

PERSPECTIVES

HF/E on the College Campus: An Interview with Thomas Ferris

BY SUSAN L. SPRARAGEN

As we consider the future of the Human Factors and Ergonomics Society, we look to our student body with the hope that they will carry on the directions we have set and prepare and set courses for innovative ideas that will address the challenges ahead. When I met with Thomas Ferris, I quickly became confident that he was a student leader who was up for the task. Thomas is president of the HFES student chapter at the University of Michigan, where he is studying industrial and operations engineering. The chapter has 38 members consisting of undergraduate and graduate students. I posed some questions to Thomas, and he provided some compelling answers.

Why are students at the University of Michigan pursuing human factors/ergonomics?

Students are realizing the increasing importance of human factors and ergonomics in a variety of settings. With rising health care costs, companies are seeking ways to reduce risk on the job, and students are interested in learning methods to help accomplish this critical task. Michigan's industries, most notably the auto industry, provide a local need for professionals who are trained in HF/E-related fields to contribute in product development: everything from interface design to aesthetics to techniques for manual labor during manufacturing.

HF/E studies at Michigan revolve around the desire to improve every aspect of the work environment for the operators of engineered systems. Our research runs the gamut from the analysis of hand and wrist postures when operating a screwdriver to the organization of display components in an airplane cockpit.

At Michigan, there is truly an abun-

dance of problems to work on that deal with all aspects of the human-machine interface.

What is the most common human factors issue or interest among the students?

We have a wide range of interests in both physical and cognitive ergonomics issues, but probably the single most common interest is modeling. In our physical ergonomics research laboratories, we design biomechanical models of hand- and whole-body motion, which are used to replicate the movements, postures, and force exertions required for common tasks in work environments. Some of our cognitive ergonomics research projects involve the development and testing of mathematical models of human cognition, as well as interface models that adapt to input regarding a human operator's cognitive state.

How does the University of Michigan Student Chapter help students explore and advance their research?

We have held several events over the past few years designed specifically to provide students with a basic idea of what types of HF/E research goes on at Michigan. For example, we regularly organize large-scale and impromptu tours of research labs in the University of Michigan Center for Ergonomics and UM Transportation Research Institute. Additionally, we have hosted seminars where we have invited faculty and local industry members to speak about their work. Through "research opportunities" presentations, graduate students advertise projects in their laboratories, which are seeking additional student researchers. This has been a very effective way to recruit students who are generally interested in ergonomics re-

search to become more involved and help advance our projects.

What was the most popular event or activity you hosted? Why do you think it was a success?

The most popular event for our chapter was the Bad Designs on Campus (BDOC) contest that we ran in honor of National Ergonomics Month (October) last year. UM students and employees were invited to submit a one-page summary of something on campus that they considered to be a bad design from an HF/E standpoint. In addition to thorough problem explanations, submissions also had to include suggestions for design solutions to improve the situation. After we received over 30 submissions, our chapter voted on the best (worst) finalists (listed at <http://www.engin.umich.edu/soc/hfes/bdoc/>) to determine prize winners.

The event was a success because it raised awareness about our student group and HF/E in general, and allowed people to feel like they were making an impact on campus. Several students who entered the contest thanked us for giving them an outlet to voice their dissent in a structured and effective way.


Can you tell us more about the background of the student body?

Because of UM's strengths in both physical and cognitive ergonomics, our students come from a broad range of backgrounds, some rooted in engineering, kinesiology, and psychology and others in usability. The most interesting stories come when our groups work together on different aspects of a common problem. For example, last year our student chapter was consulted to evaluate about 20 different chair models, one of which would be chosen for installation in a series of new

lecture halls. Those who had stronger physical ergonomics backgrounds applied their skills by analyzing seated posture and cushion support distribution. Those with stronger cognitive ergonomics and usability backgrounds gave input about design aesthetics and identified potential problems people may have interacting with the chairs if they were not mounted to desktops properly. It was especially rewarding that the department where the new lecture halls were being constructed valued our opinion so highly and that we were able to put our skills to good use to better our common environment.



Susan L. Spraragen, editor of the Perspectives department, is a user experience researcher at IBM T.J. Watson Research Center in Hawthorne, NY.

She would be interested to hear from other HFES student chapters about activities and goals for their respective student bodies that could be shared with HFES members and nonmembers. Submissions or ideas for future articles for Perspectives may be sent to sprara@us.ibm.com. 

Upcoming in EID

Winning Solar Races With Interface Design

Representation-aiding techniques prove a useful approach in managing the complex challenges of race strategy planning.

Redesigning a Graphic Weather Display for Pilots

Application of HF/E principles ensured that the graphic display could support the task, show the data, remove distortions, enhance discriminability, and improve performance without increasing viewing time.

Analyzing Text Entry Interface Design Requirements

Examining the psychological constructs behind how users expect to be able to type text can lead to improved design of devices such as portable digital assistants and cell phones.

Removing Barriers to Medical Devices for Users With Impairments

Observing how those with disabilities cope with exam tables, dental chairs, hospital beds, and weight scales reveals ways to design more accessible and safer health care devices and equipment.

JUST RELEASED!

ANSI/HFES 100-2007 Human Factors Engineering of Computer Workstations

The Human Factors and Ergonomics Society is pleased to announce the release of **ANSI/HFES 100-2007, Human Factors Engineering of Computer Workstations**, as a new American National Standard. This standard represents the culmination of a 20-year process, which began with the approval of the preceding document, **ANSI/HFS 100**, in 1988.

The content and breadth of coverage of the new standard address changes in the arenas of workstation and computer design. The number and types of input devices have increased to include computer mice and other pointing devices, and the displays chapter has been expanded to cover color devices.

The furniture chapter now provides four working postures for reference by designers. This reflects the dynamic nature of computer workplaces and seeks to correct the misunderstanding that the 90° posture used in the 1988 standard was “the” correct working posture.

The integration chapter offers guidance regarding how individual elements that are ergonomically well designed can be integrated into a workplace system that is also ergonomically appropriate.

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 - 5. Installed Systems
 - 6. Input Devices
 - 7. Visual Displays
 - 8. Furniture

**108 pages, 38 figures, 5 tables, section references,
8.5 × 11", PDF on CD-ROM**

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