



Volume 1, Issue 2

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From the Department Head



Hi. I want to report to you our ongoing diversity activities aimed at attracting more students to study CS from underrepresented groups in computing, a problem we share with many other departments across the nation. Recently, about 25% of our PhD and 35% of our MS graduates are female, but only 9-10% of our undergraduate majors are female.

We have 6 female tenure-track or research faculty out of 37.

Since 2009, we have concentrated on programs to recruit and retain female undergraduates. We are forming relationships with high school teachers of computing through our annual workshops and high school visits around the state. We bring with us selected CS undergraduates (i.e., *CS Ambassadors*), our best spokespersons. We have run four workshops for high school teachers which emphasize new ideas in curricula and tools, attracting high school women to computing, and networking among the teachers for sharing of ideas/approaches. We have visited six high schools across Virginia, with teams of CS Ambassadors, a CS faculty member and a CS advisor, and have met approximately 250 students.

Not all College of Engineering (COE) first-year students have selected a major before they come to Blacksburg, so we introduce them to neat computing ideas and experiences. For example, the COE *Student Transition Engineering Program (STEP)* involves about 75 COE first-year students each year. During summer 2011, we were able to expose *STEP* students to two CS modules, one on digital libraries & search and another on cloud computing. Faculty and their graduate students also have presented programs in the COE *Hypatia* and *Galileo* specialty dorms and in Engineering Education first-year courses.

Our department was a founding member of the Center for Women in IT (NCWIT) *Pacesetters* program. This national program seeks to increase the numbers of *Net New Women* in computing across academia and industry. Our goal is to significantly increase the proportion of women CS graduates.

This year we co-organized the VA/DC NCWIT *Aspirations in Computing Award* with faculty from UVA and GMU. NCWIT has run a national Aspirations award for several years, and regional programs like ours are established to recognize and encourage even more young women to choose computing. The department is offering scholarships to any national or VA/DC regional *Aspirations* winner who attends VT as a CS major. We are honored that our national Aspirations award winner, Elena Nadolinski, was invited to the White House during *Computing Education Week 2011*, as a representative of the young women awarded this honor.

We have been fortunate in obtaining industrial grant support for many of these diversity activities, including a NCWIT/Microsoft *Seed Fund* grant and funds from Lockheed Martin, Northrop Grumman, and Google. All of these companies are active members of the *CS Resources Consortium (CSRC)*, our industrial partners program. We also continue to support student attendance at the Grace Hopper Celebration of Women in Computing and the Tapia Conference. Although we are focusing now on increasing our numbers of women in CS, we also need to be actively recruiting minority males and females into CS.

To find out more about the programs mentioned above, please visit the following websites:

www.eng.vt.edu/step

www.ncwit.org/pdf/PacesettersProgram_ExecSumm.pdf

www.ncwit.org/award/award.index.php

<https://awardportal.ncwit.org/comps.state.php?competitionId=73&action=detail>

New Virginia/D.C. Aspirations Award for Computing

The Department of Computer Science at Virginia Tech has joined with George Mason University and the University of Virginia to create a Virginia/D.C. Affiliate program, in conjunction with the National NCWIT (National Center for Women in IT) Aspirations in Computing Award. From the NCWIT website, "the Award for Aspirations in Computing honors young women active and interested in computing and technology. We are looking for the next generation of technical talent. Award winners receive cool prizes, gadgets, scholarships and all girls can join a community of fellow technically-inclined young women." (More information about the Aspirations program can be found at <http://www.ncwit.org/award/award.index.php>.)

Even though this was only our first year, we had 45 applicants for our award. With the help of our applicant reviewers, we selected 10 winners. We are pleased that our top scoring young woman was selected as a national award winner and that we had five national runners up! Each Virginia/D.C. winner will be invited to bring her parents and her sponsoring teacher to an awards luncheon on March 31, 2012 at the Mason Inn in Northern Virginia. At the luncheon, we will recognize each young woman and present her with a trophy and a prize. Each awardee will also receive a matching trophy to take back to her high school, to be placed in her high school's trophy case.

In addition, the CSRC is offering a \$1000 renewable scholarship to any National or Virginia/D.C. regional winner who enrolls in Virginia Tech and declares CS as her major. The CSRC offered this same scholarship to any national award winner last year and we are pleased that one of the winners is now in her first year at Virginia Tech and plans to major in computer science.

How you can help!

For this year, we are still seeking additional financial support for this program. *Many thanks to Google (\$2000) and Northrop Grumman (\$5000) for helping to support this year's event.*

- Your funding can help fund the program itself, student awards, or even student/parent travel grants to the awards program (if needed).
- Your company can underwrite one of the \$1000 renewable scholarships by providing \$3000 for one scholarship.
- We are also seeking prizes for the award winners. Other affiliates have included items from supporting companies, such as various brands of video and digital cameras, iPads, and Vera Bradley purses.

In addition to funding support and providing prizes, you can help next year's program in several ways:

- Help us recruit girls to apply to this program. We are trying to reach as many high school girls in the state of Virginia and the District of Columbia as possible. Applications are accepted from September 15 through October 31. The award program will be March 31, 2012.
- Judging submitted applications. This will happen between early November and early December. *Special thanks to Steve Choquette from IBM for helping to review this year's applications.*

If your company is interested in supporting this program, please get in touch with Libby Bradford as soon as possible.



Regional Women in Computing Conference a Huge Success



On Friday, October 14, 2011, seven Virginia Tech student members of the Association for Women in Computing (AWC) drove to the Tennessee Celebration of Women in Computing, a regional conference located in Pikeville, Tennessee. The first annual conference was held at Tennessee Tech University. Throughout the two days of the conference, our undergraduate and graduate students attended panels, birds of a feather sessions, technical talks, and listened to invited and distinguished speakers. Topics covered ranged from entrepreneurship and robotics to internships and obstacles facing women in computing-related careers.

The invited speaker sessions were a particularly inspiring portion of the conference. Pooja Sankar, who founded Piazza and spoke during the CS@VT Graduate Seminar earlier this semester, gave a talk on entrepreneurship. Erin “Ed” Donahue from Microsoft gave a speech that inspired our students so much that they invited her to give a talk at Virginia Tech on mobile phone apps, which she presented on October 28, 2011.

Our attendees felt that this shorter conference provided a fantastic opportunity to network and reap the benefits of sessions tailored to women in computing without the need to miss a week of classes. Additionally, the smaller size of the conference allowed our students to forge bonds with other attendees by seeing them at multiple events. The bonfire in between days one and two offered a way to get to know experienced researchers and industry workers in an informal setting.

Overall, the Tennessee Celebration of Women in Computing was a success, and the members of AWC look forward to attending this regional conference for years to come.

Article by Lauren Bradel, AWC Public Relations



Elena Nadolinski, Ariel Cohen (AWC President), and Monika Akbar (Grace Hopper Conference Co-Chair) exploring the scenic Falls Creek Falls near the conference site.

CS@VT and AWC well represented at the Grace Hopper Celebration of Women in Computing

The Association for Women in Computing at Virginia Tech (AWC) and the Department of Computer Science at Virginia Tech made a huge impact at this year's national Grace Hopper Celebration of Women in Computing. The conference, held this year in Portland, Oregon, offers female computer scientists the opportunity to network with fellow students, researchers, and professionals, attend technical, academic, and profes-



sional sessions, and present their research to a general audience of computer scientists. As a conference aimed at computer scientists in general, Grace Hopper offers the opportunity for attendees to pick up tips for success in industry or academia. Some of the sessions offered included negotiating in the workplace, developing research proposals, and building personal brands. However, the conference was not limited to these general sessions. Sessions on mobile computing, security, and large-scale computing were just a few of the topics covered.

In addition to attending valuable sessions, Virginia Tech students and alumni ran panels and presented their research during the poster session. Stacy Branham led a panel on time management. Anamary Leal was a member of the panel for this session. Laurian Vega, a recent PhD graduate from Virginia Tech, served on two panels regarding motherhood and maternity leave. Lauren Bradel, Sarah Dotson, Shaimaa Lazem (GHC scholarship winner), Anamary Leal, and Rongrong Wang presented their work at the poster session.

The AWC attendees volunteered their time at Virginia Tech's sponsor booth. As a gold sponsor, Virginia Tech's booth was located right in front of the entrance to the exhibitor and sponsor booth area. Attendees who staffed the booth fielded questions from potential undergraduate and graduate students as well as current PhD students looking for faculty opportunities.

The Grace Hopper Celebration of Women in Computing was started in 1994 in honor of Admiral Grace Murray Hopper and has expanded to include an additional annual conference in India. Next year's Grace Hopper Conference will be located in Baltimore, Maryland.

The CS Department and AWC wish to thank [Freddie Mac](#) and [Northrop Grumman](#) for their generous support. Their financial support helped make this year's trip possible.

Article by Lauren Bradel (AWC Public Relations)

Eeshan Shah, CS undergrad, receives CRA Undergraduate Research Honorable Mention Award for 2012



Computer science student Eeshan Shah, advised by Dr. Eli Tilevich, is the recipient of a CRA Undergraduate Research Honorable Mention Award for 2012. This is the Computer Science Department's third year of having a CS@VT undergraduate being an awardee in this competition. The CRA annual competition recognizes significant undergraduate computing research projects from the US and Canada. This year there are awards for male and female winners, runners-up and finalists (a total of 14 students this year) plus a set of female and male honorable mention awards (total of 47). More information about the program can be found at:

<http://www.cra.org/awards/undergrad/>

Virginia Tech computer science student honored at White House



Elena Nadolinski, of Fairfax, Va., and a freshman at Virginia Tech studying computer science, is one of six young women invited recently to the White House as a winner in the National Center for Women in Information Technology Award for Aspirations in Computing.

This award recognizes young women at the high school level for their computing aspirations and achievements. Nadolinski was attending W. T. Woodson High School when she learned of this honor, but the trip to the White House did not occur until December of 2011.

In high school, Nadolinski was the vice president of Woodson's Computer Science Club, and president of its Robotics Club, serving both groups for three years. While she was president of the latter group, her team placed second internationally in the Botball Robotics Tournament. Another project she undertook, writing a software program in Java, a computer science language,

won her recognition from the Central Intelligence Agency and from George Mason University.

Since she enrolled at Virginia Tech she has joined the Association for Women in Computing. She will work as a cooperative education student in the summer and fall of 2012 with Science Applications International Corporation, an international research and development company at its northern Virginia location.

Nadolinski's visit to the White House coincided with President Obama's recognition of individuals working to recruit and retain women in science, engineering, technology, and mathematics fields and the celebration of Computer Science Education Week.

"We are extremely pleased Elena elected to study computer science at Virginia Tech's College of Engineering. In the past few years we have emphasized the recruitment of high school women into our curriculum. Elena is an example of a great candidate. Hopefully, as organizers of a new Virginia/District of Columbia regional National Center for Women in Information Technology Aspirations Program, with colleagues at the University of Virginia and at George Mason University, we will attract even more women like her," said Barbara Ryder, J. Byron Maupin Professor of Engineering and the computer science department head.

Virginia Tech's Department of Computer Science is a founding member of the National Center for Women and Information Technology Pacesetters program, aimed at increasing the number of women in computing.

Article by Lynn Nystrom (Director, News & External Relations—College of Engineering at VT)

CS@VT participating in Sit With Me: NCWIT campaign to increase women in computing



Dr. Scott McCrickard

Picture courtesy of SitWithMe via Flickr

The National Center for Women in Information Technology (NCWIT) has created a new campaign, entitled "Sit With Me," to encourage more young women to pursue careers in computing. As a member of [NCWIT's Pacesetters](#), CS@VT was encouraged to participate. Dr. Scott McCrickard took a turn sitting in the red "Sit With Me" chair. To hear

Dr. McCrickard describe CS@VT's efforts to increase the number of women in computing, please view the [video](#) on Vimeo.

To read more about the Sit With Me project, please visit the project's [webpage](#).

VT Mobile App Development group develops HokieHelper

The VT Mobile Application Development (MAD) group has announced the release of two new apps – HokieHelper and Expression Guessin'. HokieHelper is available on the Android marketplace and Expression Guessin' on the Windows Phone marketplace.

The MAD group is a stu-

dent-led club founded in the spring of 2011. The group currently has about 25 members who meet every week to work on different applications. MAD meets on Wednesday evenings at 6:00pm in Randolph 110. Please join them to find out more about MAD.

Check out the recently released apps here:

[HokieHelper](#)

[Expression Guessin'](#)



Mail Pilot—Email Reimagined



Senior computer science major Alexander Obenauer and recent biological sciences graduate Josh Milas are hoping to reinvent e-mail. Their new startup, Mail Pilot, was recently featured in the [Collegiate Times](#). Mail Pilot will help users treat their e-mail like a "to do" list. Since the Collegiate

Times article was published, Obenauer and Milas have reached their fundraising goal through Kick-Start. Read [more](#) about their project and the reviews it has received from The New York Times and WIRED.

Spring 2012 CSRC Career Fair



working on a variety of research projects.

Later in the day, over 330 students attended the CSRC Spring Career Fair in the Commonwealth Ballroom of Squires Student Center. The CSRC Spring Career Fair, in its twenty-first year, gave CS majors an opportunity to visit with our industrial partners to discuss internship, co-operative education, and full-time positions. The CSRC is pleased to see the continuing growth of its program, with eighteen new members. The CSRC welcomed the following companies for Spring 2012: AMC Technology, Aspect Security, Bart & Associates, Blackbaud, Breakaway Technologies, CapTech Consulting, Gilfus Education Group, GRB, Insurance Institute for Highway Safety, Lowe's Companies, Next Century Corporation, Perfect Sense Digital, Public Safety Systems Incorporated, Royall & Company, The SI, The Washington Post, Verisign, and Verizon. The CSRC also welcomed back Chesapeake Technology International and SWIFT. It is encouraging to note that despite the challenging economic times, membership in the CSRC continues to grow.

Please see our [slideshow](#) for pictures of the event.

CSRC Makes \$50K Donation to Scholarship Fund



In the winter of 2007/2008, the CSRC endowed the Department of Computer Science's first general scholarship fund. The original \$50,000 endowment came directly from CSRC from the funding provided by the companies of the CSRC. The "Investment in Excellence" scholarship fund was established in recognition of

On Monday, February 13, the Computer Science Resources Consortium spring luncheon was held in Owens Banquet Hall at Virginia Tech, followed by the CSRC Spring Career Fair later that evening. At the luncheon, company representatives, faculty, and invited students heard presentations from undergraduate and graduate students

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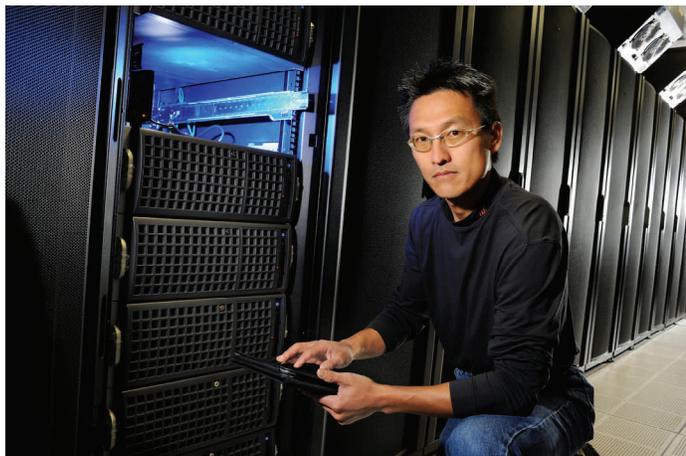
We want to hear from you! Please send us news about yourself, your current employment, family, or anything else interesting in your life. Please also send pictures to go with your announcements.

For further information and to submit your information, please contact Libby Bradford, Director of External Relations and Undergraduate Studies at bradford@vt.edu.



the close bond between the CSRC and CS@VT. Each year, we make a donation to the scholarship fund to help increase the principal of the endowment fund. Due to the success of the CSRC and its current 79 companies, this year's donation of \$50,000 was the largest yet.

Wu Feng unveils HokieSpeed, a new powerful supercomputer for the masses



Virginia Tech crashed the supercomputing arena in 2003 with System X, a machine that placed the university among the world's top computational research facilities. Now comes HokieSpeed, a new supercomputer that is up to 22 times faster and yet a quarter of the size of X, boasting a single-precision peak of 455 teraflops, or 455 trillion operations per second, and a double-precision peak of 240 teraflops, or 240 trillion operations per second.

That's enough computational capability to place HokieSpeed at No. 96 on the most recent Top500 List, the industry-standard ranking of the world's 500 fastest supercomputers. More intriguing

is HokieSpeed's energy efficiency, which ranks it at No. 11 in the world on the November 2011 Green500 List, a compilation of supercomputers that excel at using less energy to do more. On the Green500 List, HokieSpeed is the highest-ranked commodity supercomputer in the United States.

HokieSpeed contains 209 nodes. Each node contains two 2.40-gigahertz Intel Xeon E5645 6-core central processing units and two NVIDIA M2050/C2050 448-core graphics processor units, or GPUs, which reside on a Supermicro 2026GT0TRF motherboard. That gives HokieSpeed more than 2,500 central processing unit cores and more than 185,000 graphics processor unit cores to compute with.

"HokieSpeed is a versatile heterogeneous supercomputing instrument, where each compute node consists of energy-efficient central-processing units and high-end graphics-processing units," said Wu Feng, associate professor in the computer science department. "This instrument will empower faculty, students, and staff across disciplines to tackle problems previously viewed as intractable or that required heroic efforts and significant domain-specific expertise to solve."

HokieSpeed was built for \$1.4 million, a small fraction of the Top500's current No. 1 supercomputer, the K Computer from Japan. The majority of funding for HokieSpeed came from a \$2 million National Science Foundation Major Research Instrumentation grant.

Excerpted from Steven Mackay's original article, College of Engineering.

Press about HokieSpeed:

[Virginia Tech's Wu Feng Unveils HokieSpeed, a New Powerful Supercomputer for the Masses](#), from NSF

[Prof Promises Supercomputer on Every Desktop](#), from WIRED

[Virginia Tech supercomputer aims to accelerate research](#), from WSLs.com

[VT nears completion of HokieSpeed, world's most powerful supercomputer](#), from engadget

[Virginia Tech's HokieSpeed super computer packs over 2500 central processing cores](#), HotHardware

[Virginia Tech unveils HokieSpeed; supercomputer for the masses](#), EE Times

[Dr. Wu Feng discusses HokieSpeed](#), Vimeo

[Virginia Tech is Home to One of the World's Fastest Computers](#), from NPR

Computer Science group celebrates Chinese New Year with drumming

Under the direction of [Dr. Francis Quek](#), a group of computer science students participated in an NSF funded drummer-game.

The group was the opening performance for the Lunar New Year celebrations hosted by the Association of Chinese Scholars (ACSS). Dr. Quek describes the performance and the project: "We were the opening item, and I understand we were a smash hit. The performance was put up by the Chinese Performing Arts Group (CPAG) of which I am faculty advisor, and Sharon Chu is current

student president. We combined elements from my Physical Computing in CS (CS 6204) class to produce a light show that illuminated a dragon (year of the dragon) that breathed fire in clouds amidst lightning and thunder. This class is supported by another grant from NSF with which we built the Rapid Prototyping Lab. Three students from CS: Sharon Chu, Bert Scerbo, and Patrick To (undergrad CS) participated in the drumming, dance and Wushu presentation, along with Jessica Zhang (ISE, student of Thurmon Lockhart). We had participation from the Japanese Cultural Association (Taiko drumming) and the

Chinese American Society Lion Dance Group. This is in the great tradition of academic research participating with student organizations in the arts to produce an outreach multi-cultural event. The CS department, CHCI, and NSF were acknowledged in the presentation." See the [performance](#) on YouTube.

Dr. Quek hopes that the drummer-game project "will become a featured item in some future technology-art event on campus with the new Institute for Creativity, Arts, and Technology (ICAT)."

Virginia Tech researchers win Digging into Data Challenge

Dr. Naren Ramakrishnan, professor and associate department head, and a group of faculty and graduate researchers from Virginia Tech and the University of Toronto were recently awarded funding through the "[Digging into Data Challenge](#)." This challenge is "an international funding competition designed to promote innovative humanities and social science research using techniques of large scale data analysis. 'An Epidemiology of Information: Data Mining the 1918 Influenza Pandemic' is one of 14 projects approved for funding from the National Endowment for the Humanities and the Social Sciences and Humanities Research Council of Canada." The funding from this highly selective award will be used to do text mining over newspapers from the 1910s-1920s. This project is also one of two notables in the NEH FY 2013 budget request.



Dr. Naren Ramakrishnan

To read more about this award, please see [the article](#) by Jean Elliott on the VT News Homepage.

Institute of Creativity, Arts, and Technology director's research wins international award



Dr. Ben Knapp

[Dr. Ben Knapp](#), professor of computer science and director of the [Institute for Creativity, Arts and Technology](#) received the best presentation award at the 2011 International Computer Music Conference.

"R. Benjamin Knapp, founding director of the institute and professor in the College of

Engineering's Department of Computer Science, focuses his research on human-computer interaction. Knapp and his colleagues work to develop and design user-interfaces and software that allow both composers and performers to augment the physical control of a musical instrument with a direct physiological interface. His paper, 'The measurement of performer and audience emo-

tional state as a new means of computer music interaction: A performance case study' with co-author Eric Lyon from the Sonic Arts Research Centre at Queen's University, was voted best paper presentation by members of the conference."

For the [complete article](#), please see the posting by Susan Bland on the VT News Homepage.

How You Can Help CS@VT

The generosity of our alumni enables our department to fund many special activities. Donations, matching gifts, gifts in kind and planned gifts are only a few of the many ways that you can give to the department. If you already are a regular contributor to the Department of Computer Science, we offer our sincere thanks, and ask for your continued support. If you are not, we invite you to become part of the future of our department by making your contribution today.

To ensure that your gift reaches our department, you should select the appropriate account for your intended gift. From the Giving To VT page (www.givingto.vt.edu), please click to make an “immediate impact” and then click the secure online form. In the section entitled “Gift Information,” please select “Other Designation” and type in the CS account name and fund number to which you would like to give.

See below for CS funds and scholarships.

General CS Fund

To help fund a variety of activities, events and initiatives, please make a donation to the CS Department.

Please type “Department of Computer Science -- 881337.”

George W. Gorsline Scholarship

The scholarship was endowed by many grateful alumni to honor the department’s first department head, affectionately known as “Dr. G” to his students. He was the champion of the “underdogs,” those students who faced unique challenges, but persevered and overcame obstacles to complete a degree in CS. This scholarship is awarded to a rising senior who has made the biggest turnaround from freshman year.

To make a donation to this scholarship, please type “George Gorsline Scholarship—883979.”

CGI Scholarship

After the tragedy of April 16, 2007, CGI and its employees wanted to create a scholarship to provide support to students studying computer science at Virginia Tech.

To make a donation to this scholarship, please type “CGI Computer Science Scholarship—860185.”

You can see if your company will match your gift to make it even easier to provide scholarship support to CS@VT students.

See <http://www.matchinggifts.com/VaTech/>

When you make a donation to CS@VT, please send e-mail to donations@cs.vt.edu, so that we can appropriately and more quickly acknowledge your gift.

Investment in Excellence Scholarship

This scholarship fund was endowed in 2007 as the CS Department’s first general scholarship fund. Recipients of this scholarship are among the department’s best and brightest students.

To make a donation to this scholarship, please type “Investment in Excellence Scholarship— 860199.”

Anne and George Gorsline Scholarship

This scholarship was created by alumni after the department’s 30th anniversary celebration. It was created to help encourage young women to continue their studies in CS, in memory of Dr. Gorsline and to honor his wife, Anne.

To make a donation to this scholarship, please type “Anne and George Gorsline Scholarship—885589.”

Griffith-Strader Christian Scholarship

This scholarship was created by Mr. Stephen Strader to help support continuing students from the state of Virginia.

To make a donation to this scholarship, please type “Griffith-Strader Christian Endowed Scholarship—885518.”

Many thanks to all of our current CSRC members:

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 AOL
 Aspect Security
 Assured Information Security
 Bart & Associates
 BIT Systems
 Blackbaud
 Bloomberg
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 GCE Federal
 General Dynamics (AIS)
 Genworth Financial
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 IMC Financial Markets
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