Voice

Promoting CS

Inside This Issue

IN THE NEXT ISSUE OF THE VOICE

Your CSTA Membership

Addressing Equity Issues in CS Education

A Call to Action

Chris Stephenson

IN AN EFFORT TO FOCUS COMMUNITY attention on improving the engagement of underrepresented students in computer science (CS), the Computer Science Teachers Association (CSTA) has released an important new report that calls for all stakeholders to become more involved in addressing key equity issues.

The report, *Addressing Core Equity Issues in K–12 Computer Science Education: Identifying Barriers and Sharing Strategies*, stems from a town hall and workshop held at the 2009 Grace Hopper Celebration of Women in Computing and was co-authored by CSTA, the Anita Borg Institute (ABI), and the University of Arizona.

Even while CS is critical to national competitiveness, CS teachers are suffering from an endemic lack of resources and a lack of support from their school districts and state governments. The report shows that K–12 CS education in the U.S. is in a state of crisis. It focuses on the critical absence of women and underrepresented minority students from computing at the K–12 level and provides an in-depth look at the barriers currently existing in our educational system.

"This report is a clarion call to all of the stakeholders who think these problems are solved," said Chris Stephenson, executive director of CSTA and co-author of the report. "It provides practical, achievable suggestions for working together to ensure that all students have the opportuni-

ties that rigorous computing provides."

The report also provides recommendations for solutions to address core equity issues and highlights the need for engagement and action by a broad cross-section of stakeholders, including:

- Address the lack of women and underrepresented minorities through proactive efforts including mentoring students to build self-confidence.
- Ensure that all school decision makers (administrators, guidance counselors, and teachers) are encouraging girls and minority students to take rigorous CS courses.
- Engage industry representatives with K–12 teachers to provide an accurate and up-to-date picture of the computational thinking skills that a diverse body of students needs to engage successfully in the workforce.

"This report provides an in-depth look at the barriers currently existing in our educational system that are negatively impacting the recruitment of girls and underrepresented minorities in CS," said Dr. Caroline Simard, vice president of research and executive programs for the ABI and co-author of the report.

According to Stephenson, the 2009 events at the Grace Hopper Celebration of Women that led to this report are just the beginning of a new relationship between CSTA and ABI that both organizations believe will provide

Executive Officers

Michelle Hutton
President
mfh@pobox.com

Stephen Cooper
Vice-President
scooper@sju.edu

Staff

Dr. Chris Stephenson
CSTA Executive Director
Phone: 1-800-401-1799
Fax: 1-541-687-1840
cstephenson@csta.acm.org

Pat Phillips
Editor
Phone: 1-608-436-3050
Fax: 1-928-855-4258
cstapubs@csta.acm.org

Committees

Certification
cstacertification@csta.acm.org

Curriculum
cstacurriculum@csta.acm.org

Grants
cstagrants@csta.acm.org

International
cstainternational@csta.acm.org

Membership
cstahelp@csta.acm.org

Professional Development
cstapd@csta.acm.org

Research
cstaresearch@csta.acm.org

EQUITY ISSUES IN CS EDUCATION
continued from page 1

important focus on and energy for improving K–12 CS education. CSTA and ABI are already working to address the issues begun in this report at the 2010 Grace Hopper Celebration of Women in Computing with community working sessions and another workshop for K–12 teachers that will focus on how to better engage all students in CS education.

The report, underwritten by Google, IBM, the National Science Foundation, and the Motorola Foundation, is available from the CSTA website at *csta.acm.org/Communications/sub/Documents.html*.

Computer Science Outreach

Meeting the Kids Half-way

Judy Robertson

LAST SUMMER WE RAN workshops for teenagers at Heriot-Watt University in Edinburgh, UK, and and while galloping between labs it occurred to me that some interesting things were going on.

A bit about the workshops first: the summer schools were both for 17–18 year olds, both were set up to encourage young people to study computer science (CS), and both involved virtual world building. One of the workshops, on computer game making using the Neverwinter Nights 2 toolset, lasted for just two hours, and the other was the final presentation session of an eight week project on Second Life programming. Both of them went very well indeed from the point of view of introducing young people to the fun aspects of CS.

Whether they pay off in terms of recruiting people to study our degree courses in CS remains to be seen. But you have to start somewhere, right? Here are some things I noticed which might be useful to others who are interested in schools' outreach and recruitment.

- There was a relaxed atmosphere. The young people were joking around and enjoying themselves. Importantly, [they were] laughing with the staff rather than at them. Having some hand-picked students who I knew to be friendly and approachable really helped with this.

- The young people were doing stuff, rather than listening to me drone on. The games workshop kids spent most of their time exploring the software with minimal time spent in demos. The Second Life project groups were presenting their projects and giving demos while their classmates assessed their work. They seemed to be taking the assessment task seriously and responsibly. And I tell you what: it really makes them ask sensible questions at the end of each presentation. This is a contrast to the usual set up in class where students sit like turnips when you ask "are there any questions?"

- Both the workshops involved creative tasks where the teenagers chose for themselves what to build. This does have the drawback of revealing my

ignorance of the latest pop culture fads but I do know what South Park is at least. And armies of magical badgers are a timeless classic, I always find. Seriously, though, this is very important. If you want people to take pride in their work, they need to take some ownership of it. For that to happen, they need to have the choice to work on personally meaningful projects and this often means embracing popular culture in a way which we (as grown-up computer scientists) might find baffling, or intensely irritating.

It is probably now apparent that my view on CS education diverges from some of the viewpoints which have been published in technical journals in the past few months. Some of these articles argue passionately that we should be teaching particular topics to address a skills gap in the current labor market. This may be so, but we need to make sure there are any CS graduates in four years' time, never mind experts in complex systems or other advanced areas. We simply can't get enough people interested in CS just now, and many universities have problems with retaining students past the first year.

Rather than pushing our agenda of what we think is important and berating young people that they ought to find it interesting, we need to meet them halfway.

Rather than pushing our agenda of what we think is important and berating young people that they ought to find it interesting, we need to meet them halfway. We need to start from their interests, and then help them to see how CS knowledge can help them achieve something which appeals to them. As in: "You're interested in alcohol and The Simpsons. Ideal. How about you make a 3-D Homer Simpson whose arm can move up and down to drink beer?" At that point you can start explaining the necessary programming and math concepts to do the rotation in 3D space (it's not as easy as you might

think. Try it, but not after a few pints).

Or even just admire what they have figured out for themselves. "You really managed to make a script where an excessively large pig kills some piglets to make the player a bacon sandwich? Marvellous! Did you know that creating and disposing

Once you have them hooked on programming, or signed up on your degree programme you can build on it.

of objects is something you do a lot when you're programming? Let me tell you all about it".

Once you have them hooked on programming, or signed up on your degree programme you can build on it. I'm not saying we don't need to teach sober, serious and worthy aspects of CS. Of course we do. I'm just saying we don't need to push it immediately. It's kind of like when you have a new boyfriend and you know you have to introduce him to your weird family. Do you take him to meet the mad uncle with the scary eyebrows straight off? No, you introduce him to a friendly cousin who will make him feel at home and has something in common with him. (Note: I'm talking about the metaphorical eyebrows of computational complexity here, not the actual facial hair of my esteemed colleagues.)

What I'm suggesting is not new—there are pockets of excellent outreach work with kids in various parts of the world. I think it's time we tried more of it, even though it is time consuming. After all, we know we can recruit hard core computer scientists to our degrees with our current tactics (you know—the people who are born with silver linux kernels in their mouths). But given there aren't that many of them, it's well worth the effort to reach out to the normal population. Unleash the inner computer scientists in everyone!

Reprinted with permission from *cacm.acm. org/blogs/blog-cacm/35583-computer-science-outreach-meeting-the-kids-half-way.*

Attracting Students and Preserving Cultural Heritage

Coalition for American Indians in Computing

Guy-Alain Amoussou

THE BROADENING PARTICIPATION in Computing (BPC) Coalition for American Indians in Computing (CAIC) at Humboldt State University (HSU) program grew from an initial realization that the University, which was built on American Indian land, had no representation of American Indians (AI) in its computing department student body. Additionally it was learned from a 2006 survey of northern California tribal needs that it was difficult to fill computer science (CS), computer information system (CIS), and information technology positions—and even more difficult to find AI with the required skills and experience.

The CAIC program intends to meet broad-based Tribal needs for highly skilled AI technologists. To achieve that goal, we have focused on increasing the number of AI students receiving degrees in CS and CIS at HSU.

The pillar of our strategic intervention has been the organization of a two-week residential summer camp at HSU in Arcata, CA. Over the past three years, the residential summer camps have included self-identified Native American students from high school and community colleges from around the country. After the program's first summer, we very quickly learned that an essential element that matters to AI students is their culture and language preservation. Our goal has since shifted from just attracting AI students in computing, to helping these same students learn how they can contribute to preserving their cultural heritage and languages by using computing.

During the residential camp where students experience college life, the daily schedule is organized around four types of activities: cultural/social, instructional, college preparation, and physical. Some of these activities include: a daily blessing led by a tribal leader; instruction in computer gaming (JavaScript/DrScheme), geographic information systems, digital media (Photoshop), and computerized Native language preservation (ACORNS); preparing for college by learning about writing a personal statement, living on a budget, career exploration, researching scholarships, writing scholarship letters; conversations and presentations on drug and alcohol prevention; tribal leader-led learning about local native history, medicinal plants, beadwork, diet and wellness, and sports such as trips to the beach, river rafting, or kayaking in Indian country. There are also weekly student presentations that invite participants to reflect on their camp experience. The life of students on campus is supplemented by live-in Native American college-aged peer mentors from HSU, and additional participation of tribal leaders from local communities in a wide array of activities and presentations.

> During the residential camp where students experience college life, the daily schedule is organized around four types of activities: cultural/social, instructional, college preparation, and physical.

Over the past three years, the program has involved one hundred students from ten states, representing over twenty-five tribal groups. Students report very positive experiences that they have even referred to as "life changing." The success is the result of collaboration with key persons in tribal communities and offices at HSU, including the Center for Indian Community Development (CICD), the Indian Teacher & Educational Personnel Program (ITEPP), and the Indian Natural Resource, Science and Engineering Program (INRSEP).

In our final year of our funding, we have paid particular attention to recruiting rising juniors and seniors from local tribes who are truly interested in studying

computing at the college level. Transcripts and scholastic references were requested in the admissions process so that CAIC teachers could gear classes to the appropriate level of math and science readiness.

The project was funded by the National Science Foundation in 2007 for three years. This year represents a one-year extension of the program. As for our future, we are seeking funding to continue building upon the foundation that has been laid. Ann Burroughs is the current Principle Investigator and Janet Sclar is the Project Coordinator.

The Bootstrap Project

Jack Clay

IMAGINE A ROOM FULL OF twelve and thirteen year old students buzzing with excitement as they work to discover how to determine the next set of coordinates needed to place a moving image on a screen; as, on another occasion they work in teams to write functions using the distance formula to determine if one image

> ### The Bootstrap curriculum can be implemented as an after-school program meeting one or more times per week.

is touching another; and, towards the end of the program, as each team combines their ideas into a video game. These images of young students fully engaged in acquiring algebraic and computer science (CS) skills are the result of the Bootstrap curriculum.

Bootstrap is designed to teach fundamental algebraic concepts through a computer programming paradigm. While other initiatives attract younger students to CS through storytelling with images, Bootstrap's focus is on learning and using algebra as the vehicle for creating images, animations, and ultimately a video game.

Along with its algebraic focus, Bootstrap is aligned with a number of learning standards, and lessons cover mathematical topics ranging from simple arithmetic expressions to the Pythagorean Theorem, discrete logic, function composition, and the distance formula. The program is based on cognitive science research and best practices for improving critical thinking and problem solving. And, the curriculum has been shown to work for students in a broad range of settings. It

has been successfully implemented in some very challenging and economically disadvantaged schools in cities such as Boston, Austin, San Francisco, and New York City.

CS topics include data types, functions, Boolean operations, conditional branching, and for advanced students, may be expanded to include data structures and event handling.

A major component of the Bootstrap methodology is the Design Recipe. Students learn to follow a series of steps leading them to analyze the parameters of a given problem, to develop appropriate tests for the expected results of the solution, and to use these steps to create a solution that they are confident will solve the problem.

The Bootstrap curriculum can be implemented as an after-school program meeting one or more times per week. It can also be integrated into the school day course offerings, offered as a weekend enrichment opportunity, a mini course, or even an intense week-long summer program.

All components of the Bootstrap curriculum are available for free download. Materials include detailed lesson plans, student materials, example and supporting program files, and a development environment specifically designed with friendly and informative feedback messages for beginning-level programming. The program's developers are very supportive and are willing to work directly with teachers who would like to implement a Bootstrap program in their schools.

To learn more about Bootstrap or to download materials visit the Bootstrap website at *www.bootstrapworld.org*.

Meet the Authors

Guy-Alain Amoussou
National Science Foundation
Guy-Alain is currently a CS Program Officer in the Division of Undergraduate Education (DUE) at the NSF. As a diversity advocate, Dr Amoussou has initiated and led recruitment efforts of Native Americans for his department at Humboldt State University.

Mark Breslav
Breslav Public Relations, NY
Marc has managed an environmental public relations and marketing firm since 1983 and was the founder and a faculty of the former Business and the Environment continuing education certificate program at NY University.

Jack Clay
Educator, Rutland, VT
Jack currently teaches CS at Rutland HS but has taught a variety of CS topics in a variety of locations from Switzerland to Ecuador. He has used the Bootstrap curriculum with both middle and high school students.

Shyno Chacko Pandeya
WGBH Educational Foundation
Shyno is the coordinator for the New Image of Computing initiative (NIC) at WGBH. NIC works to improve the image of CS among college-bound high school girls.

Judy Robertson
Heriot-Watt University Edinburgh, UK
Judy Robertson is a senior lecturer in CS. She is interested in technology enhanced learning for all ages of learners and particularly the use of virtual worlds and games in education.

Chris Stephenson
Executive Director, CSTA
Chris Stephenson is a long-time advocate for K–12 CS education. She is the author of several textbooks, white papers, and scholarly articles on CS and adaptive technologies.

Managing School E-waste

Part Two: Six Steps to Maximizing Income

Marc Breslav

Editor's note: *This is part 2 in the two-part series on managing school electronic waste. See the May issue of the Voice (csta.acm.org/Communications/sub/CSTAVoice.html) for details on the growing crisis of discarding e-waste.*

Schools are discarding a goldmine of electronic equipment which could instead generate "green" income and a supply of restored equipment for reuse for those less fortunate. Richard Sommers, president of the IT Asset Management Group, recommends six steps to maximize returns from electronics that would otherwise be discarded.

1. Centralize and track

An inventory (preferably at the district or system level) provides a comprehensive sense of all the discard equipment in the district. The goal is to centralize the inventory data at the largest administrative scale. This could be a student project, or some companies, after prequalifying what they are likely to find, may send someone to your school to help. E-waste processing firms are interested in quantity as well as quality. To keep the inventory up to date, district or system purchasing officials could require that any requisition for electronics indicate if a used machine is being replaced, and require its delivery to a central, temporary storage facility.

2. Demand one-stop shopping

Research the companies that will purchase your entire discard inventory. Depending on what you have, they may not be interested. For example, if much of it is not reusable and only has value as recyclables, that value may not warrant their involvement.

3. Prioritize sustainability

Can the company follow each component recyclable, say lead, through any recycling subcontractors to a specific smelter? Do the company and all of its subcontractors follow ethical and sustainable recycling practices? Several competing E-waste certifications and related standards are now just beginning to be offered. The certifications include:

- The e-Stewards of the non-profit Basel Action Network
- U.S. EPA's R2 practice standard
- The RIOS standard associated with the trade association ISRI (Institute of Scrap Recycling Industries).

There is also an international environmental standard known as ISO-14001, which, while it can stand alone, is part of some of the other certifications. During the flux seek e-waste reuse companies who use only recycling subcontractors with at least one of the certifications or standards.

4. Consider data destruction

If you are not wiping hard drives yourself, how will the company deal with any data security issues? Will they, at their own processing facility, overwrite discs three to seven times with a multi-pass software wipe? This method is preferable, as it allows the drive to be reused. Drives can by degaussed or shredded, but this reduces the price paid for such units.

Find companies which are NAID-certified (National Association for Information Destruction). Certification is awarded annually, with recurring, independent audits by Certified Protection Professionals (CPP).

Companies should also state that they follow DoD 5220.22-M specifications. This establishes the standard procedures for government contractors handling classified information, going beyond data sanitization matters.

5. Offer the material to multiple parties

Offer the material to more than one of the vetted companies, but make sure the responses or bids you receive are apples to apples. Will they pick up, and do so without charge? Will they take all e-waste, even the gear that cannot be reused, but must be recycled? They should specify what will be reused, what will be recycled, and the level of data destruction. What other documentation is needed to satisfy your institution's sustainability policy? All these and other details should be confirmed in a letter of agreement.

6. Supervise the pick-up

Be present at the pickup. Some firms say they will take everything, yet end up picking through the material once onsite. They take the items that can be reused, and leave recyclable items of little or no value to them.

Reach the IT Asset Management Group at *www.itamg.com*.

Promoting CS Careers

Judging a Career by its Cover

Shyno Chacko Pandeya

For just a moment think about popular medical television shows. The characters are smart, sexy, and do noble work caring for sick people and saving lives. Since Richard Chamberlain first melted hearts as Dr. Kildare in 1961, television has been a public relations boon for the medical profession. Not only do TV doctors look good, but they lead interesting lives also. With this type of marketing, who wouldn't consider medicine as a potential career choice?

Of course, what the television dramas don't show is the hard work it takes to become a doctor. Medicine is a sought-after career in part because young people have a positive image of the field. They understand the benefits of being a doctor first; and because of that, are willing to put in the hard work to become one.

Few professions need a "Dr. McDreamy" of *Grey's Anatomy* more than computer science (CS). Similar to the field of medicine, CS has a profound impact on just about every aspect of human endeavor. Computer scientists create tools to express creativity and invent the future. The problem is that most young people don't know this—especially young women.

Dot Diva is out to change the image of CS among college-bound high school girls. This project not only reaches the girls directly through the website (www.dotdiva.org), but also offers resources for individuals and groups working to encourage college-bound high school girls to consider CS as an undergraduate major and career choice.

The Dot Diva initiative is built upon the results of a nation-wide survey of high school girls. The results were clear: the girls want careers that involve creativity, collaboration with others, and that make a difference in the world. Sadly, none of the girls associated those characteristics with CS.

But Dot Diva is changing that. Using market-tested images and messages, Dot Diva is focusing on the exciting career possibilities available in the field of CS and showcasing young women who followed their passion to make the world a better place with CS. Spotlights include:

- Developing a "smart wheelchair" to improve the quality of life for people who are disabled
- Designing handheld devices that can diagnose diseases in regions of the world without hospitals
- Creating a virtual fashion show with interactive holograms to launch a new clothing line

A collection of free resources for teachers and parents is under development. The collection will include downloadable posters, presentations, brochures, college guides, and research information, as well as real-world images of young women in a variety of computing careers ideal for use in your own promotional materials. Resources will include:

- What Girls Want From Their Careers
- Top 10 Reasons Computing is a Great Career
- How to Talk to Girls About Computing
- Summer Camps, Contests, and Other Opportunities
- Support Organizations for Women in Computing

The message that Dot Diva is sending to students is that studying CS opens doors and leads to exciting career opportunities by creating tools can be used to do wonderful and important things. Send your ideas for useful resources to *dotdiva@wgbh.org*.

College Connection

Virginia Tech

Editor's note: *This dialog with Dr. Cal Ribbens, Associate Department Head for Undergraduate Studies at Virginia Polytechnic Institute and State University (Virginia Tech), is a continuation of our series of interviews with CSTA institutional members. Please share with your students these details about the CS programs at Virginia Tech.*

Virginia Tech, with an enrollment of over 30,000 students, is a public land-grant university located in Blacksburg, VA. The Department of Computer Science (CS) offers bachelors, masters, and doctoral degrees in CS (*www.cs.vt.edu*)

CSTA: What draws students to your program and what keeps them there?
Ribbens: Students choose to study at Virginia Tech (VT) for a variety of reasons. Many are drawn to its state-of-the-art facilities and a wide range of courses with a good student/faculty ratio taught by 35 highly-qualified faculty members. VT is an affordable, highly-ranked university consistently listed in various "best-value" rankings, and the College of Engineering undergraduate program is currently ranked 14th in the U.S. Over 350 undergraduate CS majors value the many opportunities to be involved in undergraduate research and extensive interaction with companies who recruit VT graduates.

CSTA: What skills can students acquire before college that will help them succeed in your program?
Ribbens: A strong foundation in mathematics is important. A high school CS class is helpful, but not presumed.

CSTA: Tell us about innovative majors or programs of study at VT.
Ribbens: In addition to more traditional courses of study, VT offers optional tracks in Human Computer Interaction; Knowledge, Information and Data; Media/Creative Computing; Scientific Computing; and Systems and Networking.

CSTA: What cool careers are VT graduates prepared for?
Ribbens: VT graduates go on to careers in an extremely wide range of well-known companies. Graduates have accepted opportunities in consulting, finance, entertainment, education, energy, government, security and more. Over 30 companies regularly attend CS job fairs at VT.

CSTA: What distinguishes VT and its program from others?
Ribbens: Vigorous learning environments in human-computer interaction, high-end systems, computational biology, and bioinformatics, as well as extensive opportunities to get involved in undergraduate research projects and summer internships sets VT apart.

CSTA: Tell us a bit about the social environment of the CS program.
Ribbens: Students can select from a wide range of social, intellectual, and service organizations. A large undergraduate learning center provides space for CS students to work on group projects and gather informally.

CSTA: What unique programs are in place at VT to increase the diversity of the CS student population?
Ribbens: The Department supports a very active chapter of the Association for Women in Computing. Approximately ten VT students attend the Grace Hopper Celebration of Women in Computing. In addition, the College of Engineering, through its Center for the Enhancement of Engineering Diversity (CEED), supports many activities to encourage and support students from diverse backgrounds. Professor Manuel Pérez-Quiñones is Chair-Elect of the Coalition to Diversify Computing (*www.cdc-computing.org*).

SHOW ME THE NUMBERS

Trends in U.S. Female Undergraduate CS & IT Degree Recipients

2008

Female undergraduate degree recipients (all fields)	57%
Recipients in computer & information sciences	18%
CS & IS recipients from major research universities	12%

1985

Recipients in computer & information sciences	37%

2000 to 2008

Decline of incoming undergraduate women interested in majoring in CS	79%

Source: *www.ncwit.org/pdf/BytheNumbers09.pdf*

CSTA Members in the News:
Video Recorder Winners

CSTA congratulates **Deborah Gillian** of *Alma J. Brown Elementary School (LA)* and **Elaine Adams** of *Hollidaysburg Area Sr. High School (PA)* both of whom won a Flip® video recorder for their participation in the CSTA Membership Satisfaction survey.

MARK YOUR CALENDAR

Project GUTS / Supercomputing Challenge Summer Teacher Institute
July 11–24, 2010 in Socorro, New Mexico
challenge.nm.org/STI

2010 High School Research Program
July 11–30, 2010 in Little Rock, Arkansas
technologize.ualr.edu/?page_id=79

SuperQuest Southern Oregon
July 12–16, 2010 in Klamath Falls, Oregon
www.techstart.org/superquest/superquest-oit

CS & IT Symposium
July 13, 2010 at Google Headquarters,
Mountain View, California
www.csitsymposium.org

Carnegie Mellon University CS4HS Summer Workshop 2010
July 26–28, 2010 in Pittsburgh, Pennsylvania
www.cs.cmu.edu/cs4hs/summer10

African–American Women in Computer Science Scholarship
August 1, 2010 deadline
www.cis.famu.edu/~aawcs

SuperQuest Summer Institute
August 2–6, 2010 in Corvallis, Oregon
www.techstart.org/cs4hs

Grace Hopper Celebration of Women in Computing
September 28–October 2, 2010 in Atlanta, Georgia
gracehopper.org/2010

Consortium for Computing Sciences in Colleges (CCSC: Midwest)
September 24–25, 2010 in Franklin, Indiana
www.ccsc.org/midwest/Conference

SuperQuest Fall Conference
October 8, 2010 in Hillsboro Oregon
www.techstart.org/superquest/superquest2010

Consortium for Computing Sciences in Colleges (CCSC: Northwestern)
October 8–9, 2010, 2010 in Newberg, Oregon
www.ccsc.org/northwest

USA Science & Engineering Festival & Expo
October 10–24, 2010 in Washington, D.C.
Expo on the National Mall October 23–24
www.usasciencefestival.org

Consortium for Computing Sciences in Colleges (CCSC: Rocky Mountain)
October 15–16, 2010 in Fort Collins, Colorado
www.ccsc.org/rockymt

Consortium for Computing Sciences in Colleges (CCSC: Eastern)
October 15–16, 2010 in Huntingdon, Pennsylvania
projects.juniata.edu/ccsce10/index.shtml

Consortium for Computing Sciences in Colleges (CCSC: Southeastern)
November 12–13, 2010 in Atlanta, Georgia
cs.furman.edu/ccscse

Computer Science Education Week
December 5–11, 2010 in your school
www.csedweek.org

RESOURCES

Here's more information on topics covered in this issue of the *CSTA Voice*.

Page 1: Addressing Core Equity Issues in K–12 Computer Science Education *csta.acm.org/Communications/sub/Documents.html*
Page 1: Grace Hopper Celebration of Women in Computing *gracehopper.org/2010*
Page 1: Anita Borg Institute (ABI) *anitaborg.org*
Page 1: University of Arizona *www.arizona.edu*
Page 2: Heriot-Watt University *www.hw.ac.uk*
Page 2: Neverwinter Nights 2 *www.nwn2.com*
Page 2: Second Life *secondlife.com*
Page 2: Meeting the Kids Half-way *cacm.acm.org/blogs/blog-cacm/35583-computer-science-outreach-meeting-the-kids-half-way*
Page 4: Humboldt State University *www.humboldt.edu*
Page 4: Center for Indian Community Development (CICD) *www.humboldt.edu/cicd*
Page 4: Indian Natural Resource, Science and Engineering Program (INRSEP) *www.humboldt.edu/~inrsep*
Page 4: CSTA Resources *csta.acm.org/Resources/sub/Careers.html*
Page 5: Bootstrap *www.bootstrapworld.org*
Page 6: IT Asset Management Group *www.itamg.com*
Page 6: National Association for Information Destruction *www.naidonline.org*
Page 6: Dot Diva *www.dotdiva.org*
Page 7: Virginia Polytechnic Institute and State University (Virginia Tech) *www.cs.vt.edu*
Page 7: The Coalition to Diversify Computing (CDC) *www.cdc-computing.org*
Page 7: National Center for Women in Technology (NCWIT) *www.ncwit.org*