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## Global HF/E Insights From My China Travels

*By Kathleen L. Mosier, HFES President*

As I begin my term as HFES president, I'd like to share with you some insights that I gained as a member of the 2008 HFES/People to People delegation to China. The delegation included 15 human factors/ergonomics professionals and was led by HFES Executive Director Lynn Strother. We visited three cities in China and met with HF/E counterparts from Chinese universities, training facilities, and professional organizations. It was an amazing trip, and the experience provided part of my motivation to run for president of the Society. From my colleagues in the delegation, I gained a heightened awareness of our many outstanding assets as well as some challenges and opportunities for positive change.



I believe that HFES must promote membership and active participation by all HF/E professionals, or we run the risk of becoming irrelevant to a large segment of the HF/E community. We have begun to take steps toward this, as evidenced by the more than 80 practice-oriented presentations at the recent HFES Annual Meeting in San Antonio on topics such as designing a usability evaluation environment; human factors/ergonomics practice from the perspective of forensics consulting firms; ergonomics process design and management; human factors and risk communication for reuse, recycling, disassembly, and product end-of-life; improving

the user interface and adoption of online personal health records; test and evaluation initiatives; and practical applications to improve hospital health care delivery systems. As we move forward, we must make sure that both scientists and practitioners in human factors/ergonomics see our value as a Society and recognize that being a member of HFES enhances both research and practice.

### **HFES Membership and the Scientist-Practitioner Model**

Our central strength and most valuable asset rests in our members. The list of Technical Groups attests to the diverse subdisciplines in which we work. This diversity was highlighted by the range of counterparts we met in China, including representatives from the Astronaut Research and Training Center, Tsinghua University, the Chinese Ergonomics Society, the Usability Professionals Association-China, and academics in HF/E and in industrial/organizational psychology programs at the Nanjing University of Technology, East China Normal University, and the Nanjing University of Aeronautics and Astronautics.

Although our diversity is a great strength, addressing the needs of such a diverse Society is one of our greatest challenges. As a community of people who do applied work, we must nurture both sides of the scientist-practitioner model and foster connections between the academicians and researchers who formulate and test theories and the HF/E practitioners who translate this work in applied settings. Unfortunately, it seems that we have not always done a good job of facilitating these connections or of making our publications and our meetings relevant to the practice side of the scientist-practitioner model. This notion was supported by comments from practitioners in our HFES delegation, who questioned the value of Society membership and active participation in HFES and bemoaned the dearth of practice-oriented sessions at our annual meetings.

### **Human Factors/Ergonomics Training**

To be competitive in today's market, students in HF/E programs must have the edge provided by excellent training. Our visit to the labs at Tsinghua University, one of the most respected HF/E educational institutions in China, made salient the degree to which the quality of training determines the future of the discipline. Moreover, other nations look to U.S. academic programs to provide models, so we must have a mechanism to identify and reward the premier graduate programs in human factors/ergonomics. We are in the process of reviewing, revising, and revitalizing HFES accreditation of graduate programs in HF/E, and we plan to increase the visibility and value of this accreditation for students, faculty, and employers.

### **HFES as a Global Organization**

In China we met with representatives of the HFES chapter at Tsinghua, and I'm pleased to announce that we will soon have a new chapter in Shanghai. In April, the HFES Executive Council approved a new dues structure to facilitate chapter formation in developing nations. So we have taken steps toward increasing internationalization of the Society.

At this point, HFES has reached a critical juncture with respect to our position in the global community. We must decide whether we want to be a truly global organization and formulate our strategic plan based on that decision. On the one hand, HF/E work is ongoing or emerging across the world, and the knowledge and skills collectively within HFES are critically important and should be disseminated as widely as possible. As the premier professional human factors/ergonomics organization, we should be involved in this worldwide development of the field so that we can contribute to, as well as take advantage of, advances and new developments.

On the other hand, becoming a truly global organization may require departures from our standard modes of operation. "Going global" will entail an expanded focus and outreach to international HF/E societies, universities, and organizations. For example, the foci of our Membership Committee would extend to member development both in the United States and abroad, with activities such as identifying receptive groups for direct mail or e-mail promotions, promoting membership recommendations in all employment sectors, identifying ways to approach International Ergonomics Association member organizations and their individual members to promote electronic membership in emerging economies, and working with local and student chapter presidents to develop bylaws, handbooks, and other materials tailored for emerging economies. (Thanks to HFES Director of Member Services Carlos de Falla for these suggestions!) Other measures may be essential; for example, as a global organization, we should consider holding an annual meeting outside the United States.

How to increase our global presence will be a critical question for the future direction of HFES, and one of my goals will be to continue to increase our visibility as a society and as representatives of our discipline across the globe. Building on our assets and successes, we need to manage our direction, facilitate growth, and make *human factors/ergonomics* a term and a discipline that people around the world not only understand but also value. I'm excited about the year ahead and look forward to your input. Please contact me with questions, comments, or suggestions at [kmosier@sfsu.edu](mailto:kmosier@sfsu.edu).

## Public Policy on Distracted Driving

By William C. Howell, Chair, Government Relations Committee

Unless you've been in a coma the past couple of months, you're undoubtedly aware that the feds and the media have finally awakened to the serious and growing problem of driver distraction. In this special section, John Lee clearly documents this enlightenment in his report on the high-profile U.S. Department of Transportation (DOT) [Distracted Driving Summit](#). William Horrey provides an update on U.S. federal funding initiatives for surface transportation. Peter Hancock, reporting on the First International Conference on Driver Distraction and Inattention, reminds us that the concern isn't just a domestic one.

It's clear that the field of HF/E has contributed heavily and continues to play an important role in this area. What you probably don't know is the backstory on how HFES has figured into this picture. Although direct cause-effect relations are almost impossible to nail down in public policy developments, we've been actively promoting this issue ever since publication in *Human Factors* of the [special section on driver distraction](#) in 2004 (Vol. 46, No. 4, Winter 2004). I'll summarize a bit of the story here to illustrate how a relatively small organization like HFES can help advance policy and to update you on some post-DOT summit developments.

Given the considerable overlap between HF/E and psychology in work bearing on this issue, and that the American Psychological Association (APA) has a large government-relations staff with which HFES has collaborated in the past, we solicited their participation in elevating the policy world's attention to (and investment in addressing) the distraction problem. The APA assigned a well-connected lobbyist, former Senate Appropriations Committee senior staffer Michael Hall, to this effort, and his firm – in collaboration with APA/GR's Geoff Mumford and our own HFES Government Relations Committee – has been shaping and executing advocacy strategy ever since. Space doesn't permit a detailed account of these activities, but they have included working with key congressional offices and agencies on policy objectives that we considered both doable and potentially effective. Among them was pushing for release of a DOT action plan that was prepared in June but has remained on the shelf. It's possible that this nudging – along with some media coverage – had some bearing on DOT Secretary Ray LaHood's renewed interest in the issue and decision to hold the recent summit (from which an updated version of the plan may finally see daylight). Equally important has been the involvement in recent legislative activities.

At this writing, a number of House and Senate bills targeting the distraction problem have been introduced and are making their way through the legislative process. The most promising seems to be [Rockefeller/Lautenberg \(S.1938\)](#). Hearings were held in both the Senate (October 28) and House (October 29) that included testimony from HFES members, and questions were supplied in advance to committee members' offices for use in questioning Secretary LaHood and others. Although I can't go



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into detail here, it appears that some form of legislation is virtually certain to pass, and the HF/E and psychology perspectives and evidence will be well represented. But if public policy is the proverbial sausage, perhaps this little crack in the factory door will enable you to catch a glimpse of how it's made and how the ingredients from HF/E have been worked into this extremely important batch.

## The DOT Distracted Driving Summit: Highlights and HF/E Challenges

By John D. Lee

*"Sometimes, it takes a lot longer to find a letter on that keyboard than it does to get a cup of coffee."* – Comment from a truck driver describing the challenge of driving while typing (Richtel, 2009).

The issue of driver distraction has recently captured the attention of the media and, as reflected by the Distracted Driving Summit, the attention of policy makers. Convened in Washington, D.C., by U.S. Department of Transportation Secretary Ray LaHood, the summit brought together a highly diverse group to discuss the dangers of driver distraction, potential interventions, and the challenges of implementing those interventions. In response to Secretary LaHood's invitation, 300 attendees were present, and the proceedings, covered by major television networks, were [webcast](#) to an audience of more than 5,000.

The issue of driver distraction represents an critical opportunity for the human factors/ergonomics community to contribute to solving an important societal problem. Secretary LaHood called the gathering "probably the most important meeting in the history of the Department of Transportation." Whether this event will be seen by the general public as more important than other major transportation initiatives remains to be seen, but it may have lasting implications for those interested in driver distraction.

HF/E and applied psychology were well represented at the meeting, which also included diverse perspectives from legislators, as well as the editor-in-chief of *Seventeen* magazine, a panel of teen drivers, and the heads of such major trade associations as CTIA - The Wireless Association and the Consumer Electronics Association. Researchers from the Insurance Institute for Highway Safety and the National Safety Council described the broad literature regarding the challenge of changing driver behavior through information campaigns, noting, for example, that the campaign to promote seat belt use failed, with usage rates increasing only when required by law. Driver distraction may pose a similar challenge. Even though drivers believe that cell phone conversations and texting are distracting, they also admit to talking and texting while driving.

Speakers repeatedly noted that distraction represents a clear threat to driving safety, accounting for 5,870 deaths in the

United States in 2008 (NHTSA, 2009b). Although a great diversity of sources both within and outside the vehicle account for these deaths (e.g., eating, grooming, other motorists, and billboards), the summit focused on technology used in the vehicle – particularly cell phones, Internet connectivity, and texting. Three dimensions of demand have served as a simple way of describing driver distraction: *visual* (eyes off the road), *manual* (hands off the wheel), and *cognitive* (mind off the road). High demands on all three of these dimensions make texting intensely distracting.

Social pressures on teens and work-related pressures on adults lead to texting while driving. A recent survey showed that teens send an average of 2,899 messages a month, up 566% in the last two years (Covey, 2009). Several tragic crashes provide anecdotal evidence that teens text while driving. A recent naturalistic study of truck drivers showed that texting while driving increased the odds of a crash by approximately 23 times compared with driving without distraction (Hanowski, Olson, Hickman, & Bocanegra, 2009). Several simulator studies confirm this danger (e.g., Drews & Strayer, 2009). In my presentation, I described texting as a sort of perfect storm in which several factors converge to produce a particularly intense distraction: high visual, manual, and cognitive demand combined with an engaging and extended interaction.

Four senators – Schumer (D-NY), Klobuchar (D-MN), Pryor (D-AK), and Menendez (D-NJ) – spoke in support of a bill that will encourage states to pass laws against texting while driving. Such laws seemed to have broad support from the diverse audience at the meeting, as well as from 90% of the public. Other sources of distraction are more complex and contentious, such as limiting truck drivers' freedom to type messages as they drive (Richtel, 2009).

There are ample demonstrations of the intensity of distraction associated with texting, some provided by the HF/E community. A more subtle issue that remains to be resolved is the degree to which texting contributed to the 37,261 motor vehicle fatalities in the United States in 2008, relative to the fatalities associated with cell phone conversations and other distractions. Although intense, texting likely comprises shorter and less frequent interactions compared with cell phone conversations. The safety consequences of high-intensity, low-exposure distractions such as texting – relative to those of low-intensity, high-exposure distractions – was a point of substantial discussion at the summit and is an ongoing challenge for the human factors research community.

Assessing the safety consequences of various distractions represents a central challenge to the HF/E field: How are results from various modes of inquiry harmonized to guide design? In the case of cognitive distraction, a long history of theoretical and empirical findings shows that when people do two things at once, performance on one or both tends to suffer. The degree to which such dual-task performance is governed by various mechanisms, such as the competition between resources or a central bottleneck, is still debated (Levy, Pashler, & Boer, 2006; Wickens, 2002). The data regarding the effect on driving performance, however, are clear. At the summit, William J. Horrey, representing the HFES Surface Transportation Technical Group,



clearly summarized several meta-analyses of simulator and on-road studies that show a consistent impairment of drivers attributable to cognitive distraction. Such distraction slows reactions to events by an average of 130–250 ms (Caird, Willness, Steel, & Scialfa, 2008; Horrey & Wickens, 2006). Researchers seem uniform in their agreement that cognitive distraction can impair driver performance.

Researchers disagree about the magnitude of impairment related to cognitive demands relative to those associated with visual demands and the degree to which cognitive demands undermine driving safety. Summit presenter Thomas A. Dingus concisely articulated one perspective: “In driving, vision is king.” The HF/E community faces a challenge in assessing whether or not the relatively mild distraction of cell phone conversation cumulates over a large exposure to produce safety consequences comparable to those of texting.

The aggregate crash data, epidemiological studies, naturalistic driving studies, and simulator studies conflict. The percentage of drivers using cell phones at any given moment has increased substantially – from 3% in 2001 to 6% in 2005, where it has remained stable (NHTSA, 2009a). However, fatalities and crashes have decreased, suggesting little or no increased risk of cell phone use while driving. At the same time, seat belt use and graduated licensing have increased, which, in the absence of the increased cell phone use, might have substantially reduced fatalities.

In parallel with the increased use of cell phones and other in-vehicle technology, the United States has also fallen from first in the world in driving safety in 1993 to fourteenth today. Obviously, tracing the effect of cell phone-related distraction to trends in aggregate crash data is challenging.

Epidemiological studies offer a more precise indicator because they allow one to estimate how the odds of a crash depend on cell phone conversations. Two studies found similar results: an odds ratio of approximately four that did not differ for hands-free or hand-held phones (McEvoy et al., 2005; Redelmeier & Tibshirani, 1997). A study of a completely hands-free device – General Motors’ OnStar system – found an odds ratio that did not differ from undistracted driving (Young & Schreiner, 2009). Naturalistic data collected using an instrumentation suite that captures a comprehensive record of driver behavior over months of driving provides an even more precise indicator. Naturalistic data show an odds ratio of 1.3 with a confidence interval that includes 1.0 and, from a recent study of truck drivers, an odds ratio of 0.6 (Klauer, Dingus, Neale, Sudweeks, & Ramsey, 2006). Odds ratios below 1.0 suggest that cell phone conversations provide a protective effect, possibly because they help drivers fight drowsiness.

It is important to note that the odds ratios from naturalistic studies reflect the combined odds of crashes and near-crash events, because crashes alone are too rare to provide stable estimates. In addition, near-crash events associated with unresponsive drivers, such as those who fail to slow for a red light, are not considered. It is as challenging to generalize near-crash events to crashes as it is to generalize performance decrements in the simulator to diminished driving safety.

A recent article by Angell (2009) provides a clear explanation for some of these differences and challenges the HF/E

community to develop new ways to assess the influence of behavior on safety. She argues that just as the safety devices that improve performance in the simulator – such as early-warning brake lights (Shinar, 2000) – do not always improve safety on the road, distractions that undermine performance may not always diminish safety. At the summit, I presented a complementary perspective based on the idea of spare capacity. Cognitive distraction diminishes drivers’ spare capacity, but only in rare situations does this coincide with intense driving demands to lead to a crash. The proliferation of many sources of distraction may also diminish drivers’ spare capacity. As a greater proportion of drivers becomes distracted, the spare capacity of the traffic surrounding a distracted driver may also decline, undermining the ability of traffic to compensate for even mild impairments of distracted drivers. Generalizing results from the various modes of inquiry to assess the safety consequences of distraction confronts the HF/E community with a fundamental challenge.

At the summit, legislators repeatedly requested data to guide decisions, and some argued that naturalistic data are the “gold standard.” The complexity of the distraction problems and the limits of any mode of inquiry mean that no simple answer or single method will resolve the problem. The human factors/ergonomics community is far from presenting a harmonized view regarding distraction and driving safety. This challenge was reflected both in the legislators’ uncertainty about how broadly to define distraction and in the teen panelists’ uncertainty regarding which technologies distract.

Can HF/E professionals meet the challenges highlighted at the Distracted Driving Summit? We can hope that the ongoing challenge of distraction will help generate techniques that allow us to harmonize the results of controlled laboratory research, observational field studies, and epidemiological approaches.

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## Surface Transportation Authorization Act of 2009

*By William J. Horrey*

The current U.S. federal surface transportation authorization – the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, P.L. 109-59) – was set to expire on September 30, 2009. However, Congress enacted a one-month continuing resolution, and various committees are now working to extend the authorization into 2010 or beyond. This authorization and the Surface Transportation Authorization Act (STAA), described below, are critical in determining the nature of federal funding for surface transportation as well as shaping transportation policy.

Looking ahead, it will be in the collective interest of human factors/ergonomics professionals to monitor how the surface transportation authorization takes shape and how it will affect HF/E research opportunities. Although a comprehensive description of the proposed new authorization goes well beyond the scope of a *Bulletin* article, it is important to highlight a few points and provide some links to Web sites where more information can be found.

### SAFETEA-LU 2005

SAFETEA-LU was signed into law on August 10, 2005, with \$244.1 billion guaranteed funding for highways, highway safety, and public transportation. The authorization focused on several major challenges facing the transportation system, including improving safety, reducing congestion, protecting the environment, increasing connectivity, and improving freight efficiency. Of particular interest to the human factors/ergonomics

community, the Highway Safety Improvement Program was a core program, receiving \$5.1 billion in funding from 2006 through 2009. SAFETEA-LU also authorized nearly \$2.3 billion for research programs and initiatives, including surface transportation research, training and education, Bureau of Transportation Statistics, university transportation research, intelligent transportation systems (ITS) research, ITS deployment, and transportation technology innovation and demonstration.

SAFETEA-LU was funded largely by the Highway Trust Fund, which, in turn, is funded largely by federal motor fuel taxes (18.3 cents per gallon). Unfortunately, this fund was at risk of a shortfall; it lacked sufficient revenues to meet all commitments and current projections. Consequently, the Senate passed a bill to deposit an additional \$7 billion into the Highway Trust Fund to ensure adequate funds until the end of the fiscal year in September 2009.

Although the economic downturn has certainly played a role in the shortfall, in the era of increased fuel economy, reliance on a fuel tax is becoming obsolete. The question that remains unanswered is how best to replace it. This has spurred much debate.

### STAA 2009

The Committee on Transportation and Infrastructure, led by Chairman James L. Oberstar (D-MN) and Ranking Member John L. Mica (R-FL), is developing the next surface transportation authorization, which will shape policy and investment over the next six years. On June 18, the committee released the blueprint for the Surface Transportation Authorization Act (STAA) of 2009.

The STAA builds on the previous authorization and aims to address the growing needs of the nation's surface transportation system, including issues pertaining to maintenance needs, safety costs, congestion, and environmental impacts from transportation. More specifically, it is designed to achieve specific national objectives: Reduce highway fatalities and injuries, reduce congestion in major cities and the freight transportation network, provide transportation alternatives for commuters and travelers, reduce adverse environmental impact, and promote public health and livability of the nation's communities. The STAA calls for an investment of \$450 billion over the next six years, plus an additional \$50 billion for high-speed rail.

The committee's report identifies 108 distinct and current federal surface transportation programs administered by five different agencies (Federal Highway Administration, Federal Transit Administration, National Highway Traffic Safety Administration, Federal Motor Carrier Safety Administration, and Federal Railroad Administration). The STAA consolidates or terminates more than 75 programs. In the new authorization, highway safety represents one of the four core categories within highway funding. STAA aims to direct federal highway-safety investments to specific activities that are demonstrated to reduce fatalities and injuries while requiring state and local governments to establish transportation plans with specific performance standards that would be measured annually and periodically adjusted according to specific objectives.

Those interested can find additional information regarding the authorization at the following sites:

- Committee on Transportation and Infrastructure: <http://transportation.house.gov/>
- Surface Transportation Reauthorization Legislation in the 111th Congress: Summary of Selected Major Provisions: <http://www.itsa.org/itsa/files/pdf/ReauthMajorProvisions.pdf>
- News from the American Association of State Highway and Transportation Officials: <http://news.transportation.org/default.aspx>

*William J. Horrey is chair of the Surface Transportation Technical Group. He is a research scientist at the Liberty Mutual Research Institute for Safety in Hopkinton, MA.*

## Distraction Was the Attraction at Gothenburg Driving Conference

*By Peter A. Hancock*

The First International Conference on Driver Distraction and Inattention took place in late September at Chalmers University in Gothenburg, Sweden. Attendees from more than 20 countries were hosted by the SAFER Program (Vehicle and Traffic Safety Center at Chalmers) and the French National Institute for Transport and Safety Research (INRETS). The timely meeting brought into full focus the critical and growing concern over driver distraction.

Ranging in scope from the most recent innovations in digital billboards to traditional considerations for fatigue, boredom, and episodes of microsleep, the two-day event coursed widely over the landscape of current and emerging concerns. I had the honor to open the conference and spoke primarily on the various roles and intentions adopted by modern drivers, as well as the traps of hindsight bias in a general consideration of the theoretical and philosophical underpinnings of the distraction issue.

Michael A. Regan's insightful paper examined the central question of definition and proposed a potential consensus: "Driver distraction is a diversion of attention away from activities critical for safe driving toward a competing activity," which generated much lively discussion.

Regan was followed by John W. Senders, who, more than 40 years ago (with colleagues Kristofferson, Levison, Dietrich, and Ward), conducted what may be regarded as one of the seminal works on driver visual sampling strategy ("The attentional demand of automobile driving," *Highway Research Record*, 195, 15–33). John elaborated on this conception through reference to more modern queuing theory and showed how these conceptual formulations were directly relevant to the utilization of modern in-vehicle devices.

A highlight was Richard J. Hanowski's presentation on commercial truck drivers and their incidents of distraction. In an analogue of the now-famous 100-car study, Hanowski mesmerized and frightened his audience with video clips of truck drivers engaged in many in-cab actions that one hopes are not highly ubiquitous but suspects probably are.

The second day began with Michael Perel's sagacious plenary speech. Perel, now retired from the National Highway Traffic Safety Administration, gave his perspective on several decades of research and cited many modern examples, including President Obama's NASA cell-phone call and epidemiological distributions of differential laws concerning in-vehicle devices across the United States.

I very much enjoyed Jerry Wachtel's talk on digital billboards, which is certainly an area to watch carefully. Many other contributions followed from scientists from around the globe, including some loudly voiced opinions on the horrendous problems facing South Africa. Sound experimentation by Birrell and Young was ably presented and showed how first-class science crosses all international barriers.

The final plenary was given by Claes Tingvall, who addressed the laudable concept of Vision Zero, a Swedish National Policy initiative that seeks to attain the goal of zero fatalities and zero major injuries from traffic accidents in that nation. Whatever attitude one takes toward such an aspiration, Tingvall's presentation of the morally crucial notion was persuasive and inspiring. Speaking to the issue of distraction, he provided a fluent defense of the idea that road traffic accidents are a serious public health threat. I hope that this ethos can penetrate further into the worldwide community and that this conference was one step along this important path.

Thanks are very much due to all the hosts and organizers of the conference. Interested individuals who would like to explore this issue in more detail are directed to *Driver Distraction: Theory, Effects, and Mitigation* (Regan, Lee, & Young, CRC Press, 2008). A text from the conference is planned, and a follow-up meeting is anticipated.

*Peter A. Hancock is Provost Distinguished Research Professor and Pegasus Professor in the Department of Psychology and Institute for Simulation and Training at the University of Central Florida. He is an HFES Fellow and past president.*

### SHORT COURSES

**University of North Carolina at Chapel Hill**, School of Public Health, P.O. Box 16248, Chapel Hill, NC, 27516-6248, 888/235-3320. [osherc@unc.edu](mailto:osherc@unc.edu), <http://osherc.sph.unc.edu/ce.htm>.

- **31st Annual Occupational Safety and Health Update**, December 3-4, 2009, Chapel Hill, NC.
- **30th Annual Occupational Safety and Health Winter Institute**, February 14-19, 2010, TradeWinds Island Resorts, St. Pete Beach, FL.



## ELECTIONS

# Terms Begin for New Officers and Executive Council Members

HFES welcomes the newly elected officers and Executive Council members, whose terms began on October 19.

### President-Elect

**Anthony D. Andre**, *Founding Principal, Interface Analysis Associates, and Adjunct Professor, Human Factors and Ergonomics Program, San Jose State University*

### Secretary-Treasurer-Elect

**Ronald G. Shapiro**, *Independent Consultant, Providence, Rhode Island*

### Executive Council At-Large Members

**John D. Lee**, *Professor, Department of Industrial and Systems Engineering, University of Wisconsin*

**Marc L. Resnick**, *Associate Professor, Industrial and Systems Engineering; Director, Human Factors and Ergonomics Laboratory; and Director, Institute for Technology Innovation, Parno Global Entrepreneurship Center, Florida International University; and president and senior consultant, Performance Solutions.*

## STUDENT VIEWS

# Student to Intern and Back Again: The Value of Internships

*By Felix Portnoy*

My first encounter with industry as a human factors/ergonomics professional was in September 2005, when I found myself holding my head between my knees while breathing heavily to keep from passing out. . . . But let's back up a bit.

My former academic adviser, Paul Milgram at the University of Toronto, had arranged for his students to visit the operating room at Toronto Western Hospital. The intention was that we would learn about the general practice of anesthesiology from the HF/E perspective, not just by reading about it but by actually observing anesthesiologists in action. My first trip to the OR was very exciting, to say the least.

I got to wear scrubs and protective gear, and then I headed off to the OR. While waiting for the patient, I chatted with Dr. McCartney, one of the anesthesiologists, and inquired about the various monitor displays that he was using. Suddenly, they rolled in the patient; he was in his late 20s, about my age at that time. During the operation I tried to stay out of the way and simply observe the procedure, when I realized that the poor man was having surgery for a tumor in his prostate. I watched the

surgeon as he operated and gradually felt the floor begin to spin under me. Determined not to be the one who faints in the middle of the OR, I went out into the corridor. In a desperate attempt to remain conscious, I crouched and held my head while ignoring the puzzled looks of the passing staff. I recognized then the rare opportunity that I had been given, so I decided to go back into the OR, and I ended up returning many times after that.

Since that experience, I have often wondered what would have happened had I not returned to the OR that day. Yes, I probably would have found a different research topic, but I have serious doubts whether it would have been as exciting and beneficial as the work I did that led to the development of a display aid for anesthesiologists to better detect peripheral nerves using ultrasound machines. Following my positive experience in the OR, but before diving into my PhD, I decided to do an internship with a large private corporation to explore what other research topics I had been missing.

Although the common notion is that knowledge is generated within the confines of the academic research lab and then applied in industry, a more accurate statement is that research questions in HF/E are generated in industry and *then* transferred to the university to be fully resolved. One of the ways to maintain a strong link between academia and industry, and to better prepare a student for a professional career, is through internships. Unfortunately, internship positions are hard to find, and many are not widely announced. Many companies have a need for a talented temporary workforce, yet this demand is often not communicated well to the student population.

To my knowledge, few universities support or provide the opportunity to gain practical industry experience during graduate-level studies. For example, I had to discontinue my course of study and later reapply for graduate school after I accepted an internship position in industry. And, even when a company is successful in promoting its internship opportunity, some academic programs and/or advisers may be reluctant to facilitate an internship, fearing that it may distract the student from completing his or her work or even result in the student dropping out of school altogether.

I would argue that internship experiences are likely to promote one's research and academic interests rather than inhibit them. It was my experience in the OR that led me to delve into perceptual research, and it was my experience as an intern working in the petrochemical and Internet industries that led me to pursue a PhD in the fascinating field of automation and human-computer interaction.

If you are teaching in academia, ask yourself what you have done to encourage your students' curiosity about applied issues and contexts. Have you taken them into the field to observe real-world systems or to shadow subject matter experts? If you are a practitioner, have you considered the benefits of hiring motivated students to boost the productivity and creativity of your business? Have you contacted your alma mater to seek potential candidates for an internship?

Fortunately, HFES has undertaken several recent initiatives to increase students' awareness of internship opportunities. First, the Education and Training Committee has updated the [Educational Resources](#) section of the HFES Web site to include information for students who are interested in pursuing careers in HF/E. In

## STUDENT VIEWS, CONT.

addition, a new list of [internship opportunities](#) serves as a one-stop information resource for perennial internships across private industry and government agencies. Finally, HFES recently updated its Career Center policy to allow free postings of internship positions, which should encourage more companies to post their internship openings.

I hope that with this greater accessibility to internship information provided by HFES, students will be encouraged to participate in internship programs that will develop and enhance their skills. More important, it will allow us not only to bridge the gap between academia and industry but also to produce better scholars, leading our discipline to higher ground.

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## MEMBERSHIP

### Time to Renew Your Membership!

In a challenging economy, it pays to stay connected to new developments in the field and your network of colleagues. Renewal statements for your 2010 HFES membership are in the mail. Please renew today to help HFES conserve resources. **Save \$15 – renew by January 31, 2010.**

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#### Upcoming Changes to *Directory & Yearbook*

**IMPORTANT:** In another resource-conservation measure, in next year's printed membership directory, **HFES will include only the names, affiliations, and business contact information of members who have renewed by March 7, 2010. Because of this change, the directory will be mailed in June 2010.** (In the past, information was included for those who had not paid their dues as of January 31, and the directory was generally mailed in April.)

In addition, **only one contact address will appear in the print directory.** The address printed in the directory will be your business or school address unless you list only a home address in your member record. This makes it especially im-

portant that you log in at [hfes.org](http://www.hfes.org) today to renew your membership and update your contact information.

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Membership renewal is easy. Either fill out and return the printed renewal form, or renew online at <http://www.hfes.org> by logging in with your username and password. (If you've misplaced this information, simply e-mail the Member Services Department at [membership@hfes.org](mailto:membership@hfes.org) or call 310/394-1811.) You can also join or renew Technical Groups, change your delivery preference (online, print, or both) for *Human Factors* or *Ergonomics in Design*, subscribe to the *Journal of Cognitive Engineering and Decision Making*, and order publications at special member prices. All online transactions are secure, and you can download and print a receipt.

**Be sure to update the information in your member record so other members can find you in the online or print *Directory & Yearbook*.** (You'll always find the most up-to-date information in the online directory.)

HFES membership is one of the best values available to HF/E professionals. Continue your participation in 2010 by renewing today, and encourage your colleagues to join.

## CALL FOR PAPERS

The Usability Professionals' Association's *UX Magazine* is seeking proposals for articles on the theme of usable accessibility – inclusion, access, and usability. Articles should take a broad view of this theme, including barriers to information technology based on disability, literacy, availability of technology (including networks and even electricity), and other geographical, financial, social, and cultural barriers. Articles should be practical – stories about research methods, case studies, and design solutions that overcome these barriers – or articles that look forward to solutions.

Proposals are due *December 1, 2009*; articles are due *February 1, 2010*; and the issue will be published in May 2010. Articles are typically between 750 and 2,500 words and should be written in an active, personal voice. For more information, go to [http://www.usabilityprofessionals.org/upa\\_publications/user\\_experience/editorial/](http://www.usabilityprofessionals.org/upa_publications/user_experience/editorial/).

# Bulletin

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