

CSTA SGB Update: What We Have Done Together...so far

Dr. Chris Stephenson



Agenda

- Why what we do is so important
- Why SGB funds are critical
- What we've done so far
- Continuing our work together

CSTA's Mission



CSTA is a membership organization that supports and promotes the teaching of computer science and other computing disciplines. CSTA provides opportunities for K-12 teachers and students to better understand the computing disciplines and to more successfully prepare themselves to teach and learn.

CSTA Today

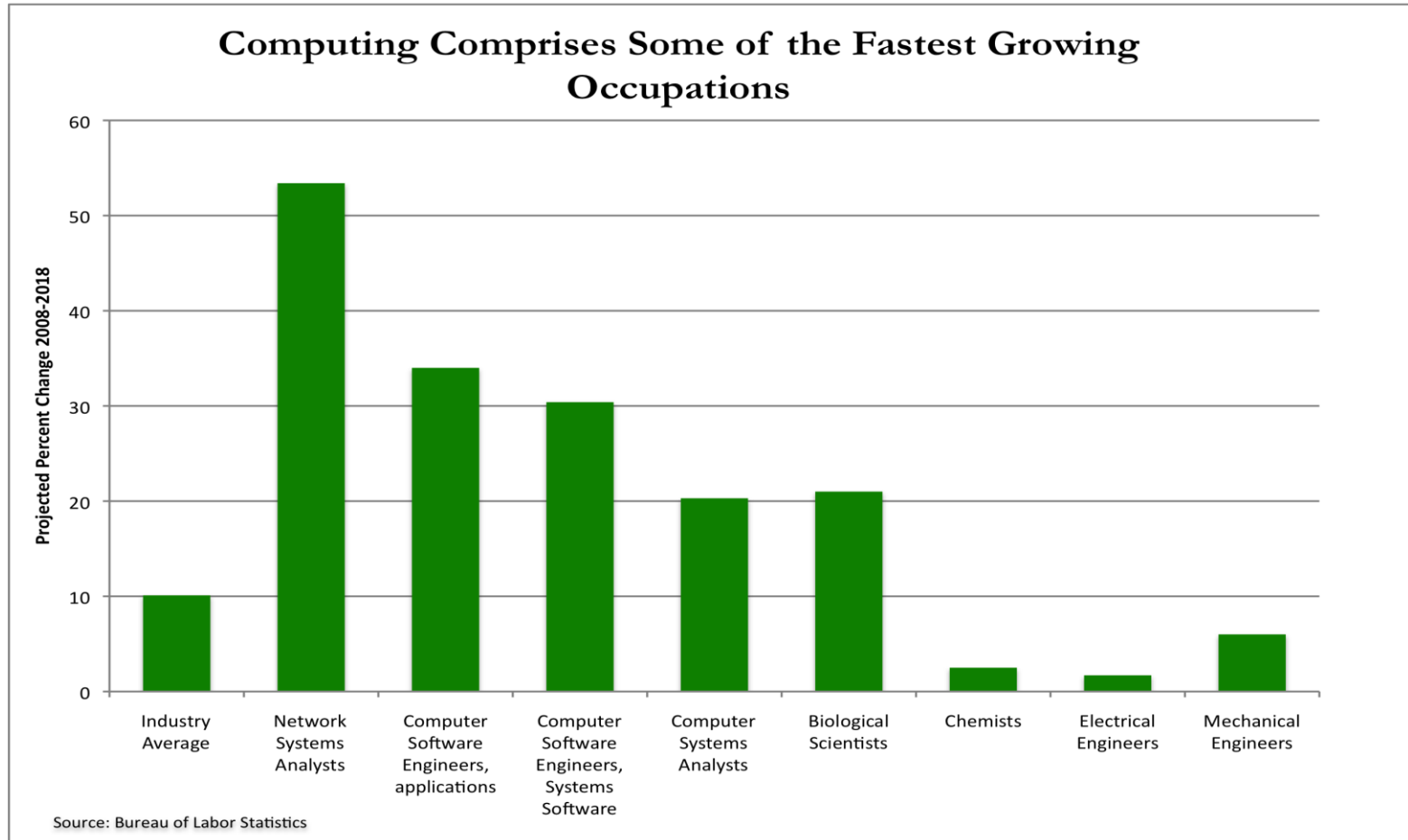
CSTA is an international membership organization of 13,000 members (we continue to grow at more than 20% per year)

- CSTA is a learning community
- CSTA is an advocacy organization
- CSTA is a provider of professional development for teachers
- CSTA is a research body
- CSTA is a provider of resources

Knowledge for Today and Beyond

We consider it critical that students be able to read and write and understand the fundamentals of math, biology, chemistry and physics. To be a well-educated citizen in today's computing-intensive world, students must have a deeper understanding of the fundamentals of computing as well.

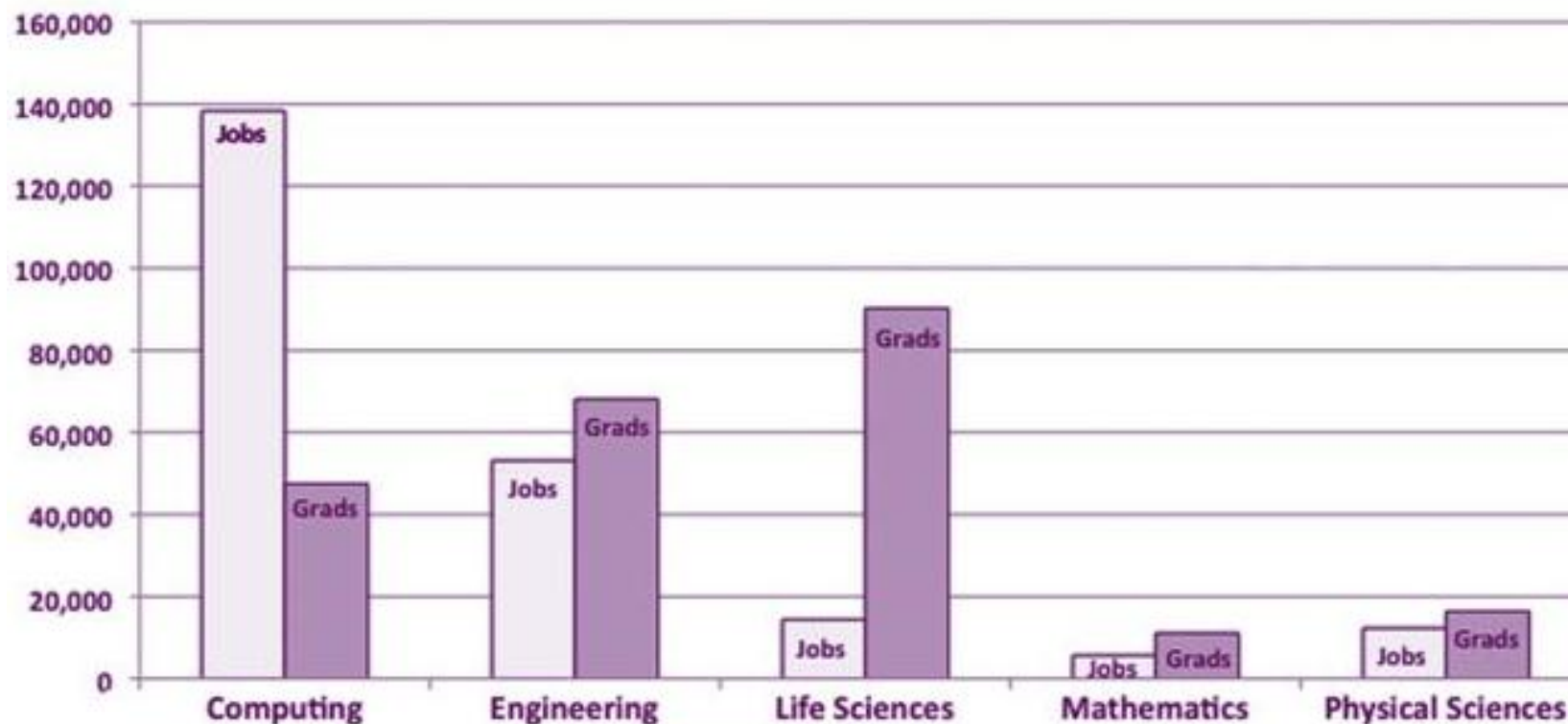
Fastest Growing Jobs



Jobs and Graduates

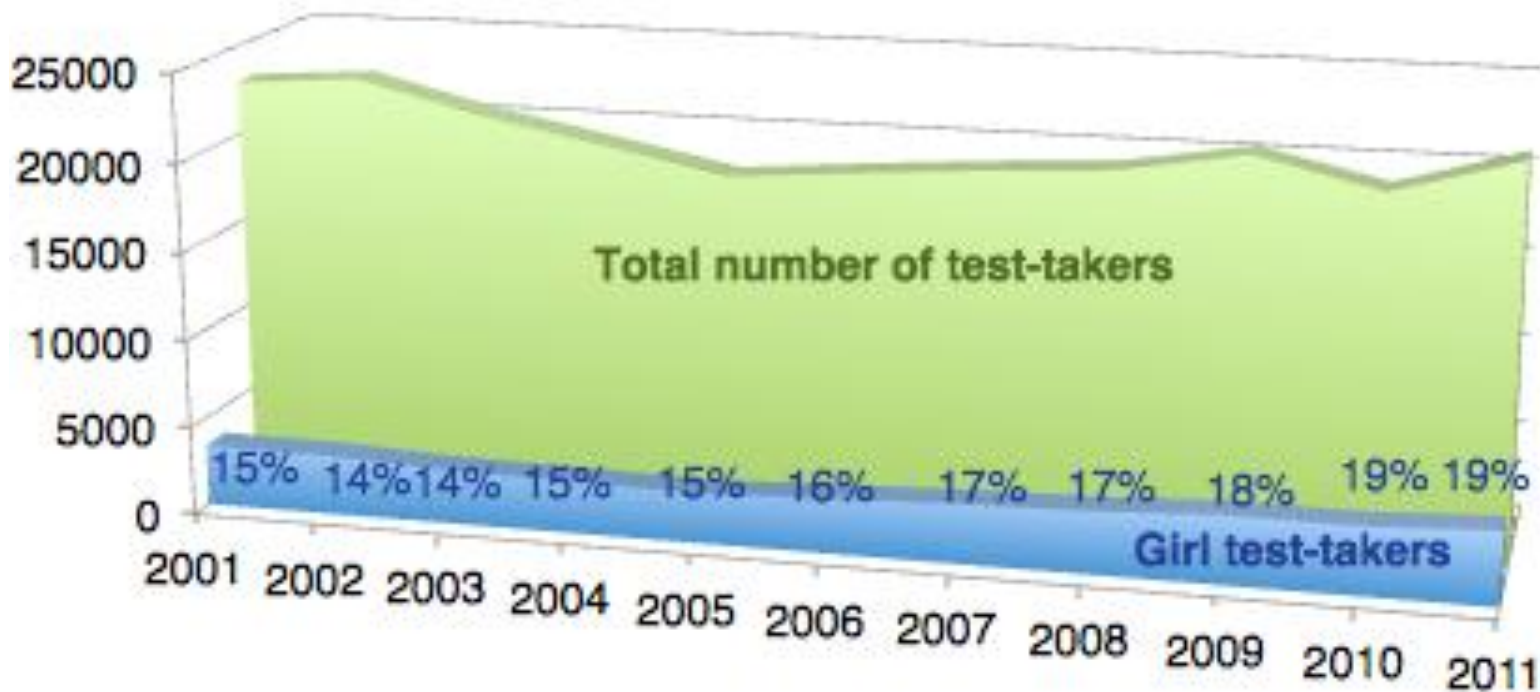
Annual STEM Job Openings vs College Graduates Through 2018

□ Job Openings ■ Bachelors Awarded



Data Sources: US-BLS Employment Projections, 2008-2018 (http://www.bls.gov/emp/ep_table_102.pdf), National Science Foundation Division of Science Resource Statistics (<http://www.nsf.gov/statistics/nsf08321/tables/tab5.xls>), and National Center for Education Statistics (http://nces.ed.gov/programs/digest/d08/tables/dt08_286.asp).

Female CS Test Takers



Joanne Cohoon, University of Virginia, 2012

CS and Social Justice

- Students from minority homes are far less likely to be exposed to computer science knowledge
- Schools with minority students are far less likely to have rigorous computer science courses
- Access to this privileged knowledge is the social justice issues of the 21st century



With Senator Merkley of OR

Funding What Others Won't

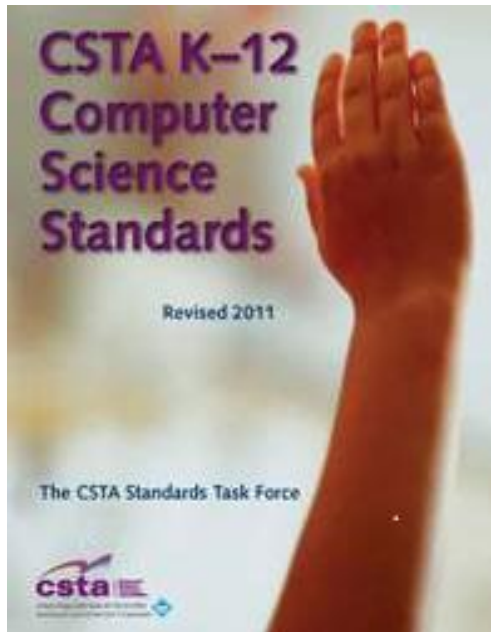
- CSTA's funding from grants is encumbered money that can only be spent on certain research projects (though it does cover about 1/2 of staff salaries)
- Organizational funding from ACM supports the membership organization aspects
 - Board meetings
 - Council meetings
 - Work on projects such as Computing in Core and CSEdWeek
- Much of the critical work we do cannot be funded by corporate sponsors or public or private grant funding
 - Teacher certification
 - Learning standards
 - White papers
 - Federal advocacy
 - State advocacy

CSTA Regional Chapters

- Arizona
- Arkansas
- California (4)
- Canada-AB
- Canada -BC
- Canada-SK
- Colorado
- Connecticut
- Florida
- Georgia
- Illinois
- Indiana
- Kansas
- Kentucky
- Maryland
- Massachusetts
- Michigan
- Missouri
- New Hampshire
- New Jersey
- New Mexico
- New York (3)
- North Carolina
- Ohio
- Oregon
- Pennsylvania
- Rhode Island
- South Carolina
- Texas (2)
- Utah
- Virginia (2)
- Washington
- Wisconsin



New Computer Science Standards



- Introduces fundamental CS concepts to all students, beginning at the elementary school level.
- Presents CS at the secondary school level in a way that can fulfill a CS, math, or science graduation credit.
- Encourages schools to offer additional secondary-level CS courses that will allow students to study CS in more depth and prepare them for entry into the work force or college.
- Increases the availability of rigorous CS for all students, especially those who are members of underrepresented groups.

Standards: Running on Empty

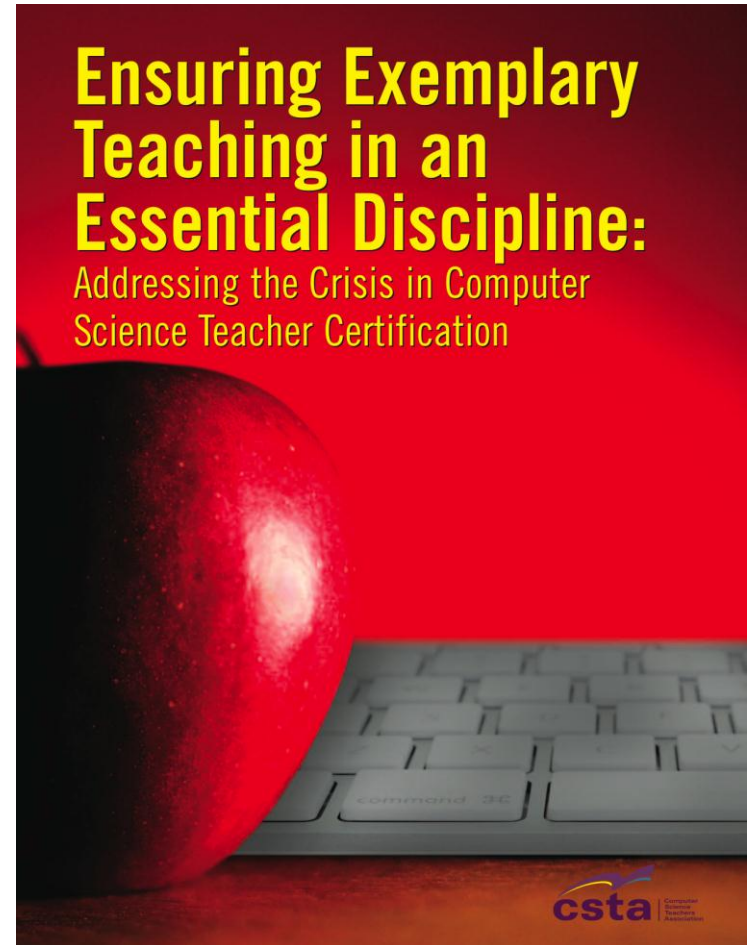


- Examines current learning standards in core subject areas in every state.
- Shows that roughly two-thirds of the country have few computer science education standards for secondary school education, and most states treat high school computer science courses as simply an elective.

- **Includes state-by-state standards report cards keyed to CSTA computer science standards.**

CS Teacher Certification is a Total Mess

- CSTA provides the only comprehensive information on CS teacher certification
- CSTA created a multi-level model for certification for the four kinds of CS teachers
- CSTA is now working on a new report that will include a state-by-state report card



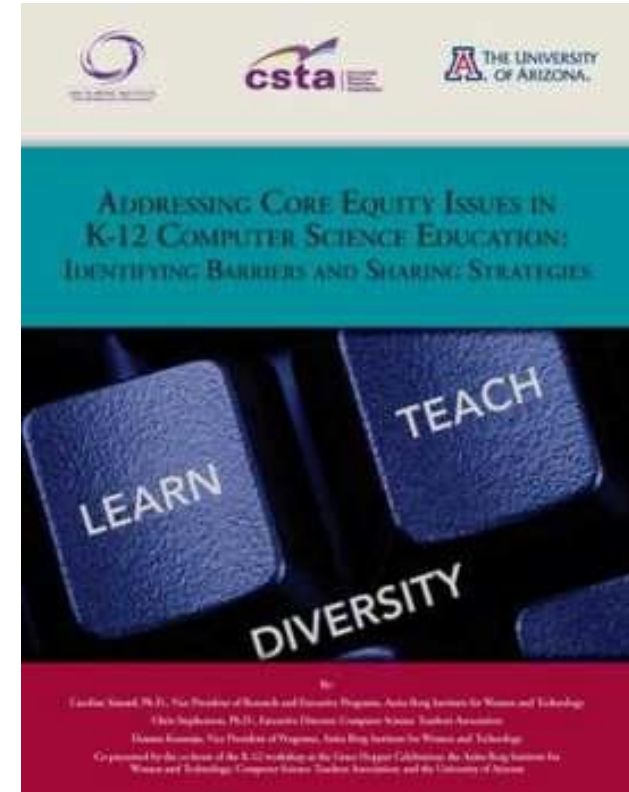
Support for ACM Projects



- Helped create and now market and distribute the ACM *Computing Careers and Degrees* brochure
- Co-wrote and published the *Running on Empty* report
- Founding member of Computing in the Core coalition with ACM
- Serve on Ed Council and Ed Board
- Hold in-conjunction events with SIGCSE
- Serve on ACM Europe committee

Equity: Addressing Core Equity Issues

- An in-depth look at the barriers in our educational system
- Practical recommendations for solutions to address core equity issues
- Comprehensive recommendations for each stakeholder group
- Practical, achievable suggestions for working together to ensure that all students have the opportunities that rigorous computing provides



Posters and Brochures

IMAGINE YOUR FUTURE in COMPUTING

Do you want to help build the next generation of mobile phones, try media devices, or even high-tech prosthetics? Or create new and more advanced medical tools? That's Computer Engineering.

Do you enjoy finding better ways to get things done in your computer? Are you interested in understanding how computers can make business work better? That's Information Systems.

Learn to design digital hardware and software including communications systems, computers, and devices such as phones, MP3 players, DVDs, game systems, X-ray machines, and even laser surgical tools.

Design the next eBay, music store, Business and consulting website in major ways and you might be the next successful entrepreneur.

Do you love to solve puzzles? How new ways of using computers? Or exchange business about new ideas? That's Computer Science.

Do you help other people in their computers or design their web sites? Are you the troubleshooter everyone turns to when their computer acts weird? That's Information Technology.

Design and build software, or solve real-world problems using robots, computer-empowered music, digital forensics, and other innovations.

Support, troubleshoot and design technology. Business, government, schools, health care, and other organizations all need IT specialists.

Do you see the big picture? Can you imagine where new small events and experiences? That's Software Engineering.

Develop computer games or software systems for safety-critical applications. Business applications are made up of many smaller programs carefully linked together.

A high-tech world calls for **brilliant and talented people**. Jobs in technology are growing and offer **big salaries**. Technological advances are creating **new jobs every day!**

Explore your interests in computing. Your high school may have classes and clubs. Talk with your guidance counselor and your school's computing or technology teachers to learn more about the opportunities ahead.

cssta
Computer Science Teachers Association
www.cssta.com

<http://cssta.com.org>

For more information visit <http://computingcareers.com.org>

Computer Science and Sports: Better. Faster. Smarter.

cssta
Computer Science Education Week

Computer Science and Sports: Better. Faster. Smarter.

WORLD OF OPPORTUNITIES in computing

MEDICAL INFORMATICS

LEARN
Computer Programming
Database Management
Medical Terminology
Pharmacology
Medical Coding

JOB
Hospital Medical Records
Medical Records Security Officer
Medical Research Professional
Health Records Administrator
Health Information Technician

MOBILE APPS

LEARN
Computer Programming
Web Development
Animation
Entertainment Design

JOB
App Programmer
Mobile Application Developer

COMPUTER MAPPING

LEARN
Computer Programming
Geo-databases and GIS Systems
Cartography

JOB
GIS Technician
Cartographic Technician
Photogrammetrist
Computer Mapping Specialist
Weather Forecaster
Marketing Analyst

CYBER FORENSICS

LEARN
Computer Forensics
Networking and Operating Systems
Data Recovery

JOB
Computer Forensic Technician
Security Technician
Data Recovery/Forensic Specialist
Computer Security Specialist

Computing in Computer Science | Computing in Computer Engineering | Computing in Informatics | Computing in Information Technology | Computing in Software Engineering | Computing in Information Systems | Computing in Cybersecurity

cssta
COMPUTER SCIENCE TEACHERS ASSOCIATION
cssta.com.org csstareg.org csstacool.org



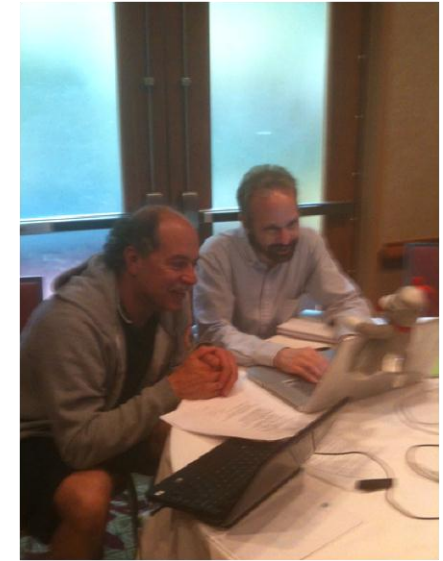
The Critical Intangibles



Providing PD



Supporting students engagement



APCS Principles Course



Developing chapter and teacher leadership



Partnerships for equity



Policy work with ACM

Supporting Our International Work

International
Comparisons
Report



NZACDITT

New Zealand Association for Computing,
Digital and Information Technology Teachers

COMPUTING AT SCHOOL

EDUCATE · ENGAGE · ENCOURAGE

In collaboration with BCS, The Chartered Institute for IT

THE CSTA GUIDE
TO ESTABLISHING
A
COMPUTER SCIENCE
TEACHERS ASSOCIATION

By:

Chris Stephenson
and
Margot Phillipps



#CSTA12CM

The New Educational Imperative:
Improving High School Computer Science Education
International Version

By The CSTA Curriculum Improvement Task Force



UK
Computing
Curriculum
Document



פעילויות

SGB Funding for CSTA to Date

- 2008–2009: \$100,000
- 2010–2011: \$75,000
- 2011–2012: \$65,000
- 2012–2013: \$50,000
- 2013–2014: \$35,000

Ideas for Future Funding

- Chapter mini-grant program that would provide small stipends for advocacy, PD, or to develop new resources (\$60,000 per year)
- 100 toolkits for CSTA chapters that would include Bylaws templates, guidelines for elections and leadership development, ideas on how to run engaging meetings, a policies and procedures manual, the workshop toolkit, etc. (\$20,000)
- A bank of assessment questions tied to the CSTA standards (\$75,000)
- An advocacy fly-in to DC that would allow us to bring all our LC members in to visit their political reps in DC and advocate for computer science and the Computer Science Education Act (\$100,000)

THANK YOU!

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