

## **UW CSE DawgBytes 2014-15 Annual Report**



DawgBytes, the University of Washington Computer Science & Engineering K-12 outreach program, aims to introduce both students and teachers to the exciting world of computing. In the 2014-15 academic year, we worked to make the program more sustainable. One of the main things that we did to achieve this was adding more people to our team.

We hired dedicated tour guides which allowed us to expand our school visits and make them more sustainable. We also hired a research assistant to provide general support.

In the 2015-16 academic year, we intend to continue increasing community involvement in outreach initiatives along with more structural improvement to increase sustainability. Our focus will be on expanding and improving existing programs.

Descriptions of our 2014-15 programs follows. More information is available on the DawgBytes website: <http://www.cs.uw.edu/dawgbytes>.

## **New initiatives**

### **Hiring Tour Guides**

This year during spring and summer quarters we hired undergraduates to give tours. This enabled us to offer tours to many more groups visiting our building as well as to have regularly scheduled tours for the general public. The public tours were very popular.

### **Hiring an RA**

Besides hiring tour guides, we also tried hiring a graduate research assistant (RA) to assist with all aspects of the program. Our RA assisted with events, recruited volunteers and improved our web site. This was a successful trial and we plan to continue hiring RAs in the future.

### **Grade-it Available to Teachers**

This year we made the grading software developed internally for our introductory classes available to high school teachers. High school teachers have asked for access to this for years but in the past it was not possible because the software wasn't stable enough. Thanks to many improvements we now host it for many different schools.

### **Womens' seminar**

This year during spring quarter we took over the womens' seminar associated with CSE 142 and 143, our introductory programming courses. This seminar-style course is designed for up to 25 students. It creates networking opportunities for women potentially interested in computer science and a safe place to discuss womens' issues in computer science. In 2015-2016 this will be led once again by the Ugrad Advising team. Maggie will be point person.

## Continuing Initiatives

### Summer Camps

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

This summer, we offered camp opportunities for elementary, middle and high school students. Camps were run by a UW lecturer and two local high school teachers. We had a total of 9 camp sessions this summer serving over 180 students.



### Classroom Visits (various dates winter and spring quarters)

UW CSE undergraduate and graduate students as well as faculty members visited 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.

### K-12 Computing Education Seminar

<http://courses.cs.washington.edu/courses/cse490o/14sp/>

Undergraduate and graduate students met weekly to discuss readings on computing education in K-12. This year, we continued to assign a small hands-on project. Students took this opportunity to do exciting work including the creation of materials to teach graph algorithms without computers and Processing tutorials.

### 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. This year, we provided clock hours for participants.

## Computing Open House (Saturday, December 6th, 2014)

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

During Computer Science Education Week, over 450 community members came to the Paul G. Allen Center for Computer Science & Engineering 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 stations.



## Programming Competition (Saturday, December 13th, 2014)

<http://www.pscsta.org/2013/12/december-2013-contest-results.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. This year's competition brought together 331 students from 27 different schools.

## NCWIT Award for Aspirations in Computing (Saturday, March 21st, 2015)

<https://www.facebook.com/media/set/?set=a.791866007508325.1073741857.416582038370059&type=3>

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.



## APCS Review Day and Ice Cream Social (Saturday, May 2nd, 2015)

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

Around 150 local K-12 students who were enrolled in Advanced Placement Computer Science came to the Paul G. Allen Center for Computer Science & Engineering to eat ice cream and do some last-minute review for the AP exam. Sessions on different topics were led by UW students and faculty.

## **UWHS Workshop (May 9th, 2015)**

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

In this one-day workshop, teachers from around the Puget Sound gathered to learn about Grade-it, our grading software. Teachers new to UWHS were introduced to 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 complete materials to use in their classrooms. We will also be providing follow-up throughout the year.

## **CS4HS (July 15th-17th, 2015)**

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

UW CSE partnered with Carnegie Mellon and UCLA eight 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.

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. We had approximately 50 teachers this year.

## **High School Teacher Scholarships**

This summer, we funded a local high school teacher to take CSE 142, the first course in our introduction to computer science series. This teacher gained computer science content knowledge while working through projects and lessons that they will be able to use with their own students. A growing number of local high school teachers report success in using CSE 142 materials in their courses and these scholarships help broaden access to high-quality CS courses. In the future we will offer scholarships for the text book only as we have learned that teachers can submit paperwork through their school districts to take this course for \$35 as part of high demand tuition exemption.

## **High-Achieving Women's Tea**

Every quarter we invite the top women in CSE 142, our first introductory programming course, to have tea and a discussion about CSE with a faculty member and some current undergraduate women in the department. After introductions, we encouraged students to share their questions about CSE.

