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## HFES 2009 Salary and Compensation Survey Results

*By S. Camille Peres, University of Houston-Clear Lake,  
& Lyn McCloskey, PRM Consulting*

Many professional organizations conduct surveys to gauge salary levels and trends for people in their fields. The reports generated from these efforts typically provide salary information by geographical region, category of employment, educational attributes, and other factors that have an influence on pay levels. The results of these surveys are widely used by employers when determining competitive salaries for their employees, by employees when negotiating salaries, and by students who are considering different career paths.

HFES has conducted salary surveys of its members several times over the years, most recently this spring. We once again contracted with PRM Consulting, Inc., a professional services consulting firm headquartered in Washington, D.C., to develop an easy-to-complete online questionnaire consisting of 23 yes/no and multiple-choice questions. (Note that anti-trust laws prohibit HFES members or employees from analyzing and reporting on the data themselves, so the Society is legally required to engage a third party to do this.)

In April, we sent e-mail invitations to 3,409 Associate, Fellow, Full, Honorary Fellow, and Transitional Associate members to collect information on monetary (pay) and nonmonetary (benefits) compensation. A total of 635 HFES members fully completed the questionnaire, including 22 non-U.S. (primarily Canadian) members. (For data analysis purposes, the information submitted by non-U.S. members was excluded from the results.) Interest in the 2009 survey was high; the participation level was about twice that for the 2005 survey. The following is a brief summary of the full HFES 2009 Salary and Compensation Survey report.

### Areas Covered in the Survey

We collected salary information for employees and consultants according to such factors as region, area population, degrees earned, years of experience, and time since highest degree. The salary report also provides information on employee benefits overall and by market sector. The surveyed benefits include health insurance, paid time off, and retirement. Finally, the 2009 survey includes current trends in the employment environment for HF/E professionals – important information in light of the recent decline in economic conditions.

### Respondent Characteristics

There is a fairly even distribution of survey respondents across the United States, with the largest percentage located in the mid-Atlantic and southeast regions.

More than half of all survey respondents (55.5%) are employed in the for-profit business sector. Approximately 20% of survey respondents are employed in a university setting. More than 50% of survey respondents have a PhD in engineering or psychology.

On average, survey respondents have been in their current position for approximately 8 years, but they have slightly more than 15 years of experience since obtaining their highest degree.

More than half of all survey respondents work in a medium-sized city at an organization with 1,500 or more employees.

### Pay Data

Overall, employee base salaries vary little by region. Average base salaries range from a low of \$88,317 in the mid-central United States to a high of \$118,434 in the northwest. Average employee base salaries also vary little by market sector, although they are slightly higher in the for-profit business sector versus other markets, and lowest within a university setting.

There is little variation in average salaries for employees by population area, but average salaries are higher for smaller companies/organizations (i.e., fewer than 100 employees).

Across all market sectors, employees with a doctorate earn 18% to 28% more than their counterparts with a master's degree.

On a geographic basis, the differences in average employee base salaries between those with a bachelor's and those with a master's degree are generally very small, but those with a doctorate average about 22% higher.

Although average base salaries tend to trend upward for employees based on their time in position, this measure has little impact on the average salaries for consultants.

Finally, although the prevalence of annual bonuses for employees is much higher within for-profit businesses (86% are eligible), the average bonus reported as a percentage of base salary is slightly higher in universities than in all other surveyed market sectors.

*continued on page 2*

## Salary and Compensation Survey

(continued from page 1)

### Employee Benefits

The full report provides a detailed summary of various benefits reported by survey respondents. The benefits data reflect information reported for employees with W-2 earnings only.

Most survey respondents (approximately 90%) receive employer-provided health benefits, including dental and vision. Employees within a university setting pay less for their health benefits than do their counterparts in all other market sectors.

Most survey respondents are provided with retirement benefits solely through a defined contribution plan with matching contributions. Typically, employers provide a 100% match on up to 6% of base salary.

Well over half of survey respondents can receive tuition assistance (63%) and support for attendance at professional meetings and conferences (73%), but only about half of them (49%) can be reimbursed for professional society dues.

A total of 148 survey respondents (or 24% of the total) report a variety of sources of nonmonetary compensation. Typically, non-monetary compensation includes such benefits as access to fitness facilities, gym memberships, discounts on goods or services, subsidized or paid transportation, and flexible working hours.

### Employment Environment

Given the recent economic situation, the 2009 questionnaire included questions regarding any actions being taken by respondents or employers in response to current financial conditions. Below are some highlights:

- Approximately 30% of survey respondents anticipate making or have made layoffs/terminations or will institute a hiring freeze in the near future.
- About one-fourth of all survey respondents are planning a salary freeze, but only 13% of them are planning on also reducing benefits. However, a third of survey respondents are planning to reduce or eliminate employees' travel budgets or benefits.
- Survey respondents who are business owners or executives generally report little in terms of economic indicators from clients, with fewer than 7% of them indicating reductions and/or delays.
- Twelve respondents indicate they are hiring HF/E professionals.

### Summary

The 2009 HFES Salary and Compensation Survey provides

employers and HF/E professionals with a picture of the compensation profile for this profession across the United States. Our 18% response rate is sufficient for making generalizations regarding current salaries. Indeed, the results indicate that working in HF/E pays relatively well. The range of average salaries is notably higher than the approximately \$78,000 average salary reported by the Census Bureau in 2006 for "professional, scientific and technical services." This is particularly encouraging considering the challenging economic climate.

The report may be purchased at <http://www.hfes.org/Publications/ProductDetail.aspx?ProductID=94>. Survey respondents received a free copy, and the report is available for \$50 for HFES members and \$300 for nonmembers.

## ANNUAL MEETING

## Virtual Workshops at This Year's Annual Meeting

By *Anthony D. Andre, Internal Affairs Domain Leader, & Philip J. Smith, Meetings Domain Leader*

New for this year is the Web broadcast of two half-day 53rd Annual Meeting workshops. The aim of broadcasting these workshops is to bring human factors/ergonomics tools to professionals who are not able to attend the Annual Meeting.

Our first forays into the virtual world are Bonnie John's workshop, "Cognitive Crash Dummies: Predictive Human Performance Modeling for Interactive System Design" (Monday, October 19, 8:30 a.m.–12:00 noon), and David Woods's workshop, "Engineering Resilience to Create Safety" (Monday, October 19, 1:30–5:00 p.m.). Information about the workshops can be found at <http://www.hfes.org/web/HFESMeetings/09AMWorkshops.html>.

Each workshop will be broadcast in real time through a popular Web conference service. The audio portion will be available both through computer audio and via telephone (as backup). Off-site participants will be able to submit questions to the moderator, who will present them to the workshop presenter. Registered off-site participants will be sent details of login and audio connection procedures in September.

The off-site registration fees, which offer substantial savings over the on-site fee, are \$110 for members, \$140 for nonmembers, and \$25 for students. Traditional on-site attendance is encouraged for meeting attendees.

These, the Society's first Web seminars, were planned by the Virtual HFES Task Force, headed by Domain Leaders Anthony D. Andre and Philip J. Smith. Over the course of the past six months, we obtained input from other Domain Leaders, the Executive Council, and HFES members on the topic of Web-based services.

We hope that those who can't attend the 2009 Annual Meeting will benefit from one or both of these informative workshops. Our goal is for this to be a convenient and inexpensive way to keep informed, obtain continuing education units (CEUs), and otherwise be a part of the Annual Meeting. Look for more Web-based presentations and services to be announced soon!



Human Factors  
and Ergonomics  
Society

# Bulletin

Volume 52, Number 7

July 2009

The HFES Bulletin (ISSN 1527-3660) is published 11–12 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>.

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## 2009 HFES Election of Officers and At-Large Executive Council Members

The nomination ballots for this year's election have been tallied, and the following candidates have agreed to run for office. Ballots have been mailed to all Full Members and Fellows in good standing. Completed ballots are due August 3.

### President-Elect

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

**Eduardo Salas**, Pegasus Professor and University Trustee Chair, Department of Psychology and Institute for Simulation and Training, University of Central Florida

**Joel S. Warm**, Senior Scientist, Warfighter Interface Division, Air Force Research Laboratory, Wright Patterson Air Force Base

### Secretary-Treasurer-Elect

**Kermit G. Davis**, Associate Professor, Environmental Health, University of Cincinnati

**John F. "Jeff" Kelley**, Senior Managing Consultant, IBM Global Business Services, Usability Engineering Practice, and Adjunct Associate Professor, Department of Engineering, Georgia Tech

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

### Executive Council At-Large

**Thomas W. Dennison**, Research Engineering Manager, Sikorsky Aircraft

**Anand K. Gramopadhye**, Professor and Chair, Department of Industrial Engineering, Clemson University

**James M. Hitt**, Program Manager, Northrop Grumman Corporation

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

**Gary A. Mirka**, Professor and Chair, Department of Industrial and Manufacturing Systems Engineering, Iowa State University

**Marc L. Resnick**, Associate Professor, Industrial and Systems Engineering; Director, Human Factors and Ergonomics Laboratory; and Director, Institute for Technology Innovation, Pino Global Entrepreneurship Center, Florida International University; and President and Senior Consultant, Performance Solutions

## EID Editor Candidates Sought

Are you interested leading the transformation of *Ergonomics in Design* into the premiere publication for the dissemination of applied human factors/ergonomics work to practitioners? Would you like to be part of the Society's vital outreach efforts? The HFES Scientific Communications and Publications Domain Leader and Publications Committee invite applications from volunteers interested in becoming editor of *EID* for the three-year term beginning January 2010.

The editor is responsible for the quality of the publication's content, with the objective of covering a wide variety of balanced and timely topics of interest to HF/E practitioners. The editor works with an editorial board consisting of associate editors and department editors to monitor the quality and timeliness of reviews; invites articles or develops article ideas on a range of topics, especially underrepresented topics; helps the staff to set an editorial calendar each year; evaluates the submissions and their reviews and makes final accept/reject decisions; and collaborates with an editorial development team and the AEs to ensure a steady stream of submissions.

Currently, *EID* receives 20–40 articles per year, and it is hoped this number can be increased through the efforts of the editor, development editors, and editorial board members. The editor receives an annual honorarium and is reimbursed for some expenses. All administrative and editorial production support is provided by the HFES Communications Department, which manages the peer review process (including forwarding all correspondence between the editor and authors) and is responsible for all production matters.

To apply, please go to <http://www.hfes.org/web/PubPages/EID-Editor.html>, where you will find a list of questions for candidates. Send your responses to Lois Smith ([lois@hfes.org](mailto:lois@hfes.org)) by **August 1, 2009**, for forwarding to the Publications Committee. This will enable the committee to make a recommendation to the Executive Council at its October meeting in San Antonio. The incoming editor will be asked join the Editorial Board in October 2009 and assume responsibilities of the editorship on January 5, 2010.

Feel free to contact Lois Smith (310/394-1811, [lois@hfes.org](mailto:lois@hfes.org)) or Domain Leader Kermit Davis (513/558-2809, [daviskg@ucmail.uc.edu](mailto:daviskg@ucmail.uc.edu)) if you have questions about the processes, scheduling, or other details of the job. We look forward to receiving your application.



**Human Factors and Ergonomics Society**  
**53rd Annual Meeting**  
 October 19–23, 2009, San Antonio, Texas USA  
**Bookmark [hfes.org](http://hfes.org) for regular updates about**  
 exhibiting your products and services, reserving a  
 meeting sponsorship, registering online, viewing the  
 Preliminary Program and creating a personal meeting  
 itinerary, and reserving a hotel room.

## A Historic Day for U.S. Science Policy

By William C. Howell, Chair, Government Relations Committee

On April 27, an event of uncommon significance for anyone involved in research took place at 21st Street and Constitution Avenue in Washington as President Obama unveiled his science policy agenda. Speaking before representatives of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine in *their* building, he left no doubt that his commitment to growing the support for both basic and applied research is genuine and, equally as important, that he understands why this investment is critical to the nation's future. At a meeting of behavioral and social scientists I attended in that same building the following day, copies of the speech were distributed and its implications discussed in depth, with considerable enthusiasm.

Paying lip service to science is hardly unique for presidents and other elected officials, of course, especially when preaching to the choir – it's right up there with motherhood and apple pie. But several characteristics of this event were highly unusual, diagnostic, and, hence, noteworthy. First was the mere setting: Traveling across town to deliver his message on science's home turf rather than just inviting a few representatives over to the White House (the customary approach) is significant in that it underlines the sincerity of his words and the respect in which he holds this community. "Under my administration," he said, "the days of science taking a back seat to ideology are over," and clearly he meant it.

Second, instead of platitudes and vaguely supportive language, this speech contained explicit goals, numbers, and targets: "an historic commitment to basic science and applied research" that, among other things will "double the budget of key agencies, including NSF...NIST...and the DOE." Elsewhere he cited NASA, NIH, and other traditional sources of research funding. In short, President Obama left little doubt that he intends to walk the walk, not just talk the usual happy talk.

Third, he explained why he considers this dramatic increase in science funding a necessity rather than a luxury, despite our current economic woes. Indeed, he considers any sustained economic recovery, along with continued world leadership, impossible without it. This depth of understanding is rare among policy makers, particularly those residing at 1600 Pennsylvania Avenue. As one Academy member in the audience put it, "He actually *gets* it."

Reverberations from this event, along with copies of the speech, spread quickly throughout the science community. Euphoric scientific and professional societies, along with universities and advocacy groups in which HFES participates, have been actively exploring the ramifications of this "historic" policy statement and discussing the practical implications for their respective agendas and government relations activities.

However, some of those most closely associated with HFES have detected a possible cloud in this otherwise azure sky. Careful inspection of the speech reveals no explicit mention of the *behav-*

*ioral* or *social* sciences but plenty of references to the *physical* and *biological* kind. This has led to considerable speculation on what, if anything, the omission means and what, if anything, should be done about it. For example, it appears that the Federation of Behavioral, Psychological, and Cognitive Sciences (FBPCS, of which HFES is a member) sees this omission as an educational opportunity and is encouraging a letter-writing campaign aimed at raising the president's awareness of – and appreciation for – what these omitted disciplines have to offer. The approach taken by others, including the American Psychological Association (APA) and the Consortium of Social Science Associations (COSSA, the leading social science consortium), is likely to be less direct and reflect a longer-term strategy for infusing behavioral and social science into policies, programs, and priorities of the new administration, thereby taking advantage of the president's clear commitment to and understanding of science.

Nearly everyone, however, seems to agree that any response to the speech should have a strong positive tone and that the policy itself opens up a wide array of future advocacy opportunities in the legislative and agency arenas as well as in the administration itself. You can rest assured that HFES will continue working with other organizations to capitalize on these opportunities as they materialize.

Anticipating policy developments based on available clues, though a Washington preoccupation, is at best an uncertain enterprise. Thanks to this president's speech, however, there's little doubt where science is headed in the foreseeable future – and all signs are pointing up.

*William C. (Bill) Howell is retired but holds adjunct faculty appointments at Arizona State University (Polytechnic Campus) and Rice University. He serves on several national advisory boards and was HFES president in 2000–2001.*

### EXECUTIVE COUNCIL

## Comments on the HFES 2009 Budget

By Andrew S. Imada, HFES Treasurer

As HFES President Paul Green described in his report of the midyear Executive Council meeting (see the May/June issue), Council approved a revised budget that anticipates a deficit. Know that this budget was passed with mixed emotions, including disappointment and a heavy sense of responsibility. As elected representatives for the membership, the entire Council feels responsible for the fiscal health of our Society. At times, cash shortfalls can be deliberate, and at other times factors beyond our control make shortfalls unavoidable.

However, it may be helpful to understand the budget in a larger context. First, these are difficult times. We have experienced

unprecedented financial uncertainties that can be described as unique generational events. The upheaval among enterprises, government, and individual life stories speaks to the magnitude of what we are living through. Second, although the deficit does approach \$80,000, it represents less than 6% of a \$1.4 million operating budget. A shortfall is a shortfall, but its magnitude needs to be understood in the context of the total budget. Be assured that the budget considers expenses carefully and prioritizes HFES core functions.

### **Silver Linings**

In the short time that I have served on the Executive Council, I have come to appreciate our strengths as an organization. Challenges and crises help us identify real inner character and our own strengths and capabilities. Working with the Executive Council, staff, and other organizations has led me to identify the following strengths:

**Dedicated membership.** In late 2008 the staff recognized a change in membership dues renewal patterns. At first this was not alarming. However, in early 2009 the pattern continued, and benchmarking data from like organizations suggested that dues renewals had fallen off between 20% and 25%; that would be a variance ranging from \$125,000 to \$157,000 in our largest revenue line item. This never happened, and your contributions have nearly matched previous years' dues payments. That speaks to the dedication and support of our membership. I appreciate that the loyalty and dedication of our members are valuable assets.

**Visionary leaders.** If those who served the Society before the current Executive Council had not had the foresight to make the changes we did in 2001, we would be in a very different position today. The cash reserves that they envisioned and created put us in a comforting position during just such a rainy day. Moreover, previous recommendations to protect our cash by federally insuring our funds make what we have much safer, even if there is more turbulence among financial institutions.

**Valuable staff.** Before we met at the 2008 Annual Meeting, the executive director and staff had anticipated the changes and made proposals proactively. Their ability and willingness to make budget cuts, come up with innovative ideas, be resilient, and display their sense of history of our organization gave me the confidence that these were real solutions and not a pencil-whipping drill. This kind of action requires flexibility and personal sacrifice from the staff, and I am sure you are as appreciative as I am for these changes during these unusual economic times.

**Sustainable processes.** The increased professionalism and well-defined processes in HFES are sustainable and do not depend exclusively on the hard work of members or good fortune, and success is sustainable. Examples include our relationships with professional meeting planning and publishing organizations. These represent step-function changes in operations that are more likely to produce predictable and sustainable success in the future.

### **Beyond the Budget**

In sum, the Executive Council's submission of a deficit budget was not pleasant. We would have preferred to continue the previous seven-year trend of contributing a surplus to our cash reserves. However, our dedicated membership, heritage of visionary leadership, great staff, and professional organizational processes suggest that our overall health as an organization is strong and sustainable.

### **PEOPLE**

HFES Fellow **William S. Marras** was elected to the National Academy of Engineering earlier this year. Marras, Honda Endowed Chair in the Department of Industrial and Systems Engineering at Ohio State University, was honored for his work in developing methods and models used to control costs and injuries associated with manual work in industry. He was also recently appointed editor in chief of *Human Factors*. He may be reached at [marras.1@osu.edu](mailto:marras.1@osu.edu).

**Anthony D. Andre** was named the 2009 Outstanding Lecturer by the College of Engineering at San Jose State University. He was also recognized by the university for 15 years of service in both the Psychology and Industrial and Systems Engineering Departments as part of the human factors and ergonomics graduate program. Andre may be contacted at [andre@interface-analysis.com](mailto:andre@interface-analysis.com).

The National Space Biomedical Research Institute (NSBRI) has named HFES Fellow **Jack W. Stuster** to its External Advisory Council. Stuster is vice president and principal scientist at Anacapa Sciences and may be reached at [jstuster@anacapasciences.com](mailto:jstuster@anacapasciences.com).

**Bryce G. Rutter**, founder and CEO of Metaphase Design Group, received the 2009 Inventor of the Year Award from the Bar Association of Metropolitan St. Louis. Rutter was honored for his work in combining kinesiology and industrial design. He may be contacted at [bryce@metaphase.com](mailto:bryce@metaphase.com).

**Jerry M. Owens**, 67, of Lubbock, Texas, formerly of Orlando, Florida, died January 23, 2009. Jerry was born September 3, 1941, and received his PhD in engineering psychology from Texas Tech University. He served in the U.S. Air Force from 1962 to 1966 and in the U.S. Navy from 1973 to 1992 and he was a naval aerospace experimental psychologist. In that role, Jerry held a number of positions in the Washington, D.C., area in support of human factors research. His most recent position was site director at CHI Systems in Orlando, where he served in support of various projects sponsored by the Department of Defense. Jerry is remembered by all who knew him as an encouraging, giving, thoughtful, and compassionate man.



## The Role of Domains in HFES Governance

By *Anthony D. Andre, Internal Affairs Domain Leader*

Periodically, the HFES Executive Council examines the Society's governance structure in an effort to improve our organizational effectiveness through enhancing communication among the Council and our many committees. In 2006, the Council approved a structure proposed by Past President Waldemar Karwowski based on domains (replacing the former structure, based on subcouncils), each encompassing major activity areas: Internal Affairs (Anthony D. Andre, leader), Outreach (Deborah A. Boehm-Davis, leader), HFES Institute (Bruce Bradtmiller, leader), Meetings (Philip J. Smith, leader), and Scientific Communications and Publications (Kermit G. Davis, leader). Domain leaders are appointed by the HFES president (with advice and consent from Executive Council) and nominally serve a three-year term.

The domains have been evolving since their establishment three years ago and have largely succeeded in their aims to ensure that important committee activities are carried out and that information flows efficiently between committees and Council. In this article, I briefly describe the current state of the domains.

Under the domain structure, the five domain leaders manage both near-term strategic and tactical issues related to their respective committees and to their domains as a whole, the committees engage in day-to-day tactical activities, and HFES staff handles operations. In addition to supervising the committees within each domain, domain leaders establish new initiatives related to their domains and participate in Executive Council meetings. This structure allows Executive Council to better and more efficiently manage the Society and to focus its efforts on long-term strategic issues.

Below is an introduction to each domain, the committees within it, and its current domain leader.

### Scientific Publications and Communications Domain

This domain includes the Publications Committee and represents all of the Society's publications (books, journals, standards, best practices), and the Web site. In addition, it addresses all issues related to proposed publications. Contact Domain Leader Kermit Davis at [daviskg@ucmail.uc.edu](mailto:daviskg@ucmail.uc.edu)

### HFES Institute Domain

Originally led by Arnie Lund (2006–2008), the HFES Institute Domain includes the HFES Institute and the various task forces and committees that develop standards and best practices, such as the ISO and ANSI/HFES standards committees. It also includes the HF Standardization Interest Group. Contact Domain Leader Bruce Bradtmiller at [bruce@anthrotech.net](mailto:bruce@anthrotech.net)

### Internal Affairs Domain

The Internal Affairs Domain includes the following commit-

tees: Accreditation Review Committee, Awards Committee, Chapter Affairs Committee, Council of Technical Groups, Education and Training Committee, Fellows Selection Committee, Membership Committee, Professional Standards Committee, and Student Affairs Committee. Contact Domain Leader Tony Andre at [andre@interface-analysis.com](mailto:andre@interface-analysis.com)

### Outreach Domain

This domain, whose inaugural leader was Marvin Dainoff (2006–2008), includes various committees that relate to outreach to other societies, organizations, and individuals. The committees under its purview are the Diversity, Government Relations, IEA Representatives, Interorganizational Relations, National Ergonomics Month, and Media Relations Committees. Contact Deborah Boehm-Davis at [dbdavis@gmu.edu](mailto:dbdavis@gmu.edu)

### Meetings Domain

Overseeing all of the elements and activities related to the HFES Annual Meeting is the function of the Meetings Domain. The committees within this domain include the Annual Meeting Host Committee and Technical Program Committee. Contact Domain Leader Phil Smith at [smith.131@osu.edu](mailto:smith.131@osu.edu).

If you would like to learn more about the domain leader role, please contact me ([andre@interface-analysis.com](mailto:andre@interface-analysis.com)) or any of the other domain leaders. We hope that qualified individuals will make known their interest in these important leadership positions.

## JCEDM

## Special Issue on Improving Human-Robot Interaction

By *Haydee M. Cuevas, SA Technologies, Special Issue Administrative Liaison*

We invite your contributions to a special issue of the *Journal of Cognitive Engineering and Decision Making*, "Improving Human-Robot Interaction [HRI] in Complex Operational Environments: Translating Theory into Practice." The primary goal of this special issue is to present practical, useful, theoretically based, and empirically validated recommendations for the design of systems and processes to support HRI in complex operational environments. Another goal will be to delineate a "research roadmap" that highlights areas warranting further investigation.

The last decade has seen an unprecedented proliferation in the use of robots in a broad range of complex domains, such as urban search and rescue, military operations (e.g., explosive ordinance disposal, intelligence, surveillance, and reconnaissance), scientific exploration in underwater and space expeditions, law enforcement (e.g., bomb squads), manufacturing, and health care (e.g., telerobotic surgery). Remotely controlled ground, aerial, sea surface, and underwater robotic vehicles are being utilized as tools to safely

extend the sensory and psychomotor capabilities of humans to remote environments. More important, with the ever-increasing technological sophistication in their design and capabilities, robots are becoming more than mere tools. They now can be seen as quasi-team members whose tasks and behaviors have to be integrated with the task requirements and expectations of their human teammates.

Accordingly, in the past decade, the scientific research community has focused considerable attention on developing a better understanding of the technical and social issues that affect human-robot interaction, particularly in the context of teams. To increase the utility of this growing body of work, researchers must be able to translate their theories and empirical findings into practical, useful guidance for improving HRI across various domains. In turn, these findings could potentially generate new research, such as further empirical validation of proposed design recommendations in different contexts and the development and validation of theoretical and quantitative models of human performance in HRI.

We are seeking theoretical, methodological, and empirical papers that address issues including (but not limited to) the following topic areas:

- **Sensor interpretation and integration:** information visualization; object recognition; motion awareness
- **Manipulation:** teleoperation and motor control such as during mine removal, USAR, and RSTA
- **Navigation:** local and global spatial comprehension; robot localization; motion awareness; cognitive maps
- **Planning:** decision making; task prioritization; contingency planning; dynamic replanning
- **Multiple robot operations:** operator-to-robot ratio; attention (focused and divided); task switching; situation awareness; adaptive automation
- **Team performance:** human-human group dynamics; collaboration and coordination; shared situation awareness
- **Trust and acceptance:** human-robot group dynamics; anthropomorphism; system reliability
- **Technological issues:** system capabilities and limitations; latency; bandwidth; use of multiple modalities
- **Research issues:** scaled real-world testbeds versus simulated virtual environments; platform-specific versus platform-general considerations (e.g., UGV vs. UAV); metrics/measures and benchmarks; individual differences

Please include a final section in your submission that explicitly and succinctly demonstrates how your research findings can be translated into practice. This section should be formatted as a bulleted list of guidelines, lessons learned, or implications for practice, with a brief rationale that explains and supports each statement.

Manuscripts should be prepared according to the *Publication Manual of the American Psychological Association*. Review the JCEDM “Information for Contributors” Web page (<http://www.hfes.org/web/PubPages/JCEDMauthorinfo.pdf>) for more specific instructions. Manuscripts should be no more than 25–30 double-spaced pages. The title page, abstract, and author biographies do not count toward the page limit.

The closing date for submissions is **November 15, 2009**. Please let us know by October 15, 2009 if you are planning to submit a paper. Manuscripts should be submitted electronically to <http://mc.manuscriptcentral.com/jcedm>; indicate that this is a special issue submission when you upload your paper.

Please direct inquiries regarding the suitability of work to the Special Issue Guest Editors (see contact information below). For technical questions (e.g., formatting, review status, etc.), please contact me at [haydee.cuevas@satechnologies.com](mailto:haydee.cuevas@satechnologies.com).

#### **Special Issue Guest Editors**

Jennifer M. Riley, SA Technologies  
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[djgillan@gwced.ncsu.edu](mailto:djgillan@gwced.ncsu.edu)

### **NATIONAL ERGONOMICS MONTH**

## Get Ready for NEM 2009!

*By Raegan M. Hoefl, NEM Committee Chair*

National Ergonomics Month (NEM) in October is targeted at promoting human factors/ergonomics to the general public through outreach and community service. The NEM Committee invites all members, including those in local and student chapters, to create a plan of action that actively promotes NEM in your communities.

No idea is too great or too small! Speak about HF/E at your local schools. Write an article on HF/E for your company or school newsletter or your community newspaper. Use the Internet – via social networking sites, photo sites, and video sites – to upload and discuss HF/E-related materials. The possibilities are endless! For more great ideas, visit [www.hfesnem.org](http://www.hfesnem.org). This year, we would like to post your upcoming events on the NEM Web site so they can inspire others. Please send information about your events to [raegan.m.hoefl@lmco.com](mailto:raegan.m.hoefl@lmco.com).

Once again, we will be hosting the NEM Best Action Plan Contest. To participate in the 2009 contest, please include the information on page 8 in a Microsoft Word file and send it to the above e-mail address as an attachment. The submission deadline is **September 1, 2009**.

## NATIONAL ERGONOMICS MONTH, cont.

- Proposer's name(s), address, e-mail address, and daytime phone number.
- Whether the entry is on behalf of a local or student chapter. If so, please specify the chapter name.
- Names of other professionals and/or students participating in organizing or implementing your action plan.
- Title of your action plan.
- Brief description of your action plan. What activities are planned?
- Timeline for your action plan. When will you implement it?
- Goal(s) of your action plan. What do you seek to accomplish?
- What audience(s) are you targeting (e.g., community, students, corporations, government)?

Awards will be presented to the best individual, local chapter, and student chapter action plans at the HFES 53rd Annual Meeting in San Antonio, Texas.

Entries are also invited for the 2008 NEM Best Action Plan Implementation Contest. Contact me at raegan.m.hoeft@lmco.com for submission instructions.

The NEM Committee seeks volunteers to serve on the Selection Committee for these two contests. If you are interested, please contact me at 609/326-4214 or via the e-mail address above. Let's make NEM 2009 an October to remember!

## HFES BOOKS

### Save 50% on Selected HFES Books

Members, take advantage of the summer sale on these great HFES books! From July 1 to August 31, members can purchase any of the following titles at greatly reduced prices:

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- *New Trends in Collaborative Activities*
- *Guidelines for Using Anthropometric Data in Product Design*
- "Extra-Ordinary" Ergonomics
- *Human Factors and Ergonomics Society: Stories From the First 50 Years*

Online credit card transactions are secure (<http://www.hfes.org/Publications/>); you can also download the printable order form from the HFES Web site ([http://www.hfes.org/Web/PubPages/pubs\\_order.pdf](http://www.hfes.org/Web/PubPages/pubs_order.pdf)) and mail or fax it to HFES, P.O. Box

1369, Santa Monica, CA 90406-1369; fax 310/394-2410. Contact Member Services at [membership@hfes.org](mailto:membership@hfes.org) if you have any questions.

## CHAPTERS

### CSU Long Beach Conference

By Paige Bacon

The 4th Annual Regional Human Factors Conference, hosted by the HFES California State University, Long Beach Student Chapter, was held on February 28 in Long Beach. Three keynote speakers headlined the event.

Fred Garcia, assistant director of the Center for Usability and Design Accessibility at Cal State, Long Beach, discussed the challenges of product accessibility evaluation, the relationship between accessibility and usability, and the importance of taking users with disabilities into account when designing usable products. Ray Kowalewski, manager of Central User Testing at Activision-Blizzard, highlighted his journey through the field of human factors and the implementation of user testing in video game design. Douglas H. Harris, former HFES president and chairman and principal scientist of Anacapa Sciences, Inc., led an open forum during which he discussed his perspectives on the human factors discipline over the past 50 years. He spoke about the new challenges faced by HF/E professionals in terms of training, technology, and the changing role of human factors in large organizations.

The conference also included a poster session featuring students and professionals from throughout Southern California, a series of displays from industrial design students at Cal State, Long Beach, and a panel of Cal State graduates who discussed strategies for obtaining internships and entry-level human factors positions.

We look forward to seeing you at the 5th Annual Regional Conference in 2010!

Paige Bacon is a first-year graduate student in the MS human factors program at California State University, Long Beach. She received her BA in psychology from Wichita State University.

## Bulletin



Volume 52, Number 7

July 2009

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