

## AccessComputing Collaborators and Partners in the News

By Sheryl Burgstahler, DO-IT Director

DO-IT's *AccessComputing* project serves to increase the participation of people with disabilities in computing academic programs and careers. It is with great pleasure that I share some recent accomplishments of project leaders, partners, and collaborators.

- *AccessComputing* and *AccessCSforAll* PI Richard Ladner received the Public Service Award from the National Science Board. A very prestigious award, this has previously been presented Jane Goodall and Bill Nye. Read more at [bit.ly/LadnerAward](http://bit.ly/LadnerAward).
- Long time colleague, Rob Parke, who is a senior lecturer at the University of Southern California, was profiled as part of People of the Association for Computing Machinery. Read more at [bit.ly/ParkeAward](http://bit.ly/ParkeAward).

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*AccessComputing collaborators and partners (from left to right): Richard Ladner, Jonathan Lazar, Jeanine Cook, Rob Parke, and Ayanna Howard*

- Another long-time colleague Jeanine Cook from Sandia National Lab received the Richard A. Tapia Achievement Award for Scientific Scholarship, Civic Science, and Diversifying Computing. Read more at [bit.ly/CookAward](http://bit.ly/CookAward).
- *AccessComputing* Partner Jonathan Lazar received the Special Interest Group on Accessible Computing (SIGACCESS) Award for Outstanding Contributions to Computing and Accessibility. More info at [bit.ly/LazarAward](http://bit.ly/LazarAward).
- *AccessComputing* Partner Ayanna Howard was named the next Dean of the College of Engineering at the Ohio State University. Read more at [bit.ly/HowardNamedDean](http://bit.ly/HowardNamedDean).

Congratulations to you all for your great achievements!



### **New Staff Profile: Andrea**

Hello, my name is Andrea Mano, and I am a senior computer specialist with DO-IT. My role is to support the technology needs of our *DO-IT Scholars* and *Ambassadors*. I will be engaged in the *DO-IT Scholars*

Summer Study and our *Neuroscience for Neurodiverse Learners*, as well as other DO-IT projects.

I graduated from the University of Washington (UW) with a bachelor of science in mechanical engineering. Immediately after graduating, I worked for an exciting project, testing an experimental van operated by a joystick. I also worked as an assistive technologist for a small private consulting firm, which was particularly memorable, because I was able to meet and work with so many enthusiastic pioneers in this field. I provided assistive technology evaluation, training, and technical support for people with disabilities of all ages. I felt honored to meet so many people of varying abilities doing amazing things, and I was able to travel around the state, providing training at their workplaces or in their homes.

During and immediately following college, I volunteered for a few years with UW's Disabled Student Services as a reader, specializing in STEM courses. For 12 years, I also volunteered weekly with patients as an assistant in the Therapeutic Recreation Department at Seattle Children's Hospital, playing with patients in the playroom or taking patients on community outings. During this time, I also changed jobs, moving from the consulting firm to Children's, continuing

my work as an assistive technologist, recommending or supporting assistive technology that matched patients' needs.

In the 14 years before coming to the University of Washington, I worked at a Seattle-based non-profit. There I provided evaluation, training, and troubleshooting in accessible technology. I managed a contract that provided adapted communication equipment (including TTYs, iPads and communication aids) to people with speech and hearing issues. I traveled to clients in Western Washington, Central Washington, Omak/Okanagan, and Yakima. In addition, I provided monthly billing reports, managed equipment inventory and researched new technologies. I love to share information about accessible technology and resources, and have presented at workshops and hosted information booths. It was fun to travel to different parts of the state, bringing equipment to clients at their homes, during their recovery at hospitals, and at their schools.

In addition, I provided technical support at our wonderfully adapted computer lab, where Fridays often included adapted "Rock Band" (singing and playing adapted instruments) on the Wii. For a few years, my co-worker and I organized a two-week computer day camp each summer in the adapted computer lab. While working full time, I ran a part-time home-based business that always renewed my outlook on life.

I am third generation in Seattle, as both sets of my grandparents emigrated to the US. Proudly, I am also third generation Husky, as my maternal grandparents, both parents, and all my siblings have graduated from UW. I appreciate the variety of foods we have in this area, usually shared with family and friends. I also enjoy music and dance, as well as volunteering in the community.

## DO-IT Work Cited in Article by the National Institutes of Health

By Lyla Crawford, DO-IT Staff

Recently, the National Institutes of Health (NIH) published an article called “Barriers to Inclusion of Individuals with Disabilities in the Workplace” ([diversity.nih.gov/blog/2020-12-16-barriers-inclusion-individuals-disabilities-scientific-workforce](https://diversity.nih.gov/blog/2020-12-16-barriers-inclusion-individuals-disabilities-scientific-workforce)). The article described access barriers faced by individuals, as well as institutional barriers such as limited resources for staff training and purchasing accessibility-related technology. The article stated that including people with disabilities “is not just a matter of fairness or following the law, it’s also important for the advancement of science. Including individuals with disabilities means including people who have different ways of thinking, different viewpoints, and different skill sets.”

DO-IT work cited in the article included an *American Behavioral Scientist* article called “Broadening Participation by Including More Individuals with Disabilities in STEM: Promising Practices from an Engineering Research Center,” ([doi.org/10.1177/0002764218768864](https://doi.org/10.1177/0002764218768864)) which was developed through DO-IT’s partnership with the UW’s Center for Neurotechnology (CNT) and work with the CNT Education Director, Dr. Eric Chudler.

Also referenced was the DO-IT online book *Perspectives of STEM Students with Disabilities: Our Journeys, Communities, & Big Ideas*, in



*Photo from the NIH article featuring someone working with an amputee on an arm prosthesis.*

which students with disabilities talk about their experiences pursuing careers in science, technology, engineering, and mathematics. The 96-page book provides an in-depth exploration of the student perspective as well as their goals for making the world a better place through their careers.

The NIH is a part of the U.S. Department of Health and Human Services. It is the nation’s medical research agency — making important discoveries that improve health and save lives while providing perspectives, tools, and resources to improve the quality and usefulness of information about science and health for the public.

## New Program to Increase Advancement of Women with Disabilities in STEM Faculty Careers

By Elizabeth Woolner, DO-IT Staff

We are pleased to announce that the DO-IT Center at the University of Washington is funded to establish and lead *AccessADVANCE*, a project aimed at increasing the participation and advancement of women with disabilities in science, technology, engineering, and math (STEM) academic careers. This project, a collaboration between the North Dakota State University and the University of Washington funded by the National Science Foundation, began on January 2, 2021.

Female faculty with disabilities in STEM fields is an understudied, underserved, and often invisible population. Our program engages with women with a variety of disabilities as they progress through academic and career milestones. “To effectively support female STEM faculty, attention to disability issues must be woven into the entire sociotechnical ecosystem of STEM departments,” states Cecelia Aragon, *AccessADVANCE* Co-PI and University of Washington professor and director of the Human-Centered Data Science Lab. She reports that “Many diversity efforts,





*AccessADVANCE will increase the number of women with disabilities in academic STEM careers.*

even those that aim to take an intersectional approach with regard to race and gender, do not address disability.”

*AccessADVANCE* aims to create systemic change to promote women in STEM so that those with disabilities who enter academic positions feel welcome, are fully included, and can achieve success. It focuses on working with postsecondary STEM departments and other organizations, as well as create resources and a searchable knowledge base regarding the inclusion and accessible participation of women with disabilities in academic STEM careers. “We are excited about expanding and building partnerships across the country as we work to make sure that women with disabilities can be successful as faculty members in STEM fields,” said project PI and director of UW-IT’s Access Technology Services and DO-IT Center Sheryl Burgstahler.

To create truly inclusive and equitable academic workplaces, it is imperative to systematically address issues impacting the career advancement and success of female STEM faculty with disabilities. “Ultimately, *AccessADVANCE* will broaden participation in STEM academic careers and improve those fields with the talents and perspectives of female faculty with disabilities, and thus enable a richer and more effective STEM community for all,” Aragon said.

This project is funded by the National Science Foundation for over \$1,000,000 and will run for at least five years, led by three leaders in disability, equity, and inclusion: PI Sheryl Burgstahler (University of Washington), PI Canan Bilen-Green (North Dakota State University), and Co-PI Cecilia Aragon (University of Washington). The Associate Director of the project is Brianna Blaser.

“In higher education, it is often assumed that a person with a disability is a student. We look forward to advancing conversations that remind people that people with disabilities are present throughout academia,” Burgstahler said.

### **Get Involved with *AccessComputing***

By Brianna Blaser, DO-IT Staff

*AccessComputing* helps students with disabilities successfully pursue undergraduate and graduate degrees in computing fields. We also work to increase the capacity of postsecondary institutions and other organizations to fully include students with disabilities in computing courses and programs. There are several opportunities to get involved:

- Students with disabilities can join the *AccessComputing* student team and become involved in our mentoring community (as well as become eligible for funding for conferences and REUs). There is a short application online to join.
- Professionals with (or without) disabilities can mentor students with disabilities within our community. The mentor application is also online; Mentors should note that they want to work with STEM students in question #6.
- Anyone can join a Community of Practice. These are email discussion lists where we share resources and opportunities and discuss topics related to accessibility in computing.

Faculty can become an *AccessComputing* partner. Our partners make a commitment to working on making their institution or organization more welcoming and accessible to individuals with disabilities. Our partners meet monthly for discussions on related topics.

If you're interested in getting involved, but have questions, email Brianna Blaser at [blaser@uw.edu](mailto:blaser@uw.edu).

## **A Growth of Accessibility in Video Games**

By Mira Shin, DO-IT Staff

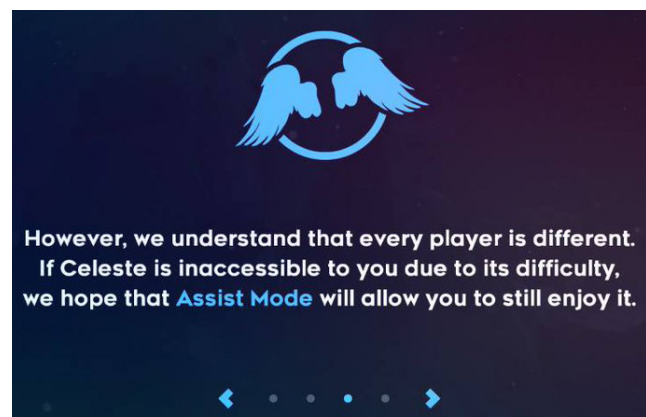
Accessibility in gaming has seen great strides in recent years. Accessibility features in software have become more frequent and adaptive hardware is being developed by mainstream game companies. However, there is still much progress to be made.

Early video games often had no accessibility features and even if any effort was made, it was difficult to obtain. For instance, Nintendo's Hands Free controller was only sold through their customer service line for a high price. Unsurprisingly, many disabled players found ways to make games playable on their own. This caused a trend where video game accessibility was made the consumer's responsibility. Although there have been advocacy groups such as The International Game Developers Association (IGDA) Game Accessibility Special Interest Group and several attempts at a set of guidelines for game accessibility (such as these game accessibility guidelines: [gameaccessibilityguidelines.com](http://gameaccessibilityguidelines.com)); these efforts have largely been ignored by major developers.

Accessibility features have rapidly grown more common, particularly over the past three years. Some video games and consoles started having settings for captions or color blindness, and Xbox notably released a co-pilot mode to allow another player to assist with certain actions.

In 2018, a significant change was seen in *Celeste*'s acclaimed assist mode, which allows the player to adjust speed, become invincible, and skip levels entirely, among other options. This was a significant decision by independent developer Matt Makes Games, as *Celeste*'s notorious difficulty is relevant to the story. This is the same argument used for defending the lack of assistive features in 2016's *Dark Souls 3* and 2017's *Cuphead*, among others. However, the inclusion of an assist mode allowed many more players to enjoy the story and experience of *Celeste*, and feel welcome doing so. In fact, an independent developer created an assist mode mod for *Cuphead* inspired by *Celeste*.

This success brought along an increase in accessibility by developers. *God of War* introduced a variety of customizable controls, the ability to replace some fine motor tasks and repeated button taps with a single button push, and several subtitle and display options to the franchise. In *Marvel's Spider-Man* the player can auto-complete quick time events, skip puzzles, turn on large subtitles, change taps to holds, and disable parallaxing. The *Last of Us 2* made news worldwide with not only its extensive accessibility menu, but the fact that it guided the player to the menu at the beginning of the tutorial to allow users to make these changes from the very start. The Xbox Adaptive Controller was also released in 2018, reflecting the growing awareness of disabled gamers.



*A screenshot from Celeste's Assist Mode, which promotes players to change settings if needed.*

Spearheaded by indie developers, mainstream companies are now catching up to the new standards of game accessibility. The gaming community at large, however, is lagging behind. *Sekiro: Shadows Die Twice*, a game by the same developers as *Dark Souls 3* and released in 2019, is another game with a notoriously high difficulty curve. There was discussion of including an easy mode in the game, which would allow the player to enjoy the story without as punishing gameplay. However, despite criticism of the lack of accessibility features by critics and accessibility advocates, there was an outcry from many fans arguing against the inclusion of an “easy mode.” These players felt that playing the game on what they consider to be an easier difficulty would compromise the vision for the game. Yet, game director Hidetaka Miyazaki has stated that while he wishes to maintain the current difficulty, he also finds it sad that many people hesitate to play and would like everyone to complete the game. While game developers are ready and willing to make games inclusive for all, some in the gaming community are not.

Great strides have been made in the past few years to produce games that are playable by everyone, but there is still much work to be done. Games like *Celeste*, *God of War*, *The Last of Us 2*, and *Marvel’s Spider-Man* have paved the way but there are still many more ways to bring video games to a wider, disabled audience. For example, these games still require a degree of fine motor control. While it may not be possible for every game to be accessible to everyone, through inclusive measures by video game developers, we are getting closer than ever before. For now, game companies should be more transparent about the accessibility of their games. Can I Play That? (CIPT) is an online resource run and written entirely by disabled writers that allows people to know beforehand whether or not a game will be accessible to them. CIPT also releases annual Accessibility Awards celebrating the incredible progress of inclusive gaming thus far ([caniplaythat.com](http://caniplaythat.com)).



*Governor's Committee on Disability Issues & Employment logo*

## **DO-IT Staff Member Accepts Committee Appointment**

By Sheryl Burgstahler, DO-IT Director

On January 1, DO-IT Center Manager Scott Bellman accepted a two-year appointment on the Coordinating Committee of the Washington State Governor's Committee on Disability Issues and Employment (GCDE). Scott was nominated by GCDE members as a candidate for the appointment.

The mission of the GCDE Coordinating Committee is to ensure the timely coordination of GCDE activities, as well as provide leadership support and guidance regarding current and future initiatives. Scott's project management and leadership experience acquired at the University of Washington over the last two decades has prepared him well for this opportunity, and we are excited to strengthen this connection between the GCDE and DO-IT.

Initiatives of the GCDE include the Accessible Communities Advisory, promoted by the legislature to help communities be more welcoming and inclusive for persons with disabilities; the Community Outreach subcommittee, which conducts outreach activities and provides policy recommendations to both rural and urban communities; the Governor's Employer Awards, designed to recognize organizations and individuals who lead in the field of

employment inclusion; and the Youth Leadership Forum, an innovative multi-day leadership training program for high school juniors and seniors with disabilities.

### ***AccessComputing* Profile: Kiara Benson**

By Kiara Benson, *AccessComputing* Team Member



Hi my name is Kiara Benson from Memphis, Tennessee. I attend Tuskegee University majoring in Electrical Engineering with dyslexia and attention deficit hyperactivity disorder (ADHD).

In the third grade my parents bought me my first computer, and my dream to be an engineer was born. Every time someone asked me what I wanted to be when I grew up, I would always say an engineer just like Katherine Johnson. So many people would tell me engineering is hard and not many minority women are in engineering. I never let the negative words of others stop me from wanting to achieve my goal of becoming an electrical engineer. In elementary school, I struggled in my math classes. My parents bought me math computer games and hired me a tutor to help me succeed. Because my parents invested in resources to help me, I worked even harder in those subjects.

In college, I struggled in some of my courses, not because I was not smart enough, but because I couldn't grasp the way the professor taught the subject. I would stay up all night studying, spend extra time at tutoring sessions, and visit professor and TA office hours. One of my computer science professors noticed that

I understood the material, but that I couldn't test well. He suggested that I may learn differently; this led me to get tested, where I found out that I had a learning disability. I also learned that it's normal for many people to find out they have a learning disability when they are in college or later in life. I transferred to Tuskegee University, which is a historical black college and where the student to professor ratio was much smaller. Tuskegee has some of the best faculty and staff. Many of my professors worked extra hours to help me and were patient. Tuskegee made me realize that black women like me can get a degree in engineering. I still cannot believe this is my last semester in college. I have completed multiple internships and research while at Tuskegee University. *AccessComputing* has granted me many opportunities and surrounded me with great people, creating one of the first environments where I don't feel ashamed of my learning disability.

*AccessComputing* also provided me with a scholarship to attend the Tapia Conference. It was the first time in my life I felt like I belong in engineering as a minority and engineering student with a learning disability. I went to workshops and heard professional scholars speak on their disabilities, and it motivated me to continue to strive to greatness.

I would like everyone to know who is reading this that anyone can be an engineer. Don't let the struggles, self-doubt, and naysayers stop you from achieving. I wouldn't have made it this far without my supportive parents, family, mentors, friends, tutors, and the illustrious Tuskegee University. My journey to becoming an electrical engineer has been an uphill battle, but I am continuing to succeed.



## My DREU Experience

By Sarah Jane Griffiths, AccessComputing Team Member

This year, I had the opportunity to participate in the Computing Research Association's Distributed Research Experience for Undergraduates (DREU) through AccessComputing. I have been involved in AccessComputing since my sophomore year, attending the CS@UW+AccessComputing research workshop in the spring of 2019. Prior to my participation in this workshop, I never thought of research as a viable path for me.

At CS@UW+AccessComputing, I had the opportunity to participate in research-based projects under affiliate assistant professor Anat Caspi, head of the University of Washington's Taskar Center for Accessible Technology (TCAT). During the weekend, I was able to participate in research seeking to make virtual reality accessible to individuals with motor impairments. The way that I learned my brain could ask questions, seek solutions, and learn along the way opened my eyes to the possibility of research in my future.

After conducting independent research at the University of Puget Sound, my home institution, in the summer before my junior year, I knew that participating in the DREU was something that I wanted to pursue. Just before applying to the DREU, AccessComputing provided me the opportunity to go to the Grace Hopper Celebration (GHC), which enabled me to find a community that sustained me throughout my undergraduate coursework.

When applying for the DREU, I knew that I wanted to conduct research in the areas of human computer interaction and/or accessible technology. Because of my exposure to these fields at the research workshop, I began to notice not only a growing passion within myself for this work but also the gaps at my home institution. For this reason, I knew that the DREU was my next step.



*Students at CS@UW+AccessComputing researched ways to make virtual reality accessible to individuals with motor impairments.*

After the application process, I was paired with a faculty mentor. I was delighted to learn that I would get to work with Professor Caspi again. Once we started planning for my DREU, I was amazed at the amount of agency I had over what I would be working on.

Ultimately, I started working on the Taskar Center for Accessible Technology's OpenSidewalks Project, which focuses on pedestrian-based transportation networks and access to pedestrian-centric infrastructure. My project fell under the OpenSidewalks Project's efforts to ensure equitable data collection regarding pedestrian networks.

I was tasked with developing a prototype for an application that would collect information on the accessibility for pedestrians at various intersections. The goal of the project was to develop an Android application that could be used by any user to document the presence of various accessibility features at the intersection (such as Accessible Pedestrian Signals, curb ramps and curb ramp placement, and traffic speed). A key interest was in how to collect consistent data when trying to gain insight on somewhat subjective topics (such as whether traffic is going above or below the speed limit).

In addition to thinking about this question, I spent a large chunk of my summer learning how to create an app that would be intuitive

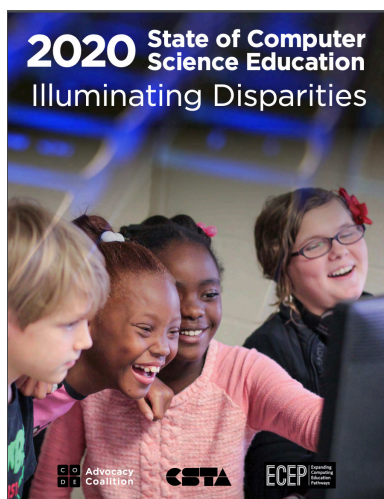


for users. I ultimately developed a functional app and gained experience in user testing, design, and research.

Through my participation in the DREU, I gained research experience in areas that I did not have access to at my home institution, gained a faculty mentor, and got to meet and be a part of a lab. I was fortunate to attend the Tapia Celebration of Diversity in Computing and present my research at Grace Hopper. This was such an amazing experience, and I cannot express enough how grateful I am to AccessComputing, the Computing Research Association, and Professor Caspi for fostering my growth as a researcher this summer. If you are interested in learning more about my DREU experience, or reading the final report, you can visit my DREU site.

## **2020 State of Computer Science Report**

By Richard Ladner, DO-IT Mentor



The “2020 State of Computer Science Education: Illuminating Disparities” was just released and can be downloaded. This report details the progress made by all 50 states and the

District of Columbia in adopting policies and initiatives for K-12 computer science education. For the first time it contains data about disability reported from 11 states (see pages 17 and 95). In 2019, in the 11 states 12.9% of K-12 students in public education were served by the Individuals with Disabilities Education Act (IDEA), while only 7.6% of students who took at least one computer science course were served under IDEA. This is significant because data on students with disabilities in K-12 computing

courses is often not collected or reported. Also, for the first time, data on English language learners and students eligible for free and reduced-price meals is reported. It is worth noting that in 2019 the relative representation of students with disabilities (under IDEA) in computer science courses is at about the same level,  $7.6/12.9 = 58.9\%$ , as women  $29/50 = 58.0\%$  taking AP computer science courses.

The report also highlights the work of Amanda Rodda at the Washington State School for the Blind and Sarah Ciras at the Landmark School that serves students with learning disabilities, both of whom participate in the *AccessCSforAll* project that addresses accessible computer science education at the K-12 level.

Congratulations to the teams at the Code.org Advocacy Coalition, CSTA, and ECEP for putting together this informative report on computer science progress in K-12 education.

## **Accessibility and Online Conferences**

By Terrill Thompson, DO-IT Staff

As most conferences have moved online since early 2020, they have turned to the use of a variety of technologies in an effort to replicate the functionality of face-to-face conferences. Conferences commonly feature presentations, an agenda or schedule of events, opportunities for networking and discussion among attendees, exhibitors demonstrating their products and services, and poster sessions.

Unfortunately, many of the platforms and tools used by conferences for providing these functions online do not currently meet accessibility standards and consequently are difficult, if not impossible, for people with disabilities to use. For example, screen reader users depend on properly coded page structure, with headings that form an outline of the page and particular page regions (e.g., banner, navigation, and main) explicitly identified in the underlying HTML code;

users who are physically unable to use a mouse must be able to access all links, buttons, and controls with keyboard alone; and users who are unable to hear the presenters depend on captions and expect to have some control over how those captions are displayed. Most, if not all, online conference platforms fail in one or more of these areas.

In order for this situation to change, conference organizers must demand accessible products. The more vendors hear from their potential customers that accessibility is an important consideration – maybe even a deal-breaker – the more likely they will be to recognize the market demand for accessibility. This is a wide-open opportunity for any vendor that embraces accessibility, as they can be first to market with an accessible product.

Meanwhile, conference organizers, despite the lack of accessible choices for online conferencing platforms, still need to provide accessible conference experiences. They cannot simply discriminate against people with disabilities and provide conference features that are only available for non-disabled attendees. This requires working proactively with their chosen vendor as early as possible in the negotiation process, to try to help them recognize the implications of their accessibility failures and commit to fixing them. Whenever possible, accessibility expectations including a timeline for fixing known issues should be included in the contract. It also requires thinking creatively about workarounds, in case vendors fail to deliver an accessible solution on time.

The following case studies describe how two conferences, both of which have long histories as face-to-face events, went fully online in fall 2020, and responded creatively to the need for an accessible conference solution.



*The virtual Richard Tapia Celebration of Diversity in Computing Conference hall*

### **Case Study 1: Richard Tapia Celebration of Diversity in Computing Conference**

The Tapia Conference is an annual fall conference that seeks to acknowledge, promote, and celebrate diversity in computing. *AccessComputing* had representation on the Infrastructure Committee for the 2020 conference. Tapia chose vFairs as its online conferencing platform. vFairs provides a virtual experience that visually resembles a face-to-face conference, including an on-screen replica of an interactive lobby, exhibit hall, and auditorium. The virtual conference spaces even include virtual attendees mingling and browsing, and Tapia worked with Fairs to ensure those attendees had diverse characteristics, including people with visible disabilities such as wheelchair users and people using white canes.

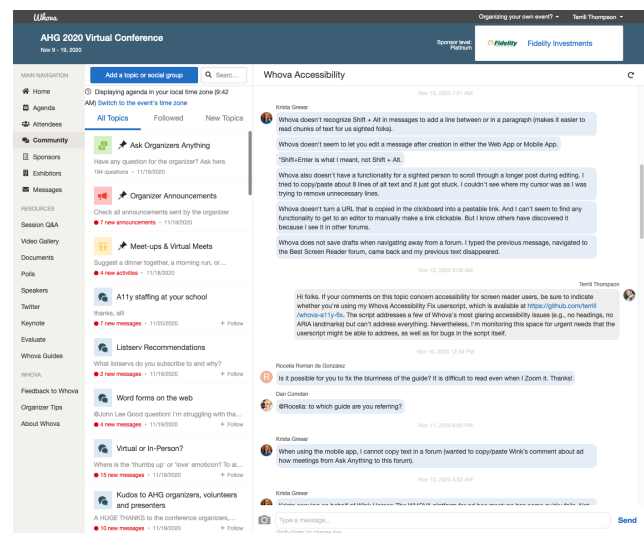
Although visually compelling, vFairs had major problems with accessibility for attendees who are blind or visually impaired, as well as other attendees who use assistive technologies or custom configurations. *AccessComputing* staff, on behalf of Tapia, conducted an accessibility review of the platform and met with vFairs representatives on two occasions to discuss the most significant problems and describe possible solutions. The parties shared an online document in which progress was tracked on each of these issues. vFairs made some progress and was able to fix a few of its problems, but ultimately, they ran out of time to complete all the needed updates in time for the conference.

As a workaround for the accessibility issues, Tapia provided attendees with a guide to navigating the conference environment with a screen reader. This guide included key landmarks and workarounds for navigating through the otherwise inaccessible features of the conference platform.

After the conference, vFairs representatives agreed to meet with a panel of conference attendees who have disabilities (three screen reader users and one attendee who uses eye-gaze technology in combination with Dragon speech-to-text software). The attendees described the challenges they faced in navigating and using the software, which helped to reinforce to vFairs that the work they had started would benefit actual users, and accessibility was not just an abstract technical specification.

**Case Study 2: Accessing Higher Ground**  
Accessing Higher Ground (AHG) is an annual fall conference focused on accessible media, web, and technology in higher education. *AccessComputing* had representation on the Program Committee for the 2020 conference. AHG actively sought recommendations for an accessible conferencing platform, but as noted above, all available products seem to fall short on accessibility, so AHG chose Whova, despite its known accessibility problems.

*AccessComputing* staff, on behalf of AHG, conducted an accessibility review of the platform and provided a report to the vendor that included code-level recommendations for solutions to the most significant problems. At Whova's request, a meeting was set up to ensure they understood the report, and these issues were then handed off to the engineering team. However, they were unwilling to commit to fixing their accessibility problems in time for the conference, nor were they willing to offer a timeline by which the problems might be addressed.



*A screenshot from Whova's Community Forum, with "Whova Accessibility" as the featured topic*

Since AHG is a conference about accessibility, and since many of the attendees are known to have disabilities, AHG especially needed a workaround. Their solution was to develop a userscript, a JavaScript file that runs in a browser extension such as Greasemonkey or Tampermonkey, and fixes many of Whova's accessibility problems client-side, after Whova has loaded in the browser. This was created by *AccessComputing* staff as an open source project called Whova Accessibility Fix ([github.com/terri/whova-a11y-fix](https://github.com/terri/whova-a11y-fix)). Conference attendees, particularly those who use screen readers, spoke fondly of this solution. As one attendee said in an email, "I can use the Whova desktop app without issue. Thanks to you and your sweet JavaScript band aid."

With more time to promote this effort, this could potentially be an effective means of building community around accessibility. Anyone who has JavaScript skills and/or web accessibility skills could participate in developing the solution in collaboration with others as part of a team, and could learn new skills as part of the effort.

However, despite its positive side, this solution has its drawbacks. It's essentially a hack, based on a snapshot in time of the application it's



seeking to fix. If the company rolls out any changes, this could very easily break the solution, and since the solution is created independently of the company, there is no communication between the parties. Also, this solution may provide vendors with a false sense of relief from responsibility to fix their accessibility bugs. It's already difficult to persuade vendors to fix accessibility of their products. They may be even less motivated to do so if they believe their customers can use a fallback solution to avoid discriminating against their participants.

### Logistical Considerations

In addition to choosing an accessible online conferencing platform, conference organizers can take many other steps to ensure their conferences are accessible. Here are some examples:

- Provide a means on the conference registration form for attendees or presenters to request accommodations.
- Be prepared to provide accommodations when they're requested, such as live captions or sign language interpreters. Identify vendors ahead of time who provide these services and be prepared to use them. It is important to make arrangements early, to understand the steps for enabling these services in the chosen conference platform, and to relay that information to anyone who needs it. In 2020, demand for captioning has increased dramatically, so skilled captioners are in short supply, which means making arrangements early is especially important. Also, note that conference participants who need captioning and interpreting will need these accommodations for all parts of the conference, not just for presentations (e.g., for interacting with exhibitors and for networking events).
- Provide live captions and sign language interpreters proactively for large events such as keynotes, plenaries, and featured sessions.
- Provide information to speakers about how to ensure their presentations (e.g., PowerPoints and digital handouts in Word or PDF) are fully accessible, with alt text for images, proper heading structure in handouts, and adequate color contrast.
- If the conference includes pre-recorded videos of presentations, be sure to caption all videos.
- Another common accommodation request is access to presentations and slideshows. Again, proactively collecting presentations and sharing them with attendees can ensure everyone has access.

### 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, engineering, mathematics, and technology. 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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