

# Two DO-IT Staff Accept Positions Within Committees

By Sheryl Burgstahler, DO-IT Director

DO-IT staff members Scott Bellman and Lyla Crawford were both recently invited to join different committees. Scott accepted a chair position within the Washington State Governor's Committee on Disability Issues and Employment (GCDE; *esd.wa.gov/GCDE*), while Lyla is happy to be joining the advisory committee of Understanding Interventions that Broaden Participation in Science Careers (UI; *understanding-interventions.org/*).

Through 2019, Scott will serve as chair of the GCDE Membership Committee, which sets priorities for member engagement, makes appointment recommendations to the governor, and guides policy for new member recruitment and selection. The GCDE advises

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Scott with Governor Inslee at GCDE event.

the governor on legislature that affects people with disabilities; assures policies create equal opportunities and access to employment, education, healthcare, and public services; and provides training and technical assistance to the business community to promote employment opportunities and awareness of disability issues.

Lyla joins the nationally-known UI, which facilitates communication among individuals who participate in broadening participation programs. They ensure that social scientists, graduate students, education researchers, program evaluators, and faculty are all disseminating and sharing information on how to create a diverse field.

UI aims to "positively impact the outcomes of efforts aimed at broadening participation in research and research careers through the expansion and dissemination of the relevant body of knowledge, and facilitate its implementation in practice, policy development, training, and professional development." The next UI conference will meet in Baltimore in March 2018.

Congratulations to both Scott and Lyla, and we look forward to the great work they will be doing.



In the Scholars program, high school students with disabilities connect with other students from across Washington State.

Apply to the *DO-IT Scholars* Program By Tami Tidwell, DO-IT Staff

DO-IT is actively recruiting students for our capstone program, *DO-IT Scholars*. For this unique program we are seeking students who

- are sophomores or juniors in high school in Washington State;
- have an aptitude for and interest in attending college;
- have a disability such as, but not limited to, mobility impairment, learning disability, sensory impairment, autism, or health impairment; and
- are motivated to participate and interested in interacting with other students with a variety of disabilities.

DO-IT Scholars are loaned computer equipment and adaptive technology needed to participate in electronic mentoring and Internet support year-round. For two to three summers, DO-IT Scholars attend a two week, live-in summer program on the University of Washington Seattle campus, where they learn about college selection, challenging careers, self-advocacy, and adaptive technology. Applications are accepted any time during the current school year. Students are encouraged to work on and submit their applications in the fall and winter. Applications received before January 30 will receive the highest priority. Applications received after will be considered on a space-available basis.

To apply to be a *DO-IT Scholar*, visit *www. uw.edu/doit/programs/do-it-scholars/applying*. For any assistance or information, please contact us at 888-972-DOIT (voice/TTY).

## New Astronomy-Themed Accessible Hour of Code

By Brianna Blaser, DO-IT Staff

One of the *AccessCSforAll* Principal Investigators (PI) Andreas Stefik released a second accessible Hour of Code Activity this fall, just in time for Computer Science Education Week. The new Hour of Code explores astronomy and uses the Quorum programming language (*quorumlanguage*. *com/hourofcode/astro1.html*). Quorum is an evidence-based programming language that is design to be accessible.

Based on the traffic, the new Hour of Code is a great success with over 57,000 page views during Computer Science Education Week alone. The Quorum Hours of Code are the



Eagle Nebula, one of the images you can discover in the astronomy-themed Quorum Hour of Code activity.

only accessible tutorials included in the Hour of Code activities, thereby opening up this opportunity to students with disabilities who may not otherwise be able to participate.

Learn more about Quorum and other AccessCSforAll initiatives at www.uw.edu/ accesscomputing/accesscsforall.

#### Increasing Accessibility of Postsecondary Career Centers By Scott Bellman, DO-IT Staff

Postsecondary career centers help students prepare for employment by teaching them how to create resumes, improve interview skills, and find job openings. Some career centers understand the unique needs of students with disabilities such as accessible facilities, materials in accessible formats, and learning about disability disclosure for employment. However, there are additional ways that career centers can improve access and engagement.

When career centers collaborate with other departments and organizations on campus, they can more effectively serve students with disabilities. For example, career centers can find partners on campus to run a Workforce Recruitment Program (*wrp.gov/AboutPre.do*). They can also encourage partners to distribute resources on accommodations for students with disabilities.

There are many promising practices for career centers to follow, as seen below:

- Create workshops specifically for students with disabilities and host all events in accessible facilities.
- Train career counselors and staff on communication tips for working with students with disabilities and how to provide materials in alternate formats.
- Provide supportive statements on promotional materials.
- Caption videos and maintaining accessible websites.

Career centers can also create resources specifically for students with disabilities. For example, the UW Career & Internship Center created a page from their home page called "Resources for Students with Disabilities."

This article is adapted from the DO-IT Knowledge Base article "How can the engagement of students with disabilities in postsecondary career centers be increased?" (www.uw.edu/doit/how-can-engagementstudents-disabilities-postsecondary-careercenters-be-increased). For more information about accessible career services, consult Equal Access: Universal Design of Career Services at www.uw.edu/doit/ equal-access-universal-design-career-services.

#### *AccessCSforAll* and Participant Highlighted in College Board Newsletter By K Wheeler, DO-IT Staff and *Ambassador*

In their December newsletter, the College Board (*www.collegeboard.org/?navId=www-cb*) ran an article about the importance of having access to coding and other aspects of computer science. Last year, with the creation of a new Advanced Placement (AP) course, AP Computer Science Principles (AP CSP), the College Board opened doors for underrepresented groups in computing, including students with disabilities.

Last year, Grady Thompson, a 2015 *Scholar* and *AccessComputing* team member, took AP CSP. "The AP CSP course in high school solidified my interest in computing fields and motivated me to apply to the informatics program at the University of Washington," said Grady.

To increase the accessibility of their AP CSP class, the College Board has partnered with *AccessCSforAll* (*www.uw.edu/ accesscomputing/AccessCSForAll*). Richard Ladner, *AccessComputing* and *AccessCSforAll* PI, says they are "working together to create a fully accessible version of AP CSP that uses research-based accessible tools such as the Quorum programming language" (*quorumlanguage.com/*).



Grady works on a web design project during DO-IT's Summer Study 2015.

Read the full article at www.collegeboard.org/ membership/all-access/academic/ap-computerscience-principles-increases-access-studentsdisabilities.

# DO-IT Staff Teach Undergraduate Seminar at UW

By K Wheeler, DO-IT Staff and Ambassador

For the fifth year running, DO-IT Staff members Scott Bellman and Sheryl Burgstahler co-taught an undergraduate seminar at the University of Washington titled "Disability 101: Identity, Education, Careers, & Leadership." Dan Comden, Hadi Rangin, and Kayla Brown participated as guest lecturers in the course.

The seminar explored types of disabilities, the history of the treatment of disabled people, campus disability services, the intersection of disability and career fields, and more.

Each of the students completed an accessibility review of a local lab or science education program, like a museum or the Pacific Science Center. The students used DO-IT resources like the Checklist for Making Science Labs Accessible to Students with Disabilities (*www. uw.edu/doit/checklist-making-science-labsaccessible-students-disabilities*).

Here are some quotes from students about how this class affected them:

"Before taking this class I was planning on majoring in psychology and minoring in disability studies, but now I have decided that I want to double major." "My thinking and perception on disability was routinely challenged in this course and the things I learned will forever shape how I interact with and consider the concept of disability in society."

"People with disabilities work just as hard, and it's awful that people don't see them as equals. I definitely have done this to someone before, and this seminar has made sure that I will never do that again."

Everyone involved in putting this class together had a great time. DO-IT will host this seminar again next year.



AccessERC CBI participants.

## AccessERC Hosts CBI

By Scott Bellman, DO-IT Staff

On December 6-8, *AccessERC* hosted its third capacity building institute (CBI), titled Increasing the Participation of People with Disabilities in Engineering Research Centers (ERCs).

The National Science Foundation funds ERCs, where postsecondary researchers and industry collaborate on complex engineered systems and technologies that could spawn whole new industries or radically transform existing ones. Members of ERCs from across the country attended the CBI to learn more about including individuals with disabilities in their centers.

Participants visited the UW's BioRobotics Lab (*brl.ee.washington.edu/*), where they learned about cutting edge research and practiced evaluating accessibility by using the DO-IT publication "Checklist for Making Engineering Labs Accessible to Students with Disabilities" (*www.uw.edu/doit/checklistmaking-engineering-labs-accessible-studentsdisabilities*).

CBI participants also learned about best practices for including people with disabilities, such as

- understanding disability culture and disability rights;
- recruiting individuals with disabilities as students, staff, and mentors;
- applying universal design principles to activities, facilities, and research;
- providing accommodations for engineering activities; and
- making sure that information technology (e.g., documents, websites) is accessible.

The participants continue conversations online in the *AccessERC* community of practice, where they talk about increasing the engagement of people with disabilities in ERCs.

AccessERC is a collaboration between DO-IT and an ERC at the University of Washington called the Center for Sensorimotor Neural Engineering (CSNE; *www.csne-erc.org/*). Dr. Rajesh Rao, CSNE Principal Investigator, shares "ERCs are designed to have huge impact in society by solving some of the major challenges in engineering that society is currently facing. In order to have that kind of impact and solve these important problems, we need to include every section of society, including people with disabilities, in all aspects of ERCs."

To join the AccessERC community of practice, visit www.uw.edu/doit/programs/accesserc/ resources/join-accesserc-community-practice, and to learn more about the project, email doit@ uw.edu.

# *AccessComputing* Launches Social Media

By Kayla Brown, DO-IT Staff

Consider following *AccessComputing* on Twitter and Facebook.

- Twitter twitter.com/AccessCompUW
- Facebook www.facebook.com/ AccessComputingUW/

You will find about events, news, and resources from our partners. For more information about how you can get involved with *AccessComputing*, email us at *accesscomp@uw.edu*.

### iPhone X and Accessibility

By Terrill Thompson, DO-IT Staff

Apple has done a good job in recent years of building products that are usable by people who have a variety of characteristics. In iOS, the operating system that drives Apple's mobile devices, there are dozens of features available under Settings > General > Accessibility, grouped into categories "Vision," "Interaction," "Hearing," "Media," and "Learning."

Screen reader users in particular are drawn to iOS devices. According to WebAIM's latest Screen Reader User Survey (#7, published December 21, 2017 at *webaim.org/projects/ screenreadersurvey7/*), 1,557 survey respondents (88.0%) said they use a screen reader on a mobile phone, mobile handheld device, or tablet; and of these, 75.6% are using Apple iOS devices (iPhone, iPad, or iPod Touch).

In November 2017, Apple released the iPhone X, the first in Apple's next generation of smart phones. With a suggested retail price of \$999.99, it is the most expensive Apple phone to date. The accessibility community expressed some initial concerns about the impact of new iPhone X design choices and features on accessibility. Concerns focused primarily on two features: Elimination of the home button and Face ID.

#### No More Home Button

Prior to iPhone X, the Home button provided a large tactile target that users could press in order to perform various functions. For example, tapping once returned users to the home screen. Tapping twice could be configured to enable "Reachability," a feature that lowers the top of app windows so users with limited hand dexterity can more easily access common controls located at the top of apps. Tapping three times could be configured to serve as an "Accessibility Shortcut," used to toggle a single accessibility feature or display a menu of multiple accessibility-related features, depending on how users configured it.

Eliminating the physical home button left questions as to how users would perform these important functions. Fortunately, all functions are still supported, but are now triggered using different methods. Users can return to the home screen by swiping up from the bottom of the screen; they can enable "Reachability" by swiping down from the bottom of the screen; and they can initiate the "Accessibility Shortcut" by tapping three times on the Side button (a single long button located on the right side of the iPhone; opposite two shorter volume buttons located on the left).

Whether these methods are equally accessible to the methods they replaced (using the Home button) is a question of some debate. Swiping up or down from the bottom of the screen requires some dexterity, and has different results if the user starts too far from the bottom or holds their finger on the screen too long. Also, tapping three times on the side button requires careful precision, as tapping twice opens Apple Pay, and (more critically) tapping five times initiates "Emergency SOS", which automatically calls 911. If accidentally triggering the latter is a concern, it can be configured (in Settings > "Emergency SOS") to play a "Countdown Sound" for three seconds prior to calling 911, during which time the user can cancel the call. It can also be disabled altogether, although having easy access to emergency services is arguably a nice feature.

#### Face ID

The other feature that has caused some initial concern, particularly within the blind/low vision community, is Face ID. This is one of the highest profile new features of the iPhone X, as it showcases new levels of sophistication in face recognition technology. Face ID uses automatic face recognition for unlocking the phone, downloading apps from the App Store, or conducting financial transactions using Apple Pay. Apple claims their face recognition technology, which uses 3D modeling of the user's facial features, is more secure than fingerprint recognition ("Touch ID"), which can be spoofed by using a piece of tape to capture a person's fingerprint. It's also an accessibility improvement for people who have no fingers or fingerprints.

For people who are blind, the process of setting up Face ID is reasonably accessible using VoiceOver (the screen reader that comes with iOS). VoiceOver coaches users through the setup process with prompts such as "Move iPhone a little higher" and "Tilt your head up and to the right." However, once Face ID is setup, it requires users to gaze directly into the phone, which is a difficult task for users who are unable to see. Even if VoiceOver provides verbal assistance, this can be a much more burdensome process than touching the device with a finger. Fortunately, Face ID is optional with the iPhone X. Users can control which features require it, or they can disable it altogether, in which case the iPhone falls back to old school security methods (i.e., enter a passcode).

#### Summary

iPhone X still has the dozens of accessibility features that iPhone users are accustomed to. However, Face ID and the lack of a home button are changes that some users may find problematic. Anyone who feels they might be impacted by these changes should head to a store that sells these devices and try them out before making a purchase. As an alternative, the iPhone 8 and iPhone 8 Plus were released shortly prior to the iPhone X, and offer many of the same improvements (e.g., faster processor, better camera, water resistant, wireless charging) yet still have a home button and Touch ID (and are slightly less expensive). To compare all three models (or other older models), visit *www.apple.com/iphone/compare/*.



DO-IT participants and mentors get to know each other, play games, and eat pizza at a DO-IT Networking event.

#### Join DO-IT at an Event By Tami Tidwell, DO-IT Staff

DO-IT programs and projects such as *Scholars*, *Pals*, *AccessSTEM*, and *AccessComputing* offer many opportunities to meet mentors and learn about science, technology, engineering, and math. Some upcoming events are featured below.

Staying Connected meetings allow college students to come together to support one another in college success. Upcoming Staying Connected dates are Wednesday, January 17, and Tuesday, February 16. Please RSVP to Kayla Brown at *kayladb@uw.edu* for the times and locations.

DO-IT Networking Nights invite students to the University of Washington Seattle campus to connect with fellow students, mentors and staff. The 2018 dates are February 16, May 18 and October 26.

For more information on upcoming events, contact DO-IT at *doit@uw.edu*.

## What are Alternatives to Disability-Related Simulations to Promote Disability Awareness?

By Sheryl Burgstahler, DO-IT Director

In the last issue of DO-IT News, we touched upon disability-related simulations (*www. uw.edu/doit/how-plan-disability-awarenessevents*). Disability-related simulations, where a person supposedly experiences what it's like to have a disability by covering their eyes or maneuvering in a wheelchair, are often criticized because they promote negative stereotypes of helplessness. At best, they only simulate an initial experience with a disability, not the experience of someone who has learned the skills of using a wheelchair or other assistive devices and strategies to accomplish tasks.

This topic is one that people often bring up when engaging with the disability community and looking for ways to include others. Instead of having a simulation, I often recommend hosting a panel of individuals with disabilities who can share their personal experiences and make direct connections with an audience. Another way to do this is to show videos of real individuals with disabilities sharing their experiences, including challenges as well as solutions. We recommend a few YouTube Channels and videos listed here:



A panel is a great way to give people insight on the experiences of students with disabilities.

- Ask an Autistic, a channel where one person answers questions about what it's like for her live with autism (*www.youtube. com/user/neurowonderful*)
- The Tommy Edison Experience, a channel where one person uses humor to answer popular questions about living without sight: *www.youtube.com/user/TommyEdisonXP*
- A Day Through a Deaf Person's Eyes, a video that features people sharing different aspects of their life while Deaf: *www.youtube.com/watch?v=ecmCHXZkTGI*
- Disability, the Truth, a video that interviews people to hear their insights on disability: www.youtube.com/ watch?v=MJ4JOomkyNI

You can learn more about simulations and alternative activities to simulations by consulting the following articles:

- I Won't Pretend That Disability Simulation Works (*www.huffingtonpost. com/emily-ladau/i-wont-disabilitysimulation\_b\_4936801.html*)
- How Disability Simulations Promote Damaging Stereotypes (*nfb.org/images/nfb/ publications/bm/bm14/bm1401/bm140107. htm*)
- Disability Simulations: What Does the Research Say? (disabilitywisdom. com/2017/06/09/disability-simulations-whatdoes-the-research-say/)
- Disability-Related Simulations: If, When, and How to Use Them (*www. rdsjournal.org/index.php/journal/article/ viewFile/385/1182*)

## About DO-IT

DO-IT (Disabilities, Opportunities, Internetworking, and Technology) serves to increase the successful participation of individuals with disabilities in challenging academic programs and careers, such as those in science, technology, engineering, and mathematics. Primary funding for DO-IT is provided by the National Science Foundation, the State of Washington, and the U.S. Department of Education.

For further information, to be placed on the DO-IT mailing list, request this newsletter or other materials in an alternate format, or make comments or suggestions about DO-IT publications or web pages, contact us at



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