Access Computing

NEWS from the Alliance for Access to Computing Careers

Increasing opportunities for people with disabilities

AccessComputing Minigrants Available

by Richard Ladner, PI, and Sheryl Burgstahler, Co-PI.

The Alliance for Access to Computing Careers (*AccessComputing*) has funds available to support training, experiential learning, and information technology (IT)-related activities nationwide. The goal is to increase the number of people with disabilities, including post-9/11 veterans, successfully pursuing computing careers.

Since 2006, minigrant funds have been used to expand existing computing events to involve students with disabilities, create new stand-alone events designed to attract and support students with disabilities into computing fields, and support professional development opportunities.

Highlights of this issue:

Engage in *AccessComputing*

Students with disabilities:
- Internships
- E-mentoring
- *AccessComputing* Team
- Summer programs

Educators & employers:
- Host an intern
- Communities of practice
- E-mentoring
- Minigrants

AccessComputing Student Team Members

by Brianna Blaser, *AccessComputing* Staff

It's always important for students to be thinking about their professional development and their career plans. *AccessComputing* invites students with disabilities who are pursuing computer science or other

computing-related majors nationwide to join our *AccessComputing* team.

Student team members engage with *AccessComputing* project staff and mentors, and in an online mentoring community. They learn about paid computing internships, scholarships, career fairs, and other opportunities.

Current team members include high school, community college, undergraduate, and graduate students who are pursuing degrees in a wide variety of computing careers that include systems designers, computer scientists, information professionals, software developers, information systems analysts, technology teachers, and computing faculty.

Students who wish to join the team, should complete and submit an application, available online at: *www.uw.edu/accesscomputing/team_app.html*. For further information or help with the application, students are encouraged to contact me at *blaser@uw.edu*.

AccessComputing Student Internships

by Scott Bellman, *AccessComputing* Staff

AccessComputing student interns have completed over 120 internships. They have worked on computing projects and research in industry settings, workshops, and labs. They have learned how to request reasonable accommodations, communicate with supervisors and co-workers, collaborate with others, and manage priorities. Their internship experiences have improved their resumes, helped them meet graduation requirements, improved their confidence, and further developed their network of professional contacts. As one student shared, "This experience would be very difficult, if not impossible, to achieve from regular course projects. It definitely will be a shining point on my resume. Consequently, it will help build my career in the near future."

Some specific examples of research projects include:
- A project called "Indoor Radio Propagation Analysis using RFID and WiFi Technologies" at the University of South Carolina.
- A project researching network activity and behavior at Clemson University to improve the end-user experience and make improvements to the network.

Further examples of paid internships completed by *AccessComputing* interns include:
- A manager of an assistive technology computing lab.
- A software engineering intern at IBM.
- A robotics interface research intern at the University of Maryland, Baltimore County.

Research suggests that students who participate in work-based learning do better in school because they get to apply their knowledge in real-world settings, which reinforces learning from the classroom. As one student said, "I am very happy to get

this research opportunity. This experience allows me to connect discrete knowledge points together, and most importantly, it allows me to apply knowledge, particularly in mathematics, to a more practical science and engineering field."

Computing students with disabilities in the United States are encouraged to contact AccessComputing staff to learn more by sending a message to *accesscomp@uw.edu*.

Youth Slam
by Lyla Crawford, *AccessComputing* Staff

Youth Slam has been hosted by the National Federation of the Blind since 2004. This five-day academy engages and inspires high school students who are blind to consider careers falsely believed to be inaccessible to them and bring a unified voice to the next generation of blind professionals. At the 2011 Youth Slam event held in July, Dr. Jeffrey Bigham led a track designed to introduce students to computer science through a project based around navigation with the iPhone.

Participants were introduced to computer programming using tools much like what they would see in an introductory course, but were provided with help of knowledgeable and easily available computer scientists. By the end of the week a number of students were excited about the prospect of further development of the applications they had created, and perhaps releasing them on the Apple App Store.

Faculty and computer scientists gained a first-hand appreciation for what it's like for a person who is blind to do computer programming. As Dr. Bigham reported "this experience may alter how they approach their work in the future, may change their approach when encountering students with disabilities in the future, and the experience will be carried forward with them into their careers."

Saturday Computing Experience
by Rob Roth, *AccessComputing* Staff

Funded by the Bill and Melinda Gates Foundation, the first Saturday Computing Experience (SCE) for deaf and hard-of-hearing students took place in Spring 2011. Kyle Rector, a graduate student in Computer Science and Engineering Department at the University of Washington, led the class. Six young women and three young men from ACE High School in Highline, Edmonds-Woodway High School in Mountlake Terrace, and Roosevelt High School in Seattle participated. Volunteers included other graduate students from the Computer Science and Engineering Department, and staff from Cray, Google and Microsoft. Staff included two graduates of the Summer Academy for Advancing Deaf & Hard of Hearing in Computing and *AccessComputing* team members, Josiah Cheslik and Jordan Atwood. The program was developed by Richard Ladner, PI of *AccessComputing*.

The nine deaf and hard-of-hearing students presented the results of their Arduino project to parents and teachers on the final day of the 9-week program. The students demonstrated what they learned about computer science: that it can produce useful products and be a viable career path. One student created a light color mixer with dials to create any visual color. Another useful application was a temperature sensor, with a light that turns blue when cold and red when hot.

One of the student's parents commented that the SCE exposed their daughter to a level of computing that she had no previous experience with. Another said that the SCE helped their son pick a career path.

Five Years of the Summer Academy
by Rob Roth

The Summer Academy is an academically challenging program designed for deaf and hard-of-hearing students with skills in math and/or science who may be considering computing as a career. Admission is extremely competitive, based on an assessment of ability in computing, and enthusiasm to participate in an intensive experience in all things computing. Participants take a computer programming course for college credit, a certificated class in Animation, visit computer companies, meet role models, and learn about computing research.

This past summer marked the fifth year of the very successful Summer Academy. In 2011, we expanded the number of students entering the Summer Academy to thirteen, bringing the total number of participants to 51 students over the five year period.

Just recently, we learned that two of our 2007 graduates gained employment in the computer science field: Jason Schwebke at Aurora Health Care as a Web Application Developer Associate, and Matt Starn at Microsoft as a Software Engineer. Summer Academy alumni have also held internships at companies that include Microsoft, Cisco Systems, NASA, and IBM.

Team Bio: Katie Sullivan
by Katie Sullivan, *AccessComputing* Team Member

Hi, my name's Katie and in Fall 2011 I started working full-time at Microsoft as a Program Manager on the Office User Experience team. I graduated from the Franklin W. Olin College of Engineering in May 2011 with a BS in Engineering: Computing.

Olin's strong focus on design and innovative thinking has helped me with my job here at Microsoft. I joined my team in the middle of the product cycle, meaning everything was fast-paced and I needed to work hard to catch up. Over time I began to own more features, working on "feature crews" (with developers and testers) to improve various aspects of the product, make critical decisions, and design solutions to problems. I wish I could talk in detail about the cool and exciting things I am working on... but they'll be seen eventually!

I'm deaf and primarily lip-read which means that it can be hard to follow key conversations in big meetings at work. Luckily my coworkers and boss are very accommodating, and always help to make sure I know what's going on. My boss in particular works hard to make sure I feel I am not missing out on anything and that I am not held back by anything as trivial as mishearing someone in a meeting. I've never worked anywhere where it was so easy to request captioning or other services to make sure I could do my job well.

Working at Microsoft and living in Seattle has been all I could ask for and more. I interned here two summers ago at the University of Washington, working with Richard Ladner and Anna Cavender on a computer science research internship. That summer I was engaged in the Summer Academy for the Deaf and Hard of Hearing in Computer Science at UW and also became a member of *AccessComputing*. With these communities

I made many connections and it was my first real introduction to Deaf culture. Now that I'm back in Seattle I love being close to this community again. This may mean I'll actually get good at signing now!

Team Bio: Matt Starn
by Matt Starn, *AccessComputing* Team Member

My name's Matt Starn and I'm a new full-time employee at Microsoft as an SDE (Software Design Engineer). I graduated from Rochester Institute of Technology (RIT) with a Bachelor's in Computer Science and I've been a member of the *AccessComputing* Team for several years. In the summer of 2007, I participated in the Summer Academy program at the University of Washington. At the time, I was a student at University of California, Los Angeles but I wasn't sure what direction I wanted to go in life after college until I joined the program. Several years later, the lessons I've learned there have helped me get to where I am today. I made connections in Seattle with students that were enrolled at RIT, discovered what an incredible Computer Science program they had and transferred there. I was there as a student for three years and when I finished my coursework, I used as many networking resources as I could to find jobs and internships to keep myself busy until I could land in a place I wanted.

After two three-month stints for a small start-up company in Rochester, a fellow alumni of RIT and current employee at Microsoft got me into the interview process for his company, which led to an SDET (Software Design Engineer in Test) internship with the Microsoft Dynamics AX team. Upon my move back to Seattle for my internship, I felt that Microsoft was a perfect fit for me and I knew I wanted to settle down in Seattle. So this September, when my internship was completed and Microsoft offered me a full-time position to stay on with my old team as a developer, I immediately jumped on the opportunity. Not only is it a great company to work for, but they provide so many accessibility options to support me with whatever I need to do my work, no questions asked. Right now, I'm currently involved with the Project Accounting team, as part of the Service Industries division of Dynamics AX 2012. My duties include working on completing the newest version of the product which will be released shortly as well as trying to improve and innovate the product for future versions down the line.

Reports of Projects Newly Funded by *AccessComputing*
by Lyla Crawford

The following projects have recently been completed with funding through *AccessComputing* minigrants. Congratulations to all of these recipients for conducting successful projects!

Projects:
- **Accessibility Camp Seattle** brought together 110 IT professionals, designers, developers, students and professionals with disabilities, and interested community members to discuss how digital inclusion is fundamental to the digital age.
- **Alice in Roboland** project at Auburn University, a hands-on technology and science summer camp.
- **Computer Science Track** at the National Federation of the Blind Youth Slam was organized by Dr. Jeffrey Bigham to introduce students to computer science through a project based around navigation with the iPhone.
- **Gearing Up for Success** Pre-orientation at the Rochester Institute of Technology (RIT) assisted incoming first year students with Autism Spectrum Disorders in transitioning to RIT by covering three main topics: Disability Awareness, College Life, and Success and Career Goals.
- **Greenfoot Computing Camp**, hosted

by the Department of Mathematics and Computer Science of Gallaudet University, was a one week computer camp for high school students who are deaf or hearing-impaired.

- **Mathematics: Artificial Barrier to the Computing Field** training event for faculty of the mathematics and computer science departments at Florida State University.
- **Roadshows, Tours, and TechNights** for Children with Hearing Impairments were hosted by Carnegie Mellon.

AccessComputing Co-PI Director Honored - Twice
by Scott Bellman

We are proud to announce that this year, *AccessComputing* Co-PI Sheryl Burgstahler won two impressive awards!

First was the Strache Leadership Award, which honors those who work with students as an educator and mentor, while remaining a leader in the fields of disability and assistive technology through publications, presentations and research. The Strache Leadership Award will be presented to Dr. Burgstahler this spring at the Keynote Address of the California State University at Northridge (CSUN) Technology & Persons with Disabilities Conference. The award is named after Dr. Fred Strache, who, before retiring from CSUN in 2001, held many positions, including VP for student affairs.

Dr. Burgstahler also received another prestigious award earlier this year. At its annual conference, the Association of Higher Education and Disability (AHEAD) presented the AHEAD Professional Recognition Award for outstanding achievement and contributions to the field of higher eduction

and disability. AHEAD is the premiere professional association for disability services personnel. It is committed to full participation of persons with disabilities in postsecondary education.

Dr. Burgstahler responded to these honors by saying that they "acknowledge what can be accomplished by a team of talented staff members who continually look to the students themselves for guidance on what to do next."

AccessComputing Distributes Vets Video
by Debra Zawada, *AccessComputing* Staff

A new *AccessComputing* video titled "Returning from Service: College and IT Careers for Veterans" has been distributed nationally through university computing faculty.

Now that the war in Iraq is ending, more and more veterans are returning to school and many are interested in IT careers. The video can help faculty and staff be more welcoming to this group of students, particularly those with disabilities.

This video presents opportunities and challenges faced by veterans with disabilities as they transition to the postsecondary classroom and pursue degrees in computing and information technology fields. Veterans and educators share accommodations and strategies for creating welcoming and accessible environments for these students.

Feedback about the video has been positive and many departments have been sharing the resource with their faculty, staff, and leaders in order to create a more supportive environment for vets.

Access this short video and complementary publication at *www.uw.edu/doit/Video/index. php?vid=52*.

A Capacity-Building Workshop for Georgia Tech

by Brianna Blaser

With sponsorship from *AccessComputing*, Georgia Computes, GVU Center, and the Institute for People and Technology, Georgia Tech sponsored A Capacity-Building Workshop for Georgia Tech in September 2011. The workshop aimed to increase the participation of people with disabilities in computing fields and, in particular, to help Georgia Tech to improve how they facilitate success of students with disabilities.

AccessComputing staff worked with Georgia Tech to design an agenda and activities tailored to the needs of Georgia Tech. The day consisted of a series of module sessions to allow participants to come to the sessions most relevant to their own roles and to allow more flexibility for attendees who may not be able to come for the full day.

The agenda for the day began with an Executive Session for department chairs and other department administrators led by Dr. Richard Ladner from the University of Washington. The discussion focused on issues for students with disabilities at Georgia Tech and recognition that it is important to engage this group. Sessions also included presentations from faculty, a student panel, discussions, and a presentation from Dr. Ladner emphasizing the role of education and human resource development.

Mark Guzdial, one of the organizers and participants, wrote a blog post on his experience of the workshop and the lessons he learned. He wrote, "Overall, the day was really worthwhile for me. I became aware of a lot of issues that I'd never even thought about before, from PDF's to blackboards. I mostly became aware of how much we need to do."

30 Tips for Web Accessibility

by Terrill Thompson, *AccessComputing* Technology Specialist

AccessComputing has unveiled a new resource titled "30 Web Accessibility Tips." I selected the 30 tips based on my experiences as a technology accessibility specialist with *AccessComputing* and other projects. They're designed to be used by web designers, developers, or content authors to guide them in creating or deploying web-based resources that are fully accessible to all users. The tips are available online at *www.uw.edu/accesscomputing/tips/*.

The site's home page includes a master list of all 30 tips plus a short description of each. Additionally, each tip is examined in more detail on its own separate page, with screen shots and example code. In the next few months the individual tips pages will also include short videos that demonstrate problems and step-by-step solutions.

The 30 tips include some of the most common web accessibility problems occurring in higher education, based on observations made while working with web designers, developers, and content authors at the University of Washington and other institutions. Examples of tips include:

1. Add proper alt text to images - Use alt text to provide access to the content of the image for those who cannot see the image, including those using screen readers.

27. Test pages on mobile devices - Growing numbers of users, including users with disabilities, are accessing the web using phones, tablets, and other mobile devices.

About *AccessComputing*

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