

INSIGHT



The Perception and Performance Technical Group Newsletter Vol 27 • No. 1 • May 2005

Chair's Report *Patricia R. DeLucia* Texas Tech University

Greetings to All Members!

As I was preparing this *Chair's Report*, I browsed through my collection of old issues of *Insight*, formerly known as the *Visual Performance Technical Group Newsletter*. My oldest issue is from 1988. I found these issues very interesting. For example, in March of 1988, Michael Venturino reported in his *Chair's Report* that the PPTG had 498 members, down from 540 the previous year. Our current membership hovers at about 300. In June of 1988, Dave Post reported in his *Program Chair's Report* that there were 58 proposals submitted, including 56 lectures, 1 panel, and 1 symposium. The acceptance rate was 52%. The Review Board consisted of 12 reviewers. The PPTG offered a total of 9 sessions with each lecture session comprised of 4 papers. In subsequent years, HFES opted for 5 papers per lecture session and PPTG has typically offered 5 or 6 sessions. Harvey Smallman reports the statistics on this year's proposal submissions later in this issue. Finally, the older issues of our newsletter featured regular columns including the *Student Paper*, *Featured Lab Report*, and *Job Postings*. I would like to encourage members to again submit such items. To stimulate your interest, I hope to reprint one of the older lab reports in the next issue of *Insight*.

Now on to regular business news...

- **Update on the 2005 HFES Annual Meeting Program:** The technical review process for the Annual HFES Meeting has been completed. Harvey Smallman provides details later in this issue. *We thank each reviewer for reviewing the proposals.* Their names are listed later in this issue. A preliminary schedule of the program will appear in a subsequent issue.

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- **Winners of the HFES Perception & Performance Technical Group Student Research Award:** This is the first year that PPTG has offered two Student Awards. Harvey Smallman announces the winners later in this issue.
- **Ballots for PPTG Secretary/Treasurer:** Sehchang Hah has been nominated as PPTG Secretary/Treasurer. All PPTG members will receive a ballot in the postal mail. Since there is only one candidate, our operating rules require a space for write-in

candidates on the ballot. Sehchang's biographical information will be provided with the ballot.

- **PPTG Website:** Don't forget to visit the newly remodeled PPTG website at <http://pptg.hfes.org/>

Please send Steffen Werner any materials to post or any suggestions to improve the website. Also, if you are interested in helping Steffen maintain the website, please contact him at swerner@uidaho.edu

As always, I would like to close by encouraging you to submit articles to Insight. This is an excellent way to describe your research, laboratory facilities, technical breakthroughs, and other activities. We want to hear from you! Contributions should be sent to Shelley at shelley-home+work@LipmanFamily.org

Member Spotlight: Steve Wilcox



Design Science

*Stephen B. Wilcox, PhD, FIDSA
[sbw@dscience.com]*

I'm one of the Principals of a 20-person consultancy in Philadelphia called *Design Science*. We specialize in optimizing the human

interface of products. Our specific services include ethnographic research, human factors support, including usability testing, and the design of electronic interfaces. Lately, we've been particularly involved in developing visual formats that allow complex information to be presented in such a way that the implications are clear "at a glance." Thus, one important aspect of our work is to do everything we can to assure that the data we obtain actually drives management decision making.

Most, but not all, of our clients produce medical devices. We've worked on all sorts of medical products—surgical instruments, contrast-medium injectors, IV bags, interfaces for implanted defibrillators, diagnostic equipment, dialysis systems, blood-collection devices, insulin pumps, sterilization equipment, catheters,

infusion pumps, sedation systems, oxygen-delivery systems, fluid disposal systems—you name it. Our clients tend to be market leaders, such as Baxter, J&J, Guidant, Steris, and Hill-Rom. On the consumer-products side, most of our work is in the high-tech arena, for companies like Symbol Technologies, Research in Motion, and Sirius Satellite Radio, but we've also done a lot of work for Kohler and Maytag. A particular focus of our work in the consumer-products area is on *inclusive design*, or design that is usable by everyone, including those with disabilities.

I have to confess that I haven't been that active in HFES over the years, because my energy has gone, instead, into medical and design organizations. So, on the one hand, I serve on the Editorial Board of *Medical Device and Diagnostic Industry*, and the Human Engineering Committee of the Association for the Advancement of Medical Instrumentation, and I was recently a judge for the Medical Design Excellence Awards. On the other hand, I run the Human Factors Professional Interest Section of the Industrial Designers' Society of America (IDSA) and I recently served as a Vice President of IDSA. I suppose that the focus of my career has been on the integration of human factors, broadly defined, with product design, particularly medical product design.

Below are the things I've published in the last few years. As you can see, I want to get information out to people in product development rather than to write for other HF professionals.

Wiklund, M. and Wilcox, S. *Designing Usability into Medical Products*. New York: Taylor & Francis, 2005.

Wilcox, S. High stakes design. *Innovation: The Journal of the Industrial Designers Society of America*, 2003, Summer, 61.

Wilcox, S. and Callahan, E. Remote Interaction. In *Inclusive Design: Design for the Whole Population*, edited

by J. Clarkson, R. Coleman, S. Keates, and C. Lebbon. London: Springer 2003.

Wilcox, S. Eight ways to kill innovation. *Medical Device & Diagnostic Industry*, 2003, June, 40.

Jarvinen, J. and Wilcox, S. Incorporating inclusive design at a major corporation. *The Include 2003 Conference Proceedings*, Royal College of Art, London, England, 2003.

Wilcox, S. and Callahan, E. Remote interaction as an assistive technology. *The Include 2003 Conference Proceedings*, Royal College of Art, London, England, 2003.

Wilcox, S. Applying Universal Design to Medical Devices. *Medical Device & Diagnostic Industry*, 2003, Jan., 114.

Wilcox, S. Introduction. In *The Measure of Man and Woman: Human Factors in Design, Revised Edition*. A. Tilly, New York: John Wiley & Sons, Inc. 2002.

Wilcox, S. Including inclusive design. *Appliance Manufacturer*, 2002, Jan., 88.

Wilcox, S. and Yue, L. Developing testable product simulations. *Innovation: The Journal of the Industrial Designers Society of America*, 2001, Winter, 32.

Wilcox, S. Universal design comes of age. *News from the Design Management Institute*, 2001, Aug.

Wilcox, S. and Reese, W. Ethnographic methods for new product development. *Medical Device & Diagnostic Industry*, 2001, Sept., 68.

Wilcox, S. Ethnography as a product development tool. *Appliance Manufacturer*, 2001, Jul., 58.

Wilcox, S. Inclusive Design. *The Include 2001 Conference Proceedings*. Royal College of Art, London, England, 2001.

Wilcox, S. Designing out ego, designing in customer preferences. *Appliance Manufacturer*, 2001, Mar., 68.

[Editor's note: When Lois Smith of HFES headquarters had asked if anyone was involved with a project that could be used to publicize Human Factors, Steve *immediately* volunteered. Perhaps we'll see his "name in lights" soon!]

Report from the Program Chair

Harvey S. Smallman

- PPTG Student Research Award: We have two winners this year!** Last year, the PPTG members decided that we would award two Student Research Awards for this year's papers. Our two winners are Ernesto A. Bustamante of Old Dominion University and Zhonghai Li of the University of Toronto (see abstracts below). Sixteen PPTG submissions featured student work this year and six of those were entered in competition for the Student Research Awards. Winners were determined by a rank-ordering of those six submissions by three expert referees. Ernesto is starting to make a habit of winning, as he won last year's award – keep up the great work, Ernesto! Ernesto was the author of "A Signal Detection Analysis of the Effects of Workload, Task-Critical and Likelihood Information on Human Alarm Response." Zhonghai's paper was entitled, "An Investigation of the Potential to Influence Braking Behaviour through Manipulation of Optical Looming Cues in a Simulated Driving Task," and was co-authored by Paul Milgram, also of the University of Toronto. Ernesto and Zhonghai will each receive a \$500 award and a certificate suitable for framing.
Congratulations, Ernesto and Zhonghai!
- Outcome of Proposal Selection for the PPTG Technical Program:** We received a large number of excellent proposals for the PPTG Program. There were 50 proposals: one panel, one symposium of 5 lectures, 13 posters and 31 lecture proposals. Two proposals were redirected to other, more appropriate Technical Groups, and two were transferred in from other TGs. Each proposal was reviewed by three anonymous, expert reviewers. One symposium of 5 lectures, 9 posters, and 25 lectures were accepted for presentation at the meeting for an overall

77% acceptance rate. There will be six PPTG sessions at the meeting: one for the symposium and five different lecture sessions.

- A SPECIAL THANKS TO OUR REVIEW TEAM!** Our consistently outstanding technical program would not be possible without the volunteers on our Review Board. We thank each of the following 40 individuals for reviewing the proposals: Samuel Adams, Thomas Ayres, Jan Berkhout, David Boles, Robert Bolia, Patricia DeLucia, Eugenia Cox-Fuenzalida, Henry Been-Lirn Duh, Brian Dyre, Stephen Ellis, Andreas Finkelmeyer, Barry Goettl, Fran Greene, Sehchang Hah, Paul Havig, Larry Hettinger, Justin Hollands, Jocelyn Keillor, Mohammad Khasawneh, Phil Kortum, Mark Lee, John Lenneman, Les Meyer, Suebsak Nanthavanij, Chris Pagano, Raj Ratwani, Sherri Rehfeld, Renate Roske-Shelton, Mark Scerbo, Mark St. John, James Szalma, Gina Thomas-Meyers, William Vigilante, Bruce Walker, Joel Warm, David Washburn, Steffen Werner, Chris Wickens, Stephen Wilcox, John Wise.
THANK YOU, ALL!

Something to Think About...

Steve Rogers, VP and Principal Scientist at Anacapa Sciences, Inc., sent us the following:

"As I continue to monitor the literature, I found an important note inside the cap of my diet Snapple.

"'Real Fact' #165 delivers the startling news that 'Your eye expands up to 45% when looking at something pleasing.' I would certainly like to call this finding to the attention of the PPTG for further study."

Abstracts of Student-Paper Awards

A Signal Detection Analysis of the Effects of Workload, Task-Critical and Likelihood Information on Human Alarm Response

Ernesto A. Bustamante
Old Dominion University

The purpose of this study was to examine the effects of task-critical and likelihood information on participants' sensitivity and bias to alarm signals under varying levels of workload. Participants performed a complex primary task at the same time they performed a secondary task. Likelihood information was manipulated through the use of either a Binary Alarm System (BAS) or a Likelihood Alarm System (LAS). As expected, task-critical and likelihood information significantly increased participants' sensitivity, and this varied across workload levels. Participants benefited from task-critical information only when they were interacting with the BAS. However, participants benefited from likelihood information regardless of task-critical information, particularly under high-workload conditions. Furthermore, task-critical information increased participants' response bias under low workload, making them less likely to respond to alarm signals. These results showed support for the use of an LAS as a way to mitigate the cry-wolf effect above and beyond task-critical information.

An Investigation of the Potential to Influence Braking Behaviour through Manipulation of Optical Looming Cues in a Simulated Driving Task

Zhonghai Li & Paul Milgram
University of Toronto

This paper reports on an investigation of how manipulation of optical looming cues can influence braking behaviour, for automobile driving in a low-fidelity simulator. Twenty participants were instructed to follow a leading vehicle (LV) and appropriately respond to braking events of the LV, which occurred randomly and at different deceleration rates. During some braking events, the size of the LV was manipulated in different ways, without subjects being aware of it, in a manner concordant with the retinal expansion that would have been experienced by the observer if the actual LV had been displaced. Results showed that subjects braked sooner when confronting an expanding LV and later for a contracting LV, relative to a constant-size LV, to an extent corresponding to the magnitude of the manipulation. The experiment supports the theory that drivers use time-to-collision (TTC) information derived from optic looming to control braking.

About the PPTG

This newsletter is a publication of the **Perception & Performance Technical Group** of the **Human Factors and Ergonomics Society**. The PPTG is interested in research and application of all aspects of perception as it affects human performance. The Newsletter is published four times a year. Items for inclusion should be sent to the Editor.

Membership in the PPTG is open to all. Dues are \$5 per year (\$7.00 US for outside USA and Canada), which includes a subscription to the Newsletter. Single newsletter copies, including back issues, are available for \$2 each. Please send requests to the Editor, with a check payable to the Human Factors and Ergonomics Society.

Questions about advertising in **Insight** should be addressed to Shelley L. Rosenbaum Lipman, editor of INSIGHT.

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 Quarter page \$ 75.00
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CONFERENCE CALENDAR:

	<p>HFES 49th Annual Meeting and 2005 Conference Meeting of the Human Factors and Ergonomics Society: 26-30 September; Orlando, Florida.</p>
	<p>HPEE 2nd Annual Meeting (http://www.hpee.org/meeting2.php) Meeting of the Human Performance in Extreme Environments: 19-20 January 2005; Orlando, Florida. Contact Jason Kring (jkring@HPEE.org) for details.</p>
	<p>First Symposium on Auditory Graphs July 2005: University of Limerick; Limerick, Ireland. Contact Bruce Walker (bruce.walker@psych.gatech.edu) for details.</p>