CS/M SCHOLARS PROGRAM AT WESTERN WASHINGTON UNIVERSITY

Mark Twain once remarked that everybody likes to talk about the weather, but nobody seems to do anything about it. It’s similar to the issue of the underrepresentation of women in computer science and mathematics. The numbers do not lie; while women represent 54 percent of Western graduates, they are awarded about 10 percent of the degrees in computer science and about 35 percent of the degrees in mathematics. Many people have talked about this issue over the years, but it’s been a difficult one to address. However, the CS Department has started to make some strides in reversing this trend thanks in part to Professor Perry Fizzano. In March 2011, Western was awarded a $590,000 grant from the National Science Foundation which was entitled “Graduating More Women in Computer Science and Mathematics.” This grant was co-written by Dr. Fizzano and Dr. David Hartenstine in Western’s Math Department and it launched the start of the CS/M Scholars Program at Western.

The female students selected for the CS/M Scholars Program will receive a substantial scholarship, but will also benefit from automatic registration in a 2-credit seminar in mathematics and a 3-credit seminar in computer science in their first quarter at Western. These small seminars are open to other first-year students as well and provide an engaging and fun look into computer science and math. The aim of the seminars is to give a taste of the immense breadth of these fields and the types of real world problems that can be tackled. Besides the seminar classes, the CS/M Scholars also participate in monthly get-togethers, often revolving around visits with Western alumnae and other prominent women in the field to explore career options and professional development activities.

The CS/M Scholars Program is now at the end of its second year and the cohort entering in the Fall of 2013 has already been selected. We expect that this program will help to create a snowball effect – the more women who are successful in the departments will help to encourage other women to feel welcome in the departments and pursue degrees themselves. Time will tell how successful the program becomes, but as Mark Twain also said “The secret of getting ahead is getting started.”

The Big Cluster

This year, the Computer Science Department saw the arrival of its exciting new “Big Cluster,” an addition which will help answer the needs for performing extensive computations and working with big data. With 296 CPU cores, 2,688 GPU cores, 2 terabytes of RAM and a 40 Gbps Infiniband network, the cluster found immediate use in classes and research projects requiring serious computing power.

This new tool provides the department its own cloud with a generous amount of storage and processing power, as well as plenty of Web services to share with others. For example, the “Biology Department uses the new cluster for their Metagenomics research,” says Phillip Nordwall, the CS Department’s Senior Systems Programmer Analyst.
LETTER FROM THE CHAIR

Hello from Bellingham! This year I took over as chair of the Computer Science Department. The first thing I realized was how much I didn’t know about the inner workings of the department and the university. I’m learning quickly and am excited about the future of the department.

Over the last couple of years, the number of our majors has doubled. We’ve traditionally graduated about 45 students per year for the last several years. However, this year we’ll graduate over 60 and next year it will be close to 100! This growth has taken place at a time when we’ve been losing faculty. Some have retired and some have moved to administrative positions elsewhere in the university. We anticipated this growth of students and redesigned our curriculum to streamline the time to degree, but it’s still been a real stretch for us to keep up. We’ve been lucky to have brought in some amazing temporary faculty, but are actively seeking opportunities to expand our department with permanent faculty.

We’re designing a new degree option in our department revolving around big data. We hope to run the new degree program through committees in the upcoming academic year so we can start bringing people into the major in Fall 2014. It will be an interesting degree program that will share several courses with the traditional B.S. in Computer Science, but have some new courses in areas such as Data Mining and Data Visualization. The future for this area of computer science is rapidly growing and applicable to other scientific disciplines that work with large data sets, but also to fields such as linguistics, sociology and marketing where information can be mined from the internet to help analyze human behavior and forecast trends.

Even though we have more students than we can handle right now, I’m still interested in recruiting even more and raising the quality of the students in our department. Our website includes an alumni page which we hope will help in enticing students to pursue a degree in computer science. One thing you can do as an alumni to help this effort is provide a current picture and a short description (~100 words) of the exciting work that you do in language that a teenager without a background in computer science can understand. Minimize your use of technical jargon as much as you can and focus on the types of problems you solve as opposed to the details of how you solve them. Check out the alumni page on our website for instructions on how to submit your information.

Thanks for reading and I hope that your upcoming year is as exciting as I anticipate ours will be. Enjoy the rest of the newsletter and stay in touch!

NEW CS DEPARTMENT STAFF MEMBERS

Jennifer Bunch

Jennifer Bunch left the oil solutions industry to find an organization whose values matched her own. This search led her to become our Department Manager. As a recent graduate of WWU she knew that this would be a perfect fit. Jennifer is eager to analyze the department’s needs and processes with fresh eyes. She is also excited to be a part of a program that is growing and facing challenges that come hand-in-hand with changing environments. With a Bachelor’s in Business Administration, she thoroughly enjoys budgeting, developing and implementing procedures that streamline processes, and spending time working as part of a team.

Mary Hall

Mary Hall is the new Program Coordinator for CS Advising. When asked about her new job, she explained: “My role is to guide and support the computer science students by helping them navigate through the major requirements in order to reach their academic goals. I love working with undergrads, especially our amazing CS students.” Mary graduated from WWU with a BA in Education and English Literature and she has worked on campus since 2007.
Dr. James Johnson

In partnership with the National Security Agency, Professor James Johnson spent the Fall quarter of 2011 on sabbatical in Fort Meade, Maryland. During his time with the agency, Dr. Johnson adapted recent research that establishes discrete versions of certain vector calculus concepts which provide for graph decompositions that can isolate gradient and solenoidal components of an arbitrary finite graph. A prospective application for Dr. Johnson’s work would be extracting a best gradient approximation, in a least-squares sense, to a graph that may include some cyclical flow. These approximations, in turn, can be used to generate a global ranking of the vertices despite local inconsistencies. In this context, the methods discover a global consensus from conflicting local judgments, a phenomenon known as “the wisdom of crowds.”

A paper describing a declassified version of this work entitled “Hodge Theory on Graphs: A Tutorial” has been accepted for publication in IEEE Computing in Science and Engineering, to be published in 2013. In the meantime, he has also been able to adapt some of the ideas which have stemmed from his research into the basis for a CSCI 245 Object Oriented Programming project for students.

Dr. Michael Meehan

As a member of a six-person team of professors from around the country, Professor Michael Meehan spent a full year, from Spring 2010 to Spring 2011, assisting the Educational Testing Service (ETS) in their creation of the exit exam for computer science students used by English speaking colleges and universities all around the world to measure overall effectiveness of their program. Throughout this year, Dr. Meehan attended meetings at ETS in Princeton, New Jersey. The new ETS computer science exit exam was first offered to students in the Spring of 2012 and will remain in circulation for the next five years.

Currently, Professor Meehan is working on a textbook on concurrency and as part of his latest work in the field, Western Washington University was able to obtain a substantial software donation from Intel, valued upwards of $250,000. Dr. Meehan plans on including the use of this software in future offerings of the CSCI 322 Principles of Concurrent Programming class.

Dr. Phil Nelson

During the past couple of summers, Phil Nelson has worked for the mobile applications development company Treemo Labs, based out of Seattle. He helped in production of some of their latest iPhone and iPad apps, such as the 60 Minutes iPhone App and Appafolio. Appafolio was developed with the non-programmer in mind by allowing creation of portfolio style applications with no previous coding experience required. Users can add text, video, and pictures in an app with a custom background.

The experience Dr. Nelson gained while assisting Treemo proved beneficial in the creation of one of the latest WWU computer science courses, CSCI 397 Mobile Device Programming, which was first offered during the Winter Quarter of 2012. In this exciting new class, students are given the opportunity to develop applications for the Android platform using either a Motorola Xoom tablet or an Asus Transformer tablet.

New CS Information Technology Specialist

Andrew Fugier is our new Information Technology Specialist, in charge of making sure our equipment works smoothly. Andrew is not new to the department, since he has taken a number of CS classes here for the past few years. He comes to us with years of experience that he acquired doing contracting and outsourcing jobs in the San Diego area. “I came back to school,” says Andrew, “because my real passion is about creating software.” He is a Microsoft Certified IT Professional (MCP) and a Microsoft Certified Technology Specialist (MCTS) and will finish his BS in 2014.
The cluster is really a combination of two clusters, the first one being used for computationally intensive jobs or in classes like Dr. Nelson’s Parallel Computation (CSCI 515) taught in Winter and Fall 2013. The other half is used to provide virtual servers, multiple OS or whatever computing tools may be needed for senior projects, independent studies and ongoing research, as well as an EC2-compatible cloud environment.

With this new cluster, we now have “the ability to launch multiple instances of operating systems, applications or images to serve our environment better” says Phillip Nordwall, “while giving students root access within their virtual machines.”
Congratulations to all the 2012 - 2013 Academic Year Award and Scholarship Winners

**Boeing Computer Science Scholarship** ...................................................... Ericka Smith

**Track Global Fellowship in Computer Science** ................................. Mason Bially

**Danny Mason Computer Science Scholarship** ................................. Daniel Ma

**Kaiser-Borsari Scholarship for Women in Computer Science** ................. Michelle Friedrich

**Giusti Scholarship for Computer Science** .......................................... Alexander Potter

**Computer Science Alumni/Friends/TAG Scholarship** ......................... Emily Cook

**Kaiser-Borsari Computer Science Scholarship** ..................................... Ainsley Uhlenkott

**Computer Science Citizenship Award** .................................................. Auresa Nyctea

**David W. Cole Endowment** ................................................................. Chad Elofson

**Logos Bible Software Scholarship in Computer Science** .................... Kyle Radar

**Dealer Information Systems Computer Science Scholarship** .............. Ali Hajy

**Dealer Information Systems Computer Science Scholarship** .......... Alex Lord

**2012 - 2013 Academic Year Scholarship Winners**

Outstanding Computer Science Instructor Awards

At the 2012 and 2013 annual CS Department barbecues, the students recognized Dr. Perry Fizzano and Dr. Phil Nelson as their choices for the Outstanding CS Instructor of the Year awards.

**Congratulations!!!**

2012 Dr. Perry Fizzano and 2013 Dr. Phil Nelson
Gracie Ermi

Although she may be new in the CS Department, Gracie Ermi is not new to the area. She has lived in Mount Vernon, WA her whole life and clearly wanted to stay in the Pacific Northwest. “Bellingham is beautiful, and WWU offers so many great opportunities!”

As a freshman just starting in the program, Gracie is quick to show her enthusiasm “I was pleasantly surprised by how much computer science interests me, and being in the CS/M Scholars Program (see page 1) and the Association for Women in Computing (AWC) has really helped me to meet other people in the program and explore the options that a computer science degree has to offer. My ultimate goal is to use my degree to work for a non-profit organization.”

Gracie is in the WWU Honors Program and also works as a research assistant for Professor Hearne. Gracie has been compiling data for a project creating a timeline of when various sounds were incorporated into the language of Tetum, which is a creole of Portuguese.

Outside of her computer science studies, Gracie also plays baritone saxophone in the Western Big Band, and this summer she is going to work at Camp Indianola as a lifeguard/cabin counselor.

Alex Potter

Alex Potter is a post-baccalaureate student working towards a Bachelor of Science in Computer Science as a complement to his original degree in linguistics and music. Having studied abroad in St. Petersburg, Russian Federation, Alex possesses an eclectic mix of fluency in Russian, German and Japanese. With this background, Alex hopes to work in the field of computational linguistics, particularly historical linguistics.

As to what brought him to the CS Department, Alex says “I was drawn to Western for the high quality of the professors, small class sizes, and beautiful setting. I never considered myself a math person before coming to Western, but I found myself enjoying these courses for the first time thanks to the excellent professors. I’ve really enjoyed Unix Systems and Computer Systems, particularly programming in C and learning how the computer hardware and software interact. I also enjoyed Algorithms I and II.”

Recently selected for a summer internship at Isilon Systems, a Seattle based company, Alex is very excited to get some real hands on experience, especially in the increasingly important field of big data.

With a projected graduation in spring 2014, Alex is well on his way to realizing his dream career path.

Liang Luo

Talk to Liang Luo about his decision to study computer science and his answer will surprise you. “Lots of people ask me why I switched to computer science after I completed my master degree in art. Well, the truth is I didn’t even think about majoring in computer science before, but I know the more I’ve become involved, the more I enjoy studying this field.”

Liang explains that as a former arts major, he encountered some difficulties when he started pursuing his goal. “Lacking an in-depth understanding of computer science knowledge was an obstacle for me. The excellent CS Department faculty helped me obtain and strengthen the essential skills, which I really appreciate. Meanwhile, I have been working as a teaching assistant since I got into the program. For me, sharing the knowledge is not just strengthening what I have learned by teaching others; the more important part is the satisfaction of helping other students who have the same dream as I have.”

After graduation, Liang will work on developing international cooperation between the USA and China in the field of computer science because “the potential markets offer big opportunities for both sides.” Liang concludes “My contribution might be very limited, but in the future, I would like to help develop and improve communication.”
Transitions: From Undergraduates to Real World Opportunities

Brian Schiller

Brian Schiller, the 2013 Outstanding CS Graduate, has an impressive record in the classroom, the workplace, and in service to the university. He finishes his math and CS majors this June with a 4.0 GPA.

While a student at WWU, Brian competed in KRYPTOS, a Pacific Northwest Cryptanalysis competition, the ACM International Collegiate Programming Contest (ICPC), and the annual William Lowell Putnam Mathematical Competition.

Last summer found Brian with a software development internship for Amazon’s AWS S3, where he bolstered his classroom learning with real-world experience.

During the past year, he has served as Mentor Program Coordinator for the CS department, a program that provides beginning CS students an opportunity to be tutored by upperclassmen when they are struggling with CS classes.

This summer Brian will marry his sweetheart of five years and move to St. Louis, MO where he plans to work as a software developer.

Travis Peters

Not every CS major walks into the CS department with their career plans all set to go. Occasionally, it is those who are just running by who end up becoming the most committed. As Travis Peters explains “I initially chose Western because I wanted to continue my running career, but also be at a university that would prepare me well for graduate school. I took my first CS class ever during my freshman year of college and got hooked! Western’s Computer Science department offered plenty of challenges, but always offered the help I needed to grow as a student.”

Highlights from his time at WWU include his CS teaching assistantship and his tenure as the Associated Students Vice President for Business & Operations. Both positions provided satisfying opportunities to help students, learn more about the university as a whole, and to advocate for resources and programs at Western.

After getting married this summer, Travis and his wife, Mary will drive from Bellingham, Washington to Hanover, New Hampshire to begin the next chapter of their lives. Travis has been accepted into the Ph.D. Program at Dartmouth with exciting opportunities for both teaching and research assistantships.

Camille Ciancanelli

While working as a research analyst, Camille Ciancanelli received her first introduction to programming. She was so excited by this original exposure that she decided to pursue a master’s in computer science and is focusing her graduate work on data mining.

Camille is also a teaching assistant, a task she really enjoys. “It is a real privilege to be able to help students think about what they want to accomplish and then guide them through some of the steps” she says. Working in the department has been a very satisfying experience for Camille. “The CS students,” she says, “know how to work in teams and they like using their brains. I like that.”

Outside of class, Camille is very involved in student activities. As a past Director of Leadership Development, she found speakers for the AWC meetings, organized events such as the “Dare to be Ambitious” workshop which explored the challenges facing women in the workforce, and the “Red Chair” event which gave students first-hand exposure to a high tech workplace. She also organized the very successful “Rope Course” designed to enhance teamwork, trust and build community.

Last, but not least, when she needs an exciting change of pace, Camille - an avid equestrian - is always happy to go back to her horse, Austin, and to pursue her true passion in dressage.

2013 Outstanding Computer Science Graduate
The Computer Science Department is growing!!!
Check out our website and share your news via our alumni page.

http://www.cs.wwu.edu

CS ALUMNI
Keep in Touch!

WE CAN’T DO IT WITHOUT YOU!

CREDITS

EDITORS
Martin Granier
Perry Fizzano

WWU
CS Department
516 High Street
Bellingham, WA
98225-9165

(360) 650-3805

Published annually
Alternate formats:
cs.wwu.edu/newsletter