csta Voice

CS Education Week

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

Volume 6, Issue 5 November 2010

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Legislative Action for CS

Cameron Wilson & Virginia Gold

THE ROAD TO EDUCATION REFORM is long, and progress comes in fits and starts. Last month, the education community achieved landmark progress when congressional representatives from both political parties introduced legislation to help strengthen computer science (CS) education. Representative Jared Polis (Colorado) proposed the Computer Science Education Act, and Representative Vernon Ehlers (Michigan) offered the Computer Science Education Week Resolution.

This marks the first time any Member of Congress has introduced major legislation to address the numerous policy issues with K–12 CS education. The support and activism of the education and computing communities are critical for both these initiatives if we are to achieve our goal of educating the public on the issues and pushing Congress to support its objectives.

Computer Science Education Act

The Computer Science Education Act is designed to stimulate state and local reforms and expand teaching of K–12 CS education. To meet these goals, the bill:

- Defines CS education and its concepts to clarify the confusion of terms around K–12 CS education
- Establishes planning grants for states to work with stakeholders to assess their CS offerings in K–12, and develop concrete steps to strengthen them
- Builds on the planning grants by establishing five-year implementation grants for states, in partnership with local school districts and institutions of higher education, to develop state CS standards, curriculum, and assessments; improve access to underserved populations; develop professional development and teacher certification programs as well as on-line courses; and ensure that CS offerings are integral to the curriculum
- Creates a blue-ribbon commission to review the national state of CS education, and organize states to address the CS teacher certification crisis
- Establishes K–12 CS teacher preparation programs at institutions of higher education

This initiative serves as a "marker" for critical reforms that the computing community has urged Congress to adopt as part of a broader effort to address the overall K–12 education system, tentatively scheduled for the fall agenda.

The good news is that we have created a prestigious coalition of non-profits and computing companies behind the bill. This group—ACM, CSTA, Google, Microsoft, Intel, SAS, the Computing Research Association, the National Center for Women & Information Technology, and the Anita Borg Institute for Women and Technology—signed a joint letter to Congressman Polis declaring their support for this legislation. As we continue down the long road of reform, this coalition, to be known as Computing in the Core (*www.computinginthecore.org*), will work *continued on page 2*

CSTA thanks

Cameron Wilson,

ACM Director of Public Policy, for his efforts in getting the week of December 5, 2010, declared Computer Science Education Week.

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PUTTING COMPUTING IN THE CORE CURRICULUM

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with Congress and the larger computing community to make this legislation part of the education policy landscape.

We urge the education community to join this coalition to ensure that K–12 CS education is part of students' core education. Now is the time for the community to let federal, state, and local policy makers know that K–12 CS education is a critical national need that should be part of the core knowledge for students in K–12 education.

Listen to Representative Polis describe how the bill came about and his hopes for its impact in a podcast posted at *csta.acm.org*.

Computer Science Education Week Resolution

The Computer Science Education Week Resolution is similar to last year's first-ever resolution to advance computing's role in preparing skilled workers and creating career opportunities. It calls on educators and policymakers to improve CS learning at all educational levels, and to motivate increased participation in CS. It honors noted computer scientist Grace Murray Hopper by designating the first week of December as Computer Science Education Week (*www.csedweek.org*). As it did with enormous success last year, the community will work together to raise awareness of computing and its role in society.

As we travel the road to reform, our children's future success and their ability to make a difference in a global society demand that we acknowledge CS as a core subject in education, as Congress has done with these legislative initiatives. We hope you will lend your support to this vital community imperative.

Preparing Today's Students for Tomorrow's Careers

Joel Adams

THERE IS A LOT OF CONFUSION about Science-Technology-Engineering-Mathematics (STEM) careers related to the number of job opportunities, and what people in STEM-related careers with the most job opportunities actually do.

The chart of new U.S. jobs per year (2008-2018) from the U.S. Bureau of Labor Statistics (BLS) at *www.bls.gov/emp/ep_table_102.htm* is a wonderful illustration of the quantity of job opportunities in STEM careers our students will experience over the next 8 years. These projections of future jobs should be a wake-up call to any student interested in a STEM career.

The U.S. government is predicting that the top four STEM jobs in the U.S. will all be in computing:

- nearly **30,000 new software engineering** jobs;
- nearly **25,000 new computer networking** jobs;
- over **10,000 new systems analyst** jobs each year; and
- over **7,000 new computing support** jobs.

By contrast, no other STEM job will offer more than 10,000 new jobs per year. This raises three questions:

- What are these jobs?

CSTA Voice ISSN: 1555-2128

CSTA Voice is a publication of the Computer Science Teachers Association.

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.

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- What kind of degree do you need to get one of these jobs?
- How much competition is there for these jobs?

Software engineers design, build, test, and maintain software. This includes application software: office software, games, phone applications, productivity software, and entertainment software; systems software for the operating systems of computers, tablets, and phones; networking software; and software for the services provided by websites and other server computers. Software engineers typically have a degree in software engineering or computer science (CS).

Network specialists design, build, configure, and administer computer networks. They deploy wired and wireless networks, configure network hardware, configure computers for network access, set up network services like e-mail servers and web servers, monitor networks against malicious software like viruses and worms, and other networking tasks. Network specialists may have a degree in CS, information systems (IS), or information technology (IT).

Systems analysts study the flow of information through a business or organization, and look for ways to use IT to improve the organization's efficiency. They often work with software engineers to design business software, so they need to understand how a business works, how IT works, and have good communication skills. They typically have a degree in IS, or a degree in CS plus several business courses.

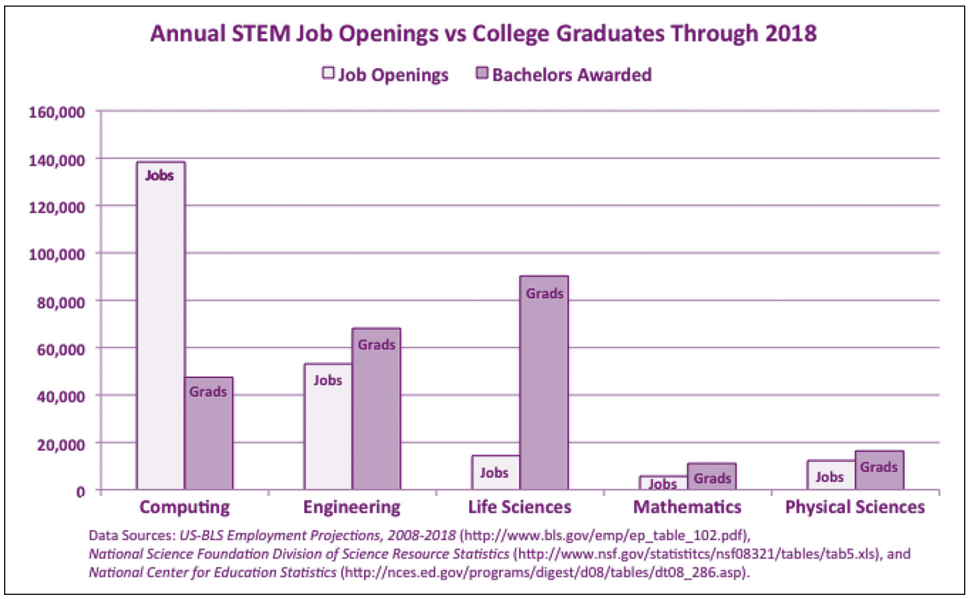
Computing support specialists install and configure computer hardware or software, answer technology questions, and generally help people with their IT problems, usually in a business or organization. Support specialists need to be excellent communicators, skilled with computer hardware, and expert users of software applications and operating systems. They typically have a degree in IT, IS, or CS.

A student can earn a bachelor's degree in CS, IS, IT, or software engineering; each degree has its strengths and weaknesses. One of the strengths of a CS degree is its flexibility—it is arguably the most general of these four computing degree options, providing students with the most career options after they graduate.

Looking at the competition for jobs across the STEM areas, comparing the U.S.-BLS total jobs data to the most recent graduation data adds further clarity to the topic.

The only STEM-related degree category that is predicted to have more jobs available than college graduates (based on 2007 graduation data) is computing.

The sciences, engineering, and mathematics are all producing more graduates than there are jobs. *continued on page 4*



csta
Computer Science Teachers Association

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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.

What are you doing for

CS EDUCATION WEEK?

December 5–11

- Wondering what others are doing?
- Wanting some ideas?
- Needing resources?

VISIT

www.csedweek.org

MAKE YOUR PLANS NOW!

TELL THE WORLD!

www.csedweek.org/connect-with-us

PREPARING TODAY'S STUDENTS FOR TOMORROW'S CAREERS

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By contrast, there are more than two computing jobs for each computing graduate! This is good news for CS students.

- Computing graduates will have their choice of jobs, while science, engineering, and mathematics graduates may have difficulty finding work.
- Businesses will be unable to find all the computing professionals they need; the resulting competition will increase salaries, and businesses will value the computing employees they hire, producing high job satisfaction.

Computing careers appear to have a rosy future. Spread the word to your students and colleagues!

A 21st Century Building Block

Computer Science Education

Kevin Schofield

STOP FOR A MOMENT and take a look around. How many computers can you see?

You might be surprised.

Yes, there's a desktop PC over there, and yes, you might have a laptop nearby. But hidden on wall there is a computer that regulates the thermostat. The car in your driveway likely includes several dozen computers, controlling everything from the power steering to the CD player. Computers regulate the washer and dryer in your laundry room. Most people these days carry a mobile phone, which, as we have become increasingly aware, is a specialized and powerful, yet tiny computer.

Five hundred years ago, people built things out of wood and brick and metal. The skills necessary to do so became invaluable, and those who excelled at those skills were much in demand.

In the 21st century, people still build things out of wood and brick and metal; but at an accelerating pace, they are embedding computing devices into their creations. Computers have become one of the essential construction materials of our age.

That means that computing skills have become essential. Now, more than ever, computer science (CS) skills are a necessity for the budding innovator. This will become even truer in the years and decades to come in fields ranging from economics to biology to gaming. You'd be hard-pressed to identify a productive endeavor for which computing is not a prerequisite for success.

The world thirsts for tools and products that are more interactive and more pliable. Ideas for these 21st Century tools will lead inevitably to their creation. Their creation, however, simply won't be possible without a firm grasp of CS. The knowledge and insights provided by a CS education are what will enable the leaders of tomorrow to shape the future.

But don't just take it from me. This summer, one of my Microsoft Research colleagues was Alexander Barbe, a high school intern who this fall will be a senior at Inglemoor High School in Seattle. He's a precocious teen—one who enjoys horseback riding and honing his language skills by reading Harry Potter novels in Spanish. But he also has taken a key step toward a prosperous future by participating in his school's International Baccalaureate CS program—and by spending this past summer working with the Research in Software Engineering group on tools to help verify the correctness of computer programs.

In the 21st century, people still build things out of wood and brick and metal; but at an accelerating pace, they are embedding computing devices into their creations.

"The most exciting thing about CS for me," Barbe says, "has to be the fact that it is a field where, through a channeling of your inner Spock, you create not only a functional piece of software, but also often

an elegantly simplistic piece of work."

"As Einstein said, 'Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius—and a lot of courage—to move in the opposite direction.' I really enjoy striving to use my creative mind in the pursuit of the elegance of simplicity."

That sort of enthusiasm is what I find exciting. That is what this century is going to be all about. Vast advances in hardware and software have made it possible to imagine and create inventions and breakthroughs that would have been unthinkable just 10 years ago.

It wasn't that long ago that it would have been inconceivable to contemplate computer usage in some of the more disadvantaged parts of the globe. Now, even the residents of those areas are likely to possess or have access to a computer, such as that in a mobile phone.

That access provides the potential for self-improvement, a chance to better the existence of one's self and family. Humankind is one of the most adaptable of species, and one thing we have learned is that if you provide people with the means to improve their lot, many of them will do so.

It's all about building a smarter world, a more capable world, a world in which more people are engaged and empowered than ever before. We all want to live in a cooler, smarter, better world, and, inevitably, leaders will emerge who will take us there. If you aspire to be one of those leaders, if you want to have an impact on your world, a CS education is the best way to do so.

Promotional Videos

Just in Time for CS Education Week

PROMOTE THE EXCITEMENT and opportunities in computer science (CS) careers to your entire student body with five new videos from CSTA. The two-minute videos are perfect for morning video announcements or as introductory activities in the classroom. All five videos will be available from *csta.acm.org*.

The videos focus on four areas of CS careers of interest to students: communications, the environment, medicine, and entertainment. They showcase the essential role of CS in each field and highlight cutting-edge technologies and exciting career opportunities. Each fast-action video depicts how CS not only sustains our modern lifestyle, but also improves the lives of people everywhere.

The video promotion project began as a way to support Computer Science Education Week and to feature CS careers that touch every aspect of students' lives. CSTA Director Chris Stephenson had been very impressed with a number of promotional videos produced by the University of California, Irvine, Donald Bren School of Information and Computer Sciences, and approached founding Dean Debra Richardson to ask if the Bren School would work with CSTA to create a set of videos especially for CS Education Week. Richardson generously donated the time of her Director of Communications, Sherry Main, and Media Studio Coordinator, Robert Farmer, to the project of creating the videos.

Volunteer CSTA members worked with the staff to plan, design, and create the videos which will be posted for live streaming and download on both the CSTA and CS Education Week websites. The hope is that schools will use these videos for morning announcements (in schools that have video announcements) and by teachers in the classroom, to promote CS careers—especially during CS Ed Week. An audio announcement and transcript will also be available for schools without video announcement capabilities.

According to CSTA Executive Director Chris Stephenson, CSTA is hoping that educators will use these videos to expand students' perceptions of CS and the opportunities it presents. "We know that to many students, CS is simply invisible. We are hoping that these videos help students to make connections between the things they love and care about and the incredibly varied knowledge and career paths that CS offers," she said.

Meet the Authors

Joel Adams
Calvin College, PA
Joel joined the faculty at Calvin College as Professor of Computer Science. He is the author of numerous articles and several books, most recently *Alice in Action* and *Alice in Action with Java*. Joel has twice been named a Fulbright Scholar (Mauritius 1998-99; Iceland 2005).

Stacey Armstrong
Educator, Houston, TX
Stacey has taught computer science for 14 years. He is currently teaching at Cypress Woods High School in Houston and serving on the AP Computer Science Principles Commission charged with creating a new AP Computer Science course that will help broaden participation in computing. Stacey serves on the ACM Education Policy Committee.

Tom Cortina
Carnegie Mellon University, PA
Tom is an associate teaching professor in the Department of Computer Science at Carnegie Mellon University and is co-chair of SIGCSE 2011 with Ellen Walker of Hiram College.

Sherry McGratten
University of Toronto
Sherry is the Communications & Liaison Officer at the Department of Computer Science (DCS), University of Toronto. She also provides communications planning and implementation to showcase the department and the exciting opportunities that exist in computer science to a variety of stakeholders.

Kevin Schofield
Microsoft Research
Kevin is the general manager for strategy and communications at Microsoft Research and oversees business and operations for Microsoft's basic research division. He serves on the Advisory Board of CSTA.

Cameron Wilson
ACM, Washington, DC
Cameron is Director of ACM's Public Policy Office. He works closely with CSTA on computer science education issues to assist policymakers, computing professionals, and the public in understanding the implications of complex information technology policy issues.

CS Education Week Highlights

Linking Canadian Universities and High Schools

Sherry McGratten

In celebration of Computer Science Education Week, Canadian high school students will have opportunities to build their own avatar, learn about robotics, defend their computer against the dark arts, and learn about great moments in computer science (CS) history.

At last spring's Canadian Association of Computer Science (CACS) meeting, CS department representatives from post-secondary institutions across Canada decided to collaborate and host a multitude of outreach events.

Event organizer Michelle Craig, a faculty member at the University of Toronto, sums up the excitement surrounding CS Education Day: "On December 9, CS departments from coast-to-coast will be celebrating the value of studying CS and demonstrating not only how much fun CS can be, but the impact of CS on fields as diverse as environmental activism and fashion design. We're excited to share with our local communities, support high school CS teachers, and encourage students to take CS courses."

- Students from GS Lakie Middle School in Lethbridge, Alberta, will have the opportunity to create interactive stories and animations with the popular Scratch programming tool in sessions led by Dr. Jackie Rice and volunteer graduate students from the University of Lethbridge. For ongoing outreach, Rice and colleague Nicole Wilson recently launched LUMACS—life, u, mathematics and CS—to raise awareness of math and CS in everyday life.
- At the University of Toronto, Mississauga, 120 grade-9 math students will participate in a conference-like field trip designed to connect CS to concepts from the grade-9 math curriculum. Workshops will include: Understanding Secret Codes, Solving a Mystery with Computer Forensics, Inside Image Compression, CS Unplugged, and Introductory Python Programming.
- The University of Alberta is planning a day of Lego Mindstorms robotics and game development workshops for high school students.
- At the University of Guelph, visitors will meet students and professors as they tour Guelph's new software engineering lab.
- Brock University will host a full-day Computer Science Fair for local students in grades 9 and 10. Up to 175 students and their teachers are expected to attend.
- Undergraduate students from the University of Western Ontario made posters depicting great moments in CS history as part of their course work. The best posters will be presented to local high schools to celebrate CS Education Week and promote CS courses.
- The University of Saskatchewan, in conjunction with the Prairies NSERC/Cameco Chair for Women in Science, is hosting Connected 2010! This one-day interactive event for female students in grades 9 and 10 will include topics such as social media, animation, and wireless networks.
- At the University of Ottawa, CS Education Week will feature the CONTACT program. Local high school students will participate in workshops on programming with the Processing programming language and Lego Mindstorms.

The University of New Brunswick, the University of Toronto-St. George Campus, and Dalhousie University are also making plans and more schools are expected to join the collaboration in the upcoming weeks. See what is happening in Canada during CS Education Week at *www.cacsaic.org*.

Promoting CS Education

A Baker's Dozen of Ideas

Do you need ideas for celebrating Computer Science Education Week? Check out dozens of classroom resources at csta.acm.org and *www.csedweek.org*.

1. Use the CSTA videos in the morning announcements.
2. Hold a CS poster, video, commercial or essay contest.
3. Provide CS career posters to the guidance office (*csta.acm.org*).
4. Host a CS party and invite school administrators.
5. Have students tell a story using Alice or Scratch.
6. Invite a computer scientist to discuss the many jobs in CS.
7. Conduct CS4FN (*www.cs4fn.org*) and CS Unplugged (*csunplugged.org*) activities.
8. Have students create a web page celebrating CS.
9. Plan student projects in collaboration with other courses.
10. Ask students to identify and discuss TV shows or movies that incorporate computers—current or from the past.
11. View Randy Pausch's "Last Lecture" video (*www.youtube.com/watch?v=ji5_MqicxSo*) or University of Washington CSE videos (*www.cs.washington.edu/WhyCSE*).
12. Ask students to discuss current events that involve CS.
13. Feature your CS Education Week activities in the local or school newspaper.

College Connection

University of California, Irvine

Editor's note: *This dialog with Debra Richardson, founding dean of the Bren School of ICS, and Hal Stern, current dean of the school, is a continuation of our series of interviews with CSTA institutional members. Please share with your students these details about the CS programs at Bren:ICS at UC Irvine (www.ics.uci.edu).*

The Donald Bren School of Information and Computer Sciences (Bren:ICS) at the University of California, Irvine (UC Irvine) is the only independent computing school in the University of California system. Located in the heart of Orange County, California, the campus is close to famous surfing beaches, desert and mountain resorts for hiking and snowboarding, and famous attractions and venues like Disneyland and Angels Stadium.

CSTA: What draws students to your program and what keeps them there?
Richardson: Students are attracted to Bren:ICS for its highly-regarded faculty, extensive set of majors, and diverse curriculum. Students stay because of the strong social environment and because our advising and counseling staff is first-rate. The school offers over one hundred courses covering a broad range of topics. Students are sure to find multiple courses in their area(s) of interest, courses that not only introduce students to fundamentals but also explore topics in depth.
CSTA: What skills can students acquire before college that will help them succeed in your program?
Stern: The broad range of majors and courses offered by

Bren:ICS means that students from a variety of backgrounds will easily find a place in an appropriate program in the school. Some incoming students have programming experience but this is by no means a requirement! A strong foundation in mathematics, communication, and qualitative skills is fundamental and will benefit all students.

CSTA: Tell us about innovative majors or programs of study.
Richardson: The Bren School continues its tradition of developing innovative educational programs with the recently developed undergraduate majors in Computer Game Science and Biomedical Computing. Bren:ICS offers a range of majors:

- Biomedical Computing
- Business Information Management offered jointly with The Paul Merage School of Business
- Computer Game Science
- Computer Science
- Computer Science and Engineering offered jointly with The Henry Samueli School of Engineering
- Informatics
- Information and Computer Science
- ICS Undeclared Pre-Major

CSTA: What cool careers are your graduates prepared for?
Stern: Our students end up in cutting edge careers where they make a difference in the world, many of which are shaped by their engagements in research projects here at UCI. Examples of research that students have participated in include emergency response technology, developing learning tools for autistic children, and developing environmental tracking technology for a greener planet. The possibilities are endless.

Recent alumni have also taken exciting positions at animation giant Pixar, Internet companies like Yahoo! and Google, and local video-game developer Blizzard. Our alumni are also found at IBM, NASA, Microsoft, Deloitte and Touche, Unisys, Accenture, Merrill Lynch, Broadcom, and many other world-renowned organizations. Many students will go on to graduate and still others use their undergraduate training in computing and information technology as the starting point for professional education in management, medicine, or the law.

CSTA: What CS promotional activities happen at your school?
Richardson: ICS Day is an annual event planned by and for Bren:ICS students that brings together students and faculty for friendly competitions and networking opportunities. Bren:ICS students also have an opportunity to showcase their work and demonstrate their entrepreneurial spirits through events such as the hITEC product development competition. This competition involves industrial mentors and over $9,000 in prizes. Some of our students have also transformed their winning product ideas into actual startup companies.

CSTA: Tell us about the social environment of the CS program.
Stern: Student organizations within our school include a student chapter of the Association for Computing Machinery (ACM), Women in Computer Sciences (WICS), and the Informatics Students Association (INSA). Bren:ICS Student Ambassadors also work with Student Affairs staff and host events (such as Java Chats with faculty, gaming competitions, and pizza mixers) to help build friendships among new and continuing students and create a strong sense of community and school pride.

The ICS Theme House in the Arroyo Vista housing community is a small, residential learning community open to Bren:ICS majors. Students enjoy activities like informal faculty chats, visits to local companies, career and graduate school information sessions, and social and community service events.

CSTA: What unique programs promote the diversity?
Richardson: The UCI student body is diverse, and students encounter numerous opportunities to learn with and from students whose backgrounds and experiences expand their understanding of how to live and work in a multicultural society. Bren:ICS is an active partner with CSTA in a number of equity-focused projects. Currently, for example, we are working together on a new set of videos that will be released to help promote Computer Science Education Week. These videos are designed to encourage all students to see CS as a relevant and exciting field for study and work. Bren:ICS faculty also worked with CSTA to create key curriculum implementation resources to help teachers at the elementary level begin introducing core computer science concepts to children.

Professional Growth

Plan for SIGCSE 2011

Tom Cortina

SIGCSE 2011 (Special Interest Group in Computer Science Education) symposium will be held March 9–12 and the conference organizers are once again working to make the event both relevant and affordable for high school teachers.

The conference, which will take place at the Sheraton Hotel and Conference Center in Dallas, provides an opportunity for CS educators in college and high school to present recent work and share ideas. Friday, March 11, has been organized as a day of special interest to high school teachers.

A special discounted rate for high school teachers is available for Friday-only admission, which includes access to the Friday keynote session, technical paper presentations, vendor exhibits, posters and coffee breaks, and a copy of the symposium proceedings on CD. A set of selected papers and panels of interest to the high school community have been planned for Friday, March 11. For an additional fee, high school teachers can attend an evening workshop on Friday. And of course, teachers are welcome to register for the full symposium if they wish.

Check *www.sigcse.org/sigcse2011* for details.

SHOW ME THE NUMBERS
CS IN THE BEST 50 JOBS IN AMERICA

Rank	Job	Median Salary
1	Systems Engineer	87,100
5	IT Project Manager	98,700
8	Computer Security Consultant	99,700
12	Software Developer	79,400
16	Software Product Manager	106,000
17	IT Business Analyst	82,600
30	Network Engineer	86,200

Source: *www.focus.com/images/view/7362/*

CSTA Member in the News:
Chinma Uche

Winner of the $3500 Google/CSTA CS & IT Award

She will use the *Exploring Computer Science* curriculum along with *Google App Inventor* and Android phones to motivate and engage students in creative and innovative CS learning.

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

Computer Science Teachers Association
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New York, NY 10121-0701

MARK YOUR CALENDAR

SIGCSE 2011 Submission Deadline
November 1, 2010
www.sigcse.org/sigcse2011

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

FETC 2011
January 31–February 3, 2011 in Orlando, Florida
www.fetc.org

TCEA 2011
February 7–11 in Austin, Texas
www.tcea2011.org

SIGCSE 2011
March 9–12, 2011 in Dallas, Texas
www.sigcse.org/sigcse2011

Consortium for Computing Sciences in Colleges (CCSC: Southwestern)
April, 2011 in Los Angeles, California
www.ccsc.org/southwestern

Consortium for Computing Sciences in Colleges (CCSC: Mid-South)
April 1–2, 2011 in Conway, Arkansas
www.ccsc-ms.org

Consortium for Computing Sciences in Colleges (CCSC: Central Plains)
April 8–9, 2011 in Warrensburg, Missouri
www.ccsc.org/centralplains

Consortium for Computing Sciences in Colleges (CCSC: Northeastern)
April 15–16, 2011 in Springfield, Massachusetts
mars.wnec.edu/ccscne

Consortium for Computing Sciences in Colleges (CCSC: South Central)
April 15–16, 2011 in Huntsville, Texas
www.sci.tamucc.edu/ccsc

RESOURCES

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

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Page 1: CS Education Act *thomas.loc.gov/home/gpoxmlc111/h5929_ih.xml*
Page 1: Resolution: CS Education Week Resolution *thomas.loc.gov/home/gpoxmlc111/hr1560_ih.xm*
Page 1: Computing in the Core *www.computinginthecore.org*
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