



Voice

The Voice of K–12 Computer Science Education and its Educators

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A Call to Action

Debra Richardson, Ruthe Farmer, Cameron Wilson

CSEdWEEK 2011 (December 4–10) is your opportunity to raise awareness about the societal impact of computing, the richness of computing careers, and the critical need for computer science (CS) education. This is your call to action to inspire students about CS, to employ new and better ways to engage students, and communicate with the public and parents about the need for and value of CS education.

Start now! Get creative! Think outside the box! Don't forget to include parents in your plans for the events and activities during CSEdWeek 2011.

The best place to start is the CSEdWeek website (www.csedweek.org) where you can find inspiration and resources. View the events and activities pledged last year and tap into the wide variety of resources available to showcase computing and CS education. You will also find more ideas in this issue of the *Voice*. Pledge your CSEdWeek 2011 plans at: www.csedweek.org.

Last year, CSEdWeek was a smashing success with more than 1750 pledges of support and over 300 events and activities engaging students, parents, teachers, and the computing community around the world.

- A charter school and some very active CSTA members in Massachusetts, held a full week of activities, which included student assemblies, competitions with a winner selected in each grade (6–12), and two parent-night presentations on opportunities in CS. As a result of these events, approximately 50 students joined a summer gaming club. Parents

volunteered their time and donated resources (such as computers) and offered student internships and grants from their employers.

- Like many colleges campuses, a California university CS department held a CS Education Day, hosting 275 high school students from schools affiliated with the local CSTA chapter. The day included introductory CS demonstrations, student animated films, and an interactive session with college students. Students participated in hands-on activities with CS Unplugged, Scratch programming, film animation, gaming, and robotics.
- Two state governors issued proclamations endorsing CSEdWeek because of efforts by CSTA Leadership Cohort members. Follow their steps:

1. Find a friendly state representative to put you in contact with the Governor's office.
2. Work with the Governor's staff on the proclamation wording, starting with the template available at CSEdWeek.
3. Update the proclamation annually with the new dates for CSEdWeek.

Thank you to all who pledged for CSEdWeek 2010. If you haven't already told us the story about what you did, please share the details (www.csedweek.org/forms/sign/pledge-step3).

Don't forget to include parents in your plans for CSEdWeek 2011.

CSTA THANKS

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for their impact on
CS education in Chicago.

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CSEdWeek

Ideas to Fit Your Schedule

CSEDWEEK is quickly approaching and it's likely that you already have some great projects planned for the week of December 4–10. But if not, here are a few projects, small to large, to fit the time you have.

15 Minutes:

- Create an e-mail signature proclaiming your commitment to CS education. Use the CSEdWeek image from csedweek.org.
- Use the daily CSTA video and audio announcements to make students aware of the opportunities in CS. (csta.acm.org/Advocacy_Outreach/sub/CSEdWeek.html).
- Add the CS History Gadget to your own website (www.google.com/ig?referrer=ign_n#m_8).
- Assign students to view the *Why CSE?* videos and indicate which of the students' stories they most identify with (www.cs.washington.edu/WhyCSE).
- Go prepared with CSTA brochures to talk with your administrator or counselors about the value of CS education in your school.
- Make CSTA career brochures available in your counselor's office.
- Print or request copies of the CSTA posters for your classroom (csta.acm.org/Resources/sub/BrochuresPostersVideos.html).
- Use your school-to-parent communication system to tell parents about the value of CS education and thank them for supporting their children in your class.

- Extend an invitation to parents to "stop by for a visit" during your CS class.
- Revise your personal vocabulary to replace the word "programming" with "computer science."
- Make your classroom inviting. Stand outside the door between classes and greet students as a friendly computer scientist.
- Celebrate your students' CS successes via the school and community news channels.

30 Minutes:

- Assign students to ask their families to spend an entire day without using any computing technology and record their experiences. Discuss their findings in class the next day and relate to CS careers.
- Prepare a showcase of student computing projects in the school hallways, media center, or cafeteria.
- Offer a lunch break "Escape to CS" once a week or once a month to invite non-CS students to "play" with CS concepts and tools such as Alice, CS Unplugged, Kodu, or Scratch.
- Schedule your students to take turns in the cafeteria or student commons to demonstrate cool CS projects from your class.
- Learn a few "magic tricks" to spark up your introduction to CS concepts (www.cs4fn.org/magic).
- Send a press release of your CSEdWeek activities using the press release template (www.csedweek.org/resources).

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CSTA Voice is a quarterly publication for members of the Computer Science Teachers Association. It provides analysis and commentary on issues relating to K–12 computer science education, resources for educators, and information for members. The publication supports CSTA's mission to promote the teaching of computer science and other computing disciplines.

Change of Address and Membership Questions: Contact Member Services via e-mail at cstahelp@csta.acm.org, or call 1-800-342-6626 (U.S. & Canada) or +1-212-626-0500 (Global).

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1 Hour:

- Invite some of your former students who are college CS majors to visit their alma mater for a hands-on show-and-tell about the exciting and meaningful things they're learning.
- Communicate the magic and ubiquity of computing to non-CS students throughout the school. For example, combine the CS and psychology classes in a discussion about usability and user design or join CS and science classes to explore the intersection of CS and the tools scientists use.
- Assign computing projects that integrate with projects in other curriculum areas. Ask the other teachers to allow your students to "show off" their computing versions of the projects.
- Submit proposals to share your CS teaching innovations at conferences.
- Plan CS projects that involve "social causes." Recruit community members to serve as "clients" for your students.
- Encourage your CS students to host an open house for students unfamiliar with computing and engage them in CS Unplugged activities.
- Contact your local government representative to ask for support in having December 4–10 proclaimed CSEdWeek in your community or state.

3+ Hours:

- Reach out to a local high-tech company or corporate IT department and take your students on a field trip; invite their parents as well.
- Host a Parents' Night that showcases the exciting and meaningful career opportunities in computing and debunks the myths about computing careers.
- Plan a CS exploration day for potential students and parents. Gather ideas from programs such as Computer Mania (www.computer-mania.info).
- Look for innovative technology contests for showcasing your students' ideas to the world. Explore the World Series of Innovation (www.nfte.com/world-series-of-innovation.html), ACSL (www.acsl.org), and Imagine Cup (www.imaginecup.us).
- Sponsor your own contest.

You will find many more ideas and resources at csedweek.org/resources and csta.acm.org. And remember, great projects can be used any time of the year so don't limit your CS education promotion ideas to just one week in December.

Pledge your support now for CSEdWeek and start planning how you'll change the future of CS education.

Why We Should Care about Issues of Equity

Joanna Goode

THERE HAS BEEN AN INCREASED EMPHASIS on equity issues in computer science (CS) education in recent years, supported largely by NSF programs aimed at broadening participation in computing. Yet, I have found that when folks talk about equity, they often have different viewpoints on why we should be addressing equity, what equity means, and how to achieve equity in the K-12 CS classroom. Based on my experiences as an AP CS teacher in a diverse high school, and involvement in the Exploring Computer Science program in Los Angeles schools, I offer my own viewpoints on what equity means to me in computing classrooms.

Why should we address equity?

Though many cite economic purposes for

working towards equity, I hesitate to use this reasoning as my central purpose for the equity-based work I do. Certainly, we are missing out on the creative potential of over 70% of the population when we continue with vast under-representations of people of color and females in the computing industry. Also, these under-represented groups are at a disadvantage personally if they do not have the sufficient preparation to become computer scientists, a growing profession with a higher-than-average salary for graduates with college degrees.

But, this is not a particularly compelling argument to lead with around issues of equity except for those who are college CS professors or *continued on page 4*



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Contribute to the CSTA Voice

The editorial board of the **CSTA Voice** is dedicated to ensuring that this publication reflects the interests, needs, and talents of the **CSTA** membership. Please consider sharing your expertise and love for computer science education by contributing newsletter content.

Potential writers for the **CSTA Voice** should send a brief description of the proposed article, estimated word count, statement of value to members, author's name and brief bio/background info, and suggested title to the editor at: cstapubs@csta.acm.org. The final length, due date, and title will be negotiated for chosen articles. Please share your knowledge.

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Letters to the Editor are limited to 200 words and may be edited for clarification.



ACM founded CSTA as part of
its commitment to K–12
computer science education.

CSEd Week

Make plans now!



**Connect
Invigorate
Encourage
Share
Educate
Promote
Honor
Recognize
Showcase
Celebrate**

CS EDUCATION



December 4–10



**Take the Pledge
Find the resources
you need**

www.csedweek.org

WHY WE SHOULD CARE ABOUT ISSUES OF EQUITY

continued from page 3

working in the industry. Many outside of CS see this economic/industry perspective as self-serving. We don't argue for universal literacy in order to prepare children to be English majors or work as journalists, etc., but we believe everyone should have the opportunity to read and write because it is a fundamental skill needed to maximize opportunities and interests in our society. So why would we want to use an economic rationale to support the need to address equity issues in CS? This is not to say that employment prospects are not a vital piece of social justice education, but rather, that they are not the sole purpose for broadening participation in computing.

For me, equity is a social justice issue, a new frontier in civil rights. As a community, we are arguing that computational thinking is an essential 21st century skill—so in this vein, we need to prepare all students to have this fundamental knowledge to fully participate in society, including girls and students of color. As civil rights leader and the Algebra project director Bob Moses cautions, students of color will become “the serfs of the Information Age” unless we work for equal opportunity and access in computing education. If education is a fundamental human right in our country, then access and equity in CS are certainly a part of the 21st century model of education that should support this purpose of schooling.

The Multiple Dimensions of Implementing Equity

This social justice perspective for viewing and addressing equity in CS can help guide outreach projects and reform efforts to strategically focus on the important dimensions of CS educational equity. Through research, we have found that the following multiple-pronged strategy is vital for broadening participation in computing at the K-12 level.

1. *Courses must be available for all students in all schools* to provide the most pathways to CS education for underrepresented students. Until computing courses are universally available in schools, severe equity

issues will be pervasive. With many schools in the U.S. being highly segregated by race and social class, data has shown that more affluent, White schools are much more likely to offer rigorous computing courses to students. A fundamental step towards making CS more accessible is to build courses at all schools, so any interested student is able to learn about computing. I am not advocating that computing be required of all students, but instead, be available for any student who desires to access this critical 21st century knowledge, regardless of whether the student is college-bound or not.

2. *Curriculum and assessment must be tailored towards students* in meaningful ways. The “one size fits all” approach to computing, for generations, has marginalized students of color and females. We cannot simply bring underrepresented students into “traditional” classroom spaces and expect them to engage in a curricular model that has typically captivated the interests of only a small sample of the population. Instead, curricular resources need to be created to reach the interests and prior knowledge of particular minority communities and girls. This type of resources could include materials such as Ron Eglash’s culturally situated design tools to showcase the cultural dimensions of computing. A second approach would be to include project-based curriculum that encourages students to draw from their own community knowledge to examine social and environmental issues through a computing perspective. Curriculum and assessment must be carefully developed to highlight the multiple ways of knowing and showing that students bring to classrooms.

3. *Teachers must be supported in developing an inclusive pedagogy* that is effective for engaging girls and students of color. Moving towards an inquiry-based teaching strategy has been shown to be effective for

reaching underrepresented students in computing and in other STEM disciplines. Having pre-service opportunities and professional development workshops that help communities of teachers sharing strategies for teaching underrepresented students, English language learners, etc. is critical in developing these pedagogical skills.

These three elements are part of a cohesive whole, and must be tackled together. If particular organizations, universities, schools, or industries are firmly committed to working towards equity in CS education, their action plans must address all three of these dimensions to make real change. Information about *Exploring Computer Science* is available at: www.exploringcs.org.

Transforming Data into Knowledge

STUDENTS AT PHILLIP O. BERRY ACADEMY OF TECHNOLOGY in Charlotte, NC, are on their way to exciting careers in sustainability management, data mining, health informatics, risk management, and fraud detection because of their data analysis skills using SAS.

SAS is a 4th generation (4GL) programming language designed for data manipulation, data analysis, and reporting. Two courses in SAS programming for high schools cover the beginning and advanced skills corresponding to the BASE and Advanced SAS programming certification exams.

In the first course, students use the BASE SAS software to manage data and SAS procedures to analyze and report the data. Students also use a DATA Step Debugger and Output Delivery System (ODS), an extendable system commonly used in businesses today. The second level course utilizes the BASE SAS software and SQL (Structured Query Language).

Both courses are designed to be taught as semester courses on a block schedule. Teaching resources include: presentations, data sets, example programs, project ideas, guided lecture worksheets, and

a pacing guide. A week-long train-the-teacher workshop for prospective teachers is available at no cost.

According to Sharon Jones, a career and technical education teacher at Phillip O. Berry's Academy, learning SAS programming skills has opened up a whole new world of opportunity for her students. "It really gives the students the power of knowledge," she says. "Students take raw and unorganized data and turn it into knowledge that can benefit others and themselves."

Course enrollment at the Academy has grown dramatically from 12 to 80 students in three years. Student projects include analysis of interesting data such as TV ratings gathered from peers and details about cars in the parking lot.

To qualify, teachers must have taught two years of another programming language such as C++, Java, Visual Basic, or Python. Students must have completed Algebra 1 and a course in one of the programming languages.

For more information visit: support.sas.com/highschool, or contact: hsprogramming@sas.com.

Meet the Authors

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London, England

Jonathan is the programme manager of Computer Science For Fun, an initiative of Queen Mary, University of London.

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University of South Carolina

Duncan is a professor in the Department of Computer Science and Engineering, with a second-semester textbook to be published in January.

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As Director of Strategic Initiatives at NCWIT, Ruthe provides strategic planning and direction, fund development, and cultivation of new partnerships for NCWIT.

Joe Knoch

Milwaukee, WI

Joe has worked with Debbie Carter in the development of the CSTA *Source* web repository since 2003. Currently he is retired and working as a CS consultant.

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University of Oregon

Joanna previously worked as a mathematics and CS teacher at an urban Los Angeles area high school. She is the co-author of the *Exploring Computer Science* curriculum and co-author of *Stuck in the Shallow End: Education, Race, and Computing*.

Debra Richardson

CSEdWeek, Chair

Debra is a professor of Informatics and the founding dean of the Bren School of ICS at the University of California, Irvine.

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Computing in the Core Coalition

Cameron is Director of ACM's Public Policy Office in Washington, DC. He works closely with CSTA on CS education issues.

Pat Yongpradit

Silver Spring, Maryland

Pat teaches CS at Springbook HS. He coaches Imagine Cup teams and wrote the *Game Development with XNA: Semester 1* and *XNA Jumpstart* curricula.

CSTA in the News: Chicago CSTA Chapter Blazing a Trail

The Chicago CSTA chapter is playing a major role in transforming CS education for nearly 450,000 Chicago Public School students. A \$756,000 CE21 grant from the National Science Foundation, "Taste of Computing: Adding a CS Entree to the Education Choices in a Large Urban School District," includes training all Chicago public CS teachers to teach the new *Exploring Computer Science* curriculum. Gail Chapman, co-author of the curriculum, helped facilitate the training for which teachers can earn college credit.

Go to the Source

More Resources for CSEdWeek and Beyond

Joe Kmoch

You will find many resources in the *Source* web repository for planning CSEdWeek activities. Here are just a couple. Visit the *Source* to download these items and browse through the growing collection of lessons, projects, and articles submitted by CSTA members and aligned to the *ACM Model Curriculum for K–12 Computer Science*. And please, consider submitting one or more of your favorites. It is quick and easy with our online submission process at csta.acm.org/WebRepository/WebRepository.html.

Computing Career Exploration: An Interview by Stephanie Ludi
csta.villanova.edu/handle/2378/336

L2A10, L3A10: Careers in Computing

In this activity students explore computing careers by interacting with practitioners in the community or online.

Comment: This assignment encourages students to think about how computing and related skills are applied to a variety of real-world problems. The location of the practitioners can be identified with marks on a world map to enhance student learning.

Pirates of Silicon Valley Guide Worksheet by Clark Chernak
csta.villanova.edu/handle/2378/454

L1A12: Computers in Society

L2A09: Ethical Issues

L2A10, L3A10: Careers in Computing

L3A09, L3C03: Social issues

The worksheet guides students through a viewing of the *Pirates of Silicon Valley* video. The video depicts the events that led to the creation and explosive growth of the personal computer and traces the careers of Steve Jobs and Bill Gates.

Comment: Use this video to introduce the development of PC hardware and software. This TNT production was nominated for an Emmy award. It is suggested that it be viewed in two sessions. The video must be rented or purchased.

Classroom Tools

Put a Little Magic into CSEd Week

Jonathan Black

A moment of “magic” can spark curiosity and pave the way for deeper understanding in your computer science (CS) classroom. Magic tricks make great additions to CS lessons because computing and magic have more in common than you might think. Magic tricks are all about creating moments of wonder and excitement—exactly what CS can do.

Computer Science For Fun (CS4FN) is the UK’s largest initiative to interest young people in CS. Everything we produce is designed to create a sense of wonder and engagement in computing because we believe that students will stay with subjects that they find powerful and exciting. The free collections of magic tricks are available at: www.cs4fn.org/magic. The climax of each trick is just the beginning of the learning experience.

We use magic tricks to illustrate complex CS concepts. Many tricks—especially card tricks—rely on mathematical and computing principles. The secrets behind the forced cards and trick shuffles in our first book are useful in a computer lab as well as on stage. Card tricks can introduce students to sophisticated algorithms, abstractions of real-world problems, and search strategies. It’s all about giving students a more concrete example of how computers manipulate data to

get things done. After all, what is a card trick but a list of instructions for moving data around?

The tricks in the second book focus on the principles of interface design and human-computer interaction. Just as a magic trick is a practical secret dressed up with a compelling performance, a computer algorithm is the practical display of an interactive process. Without understandable audience or user cues about what to expect and where to direct their attention, both magic tricks and computer programs fail. A successful program relies on prediction, model checking, and problem solving. CS is more than knowing how computers work—CS is knowing how people work.

Teachers use our magic tricks in ways that fit how they teach and how their students learn. Some distribute the materials and watch as students take pride in learning the tricks, performing them for their friends, and absorbing the CS concepts behind the scenes. Other teachers learn the tricks and use them as attention-grabbers at the beginning of a lesson. The tricks are suitable for audiences ages 8 years and older; you can choose how basic or detailed to make the explanation. The magic books are written for middle school and older. The tricks are easy to learn and are guaranteed to add a spark to your CS classroom or next party!

Our resources on the magic of CS are all available for free. Download PDF versions of both magic books, or if you prefer, browse through the tricks individually. We’re always adding more to the site! Visit www.cs4fn.org/magic for all the secrets and while you are there check out the rest of the CS4FN project on the website, including more resources for teachers, and engaging articles for students about the latest developments in CS research. You can even sign up for free copies of our CS4FN magazine. We hope you’ll find lots of material to spark your own moments of wonder during CSEdWeek and all year long.

Membership News

Trends Revealed in CSTA Teacher Survey

Duncan Buehl

In response to rapid technological changes in today’s world, computer science (CS) as a discipline is constantly evolving to meet the changing needs of our students. In an effort to measure these changes, CSTA’s Research Committee surveys high school CS teachers every two years. The most recent survey, the 2011 CSTA National Secondary Computer Science Survey, reveals much about our changing discipline. (Previous surveys were conducted in 2009, 2007, and 2005.)

First, the data: The demographics have not changed much from two years ago. A slightly larger percentage (37% versus 32%) of reporting schools are now categorized as “suburban” rather than “urban.” There was no significant change in the sizes or grade levels of the schools or the age, gender, racial identification, or experience of responding teachers. There has been no real change in the academic “credit” (math, technology, business, etc.) earned for introductory CS.

Sadly, however, the 2011 data points to a number of very disturbing trends. In 2009, 44% of students were required to take an introduction to CS course. In 2011, however, that number dropped to 31% despite a slight increase in the percentage of schools offering introductory or pre-AP CS. As is the case with much of the data, what we see in 2011 is a return to the numbers of 2007.

The number of CS students has also declined. In 2009, 30% of the schools reported having 100 or more students enrolled in introductory CS. In 2011 this number dropped to 21%. In addition, the percentage reporting decreased enrollments has risen from 22% in 2009 to 31% in 2011.

The number of female students has also declined. In 2011 more schools reported female students in the 1 – 20% and 20 – 40% range than in 2009. The percentage of schools that reported having from 40 – 60% or more females in an introductory class fell from 42% to 29%.

The data for minority students is mixed. The survey reports ethnic minority enrollment in ranges of 0 – 20%, 20 – 40%, or 40 – 60% or more. In 2009 the percentages of schools that reported ethnic enrollments in these ranges were 0.57, 0.13, and 0.10, respectively. In 2011 the values changed to 0.53, 0.20, and 0.06. Fewer teachers report having between 0 – 20% or 40 – 60% minority students; more report having between 20 – 40% minority students.

There is, however, some good news. The percentage of schools offering both AP CS and introductory CS has increased even though the total enrollments in AP CS are slightly smaller. The introductory CS content is also shifting away from “use of computers” to programming and problem solving. There was also a modest increase (74% to 82%) in schools offering courses other than introductory CS or AP CS, but there was no change in the distribution of the content of these other courses.

There was a significant decrease (42% down to 33%) in the percent of schools reporting that the state or district requires specific CS content be taught. Interestingly, there was an increase from 66% to 73% of the reports that these requirements are in fact enforced. Both statistics represent a return to 2007 numbers.

The 2011 survey results are based on 1384 usable responses from 1561 self-described CS, computer programming, or AP CS teachers. The complete results from this survey are available on the CSTA website at csta.acm.org/Research/sub/CSTARResearch.html.

Curriculum in Action

CS for Social Causes

Pat Yongpradit

Game Development with XNA: Semester 1 is an exciting and engaging computer science course that enables students to apply their CS skills to create games and simulations for social causes.

Three projects highlight the intersection between traditional programming education, game design, and social issues. In Super Audio Kart, students learn about exception handling to make a racing game for visually impaired players. In BeadforLife, students use conditional compilation to test a button-mashing duel between two bead makers. In Nashville 1960, students recreate a sit-in protest at a segregated lunch counter using object-oriented programming.

The XNA Game Studio is a professional game development environment for developing interactive applications for the PC, Xbox 360, and Windows Phone in C#.

Students will:

- Address social causes and real-world problems.
- Explore game and simulation development as communication and art.
- Apply knowledge of variables, conditionals, loops, object-oriented programming, recursion, and data structures to game creation.

Lessons are aligned to CSTA, ITEA-STL, and ISTE-NETS standards. An online community provides support for teachers. Lessons will be most successful with students who have had experience with a structured programming language and have a basic understanding of variables, conditionals, loops, and object-oriented design.

The free curriculum package includes a Teacher Roadmap,

daily lesson plans, demonstration projects, video tutorials, lab assignments and solutions, and assessment tools. The teaching resources and C#/XNA software are free.

The teaching tools can be downloaded in four zipped files listed at: www.facultyresourcecenter.com/curriculum/pfv.aspx?id=8856

It is suggested that the files be saved and unzipped on the desktop before being moved to storage folders. Contact innovativeteachers@microsoft.com for additional information.

College Connection

My College Options

Ed Doody

CSTA has partnered with National Research Center for College and University Admissions (NRCCUA) to provide a powerful new tool for CS teachers interested in helping their students gather a wealth of information about available college and university programs.

My College Options is a free online college and career planning community through which student needs, talents, and interests are matched with 5,000 public and private colleges and universities across the U.S. Students receive a customized student/college match report of up to 15 colleges and universities with programs and features that fit the students' profiles. Colleges and universities contact students directly based upon their stated or demonstrated interests and academic/extra-curricular strengths. Additional services include real-time reminders, checklists, articles, and newsletters covering each phase of a student's high school career, from entrance exams and financing to test preparation and scholarship matching.

Parents, educators, and counselors will also find useful tools and information. Parents can learn about the transition from high school to college and find essential information on paying for college. Educators and counselors can review the college matches for their students, compare their high school report to state and national statistics, and access a comprehensive college and career planning resource center.

My College Options was created by NRCCUA. Currently 94% of U.S. high schools and over 70% of high school students participate. Thousands of colleges and universities offer a wide range of post-secondary opportunities and resources for students to explore.

For information visit: csta.acm.org/Resources/sub/HighlightedResources.html.

SHOW ME THE NUMBERS

MOTIVATING STUDENTS WITH STEM CAREER OPPORTUNITIES

11 MOST-WANTED DEGREES IN 2011

FOUR-YEAR DEGREE	AVERAGE SALARY OFFER
Computer science	\$63,000
Accounting	\$50,316
Finance	\$53,048
Electrical engineering	\$60,646
Mechanical engineering	\$60,739
Business administration and management	\$46,832
Information sciences and systems	\$56,868
Computer engineering	\$60,112
Management information systems	\$54,372
Logistics and materials management	\$50,602
Economics	\$54,634

Source: msn.careerbuilder.com



We're on the Web! csta.acm.org

MARK YOUR CALENDAR

Grace Hopper Celebration of Women in Computing
November 9–12, 2011, in Portland, Oregon
gracehopper.org/2011

Consortium for Computing Sciences in Colleges (CCSC: Eastern)
November 11–12, 2011, in Greenville, South Carolina
www.ccscse.org

American Computer Science League (ACSL)
Registration due by December 1, 2011
www.acsl.org

CSEd Week
December 4–10, 2011, [in your school](#)
www.csedweek.org

FETC
January 23–26, 2012, in Orlando, Florida
fetc.org/events/2011-conference/information/fetc-2012.aspx

TCEA
February 6–10, 2012, in Austin, Texas
tcea2012.org/2012/public/default.html

SIGCSE 2012
February 29–March 3, 2012, in Raleigh, North Carolina
www.sigcse.org/sigcse2012

Consortium for Computing Sciences in Colleges (CCSC: Southwestern)
March 23–24, 2012, in Stockton, California
www.ccsc.org/southwestern

Consortium for Computing Sciences in Colleges (CCSC: Central Plains)
March 30–31, 2012, in Springfield, Missouri
www.ccsc.org/centralplains

Consortium for Computing Sciences in Colleges (CCSC: Mid-South)
March 30–31, 2012 in Jackson, Tennessee
www.ccsc-ms.org

Consortium for Computing Sciences in Colleges (CCSC: South Central)
April 20–21, 2012, in Canyon, Texas
www.sci.tamucc.edu/ccsc

Consortium for Computing Sciences in Colleges (CCSC: Northeastern)
April 27–28, 2012, in Hamden, Connecticut
www.ccscne.org/2012/

RESOURCES

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

Page 1: CSEdweek www.csedweek.org

Page 2: CSTA csta.acm.org

Page 2: CSTA Career Resources csta.acm.org/Resources/sub/BrochuresPostersVideos.html

Page 3: Exploring Computer Science www.exploringcs.org

Page 3: Exploring CS Curriculum 4.0 csta.acm.org/Curriculum/sub/ExploringCS.html

Page 5: SAS support.sas.com/highschool

Page 5: CSTA Chapters csta.acm.org/About/sub/CSTAChapters.html

Page 6: Computer Science For Fun www.cs4fn.org/magic

Page 6: CSTA Research csta.acm.org/Research/sub/CSTAResearch.html

Page 6: CSTA Source csta.acm.org/WebRepository/WebRepository.html

Page 6: ACM Model Curriculum for K–12 CS csta.acm.org/Curriculum/sub/ACMK12CSModel.html

Page 7: Game Development with XNA: Semester 1
www.facultyresourcecenter.com/curriculum/pfv.aspx?id=8856

Page 7: Games for Change www.gamesforchange.org

Page 7: App Hub create.msdn.com/en-US

Page 7: MyCollegeOptions www.mycollegeoptions.org

Page 7: CSTA Highlighted Resources csta.acm.org/Resources/sub/HighlightedResources.html

Page 8: Consortium for Computing Sciences in Colleges (CCSC) www.ccsc.org

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