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.
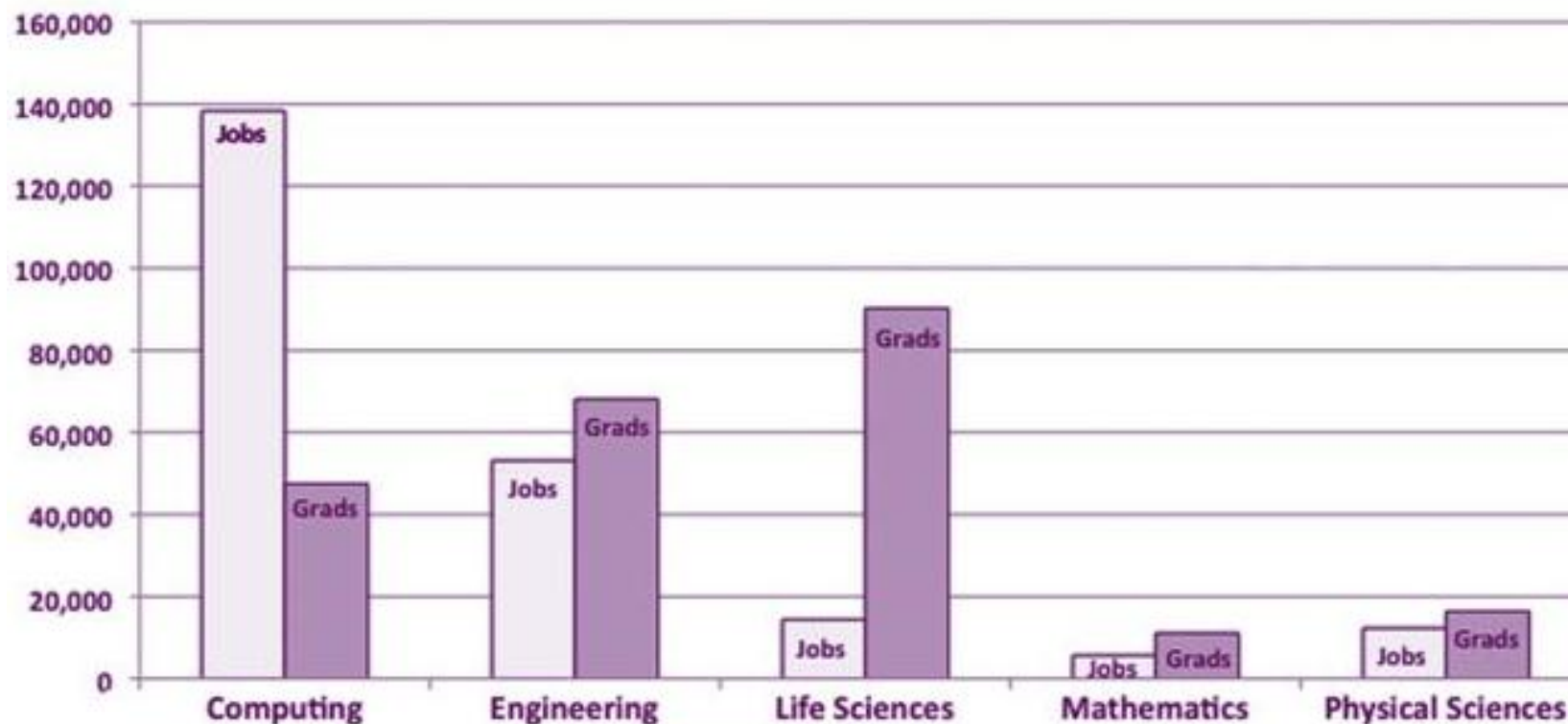
Fastest Growing Jobs

Computing Comprises Some of the Fastest Growing Occupations
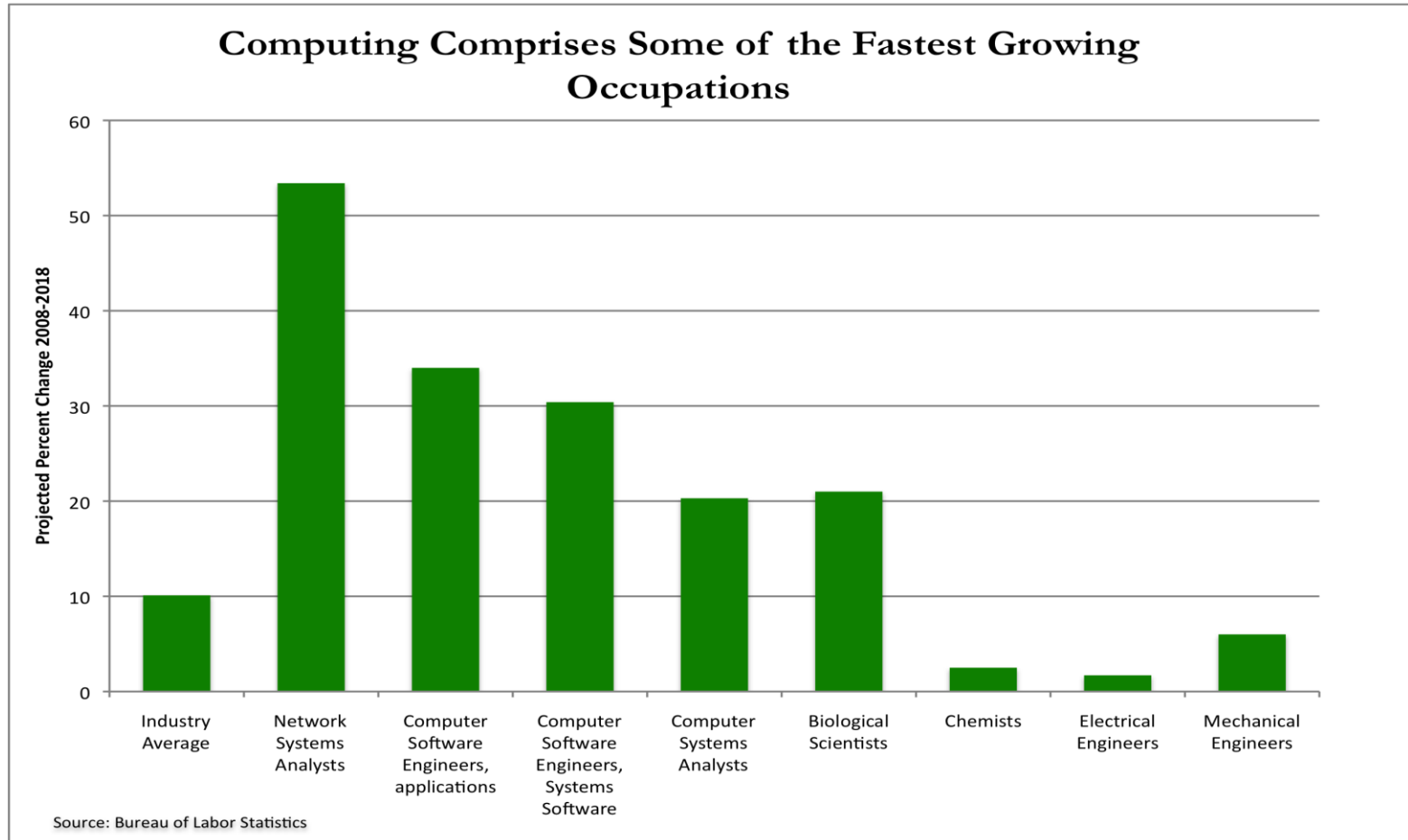
# Jobs and Graduates

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/statistitcs/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
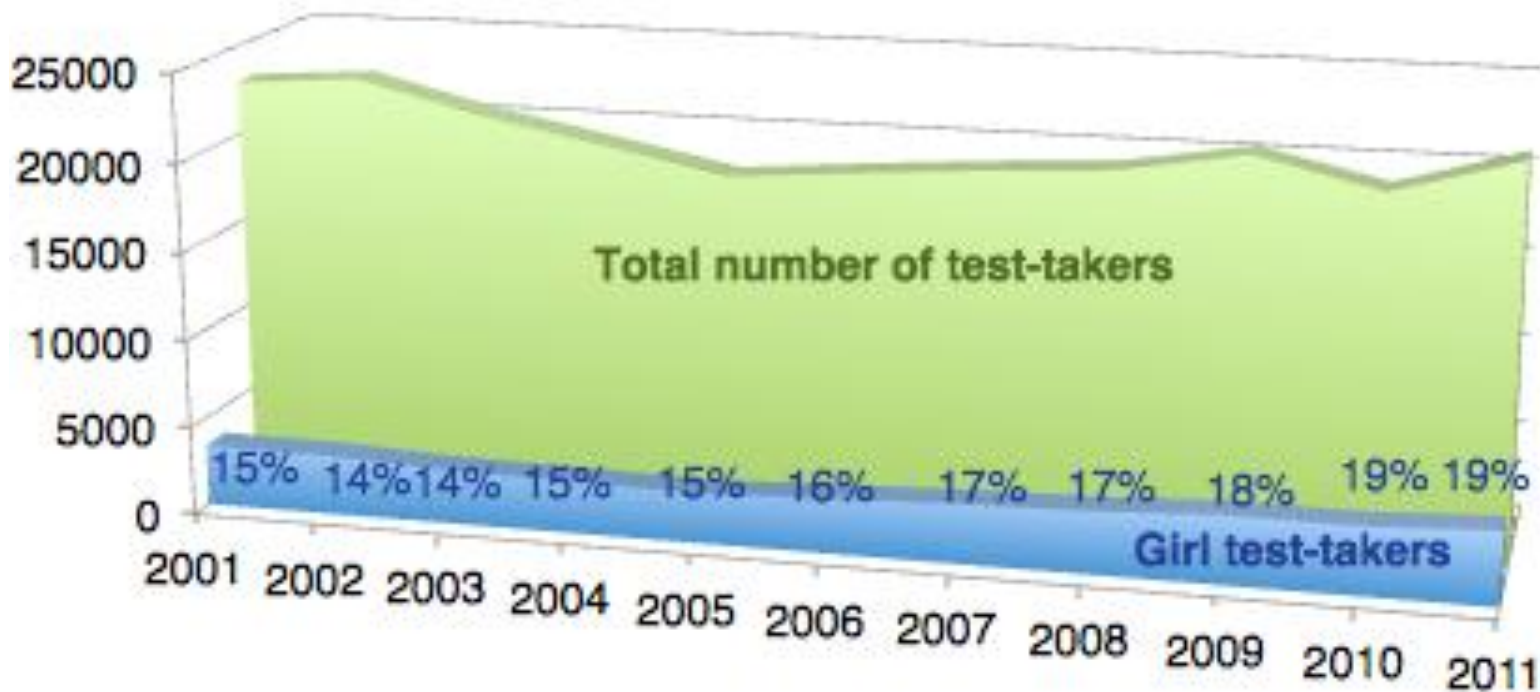
Joanne Cohoon, University of Virginia, 2012

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

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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
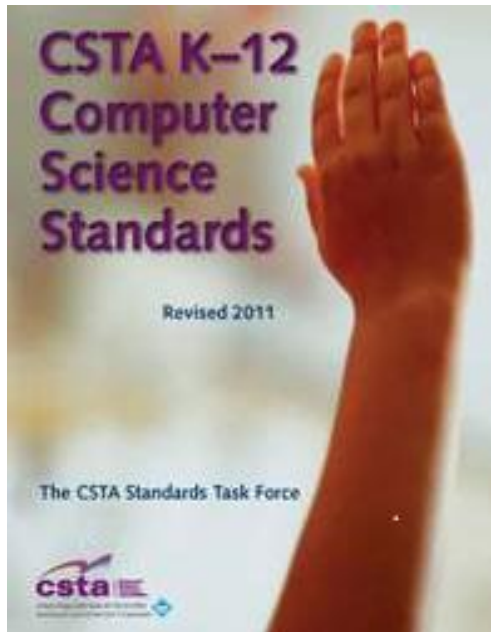
- Introduces fundamental CS concepts to all students, beginning at the elementary school level.
- Presents CS at the secondary school level in a way that can fulfill a CS, math, or science graduation credit.
- Encourages schools to offer additional secondary-level CS courses that will allow students 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

Running On Empty:
The Failure to Teach K–12 Computer Science in the Digital Age

- 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
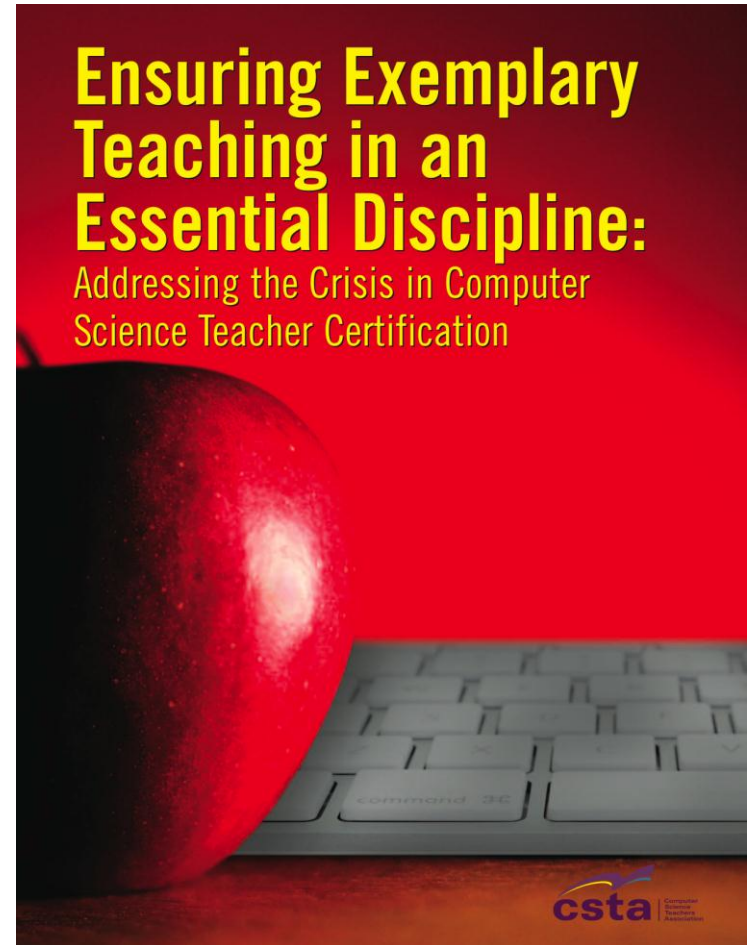
Support for ACM Projects

- 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
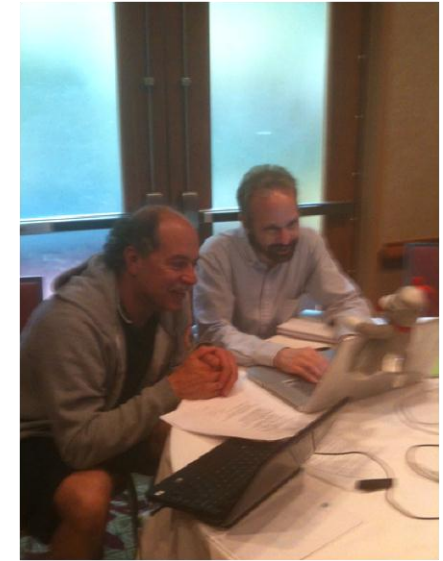
Posters and Brochures

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

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

By The CSTA Curriculum Improvement Task Force

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UK Computing Curriculum Document

פעילויות מחשבה

פעילויות

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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!

Chris Stephenson
Executive Director, CSTA
Phone: 1-541-687-1840
Fax: 1-541-687-1840
cstephenson@csta.acm.org

CSTA website: csta.acm.org