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Design of the Sirius Radio Interface: An Interview with Stephen Wilcox

By Pamela Savage-Knepshield, Bulletin Features Editor

Responding to a request from HFES for human factors/ergonomics success stories that the Society can use to promote the field, HFES Member Stephen Wilcox wrote to tell us that his firm, Design Science, had assisted in the redesign of the Sirius satellite radio user interface.

Considering that Sirius now has four million subscribers and is not the only such service available, a usable interface is a critical element in the company's success. A quick search on the Internet attests to the ease of use of the Sirius user interface (UI). User reviews include comments such as "the remote works great," "a breeze to install," "awesome little receiver," and "easy to set up."

We asked Steve to describe his firm's experiences with this interface redesign project, including any challenges and lessons learned he could share with HFES members.

Q: From its inception, a Sirius product development goal was to design an easy-to-use interface. Can you briefly walk us through the Sirius UI design process?

A: We developed the interfaces for two Sirius products that have been finalized so far – both on the Xact Communication Web site (<http://www.xactcommunication.com>): ReGo, a combination MP3 player and satellite radio with a flash memory; and Visor, a small, portable satellite radio with a one-line display. Our client was US Electronics, the company that designs and distributes the Sirius devices.

The design process involved the following steps:

- Examination and review of existing product interfaces.
- Creation of the navigational structure in Visio.
- Creation of alternative screens.
- Creation of a working prototype in Macromedia Director.
- Usability testing of the prototype.
- Refinement of the prototype based on the testing results and creation of usability recommendations for hardware.
- Delivery of the final prototype and documentation to the software team.

Q: How did the UI design fit into the overall product design process?

A: There was a proposed hardware design when they came to

us, which we critiqued and made recommendations for. While the hardware design and the software design were being finalized, we designed the user interface. Thus, we worked with an industrial design consultant, Pollen Design; a software team from Korea; a manufacturer in China; and an engineering and marketing team of our client's in New York, as well as the Sirius folks.

Q: What role did your design firm play in the Sirius design process?

A: We designed the graphical user interface and made recommendations for usability of the hardware.

Q: What design tools and techniques did you use? What worked well and what did not? What would you do differently?

A: We used Visio to communicate the navigation, Illustrator and Photoshop for screen design, Director for prototyping, and our own proprietary multichannel video system to record usability testing. We've been doing GUI design for many years, which means dozens of projects. Thus, at this point it's not that common, for example, for us to learn something unique that causes us to do things differently, although, of course, it sometimes happens.

Q: Which design constraints posed the greatest challenge to your team? How did you resolve issues that arose from these constraints?

A: The limitation of a one-line display for Visor and a relatively small display for ReGo but the need to include a number of functions. Also, previous Sirius devices had some bad conventions that we didn't want to directly violate but which needed to be improved. We relied on solid principles of human factors and usability testing.

Q: Did your design team face any challenges in its role as an "outsider" in the design process? If so, what were they and how did you overcome them?

A: One challenge was that the hardware design was largely frozen when we got involved. We had to work with it and couldn't change too much. Generally, though, modern communication tools allow us to work as part of an integrated team despite a large geographic distribution of the team members.

Q: How would you respond to those who say, "Our budget is

Design of the Sirius Radio Interface...

(continued from page 1)

too tight, there is not enough time, and we know what our users want, so why bother including them in the design process?"

A: People who say that are not likely clients for us. We restrict our practice to clients who understand that it doesn't make sense to rush to market with the wrong product.

Q: Based on lessons learned, what advice would you give to the human factors/ergonomics community?

A: One thing we've learned over the years is that it is crucial to be able to work effectively with hardware and software engineers and with industrial designers. This means having a deep respect for their skills, being able to speak their language rather than ours, and being able to nest our activities within a larger program while generally staying off the critical path. The human factors profession has been held back in the product development world by being way too precious – failing to adjust to the needs of others.

Stephen Wilcox, an HFES member since 1984, is the founder and principal at Design Science, a product design research consulting firm that focuses on optimizing the human interface of products. He has a Ph.D. in experimental psychology from Pennsylvania State University and has been working in product design for more than 20 years. Steve chairs the Human Factors Professional Interest Section of the Industrial Designers Society of America (IDSA) and is the only social scientist ever to be inducted into the IDSA Academy of Fellows. ☒

MEMBERSHIP

Benefits of Student Membership

All members are encouraged to tell students with an interest in human factors/ergonomics about the value of an HFES student membership. Benefits for Student Members include the following:

- reduced membership fees and complimentary subscriptions to *Human Factors*, *Ergonomics in Design*, the *HFES Bulletin*, and the *HFES Directory and Yearbook*

- member discounts on HFES books, proceedings, and technical standards
- subscription to the HFES members-only Career Center, which includes confidential résumé posting and job searching
- Transitional Associate membership for up to two years after graduation – a 50% discount off the regular Associate member dues
- access to membership in 22 technical groups, which feature newsletters, annual meeting technical program tracks, and networking opportunities
- opportunities for networking through student chapters and enrollment in the Student List Server


Additionally, the HFES annual meeting offers many excellent opportunities to network and learn about the HF/E discipline. Unique benefits at the HFES annual meeting include the following:

- student awards (the Alphonse Chapanis Best Student Paper Award and the Student Member with Honors)
- reduced registration fees
- student volunteer opportunities with registration fee reimbursed
- discounts on workshops
- Student Forum technical program sessions
- Student Career and Professional Development Day
- Student Reception
- On-Site Career Center
- networking with peers and mentors

Help a friend or student advance his or her professional career and strengthen the HF/E community by recommending membership in the Human Factors and Ergonomics Society. Applications are available at <http://hfes.org> or by contacting Member Services at membership@hfes.org or 310/394-1811.

HFES Bulletin at <http://hfes.org>

Some members may have received copies of the February issue of the *HFES Bulletin* late because of problems with the U.S. Postal Service. Remember that in addition to receiving a copy of the *Bulletin* in the mail, members may also access the *Bulletin* on the HFES Web site at <http://www.hfes.org/web/BulletinArchive.html>. Issues are usually posted by the first of each month. ☒



Bulletin

Volume 49, Number 4 April 2006

The *HFES Bulletin* (ISSN 1527-3660) is published 11 times a year by the Human Factors and Ergonomics Society, 1124 Montana Ave., Suite B, Santa Monica, CA 90403 USA, <http://hfes.org>. Address inquiries and address changes to HFES, P.O. Box 1369, Santa Monica, CA 90406-1369 USA, 310/394-1811, fax 310/394-2410, <http://hfes.org>.

Copyright © 2006 by the Human Factors and Ergonomics Society. Printed in the USA. The *HFES Bulletin* is provided to members of the Society (\$10 of annual dues covers member subscriptions); nonmembers may subscribe for \$40/year. Periodicals postage paid at Santa Monica, CA, and additional mailing offices. USPS #018-206.



Plan to Attend the HFES 50th Annual Meeting

<http://www.hfes.org/web/HFESMeetings/06annualmeeting.html>

Call for Student Volunteers

The Annual Meeting Host Committee invites full-time students to serve as student volunteers for the HFES 50th Annual Meeting in San Francisco, October 16–20, 2006. Student volunteers perform many essential functions and help to ensure that the meeting runs smoothly.

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

- Contact information: full name and e-mail address
- Your department, university, and current course load (must be full-time according to your university's definition)
- 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 via e-mail at carlos@hfes.org.

Help is needed in the following key areas:

- Workshops (October 16)
- On-Site Job Fair at HFES Career Center (October 16–19)
- Daily on-site newsletter (October 16–18)
- Poster sessions (October 17–19)
- Technical tours (October 17–19)
- HFES Central (October 16–19)
- Internet stations (October 16–20)

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 from mid-June through September 25.

You must be preregistered for the annual meeting to serve as a student volunteer. First preference will be given to HFES Student Affiliate members. 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. NOTE: Volunteers must arrive 30 minutes before their scheduled time of service, or the assignment will be given to another volunteer. 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.

Book Annual Meeting Reservations Early

HFES members are encouraged to make hotel reservations early for the 50th Annual Meeting in San Francisco. A number of other conferences will be held in the city the week of the annual

meeting (October 16–20, 2006), so reservations should be made earlier than normal this year to guarantee a room at the annual meeting hotel, the Hilton San Francisco.

Go to http://www.hilton.com/en/hil/groups/private_groups/sfjfbhb_hfa/index.jhtml to reserve your room at the special HFES rate of \$195/night.

Annual Meeting Sponsorship Opportunities

The HFES 50th Annual Meeting is an opportunity to promote your organization's products and services. Members are encouraged to pass this information to their employers and other interested parties.

Increased Visibility

The following sponsorship opportunities are available. 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.

Plenary Session: \$5,000

One sponsorship is available. The Opening Plenary Session, Tuesday, October 17, features the keynote address and presidential address and recognition of HFES awardees and newly elected Fellows. Special 50th Annual Meeting commemorations are also anticipated. The sponsor will be acknowledged from the podium, and signs bearing the sponsor's name and logo will be placed at the door.

Message Center/E-Mail Stations: \$5,000

One sponsorship is available. Simply provide a screensaver with your company logo for display on monitors at the free e-mail stations. This heavily utilized service is an excellent way to increase your visibility. Also includes signage; logo mousepads will be included if supplied by the sponsor (6–10 stations).

Coffee Breaks: \$2,500

Eight sponsorships are available. Morning and afternoon coffee and beverage breaks are offered in the exhibit hall and other locations. Signs bearing the sponsor's name and logo will be placed in the area. In addition, the sponsor's representatives are encouraged to meet and greet attendees in the coffee break areas.

How to Reserve a Sponsorship

If you wish to reserve a sponsorship, please contact Dick Bublitz, 800/485-5029, 818/992-0366; dick-rcb@juno.com. **A \$500 deposit is required at the time sponsorships are reserved; the balance is due August 25, 2006.** 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.



What's New at *Human Factors*?

By Nancy J. Cooke, Editor

By the time you see this article, our new editorial team, which includes six associate editors and an editorial board of nearly 60 members, will have completed just about 1.5 years of its term. The time has flown by, as it often does when you are having so much fun!

The editorial team has been doing an amazing job. We have collectively reduced the review cycle to a mean of 60 days, a goal that was set by Past Editor Eduardo Salas (see the September 2003 *HFES Bulletin*). It is probably no coincidence that since that 2003 article, we have also moved to electronic access to the journal and electronic submission. But I suspect that there is more to this success than the new automation. We are all working very hard. I continue to be awed by the quality and timeliness of the reviews, the scholarship of the submissions, and the determination, responsiveness, and patience of the authors. Together we are publishing a journal that reflects the scientific rigor, practical innovation, and quality contributions of our field.

You may have noticed some recent changes. Wayne Gray recently stepped down from his duties as associate editor, and we thank him for his years of excellent work in this capacity. Though we are sad to lose Wayne from our team, we are pleased that Deborah Boehm-Davis from George Mason University and Rob Radwin from the University of Wisconsin have joined us as new associate editors. We also welcome several new editorial board members: Robert Bolia, Michael Jorgensen, David Kaber, Mark Lee, Esa Rantanen, and Valerie Shalin.

There have also been some procedural changes regarding submissions and the review process. The most apparent change is, again, our new electronic system, Manuscript Central, which processes submissions and reviews and sends out those annoying reminders. We continue to tweak aspects of the interface that we find troubling but attribute our speedy turnaround time, at least in part, to Manuscript Central.

In addition, now when you submit a paper, we request that you provide a 250-word structured abstract. Structured abstracts contain labeled sections (objective, background, method, results, conclusion, and application) that we believe will make your paper more accessible to a broad set of readers. You can look at an example of a structured abstract on the HFES Web site in the Instructions for Authors (<http://www.hfes.org/Web/PubPages/hfauthorinfo.html>).

In the same place, you can find new length requirements for manuscripts, which specify word count and guidelines for tables/figures and references in an attempt to reduce ambiguity on this issue. Please pay attention to the different types of submissions (research report, regular article, review article) and the specific length restrictions associated with each.

We are providing additional options regarding blind review. Although the default is for the reviewer to be blind to the author but the author identified to the reviewer, we provide an option for authors who wish to conceal their identities. Instructions for this option are on the Web. We also give reviewers an opportunity to

reveal their identities if they wish. Most of these changes are in response to concerns raised by authors and reviewers.

We continue to explore ideas for increasing the impact of the journal, recognizing that this is a strategic objective of HFES and a very important consideration for academics. We anticipate that the recent changes implemented regarding article length and structured abstracts, as well as the faster turnaround from submission to decision, should help in this regard.

Finally, we are reviewing ideas for the 50th anniversary of the journal in 2008. There are tentative plans for a "best of *Human Factors*" book and possibly a 2008 Annual Meeting panel of past editors. Other ideas are welcome. New guidelines for special sections are also forthcoming.

Looking back, it has been a very busy and productive year and a half for the journal. We will continue to push forward to make *Human Factors* a stellar vehicle for the human factors and ergonomics message. ☒

OUTREACH

"HF/E Breaking News" E-Mail Discussion Forum

By Tony Brown, HFES Media Relations Committee Chair

Are you interested in sharing your breaking news? Do you want to hear about the latest news by e-mail? Submit a story idea for television broadcast?

The HFES Media Relations Committee has established an e-mail discussion forum to exchange information on breaking news within the field. We are trying to uncover work that might be of interest to local TV news viewers. Our goal is to bring together the science of HF/E with its practical application to try to increase our media coverage (TV, print, radio). We need you to contribute your thoughts and ideas.

Information you post might later appear in the spotlight news area of the HFES home page or in the "In the News" department of either the *Bulletin* or *Ergonomics in Design*, or it may be used to develop a story idea that HFES can submit for the Discoveries and Breakthroughs Inside Science program.

If interested, you can subscribe to the group by sending e-mail to hf-breaking-news-subscribe@smartgroups.com. Once you are subscribed, you can post information by sending an e-mail to hf-breaking-news@smartgroups.com. For more information or to send questions to the moderators (Tony Brown and Eugenia Kolasinski), type a message to hf-breaking-news-owner@smartgroups.com.

Please observe the customary rules of etiquette when posting your message. In addition, if you wish to post an article, story, or clip from a Web site or electronic or print publication of any kind, you must first obtain the permission of the copyright owner of that information and provide the proper acknowledgment of the source in your posting. ☒

David Meister

David Meister died on March 23 of the complications of congestive heart failure. He was 81. A renowned, internationally recognized expert in the field of human factors and ergonomics, he was a guest scientist of foreign governments and an author of 16 books as well as volumes of papers and articles on the subject of human interaction with technology. He was a past president, Executive Council member, and Fellow of the Human Factors and Ergonomics Society; a Fellow of the International Ergonomics Association; and president and a director of the HFES San Diego Chapter. In addition, Meister served as newsletter editor for both the Test and Evaluation and Systems Development Technical Groups, as well as holding other positions within HFES.

Born in New York City, Meister received his bachelor of arts degree from New York University. He held a doctorate from the University of Kansas at Lawrence and master's degrees from the University of Iowa and San Diego State University. He served in the U.S. Army during World War II, receiving an honorable discharge in 1946. Upon his retirement from government service at age 65, David went back to college and earned a master's degree in American history, his second love.

David Meister was the conscience of our human factors profession. He kept challenging us to develop the profession to be independent of its origins: psychology and industrial engineering. He wanted us to recognize its uniqueness. Through his books, papers, articles, lectures, and discussion panels, David always advocated the development of human factors concepts with a view toward a system of principles and theoretical constructs. David's never-ending goal was to have his colleagues address professional issues beyond their day-to-day projects – that is, the issues that would help human factors and ergonomics grow as a profession.

He is survived by his wife, Mary Ann; his sister, Beatrice Federman of White Plains, New York; one niece; and two nephews. He was a generous contributor to the Jewish community and to animal welfare and human rights organizations. Memorial contributions may be sent to the Jewish Community Foundation, 4950 Murphy Canyon Rd., San Diego, CA 92123; the Jewish Community Center Library 4126 Executive Dr., San Diego, CA 92121; and the American Heart Association, 800/242-8721.

David's presentations and lectures at professional meetings always attracted overflow attendance. Called by his colleagues "a giant in the field," "a valued mentor," and "instrumental in moving the field of human factors and system design forward," Meister will be remembered by friends and colleagues as an outstanding contributor to the human factors and ergonomics profession. We'll miss David. ☉

IEA Hosts Contest for New Logo Design

As part of the celebration of the 50th anniversary of the decision to found the International Ergonomics Association (IEA), the organization is organizing a contest to design a new logo. All submissions will be presented at a special event at the IEA 2006 Congress in Maastricht, Netherlands, in July.

The new logo should reflect the worldwide nature of the IEA and its presence on all continents. Submissions should include the letters "IEA," and one color in addition to black and white is allowed in the design. Additionally, submitters must agree to transfer all copyrights for the design to IEA. Each design proposal should have two versions: one with and one without the words "International Ergonomics Association."

Send your submissions to IEA Secretary General Sebastiano Bagnara at bagnara@unisi.it by *June 1, 2006*. The final choice of the logo will be taken by popular ballot of all attendees at the IEA 2006 Congress. The winner will be awarded a prize of \$500, and his/her name and photo will be posted on the IEA Web site for the next year. ☉

LETTERS

This letter was received by President Marvin J. Dainoff in regard to his article in the February HFES Bulletin.

This is to compliment you on your excellent and timely article, "On the Cusp of a Crisis – Connecting the Dots," in the February 2006 issue of the *HFES Bulletin*. The central issues that you addressed – cuts in research funding, lack of student interest in science, poor educational preparation—supported by the worrisome indicators you presented, appear to be reflective of a long-term cultural trend in this country. The data suggest that our society does not value inquiry, understanding, and innovation to the extent that it once did and is now more consumed by ideology, fear, and conformity.

Your article prompted me to reread the article, "Opportunities in 1984," that I wrote at the start of my HFES presidency (December 1983 *HFS Bulletin*). I was shocked to discover how some of my concerns of 22 years ago have become front-page news today. My perspective, then, was to heed the warnings of George Orwell from his novel *1984* and to suggest what our profession might do to counter the worst possibilities that he foresaw in a society.

As a consequence of reading your observations and rereading mine of two decades ago, I am more convinced than ever that the problem you addressed is fundamental and pervasive. As individuals, professionals, and HFES members, we can push for science, but what will really make a difference is leaders who understand and value science and who can and will act accordingly.

With best regards,
Douglas H. Harris
Chairman and Principal Scientist, Anacapa Sciences, Inc. ☉

What Are You Worth? How to Discover Your Salary Range

By *Melanie Diez, Student Views Editor*

Congratulations! You are about to graduate and start earning a paycheck. You've read all the books on interviewing and salary negotiations and realized the importance of having a salary range in mind when you walk into your interview. But how can students with little to no real-world experience discover what they are worth? The trick is to approach the problem from many different angles, using multiple sources to find a range. Here are four strategies you can use to help triangulate on a realistic yet rewarding salary.

Salary surveys. One of the best ways to discover what people in our field are paid is through a salary survey. The HFES 2005 Salary and Compensation Survey (available for purchase at <http://hfes.org>) is a great start. This survey provides mean salaries by region, discipline, degree, and experience.

Because human factors is a multidisciplinary field, you should supplement the HFES survey with other surveys specific to your particular domain. For instance, the American Psychological Association publishes a salary survey, as does the Usability Professionals Association. If you find that low numbers of respondents in the "0-1 Year of Experience" category render the numbers unreliable, you can always extrapolate backwards from more experienced categories by assuming an approximate 5% raise per year. It's not a perfect solution, but it will provide you with what you need: a ballpark figure.

Job listings. The second approach to determining your value is to see what employers are paying for people with your skills right now. The big job boards (Monster.com, CareerBuilder.com, and USAjobs.gov) are excellent resources. Most employers do not include salary details in the job listing, but some do. By monitoring the salaries that do appear, you can deduce the going rates for different skill sets, educational backgrounds, and years of experience. (Keep in mind that these figures will be on the low end, so adjust accordingly.) The key is to be diligent in your research. Checking the boards once or twice won't give you much information, but reviewing them every few days for several months will paint a very informative picture of the salary landscape. For an even easier time, register for the automated job scout features on these boards so you can receive periodic e-mails about new jobs matching your search criteria.

General Schedule (GS) and Locality Pay tables. The third approach to help bracket the upper and lower ends of your salary range is to ask Uncle Sam. Even if you aren't considering becoming a federal employee, the GS pay scale can give you a nice ballpark figure for your experience and education. Visit <http://www.opm.gov> to find salary ranges for various GS levels in your locality. Remember that industry salaries are often higher than equivalent government positions.

Talk to friends. If you have friends in a field of interest and feel comfortable broaching the subject with them, ask them what somebody with your qualifications might expect to earn. Even if

they are not comfortable discussing salary, they might have some hard-earned wisdom concerning benefits packages and other negotiable items you might not have considered. Professors are great resources as well because they may keep in touch with former students and can offer guidance on a suggested salary range based on what similarly trained graduates were offered.

Finally, don't sell yourself short after doing all that research. Once you've defined your target range, ask for a little more during the salary negotiations. Remember, your salary range is where you want to *end* your negotiations, not start them. Chances are, the employer will try to negotiate down from your stated salary requirements. If you start with a slightly higher value, you maximize the likelihood of settling on a final salary within your target range and getting paid what you are worth. ☒

NEWS

Senate Confirms OSHA Leader

The United States Senate confirmed Edwin G. Foulke, Jr., as assistant secretary of labor for occupational safety and health in March. President George W. Bush had nominated Foulke in September to head the Occupational Safety and Health Administration (OSHA).

Prior to his nomination, Foulke was a partner with a law firm and chaired the firm's OSHA practice group. He served on the Occupational Safety and Health Review Commission from 1990 to 1995, chairing the commission from March 1990 through February 1994. The commission is an independent federal adjudicatory agency that renders decisions in job safety and health disputes arising from inspections conducted by OSHA.

As head of OSHA, Foulke will be responsible for administering a comprehensive program to ensure the safety and health of America's workers by setting and enforcing standards; providing training, outreach and education; and establishing partnerships and alliances that encourage continual improvement in workplace safety and health.

Source: OSHA Web site, http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=NEWS_RELEASES&p_id=12077.

New OSHA eTool

In March, the Occupational Health and Safety Administration unveiled a new ergonomics eTool for the printing industry. The Ergonomics in the Printing Industry eTool is a resource to help workers and employers avoid ergonomic-related injuries by making simple ergonomic improvements. The OSHA eTool focuses on workers involved in printing processes who may be at risk of developing musculoskeletal disorders from workplace activities that may require them to work outside their physical capacities (e.g., lifting heavy items or lifting too often, or working in awkward body postures). For more information about the eTool, go to <http://www.osha.gov>. ☒

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The Department of Industrial and Systems Engineering at the University at Buffalo, The State University of New York, is seeking applicants for up to two positions in the area of Human Factors Engineering, for Assistant, Associate, or Full Professor appointments. Appointments will be made for January, 2007. Successful applicants will have demonstrated research capabilities in human factors engineering. Position responsibilities include a mix of funded research activities, graduate and undergraduate teaching, and service activities. Applicants should have an earned Ph.D. at the time of appointment in Industrial and Systems Engineering or a related field. The ISE department at UB offers B.S., M.S., M.Eng., Ph.D., and combined degrees with concentrations in human factors as well as production systems, operations research, and production management, and has an ABET accredited undergraduate program in IE. ISE enrolls over one hundred graduate students and has a long history of scholarship and education in human factors.

UB is an AAU research university and one of the nation's premier centers for academic excellence, enrolling over 27000 students in 300+ degree programs. UB is the State University of New York's most comprehensive and research-intensive university. *Please send a CV and letter of interest to Chair, ISE Search Committee, 438 Bell Hall, University at Buffalo, Amherst, NY 14260. Direct questions to Prof. Ann Bisantz at 716-645-2357, bisantz@buffalo.edu or see www.ie.buffalo.edu.*

Applications from women and other protected groups are actively encouraged. The University at Buffalo is an Equal Opportunity Employer/Recruiter.

UNIVERSITY OF WATERLOO – Systems Design Engineering:

Applications are invited for a tenure-track faculty position at the rank of Assistant or Associate Professor. The candidates should possess a Ph.D. in engineering and be able to demonstrate strong abilities in both teaching and research. Candidates should be able to teach courses in the areas of human factors, cognitive ergonomics, human-computer interaction, or user-centred design and evaluation. Desirable research areas include, but are not strictly limited to, human-computer interface design, cognitive engineering, situation awareness, human-automation interaction and human performance and safety.

Our philosophy is to take a rigorous and multidisciplinary approach to designing human performance support systems based on sound human factors theory and confirmed by performance evaluation. The research group applies this philosophy to a wide range of domains ranging over healthcare, aviation, robotics, process control and others.

The successful candidate will be expected to teach both undergraduate and graduate courses, supervise graduate students, and maintain and further develop their research program. Industrial experience and eligibility for registra-

tion with the Professional Engineers of Ontario is highly desirable. Additional information on the University and the Department and its activities can be found at <http://www.uwaterloo.ca/>.

Applications should be forwarded to Mrs. V. Grieve, Administrative Assistant, Department of Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1, or by email to vgrieve@engmail.uwaterloo.ca. Please format your CV in accordance with the instructions provided at <http://sydewwww.uwaterloo.ca/>. Applicants should also include a statement of how their research and teaching goals could contribute to the philosophy of the research group. Applications will be reviewed starting on June 1, 2006.

All qualified candidates are encouraged to apply; however Canadian Citizens and Permanent Residents will be given priority. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, Native peoples, and persons with disabilities. This appointment is subject to the availability of funds, with a desired starting date of September 1, 2006.

LATEST FROM HFES:

Reviews of Human Factors and Ergonomics, Volume 1

Edited by
Raymond S. Nickerson

The Human Factors and Ergonomics Society is proud to announce the publication of the first volume in a new annual series, *Reviews of Human Factors and Ergonomics*. The series is intended to condense human factors/ergonomics knowledge in specific subject areas into a form that will provide HF/E professionals with a comprehensive understanding of each topic – its current state, important new research findings and technology, and current issues and research needs. In addition, the series seeks to inform specialists outside the HF/E community and laypersons who have an interest in the problem areas addressed.

A major distinguishing feature of *Reviews of Human Factors and Ergonomics* is that it focuses on findings that are applicable in real-world contexts, especially to the design of devices, systems, or processes that people use or with which they interact. The chapters in each volume note ways in which research results inform theory or methodology for future research and also emphasize the practical implications of the research that is reviewed. In this way, volumes in the series will highlight both research and practice.

Accordingly, in Volume 1, three chapters focus on research areas:

Biomechanical Modeling

By William S. Marras & Robert G. Radwin

Human-Automation Interaction

by Thomas B. Sheridan & Raja Parasuraman

Technology and Aging

by Wendy A. Rogers, Aileen J. Stronge, & Arthur D. Fisk

and three emphasize areas of application:

Driving Safety

by John D. Lee

Improving Product Safety and Effectiveness in the Home

by Deborah A. Boehm-Davis

Reducing and Mitigating Human Error in Medicine

by Daniel Morrow, Robert North, & Christopher D. Wickens

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Reviews of Human Factors and Ergonomics

VOLUME 1

Edited by
Raymond S. Nickerson

PUBLISHED BY THE HUMAN FACTORS AND ERGONOMICS SOCIETY

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Bulletin

Volume 49, Number 4 April 2006

Features Editor: Pamela Savage-Knepshield

Student Views Editor: Melanie Diez

Communications Director: Lois Smith

Assistant Editor: Jeremy Loudenback

Advertising: R. C. Bublitz & Associates,

800/485-5029; dick-rcb@juno.com

POSTMASTER:

Send address changes to the HFES Bulletin,

Human Factors and Ergonomics Society,

P.O. Box 1369, Santa Monica, CA 90406-1369 USA,

310/394-1811, fax 310/394-2410, <http://hfes.org>

General Information: info@hfes.org

Editorial/Advertising: lois@hfes.org

Placement Service: placement@hfes.org

Annual Meeting: lois@hfes.org

Opinions expressed in BULLETIN articles are those of the authors and should not be considered as expressions of official policy by the Human Factors and Ergonomics Society.



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