CS NEWSLETTER: WINTER 2015

KEEPCALM
AND CELEBRATE 32 YEARS OF WELLESLEY CS
CIRQUE du CS 2015

Wellesley College
Computer Science

Winter 2015 Newsletter

IN THIS ISSUE: DEPARTMENT ANNIVERSARY, UPCOMING CIRQUE DU CS, CS CLUB, NEW FACULTY, STUDENT RESEARCH, AND MUCH MORE!

BITS AND BYTES ABOUT THE CS DEPARTMENT

CS Department’s 25th Anniversary

We are proud to announce that the Computer Science Department is celebrating an important milestone—our 32nd year as an official department at Wellesley College! That may seem like a weird number of years to celebrate, but not to computer scientists.

CIRQUE DU CS
Sunday March 1, 2015

We are looking to have an extra-exciting Cirque this year as part of our anniversary celebration, including artifacts and mementos, reminiscing about the early days, and some special guests. All this, in addition to our usual dazzling array of student projects and research, along with opportunities for visiting alumnae to connect with faculty, each other, and our current students, will make for a fantastic day. Stay tuned for more details!

CS Club is Back

Thanks to Joanna Bi ’15, Sheridan Sunier ’15, Karina Chan ’16, and Cali Stenson ’17, the CS Club is back and going strong! The club has been very busy, with a number of activities (more about this later in the newsletter...), such as serving as a platform for outreach with organizations like Girls Who Code, providing a forum for hosting Hackathons and other cool tech events, and also helping our students to meet and code with each other and with the CS community outside Wellesley.

Wellesley Winners

Erin Altenhof-Long ’16 (CS major, English minor) was one of the winners of the Katharine Malone Sophomore Prize for academic excellence.

Hoop Rolling Champion

Congratulations to Alex Poon ’14, CS major and winner of Wellesley College’s 119th Annual Hoop Rolling competition. This continues the family tradition as Alex’s mother, Helen Poon ’82, won the hoop rolling competition in her own senior year.

Hoop Rolling Champion Alex Poon ’14 and Wellesley College President Kim Bottomly

Erin Altenhof-Long (middle), and other winners of the Katharine Malone Sophomore Prize.
Benjamin Wood joined us this fall as a new Assistant Professor of Computer Science. Ben has a BA from Williams College, and an MS and PhD from the University of Washington. His research focuses on programming-language and system support for reliable concurrent and parallel software. His aim is to improve programming models, language implementations, and systems to make problematic implicit properties of program executions explicit, so that programmers can more easily find, eliminate, or avoid software concurrency bugs.

Ben is teaching and making updates to CS 240 (Introduction to Machine Organization) and CS 251 (Theory of Programming Languages) this year, and looks forward to bringing new systems courses to our curriculum in the near future. In addition to his computer science exploits, Ben is an avid hiker (two years ago, he hiked solo from the Canadian border to the Mexican border, over 2,700 miles along the Pacific Crest Trail) and he is a music composer (wonderful pieces that he composed are posted on his website).

Susan Buck is our new Instructor in Computer Science Laboratory. She has a BA from the University of North Carolina (Asheville) and a MPS from New York University (Tisch School of the Arts). Susan is interested in exploring ways to empower women and minority individuals to excel in programming related fields. An inspiring example of this interest is her work co-founding the Women's Coding Collective, an online and local initiative aimed at encouraging women programmers. The Women's Coding Collective has grown into a community that now has over 2,300 members all over the world, including some Wellesley alums.

Susan has worked as a web developer, and has taught at the Harvard Extension School, the University of Pennsylvania, the University of Miami, and with Duke University's Talent Identification Program.

Eni Mustafaraj is a new Assistant Professor of Computer Science this year. Eni has a MEng from the Polytechnic University of Tirana (Albania) and a PhD from the Philipps-Universität, Marburg (Germany). Her interests include social and mobile computing, trust and information reliability, artificial intelligence, network science, and learning analytics.

Although this is a new job title for Eni, she is not new to us! Eni has been at Wellesley College as the Hess Fellow for the last 3 years, and prior to that as an adjunct and postgraduate fellow. With the support of the Hess Fellowship, she has developed two new courses in the past four years, CS249 Web Mashups and CS349A The Intelligent Web. She has also been very active in advising students doing research, and in organizing events such as Hackathons and the Hour of Code.

We welcomed three new faculty members to the department this year!
Promotions

The department was thrilled for two members of the faculty who received promotions this year. Stella Kakavouli was advanced to the rank of Senior Instructor of Science Laboratory in Spring 2014. Orit Shaer received news of her successful tenure promotion in December.

Family Additions

Darakhshan Mir was married to her fiancé Deepak on May 16 in Pennsylvania. We wish them many long and happy years together!

Webmistress/Media Liaison

The new CS department webmistress and Science Center social media liaison is Jenny Wang '17.

Supplemental Instruction

This Fall, the CS department began to participate in the Supplemental Instruction (SI) program, funded by the PLTC. The SI program aims to provide additional, structured support sessions, run by student leaders. Our first SI leaders were Sarah Burns '16, for CS 111, and Erin Altenhof-Long '16, for CS 230.

We have been very pleased with the extra help that the SI leaders provide, and are expanding to 6 leaders in the spring (two SIs in each of CS 110, 111, and 230).

Faculty Search

Computer Science continues to experience high enrollments in all of our courses. There are currently 108 students who have declared CS a major or minor, making it one of the more popular majors at Wellesley.

We are again conducting faculty searches for a new Hess Fellow (Darakhshan Mir will be completing her two-year term) and a Lecturer.

Faculty Research

Brian Tjaden completed his sabbatical leave, supported by a grant from NIH. He spent the year designing and implementing novel algorithms for analyzing DNA sequences. When he returned, he led the effort (along with Sohie Lee, Rhys Price Jones, and Jean Herbst), to teach CS 111 using Python instead of Java.

Lyn Turbak spent last year on sabbatical at MIT improving the App Inventor programming language and environment and the pedagogy associated with teaching App Inventor. He was also the Program Chair for the 2014 International Workshop on Visual Language and Computing and became an Associate Editor for the Journal of Visual Languages and Computing.

Eni Mustafaraj attended the 2nd Learning Analytics Summer Institute at Harvard Graduate School of Education on June 30–July 2.

Takis Metaxas and Eni Mustafaraj worked with Samantha Finn '12, Laura Zeng '16, Brianna Ruffin '17, and Kily Wong '16 on projects related to the development of the twittertrails.com web service. They presented two papers at the Computation and Journalism 2014 conference in New York City, Do Retweets indicate Interest, Trust, Agreement? (Extended Abstract) and Investigating Rumor Propagation with TwitterTrails. The twittertrails.com web service and its associated website blogs.wellesley.edu/twittertrails are being prepared now for uploading onto Amazon Web Services servers with the help of Wellesley’s CIO Ravi Ravishanker and his LTS staff.

Randy Shull is spending a year of sabbatical leave doing research in the area of algorithmic graph theory. Working in collaboration with Ann Trenk and Alan Shuchat in the Mathematics Department, he is developing structural characterizations of graphs that can be represented by the intersection of unit intervals that may or may not contain their endpoints. This research defines mixed interval analogues to several other important classes of intersection graphs such as tolerance, bitolerance, and trapezoid, and proposes to develop efficient recognition and realization algorithms for each class.

Scott Anderson, along with Kelsey Reiman '15 and Stephanie Contreras '16, spent the summer of 2014 renovating the Computer Graphics course (CS 307) to use WebGL and the Three.js library, thereby allowing graphics projects to be implemented in a web browser. Projects from the Fall of 2014 can be viewed at http://cs.wellesley.edu/~cs307/galler y.html.

Darakhshan Mir presented work on data privacy from her summer research group at the UC Berkeley based TRUST (Team for Research in Ubiquitous Secure Technology) Women’s Institute in Summer Enrichment, held in Ithaca in July 2014 and at Harvard University’s Privacy Tools Project.

Orit Shaer was awarded a new 3-year NSF grant to support her research on Human-Computer Interaction for Personal Genomics: Understanding, Informing, and Empowering Users.
Student Activities and Achievements

TEI Conference
Attendees with Orit Shaer at the TEI (Tangible, Embedded, and Embodied Interaction) conference in February in Munich, Germany, included Annie Han ’14, Stephanie Lee ’14, Johanna Okerlund ’14, and Yu Mei Lay He ’14.

WHack

Hackathon participants Karina Chan ’16 and Vivienne Shaw ’16

On March 8-9, eight teams of Wellesley students took on the challenge of creating mobile apps in WHack, the college’s first 24-hour hackathon. The event was organized by Christine Keung ’14, Karina Chan ’16, Chesley Hooker ’16, Sravanti Tekumalla ’16, Cali Stenson ’17, Alice Wong ’16, and faculty advisor Eni Mustafaraj. Judges included Rhys Price Jones, and staff from the Rosie company, including alumna Nicole Burton ’13, were on hand to provide valuable technical advice.

NEUCS
The New England Undergraduate Computing Symposium was held in April at Boston University.

Monica Feldman ’14 won the “Best Research Project” award for CodeSync: A Collaborative Coding Environment for Novice Web Developers!

Cassie Hoef ’15 also presented zMol and zTree: 3D Interactive Applications for Biological Designs.

CCSCNE
A large group of students participated in the programming contest and presented posters in April at CCSCNE (Consortium for Computing Sciences in Colleges Northeastern Region) in Providence, RI.

Poster presenters were Monica Feldman ’14, Karishma Chadha ’14, Soojin Kim ’15, Johanna Okerlund ’14, and Bhargavi Ramanathan ’16.

SWSIS


Our first annual Senior Poster Fair on April 16 was a great success. Our graduating seniors each presented a poster about a CS related topic or experience.

The event was attended by interested students and faculty, and we all much enjoyed the 25+ posters and demonstrations. See many of the posters at http://www.wellesley.edu/cs/events/cs-senior-poster-fair

Symposium on Usable Privacy and Security

Erin Davis ’14 received an NSF award to attend the Symposium on Usable Privacy and Security in July 2014 in Menlo Park, CA.
SC Summer Research

The very active Science Center Summer Research Program guaranteed that the building was abuzz with student researchers again last summer:

- **Stephanie Contreras-Moran '16** and **Kelsey Reiman '15** assisted **Scott Anderson** in renovating CS 307 to use WebGL and THREE.js.
- **Lyn Turbak** worked with **Karina Chan '15** to implement the App Inventor Educators site, and with **Sara Burns '16** to begin implementation of an online App Inventor concept map.
- **Misha Olynyk '16** and **Megan Chen '17** investigated visualizations of learner behavior in online courses with **Eni Mustafaraj**.
- **Orit Shaer** worked with **Casey Grote '14**, **Cassie Hoef '15**, **Evan Segreto '15**, **Elizabeth Stowell '14**, **Johanna Okerlund '14**, **Joanna Bi '15**, **Laura Ascher '16**, **Claire Schlenker '16**, **Grace Hu '17**, and **Lily Chen '17** in the HCI Lab this summer.
- **Darakhshan Mir** also led a research group in the Science Center. She worked with **Nick Manfredi '15**, **Shannon Lu '16**, **Claire Cerda '15**, and **Mingo Sanchez** (Bowdoin College) on data privacy projects.

**NSF REUs**

CS students were accepted at NSF REU (Research Experiences for Undergraduates) programs last summer, including:

- **Sunnia Ye '17** and **Grace Fang '17** did research at Carnegie Mellon University.
- **Naomi Day '17** conducted research at Harvard University.

**Internships**

**Victoria Brown '15** worked at KAYAK over the summer on the automation team. She built an automation framework that tested the mobile website, specifically on tablets. She is continuing her work there this year on a new dashboard framework to display helpful metrics around the office.

**Emily Ahn '16** worked as a Teaching Assistant for Girls Who Code last summer, and taught introductory Computer Science to 20 high school girls in a seven-week intensive immersion program.

**Cali Stenson '17** was a software developer intern at NextThought, LLC in Norman, OK where she worked on building a content management system for the company.

**Simona Boyadzhyska '16** worked at the Institute for Pure and Applied Mathematics (IPAM) at UCLA as part of their summer program called Research in Industrial Projects for Students (RIPS); Simona worked with Google LA and did research in machine learning investigating the effectiveness of using machine translation to extend text classification.

**PennApps Hackathon**

**Kat Obermeyer '15** attended the PennApps Hackathon in September and also participated in StitchFest, a Hackathon within the Hackathon using wearable technology. With her partner, she made a wearable version of the popular game FlappyBird, and won the IBM prize for Best Hack!
ACM UIST

HCl research students Cassie Hoef ‘15, Jasmine Davis ‘17, Casey Grote ‘14, and Evan Segreto ‘15 presented at the ACM UIST (Symposium on User Interface Software and Technology) in Hawaii on October 5-8.

Grace Hopper

Wellesley attendees at Grace Hopper

The Grace Hopper Conference was held on October 7-10 in Phoenix this year. Ellen Hildreth and a large group Wellesley students attended. The CS department was able to provide eight travel scholarships to the conference through generous donations from Wellesley alumnae.


IEEE Conference on Big Data

Nick Manfredi ‘15 received an NSF travel award and presented a poster at the IEEE Conference on Big Data in Washington, D.C., in October.

ACM BOSPRE

Participants in Wellesley BOSPRE

Wellesley College was a host site for the 2014 ACM BOSPRE (Boston Preliminary Programming Contest). Lyn Turbak and Scott Anderson organized the event, held on October 18 in the Science Center. Over 20 teams participated, including five Wellesley teams (all coached by Rhys Price Jones).

MaryBeth Kery ‘15, Naomi Day ‘17, Teresa Tai ‘16, Alice Wong ‘16, Sunnia Ye ‘17, Putting the “Science” in CS: Computer Science Research Beyond Wellesley.


PASSAT

Claire Schlenker ‘16 and Nick Manfredi ‘15 had their work from CS 349 (Quantifying Data Privacy) published in proceedings for the Sixth ASE International Conference on Privacy, Security, Risk and Trust (PASSAT) in December. Nick presented a paper at the conference and Claire presented a poster.
CS Club

CS Club has become very active this year, and has organized lots of great activities.

Game Night

The CS Club hosted a Game Night on May 13, advertised as “a somewhat geeky, kind-of nerdy, definitely funny study break.”

Hackathon

The Hackathon on October 24-26 had a theme of personal websites, and to help students feel prepared, the club offered workshops beforehand on topics like Django (Python framework) and APIs:

WELLESLEY CS CLUB PRESENTS
AN API WORKSHOP
LED BY KARINA CHAN '16

APIs are useful for integrating FB, Twitter, and other well known platforms into your webpages. Come learn how

Tuesday 10/7

Board Game Night

The CS Club hosted a Board Game Night on December 2 at the Pub to meet CS professors and mingle with other CS students! There were board games, good music, and tons of fun!

Dress for Success

The CS Club organized a very informative and well-attended talk by Francys Scott ’14 on How to Dress for Success in the Workforce.

Cybersecurity Visit

On November 12, a group of 23 CS students and faculty visited Lincoln Lab for a cyber tour. Our hosts included alums Lisa Basile ’01, Francesca D’Arcangelo ’03, Era Vuksani ’12, and Karishma Chadha ’14.

MIT - LL Capture the Flag

The fourth annual MIT-Lincoln Labs Capture the Flag contest was held in Lexington at Lincoln Labs, November 22 - 23. This year, 21 of the 29 students taking the CS 342 Computer Security class participated in the contest, which pits teams against one another in a test of system security knowledge.

Robogals

Tali Marcus ’15 and Veronica Lin ’15 established a local chapter of Robogals.

Robogals workshop

Robogals is an international, not-for-profit, student-run organization that aims to increase female participation in Engineering, Science and Technology through fun and educational initiatives aimed at girls in primary and secondary school. The first workshop was held at Wellesley on November 22.

Senior Seminar

We had two seniors graduating at mid-year who gave a seminar on December 2. Francys Scott ’14 discussed Using Netty to build a Proxy Server, and Ava Chang ’14 talked about work she did Improving Healthcare Services at Massachusetts General Hospital.
We enjoyed many interesting presentations this year, from alums, visiting scholars, and our own faculty members, with Computer Science topics ranging from current research to job market opportunities and interview skills.

On February 10, Benjamin Wood, now one of our new Assistant Professors, came from the University of Washington to discuss Implementing Data-Race Exceptions, how to problem-solve with tools throughout the implementation stack.

Michelle Borkin, School of Engineering & Applied Sciences, Harvard, presented her research on February 12. Her talk on Visualization Across Disciplines described applications for data visualization in medicine, computer science, and astrophysics.

Recent graduate Michelle Ferreira ’13, who now works at Google, offered some great advice on Rocking Technical Interviews when she came to visit on February 13.

Jessie Link ’00, Director of Engineering at Lookingglass, a leader in cyber threat intelligence management, joined us on February 14 for a lunchtime talk on software engineering and cyber solutions.

Sean Baker, Computer Science, University of Massachusetts at Amherst, gave a talk on February 19 on distributed systems, with emphasis on cloud computing and sustainability.

On February 21, Finale Doshi-Velez, School of Engineering & Applied Sciences, Center for Biomedical Informatics, Harvard, talked about machine learning, with applications in medicine and data intensive sciences.

Eni Mustafaraj, Hess Fellow, Wellesley College, presented a talk on February 25: Computer Science Outside the Box: Empowering EVERYONE Through Computing.

Susan Buck, our new Instructor of Computer Science Laboratory and co-founder of Women’s Coding Collective, spoke on Creating Spaces for Women Coders and Creators on March 17.

Philip Guo visited and led an informal lunchtime discussion on April 2. Philip was an MIT postdoc with a PhD from Stanford and is currently an assistant professor at the University of Rochester. He is known for creating the Online Python Tutor, creating tools to analyze data, and writing about the CS PhD experience.

Deborah Hurley, Chair of the Board of Directors of the Electronic Privacy Information Center and author of “Pole Star: Human Rights in the Information Society” gave a talk on Privacy, Personhood, Product, Profit on April 15.

On April 25, David Lazer, Professor of Political Science and Computer and Information Science, Northeastern University, explained computational social science in Opportunities and Challenges in Using Big Data to Understand Human Systems.

Ilaria Liccardi gave a talk on May 6 on Social Privacy: Creating Tools and Techniques to Help People Understand How to Safeguard Their Personal Information. Ilaria is a Marie Curie Postdoctoral Fellow working in the Decentralized Information Group at the Computer Science and Artificial Intelligence Lab (MIT) with Prof. Hal Abelson, Daniel J. Weitzner and Joseph Pato.

The Career for Work and Service at Wellesley sponsored a talk by a distinguished CS alumna on September 25. Laila Partridge ’86, Fortune 100 Business Executive, presented Code On.

On October 1, Olivia Kotsopoulos ’14, came back to highlight the ways in which a Wellesley CS education has prepared her for success in the workforce. She shared her experiences working for a company (KAYAK) after first interning there in Real World Recap: Transitioning from Wellesley to Full Time Technical Employment.

The CS and Physics departments co-sponsored a talk on October 22 by Martin Herbordt on Scalable Accelerator-Centric Clusters for High Performance Computing.

A talk titled Digital Fabrication: Designing with Physics in Mind was presented on November 7 by Emily Whiting, CS Department, Dartmouth College.

Members of the CS faculty, led by Benjamin Wood, held an informal discussion and Q&A on graduate school on November 10 at lunchtime. Topics included what to expect from grad school, how college, Master’s programs, and PhD programs differ, advice from faculty about grad school experiences in varied subfields of CS and at different schools, and nuts-and-bolts logistics advice for preparing, applying, and choosing a school.

Martine Kalke from MIT Lincoln Laboratory spoke about Cyber Security on November 19.

C.A. Webb, Executive Director of the New England Venture Capital Association (and a Wellesley Alumna) and Eric Paley, Partner at Seed Stage Venture Capital Fund Founder Collective, visited on December 5 to share an overview of opportunities in the Boston startup community. The discussion was focused on how to go about finding positions (both internships and full-time) at Boston area startup technology companies, and how to prepare to interview with these companies.
CS and MAS Senior Luncheon

The Senior Luncheon was held on May 10 in the HCI Lab, with 40+ attendees, organized by Jean Herbst with help from Rita Purcell. We enjoyed a meal from Café Mangal and dessert of cookies made by Francys Scott ’14.

The winner of the Academic Excellence Award was Olivia Kotosopoulos, and the Spirit Award was given to Karishma Chadha and Erin Davis.

Faculty, family, and students enjoyed socializing and playing board games at the Holiday Party, and it was a nice break before the start of exams. We had hoped to have a Lip Synch contest, but did not get organized ahead of time. If you would like to see that next year, please get involved and start planning early!

Hour of Code

The CS Department was pleased to again sponsor the Hour of Code, which was held on December 10-12.

CS faculty Eni Mustfaraj, CS major Cali Stenson ’17 and Rita Purcell organized the event with the help of 30+ volunteers who ran computer activities and games to help people learn about coding. There was a daily raffle and new this year, a dorm competition for participating residents, which was won by Severance. The event was fun and educational for all!

Ultimate Frisbee

The third annual CS vs. Math Ultimate Frisbee game took place on May 13, in Munger Meadow. There was a hard-fought contest between the two departments, and Lyn Turbak’s knee was a casualty of the battle. Don’t worry, he’ll be back next year!

Holiday Party

The annual CS/MAS Holiday Party was held in the Pendleton Atrium this year, on the last day of classes, December 9. Everyone gorged again this year on the chocolate fountain and goodies arranged by Jean Herbst, Rita Purcell, and Ellen Hildreth.
This year’s newsletter highlights many exciting developments in the Computer Science department - new faculty faces, promotions, resurgence of CS Club, creation of the Senior Poster Fair, and launch of our new Python based CS 111 Computer Programming and Problem Solving. We are especially proud of the many CS initiatives led by students, such as the Hackathons, Hour of Code activities, and Girls Who Code event. In a survey conducted by the Computing Research Association, Wellesley CS students strongly endorsed the statements, I want to use my degree to help society, and I want to use my degree to solve real world problems. With about half of all Wellesley students now taking at least one CS course, we are providing the tools to enable these aspirations, and with the help of our students, creating opportunities to pursue them.

In conjunction with our bi-annual Cirque du CS this spring, we will mark a special anniversary. According to the Minutes of Academic Council, the Department of Computer Science and a CS Major were voted into existence on March 11, 1982, and the department course listings first appeared in the 1982-83 Wellesley course catalog. As computer scientists, powers of two have particular significance to us, so we cannot let our 32nd anniversary pass by without notice! We hope that many of our CS alumnae will join us for a special celebration on March 1st!

Support
The CS department relies on the generosity of alumnae, friends, and corporations in helping support the department to provide an excellent liberal arts education for women studying computer science at Wellesley. Your gift enables students to attend conferences such as the Grace Hopper Celebration of Women in Computing, supports student research, provides much needed equipment, and allows the department to host a variety of events for the Wellesley CS community. Every gift makes a big difference. Non ministrai sed ministre.

Gifts can be sent to Gift Processing, Wellesley College Office for Resources, 106 Central Street, Wellesley, MA 02481 with a note designating the gift for the CS department. Your gift to Wellesley CS is tax deductible.

Thank you for your support.