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Top 10 Tips for Getting Published in *Human Factors*

By Nancy J. Cooke, Editor, Human Factors

As I come to the end of my fifth and final year as editor of *Human Factors*, I would like to offer some guidance about getting articles published in our journal. (Many of these principles can also be applied when submitting work to other scholarly publications.)

In what follows, I offer suggestions for circumventing the 10 most common roadblocks to publication in *Human Factors*.

1. Make explicit and compelling the contribution of your work to the theory and/or practice of human factors/ergonomics.

Space in quality journals is very limited, and foremost among the criteria for selection is *incremental contribution*. If your work doesn't generalize or advance the body of knowledge in the field by more than a trivial amount, it isn't likely to be accepted, no matter how well conceived or executed it is, or how well you've presented it. Lack of contribution to the field is the most common basis on which submissions to *Human Factors* (and most other journals) are rejected. Ask yourself and others whom you trust – colleagues, faculty, family – to assess how important your message is, and proceed only if you are convinced that it is substantial.

Lack of substance, however, is but one facet of this roadblock. Surprisingly often the substance is there, but it isn't clearly articulated in the presentation. Probably a third of all submissions to *Human Factors* suffer from failure to make explicit the nature of the incremental contribution.

Make doubly sure your contribution to the literature is clearly articulated in the abstract (a *Human Factors* requirement), the introduction, and the conclusion. In this case, redundancy is a good thing.

2. Connect your contribution to the HF/E literature and to the readers.

Once you've determined that your contribution is sufficient to merit publication, decide whether it fits well within the topical domain of the field. Two guides for making this decision are available in each issue of the journal: a listing of core topic areas (<http://www.hfes.org/Web/PubPages/TopicList-HumanFactorsJournal.pdf>) and the Information for Authors (<http://www.hfes.org/Web/PubPages/hfauthorinfo.html>). If, after considering these instructions and the topic list, you are still unsure about the relevance of

your work for this outlet, scan through past issues of the journal or consult with professionals in the field.

Deciding what does and doesn't fit isn't always an easy call because the field itself covers a far wider topic domain than do most disciplinary journals, and that domain is expanding. One popular misconception – that *Human Factors* publishes only laboratory-based empirical studies – is patently false. During my tenure, *Human Factors* has published field studies, research employing cognitive task analysis, integrative reviews, theoretical works, and methodological pieces. Further, in the service of HFES's strategic outreach objectives, we have attempted to push the bounds of traditional HF/E areas and open up the journal to topics that may seem "on the fringe." Naturally, there are limits; some topics are clearly outside the field's extensive domain, but again, there is no clear boundary.

3. Present your contribution in the best possible form at micro and macro levels.

This is probably the most obvious advice for any author, but substandard exposition is far more common than it should be. At the extreme, many manuscripts that might otherwise be given serious consideration are eliminated on this basis alone. It is the author's responsibility to communicate the message clearly and effectively, not the reviewer's, editor's, or reader's to figure it out.

There are many ways at both the macro and micro levels in which poor composition can undermine communication, so it would be impossible to list them all in this article. But some seem to occur frequently enough to merit particular attention here.

Communicate your contribution clearly and explicitly, organizing the presentation logically, as you would in telling a story. Put yourself in the reader's position, asking at each point what you need to know in order for the next paragraph or section to make sense. Unlike some stories, however, journal articles are not supposed to be suspenseful. The reader should be able to predict from the introduction what lies ahead in the methods section. Start by explaining the motivation for the work. As Associate Editor Deborah Boehm-Davis suggests (personal communication),

Research is typically done for one of three reasons: (1) nothing has been done in this area, (2) work has been done in this

10 Tips for Getting Published in Human Factors

(continued from page 1)

area and there is a hole that needs to be filled, or (3) research/theory is conflicting, and you are trying to resolve the conflict. If (1), you expect a general exploratory study leading to identification of important variables. If (2), you expect that the authors will manipulate variables that explore the gap or hole in previous work. If (3), you expect a design that pits the conflicting variables against one another. This also means that the discussion follows with (1) description of what was identified and where to go from here, (2) what knowledge about the “gap” adds to what was previously known, or (3) which theory/approach seems more promising. This “flow” doesn’t happen often enough.

Avoid the redundancy and bloat of poorly organized manuscripts. When the initial review of disorganized papers requires that they be shortened, authors are obliged to pay closer attention to organization, and the result is substantial improvement in clarity and overall quality. Why not invest that attention at the outset so that your product enters the review process in the best possible shape? As the saying goes, “You have only one chance to make a good first impression.”

Pay attention to grammar, spelling, term definition, and sentence clarity. Again, this contributes to that important first impression.

Be sure to provide sufficient methodological detail. Reviewers often cite this as a problem. It’s tricky: You should provide enough detail to enable someone to replicate the study, but at the same time, you shouldn’t overdo it in anticipation of every possible question or criticism someone might raise, and you should avoid redundancy. It’s important to define your variables operationally and relate them to whatever motivated the work.

Keep your audience – the readers – in mind. HF/E is a wide domain, so *Human Factors* readers constitute a very diverse population. Don’t assume that they have all read the same literature, taken the same classes, conducted the same kind of research, or earned their degrees in the same field as you have. For maximum impact, make your work accessible to as many readers as possible.

There is no better way to perfect your writing skills than to **go through your own Write-Review-Revise (WRR) process using peers, colleagues, or students as reviewers.** In my opinion, several rounds of WRR before submission can reduce the number of more lengthy WRR rounds after submission.

4. Adhere to length restrictions associated with your submission type.

Authors seem to find it difficult to adhere to length restrictions, but required reduction in length almost always improves the clarity and quality of the end product. Guidance in this regard is readily available for the *Human Factors* article categories: Research Reports, Regular Articles, and Review Articles, and in some cases, Special Section articles (see the Instructions for Authors at <http://www.hfes.org/Web/PubPages/hfauthorinfo.html>). First determine which of those article categories best applies to your work, then follow the respective length guidelines.

5. Cite the relevant literature.

Similar to my earlier points about methodological detail, what – and how much – literature to cite is tricky. Criticisms of both excessive and deficient referencing are common in the review process. Although you can never be certain how much literature to cite, you should give the matter careful thought, making sure you include and accurately report all the most relevant work (particularly the most recent) and omit what you regard as tangential. The reviewers may disagree with your decision, but this is not likely to result in failure unless your omissions have seriously compromised the rationale for the work, your methodology, or your conclusions. Provided your work constitutes a clear incremental contribution, this feedback will be constructive and helpful in strengthening your ultimate product.

Authors tend to assume a defensive posture in citing the literature. If you decide an article or chapter is worth citing, be sure to make its relevance to your “story” explicit and represent its substance accurately. In an effort to be all-inclusive, some authors give short shrift to what the cited author actually says, which reviewers might perceive as padding the reference list. That raises doubts about the author’s grasp of the literature and the credibility of other facets of his or her report.

One final point about citation relates to my earlier comment about expanding topic coverage. If your work is somewhat beyond the mainstream of topics published in *Human Factors*, the literature review format provides an excellent opportunity for you to build your case for relevance. Similarly, if you are inexperienced in the HF/E domain, a good place to start is by perusing the reference lists of review articles and regular articles published in areas related to your work.

6. Be sure that your methods address the question you are trying to answer.

Reviewers can always raise methodological issues of one sort or another, because no experimental design or methodology is perfect. But you can avoid some of the more serious criticisms simply by ensuring that your methodology addresses the question that motivated the work and that your description makes this connection clear. There will always be some limitations and caveats, but they should be clearly spelled out.

As noted earlier, when reporting your research, describe your variables and measures in enough detail to enable replication. A helpful technique for checking all this is simply to run your methods section by a few colleagues or professionals whose candor you trust before submitting the manuscript.



Human Factors
and Ergonomics
Society

Bulletin

Volume 52, Number 10

October 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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7. Report statistical results completely and factually.

Reviewers generally provide detailed comments on methods and results and often suggest alternative ways to analyze data. In contrast to some methodological issues, these can typically be addressed easily in a revision. Some common pitfalls in this area include failure to report the results completely (e.g., leaving out degrees of freedom) or “spinning” the results to better support a hypothesis.

One common example is reporting a result as marginally significant when it fails to meet the significance criterion established in advance. The p value is often determined by convention but can be set by the researcher (to $p < .10$, for instance). This is a binary decision rule, and your result is either significant or it isn't. In this context, there are no marginally significant results. This does not, of course, preclude reporting actual p values, and traditional hypothesis testing is not the only means of designing, analyzing, or interpreting research.

8. Apply HF/E principles to your graphical presentations.

A terrific article in *Human Factors* by Gillan, Wickens, Hollands, and Carswell (1998) provides guidelines for data presentation that directly address the ironic situation that authors often fail to consider the user in their graphical presentations. Too often we see graphs that are unreadable, axes that are unlabeled, and representations that are inappropriate for the data type (e.g., line graphs for categorical data). These types of mistakes are generally easily fixed but embarrassing for those who profess to be HF/E professionals.

9. Do not overstate conclusions.

It is one thing to be explicit about the contribution of your work and quite another to overreach your data and proclaim that you have the final solution for global warming or world hunger. Results need to be presented and discussed honestly. This means steering clear of discussions of marginal results or the “trends that could have been” in an effort to confirm predictions. Rather, view your findings objectively, asking whether they advance our understanding of the engaged topic and, if so, how. Significant confirmation of well-conceived hypotheses obviously makes a contribution, but so too can unexpected failure – again, provided the work was well conceived and executed. Often such unexpected findings suggest new avenues to explore, and these should be exploited rather than marginalized. Every study has its limitations, and these should also be acknowledged in the discussion, along with suggestions for overcoming them in future work.

10. Be responsive to reviews.

In my five years as editor, I have not seen a submission published without at least some revision. Most require more than one round of revision. Invariably, the end result is substantially stronger. The review process is not an adversarial one intended to criticize and minimize your contribution but, rather, is a constructive process aimed at helping those with an important message to present that message in its best possible form. Both you and the journal are well served when the inevitable requests for revision are viewed in that light.

This does not mean that you must blindly comply with each and every comment or suggestion of all the reviewers (some of which might conflict). Being responsive means recognizing and

addressing all the reviewers' concerns, whether through revision or explanation for not revising. Address each reviewer comment in a cover letter accompanying your revision, identifying explicitly (with reference to page and line numbers) where the changes appear. But do not make the mistake of addressing comments in a cover letter, only to ignore them in the revised document. The reviewers are representative of your readers, and if they have questions, it is likely that readers will as well.

Steps to Success

In my opinion, if authors were to adhere to these 10 practices, they could greatly increase the number of submissions that make it into print. It would also free reviewers to focus on other, more subtle but perhaps deeper theoretical or methodological issues that might elevate the contribution and impact ultimately made by the submission, thereby advancing the theory and practice of human factors/ergonomics.

I thank the associate editors who have contributed to this Top 10 list (Deborah Boehm-Davis, Patricia DeLucia, and William Horrey), as well as William Howell, who provided very helpful input on my first draft. Last but not least, a special thank-you to all of the reviewers, associate editors, and HFES staff with whom I have worked over the last five years. Along with the authors, each of you has significantly contributed to the high quality of published articles that we find today in *Human Factors*.

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NATIONAL ERGONOMICS MONTH

National Ergonomics Month Is Here!

By Raegan M. Hoefft, NEM Committee Chair

October is here, and that means it's National Ergonomics Month (NEM) – now in its seventh year! Have you participated in NEM events in the past? If not, there's no time like the present to get started.

For those of us who are truly passionate about HF/E, the field is like our child, and it's growing up right before our eyes. We are proud of its achievements, we learn from our collective mistakes, and we are molding it for a lifetime of success. NEM provides us with the opportunity to speak about HF/E to those who are not familiar with it and to exchange stories with others with similar experiences. So will you take the plunge?

The slogan for NEM is “A Time for Teaching, Learning, Networking, Service, and Fun!” That encompasses quite a bit, but at the same time, it leaves the door wide open for you to plan any type of event, in any location, with any type of audience that you want to reach to spread the word about the human factors/ergonomics field. In fact, the event need not even be exclusively HF/E themed in order to promote the field.

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Over the last seven years there have been some unique and creative ideas for NEM activities:

- Ron Shapiro created a presentation called “Games to Explain Human Factors: Come Participate, Learn, and Have Fun!!!” which includes interactive games for students of all ages (available for use via the NEM Web site).
- Marc Resnick has used popular music as a means for teaching HF/E principles (Resnick, 2008).
- A number of researchers have employed peanut butter and jelly sandwiches as a means for teaching HF/E principles (see Coyle & Vaughn, 2008).
- Jennifer Dyck used designs of EXIT signs for teaching HF/E principles (Dyck, 2007).
- Tracey Wortham adapted common games, such as Pictionary and Jeopardy, into HF/E teaching tools (Wortham, 2006).

Even prior to the inception of NEM, HFES had a panel session on how cartoons such as Dilbert and The Far Side demonstrate basic HF/E principles (Caird et al., 2001).

In the coming months, these and other articles will be accessible via the NEM Web site’s Related Articles page. Perhaps these ideas will inspire you for 2009 NEM and beyond!

Think You’re Too Busy for NEM?

We recognize that the fall is the busiest time of the year for many people, but we urge you to consider two important things related to NEM.

First, NEM is simply the annual kickoff for outreach events. This means that outreach efforts can occur throughout the year. For example, this past July, the HFES University of Massachusetts – Lowell Student Chapter completed its “Community Charlas” activities, which focused on spreading occupational ergonomics awareness among Hispanic workers. This event won second place in the 2008 NEM Best Action Plan Contest.

Second, no effort is too small when it comes to outreach events. To have an impact, you do not have to plan a huge, all-day event that will draw hundreds of people. Small-scale, inexpensive, easily organized activities can be used to promote HF/E, such as guest lectures in introductory psychology or engineering courses, a career-day session at a local middle or high school, or even a bad design or an HF/E-inspired cartoon outside your office or cubicle!

Upcoming Events

The NEM Web site lists upcoming events for 2009 (www.hfesnem.org). We encourage you to submit your upcoming events for posting on this list. The benefits to posting your upcoming events include public awareness, possible collaboration with those planning other events, and inspiration for others to conduct their own outreach events.

NEM at the 2009 Annual Meeting

The HFES Annual Meeting is also an excellent place to partic-

ipate in NEM activities. This year, Steven Casey, author of *Set Phasers on Stun* and *The Atomic Chef* and former chair of the HFES Public Relations Committee, will be speaking at the NEM Session on Monday, October 19, about his experiences over the years with outreach activities. His talk is entitled “‘The Good, the Bad, and The Ugly’ in the Promotion of Ergonomics... With Sincere Apologies to Sergio Leone and Clint Eastwood.” Be sure to attend the NEM session on Monday from 4:45 to 6:15 p.m. to hear Steve’s talk, find out the results of this year’s NEM Best Action Plan and Implementation Plan contests, and participate in some interactive games.

Remember, too, to consider all the components of the NEM slogan during your trip to San Antonio. Coming together with your HF/E colleagues affords you the opportunity to teach, to learn, to network, to volunteer your services, and to have fun. Outreach applies to our internal community as well as those outside the HF/E realm. There are unlimited opportunities to network during the Annual Meeting, in planned and impromptu networking sessions, business meetings, and even in hallways and elevators!

Embrace all possible opportunities to promote HF/E, during NEM or anytime of the year. And, of course, have fun doing it!

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HFES Chapters Plan NEM Activities

A number of HFES Local and Student Chapters are holding events in honor of National Ergonomics Month 2009. Consider using some of these creative ideas to promote awareness of human factors/ergonomics in your area.

The **Atlanta Chapter** is working on a Backpack Awareness Campaign for a local high school. The aim of this campaign is to educate school-aged children about how to choose and wear backpacks to decrease back pain and avoid musculoskeletal developmental problems associated with continued use of overly heavy backpacks. The campaign is planned for the spring 2010 semester, but during October, chapter members will meet with high school

teachers to organize it. Chapter members will also teach an industrial design class on HF/E practices and guide students in a project to design better backpacks for younger children.

The **Clemson University Student Chapter** will celebrate NEM 2009 by promoting the HF/E discipline to a local high school psychology class. Members will give a presentation explaining the HF/E field using pictures, videos, and case studies. They will conclude with an activity identifying an ergonomics issue at the high school and brainstorm and discuss design solutions. Chapter members will distribute information about where the high school students can find out more about HF/E or even get involved with the Clemson University Student Chapter. Chapter members hope to continue their relationship with this local high school and return for more activities in next spring.

The goal of NEM 2009 for the **Georgia Tech Student Chapter** is to educate the campus community about HF/E. More specifically, members aim to help the campus community become aware of everyday design issues relevant to them and to educate them about how HF/E principles can help overcome these problems. The chapter is planning a Bad Design on Campus Contest. The contest is open to all Georgia Tech undergraduate and graduate students. Those who wish to participate will be required to submit details about a bad design on the campus with a suggested redesign. Two winners will be chosen, and winning submissions will be posted on the student chapter Web site and highlighted in a campus newspaper article.

The **Pennsylvania State University Student Chapter** is hosting a "Human Factors in Industrial Engineering" lecture series for NEM to highlight the interdisciplinary nature of HF/E. Weekly lecture topics will include human factors in health care, computer science, operations research, and product design. The goal of the lecture series is to stimulate undergraduate and graduate students' interest in the utilization of HF/E concepts and tools in order to gain insight into problems in other engineering areas.

The **Purdue University Student Chapter** is planning three major activities for NEM: a Web site design competition, a technical meeting, and a field trip. The aim of these activities is to increase the awareness of HF/E among the Purdue student body. The goal of the Web site design competition is to introduce students to one major area in HF/E: human-computer interaction (HCI). Interested individuals will learn about fundamental design principles of HCI and gain hands-on experience from actual design practices. All submitted works will be evaluated in terms of functionality, usability, aesthetics, and creativity.

For the chapter's technical meeting, "Human Factors Labs Uncovered," representatives from different HF/E labs at Purdue will present their current research projects to chapter members and other interested individuals. Members will visit the Holleman-

Niswonger Simulator Facility at the Purdue airport, where they will learn how simulation technology can be used to train pilots and facilitate experiments in aviation.

At the **University of Idaho**, the HFES Student Chapter is working on getting articles about HF/E and their chapter into all three major university publications in the month of October. Members are also planning an information design workshop focusing on chart, table, and graph design for students and faculty from many disciplines, especially the sciences. Chapter members will give presentations and psychological demonstrations about HF/E to local high school science classes, and two chapter members will make presentations about HF/E at their high schools and undergraduate alma maters. As a special project for NEM, the chapter will conduct an ergonomic evaluation of the department conference room, making suggestions as to how best to structure it for a classroom and what types of ergonomic furniture should be purchased for it.

The **University of Illinois at Urbana-Champaign Student Chapter** has a number of activities planned for NEM. To kick off the festivities, they will host a bake sale to benefit a local food

pantry and will advertise their inaugural Bad Designs on Campus Competition. This competition will target all psychology, engineering, and HF/E students and encourage them to bring to light

some of the design challenges and problems on campus. The winner, who will receive a monetary prize, will be announced at the end of the month, and the group will meet to propose design solutions. Finally, the chapter will host a research symposium, in which current graduate and undergraduate students will highlight their research and prepare for the upcoming HFES Annual Meeting.

The **University of Oklahoma Student Chapter** is revitalizing its presence on campus. In order to attract students from such disciplines as industrial engineering, psychology, aviation, and computer science, members are planning a site visit to the Federal Aviation Administration's Civil Aeromedical Institute on November 13. Officials from the Mike Monroney Aeronautical Center will give an overview of their emergency aircraft evacuation training methods. The chapter intends this event to serve as a springboard for its growth and outreach initiative over the next year.

HFES thanks the following contributors to this article: Sarah Acton, President, Atlanta Chapter; Nathan Klein, President, Clemson University Student Chapter; Keith R. Bujak, President, Georgia Tech Student Chapter; Monifa Vaughn-Cooke, President, Pennsylvania State University Student Chapter; Leon Zeng, President, Purdue University Student Chapter; Kylie Pfeifer, President, University of Idaho Student Chapter; Scarlett Herring, President, University of Illinois at Urbana-Champaign Student Chapter; and Drew Harnish, President, University of Oklahoma Student Chapter.



Preliminary Call for Proposals: 54th Annual Meeting

September 27–October 1, 2010

Hyatt Regency San Francisco, Embarcadero Center
San Francisco, California, USA

The Human Factors and Ergonomics Society's Annual Meeting is the primary gathering of researchers and practitioners in the field of human factors/ergonomics and related areas. We invite you to submit proposals for the 54th Annual Meeting, which will take place September 27–October 1 at the Hyatt Regency San Francisco, Embarcadero Center. Participants are invited to submit proposals, including case studies, debates, demonstrations, competitive product designs, new methodologies, on-site experiments, and posters involving both fixed and dynamic information presentation.

Proposal Due Date

The deadline for submitting any type of proposal is *January 19, 2010*. A fully detailed call for proposals will be available at the HFES Web site in November.

Submit a Five-Page Formatted Proposal

The Technical Program Committee is seeking five-page proposals, which must be formatted in the same two-column layout that is used for papers published in the proceedings. This aids both proposers and reviewers: Proposers no longer have to write two distinct types of documents, and reviewers can be more confident that the proposal is an appropriate summary of what will appear in the proceedings.

Proposals for any type of submission (lecture, poster, panel, etc.) cannot exceed five correctly formatted pages. Formatting instructions will be available in the online Call for Proposals, along with a layout template into which text may be inserted. Again, there is no word limit for the proposals; however, the font must be easily readable, and authors must address all the points specified in the Call for Proposals.

Submitting Proposals

Detailed instructions for submitting materials will be included in the online Call for Proposals. All submissions will be uploaded to a Web site. (The URL will be provided in the instructions.) You must have an e-mail address to submit a proposal because all correspondence regarding your submission will be sent via e-mail.

Papers that have been published previously or presented at another professional meeting may not be submitted. All research and analyses described in your proposal must be complete at the time the proposal is submitted. Program chairs may reject, with or without review, papers that do not present completed work. The sole exception to this policy is for student work submitted for consideration in the Student Forum track, in which case the proposer may report on work in progress.

Note that for all accepted submissions, one of the authors must attend the meeting to present the work. All presenters are required to pay the meeting registration fee.

If you know of nonmembers who might be interested in submitting a proposal, please send their contact information to the Communications Department (lois@hfes.org, 310/394-1811), and we will invite them to submit their work.

HFES Copyright

HFES requires a transfer of copyright unless the work was performed by U.S. government employees. However, the author may reuse the material for any purpose without restriction or fee. If you have questions about the HFES copyright transfer policy, please contact the HFES Communications Department (310/394-1811, lois@hfes.org).

We look forward to receiving your submission and to seeing you in San Francisco next year.

HFES FELLOWS

Invitation for Applications for HFES Fellow

The Human Factors and Ergonomics Society's Fellows Selection Committee invites applications for Fellows to be elected in 2010. "Fellow" is a special class of Society membership, as established in the Bylaws, Article I, Section 4. Individuals may apply for Fellow status on their own behalf, or they may submit an application on behalf of another.

Election to Fellow status is an honor that recognizes outstanding achievement, consistently superior professional performance, exceptional contributions, service to the Society, and other meritorious accomplishments. Any Full Member of the Society in good standing (except members of the Fellows Selection Committee) may apply or nominate by completing the application forms for Fellow. No limitation is placed on the number of times a Member may be considered for election to Fellow.

Prospective applicants should carefully review the rules and regulations for Fellow designation and the guide for preparing the contribution statement in the application package prior to initiating the process.

Applicants must obtain recommendations of support for the candidate from three other Full Members. The meritorious contributions of the applicant must be detailed in the application form

and must be supported by evidentiary documentation included with the package.

The Fellow Application Package, including instructions, nomination and recommendation forms, and supporting information, may be obtained from HFES, P.O. Box 1369, Santa Monica, CA 90406-1369, carlos@hfes.org, and on the Fellows page of the HFES Web site (<http://www.hfes.org/web/Awards&Fellows/fellows.html>). The completed application package (application form, recommendation form, candidate's vitae or résumé, and supporting documentation) must be received by the Fellows Selection Committee at the HFES Central Office on or before **February 1, 2010**. Applications approved by the Fellows Selection Committee, chaired by Kenneth R. Laughery, and the Executive Council are recommended for approval by the Fellows at large. Candidates who are approved at all three levels will receive Fellow Designation at the 2010 Annual Meeting.

INTERNATIONAL ERGONOMICS ASSOCIATION

Human Factors/Ergonomics: An International Perspective

By *Christopher B. Mayborn*

Recently, it was my pleasure and privilege to attend the 17th World Congress on Ergonomics, hosted by the International Ergonomics Association (IEA) in Beijing, China. This was my second opportunity to attend this triennial professional meeting, the first being the 16th Congress in Maastricht, Netherlands, in 2006. To me, these conferences provide a wonderful cultural and intellectual opportunity to step outside the box and see what the rest of the world is exploring and accomplishing in our human factors/ergonomics science.

Knowledge-Sharing Benefits

As an active member of the HFES Aging, Safety, and Internet Technical Groups, I regularly attend our HFES Annual Meetings and feel that I am well read and up to date on topics of interest within the United States. Yet, attending an international conference provides a broader perspective, which I have found to be both informative and refreshing. For instance, I listened to a paper session chaired by Christopher Schlick (Germany) that addressed the use of information and communication technology by older workers. At this session I met and interacted with researchers such as Martina Ziefle (Germany), who investigates how the miniaturization of technology affects the usability of devices for older adults. Because my research interests are similar, I thoroughly enjoyed hearing about alternative research approaches that I had not previously considered in my own lab.

I believe exposure to such different ideas may shape my future research efforts. In fact, this has already happened, because I gleaned a few ideas regarding information security from another

session, chaired by Tomas Berns (Sweden), which have already informed one of my graduate student's dissertation work on the topic. Likewise, my own presentation on cybersecurity in a session chaired by Andrew Thatcher (South Africa) gave me the opportunity to hear direct feedback from an international audience on my work. This feedback will be instrumental during the publication process ahead.

Although learning about work being done internationally is informative for research topics that we are familiar with, another benefit to attending such conferences is to learn about topics that are less familiar to us. As a scientist interested in human factors and aging, I find independence and accessibility interesting as well but am not very knowledgeable about it from the perspective of engineering and design. After listening to Sritomo Wignjosobroto (Indonesia) present a new wheelchair design, I am now much better informed on the topic.

The closing keynote speech by Colin Drury (United States) brought home the point that the world community shares common challenges that can be addressed by human factors/ergonomics professionals. For HF/E practitioners and researchers, these shared methods of investigation and problem solving extend beyond culture and geography to make us a small but valuable resource in making the world a better place in which to work and live.

Cultural Benefits

The cultural benefits of traveling to an international conference are as valuable as the intellectual ones. At a dinner during the Beijing congress, we watched an impressive show that included a singer from the Beijing Opera, a traditional drum ceremony, and an acrobatic display. Throughout the conference, the volunteers and students from the Chinese Ergonomics Society organized a variety of daytime excursions to places such as the Great Wall, the Forbidden City, the Summer Palace, and the site of the Beijing Olympic Complex. During the evenings, conference participants could attend the Beijing Opera, feast on Peking duck, and attend the Beijing Night Show, complete with the dragon dance.

During all these activities, I enjoyed the social benefits of the conference by making new friends and getting reacquainted with old friends whom I see at our own HFES Annual Meetings. Nothing breaks the ice like climbing the Great Wall with Andy Imada (HFES secretary-treasurer and IEA president-elect), touring the Summer Palace with Debbie Boehm-Davis and Dave Kaber, eating roast donkey meat and taking a rickshaw ride through the Hutong alleyways of Beijing with Mike Wogalter, having a Chinese beer with Klaus Zink (IEA secretary) or spending 12 hours on an airplane and many exotic meals with Cheryl Bolstad.

With all these memories and experiences in mind, I find myself eagerly anticipating the next IEA World Congress, scheduled for 2012 in Recife, Brazil. The closing keynote session by Marcelo Soares (Brazil) made it clear that the upcoming meeting will be equally exciting!

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ISO/TC 159/SC3 Meeting in Beijing

By Bruce Bradtmiller, Institute Domain Leader

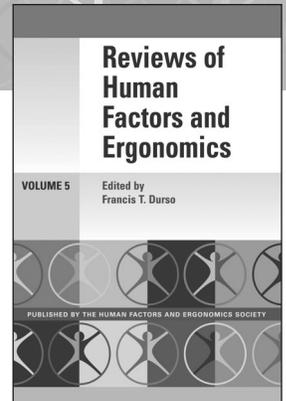
I recently attended the 19th plenary meeting of International Organization for Standardization (ISO) Technical Committee (TC) 159 (Ergonomics), Subcommittee 3 (Anthropometry and Biomechanics) in Beijing. The meeting immediately followed the 17th Triennial International Ergonomics Association Congress in August. In addition to conducting the committee's regular work, the delegates heard a presentation by Ken Sagawa (Japan) on the Advisory Group on Accessible Design (AGAD). The AGAD activities are guided by ISO Guide 71, "Guidelines for standards developers to address the needs of older persons and persons with disabilities" and the United Nations Convention on Rights of Persons with Disabilities, Article 9 – Accessibility.

There are seven distinct ISO TCs working on accessible design issues, of which TC 159 is the most active. ISO Technical Report 22411, "Ergonomics data and guidelines for the application of ISO/IEC Guide 71 to products and services to address the needs of older persons and persons with disabilities," supplements ISO Guide 71 with ergonomics data and design considerations for the implementation of accessible design. It has some information on reach range and step height (physical strength). Sagawa presented SC3 with a request to review ISO 22411 with an eye toward identifying missing topics or parts that could be fleshed out more completely. Additionally, he requested that SC3 implement accessible design in developing new standards or in revising existing standards by using Guide 71 and TR22411.

In regular business, the subcommittee voted to proceed with a New Work Item proposal on ISO 7250-1, "Basic human body measurements for technological design — Part 1: Body measurement definitions and landmarks." This revision of the standard will increase the specificity and consistency of the definitions to make them more useful for 3-D anthropometry. It is the centerpiece of all the other SC3 standards and has not been updated since 3-D scanners have become more commonly used. This update will make the standard more broadly applicable and

ensure its value in the years to come. I agreed to co-lead the project, along with Yunja Nam (South Korea). Part 2 of the series, "Statistical summaries of body measurements from individual ISO populations," is expected to be published in late 2009, and Part 3, "Worldwide and regional design values for use in ISO equipment standards," is in preparation.

Volume 5 Just Released!



Reviews of Human Factors and Ergonomics, Volume 5, contains eight chapters; in Editor Frank Durso's words: "each of these offerings is a seamless piece of

scientific cloth in which there is no stitching that binds the basic and the applied.... If one imagines a grid with fundamental concepts and methods as the rows and environments as the columns, one can see that some chapters have taken a broad slice down the columns, some have sliced through the row, and some have focused on the intersection of the concept and the environment."

Volume 5 Contents

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Chapter 5. Expertise: Acquisition, Limitations, and Control

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Volume 5 of the *Review of Human Factors and Ergonomics* provides an excellent overview of some of today's top research topics, including cockpit automation, human performance modeling, and augmented cognition. It makes an excellent resource for both novices and those who are advanced practitioners in the field.

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Bulletin



Volume 52, Number 10 October 2009

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