

UW CSE DawgBytes 2012-13 Annual Report



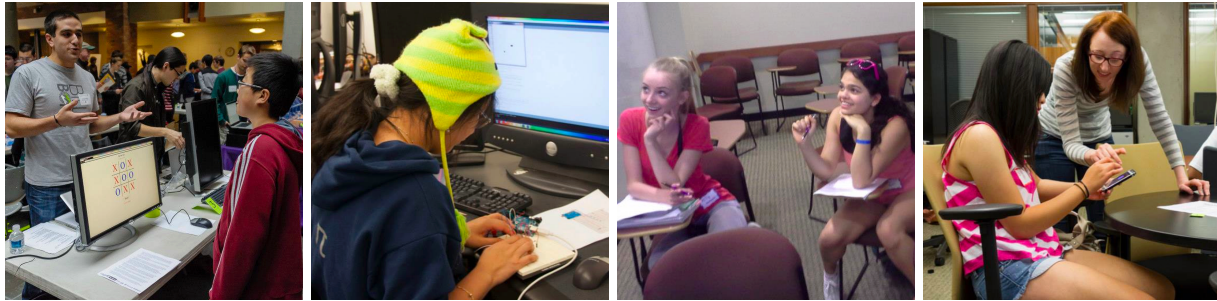
DawgBytes, the University of Washington Computer Science and Engineering K-12 outreach program, aims to introduce both students and teachers to the exciting world of computing. In the 2012-13 academic year, we continued the expansion of our offerings, organized our volunteers and increased faculty and staff time dedicated to K-12 outreach.

Our new initiatives included a computing open house that attracted over 700 community members, an additional 5 weeks of computer science summer camps, and a K-12 Computing Education seminar for UW students. Over 100 teachers and 2,000 K-12 students were reached by our programs. Over 40 UW CSE students were involved.

In the 2013-14 academic year, we intend to collaborate with local partners to expand the reach of our programs. For example, we will be teaching a course with Rainier Scholars, a nonprofit that offers academic support to low-income students, many of whom are the first in their families to be college-bound. We will also work with the Pacific Science Center to develop curriculum for a program that will bring computer science lessons to middle schools.

Descriptions of our 2012-13 programs follows. More information is available on the DawgBytes website: <http://www.cs.uw.edu/dawgbytes>.

New Initiatives



Computing Open House (Saturday, December 8th, 2012)

<http://www.cs.washington.edu/openhouse>

During Computer Science Education Week, over 700 community members came to the Paul Allen Center to participate in hands-on activities and research lab visits designed to demystify computing. UW Computer Science & Engineering students, faculty and academic advisors along with representatives from local technology companies ran 28 different stations. We sent out a mailing to high school students from Washington state who scored highly on the PSAT which included information about the department and an invitation to this event. The open house gave us an opportunity to speak to several of these students in person and to show them what UW CSE has to offer.

Girls' Summer Camp Reunions (various dates)

We organized several reunions for the girls who participated in our 2012 summer camps. Each reunion included hands-on activities to build on what campers had learned over the summer and a shared meal to build camaraderie. One of our high school reunions was hosted by Facebook and allowed students to use the Facebook API to build a memory game using their friends' pictures. The reunions also gave us an opportunity to talk to seniors about their college choices. Of the 11 seniors who participated in the camp, 6 are coming to UW. Of those, one is heading to electrical engineering, another to human centered design and engineering and the other four intend to study computer science.

APCS Review Day and Ice Cream Social (Saturday, May 4th, 2013)

<http://www.cs.washington.edu/outreach/k12/apcsreview/>

Around 50 local students enrolled in Advanced Placement Computer Science came to the Paul Allen Center to eat ice cream and do some last-minute review for the AP exam. Sessions on different topics were led by UW students and lecturers.

Seattle Science Festival Workshops (Saturday, June 15th, 2013)

<http://www.cs.washington.edu/outreach/k12/scienceFestival/>

We offered three workshops in partnership with the Pacific Science Center during the Seattle Science Festival. Our Scratch workshop for middle school students was the most popular. We also contributed to a Science Festival panel on cool jobs in computer science.

Summer Camp Expansion

<http://camps.cs.washington.edu>

We expanded our camps offerings from 3 girls' sessions in 2012 to 4 girls' sessions and 4 co-ed sessions in 2013. We worked with a total of about 160 students. The co-ed sessions were taught by Allison Obourn, a new lecturer, and by Brett Wortzman, a local high school teacher. We hired 5 camp counselors: two were alumnae of our 2012 high school camp, one is a current UW undergraduate and the other two were highly recommended by their CS teachers. We received donations of Android phones from Google and of .NET Gadgeteer kits from Microsoft.

K-12 Computing Education Seminar

<http://courses.cs.washington.edu/courses/cse490o/13sp/>

Undergraduate and graduate students meet weekly to discuss readings on computing education in K-12. This year, we expanded the seminar to include a small hands-on project. Students took this opportunity to do exciting work including the creation of a CS club at a local school, an Arduino-based curriculum module for summer campers and an activity fair that was used both as a summer camp reunion activity and for the annual STEM Out! event.

Lecturer release time

In spring, we hired a new lecturer to teach introductory CS courses and help lead outreach activities. This new hire enables each lecturer to have some release time from UW teaching to focus on outreach activities. The spring release enabled many of our new initiatives in addition to classroom visits for informal mentoring of local CS teachers.

Continuing Initiatives

Classroom Visits (various dates winter and spring quarters)

UW CSE undergraduate and graduate students as well as faculty members visited over 12 local middle and high school classrooms to discuss computer science. We use a standard presentation including content about UW CSE's undergraduate program, internship experiences, social impact of computing and futuristic CS research.

Puget Sound CSTA Meetings (various dates)

<http://www.pscsta.org/>

We host and participate in monthly meetings of the Puget Sound Computer Science Teachers Association (PSCSTA) chapter. (CSTA is a national organization for K-12 teachers of computer science.) These meetings are an opportunity for local computer science teachers to learn new teaching strategies and discuss their classroom practices. In the context of PSCSTA, we have moderated discussions and led mini-workshops on new CS education topics.

Programming Competition (Saturday, December 15th, 2012)

<http://www.pscsta.org/2012/12/december-programming-contest-report.html>

Programming competitions allow like-minded students from various schools to share their excitement for computing while deepening their programming expertise. Students participate in teams of 1 to 3 students and solve small to medium scale programming problems in a language of their choice over the course of 3 hours.

We have used this gathering as an opportunity to expose students to exciting research going on at the University of Washington. This year's competition brought together over 200 students from 26 different schools who heard about database research carried out by faculty member Magda Balazinska's group.

NCWIT Award for Aspirations in Computing (Saturday, February 23)

<http://bit.ly/NCWIT2013WA>

The NCWIT Award for Aspirations in Computing "honors young women at the high-school level for their computing-related achievements and interests." We hosted the award ceremony for 20 Washington state winners and 1 education award winner. We used this opportunity to expose winners to novel computer science research and get them to work together on problem-solving activities.

AP CS and UWHS Workshop (July 1st-3rd, 2013)

<http://homes.cs.washington.edu/~reges/uwhs/workshop/>

In this two-day workshop, teachers from around the Puget Sound gathered to learn about the structure and pacing of a high school course offering based on our introductory programming course, CSE 142. We discussed course philosophy, grading strategies, specific assignments and more. Teachers left the workshop with copies of Building Java Programs and free, complete materials to use in their classrooms. We will also be providing follow-up throughout the year.

CS4HS (August 22nd-24th, 2013)

<http://cs4hs.cs.washington.edu/>

UW CSE partnered with Carnegie Mellon and UCLA seven years ago to create Google's CS4HS, an initiative designed to promote computer science and computational thinking in K-12. UW CSE's three-day CS4HS workshop targets math and science teachers because they can help expose a representative cross-section of the student population to computing. This summer, 53 teachers from local middle and high schools participated in the workshop.

During our three days with teachers, graduate students presented cutting-edge CSE research, professors shared their vision for why CSE is an exciting field to be in, and we provided a variety of ready-to-use activities appropriate for a broad range of classrooms.

Summer Academy for Advancing Deaf & Hard of Hearing in Computing

<http://www.washington.edu/accesscomputing/dhh/academy/>

Richard Ladner's outstanding Summer Academy for Advancing Deaf & Hard of Hearing in Computing is an academically challenging 9-week residential program designed for deaf and hard of hearing students with skills in math and/or science who may be considering computing as a career.