



New ANSI Standard for Testing of Educational Seating

By Mark E. Benden and Teresa Bellinger, Members, BIFMA Seating Subcommittee

On November 2, 2012, the American National Standards Institute (ANSI) approved the newly developed safety and performance standard for educational seating: ANSI/BIFMA X6.1-2012: Educational Seating – Tests. The Business and Institutional Furniture Manufacturer’s Association’s (BIFMA) Seating Subcommittee worked diligently to create this new industry consensus standard, using several test methods from existing ANSI/BIFMA seating standards as a basis. ANSI/BIFMA X6.1-2012 involved the development of several unique tests relevant to the educational environment. These included tests for educational products such as convertible benches, chair-desks, and backpack hooks.

We were on the committee that promulgated the standard and, as much, were uniquely positioned to contribute human factors/ergonomics knowledge and approaches to its creation, which we describe in this article.

Background and Development

Although BIFMA had several variations of chair standards dating from 1974, there was no specific test standard for classroom seating. The educational seating standard was initiated in 2008 and put to a member vote by 2011. This may seem like a long time to gain industry consensus on methods and specifications necessary for this type of standard, but it is typical of the lengthy process of defining and refining an entire branch of manufacturing within the furniture industry. This particular standard defines specific tests, laboratory equipment, conditions of test, and recommended minimum levels to be used in the test and evaluation of the performance, durability, and structural adequacy of educational seating.

The standard, as is the case with most standards, starts with a scope, definitions, and general information about tests, terminology, and types of chairs to be covered. In general, ANSI/BIFMA X6.1-2012 covers seating products normally used in schools and colleges: stacking chairs, tablet-arm chairs, chair-desks, stools, cafeteria tables with attached seating, and convertible bench/tables. Tests included in the standard are related to different components of the chair; for example, the backrest (i.e., strength and durability), chair base, tilt mechanism (if applicable), seat (i.e., impact), stability (will it tip over too easily?), arms (strength and durability), casters, leg strength, footrest, and tablet arm (if applicable). Indexes in the standard include explanations of how to create the materials needed for testing, along with some of the more unique tests that came up during the standard’s development.

Consensus Process

When building consensus among many subject matter experts, a common technique used to keep the process moving is, first, to employ the larger group of 30–40 people to clearly define a set of needs related to an area of the standard and, second, have a smaller group of agreed-upon experts meet separately to research, clarify, and write a specific test or test definition. The size variations between small and large educational seating settings are too vast to allow a one-size-fits-all approach to testing. As such, definitions of what products in the market generally look

like must be evaluated against size ranges of children who are likely to use those products. Once agreement is reached on what the users will look like, efforts are made to use extremes in that population to build in safety factors. Assumptions also had to be made to simulate 10 years of use during a typical 180-day school year in order to develop the number of cycles to test a chair in a controlled lab environment.

Because the standard involves performance measures, it is critical to understand not just who will use the product but also how they are likely to use and abuse it. For example, it is likely that a child will lean back in a chair on the two rear legs. Agreeing that educational seating should be designed to discourage bad outcomes from this behavior was the first step. Deciding how to “qualify” a chair as acceptable in this effort was an entirely different challenge. An example of something the group did not take on is the possibility that a “plus-size” teacher might step onto the seat to reach something. Although this might happen, it is beyond the scope of “reasonable use,” so the standards team felt it did not fit into the scope of the standard. (That said, an ANSI/BIFMA team is currently developing the X5.11 Heavy Occupant Seating Standard to help address the growing need for larger-capacity seating and how to test those products that claim to be up to the task. Industry leaders hope to see this standard in place as early as 2014.)

The Human Factors/Ergonomics Connection

The most significant HF/E-related discussions turned out to focus on anthropometry databases, with concerns over the effect of obesity on the size of children and how these changes impact the structural design and testing of the products covered by the standard.

Research for the type of information needed in this standard came from sources such as the CAESAR anthropometric database (2002 report), NHANES (combined data set for the years 2005–2008), BS EN 1729-2:2006, Molenbroek et al. (2003), Benden (Texas A&M, 2009), CHILDATA (June 1995), sizing of current educational seating on the market, and peer-reviewed papers on utilization and proprietary industry experience based on internal testing and warranty experience.

Because the NHANES data included only height and weight data, we also reviewed historical anthropometric data from CHILDATA (June 1995), which is a compilation of anthropometric studies completed on children around the world. Of specific interest were anthropometric measurements (for example, hip breadth, buttock-to-popliteal length, and popliteal height) that (a) would help in identifying what seat height/width would be applicable for children and (b) provide input on the design of the bag that would hold the load that would be in the seats or dropped into seats during testing.

Selected furniture companies provided measurements of some of their current educational furniture and the grades of children who typically use them. The ages for these grades were then identified to determine if the anthropometric measurements for children of the ages who typically use the chairs matched the current chair sizing.

The compilation and comparison of all of these data helped the team conclude that without a recent anthropometric database of children’s measurements, it was not possible to make recommendations on changes to the sizes of chairs for children. Ultimately, the decision was made to use seat heights and children’s weight to group the chairs into three sizes that would be utilized in the standard. The anthropometric data were also the basis for recommendations regarding the loads for tests and the dimensional criteria for the bag that would hold the test loads.

Conclusion

The successful completion and approval of ANSI/BIFMA X6.1-2012: Educational Seating – Tests shows that including ergonomists on BIFMA standards committees allows for the furthering of HF/E issues and more informed standards. It also clearly identified the need for a more current anthropometric database of children in North America that includes more than just height and weight. Such a database would allow ergonomists to provide more up-to-date data that de-

signers and manufacturers of children's products could utilize to achieve a better fit of their products with the intended population.

Copies of the new standard are available from BIFMA (email@bifma.org, 616/285-3963, <https://bifma.org/secure/orderform.html>).

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BIFMA is the not-for-profit trade association for business and institutional furniture manufacturers. Since 1973, BIFMA's role has been to sponsor the development and refining of current and future standards, educate on their importance and application, and translate their necessary complexity into more easily understood and implemented formats. BIFMA also monitors the state of the industry, serves as a forum for member cooperation and collaboration, interacts with international counterparts, and advocates for regulatory conditions that foster value and innovation.

PUBLIC POLICY MATTERS

Congress Acts to Avoid Fiscal Cliff; Sets Stage for Next Round of Negotiations in 113th Congress

By Lewis-Burke Associates LLC

Congress brought the country to the brink of the so-called fiscal cliff, passing a negotiated budget agreement past the midnight deadline on New Year's Eve when taxes were due to increase on most Americans. Although much has already been reported in the media, key takeaways for the research community are as follows:

- The two-month delay in sequestration is a welcome sign and one that may portend a much better solution for research funding. However, the now smaller reductions would have to be made in an even more compressed, seven-month time frame if they were to go into effect later in the year.
- Even if it is eventually averted, the overall prospect of sequestration continues to cast a long shadow over federal agencies and their risk tolerance for new initiatives, as they must manage programs as if the sequestration could go into effect starting in March.
- Future debt ceiling discussions coming up in February, as well as the new spending caps (reduced by \$4 billion in fiscal year 2013), will further complicate final FY 2013 appropriations negotiations. Furthermore, even if sequestration is not used as a tool, discretionary spending programs will remain "on the table" to the extent that agreements cannot be reached on other mandatory spending.
- The tax extensions (e.g., charitable IRA rollover, R&D tax credit, and section 127 for graduate assistance) are all welcome signs that higher education remains a priority. However, the

Obama administration is still expected to push for a limit in deductions or other modifications affecting the university model in forthcoming tax reform discussions.

The budget agreement, known as the *American Taxpayer Relief Act of 2012* (H.R. 8), addresses the foregoing issues, but it fails to tackle other major fiscal issues, including the creation of a structure for long-term tax reform or the reform of entitlement and other mandatory programs such as Medicare and Medicaid. Also deferred is action to increase the limit for government borrowing beyond the current debt limit of about \$16.4 trillion. These issues, in addition to expiration of the Continuing Resolution (CR) that funds the entire federal government through March 27 and other tax issues on the administration's agenda, will be urgent items for the new Congress, which was sworn into office on January 3.

The fact that H.R. 8 passed with a bipartisan majority should leave no one under the impression that there will be a new period of cooperation between the White House and Congress. Members on both sides raised objections to the budget agreement. Republicans are calling for additional spending reductions through entitlement reform and spending cuts; Medicare and other entitlement programs remain a significant focus of further deficit reduction efforts in the new Congress. The administration is expected to seek further revenues in the next round of budget negotiations. Although discretionary programs funded through the annual appropriations bills have a two-month reprieve from the sequester, they are certainly expected to be part of the renewed and likely contentious budget negotiations in the coming months.

Below are additional details about the deal and its impact on the research community.

Impact on Annual Spending/Budget Sequestration

Of particular concern to the research community in the debt deal are the across-the-board spending reductions due to be triggered by the sequester enacted in the *Budget Control Act of 2011* (debt limit agreement). It was only in the late hours leading up to the final budget agreement that negotiators agreed to delay the sequester for two months, giving the 113th Congress an opportunity to address the across-the-board reductions on defense and nondefense programs, including research and education, in a less hasty and more focused manner. As part of the agreement to delay the sequester, the \$24 billion cost was offset by changes that would reduce discretionary spending caps by \$12 billion (half from defense and half from nondefense) and make changes in conversions for Roth retirement accounts to save \$12 billion over 10 years.

Although the provisions in H.R. 8 allow more time for broader relief from the spending cuts to be enacted (i.e., to avert sequestration), Congress must adjust its spending caps for both defense and nondefense spending to reflect the new cuts (\$12 billion) in FY 2013 and FY 2014, which may complicate final appropriations for individual bills this year. In addition, this relief reduces the sequestration amount for FY 2013 to \$85.33 billion, but the overall prospect of sequestration continues to cast a long shadow over federal agencies because they must manage programs as if the sequestration could go into effect starting in March.

The Obama administration has stated its desire that Congress work on a balanced plan that will end the sequester with a combination of additional spending cuts, including entitlement reform, and additional revenue.

Tax Provisions

The budget agreement also extends various business tax credits for one year, such as the Research and Experimentation tax credit, and renewable and other energy tax credits to help boost the economy. In addition, H.R. 8 includes a number of tax provisions and extenders of interest to the higher education community.

- The American Opportunity Tax Credit, created under the *Recovery Act*, is extended for another five years, through FY 2017.
- The bill extends for two years (2012 and 2013) the IRA Rollover and the R&D tax credit.
- The bill provides permanent extensions starting in 2013 for Section 127 employer assistance educational assistance, which includes assistance for graduate students, expanded student loan interest deduction, and enhancements to Coverdell Education Savings Accounts.

The tax provisions are also notable for what is not included. The final agreement does not make the proposed changes to charitable giving that were floated during the negotiations; for example, placing dollar or percentage caps on charitable deductions. Nevertheless, the [White House summary](#) notes that changes included in the final package, including itemized deductions for high earners, “sets the stage for future balanced approaches to deficit reduction, which could include additional revenue through tax reforms that reduce tax benefits for Americans making over \$250,000.”

Organizing for the 113th Congress

With the 113th Congress sworn in on January 3, House and Senate leaders have all but completed making their picks for committee leadership positions. Many senators and representatives will retain their chairmanships in the 113th Congress, but a few notable changes are expected. Below is a listing of anticipated House and Senate committee chairs for the committees of most relevance to the HF/E community. In these positions, Members of Congress will wield a great amount of influence in shaping and determining policy to be tackled by their respective committees for at least the next two years (new chairs marked with an *asterisk*).

House Committee Chairs

- Appropriations Committee – [Harold Rogers \(R-KY\)](#)
- Budget Committee – [Paul Ryan \(R-WI\)](#)
- Space, Science, and Technology Committee – [Lamar Smith \(R-TX\)](#)*
- Transportation and Infrastructure Committee – [Bill Shuster \(R-PA\)](#)*
- Armed Services Committee – [Buck McKeon \(R-CA\)](#)
- Education and the Workforce Committee – [John Kline \(R-MN\)](#)
- Homeland Security Committee – [Mike McCaul \(R-TX\)](#)
- Energy and Commerce Committee – [Fred Upton \(R-MI\)](#)
- Veterans’ Affairs Committee – [Jeff Miller \(R-FL\)](#)

Senate Committee Chairs

- Appropriations Committee – [Barbara Mikulski \(D-MD\)](#)*
- Finance Committee – [Max Baucus \(D-MT\)](#)
- Commerce, Science, and Transportation Committee – [Jay Rockefeller \(D-WV\)](#)
- Health, Education, Labor, and Pensions Committee – [Tom Harkin \(D-IA\)](#)
- Armed Services Committee – [Carl Levin \(D-MI\)](#)
- Homeland Security and Governmental Affairs Committee – [Thomas Carper \(D-DE\)](#)*
- Energy and Natural Resources Committee – [Ron Wyden \(D-OR\)](#)*
- Environment and Public Works Committee – [Barbara Boxer \(D-CA\)](#)
- Veteran Affairs Committee – [Bernard Sanders \(I-VT\)](#)

The recent announcement of Senator Mikulski as chair of the full Senate Appropriations Committee, following the death of Senator Daniel Inouye on December 17, is a positive sign for the science and engineering community. A strident supporter of federal investment in science and innovation, Senator Mikulski has chaired the Commerce, Justice, Science Appropriations Subcommittee for the last several years, which has funding oversight over the National Science Foundation, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, Office of Science and Technology Policy, the Department of Commerce, and the Department of Justice.

Given the current political and fiscal environment, it remains critical for scientific organizations like HFES to continue advocating for federal research programs. Over the next several months, HFES will be identifying ways for members to be engaged in advocacy through action alerts and other means.

ANNUAL MEETING

February 19 Is Proposal Deadline for HFES 2013 Annual Meeting



On December 17, HFES opened the online Call for Proposals for the 2013 International Annual Meeting, which will take place September 30–October 4 at the Hilton San Diego Bayfront in San Diego, California, USA. The deadline for submitting any type of proposal is **February 19, 2013**. Before submitting your work, please read the [Call for Proposals](#) thoroughly.

Papers that have been published previously or presented at another professional meeting may not be submitted. All research and analyses described in a proposal must be complete when the proposal is submitted. Papers that do not present completed work will be rejected. 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.

For questions on the submission process, please contact [Lois Smith](#) (310/394-1811).

Recapping the 2012 Student Career and Professional Development Day

Each year since 2003, HFES has offered Student Career and Professional Development Day, which enables students to meet with and learn from HF/E professionals and prepare for and a successful career in the field. Below, two students who attended the 2012 event in Boston describe what they learned.

HFES Fellows and Leaders: Preparing for a Successful Career in HF/E

By Jurate Liutvinskaite

So you are in graduate school—getting good grades, reading everything you can get your hands on, running research experiments, presenting results in conferences—doing everything your adviser tells you to do. Yet, at the end of the day, the question remains, “Is all this sufficient to get a job that I will enjoy?”

If you've ever pondered that sentiment, you are not alone. Although our discipline is one of a few that prides itself on better-than-average job growth in the foreseeable future, the process to getting that job starts long before graduation.

Here I describe the panel, "HFES Fellows and Leaders: Preparing for a Successful Career in Human Factors/Ergonomics," which was chaired by consultant Ronald G. Shapiro and Anthony D. Andre of Interface Analysis Associates. The panelists were Andre, Nancy J. Cooke (Arizona State University), and Lauren Reinerman-Jones (University of Central Florida).

Reinerman-Jones started the session by suggesting, first and foremost, that it's important to "be business savvy." This includes not only learning and understanding the business model and structure of the company you want to work for but also knowing how to create a good CV and résumé and how to interview well. She continued, "In the science world, we are offered one writing class and one presentation class, but the reality is that you need to have presentation skills [in the HF/E profession]. So, [students] might consider taking additional classes in public speaking and/or writing to sharpen these skills."

Cooke noted four words to guide students toward their profession:

- **Passion:** What area of HF/E motivates and drives you?
- **Networking:** People are very important to your career. To be successful, you have to share your ideas and interests and collaborate.
- **Communication:** Communicate your work to colleagues and to the community in general. Communication is important whether you choose to work in academia or industry.
- **Balance:** You need to find balance in your life. Balancing a family and work is essential to overall success.

The panelists agreed that maintaining balance is an ongoing challenge. Attendee Haydee Cuevas (Embry-Riddle Aeronautical University) suggested that you incorporate into your work schedule any family-related events or tasks, with time limits. And stick to those limits. "You shouldn't leave [anything] to chance. Time management is the key to a healthy life balance," she surmised.

Andre noted that if he had to communicate a suggestion to students in one sentence, it would be "Your reputation starts now." Human factors/ergonomics is a small field in which everyone knows everyone else, and your future is based on the relationships and reputation you form with other people. Andre shared a statistic from the San Jose State University human factors master's program: 90% of all jobs found by HF/E students came from leads from other students. In addition, students tend to get jobs in clusters: If one person gets a job in a certain company and enjoys it, he or she will communicate that to others, who will then try to find a job within that company as well.

It's very important to ask yourself what you think your professor and other students think of you. Because the field is small, both positive and negative news travels fast, so don't burn your bridges! Your reputation with your professors, your fellow students, and the people you meet during conferences matters. People you meet and interact with will most likely be the ones who will help you get that first job.

Shapiro asked, "What is the most important thing you do here, at this conference?" It's not your presentation, although that is important. It's not new knowledge that you might acquire. It's networking! No matter what social events or meetings you attend, your most important task is to meet and talk to new people. Bring along business cards and pass them out. Shapiro made it very clear to the audience, "Do not go to dinner with people you already know. You can do that two days earlier, or two days later. Don't be the person who came to the conference and didn't have what it takes to meet new people. That would be a huge mistake and a gap in your preparation for a successful career." He also suggested going to meetings organized by the technical groups

you are interested in and getting to know the other attendees. HFES offers many opportunities for networking at the Annual Meeting: mentor/mentee luncheons, coffee breaks, and Society-based volunteer opportunities. All of these are great opportunities to meet colleagues you don't already know.

The items mentioned above are relevant not only to graduate students looking for their first vocational experience but also for anyone planning the future of their careers. I have personally been heavily involved in both industry and academia for a while now, and balance has been a challenge. Haydee Cuevas's suggestion to create a schedule was of particular interest to me, and I am now practicing. Furthermore, I must attest that networking is a necessity that one should learn to be comfortable doing. Academia cannot impart how to network, but nonetheless, it's a cornerstone to success.

Jurate Liutvinskaite is a PhD student in the human factors and applied experimental psychology program at the University of Central Florida. Jurate is a senior industrial human performance adviser in Global Environmental Health and Safety Programs at Siemens, where she is working on optimizing human performance and safety while minimizing probability and cost of human error in the energy service Industry.

A Day in the Life of an HF/E Professional

By Corey Andrew Morgan

Many students begin their HF/E education with some idea of where the field can take them. However, they often need help recognizing the true breadth of the field and the variety of opportunities available across a range of domains. This article is a brief summary of remarks from a panel discussion.

"A Day in the Life" was chaired by Haydee M. Cuevas (Embry-Riddle Aeronautical University) and cochaired by Richard J. Gardner (Boeing Company). Panel members included Joseph Keebler (Wichita State University), Heather C. Lum (Pennsylvania State University, Erie), Farilee Mintz (Booz Allen Hamilton), Arathi Sethumadhavan (Medtronic, Inc.), and Sherry Chappell (National Transportation Safety Board).

A Day in the Life

One thing the panelists agreed on, whether employed in academia, industry, or government, was that no two days are ever alike. On any given day in academia, Keebler might be reading and writing, with teaching and meetings intermixed, whereas Lum manages the Psychology Department laboratories, gives lectures, meets with students, and acts as the HF liaison to her university.

Staying up-to-date in your field and skills is important and can be achieved by reading the literature, publishing research in your area, writing grant proposals, and teaching. Because of the work involved with balancing these many activities, academia is rarely a 9-to-5 job and often requires 12+-hour workdays. Though challenging, the work is very gratifying.

In industry, Mintz, Sethumadhavan, and Chappell regularly meet with team members to discuss the status, current activities, and goals of their projects. They work with cross-disciplinary teams and rarely work with people in their own specialty. A high degree of collaboration and coordination is often involved when working in industry, and the type of work HF/E professionals engage in on any given day will typically determine whether work is conducted collaboratively or independently. Other daily activities can include data collection and development of design solutions. Chappell added that when working in government, collaboration is very important in order to apply HF/E expertise that can improve safety by changing laws, procedures, and equipment.

On Being the Voice for Human Factors

A student from Rochester Institute of Technology asked the panelists for their advice on being the “voice for human factors.” A difficulty faced by HF/E practitioners is that of getting co-workers, managers, and administrators who have backgrounds outside HF/E to understand the importance and impact of conducting human factors work early and often. Although alleviating the potential bias against human factors can be difficult, it may be done by showing that the earlier HF/E work is included in a project, the greater the benefit will be to the company (e.g., by identifying key issues within the project). This can be done by talking specifically about how you will solve problems, what problems might arise if the human factors aspect is not addressed early, and by demonstrating your capacity to solve problems.

When working in interdisciplinary teams, it is also important to involve your team members in what you do by showing them firsthand what problems exist and that what you are doing is important. Be sure to limit the use of jargon so that people can truly understand the benefit of HF/E.

“Soft” skills are also very important. As much as you are talking, you should be listening and letting key stakeholders know that you care about what they have to say as much as you want them to care about your input.

Create a Personal Web Site to Market Yourself

A student from Brown University asked panelists for their thoughts on personal Web sites for self-promotion; specifically, whether a single site is sufficient or if one should create multiple sites for each sector of employment. The panelists felt that online presence is critical in this day and age, and creating a personal Web site is a great idea. It introduces students and their portfolios, showcases their achievements, and is great for displaying projects worked on and articles published. Having multiple Web sites (e.g., one as a portfolio of completed design work and another for publications) is fine, but integrating the two is better.

Should a personal Web site be used, panelists emphasized that you should avoid uploading private content that should not be made public (regardless of any privacy barriers put in place), and to link personal Web sites to other online profiles, such as LinkedIn. The LinkedIn profile should be as strong as possible, especially if a personal Web site may not be feasible.

To Postdoc or Not to Postdoc

Students pursuing a PhD often wonder whether or not obtaining a postdoctoral position is worth the time. A postdoc position is a great way for students to expand their skill set and dabble in work outside their area of expertise while experiencing what it would be like as a research scientist. The panelists generally agreed that taking a postdoc position can be beneficial in terms of giving students a foot in the door or an edge over another candidate but is more useful for earning a position in academia than in industry.

Applying Coursework to Career Life

A North Carolina State University student asked, “If there is one subject or class you took that you apply most often, what was it, and what courses would you recommend most students take?” Across academia and industry, the panelists agreed that a sound understanding of human factors methods and research methods is very important. As HF/E professionals, we must often utilize our skill set to analyze systems, products, and environments to understand what problems exist. The information gleaned from these analyses can then be used to inform research studies that seek to understand the extent of the problems and the effects on people who use the systems/products or who work in particular environments.

Similarly, an understanding of statistics is desirable in the workplace. In industry environments, courses geared toward design work are beneficial, as they enable students to strengthen

their design skills and develop an understanding of the design process. Any applied courses that students take will help them figure out how to apply what they have learned in practice.

Preparing for Academia, Government, or Industry

As students transition into the workforce, they often worry about choosing a career that best fits their interests in a sector that will enable them to do what they want to do. Although it can be tough to transition into the workforce, there are some things students can do before finishing their education to prepare themselves for the transition.

Having a “never say no” mentality in graduate school is a great way to develop skills that will help students get to the career path they want, even if the domain is not their first choice. Putting yourself out there with a willingness to engage in work outside your comfort zone will help you learn what you excel at and in what areas you may need to improve.

Also, getting involved in a variety of academic activities, such as clubs and newsletters, can help students learn and/or improve many useful skills, such as communicating and writing. Internships are also a great way to gain experience in a variety of domains that students might not get to experience otherwise due to the fact that graduate programs are often focused on one area. Through internships students will come to understand workplace policies and the type of work done at companies, which may help them decide where their passion lies. Engaging in a variety of work settings fosters consideration of long-term goals and how they may best be achieved.

How Do I Get *Your* Job?

Although the requirements for a job are almost never the same across institutions, the panelists offered general advice on getting jobs in academia, industry, and government.

With regard to academic jobs, Keebler provided three main ways to improve your chances of landing a job. First, publishing journal articles demonstrates knowledge and shows you can work on a team. Second, at least some teaching will be required, so students should consider demonstrating their expertise by teaching classes in graduate school. Third, write and/or earn a grant; no matter if the grant is small or large, it will demonstrate determination on your part. A recently hired graduate in the audience echoed that sentiment and described grant writing as an important skill that transcends all industries.

Recommended Web sites for job postings include [indeedjobalerts.com](https://www.indeed.com), [apa.org](https://www.apa.org), [usajobs.gov](https://www.usajobs.gov), and the [HFES Career Center](https://www.hfes.org). When sending out applications, remember not to get discouraged in the face of adversity. Keebler and Lum noted that each sent out dozens of applications before receiving any tangible offers.

For industry and government, internships and networking are key when applying for jobs. Internships help you develop the skill set that employers are looking for in new hires, and they help you to understand what you want out of a career. For example, strong time-management and prioritization skills can be learned through internships and are desirable qualities.

Although networking is a daunting activity for many students, getting to know people who work in your field and who have the type of job you want is one of the best ways to land a job. When filling a new position, the first candidates employers think of are people they have already met and interacted with. Placing yourself in their mental repository of potential candidates will move you a step above the competition. Although many Web sites, such as LinkedIn, have made networking easier than ever, face-to-face meetings are still the preferred method for networking.

Conclusion

A day in the life of an HF/E professional is exciting, and no two days are ever alike. Students have a variety of activities they can engage in to increase their chances of earning a job they're passionate about. When applying for jobs, remember to not get discouraged; just because you have a graduate degree does not mean you will earn your dream job straight out of univer-

sity, but with patience, diligence, and hard work, every day will eventually become “a day in the life.”

As someone who is currently transitioning from graduate school to industry, I personally benefited from this panel by gaining an understanding of what I may be expected to do on a daily basis. I also believe that the advice on being a voice for human factors was excellent and will help me as I begin to work with clients and professionals outside HF/E.

Corey Morgan will be graduating with his MS in human factors psychology from California State University, Long Beach in winter. He will also begin working at SA Technologies in January 2013.

INSIDE HFES

Start the Year Right—Renew Your Membership

If you haven't already renewed your HFES membership, be sure to do so before January 31 to take advantage of a wide range of benefits at great savings. For \$195, members receive online access to HFES publications that would cost a nonmember \$1,120:

- *Human Factors*: \$465
- *Ergonomics in Design*: \$106
- *Journal of Cognitive Engineering and Decision Making*: \$229
- *Reviews of Human Factors and Ergonomics*: \$205
- Proceedings of the HFES Annual Meeting: \$115

In addition to these excellent publications, you're entitled to the following benefits:

- Discounted registration and workshop fees for the HFES International Annual Meeting and the 2013 International Symposium on Human Factors and Ergonomics in Health Care
- Complimentary registration for monthly webinars and access to all past webinar recordings
- Access to the members-only [HFES Career Center](#) for confidential résumé posting and job searching, and the On-Site Career Center at the Annual Meeting
- Low-priced listing privileges in the Consultants Directory (for Full Members and Fellows)
- Opportunity to be elected an officer, Executive Council member, and/or Fellow
- Discounted subscription rates for *Ergonomics* (\$220) and the online version of *Theoretical Issues in Ergonomics Science* (\$99 + VAT)
- 20% off software, workload assessment tools, data analysis tools, and other products from the Human Systems Information Analysis Center (formerly CSERIAC)
- 15% off Taylor & Francis and CRC Press books
- 15% off selected books from Academic Press
- Discounts on car rentals from Hertz

Read about all your member benefits at <http://www.hfes.org/web/Membership/benefits.html>. (Emeritus members: Your HFES membership does not expire, but please log in at hfes.org to renew your publication subscriptions and TG memberships.)

Continuing the Society's resource conservation efforts, the 2013–2014 *HFES Directory & Yearbook* will include listings only for members who have renewed their membership by **March 8, 2013**. To ensure that your most up-to-date contact information appears in the printed directory,

please log in to your member record and make the necessary changes. Only business contact information will be included. The most current contact information for members will always be accessible via the online membership directory when you log in at hfes.org. (Forgot your HFES login ID? Contact [Member Services](#) at 310/394-1811.)

Submit Your HF/E Research on Social Media for the Human Factors Prize

By William S. Marras, Human Factors Editor-in-Chief, and Nancy J. Cooke, Chair, Human Factors Prize Board of Referees



We are pleased to announce that the topic for the 2013 *Human Factors* Prize is the human factors/ergonomics of social media. The period for submitting your work is May 1 through June 1 via the *Human Factors* [online submission site](#).

We seek articles that describe HF/E research that pertains to the effective and satisfying use of social media. Social media is broadly defined to include technology that supports communication among individuals, organizations, or communities. Examples include e-mail, Facebook, Twitter, blogs, wikis, LinkedIn, instant messaging, Skype, internet meetings, and collaborative games. This technology can be used to communicate professionally or personally.

We are *not* seeking examples that apply HF/E to the design of such technology, which may be more suitable for a venue such as *Ergonomics in Design*. Rather, we invite contributions to the science of human factors/ergonomics that are relevant to the design and use of social media.

Suitable sample topics include effects of communication modality on comprehension of messages, effective ways to integrate social media into emergency response or health-care coordination or education, use of social network data for HF/E applications, and human factors of computer-supported cooperative work.

Submissions (research articles or extended multiphase studies are welcome) must adhere to the [policies](#) for general submissions to *Human Factors*. This includes length restrictions, originality, and formatting.

Examples from Past Issues of *Human Factors*

The following papers on subject matter related to the 2013 Prize topic illustrate the types of submissions we are seeking.

- Fussell, S. R. (1995). Social and cognitive processes in interpersonal communication: Implications for advanced telecommunications technologies. *Human Factors*, 37, 22–50. <http://hfs.sagepub.com/content/37/2/228.abstract>
- Park, S., & Catrambone, R. (2007). Social facilitation effects of virtual humans. *Human Factors*, 49, 1054–1060. <http://hfs.sagepub.com/content/49/6/1054.abstract>
- Champness, B. G. (1973). Attitudes toward person-person communications media. *Human Factors*, 15, 437–447. <http://hfs.sagepub.com/content/15/5/437.abstract>
- Green, C. A., & Williges, R. C. (1995). Evaluation of alternative media used with a groupware editor in a simulated telecommunications environment. *Human Factors* 37, 283–289. <http://hfs.sagepub.com/content/37/2/283.abstract>

We look forward to receiving your submissions between May 1 and June 1. Questions may be addressed to [Nancy J. Cooke](#).

Preliminary Program Online for the 2013 Health-Care Symposium



HFES 2013 International Symposium
on Human Factors and Ergonomics
in Health Care:
ADVANCING THE CAUSE

Hosted by The National Center
for Human Factors in Healthcare,
MedStar Institute for Innovation



An information- and networking-packed [schedule](#) has just been released for the **2013 International Symposium on Human Factors and Ergonomics in Health Care: Advancing the Cause**, to be held March 10-13, 2013, in Baltimore, MD, USA. Hosted by The National Center for Human Factors in Healthcare and MedStar Institute for Innovation, the [event](#) goes beyond the basic HF/E tenets highlighted in the [2012 symposium](#) (which drew more than 400 attendees). It will provide actionable methods and best practices that will enable participants to advance HF/E outcomes in their work settings.

[Register today](#) to take advantage of early-bird rates, which end on **January 15!**

Reserve your room at the [Baltimore Marriott Waterfront Hotel](#) at the special symposium rate of \$189/person, single or double occupancy.

Bookmark the [main symposium Web page](#) for regular updates.

EID Seeks Papers on HF/E and Climate Change

A special issue of *Ergonomics in Design (EID)* is planned on human factors/ergonomics solutions to climate change. Article contributions are invited on any topic related to how HF/E principles and practices have been applied, or are being applied, in efforts to address climate change. Articles should show how critical the science of HF/E was for the project or research, provide useful information for practitioners, and show how the results of the project or research addresses the problem.

The special issue of *EID* will highlight the wide range of areas in which HF/E specialists have contributed knowledge and expertise, including design of such new technology as smart homes and green buildings; design of tasks, jobs, and systems needed to implement and expand the new technology; and design of ways to help change decision making and behavior needed to recognize and comprehend the need for immediate action to avert the long-term consequences of climate change.

Submissions are due **April 8, 2013**. Long feature articles should be between 1,500 and 3,000 words, and shorter articles should be limited to 1,000-1,500 words. Decision letters will be sent in May, and revised manuscripts are due December 2. The special issue is scheduled for publication in spring 2014.

This special issue will be promoted to governmental and other organizations with decision-making responsibilities related to global-warming policies, and to HFES members and nonmember professionals in related fields. Your article will reach a large and diverse readership in an attractive, well-respected, peer-reviewed publication.

[View the instructions for authors](#), publication policies, and sample articles, and then submit your article via the [EID online submission site](#).

Questions about submissions for this *EID* special issue can be directed to *Ergonomics in Design* Senior Editor [Ken Nemire](#).

Submit Nominations for 2013 Fellows and Awards

HFES full members are invited to submit nominations for new Fellows and six Society awards, which will be presented at the 2013 Annual Meeting.

Awards

Nominees are not required to be HFES members. Submissions are due on or before **March 29, 2013**.

To nominate,

- submit the candidate's résumé or curriculum vitae, a nominating letter, and at least two but not more than three letters of support from individuals who know the candidate well enough to assess his or her candidacy in terms of the award's criteria; and
- send all nomination packages via e-mail to [Lynn Strother](#). Please submit the package as a single file in PDF format.

For more information on the scope and criteria for HFES awards, please view the [HFES Awards Web page](#).

Fellows

“Fellow” is a special class of Society membership, as established in the HFES Bylaws. Individuals may apply for Fellow status on their own behalf, or they may submit a nomination on behalf of another.

The Fellow Nomination Package—including instructions, nomination and recommendation forms, and supporting information—may be obtained from the [Fellows page](#). You may also contact HFES Director of Member Services [Carlos de Falla](#). The completed package (nomination form, recommendation form, candidate's vitae or résumé, and supporting documentation) must be received at the HFES Central Office on or before **February 1**.

New Fellow Profiles Online

In early 2011, an online directory of [HFES Fellows profiles](#) was created to provide a resource for those interested in the HF profession—students especially—to learn about the rich history of human factors and the Society through the database of Fellows.

Profiles are added throughout the year. Recent additions include [Paul A. Green](#), [Matthew B. Weinger](#), and [Robert B. Sleight](#). Bookmark the [HFES Fellows Web page](#) for updates.

In Memoriam: Donald A. Topmiller



HFES Fellow Donald A. Topmiller passed away in July 2012 at age 81. Topmiller received academic degrees from Miami University, Lehigh University, and Ohio State University. He spent more than 30 years as a research psychologist at the Aeromedical Research Laboratories (AMRL) at Wright-Patterson Air Force Base in Dayton, OH. His doctoral dissertation was a factor-analytic study of U.S. Air Force maintenance data compiled when he was assistant branch chief for the Maintainability and Maintenance Design Branch of the Human Engineering Division.

Topmiller later served as branch chief for Systems Effectiveness, implementing the Human Engineering Systems Simulation (HESS), which conducted man-in-the-loop simulations of the Airborne Warning and Control System, remotely piloted vehicle/drone control, and maintenance management control systems. He also supervised nuclear vulnerability and survivability studies. AMRL participated with the U.S. Air Force School of Aerospace Medicine, which subsequently led to the development of SAINT: Systems Analysis of Integrated Networks of Tasks, a combined network modeling and simulation technique of manned systems.

Topmiller had a passionate interest in flying small aircraft. He was a founding member of the Young Eagles Organization at Greene County Airport. Member Mark Crabtree recalls: “Don made frequent trips to attend to his family’s homestead somewhere in Indiana. He usually flew there, and as I recall, he used a grassy field as a runway. Don was still active with his Young Eagles at least into his mid-70s. As recently as 2006, Don served as a test pilot subject in an actual flight test for a NASA project. He seemed to be a walking encyclopedia of human factors knowledge.”

Don was chair of the HFES Fellows Selection Committee (1986–1987) and of the Technical Program Committee for the 1986 HFS Annual Meeting. He served as president of the Southern Ohio Chapter in 1971 and 1985. He was a Fellow of the American Psychological Association (Society of Engineering Psychology), a consultant to the nuclear power industry, and principal scientist with General Physics Corporation before becoming a senior scientist for the Air Force.

Topmiller is survived by his wife of 62 years, two sons, and four grandsons.

– *Contributions from Jerry Chubb, Mark Crabtree, and the Dayton Daily newspaper*

OTHER NEWS

NSF Funding: Graduate Research Opportunities Worldwide

By *Lewis-Burke Associates LLC*

On December 5, the National Science Foundation (NSF) issued a Dear Colleague Letter announcing a new effort to support international research collaboration through the NSF Graduate Research Fellowship Program (GRFP). Graduate Research Opportunities Worldwide (GROW) will enable NSF-supported Graduate Research Fellows (GRFs) to spend 3 to 12 months in a partner country. GROW will add an international component to the GRF that will prepare Fellows to successfully engage in the global research environment by providing access to leading researchers and facilities around the world at an early stage of their career.

NSF already supports international GRFP activities with Norway, Finland, Denmark, and Sweden through the Nordic Research Opportunity (NRO). GROW will build on NRO to include further cofunding partner agencies in Japan, South Korea, Singapore, and France, and more countries are expected to join in the coming months. GROW projects must be initiated by the Fellow in partnership with the overseas host. The announcement of the new GROW program was made by NSF Director Subra Suresh at an event to celebrate the 60th anniversary of the GRFP.

Eligibility, Submission, and Funding Requirements

GROW is open to active GRFs at U.S. institutions, who must have successfully completed at least one year of graduate school before applying.

Letters of intent are not required. The timeline for submissions is as follows:

- December 5, 2012–February 1, 2013: GRFs may submit GROW travel requests through the GRFP FastLane module following agreement with both their home and partner institutions.
- February 1–March 1, 2013: GROW requests will be reviewed internally at NSF.
- Early April 2013: GROW supplemental awards will be announced.
- June 15, 2013: International travel for the GROW award may begin; research must be initiated in the 2013–2014 Fellowship year.

GROW awards include a \$5,000 travel supplement from NSF and a stipend for living expenses from the host agency in the partner country. Details for each partner country are different; country specific information is available [here](#). NSF expects to support 400 GROW supplemental awards in fiscal year (FY) 2013.

Additional details may be found at the following Web sites:

- [Dear Colleague Letter](#) – NSF Graduate Research Fellowship Program (GRFP) Graduate Research Opportunities Worldwide (GROW)
- Details for each [partner country](#) are available through their Web sites, grouped by geographic region
- The [NSF press release](#) announcing GROW
- Information on [international programs](#) supported at NSF
- Information on the [Graduate Research Fellowship Program](#) (GRFP)
- [Previous Dear Colleague Letter](#): NSF Graduate Research Fellows Nordic Research Opportunity
- [NSF press release](#) of the 60th anniversary of the GRFP

“Ergonomist” an Emerging Career for 2013

Each year, the Occupational Information Network ([O*Net](#)), an occupational information source developed for the U.S. Department of Labor, recognizes “bright-outlook occupations.” Based on a July 2012 O*Net update, “ergonomist” has been listed as one of eight emerging careers for 2013 with bright outlooks in terms of immediate demand and pay.

The full list of all eight occupations can be found [here](#). The O*Net report on the human factors engineer and ergonomist profession is also available [online](#).

PLAN TO ATTEND!



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