

The Human Factors and Ergonomics Society Perspective

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ABSTRACT

We first describe the Human Factors and Ergonomics Society (HFES), then our challenges with respect to meeting the needs of multidisciplinary professionals. We discuss how HFES has tried, as a professional organization, to meet the needs of its diverse members.

Author Keywords

Human factors, ergonomics, multidisciplinary, professional society

ACM Classification Keywords

Human factors, ergonomics, design, usability, systems

INTRODUCTION

The Human Factors and Ergonomics Society (hfes.org) is a professional organization that promotes the discovery and exchange of knowledge about the capabilities and limitations of humans to improve the design of systems and devices. HFES was established in 1957 and since then we have held annual meetings with published proceedings. We publish two scientific journals, and a magazine of human factors applications, books, and have recently started an annual review series. HFES has 22 technical groups, 35 local chapters, and 35 student chapters.

UNDERSTANDING THE DIVERSE NEEDS OF MULTIDISCIPLINARY PROFESSIONALS

The mission of the Society as stated in our strategic plan is to “serve and represent the members as the premier scientific, engineering, and professional practice organization for the discipline of human factors.” The Society is the meeting place of research, teaching, and practice; knowledge generation, and the application of knowledge. There are both internally focused activities to support the members, as well as externally focused activities (e.g., standards activities, education). HFES members include psychologists, engineers, computer scientists, and are employed in industry, service, government, and education.

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This mission and these members illustrate the diversity of HFES. To serve these individuals is a unique challenge that HFES has faced since its instantiation. This is also the challenge identified in the overview of the CHI 2005 Development Consortium. Namely, how can organizations meet the needs of multidisciplinary professionals and members with different goals? And do so within the constraints of professional organizations and the constraints imposed by legal, liability, and regulatory requirements?

NEEDS OF MULTIDISCIPLINARY PROFESSIONALS

HFES tries to meet member needs through a variety of mechanisms. We recognize that the annual meeting cannot be all things to all people. We rely on our publications, cosponsorship of other meetings, and organizational structure of student and local chapters, and technical groups to satisfy members' broader professional needs.

The Annual Meeting

HFES hosts an annual meeting organized both in a top down and bottom up way: at the highest level by the Central Office and the Executive Council, but the technical program is created by the Technical Groups within the conference framework. Part of the value of the conference is that it is like several conferences held simultaneously, thus allowing a broad range of interests to be satisfied (crucial for a profession where one's interests may span different areas). The HFES annual meeting is typically attended by 30-35% of our members, with some fluctuation due to location. To meet the needs of our members the technical program consists of multiple formats such as paper sessions, panels, and poster sessions. We offer “Birds of a Feather” rooms where people with similar interests can have informal discussions. We offer workshops which are intensive tutorials on specific topics such as questionnaire design, usability testing, web site design, cognitive task analysis, and human performance modeling.

Publications

The quarterly journal *Human Factors*, in its 46th volume, publishes original scientific research and review papers. It is highly ranked in terms of its impact factor in this discipline and is a key journal for the academic tenure process. Approximately 12 years ago we added a new publication called *Ergonomics in Design* to provide an

outlet for publishing human factors applications. It has a strong audience within HFES members, but its tone is intended to enable it to serve as an outreach tool to educate those outside the discipline. This “magazine” has proved to be a valuable addition to our publication portfolio.

This past year we approved the creation of a new journal called the *Journal of Cognitive Engineering and Decision Making*. Although publishing is an expensive venture that must be carefully considered, we believe that it is important for organizations to adapt to changing demands of the field.

Cosponsoring Meetings

Many members of HFES are active members of other professional organizations such as CHI, the American Psychological Association (APA), and the Institute of Industrial Engineers, to name just a few. We have made efforts to sponsor meetings jointly such as the Applied Ergonomics Conference (<http://www.appliedergo.org/>) and the Midyear Meeting of APA’s Division 21 (Applied Experimental and Engineering Psychology) and the HFES Potomac Chapter.

A critical question relating to co-sponsorship of meetings is determining who bears the financial risk or burden of such conferences. We are currently developing a process for co-sponsoring and look forward to discussions in the Development Consortium about experiences in this area.

Smaller Group Meetings

HFES has local and student chapters which hold regular meetings for networking and professional development. Some chapters host small thematic conferences.

The HFES Technical Groups (Table 1) are organized around domain and methodological areas. Some host smaller intensive meetings periodically. One example is the Interface conferences held in the 1980s as joint conferences of the Consumer Products Technical group and local chapters of the Industrial Design Society of America. These meetings were a victim of their own success and became too large for small groups of volunteers to organize. HFES is pursuing ideas for supporting this type of meeting.

Another more recent example is the upcoming meeting coordinated by members of the Macroergonomics Technical Group (<http://cqp2.engr.wisc.edu/odam2005/>) which is their eighth such meeting in the last 20 years.

Informal Communications

In addition to face-to-face meetings, HFES hosts list serves for student chapter presidents, local chapter presidents, technical group chairs, and many of the technical groups have also set up list serves and web sites (see hfes.org for links). These electronic communication methods facilitate interactions among members for the exchange of professional information and research questions.

We also rely on communication of our executive director with executive directors of other organizations. For example, a meeting is planned for the spring of 2005 of a group of chief staff officers of design-related societies. The HFES executive director is also active in the Council of Engineering and Scientific Society Executives and the American Society of Association Executives. Staff networking within related professional/scientific organizations is essential to enhancing opportunities for strategic partnerships and collaboration while maintaining the healthy boundaries that are a reality of a competitive market for association members and their resources.

Table 1. HFES Technical Groups

Aerospace Systems	Industrial Ergonomics
Aging	Internet
Cognitive Engineering & Decision Making	Macroergonomics
Communications	Perception and Performance
Computer Systems	Product Design
Education	Safety
Environmental Design	Surface Transportation
Forensics Professional	System Development
Human Performance Modeling	Test and Evaluation
Healthcare Systems	Training
Individual Differences	Virtual Environments

AUTHOR INFORMATION

Arnold M. Lund is Director of User Experience in Microsoft’s mobile computing division, and has been actively involved in HFES and CHI. He is an HFES Fellow, has been program chair for Computer Systems TG and the Communications TG. He was general co-chair of CHI ’98, founded the Denver chapter of SIGCHI, and has held various posts on the CHI program committee. Lynn Strother is Executive Director of HFES. She is a Certified Association Executive (CAE), a designation administered by the American Society of Association Executives and has served as the President of the Council of Engineering and Scientific Society Executives (CESSE). Wendy A. Rogers is the current HFES President. She has been actively involved in HFES for many years serving as Chair of Student Affairs, Chair of the External Relations Subcouncil, and Member-at-Large of the Executive Council.

SUMMARY

HFES is multidisciplinary by definition of the field of human factors and ergonomics. Our members work in a range of settings including academia, government laboratories, large corporations, and small businesses. As such, they sometimes have very different individual goals, although as a Society we have common strategic goals and objectives. Our approach has been to be proactive in developing Society activities to meet members’ needs, beyond our annual meeting. We look forward to sharing our ideas with the participants in the development consortium, learning from them about their strategies, and exploring opportunities for collaboration across organizations.

Programs and Services of the Human Factors and Ergonomics Society

PUBLICATIONS

PERIODICALS

Human Factors, the Journal of the Human Factors and Ergonomics Society. Peer-reviewed archival journal, published quarterly. Nancy J. Cooke, Ph.D., editor.

Ergonomics in Design, the Magazine of Human Factors Applications. Peer-reviewed applications publication, published quarterly. C. Melody Carswell, Ph.D., editor.

The Journal of Cognitive Engineering and Decision Making. A new quarterly journal to be published beginning in 2005. Mica R. Endsley, Ph.D., editor.

The Human Factors and Ergonomics Society Bulletin, HFES's monthly newsletter, available via postal mail and on line.

Human Factors and Ergonomics Society Directory and Yearbook, published annually

Annual Review of Human Factors/Ergonomics, Ray Nickerson, editor. First volume to be published in 2005

BOOKS

The Ergonomics of Sound: Selections from HFES Annual Meetings, 1985-2000, Ellen Haas and Judy Edworthy, Editors

Humans and Automation: System Design and Research Issues, by Thomas B. Sheridan (copublished with John Wiley, Inc.)

Macroergonomics: An Introduction to Work System Design, by Hal W. Hendrick and Brian M. Kleiner

Readings in Training and Simulation: A 30-Year Perspective, by Robert W. Swezey and Dee H. Andrews

Designing for an Aging Population: Ten Years of Human Factors/Ergonomics Research, Wendy A. Rogers, editor

Ergonomics and Musculoskeletal Disorders: Research on Manual Materials Handling, 1983-1996, edited by Waldemar Karwowski, Michael S. Wogalter, and Patrick J. Dempsey

Anthropometric Methods: Designing to Fit the Human Body, by John A. Roebuck, Jr.

HFES Perspectives on Human-Computer Interaction, Gary Perlman, Georgia K. Green, and Michael S. Wogalter, editors

Human Factors Perspectives on Warnings, Kenneth R. Laughery, Sr., Michael S. Wogalter, and Stephen L. Young, editors

Human Factors Perspectives on Warnings, Volume 2: Selections from Human Factors and Ergonomics Society Proceedings, 1994-2000, Michael S. Wogalter, Stephen L. Young, and Kenneth R. Laughery, Sr., editors

New Trends in Cooperative Activities: Understanding System Dynamics in Complex Environments, Michael McNeese, Eduardo Salas, and Mica R. Endsley, editors.

TECHNICAL STANDARDS AND GUIDELINES

Guidelines for Using Anthropometric Data In Product Design, by the HFES 300 Committee

Human Factors Engineering of Computer Workstations, BSR-HFES 100 Committee, Draft Standard for Trial Use.

ONLINE DIRECTORIES ([HTTP://HFES.ORG](http://hfes.org))

Directory of Human Factors/Ergonomics Graduate Programs
Directory of Human Factors/Ergonomics Consultants

BROCHURES AND SPECIAL PUBLICATIONS

Ergonomics Design Awards http://hfes.org/News/Design_Awards.html)

Good Ergonomics Is Good Economics

<http://hfes.org/publications/GoodErgoGoodEco.html>

The Adolescence of Engineering Psychology

<http://hfes.org/publications/GoodErgoGoodEco.html>

Preparing for a Career in Human Factors/Ergonomics

<http://hfes.org/careerguide/index.html>

Quick Tips for Finding a Human Factors/Ergonomics Job in Industry

<http://hfes.org/publications/quicktips1.html>

Designing for Human Use <http://hfes.org/publications/DesigningForUse.html>

VIDEOS

"Human Factors/Ergonomics: The Profession and the Society"
"Human Factors Success Stories"

OTHER MEMBER SERVICES

HFES Online Placement Service (at <http://hfes.org>)
Online Member Directory
Online Directory of Consultants

HFES INSTITUTE (Technical Standards and Best Practices/Guidelines)

HFES 100 Committee – U.S. National (ANSI) Standards Development
Committee for Human Factors of Computer Workstations

HFES 200 Committee – U.S. National (ANSI) Standards Development
Committee for Human Factors of Software

U.S. TAG to ISO/TC 159, "Ergonomics" and its subcommittees, SC1,
Ergonomics Guiding Principles; SC3, Anthropometry and Biomechanics; SC 4,
Ergonomics of Human/System Interaction; and SC5, Ergonomics of the Physical
Environment.

HFES ANNUAL MEETING

In its 49th year, the HFES Annual Meeting brings together approximately 1200
researchers, academicians, students, and practitioners for a five-day meeting that
includes technical sessions, workshops, tours, social events, and technical group
business meetings. The 2005 Annual Meeting will be held from September 26
through 30 at the Royal Pacific Resort, Orlando, Florida.

AWARDS

HFES presents the following society-wide awards annually:

The Jerome H. Ely *Human Factors* Article Award
The Distinguished International Colleague Award
The Paul M. Fitts Education Award
The A.R. Lauer Safety Award
The Alexander C. Williams, Jr., Design Award
The Alphonse Chapanis Best Student Paper Award
The Jack A. Kraft Innovator Award
The Arnold M. Small President's Distinguished Service Award
The Best *Ergonomics in Design* Article Award
The O. Keith Hansen Outreach Award

FELLOWS

HFES Fellows are those members whose outstanding, sustained, and superior achievements qualify and service to the Society qualify them for special recognition. Each year, the Society elects a small number of candidates, who pass through a rigorous selection process, to this class of membership. Honorary Fellow status is available to those members who are outstanding in their achievements but who may not qualify for Fellow because they do not meet the criterion for Society Service.

TECHNICAL GROUPS

HFES includes 21 technical groups, reflective of the broad and interdisciplinary interests of the members. Each technical group elects officers, publishes a newsletter, hosts a web site, and contributes to the program of the Annual Meeting. The HFES Council of Technical Groups includes representatives from each TG, and it advises the Society on technical and organizational issues. HFES Technical Groups are as follows:

- Aerospace Systems
- Aging
- Cognitive Engineering and Decision Making
- Communications
- Computer Systems
- Education
- Environmental Design
- Forensics
- Health Care
- Human Performance Modeling
- Individual Differences in Performance
- Industrial Ergonomics
- Internet
- Macroergonomics
- Perception and Performance
- Product Design
- Safety
- Surface Transportation
- Systems Development
- Test and Evaluation
- Training
- Virtual Environments

STUDENT AND LOCAL CHAPTERS

A network of local chapters that serve specific geographical regions in the U.S. and internationally, and student chapters located in universities provides a meeting place for members whose physical proximity enables them to hold regular meetings, engage in special projects (including community service), and enjoy networking and social activities.

COMMITTEES

Under the direction of six subcouncils of the HFES Executive Council, HFES has more than 40 committees, task forces, and advisory boards categorized in the broad general areas of Corporate Activities, Communications/Publications, External Relations, Internal Relations/Membership Services, Professionalism, and HFES Institute (technical standards, guidelines, and best practices).