



**For Immediate Release**

## **The National Science Foundation Provides \$5.2 Million Grant to Create New Advanced Placement® Computer Science Course and Exam**

### ***Innovative College-Level AP® Course Created to Increase Interest in Computing Degrees and Careers, Particularly Among Female and Minority Students***

**New York** — Information technology drives our global economy, underlies recent advances in science and engineering, and promises transformational approaches to our world’s most serious challenges, including health care, education and environmental remediation. Yet, collectively, a smaller percentage of American high school students take computer science courses today than they did 20 years ago.

To help ensure that more high school students are prepared to pursue postsecondary education in computer science, the National Science Foundation (NSF) is making a four-year, \$5.2 million grant to the College Board’s Advanced Placement Program® (AP®) to fund the creation of AP Computer Science Principles (AP CSP).

Details of the new AP CSP course and exam will be announced at the third annual Clinton Global Initiative America (CGI America) meeting as a “Commitment to Action” — a new plan to give hundreds of thousands of students access to a computational education and to prepare them for careers in the STEM (science, technology, engineering and math) disciplines, particularly female and minority students who are traditionally underrepresented in college computing degrees and industries. The long-term goal of this commitment is to promote business growth and innovation and improve our nation’s competitiveness in today’s global economy. This announcement will be made at the Sheraton Chicago Hotel & Towers in Chicago on Thursday, June 13, 2013.

The college-level AP CSP course will be introduced into thousands of high schools nationwide in fall 2016, with the first AP CSP Exam set to be administered in May 2017. Unlike computer science courses that focus on programming, AP CSP has been designed to help students explore the creative aspects of computing while also providing a solid academic foundation for understanding the intellectual concepts and practical contributions of computing. AP CSP includes a curriculum framework designed to promote learning with understanding, a digital portfolio to promote student participation throughout the year, and a course and assessment that is independent of programming language.

“We are very excited to offer high school students the opportunity to take a college-level computing course that diverges from standard introductory computer science courses in ways that are designed to promote the interests of students from a broad range of disciplines,” said Trevor Packer, senior vice president of AP and Instruction. “With AP Computer Science Principles, we hope to engage a larger, more diverse group of students who will go on to pursue computer science learning and the innovative careers associated with computing.”

Although computing is among the fastest-growing areas of projected job growth, the industry is failing to attract our nation’s most talented students. Of the 1.6 million bachelor’s degrees conferred in 2009-10, only 38,500 (2.4 percent) were earned in computer science — and only 6,894 (slightly over one quarter) of those were conferred to female students. White students earned 60 percent of computer science degrees in 2009-10, while black/African American and Hispanic students accounted for 10 percent and 8 percent, respectively, of those earning computer science degrees during the same period.

Successful implementation of the AP CSP course will hinge on the ability to recruit and train qualified teachers with computer science backgrounds to teach the course. Through its CS 10K Project (10,000 computer science teachers in 10,000 high schools by 2016), NSF has been laying the foundation for an unprecedented, national effort to prepare educators to teach this new material using hands-on, inclusive curricula.

In addition, the College Board is building a comprehensive set of online teaching resources and creating professional development curricula for teachers, giving them the support they need to help students succeed in the AP CSP course and on the exam. As part of this effort, the College Board will contribute \$1.5 million toward the creation of teacher support materials and professional development, and \$2 million to develop a platform that will deliver the recommended digital portfolio assessment.

“A key to the success of the AP CSP and the CS 10K initiative is the strong collaboration among the computer science education community, the National Science Foundation, the College Board, computing professional societies and other STEM organizations,” said Jan Cuny, program officer at the NSF. “Many voices have come together to articulate the need for a rigorous and engaging computing curriculum that will attract a broad audience of students, educate them about the value of computing and encourage them to lead the world in IT innovation.”

AP CSP was piloted during the 2010-11 academic year at five universities. Each institution developed and implemented a recruitment plan for increasing enrollment of women and underrepresented minorities, and each course instructor contributed to course evaluation activities. During the 2011-12 academic year, AP CSP was piloted at another 10 colleges and universities paired with 10 high schools. All pilot sites in this second phase were chosen according to criteria including geography, the ability to enroll a diverse population of students and the capacity to partner with another institution. In addition to participating in surveys and evaluation activities, instructors contributed to the research component of the project by submitting a course syllabus and implementing a portfolio assessment.

Owen Astrachan, professor of the practice of computer science at Duke University, has been the Principal Investigator of the CS Principles team and project since its inception in 2008. He was part of the small leadership group that created the curriculum framework for the course, guided the revisions of that framework by a larger advisory board and was a member of the team that ensured the recognition of the CS Principles project by the higher education community.

“The CS Principles project is integral to the development of an intellectual foundation for computer science for high school and college students and is part of the foundation of a national initiative that will help ensure a vibrant, competitive and productive workforce in nearly every field,” said Astrachan. “CS Principles is a model in both the U.S. and throughout the world in introducing students to the creative, productive and enriching field that can be the basis for further study and work.”

The successful pilots in 2010-11 and 2011-12 have helped to engender widespread enthusiasm for the success of the new AP CSP course. In a recent survey of 103 of the nation’s top colleges and universities, 87 percent confirmed that AP CSP requires the same content knowledge and skills as the related introductory college course, and 86 percent indicated a willingness to award college credit for qualifying scores on future AP CSP Exams.

Amy Briggs is a professor of computer science at Middlebury College in Vermont and teaches courses throughout the undergraduate computer science curriculum. She is a co-Principal Investigator working with Owen Astrachan in the development of the AP CSP curriculum framework.

“Populations of students who have previously lacked access to high school computing classes — or shied away from them, especially girls and underrepresented minorities — will benefit from the greater access to computing education that CS Principles will bring,” said Briggs.

An additional 38 high schools and 12 colleges and universities will pilot the AP CSP course through spring 2016.

While the College Board remains committed to improving equity in and access to all AP courses, its importance is amplified among the STEM disciplines. Research shows that students who took college-level AP math or science exams during high school were more likely than non-AP students to earn degrees in physical science, engineering and life science disciplines — the fields leading to careers essential for the nation’s future prosperity.

The addition of AP CSP will bring the number of AP courses and exams within the STEM disciplines to 11. The others are: Biology, Calculus AB, Calculus BC, Chemistry, Computer Science A, Environmental Science, Physics B, Physics C: Electricity and Magnetism, Physics C: Mechanics, and Statistics. AP CSP will be the first new AP course and exam since AP Chinese Language and Culture and AP Japanese Language and Culture were implemented in fall 2006.

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### **About the College Board**

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world’s leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success — including the SAT<sup>®</sup> and the Advanced Placement Program<sup>®</sup>. The organization also serves the education community through research and advocacy on behalf of students, educators and schools. For further information, visit [www.collegeboard.org](http://www.collegeboard.org).

**About the National Science Foundation**

The National Science Foundation (NSF) is an independent federal agency that supports fundamental research and education across all fields of science and engineering. In fiscal year (FY) 2012, its budget was \$7.0 billion. NSF funds reach all 50 states through grants to nearly 2,000 colleges, universities and other institutions. Each year, NSF receives about 50,000 competitive requests for funding, and makes about 11,500 new funding awards. NSF also awards about \$593 million in professional and service contracts yearly.

**About CGI America**

The Clinton Global Initiative (CGI), an initiative of the Clinton Foundation, convenes global leaders to create and implement innovative solutions to the world's most pressing challenges. Established in June 2011 by President Bill Clinton, the Clinton Global Initiative America (CGI America) addresses economic recovery in the United States. CGI America brings together leaders in business, government, and civil society to generate and implement commitments to create jobs, stimulate economic growth, foster innovation, and support workforce development in the United States. Since its first meeting, CGI America participants have made more than 200 commitments valued at \$13.4 billion when fully funded and implemented. To learn more, visit [cgiamerica.org](http://cgiamerica.org).

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