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## CONTENTS

Publications.....	2	Webinars.....	5
From the President..	3	Society Honors.....	6
Membership.....	3	IEA.....	8
Annual Meeting.....	4	Call for Proposals.....	9
Chapters.....	5	Member Milestones...	9

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## USER TRIAL for ANSI/HFES 100

By Bruce Bradtmiller, Claire C. Gordon, and Thomas J. Albin

One of the potential uses of ANSI/HFES 100 – 2007 (HFES 100) is to aid customers in purchasing office furniture that meets basic ergonomics requirements. Furniture designed using ergonomic principles can improve performance and reduce workplace injury and fatigue. Recently a large military customer tried to use this document for just that purpose—creating a purchase specification for office chairs based on HFES 100—and went out for bid to major furniture manufacturers. Instead of getting competing bids, however, this customer got push-back from manufacturers, who said all the requirements could not be met in a single chair. Seeking help, she contacted one of us (CCG) for advice. This presented us with a good opportunity to see whether the problem lay in the document itself or in user error.

We first analyzed the military requirements along with those in HFES 100 to see whether the user had developed the requirements directly from HFES 100 or whether there were differences. As a reminder, conformance with ANSI/HFES 100 is accomplished by meeting the requirements of the “shall” statements.

Of the 16 seat and back requirements, 9 were exactly the same as those found in ANSI/HFES 100. Four requirements addressed chair characteristics that were not addressed at all in ANSI/HFES 100. Three of the requirements were similar to those in the standard but were more stringent. For example, HFES 100 requires a minimum seat width of 17.7 inches, whereas the military requirement was for 19 inches—a difference of 1.3 inches. Similarly, the standard indicates an option for adjustability in seat depth, saying only that *if* the seat is adjustable, the adjustment range must include 16.9 inches. In the purchase specification, an adjustment range of 3 inches for the seat depth was *required*, and the adjustment range needed to be between 15 and 20 inches (which would encompass the ANSI/HFES 100 requirement).

In the case of 7 armrest requirements, 3 were the same as HFES 100, but for the other 4, there was no requirement in the standard at all. Similarly, with the 5 requirements for the seat base and casters, one was the same but 4 were not addressed in HFES 100. In the latter case, one of these requirements is that, under continuous use, the chair support a 300-pound person. This requirement to accommodate heavier workers may be a good one to consider for the next revision of our standard.

Our analysis concluded that the conflicting and stringent requirements causing the manufacturer push-back were the result of “requirement creep,” in which some recommendations had morphed into requirements, and the addition of requirements that were not in HFES 100. There did not seem to be a problem with HFES 100 itself. We recommended to the user that the requirements not fully supported by ergonomics science be removed from the purchase specification. However, our analysis also showed that the general format of the standard was a useful framework for the user to structure his own requirements—even though some of those particular requirements proved too difficult to meet and may not have had a basis in ergonomics science.

As the revision of HFES 100 gets under way later this year, this "user trial" of the standard will be available for the committee to use in its work. In the meanwhile, the current version of HFES 100 is available at: <http://www.hfes.org/Publications/ProductDetail.aspx?ProductID=69>.

*Bruce Bradtmiller is president of Anthrotech, a consulting firm specializing in anthropometry, and is division chair for the HFES Institute, which coordinates all standards activity within the society.*

*Claire C. Gordon is the Army's Senior Research Scientist (ST) in Biological Anthropology and international convener of ISO's working group in Anthropometry (ISO TC 159/SC 3/WG 1); she is stationed at Natick Soldier RD&E Center in Natick, MA.*

*Tom Albin is an ergonomic consultant at High Plains Engineering Services and chairs the committee currently reviewing ANSI/HFES 100 - 2007.*

## PUBLICATIONS

### **Exciting Changes Ahead for HFES Publications**

*by Kermit G. Davis, HFES Scientific Communications and Publications Division Chair*

As the first quarter of 2011 comes to a close, significant changes and innovations have been implemented in many of our journals in an effort to further their development and increase readership.

First, the *Human Factors Prize* was announced in February, with the specific aim of increasing high-quality submissions. This year, the prize will recognize excellent HF/E research in health care. Submissions will be accepted until June 1, and the recipient will present his or her work at the upcoming 55th Annual Meeting in Las Vegas. Additional information about the prize can be found at <http://www.hfes.org/web/pubpages/hfprize.html>.

The second major announcement is the recent appointment of Amy R. Pritchett (Georgia Tech) as the next editor in chief of *Journal of Cognitive Engineering and Decision Making (JCEDM)*. The Executive Council approved the recommendation of the Publications Committee and *JCEDM* Advisory Board in early March. Amy will replace Mica R. Endsley, who was instrumental in creating the journal and who served as editor in chief from its inception 6 years ago to the present. Amy will build on the success of the journal with initiatives to further increase readership and submissions.

Next, *Ergonomics in Design (EID)* is going through a transformation in both content and format. A redesign is under way, with the scheduled unveiling set for the first issue of 2012, coinciding with *EID*'s 20th anniversary. Another big change for *EID* is the recent completion of the online Manuscript Central submission and review site; submit your work at <http://mc.manuscriptcentral.com/ergonomicsindesign>. In addition, *EID* Editor Carol Stuart-Buttle, along with Senior Editor Julian Sanchez and his team, are working on a new Web site and blog for the quarterly. A new department—"Research Digest" edited by Arathi Sethumadhavan—will debut in the spring issue to highlight the practice aspects of articles featured in both *Human Factors* and *JCEDM*. To learn more about *EID* article submissions and view instructions for authors, go to <http://www.hfes.org/Publications/ProductDetail.aspx?ProductID=36>.

Finally, one recent development that will increase access to our publications is the Society's expanded partnership with SAGE, which provides members with online access to *JCEDM*, *Reviews of Human Factors and Ergonomics*, and the HFES Annual Meeting Proceedings and, we hope, will increase reader interest and stimulate submissions.

# Educators: Build Your Own Custom Reviews Collection

A significant new benefit for member educators is *Reviews of Human Factors and Ergonomics* Custom Collections for Education. Members who teach undergraduate or graduate courses in human factors/ergonomics and related disciplines, or hold workshops and seminars for professionals in or outside the HF/E field, now have a way to provide high-quality overviews of a broad range of topics within HF/E. Rather than purchasing one or more complete *Reviews* volumes, members can select only the chapters that pertain to their courses—at low, educators-only prices.

All 41 chapters included in the six *Reviews* volumes are available for custom collections and can be viewed at [http://www.hfes.org/web/PubPages/Reviews\\_fullchapterlist.html](http://www.hfes.org/web/PubPages/Reviews_fullchapterlist.html). When you're ready to order, go to <http://www.hfes.org/Publications/ProductList.aspx?CategoryId=15> and log in with your member ID number. (Forgot your ID number? Contact the Member Services Department at 310/394-1811, [membership@hfes.org](mailto:membership@hfes.org).)

Chapters are delivered electronically for uploading to an electronic course pack, subject to the terms in the License Agreement ([http://www.hfes.org/web/PubPages/HFES\\_Reviews\\_Custom\\_Collections\\_License.pdf](http://www.hfes.org/web/PubPages/HFES_Reviews_Custom_Collections_License.pdf)). Materials will be delivered upon receipt by HFES of the completed and signed License Agreement and payment.

## FROM THE PRESIDENT

### HFES Fellow Profiles Available Online

by Anthony D. Andre, HFES President

I recently assigned some of my students at San Jose State University with the task of presenting relevant information about the careers of many “famous” people in our field, most of whom are HFES Fellows. In the course of completing the assignment, the students informed me that they were both amazed and disappointed that such information could not be found on the HFES Web site. Most had to scour the Web for what little they could find on some of our most prominent members.

I decided to rectify the situation by creating an online directory of HFES Fellow profiles, which can now be found at <http://www.hfes.org/web/Awards&Fellows/fellows.html>. HFES staff are sending invitations to all Fellows in good standing to submit an information form so it can be posted. We hope to have a comprehensive online directory of Fellows profiles by the end of the year. I encourage students to take advantage of this opportunity to learn about the rich—albeit short—history of our profession and Society through our database of Fellows.

I thank graduate students Yi Cao, who helped me develop the initial concept and profile form, and Kevin Tu, who helped develop the layout of the form. A special thank-you goes to Neville Moray, who helped me iterate the final form and whose profile was the first to be posted on the site. Please go to [http://www.hfes.org/web/awards&fellows/fellowprofiles/profile\\_moray.pdf](http://www.hfes.org/web/awards&fellows/fellowprofiles/profile_moray.pdf) and read all about what Neville's been up to lately!

## MEMBERSHIP

### Nominations Invited by May 11

Nomination ballots for the 2011 election of HFES officers and at-large Executive Council members will be mailed to Full and Emeritus Members and Fellows in good standing on **April 11**. Completed nomination ballots are due **May 11**.

# List Your Consulting and Expert Witness Services With HFES

If you're a Full Member or Fellow and provide consulting or expert witness services, HFES invites you to purchase a listing in the online Consultants Directory (<http://www.hfes.org/web/ConsultDirectory/Consultdirectory.aspx>).

The Consultants Directory is freely available to anyone who visits the HFES Web site. The fees for an annual listing are \$150 for individuals and \$250 for companies; renewal rates for those already in the system are \$100 for individuals and \$200 for companies.

If you are a current HFES member and would like to place or renew a listing, go to [hfes.org](http://www.hfes.org), log in, and select the option "Create a Consultant Directory listing" on the Welcome page. If you have any questions, please contact the Member Services Department at 310/394-1811, [membership@hfes.org](mailto:membership@hfes.org).

## ANNUAL MEETING

### Call for Student Volunteers

HFES invites full-time students to serve as student volunteers for the 55th Annual Meeting, September 19–23, in Las Vegas. Student volunteers perform many essential functions and help to ensure that the Annual Meeting runs smoothly.

First preference will be given to HFES Student Affiliate members. **Students applying to volunteer must preregister for the Annual Meeting by August 8, 2011.** Registration opens in June. To volunteer, please e-mail the following information to [carlos@hfes.org](mailto:carlos@hfes.org):

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

Address all requests to Director of Member Services Carlos de Falla, [carlos@hfes.org](mailto:carlos@hfes.org).

You may request assignments in specific areas, and every effort will be made to ensure you receive your first or second choice. Volunteer positions are limited to about 50 slots and will be accepted on a first-come, first-served basis. Help is needed in the following key areas:

- Workshops (Monday, September 19)
- On-Site Career Center (September 19–22)
- Daily on-site newsletter (September 20–22)
- Poster sessions (September 20–22)
- Internet stations (September 19–23)

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

Volunteer positions are based on need, and most are for four hours. Students who volunteer for four hours will be reimbursed half the student registration fee. Those who are assigned to eight hours of volunteer work will receive a reimbursement of the full student registration fee. Refunds are processed after the meeting.

## Texas Regional Human Factors & Ergonomics One-Day Conference

Registration is now open for the second Texas Regional Human Factors & Ergonomics One-Day Conference, to be held on April 29 from 8:00 a.m. to 5:00 p.m. at the Universities Space Research Association, Division of Space Life Sciences (<http://www.dsls.usra.edu/>) in Houston. The conference is hosted by the Houston, Alamo, and North Texas HFES Chapters and the University of Houston Clear Lake Student Chapter. The theme for 2011 is “Making Human Factors Work in the Real World.”

The conference is a forum for sharing information, case studies, and new ideas within the human factors/ergonomics community in and around Texas, including HF/E engineers, designers, developers, company specialists, and students. A variety of presentation formats have been identified to facilitate information sharing and networking.

Student registration is \$20 and nonstudent registration is \$75. Register by April 22 online at <http://www.hfes.org/Web/EventDetails.aspx?EventID=3>. After April 22, please register on site.

For more information, visit <http://houstonhfes.org/TexasRegionalConference/index.html>. Questions about the program can be e-mailed to [submissions@houstonhfes.org](mailto:submissions@houstonhfes.org).

## WEBINARS

### Q&A With April 25 Webinar Speaker Robert Tannen



Robert Tannen, director of research and interface design at Bresslergroup, a leading product development firm, is the featured speaker for the April 25 free members-only webinar, described at <http://www.hfes.org/web/webinars/Apr-Tannen.html>. The presentation, **Human Factors in Product and Interface Design**, will feature case studies of how the existing body of HF/E knowledge in areas including ergonomics, sensory adaptation, and psychoacoustics has been applied to successful consumer and commercial product design efforts.

Rob will also demonstrate that pragmatic design principles can and do emanate from the scientific output of the human factors/ergonomics discipline. For more information about this webinar, visit <http://www.hfes.org/web/webinars/AprTannen.html>. Registration opens soon.

HFES staff recently asked Rob about his approach to design and resources he finds helpful in his work.

*Q: What are some of your “formulas for success” in ensuring that HF/E knowledge is considered early in the design process?*

*A: The most important step is to have someone with human factors expertise involved in the project team from the beginning. This can range from an advising role to a very tactical role, depending on the project. These are some fundamentals—for example, starting out by doing a relevant literature or data review. But it’s important to do real-world evaluations as soon as possible even with very coarse prototypes. The literature guides our initial design directions, but the direction can move very quickly and significantly change once we begin to evaluate concepts in the real world.*

*Q: Please mention a few of the most useful sources of HF/E knowledge (research, methods, etc.) that you tend to rely on in the course of your product design work.*

A: I start with Google for information search and relevant online resources and journals. LinkedIn groups also have been extremely helpful. For example, there are groups for human factors experts and ergonomics experts where I can post questions and some of the world's leading experts will refer me directly to a source, which saves lots of time and provides experienced advice as well.

*Q: Where would you direct professionals newly entering the field to get the knowledge they need to be successful in HF/E and design?*

A: I would tell them to use the resources I just mentioned, but I would also advise them to filter the resources to get the most relevant information. In other words, there are a lot of resources out there to be aware of, but you should spend your time proportionally on the most germane content. For example, a product designer will get more value on a day-to-day basis from reading *Ergonomics in Design* but needs to be aware of what's happening in *Human Factors* as well.

*Q: How successful do you think your Designing for Humans blog (<http://www.designingforhumans.com>) has been in spreading the word about the importance of HF/E contributions to ensure that products are designed to accommodate users' needs?*

A: That's hard for me to quantify. I started it in 2005 for somewhat self-serving reasons, as a convenient way to access links to reference information for myself—and anyone else online. The site has had hundreds of thousands of visits over the years, but in Internet terms, that's not really that much. Over the last year, I've been blogging much less on my own and instead have been blogging for <http://FastCompany.com> and have been using Twitter more—it's faster and more efficient for sharing links to information and resources. You might say tweeting is more ergonomic than blogging for most things.

## SOCIETY HONORS

# Call for Student Member and Chapter Award Applications

*by Sandra K. Garrett, Chair, Student Affairs Committee*

The Student Affairs Committee is pleased to have the opportunity to recognize the accomplishments of and service to the Society by our students and student chapters through the Student Member With Honors Award and the Outstanding Student Chapter Award. To apply for these awards, students or chapters must send a completed application (see below) and supporting materials to [garrett@clemsun.edu](mailto:garrett@clemsun.edu) on or before **July 1, 2011**. Award recipients will be recognized at the 55th Annual Meeting (<http://www.hfes.org/web/HFESMeetings/2011annualmeeting.html>) in Las Vegas during the Student Reception.

The following are highlights of the eligibility requirements for the awards. Please refer to the HFES Student Chapter Web site ([http://www.hfes.org/Chapters/student\\_chapters.html](http://www.hfes.org/Chapters/student_chapters.html)) for complete details.

### Student Member With Honors

This designation honors students who have made an outstanding contribution to the discipline and/or HFES during their tenure as a student. To qualify, students must meet **all** of the following eligibility requirements:

- Student membership in HFES for at least six months prior to application
- Minimum GPA of 3.75 for graduate students

- Minimum GPA of 3.50 for junior or senior undergraduate students
- Successful completion of at least three HF/E-related courses with an ‘A’ grade
- Significant HF/E-related service to HFES
- One letter of recommendation from a faculty member specifying and demonstrating the student’s outstanding contributions

In addition, at least two of the following three conditions must be met:

- Primary author of an HF/E research paper published in an approved journal
- An HF/E-related lecture presentation at a national or international conference
- Evidence of significant contribution to an industry project

### **Student Chapter Levels of Recognition**

Chapters are recognized for their contributions and achievements (both the number and quality of activities) across a number of categories (as listed below), with the emphasis on demonstrated excellence in a number of areas. The levels of recognition are as follows:

- **Gold** requires activity in at least eight categories, with at least 50% of the student members also being HFES Student Affiliate members.
- **Silver** requires activity in at least five categories, with at least 40% of the student members also being HFES Student Affiliate members.
- **Bronze** requires activity in at least three categories, with at least 25% of the student members also being HFES Student Affiliate members.

The list of activity categories follows; of primary importance is the quality and outcome of the activity in the category. The creativity category allows chapters to uniquely define activities and provides an opportunity for some chapters to obtain a recognition level for which they would not otherwise qualify.

- |                         |                             |
|-------------------------|-----------------------------|
| • Recruitment           | • Exploration               |
| • Guest speakers        | • Social                    |
| • Field trips           | • Information dissemination |
| • Outreach/volunteerism | • Mentorship                |
| • Collaboration         | • Continuous improvement    |
| • Service to HFES       | • Creativity                |

Chapters must clearly indicate the recognition level sought (Gold, Silver, or Bronze), provide supporting materials that document the various activities of the chapter in each category, and prove a letter of recommendation from the chapter adviser. We encourage chapters to submit other materials that will support the application, such as brochures, announcements, or images from events, videos, and Web sites. Please include all supporting material electronically as part of the application, and provide a short narrative that sufficiently details your accomplishments in each activity category.

### **Submitting Your Application**

The deadline for receiving applications for both the Student Member With Honors and the Student Chapter Award is **July 1, 2011**. No applications will be accepted after this date. Be sure to read the complete application details before making your submission. Compile the completed application materials into a single document (preferably PDF, but Word is acceptable) and send it by e-mail to me at [garrett@clemsun.edu](mailto:garrett@clemsun.edu).

# 10th Annual User-Centered Product Design Award Nominations Due April 22

As noted in February's issue (<http://www.hfes.org/web/HFESBulletin/Feb2011Design.html>), the Product Design Technical Group (PDTG) welcomes submissions for the 10th Annual User-Centered Product Design Award. The award emphasizes innovative and user-centered approaches to HF/E and industrial design.

This year's winning product or system will be recognized at the HFES 2011 Annual Meeting—to be held at the Red Rock Hotel in Las Vegas, Nevada—with a \$1,000 honorarium and a plaque acknowledging the achievement. Awardees will be asked to make a presentation on the product and the development methodology during the PDTG's award session.

Submissions may address products, software, or systems that are purchased for use in the home, in the workplace, or while mobile. They may include consumer, commercial, and medical products but exclude military equipment and systems. The product or system being nominated must be operational and capable of being marketed with no more than minimal changes. Products already on the market for more than three years will not be considered.

You may submit nominations for your own work or that of others. The nominee must be a member of HFES or of PDTG but does not have to be a member of both. If a team is nominated, at least one person from the team must be an HFES or PDTG member.

Nominations should be submitted in electronic form. Complete submission requirements (and information about past winners) are available at the PDTG Web site: <http://www.hfes.org/pdtg/>. Address questions to Stan Caplan at [scaplan@usabilityassociates.com](mailto:scaplan@usabilityassociates.com).

**IEA**

## IEA K. U. Smith Student Award Submissions Welcome

The International Ergonomics Association (IEA) K. U. Smith Student Award is open for nominations. The award honors two deserving students who are responsible for applications of or contributions to human factors/ergonomics that are worthy of recognition.

Each winner will receive a cash award of \$3,000, which will be presented during the IEA 2012 XVIIIth Triennial Congress on February 12–16, 2012, in Recife, Brazil. Depending on need, an additional stipend for travel to the congress also may be awarded to the winner(s).

Any student enrolled in an accredited postsecondary institution (college, university, technical, or vocational school) worldwide may apply for the award in any area of HF/E. Examples include an applied HF/E project, a human performance study or analysis, a design project or product, a research project undertaken in the laboratory or field, or a theoretical/conceptual contribution to HF/E.

Complete information about the award process and important dates is available at [http://www.iea.cc/upload/IEAKUS2012awardannouncement\\_020311.pdf](http://www.iea.cc/upload/IEAKUS2012awardannouncement_020311.pdf). The application deadline is **July 31, 2011**.

## 42nd Annual Conference of the Association of Canadian Ergonomists

The Association of Canadian Ergonomists (ACE) is pleased to announce the call for papers for the 42nd Annual Conference, to be held October 17–20 in London, Ontario, Canada. This year's theme, "Ergonomics and Performance: Health, Safety, and Beyond," recognizes that ergonomics and human factors theory, evaluation, and design principles not only have a positive impact on health and safety but can contribute to the optimization of product, system, and environmental designs. The ACE 2011 National Conference will explore the many ways in which HF/E professionals use their skills to better society.

The deadline for submitting an abstract, symposia or panel proposal is **April 30, 2011**. For more information, please visit the ACE Web site at <http://www.ace-ergocanada.ca>.

### MEMBER MILESTONES



**Howard J. Heglin** died on February 5, 2011, at the age of 86. He graduated with a doctorate from the University of Florida in experimental psychology. Howard was an Emeritus member of the Humans Factors and Ergonomics Society. For many years he worked for the U.S. civil service in the Human Resources Research Lab, Cambridge Research Center, and at the Naval Electronics Lab as an aviation psychologist and engineering psychologist. Howard also worked with aerospace companies Rocketdyne, RCA, Northrop, and Lockheed & Litton. His work included advanced design, systems, engineering, reliability, and project management. Howard's epitaph reads, "From Poverty to the Moon." He is survived by his children, John C. Heglin and Suzan Heglin, and four grandchildren.

## Bulletin



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# HFES Invites Your Health Care Ergonomics Research



The Human Factors and Ergonomics Society is proud to announce the first **Human Factors Prize**, which recognizes excellence in HF/E research.

Authors are invited to join the competition and submit their best research on this year's chosen topic. The prize winner will receive a \$10,000 cash reward and publication in the Society's flagship journal, *Human Factors*.

The topic for the 2011 Prize is **health care ergonomics**, broadly defined to include research at the intersection of health care and human factors/ergonomics.

**Eligibility:**

- Any researcher is eligible to submit relevant work; **membership in HFES is not required.**
- Submissions must cover original (unpublished) research in the topical area and comply with the requirements in the Human Factors [Instructions for Authors](#).
- Review articles and brief reports are not eligible.

The submission deadline is June 1, 2011. The winner will be announced on August 15, 2011, and the award presentation will take place at the HFES 55th Annual Meeting, held September 19–23, 2011 at the Red Rock Hotel in Las Vegas, Nevada. The winner will also present his/her work during the Annual Meeting.

For details about submission and the evaluation process, visit the *Human Factors Prize* Web page at <http://www.hfes.org/web/pubpages/hfprize.html>.

**We look forward to receiving your submissions.**

