored an annual spring symposium on human factors psychology, held near Washington, D.C. The HFES Potomac Chapter and APA Division 19 have become perennial cosponsors of these events. The theme of this year's Midyear Human Factors Symposium, held on March 1–2 at George Mason University, was "A New Collaborative Frontier: Innovative Approaches and Applications," and the event was another great success.

Each spring, the symposium brings together notable human factors scientists and prominent university professors, along with their brightest graduate students, to exchange information in a dynamic environment. For the past eight years, they have been joined by a group of top-notch undergraduate cadets majoring in human factors and engineering psychology programs at the U.S. Military Academy and the U.S. Air Force Academy. The symposium features numerous oral presentations, poster sessions, and discussion groups. For the first time, the 2007 program was so large that it necessitated conducting simultaneous sessions.

More than 120 attendees and participants were treated to Ben Shneiderman's (University of Maryland) dynamic keynote address, "Information Visualization: A Platform for Discovery Through Collaboration." Presentations by other speakers featured such topics as training for landmine detection, flight training, performance in operating unmanned aerial vehicles, distributed team coordination, use of real-time collaborative text editors, design of night vision devices, tactile signaling, leadership development, and considerations of posttraumatic stress syndrome. Awards were given for the best student presentations and posters.

In conjunction with the symposium, the HFES Potomac Chapter hosts a dinner meeting. This year, our guest speaker was Sharla P. Rausch, director of the newly formed Human Factors Division of the Science and Technology Directorate at the U.S. Department of Homeland Security. Rausch's talk, "Human Factors at the Department of Homeland Security: Know Our Enemies, Understand Ourselves, Put the Human in the Equation," included her list of human factors job opportunity announcements forthcoming at DHS. The symposium program agenda and the Power-Point slides from Rausch's talk may be viewed under "What's New" on the Potomac chapter Web site, *http://www.erols.com/ hfespoc*.

The symposium is made possible through the cooperation of many active members in the three sponsoring organizations, the dedicated participation of the military academy cadets and their professors, and especially the work of graduate students such as those at the George Mason University Student Chapter. By all measures, the annual Midyear Human Factors Symposium has been a huge annual success story. ✪

HFES Local Chapter Distinguished Service Award

By Fayona Meyerovitz, Chair, Chapter Affairs Committee

The 2006 Local Chapter Distinguished Service Award goes to the Southern Ohio Chapter (SOH). The runner-up is the Rocky Mountain Chapter (RMC). The Chapter Affairs Committee and the Local Chapter Award Selection Committee congratulate both chapters on their outstanding achievements in 2006.

The objectives of this award are to motivate chapters to engage in outreach activities that are beneficial to the human factors/ergonomics (HF/E) community and public, and to recognize their achievements in this regard. A local chapter must follow these criteria to be considered for the award:

- The chapter engages in an HF/E-related service activity to foster HF/E in the local community where recipients of the service are not affiliated with the discipline.
- The chapter engages in an HF/E-related service activity to increase student knowledge and/or involvement in HF/E.
- The chapter participates in a non-HF/E–related service activity to increase awareness of HF/E in the local community where recipients of the service were not affiliated with the discipline.
- The chapter has a high degree of presence and contribution to the HFES annual meeting.

In recognizing the winner, the selection committee noted, "The jury estimated that both chapters made valuable efforts and commitments to their respective communities. Their actions reflect extremely positively on the Human Factors and Ergonomics Society. Both chapters significantly contributed to the success of local science fairs… While the award goes only to one of two deserving chapters, we like to think that the real winners of this competition were the hundreds of students who benefited from the outreach activities."

The SOH will receive the award at the Local Chapter Presidents' luncheon during the HFES 51st Annual Meeting in Baltimore. A cash prize of $300 accompanies the award.

Highlights of SOH Outreach Activities

The SOH continued its past involvement in the West District Science Fair organized by the Ohio Academy of Sciences, and held at Central State University. For the past six years, the SOH, along with the Dayton Chapter of the Society for Information Display (SID), has presented Human Factors/Information Display Awards. The SOH provides the volunteer special judging teams that meet with students at the science fair and choose award recipients. SID provides funds for the awards.

The SOH developed and distributed a color brochure about the human factors field. The goal was to further educate young scientists and encourage HF/E projects for the 2006 Science Fair. The chapter distributed the brochure and a cover letter to junior and senior high school students in a seven-county region in Ohio; their names were provided by the Ohio Academy of Sciences.

About 40% of the SOH's members participated in the 2006 HFES Annual Meeting. Of the 24 members attending, 12 were lead authors on papers/posters or participated on panels or symposia.

Rocky Mountain Nomination

Although the RMC did not win the 2006 award, many of the chapter's outreach activities are noteworthy. Members engaged in activities designed to raise awareness of HF/E in the larger community, primarily focused on students. They instituted a new Special Award at the Colorado Science and Engineering Fair for the project that made the best contribution to the discipline of HF/E. The RMC registered as a sponsor of this award and sent two members (Beth Meyer and Andrew Keller) to judge the projects on the day of the statewide fair. The judges discussed with the students how their projects related to human factors. At the award ceremony, the announcement of the Special Award was accompanied by a paragraph provided by the RMC about HFES and the human factors/ergonomics discipline.

In addition, Beth Meyer gave a special interactive presentation on HF/E to a local elementary school engineering club and an HF/E career presentation to a local high school careers class. Chapter member Michael Rodriguez and his colleagues at the human factors engineering department at IBM presented topics related to HF/E work as part of a special engineering outreach at their facility. David Gilkey introduced a gathering of about 40 students to the basics of ergonomics. In total, the RMC provided an introduction to HF/E to about 125 students during 2006.

2007 Local Chapter Distinguished Service Award

The submission deadline for the 2007 award is **December 31, 2007**. Chapters will be invited to submit applications later in the year. The selection committee recommends that chapters consider submitting activities related to more than one of the criteria noted earlier and encourages them to describe all community outreach activities in detail.

The Chapter Affairs Committee urges all chapters to participate in outreach activities that can increase their chances of winning and to enter submissions for the Local Chapter Distinguished Service Award for 2007. We wish you all the best of luck with your activities for this year. ⊗

HFES 2007

BALTIMORE

Plan to attend the 51st Annual Meeting!

October 1– 5, 2007   **http://www.hfes.org**

After a stalwart struggle against cancer, **Duane T. McRuer**, known to his many friends as Mac, died on January 24, 2007, at the age of 81. An HFES Fellow, he served on the editorial board of *Human Factors* from 1966–1970 and was awarded the Alexander C. Williams, Jr., Award in 1976.

A world-class flight control and systems engineer, he became deeply involved in the extension of systems analysis techniques to the study of human-machine systems and the dynamics of the human operator. Useful mathematical models to characterize certain types of human behavior and adaptive control actions resulted from these interests. One such model, McRuer's Rule, has provided tools enabling engineering designers to increase safety and improve the performance of all vehicles controlled by humans. His efforts have created new descriptions for human skill development and a well-attested theory of manually controlled vehicle-handling qualities. His studies also included the modeling of human subsystems and have resulted in refined quantitative models of neuromuscular actuation and human equalization activity. His studies helped originate a major interdisciplinary field in control engineering, experimental psychology, and physiology. Mac's work has been recorded in over 130 archival technical papers and reports and in 10 books.

In 1992, at the conclusion of his appointment as the Jerome Clarke Hunsaker Professor of Aeronautical Engineering at MIT, he gave the Minta Martin lecture on "Human Dynamics and Pilot-Induced Oscillations." Videos of aircraft undergoing dangerous PIOs were accompanied by his elegant explanation and solution of this problem in pilot dynamics.

When young, Mac was known as the boy genius of the aircraft industry. At 81, though no longer young, he was still a genius.

For a detailed tribute to Duane McRuer, please visit *http://www.systemstech.com*.

– Ezra Krendel

Mark M. Brauer, director of safety for AMENCIE Consultants and recently elected Fellow, was profiled in the third edition of the *Career Guide to the Safety Profession*, published jointly by the American Society of Safety Engineers and the Board of Certified Safety Professionals. The guide may be downloaded from *http://bcsp.org*.

Marvin J. Dainoff, immediate past president of HFES and professor emeritus at Miami University in Ohio, was elected to serve as one of four at-large board members of the Council of Scientific Society Presidents. Council membership spans the top elected officers of the full spectrum of physical, life sciences, science, and mathematics education organizations. ✖

Putting Ergonomics into Practice, May 1–4, 2007, Columbus, OH. Gary Allread, Institute for Ergonomics, Ohio State University, 1971 Neil Ave., 210 Baker Systems, Columbus, OH 43210, 614/292-4565, ergonomics@osu.edu, *http://ergonomics.osu.edu/*.

Practical Solutions in Office Ergonomics, May 16, 2007, Raleigh, NC. Ergonomics Center of North Carolina, 3701 Neil St., Raleigh, NC 27607; 919/515-2052, fax 919/515-8156, *http://www.TheErgonomicsCenter.com*.

Principles of Ergonomics, May 21–24 and July 30–August 2, 2007, San Diego, CA. OSHA Training Institute, University of California at San Diego, 404 Camino del Rio S. #102, San Diego, CA 92108, *http://osha.ucsd.edu*.

Office Ergonomics Accreditation Program, May 21–25 and July 16–20, 2007, Raleigh, NC. Ergonomics Center of North Carolina, 3701 Neil St., Raleigh, NC 27607; 919/515-2052, fax 919/515-8156, *http://www.TheErgonomicsCenter.com*.

Principles of Ergonomics, June 5–7, 2007, Portland, WA. Pacific Northwest OSHA Education Center, 4225 Roosevelt Way NE, Ste. 100, Seattle, WA 98105, 206/543-1069, fax 206/685-3872, ce@u.washington.edu, *http://depts.washington.edu/ehce/OSHA/schedule.html*.

Principles of Ergonomics, June 19–21, 2007, Brighton, MI. Great Lakes Regional OSHA Education Center, 2000 Huron River Dr., Ste. 101, Ypsilanti, MI 48197, 734/487-2259, fax 734/481-0509, *http://www.emuosha.org*.

Human Factors Engineering, July 23–28 and July 30–August 3, 2007, Ann Arbor, MI. Paul Green, University of Michigan, 2901 Baxter Rd., Ann Arbor, MI 48109-2150, 734/763-3795, pagreen@umich.edu, *http://cpd.engin.umich.edu/*.

Systems Engineering Initiative for Patient Safety, August 13–17, 2007, Madison, WI. The Center for Quality and Productivity Improvement, 575 WARF Bldg., 610 Walnut St., Madison, WI 53726-2336, 608/263-2520, fax 608/263-1425, cqpi@engr.wisc.edu, *http://www2.fpm.wisc.edu/seips/Courses/coursehome.html*.

Ergonomics Evaluation, August 20–24, 2007, Raleigh, NC. Ergonomics Center of North Carolina, 3701 Neil St., Raleigh, NC 27607; 919/515-2052, fax 919/515-8156, *http://www.TheErgonomicsCenter.com*. ✖

Announcement deadlines: First day of the month prior to the desired issue; for events or deadlines within the first three weeks of a month, send information at least two months in advance. Items are published according to space availability. The full Event Calendar is available at http://hfes.org.

★ **2007 International Performance Improvement Conference**, April 28–May 3, 2007, San Francisco, CA. International Society for Performance Improvement, 1400 Spring St., Ste. 260, Silver Spring, MD 20910, 301/587-8570, fax 301/587-8573, *http://www.ispi.org/ac2007/*.

★ **Computer/Human Interaction (CHI) 2007 Conference**, April 28–May 3, 2007, San Jose, CA. *http://www.chi2007.org.*

★ **Fourth Annual HFES Houston Chapter One-Day Conference**, May 4, 2007, Houston, TX. hhfes@houstonhfes.org, *http://www. houstonhfes.org/conference2007.*

★ **Technical Communication Summit – STC 54th Annual Conference**, May 13–16, 2007, Minneapolis, MN. Society for Technical Communication, 901 N. Stuart St., Ste. 904, Arlington, VA 22203, 703/522-4114, fax 703/522-2075, stc@stc.org, *http://www.stc.org/ 54thConf/.*

★ **78th Annual Scientific Meeting of the Aerospace Medical Association**, May 13–17, 2007, New Orleans, LA. Sheryl Kildall, AsMA, 320 S. Henry St., Alexandria, VA 22314, 703/739-2240 x107, skildall@ asma.org, *http://www.asma.org.*

★ **Intel International Science and Engineering Fair 2007**, May 13–19, 2007, Albuquerque, NM. Jerry Sue Basselleck, 505/830-7569, jerry.s.basselleck@saic.com, *http://www.intelisef2007.org.*

★ **SID 2007**, May 20–25, 2007, Long Beach Convention Center, Long Beach, CA. Society for Information Display, 610 S. 2nd St., San Jose, CA 95112, 408/977-1013, fax 408/977-1531, office@sid.org, *http:// www.sid.org.*

★ **Work With Computing Systems 2007**, May 21–24, 2007, Stockholm, Sweden. WWCS 2007, NIWL, SE-113 91, Stockholm, Sweden, +46 8 619 67 43, fax +46 8 618 36 35, wwcs2007@niwl.se, *http:// www.wwcs2007.se.*

★ **4th Annual Workshop on Human Factors of Unmanned Aerial Vehicles**, May 21–23, 2007, Chandler, AZ. Nancy Cooke, Cognitive Engineering Research Institute, Mesa, AZ, ncooke@cerici.org, *http:// www.cerici.org/.*

★ **ASTM International F38 Spring Meeting**, May 24–25, 2007, Chandler, AZ. Daniel Schultz, American Society for Testing and Materials, 610/832-9716, dschultz@astm.org, *http://www.astm.org/ uav.htm.*

★ **2007 RINA Conference on Design and Construction of Vessels Operating in Low Temperature Environments**, May 30–31, 2007, London, UK. Royal Institution of Naval Architects, 10 Upper Belgrave St., London SW1X 8BQ, fax +44 (0)20 7259 5912, conference@ rina.org.uk.

★ **EDRA38**, May 30–June 3, 2007, Sacramento, CA. Environmental Design Research Association, P.O. Box 7146, Edmond, OK 73083, 405/330-4863, fax 405/330-4150, edra@edra.org, *http://www.edra38. com.*

★ **Engineering Ethics Conference**, May 31–June 2, 2007, Villanova, PA. Villanova University, 800 Lancaster Ave., Villanova, PA 19085, 610/519-4500, *http://www.ethics.villanova.edu/conference.*

★ **UPA 2007 Conference, "Patterns: Blueprints for Usability,"** June 11–15, 2007, Austin, TX. Usability Professionals Association, 140 N. Bloomingdale Rd., Bloomingdale, IN 60108, 630/980-4997, fax 630/351-8490, office@usabilityprofessionals.org, *http://www. usabilityprofessionals.org.*

★ **6th Creativity and Cognition Conference**, June 13–15, 2007, Washington, D.C. Creativity and Cognition Conference, Ted Selker, 20 Ames St., Cambridge MA 02139, 617/253-0291, fax 617/253-0910, selker@media.mit.edu, *http://sabrinaliao.com/cc2007/.*

★ *Indicates new listing*

SENIOR RESEARCH POSITION
HUMAN FACTORS IN TRANSPORTATION

The Human Factors Division of the University of Michigan Transportation Research Institute (UMTRI) is seeking qualified candidates for a research faculty position in the area of the driving process from the point of view of vision, perception, cognition, and human performance. The position offers the opportunity to join an active set of current research projects, as well as the opportunity to continue to develop the candidate's own research interests in a supportive environment of interactive colleagues.

Qualifications include a doctorate in experimental psychology or human factors, and a minimum of five years of relevant postdoctoral research experience. The candidate should have (1) a solid educational background; (2) demonstrated ability to conduct independent research; (3) expertise in experimental design and quantitative modeling; (4) demonstrated ability to write reports and articles for publication in peer-reviewed journals; (5) ability to secure sponsorship of research that substantially advances knowledge on the safe and convenient operation of motor vehicles; (6) ability to work cooperatively as a part of a research team.

To apply, submit an application through U-M's online job system at **http://www.umich.edu/~jobs/** for job ID #7304 and concurrently submit the same cover letter and CV, plus copies of your three most recent scientific papers and contact information for at least five references electronically to: **Ms. Trudy Bahr at ttbahr@umich.edu.**

The University of Michigan is a non-discriminatory, affirmative action employer.

F L A S H !

HFES Elections

Completed nomination ballots for Executive Council and At Large members are due at HFES on April 25.

2007–08 Directory & Yearbook

Watch your mailbox this month for the 2007–08 *HFES Directory & Yearbook!*

Living Rooms

Human Factors and Industrial Design Contributions to the Home as a Health Care Venue

Co-sponsored by
The Human Factors and Ergonomics Society and The Industrial Designers Society of America

May 1–2, 2007

ASAE Headquarters, 1575 I Street NW, Washington, DC

NOTE: Attendance is limited to 150 participants.

Cochaired by HFES Past President Barry H. Beith and IDSA Past President Ron B. Kemnitzer, this collaborative conference is based on the premise that the home will become a vital health care venue over the next 15–20 years as Baby Boomers grow older and put increased strain on the medical system. It brings together human factors practitioners and industrial designers to examine, discuss, and interact with one another about how to design products and homes that meet these needs.

The goals of "*Living* Rooms" are

- to facilitate interaction between human factors researchers/designers and industrial designers, and encourage them to explore further the potential synergism in their collaboration, and

- to raise attendees' awareness regarding the impending crisis in home health care and the role they can play in designing better home-based health care systems.

The program consists of a number of invited addresses and panels. The concluding panel will be a half-day working session for all conference attendees and speakers intended to gather data to identify and address major design issues related to the home as a health care venue. Data generated in this session will be provided in a report to be distributed to attendees and speakers after the conference.

To view the conference agenda and a list of hotels close to the venue, and to register, go to *http://www.hfes.org/web/HFESMeetings/07livingrooms.html*. Or contact HFES at P.O. Box 1369, Santa Monica, CA 90406-1369 USA, 310/394-1811, fax 310/394-2410, info@hfes.org.