



# Puget Sound Human Factors & Ergonomics Society

Winter 2005 Newsletter

[www.pshfes.org](http://www.pshfes.org)

## President's Message

Season's Greetings, PSHFES members!

What does the winter season bring to us? Turkey dinners, time with family, potential snow flurries, exciting Seattle Seahawks games, time for reflection on the year we've spent together, and a monorail collision?? I'll get to that in a minute...

This year the Society held some very worthwhile events (see sidebar), and 2006 promises to be another great year. Soon, Bruce Coulter will become the PSHFES President, continuing his great service to our local HFES community (see award article on page X).

If you're interested in getting involved as an officer, please let us know! While we continue to expand the Society's activities, membership, and local outreach, there is still so much more we can do together. The disciplines of Human Factors and Ergonomics only continue to grow in importance in the workplace and the community.

Our local area leads the way in incorporating innovations into products that touch the whole world. Microsoft recently introduced the advanced "Natural Ergonomics Keyboard 4000," designed by Society friend Hugh McLoone; Boeing's work on the new 787 airplane sets a new precedent for human factors and ergonomics design; and our Washington State Department of Labor and Industries takes ergonomics research and outreach to new levels of excellence. Those of you who attended our Symposium saw industry leaders in the fields of Ultrasound Ergonomics, Forensic Ergonomics, Aging issues, and more.

There are many facets of society to reach. Your ears might have perked up when you heard the story of the Seattle monorail collision. The local news reported that "human error" was the cause. A closer read of a [Seattle Times article](#) shows that faulty engineering, with known risks, were the underlying reasons. We've heard similar stories before: a "breakdown in protocol," or the "end of a long day." How can we help others understand human error risks, musculoskeletal disorder risks, productivity and quality risks, and, more importantly, ways to overcome them?

We have a lot to be proud of, and a lot of challenges yet to face. Please take an active role in the Society to further our profession and positively affect lives.

This has been a great year for me as part of the PSHFES, and I hope it has been for you. Thank you 2005 Officers! Thank you PSHFES members!

*Amy*

Amy May, CPE

[president@pshfes.org](mailto:president@pshfes.org)

### *What we did this year*

- Boeing-Everett tour
- Washington State Liquor Control Board Distribution Warehouse Tour
- Chris Hamrick, speaker from Ohio State Worker's Compensation Bureau
- Rick Goggins, speaker on "Ergonomics in Schools"
- Our Annual Symposium!
- 2005 Governor's Safety and Health Conference
- 2005 Human Factors and Ergonomics Society Professional of the Year Award

# Symposium Recap

by Deborah Read, 2005 Programs Chair

Thanks to all of you who attended this year's Occupational Ergonomics Symposium! The feedback was incredible and we hope to do even better next year. And thank you to our sponsors and vendors for helping our small, non-profit professional society pull this off: Boeing, Boeing SHEA, Alpha Modalities, Washington State Hospital Association, Kayser-Wesner, Activeworks, Kinesis, WeaverMark, ErgoMates, Working Concepts, and Altus. In addition, the door prizes from LiftMates, AnybodyCAD, ErgoMates, Working Concepts, and BiNW/Herman Miller were a hit!

The Pre-Symposium Workshops were exceptional, and tied in very well together, with Jennifer Karlin from the South Dakota School of Mines & Technology presenting "Lean Principles for Ergonomists" and Leslie Gamble from the British Columbia Interior Health presenting "Essential Ergonomics in the Facility Design Process". There was even a little magic in the air between the presenters as they added insights to one another's talks! The hands-on learning was terrific and it was a rare and fun opportunity to work with colleagues as teams.

The Symposium itself was as fast-paced as ever. It was such an honor to have one of the gurus of ergonomics, Dave Alexander of Auburn Engineer, as our keynote speaker! He illustrated the bottom line impact of ergonomic interventions, both injury based and prevention / process based.

The talk from Dr. Hayes on Expert Testimony + Forensic Ergonomics was eye opening indeed! And you all had the chance to either hear new ideas or to receive reminders of ergonomics ideas as they apply to Aging, Ultrasound, Laboratory, Vibratory Hand Tools, Accessibility, Custodians, and Lifting Assessment Tools. And Rick Goggins shared his Cost-Benefit calculator with us and asked us all to beta test it. This could be a huge boon for our industry, so please participate in this testing phase! Rick can be reached at [gogr235@lni.wa.gov](mailto:gogr235@lni.wa.gov).

We thoroughly enjoyed the energy in the room and the networking that we observed. It's always so nice to be among others who are as passionate about what we do as we are! Thank you again for attending. We hope you learned a gem or two and we look forward to your suggestions for next year.

## Letter from the Keynote Speaker

Thank you for opportunity to speak at your conference. I had a wonderful time and enjoyed making some new friends and seeing some old ones.

I have, over the years, had many opportunities to attend ergonomics conferences, and you all have done a splendid job with the 2005 Occupational Ergonomics Symposium. It was well organized and the logistics were excellent. You have a large and committed committee structure, attendance was large, the audience was engaged, the speakers well selected and tuned into your audience, a nice exhibition, palpable energy flowing among the participants, and plans for sustainability. Having attended and organized conferences myself, I have to tip my hat to the Puget Sound HFES Chapter for an excellent conference - everything that I would look for and expect in an excellent conference was present. Please extend my comments to the others who were involved.

All the best,

David C. Alexander, PE, CPE  
President  
Auburn Engineers, Inc.

## *Bruce Coulter honored with Professional of the Year award*

At this year's Occupational Ergonomics Symposium, PSHFES honored Bruce Coulter, CPE, with the second annual Professional of the Year Award.

Bruce began his ergonomics career at Weyerhaeuser, where he took the initiative to expand the wellness program at the company to include ergonomics. While at Weyerhaeuser, Bruce took part in the Office Ergonomics Advisory Committee, and he was a founding member of the Pacific Northwest Ergonomics Roundtable, which began as a meeting for practitioners new to ergonomics to get together and help each other implement ergonomics programs within their organizations. He took on the role of organizing meetings and maintaining an always growing membership list. Today, the Roundtable has more than 100 members, and regularly has attendance at quarterly meetings of 30 to 40 people, making it one of the most active roundtables of its kind. The Roundtable has become an important local venue for information sharing and community building among area ergonomists and others interested in the field.



For the past five years, Bruce has worked at L&I in the Training and Outreach group. At first, he created training and education materials to help employers comply with the ergonomics rule. He was also part of a team that developed a comprehensive guide to injury prevention and rule compliance for sawmills. When the rule was repealed, he broadened his efforts to help businesses in the state prevent injuries, and looked to help local industries, such as logging, which hadn't previously received much help in ergonomics.

For the past couple of years, Bruce has become active in the PSHFES, serving briefly as secretary/treasurer and currently as treasurer/president-elect. He has volunteered to help teach high-school students about ergonomics at the student program at the Governor's Industrial Safety and Health conference, and is helping out with the PSHFES "Ergonomics for Schools" initiative. Bruce recently became a Certified Professional Ergonomist, and he has always been an all-around nice guy.

Other nominees for this year's award include the Boeing 787 team (Bob Verginia, David Smith, Rich Gardner, John Amell, Chuck Eggleston, Amy May); Bill Brough of Washington Ergonomics; Ian Chong of Ergonomics, Inc.; Hugh McLoone of Microsoft; Dianne McMullin of The Boeing Company; and Barbara Silverstein of the Washington Department of Labor & Industries, SHARP team.

## **Thanks to members who taught School-to-Work sessions at Governor's Industrial Safety and Health Conference**

For the second year in a row, PSHFES members volunteered to help out with the School-to-Work session at the Governor's Industrial Safety and Health Conference in Tacoma. Our members taught some of the principles of ergonomics to over 80 local high school students, through hands-on activities that included computer workstation set up, hand tool vs. power tool use in a repetitive task, posture and lifting demonstrations, and design of the control knob-burner relationship for a stove top. The students especially seemed to enjoy being hooked up to the Pocket Ergometer, which converts the electrical activity associated with muscle use into sound. Students were able to hear the difference between neutral and awkward postures, and between wearing a backpack with one strap or with two. Anyone looking for ideas for demonstrating ergonomics to students can get more details on these activities, as well as a copy of an ergonomics video appropriate for high school students, by contacting Rick Goggins at: [pastpresident@pshfes.org](mailto:pastpresident@pshfes.org)

# Input requested regarding HFES technical groups

Dear PSHFES Members,

As some of you may know, The Human Factors and Ergonomics Society (HFES) has been re-evaluating its role regarding human factors standards. Standards, in this case, is used as a broad term to include standards, handbooks, best practices, guides, etc.

With insufficient funding for human factors standards activities within the Department of Defense (DoD), military human factors standards are rapidly growing out-of-date and are in danger of losing their technical integrity. Given the current status within DoD, the HFES has recognized a need to play a more prominent role in human factors standardization. The primary approach that is being considered is the creation of a Human Factors Standards Technical Group within HFES. As an initial step, a sufficient number of people need to express their support for such an endeavor. This essentially means members of technical groups will be asked pay annual dues of \$3 to \$6 per year. One does not have to be a member of HFES in order to be a member of a technical group.

Interested people can demonstrate their support by sending their contact information (name with prefix, address, telephone number, and e-mail (please indicate if these are home or business) to Mr. Alan Poston at [aposton86@comcast.net](mailto:aposton86@comcast.net). If you have questions or comments, please call Alan at 202-493-4519. Thank you for your assistance in this matter.

Alan Poston  
Federal Aviation Administration

## Would you like to be a PSHFES Officer?



We are accepting nominations for the position of **treasurer** for the 2006 year.

If you are interested in the position, or if you know of someone who would be an outstanding PSHFES Treasurer, please email [presidentelect@pshfes.org](mailto:presidentelect@pshfes.org)

## Web Site of the Month

[http://www.ergoblog.com/2004/09/christmas\\_gifts.html](http://www.ergoblog.com/2004/09/christmas_gifts.html)

### "Ergonomic Gift Ideas" from Ergoblog

Since the holidays are upon us, it might be fun to check out "ergonomic" gifts available for the computer users on your list. And while you're at it, look around the ergoblog site - you might find some useful information.

#### *Where have you been surfing?*

If you know of a great HF/E web site, please send it to [secretary@pshfes.org](mailto:secretary@pshfes.org) to have it included in the next PSHFES newsletter.

# Microsoft Natural Ergonomic Keyboard 4000 debuts

by Hugh McLoone, *Ergonomist, Design & User Research, Microsoft*

Nearly a decade ago, I came to Microsoft to protect and improve the health of computer users by working on front-end of product design. After shipping over 50 products at Microsoft, this new ergonomic keyboard is one of my proudest. It took nearly 7 years of basic and applied ergonomic research – along with some creative thinking thereof – for me to reconsider what it means for a fixed-split ergonomic keyboard design. The new keyboard - Natural Ergonomic Keyboard 4000 – is now available. While maintaining typing performance, this new keyboard has several unique, innovative ergonomic attributes:

- **Steeper gable “tent” slope of 14 degrees** which further minimizes wrist pronation. (The previous Natural Keyboard designs had 8 degree gable angle based on published university research at the time.)
- An innovative **“gull wing” QWERTY keys design**: the keys on the outside columns are angled both in and up – flattening and thinning – to reduce the oblique strike angle of the fingers as they strike the keys at the periphery. The hypothesis I had was that key cap surface should be perpendicular to the finger strike angle for solid, smoother, lower force action. And, it always bothered me how far away the Backspace key was on the original Natural Keyboard. It’s a complex wrist and hand motion to reach for Backspace. The new design better meets these goals and thus the flattening and thinning of the peripherals keys create an organic, “winged” design.
- An adjustable slope design that has a truly **negative slope** of -7 degrees to minimize wrist extension. (The zero/flat and positive slopes are still available.)
- **Taller palm rest** further reduces wrist extension.

The new keyboard also carries forward innovations from previous Microsoft keyboards:

- The **split angle of 24 degrees** to minimize ulnar deviation remains from the original Natural Keyboard.
- **Zoom Slider** for view zoom – placed between keyboard split. Simply push the slider to zoom in and out when navigating large documents or images.
- **Back & forward buttons** – on this keyboard placed in front of space bar.
- **My Favorites Keys** deliver one-touch access to your most-used Web sites, files and folders. Simply push and hold the key to assign it to the current destination.
- **Enhanced F Keys** make it easy to complete common tasks with one touch. You also can set traditional F Key functions with the F Key lock.
- **Customizable Hot Keys** including Mail, Web/Home and Search allow you to quickly launch these programs with the touch of a button.
- **Enhanced number pad** with =, (, ) and Backspace.
- **Padded palm rest**.

**For more information about Natural Ergonomic Keyboard 4000:**

<http://www.microsoft.com/hardware/mouseandkeyboard/productdetails.aspx?pid=043>

<http://www.microsoft.com/hardware/discover/nek4000.htm>

In particular, see the flash demo that describes the ergonomic features of Natural Ergonomic Keyboard 4000.

<http://www.microsoft.com/hardware/discover/FLA/comfort/Default.html>

And if you haven’t already seen it, the ergonomic keyboard for “conventional” users, the Comfort Curve Design was introduced last year and continues to be integrated into three more keyboard designs this fall. It has subtle split angle (12° instead of 24° on MNK) to reduce ulnar deviation of wrist.

**For more information about Comfort Curve Design:**

<http://www.microsoft.com/hardware/discover/cck2000.htm>

<http://www.microsoft.com/hardware/mouseandkeyboard/ProductDetails.aspx?pid=057>

# Professional Development Opportunities

## *New Bachelor of Applied Science Degree Program at Central Washington University-Lynnwood*

Those who have a two-year technical degree (e.g., AAS, AAS-T) can now earn a Bachelor of Applied Science degree in Safety & Health Management at CWU's Lynnwood campus. Until now, universities have required an approved two-year transfer degree for acceptance to a bachelor's degree program. This second, unique option will accommodate students with a wider range of academic and technical backgrounds. Both programs are designed for those who wish to continue employment while attending evening classes. Applications are now being accepted for Fall quarter. For further information contact the program coordinator, Jeannette Jacobson at [jacobsoj@cwu.edu](mailto:jacobsoj@cwu.edu), or see [www.cwu.edu/lynnwood/programsoffered.html](http://www.cwu.edu/lynnwood/programsoffered.html).

## *8th annual Applied Ergonomics Conference*

March 6 - 9

Orlando

Come to the ergonomic event of the year developed by practitioners for practitioners. This conference will give you the tools and practical applications you need to solve your toughest ergonomic problems. Start getting excellent returns on your company's ergonomics investment. Almost 800 practitioners attended this year's conference. We expect at least 900 in 2006! Be a part of this important group  
<http://www.appliedergo.org/conference>



## Officer Contact Information

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## Software Giveaway



The AnybodyCAD company is so generous they decided to offer another free copy of their software.

If you can answer the question below, send the answer to [secretary@pshfes.org](mailto:secretary@pshfes.org). The first person to correctly answer the question will win the AnybodyCAD Software.

**Question: What is the longest muscle in the human body?**