

# Aging Technical Group

Fall 2006

## Message from the Chair

**Chris Mayhorn**

Aging TG Chair

Assistant Professor, North Carolina State University

I hope that the summer months were productive and that the beginning of fall finds everyone ready to move forward to San Francisco for the 50<sup>th</sup> Annual Meeting of HFES. With half of my term as Aging TG chair behind me, I am pleased that we continue to grow as a technical group within HFES. Reports from Lynn Strother and others in the national organization indicate that our membership has grown beyond the 260 mark, our website remains active, and our finances remain stable.

As you will see from the conference update in this newsletter from Beth Meyer, our 2006 Program Chair, we have another high quality program planned for this year's annual conference in October. I would like to thank all of you who supported our program, whether it was by submitting a proposal, reviewing, or planning to attend our sessions. Also, I look forward to seeing everyone at our annual business meeting on Wednesday (Oct. 18) at Noon as usual. Please let me know if you plan to attend so that we can accommodate everyone comfortably.

I am eager to begin the second half of my term as chair. I intend to continue working with our officers and our members to highlight our interests and contributions within HFES and within the larger framework of those interested in aging. To this end, Darin Ellis, Randa Shehab, and I submitted a piece titled "Human factors engineering" for publication in Birren's *The Encyclopedia of Gerontology* (2<sup>nd</sup> Ed.). Furthermore, the work of a number of ATG members was featured in two chapters in the *2005 Review of Human Factors and Ergonomics*: one titled "Technology and Aging" by Wendy Rogers, Aideen Stronge, and Arthur Fisk (ATG members from the Georgia Institute of Technology) and the second titled

"Reducing and Mitigating Human Error in Medicine" by Daniel Morrow (an ATG member from the University of Illinois at Urbana-Champaign), Robert North, and Christopher Wickens. These efforts to increase the visibility of our work should greatly enhance understanding of our goals in addressing the needs of older adults as well as increasing our membership.

As always, I welcome your input and efforts in improving the impact of the Aging TG.

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## CONTRIBUTORS

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## 50<sup>th</sup> Anniversary HFES Program

**Beth Meyer**

2006 Aging TG Program Chair

We have an excellent program on aging planned for this year's 50<sup>th</sup> anniversary Annual Meeting! There will be two main sessions, plus a joint session with the Surface Transportation TG that will focus on younger and older drivers.

**Session A1:** Aging in the Real World: Practical Research Applications  
Tuesday, October 17, 3:30 pm

- **Medication Adherence Strategies in Older Adults**, Julie Boron, Wendy Rogers, and Arthur D. Fisk
- **Effects of a Pharmacy-based Intervention on Medication Adherence and Health Outcomes in Heart Failure Patients with Varying Health Literacy**, Dan Morrow, James Young, Shawn Hoke, Wanzhu Tu, Mike Weiner, Jingwei Wu, Faye Smith, and Michael Murray,
- **Videoconferencing Technology as Environmental Support for Older Adults**, Tiffany Jastrzembki, Roy Roring, and Neil Charness
- **Benefits and Privacy Concerns of a Home Equipped with a Visual Sensing System: A Perspective From Older Adults**, Kelly Caine
- **The Effects of Age and the Design of Web-Based Training on Computer Task Performance**, Sharnnia Artis and Brian Kleiner

**Session A2:** Aging, Cognition and Abilities  
Thursday, October 19, 1:30 pm

- **Queuing Network Modeling of Age Differences in Driver Mental Workload and Performance**, Changxu Wu and Yili Liu
- **What factors other than age predict performance on an information search task?**, Sara Czaja, Joseph Sharit, and Sankaran Nair
- **Impact of Auditory and Visual Distractors Upon Manual Assembly Task Learning Among Older Workers With Different Levels of Spatial Reasoning and Field Dependence**, Steven F. Wiker, Diana Schwerha, and Majie Jaraiedi

- **Aging and Visual Attention: The Effect of Perceptual Load on Dual-task Performance**, Richard Pak, Wendy Rogers, and Arthur D. Fisk

**ST2:** Joint session with Aging and Surface Transportation TGs: Older and younger drivers  
Wednesday, October 18, 8:30 am

- **Assessment of Age Differences in Mental Workload while Driving using Verbal versus Visual-Spatial Subsidiary Tasks**, Ben Schlorholtz and Frank Schieber
- **Auditory In-vehicle Messages and Older Drivers**, Carryl Baldwin
- **Field Evaluation of a Risk Awareness and Perception Training Program for Younger Drivers**, Anuj K. Pradhan, Donald L. Fisher, Alexander Pollatsek, Mike Knodler, and Michelle Langone
- **Novice Teen and Experienced Adult Drivers on the Smart Road Intersection: Does Six Months of Experience Matter?**, Erik C. B. Olsen, Bruce G. Simons-Morton, and Suzanne E. Lee

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## Aging by Design Conference

**Beth Loring**

Monday and Tuesday, October 23 and 24, 2006  
Bentley College, Waltham MA

You are invited to attend Bentley's third annual "Aging by Design," a two-day conference exploring the intersection of the rapidly-growing aging population and the world of business and technology. Topics include current research on the impact of aging on design, methods for interacting with the aging population (requirements gathering and testing), aging in the workplace, design case studies and business opportunities. Speakers and panelists will offer a variety of forums and opportunities to learn more about this expanding area.

If you are interested in the development of useful designs, the changing needs of an aging workforce,

research or marketing of usable services and products for the rapidly-growing aging population, you'll want to join us for Aging by Design, as we investigate the broader design requirements of this important population - as well as the challenges and opportunities these requirements present. Please use the following URL to find more information!

<http://www.bentley.edu/events/agingbydesign2006/>

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## **Enjoyable and Social Games for Older Adults (or Not All Games are About Shooting Aliens)**

### **Tim Nichols**

Between my tenure as a long-haired, Keats-quoting, nightingale-gazing English major at the University of Florida and my current position as an alien-blasting, assault rifle-toting, space marine cum user research engineer at Microsoft Game Studios (MGS), I spent time at the Georgia Institute of Technology, studying learning and cognitive aging under Dr. Dan Fisk and Dr. Wendy Rogers. Along with 10-hour undergraduate Final Fantasy VII sessions, my time in grad school provided me with the knowledge and skills to land a great industry job as a space marine. More specifically, at the Human Factors and Aging Lab, I learned how to think.

Here is a more concrete example of what I am talking about. I was recently discussing with a colleague the multiplayer user interface (UI) for an important, upcoming Xbox 360 title. We were trying to determine the best way to lay out multiple options on a screen with limited space and limited controls. There were two proposed designs for the UI. Without getting too detailed, one design involved a unique mapping of control and action (the action in question was a critical selection in the UI), and the other design used a control-action mapping that had been used for similar actions throughout the rest of the game UI. The first design might sound reasonable to the lay person, as it assigned a novel and therefore ostensibly more *memorable* control-action mapping to the important UI selection. However, if one has perused the consistency and learning literature, one would know that, for similar actions within a UI, consistent control-action mappings are important. In this case, consistent

mapping in the second design would be crucial for allowing users to move quickly and correctly through the UI.

In the short time I have been with the Games User Research group at MGS, it has been my good fortune to work with a bright, energetic group of people, all of whom have strong psychology and/or usability backgrounds. However, my background in human factors and aging is unique within the group, and I am interested in the factors that would affect older adults' adoption of gaming systems and their success in interacting with these systems.

Currently there are few games that are marketed towards older adults; the most prominent example is Nintendo DS Lite's *Brain Age* (<http://www.msnbc.msn.com/id/13488930/>). This is a new area for the videogames industry, and in the case of Nintendo's DS Lite handheld system (the hardware on which the games are played) the directional pad control is only 18.6mm across and the screen is 77mm diagonal. Even if the software were designed with older adults in mind (the article mentions users in their 40s and 50s), the hardware on which the games are played is likely far too small for an older adult (by our definition, 60-65+). That said, Nintendo's *Brain Age* includes puzzles and brain teasers that are similar to some of the tasks that aging researcher Dr. Elizabeth Stine-Morrow has been using in her Senior Odyssey program at the University of Illinois. One goal of her research program is to observe the benefits of these gaming activities on seniors' well-being. Furthermore, Dr. Stine-Morrow's work involves groups of seniors working together, creating a social dynamic that can easily be replicated with today's multiplayer gaming technology.

Within the industry, there are bigger hurdles to overcome before videogames and systems are designed to accommodate older adults. The largest is demonstrating a market. This issue is two-sided. The industry may feel that older adults would not be interested in videogames or technology in general (in my opinion, a silly, but presumably an insidiously persistent bias) and older consumers probably see videogames as solely the realm of adolescent males working out their subconscious violent urges. I think both of these biases are largely incorrect. As demonstrated by *Brain Age* and other games (e.g.,

Nintendo's *Nintendogs* is about caring for puppies and Nintendo's *Animal Crossing* allows users to explore towns and interact with animals and villagers, as well as interact with other players in the game environment), videogames need not be violent to be successful or enjoyable. I believe there is a market for videogames within the senior demographic if games are developed that focus on the social aspects of gaming and provide challenges and puzzles appropriate for this audience. I am not necessarily saying that sniping an enemy soldier in WWII-era Europe is inappropriate. My grandfather thinks it is awesome, but it is an empirical question.

Games can create a challenging, enjoyable, and highly social experience for older adults. I am excited about the initial forays into this area within the video gaming industry. So, if you want to chat about older adults and games, look me up. I will likely be defending the galaxy from swarming hordes of evil space mutant aliens (or grooming adorable puppies), but I can always hit the pause button.

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## **News from the 16<sup>th</sup> Congress of the International Ergonomics Association**

**Diana J. Schwerha**

From July 10-14 researchers from around the globe met in Maastricht, the Netherlands for the IEA 16<sup>th</sup> World Congress on Ergonomics. The theme of this year's conference was "Meeting Diversity in Ergonomics." The conference opened with an exciting talk given by IEA President Pierre Falzon. His encouraging words about constructive ergonomics were certainly affirmative to all of us who work in the area of human factors and aging. The conference lasted throughout the entire week, with more than 1,250 participants from 59 countries, 18 keynotes, 30 interactive workshops, and more than 1,000 talks.

Aging was well represented with four sessions: Work Ability and Aging (chair: J. Ilmarinen, Training and Cognition (chair: K. Lee), Exercise and Rehabilitation (chair: J. Ilmarinen), and Special Topics (chair: F. Fischer). The Work Ability and Aging session included talks about work ability in a variety of industries (e.g. public health, nursing, pharmaceutical companies, manufacturing). Throughout this session and others

that followed, Dr. Ilmarinen stressed the importance of ensuring that the demands of the work match the changing abilities of an aging workforce. He also mentioned that, contrary to many beliefs, work ability throughout life should increase. Work demands should match abilities with an increase in employee expertise. Unfortunately, this is not always the case but it's the goal for many of us!

The Training and Cognition session was the only session in which US researchers presented work in Aging. Chris Mayhorn presented his work on Older Adult Decision Making during Hurricane Hazard Preparation and I presented my work on the Impact of Age and Distractors upon Learning a Manual Assembly task. The other talks related to training for computer tasks and for disaster relief operations at petrochemical complexes.

Several interesting talks were given in the Exercise and Rehabilitation session as well as the Special Topics session. N. Itoh spoke about her work on the effects of edge information and aging in walking. In the Special Topics session, M. Goebel presented his work on factors relating to ergonomic product design for elderly users.

As with many conferences, the best thing about the IEA was the people. It was terrific to meet scholars from around the world and discuss (and debate!) research. Attending the conference made me realize the importance of international collaboration and the value in attending international conferences. Next year, a conference on age management will be held in Sweden ([www.livskompetens.com](http://www.livskompetens.com)) and the next IEA will be held in Beijing, China ([www.iea2009.org](http://www.iea2009.org)). See you there!

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## **Updates to our Website**

Looking for who to contact or a copy of our newsletter? Please visit our aging technical group website - <http://www.psychology.gatech.edu/atg> - also for information about upcoming conferences and other resources. The website is in constant development, so check back regularly. We appreciate your comments or feedback about how this website can best support your work and age-related issues in Human Factors.

## ERGONOMICS-ASSISTANT PROFESSOR

**North Carolina State University** seeks a tenure-track **Ergonomics-Assistant Professor**. The specific research area in cognitive ergonomics/human factors is open. An interest in teaching a course in cognitive neuroscience is preferred but not necessary. The Psychology Department has more than 30 faculty members in five Ph.D.-granting specializations: developmental, ergonomics & experimental, industrial/organizational, psychology in the public interest, and school psychology. Additional departmental information can be found online: [www.ncsu.edu/psychology](http://www.ncsu.edu/psychology). The NC State IE Department has a companion program in ergonomics, which jointly participates in educating ergonomics graduate students. NC State is a Research-Extensive, Land Grant university and is one of three major universities in the Research Triangle area, which offers numerous possibilities for collaboration with local industry. Applicants must have a Ph.D. Responsibilities include establishing a productive research program, directing graduate and undergraduate research, teaching undergraduate and graduate courses, and contributing to professional/university service.

Applicants should submit a description of research and teaching interests, a vita, up to three representative reprints/preprints of publications, and three letters of recommendation to: **Dr. Chris Mayhorn, Chair, Ergonomics Search Committee, NCSU Department of Psychology, Box 7650, Raleigh, NC 27695-7650.**

**Application review begins November 1, 2006** but applications will be accepted until the position is filled.

*AA/EOE. In addition, NC State welcomes all persons without regard to sexual orientation and, in its commitment to diversity and equity, seeks applications from women, minorities, and persons with disabilities. ADA accommodations: Chris\_Mayhorn@ncsu.edu , 919/513-4856 (office), 919/515-1716 (fax).*



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## Calendar of Events

### 50<sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society

San Francisco, California  
October 16-20, 2006  
<http://www.hfes.org>

### Aging by Design Conference

Waltham, Massachusetts  
October 23-24, 2006  
<http://www.bentley.edu/events/agingbydesign2006/>

### 20<sup>th</sup> Annual Cognitive Aging Conference

Adelaide, South Australia  
July 12-15, 2007  
<http://www.cos.gatech.edu/cac>

### 51st Annual Meeting of the Human Factors and Ergonomics Society

Baltimore, Maryland

October, 2007

<http://www.hfes.org>

### Gerontechnology 2008

Pisa, Italy  
Presented by the International Society for Gerontechnology  
<http://www.gerontechnology.info/>

### 52<sup>nd</sup> Annual Meeting of the Human Factors and Ergonomics Society

New York, NY  
September 22-26, 2008  
<http://www.hfes.org>

### 17<sup>th</sup> Congress of the International Ergonomics Association

Beijing, China  
August 9-14, 2009  
<http://www.iea2009.org>

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## **Aging Technical Group Officers**

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