AMERICAN SOCIETY OF SAFETY PROFESSIONALS

Utah Chapter

October 2021 Newsletter

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- News & Articles

MESSAGE FROM THE BOARD

Happy Change of Seasons Utah ASSP Chapter members! Did you know that October is recognized at National Ergonomics Month? In fact, since 2003, professionals have made extra effort this month to share the science, practice and value of good ergonomics with our communities. So let's talk about Ergonomics for a moment. Ergonomics is a body of knowledge about human abilities, human limitation and human characteristics, that are relevant to design. Ergonomic Design is the application of that body of knowledge to the design of tools, environments and systems (BCPE). What this means is that you can't have good ergonomics without looking at design.

One of the tools ergonomics practitioners might use to influence design decisions is anthropometry. In the past, we've relied on a number of available database sets to compare how our design solutions might include or exclude the anthropometrics of a certain population. The practice of comparing your designs to an anthropometric database has been greatly improved in the past year with the open, public access to the Virtual Fit Tool (VFT) made possible by the Human Factors and Ergonomics Society (HFES). The VFT tool can be used to make multivariate accommodation estimates to determine how users will fit products or workstations. The ASSP Ergonomics Practice Specialty Group will be giving a free webinar on how to access and use this tool during National Ergonomics Month on October 25th at 12pm MST.

If you would like to bring increased awareness to your organization about how ergonomics and human characteristics influence design, read about the PB&J group activity in the Technical Articles section of this newsletter.

Additionally, the Ergonomics Practice Specialty Group has made a number of webinar replays available to all ASSP members. See below for links to these webinars.

You might also consider revisiting one of these ASSP webinars with your teams in recognition of National Ergonomics Month. From all of us here at the Utah ASSP Chapter Board, we wish you a safe and happy season!

Rachel Michaels, Certified Professional Ergonomist (CPE)

ASSP Utah board member

For additional interactive exercises that demonstrate Ergonomics and Human Factors principles see: https://www.hfes.org/Events/National-Ergonomics-Month/NEM-Articles

Watch Replay of: Ergonomics in Healthcare Environments

https://player.vimeo.com/video/503543183

Watch Replay of: Cross Collaboration Across Industries for Inclusive Design

https://vimeo.com/518297234/6f0390eb8d

Watch Replay of: Exoskeleton Technologies – Application, Integration and Standards

https://player.vimeo.com/video/529378781

BONUS – Link to ASTM Video Discussed: https://youtu.be/xjkse94r6BM

Watch Replay of: Environmental Ergonomics During the Covid-19 Pandemic

https://vimeo.com/536004083/1b60516ce9

Watch Replay of: Human Exposure to Occupational Vibration 4/27

https://player.vimeo.com/video/542683205

MEMBERSHIP UPDATES

New Members

- Katherine Lawrence
- Trevor Beecher
- Bracken Snyder
- Matthew Tibbitts
- Nathan Winward

Member Spotlight

Name: Jake Seiter

Employer: Oldcastle APG – Amcor Masonry Products

How many years in Safety & Health? 6

Education: Bachelor and Master of Mining Engineering at U of Utah

Certifications: CSP, EMT, EIT

Why did you become a safety professional?

Before attending college, I made safety my career choice. Having worked in the construction industry for a couple of years, I saw some serious injuries that I knew could have been prevented. Initially, I started as a construction safety professional and quickly found out that I didn't know enough and needed to gain more knowledge to become a true safety professional. I selected mining engineering as the avenue for my safety career because it has been my thought that if you know how to design the mine and facilities, you know how to keep it safe.

What do you like most about your profession?

I enjoy daily interaction and safety influence with the workforce to build a strong safety culture.

What are you most proud of in your career?

I have been able to help my current company change the trajectory of their safety program from a failing system to functioning and growing safety system.

If you could be anything other than a safety professional what would you be?

Classic car rental/ dealer or a National Park Ranger

What do you like to do when you're not working?

Camping, hiking, traveling and visiting National Parks with my wife Jennifer.

Thank you Jake for introducing yourself to our fellow members.

UPCOMING EVENTS

October Chapter Meeting

Utah Conference on Safety & Industrial Hygiene

Dates: October 14-15, 2021

Meets: Th 8:30 am - 4:30 / Fri 8:30 am - 3:00 pm

Location: ONLINE - VIA LIVE BROADCAST

Register online at:
https://ce.rmcoeh.utah.edu/wconnect/ace/CourseStatus.awp?&course=21JUC102021

NEWS & ARTICLES

ASP/CSP Study Question of the Month

After being assigned to sweep the floor where dust has accumulated Ralph requested what he calls a dust mask, which is a filtering facepiece respirator. The safety supervisor noted that the dust concentration is well below regulatory level and refused to issue the respirator, stating that Ralph has not been fit tested. Was the safety supervisor correct?

A. Yes, anyone wearing a tight-fitting respirator must be medically evaluated and fit tested prior to wearing one.

B. Yes, Ralph should not have asked for the respirator due to budget constraints.

C. No, fit testing is not required in this specific case.

D. No, the safety supervisor should have performed a fit test and issued the respirator.

Universal Design and Ergonomics

Universal design is the process of creating “products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design[1].” A report from the Institute of Medicine defines disability as “a gap between a person’s capacities and the demands of relevant, socially defined roles and tasks in a particular physical and social environment.[2]” Universal design is intended to reduce the gap between individual capabilities and societal demands by creating more accessible environments and products. Automatic doors, curb cuts, ramps, and motion-activated

lights are all examples of universal design in practice that make surrounding environments more usable.

There are 7 principles of universal design that dictate decisions when creating a product or environment:

1. Equitable Use. The design is useful to a wide range of disabled and non-disabled people. For example, websites optimized for screen readers can be navigated easily by users both with visual disabilities and those without.
2. Flexibility in Use. The design accommodates individual preferences for use. Some examples are providing tools for right- and left-handed individuals or providing books in printed, digital, and audio formats.
3. Simple and Intuitive. The design does not require detailed instructions for effective use. An example is electronics that mark power switches with conventional and easily visible “on” and “off” symbols.
4. Perceptible Information. Information communicated to the user is clear regardless of disability or environmental conditions. For example, instruction signs using both diagrams and written directions are easy to understand for a wide audience of users, including those with difficulty reading or those that speak a different language.
5. Tolerance for Error. The potential for negative consequences arising from unintentional misuse is minimized. For example, many computer programs have an “undo” option to quickly reverse mistakes. The program may also ask the user “Are you sure?” to confirm intent before completing an action that may be difficult to reverse (e.g. deleting a file).
6. Low Physical Effort. The user can interact with the environment regardless of their physical abilities. For example, automatic doors do not require physical exertion from the user to open.
7. Size and Space for Approach and Use. The environment has enough space for users to easily navigate and elements within the environment are large enough to easily grasp and manipulate. Some examples include wide walkways that accommodate users with mobility aids or providing seating options that accommodate a wide range of bodies.

The benefit of approaching a planned environment or product with a universal design mindset from the outset is that the need for future adaptations will be reduced. It is impossible to create an environment that is perfectly suited to every person’s needs, but applying universal design principles is a way to get a head start on accessibility. Starting with an environment that is already designed to be more equitable saves time and sends the message that including people with disabilities is a priority. Ultimately, the best way to determine if an environment or product will meet the needs of people with disabilities is to consult people with disabilities and act on their feedback. Making an effort toward universally designed environments will allow every individual to work equitably and perform at their best.

References

[1] *The Center for Universal Design - About UD*. (n.d.). The Center for Universal Design. Retrieved June 19, 2021, from https://projects.ncsu.edu/ncsu/design/cud/about_ud/about_ud.htm

[2] Institute of Medicine (US) Committee on Disability in America; Field MJ, Jette AM, editors. *The Future of Disability in America*. Washington (DC): National Academies Press (US); 2007. 2, Definition and Monitoring of Disability. Available from: https://www.ncbi.nlm.nih.gov/books/NBK11430/

Rickerson, N. (2009). Universal Design: Principles and Practice for People with Disabilities. In I. Söderback (Ed.), *International Handbook of Occupational Therapy Interventions* (1st Edition. 2nd Printing. 2009 ed., pp. 159–165). Springer.

Saunders, J. (2020, February 26). *Cross Collaboration Across Industries for Inclusive Design* [Conference presentation]. ASSP Conference, United States. https://vimeo.com/518297234/6f0390eb8d

Rahman, L. & Stanford Disability Initiative Board. (2019, July). *Disability Language Guide*. Stanford Disability. https://disability.stanford.edu/sites/g/files/sbiybj1401/f/disability-language-guide-stanford_1.pdf

Emma Gubler is a recent graduate of Brigham Young University's Public Health program with an emphasis in Occupational and Environmental Health. She can be reached at gubleremma@gmail.com.

Ergonomics/Human Factors and PB&J

In the field of ergonomics/human factors, we often catalog user task steps, and then revise them after observing a population performing those tasks (alongside engineers revising requirements and code as people use the design). The task steps and design frequently change after we've observed users. This exercise is a hands-on way to demonstrate this common finding. **performed in practice or in production.**and the same tasks are **expected to be performed** The PB&J activity provides a compelling demonstration on the difference between procedural and abstract knowledge. For Americans, making a PB&J sandwich is one of the most basic algorithms in our cultural lexicon, and while the task seems obvious, observing the differences is intriguing and may be relatable to your teams. For example, your ergonomics/safety teams may have experienced a difference between how certain tasks are

For each group, compile the following materials: Gather your team and divide into small groups of at least 2 people as size allows.

Materials List for Each Group

- Two different types of peanut butter
- Two different types of jam/jelly
- Two different types of bread
- Disposable spoons and knives
- Paper plates and napkins for clean up

We will first collect "before" data. On a sheet of paper that can be turned in, ask participants to "Please write in order, and in as much detail as possible, all the steps involved in making a peanut butter and jelly sandwich." You can also ask the Y/N question, "Have you ever made a peanut butter and jelly sandwich?". Have participants turn in this page so that it cannot be referenced in the next steps.

We wanted to collect "before" and "after" data. Before beginning the activity of making and observing others make PB&J sandwiches, we asked the students to "Please write in order, and in as much detail as possible, all the steps involved in making a peanut butter and jelly sandwich." Our goal was to compare these descriptions with descriptions written after observation. Then instruct the small groups to take turns making a

sandwich. Instruct the non-sandwich makers to carefully observe the sandwich maker and to take notes on the process steps and tools used. Encourage the sandwich makers to think aloud and explain what they are doing as “think aloud” protocols are common in user studies. Ensure each participant is able to both make a sandwich and observe a sandwich being made.

Next, ask participants to, again, complete a list of the steps required to make a sandwich. A facilitator can then lead a discussion about the exercises. Some questions to prompt discussion might include:

- How did it feel to be observed?
- How many steps were in your initial description versus how many steps were included after the observations?
- Did anyone observe a task that was different from how they, themselves, performed the task?
- Did steps note specifics such as which type of tool (spoon vs knife) to use?
- Did any steps note things like sandwich maker work position (sitting/standing) or handedness?
- Did any steps consider preceding (i.e. obtain raw materials) or subsequent (i.e. eat, enjoy) process steps?
- How does this cause you to look at your current process descriptions and work step training materials?

For more information on this exercise visit:

Reference: Coyle CL, Vaughn H. Making Peanut Butter and Jelly Sandwiches: Do Students from Different Disciplines Approach This Exercise Differently? *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. 2008;52(8):624-628. doi:10.1177/154193120805200802

Submitted by Rachel Michael. Rachel is a Certified Professional Ergonomist (CPE), and past President of the Board of Directors for the Board of Certification in Professional Ergonomics (BCPE), and also the current Administrator for the ASSP Ergonomics Practice Specialty Group.

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Treasurer's Report

That donation will include the proceeds from the February silent auction and an additional $5,000 that the Board approved previously, for a total of $6,770. This is an increase of over $400 from Q1. However, the Chapter still has a pending donation to the ASSP Foundation for scholarships. The Chapter fiscal quarter 2 is complete. Both income and expenses increased slightly but the chapter balance is still strong at $30,545.

Overall, the Chapter finances are healthy. Thank you to our membership for your donations and support!

Utah ASSP Treasurer's Report	
Q2 - July 1, 2021 - September 30, 2021	
Beginning Balance	$30,135.81

	Cash Receipts (+)
Chapter Dues	$1,520.00
Savings Account Interest	$3.56
	Cash Disbursements (-)
Conference Meals/Breaks	$267.60
Meeting Lunch/Dinner	$508.15
Conference Other	$237.91
Other - ASSP Buttons	$100.00
Ending Balance	$30,545.71

Danny Dilts, Utah Chapter Treasurer

Job Opportunities

There are currently 5 jobs posted on the ASSP Utah Chapter website. Click on this link for more information. https://utah.assp.org/current-openings/

There is also an opening for an Industrial Hygienist at BYU. Click on link below:
https://hrms.byu.edu/psc/ps/PUBLIC/HRMS/c/HRS_HRAM.HRS_APP_SCHJOB.GBL?Page=HRS_APP_SCHJOB&Action=U&FOCUS=Employee&SiteId=60&

ASP/CSP Study Question -Solution

In a case where an employer issues for voluntary use, a filtering facepiece respirator (dust mask), there are two requirements:

1. Determine that such use will not itself create a hazard.

2. Provide a copy of Appendix D of the OSHA standard to each voluntary user of a filtering facepiece.

Medical evaluation and fit testing are not required.
The correct solution is C.

Newsletter Contributions

ASSP Utah Chapter Newsletter is published monthly. Contributions or comments regarding the newsletter can be sent to edhenkels401@gmail.com. Include "ASSP Newsletter" in the subject line. Deadline for contributions is the 15th of the month for publication in the next month's newsletter.

Thank You to all those who contributed to this month's newsletter.

Ed Henkels, Newsletter Editor