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FACT SHEET: President Obama Announces Computer Science For All Initiative

"In the coming years, we should build on that progress, by … offering every student the hands-on computer science and math classes that make them job-ready on day one."
— *President Obama, 2016 State of the Union Address*

Today, President Obama is unveiling his plan to give all students across the country the chance to learn computer science (CS) in school. We've made real progress in education -- over the past seven years, 49 States and Washington, D.C. have raised expectations by adopting higher standards to prepare all students for success in college and careers.

It is now time to take the next step forward. Our economy is rapidly shifting, and educators and business leaders are increasingly recognizing that CS is a "new basic" skill necessary for economic opportunity and social mobility. By some estimates, just one quarter of all the K-12 schools in the United States offer CS with programming and coding, and only 28 states allow CS courses to count towards high-school graduation, even as other advanced economies are making CS available for all of their students.

Fortunately, there is a growing movement being led by parents, teachers, states, districts, and the private sector to expand CS education. The President's Computer Science for All Initiative builds on these efforts by:

- <u>Providing $4 billion in funding for states, and $100 million directly for districts</u> in his forthcoming Budget to increase access to K-12 CS by training teachers, expanding access to high-quality instructional materials, and building effective regional partnerships. The funding will allow more states and districts to offer hands-on CS courses across all of their public high schools, get students involved early by creating high-quality CS learning opportunities in elementary and middle schools, expand overall access to rigorous science, technology, engineering and math (STEM) coursework, and ensure all students have the chance to participate, including girls and underrepresented minorities.

- <u>Starting the effort this year, with more than $135 million in investments</u> by the National Science Foundation (NSF) and the Corporation for National and Community Service (CNCS) to support and train CS teachers, who are the most critical ingredient to offering CS education in schools. The agencies will make these investments over five years using existing funds.

- Calling on even more Governors, Mayors, education leaders, CEOs, philanthropists, creative media and technology professionals, and others to get involved. Today, Delaware, Hawaii and more than 30 school districts are committing to expand CS opportunities; Cartoon Network, Google and Salesforce.org are announcing more than $60 million in new philanthropic investments, and Microsoft is announcing a fifty-state campaign to expand CS; and Code.org is announcing plans to offer CS training to an additional 25,000 teachers this year.

THE NEED FOR CS FOR ALL

Building on the progress made by states in raising standards to help students graduate from high school ready for college and career, President Obama signed the bipartisan Every Student Succeeds Act (ESSA) in December 2015. This law cements this progress by requiring that all students in America be taught to high academic standards that will prepare them to succeed in careers and in college.

Furthermore, more than nine out of ten parents surveyed last year say they want CS taught at their child's school. They understand that today's elementary, middle and high school students are tomorrow's engineers, entrepreneurs, and leaders who must be equipped with strong computational thinking skills and the ability to solve complex problems.

The Challenge

Access to CS education is limited and wide disparities exist even for those who do have access to these courses. For example, in the fewer than 15 percent of all high schools that offered any Advanced Placement (AP) CS courses in 2015, only 22 percent of those who took the exam were girls, and only 13 percent were African-American or Latino students. Media portrayals and widely-held stereotypes exacerbate this dynamic, with far more men than women depicted in technology roles in film and television roles. As highlighted in the first-ever White House Demo Day, these disparities in who gets included, and who feels included, are one reason why women compose less than one-third of the technical employees, and African-Americans less than three percent, at some of America's largest and most innovative technology companies.

The Opportunity

Providing access to CS is a critical step for ensuring that our nation remains competitive in the global economy and strengthens its cybersecurity. Last year, there were over 600,000 tech jobs open across the United States, and by 2018, 51 percent of all STEM jobs are projected to be in CS-related fields. The Federal government alone needs an

additional 10,000 IT and cybersecurity professionals, and the private sector needs many more. CS is not only important for the tech sector, but also for a growing number of industries, including transportation, healthcare, education, and financial services, that are using software to transform their products and services. In fact, more than two-thirds of all tech jobs are outside the tech sector.

CS is also an active and applied field of STEM learning that allows students to engage in hands-on, real-world interaction with key math, science, and engineering principles. It gives students opportunities to be producers, not just consumers, in the digital economy, and to be active citizens in our technology-driven world. CS can also help foster computational thinking skills that are relevant to many disciplines and careers, such as breaking a large problem into smaller ones, recognizing how new problems relate to ones that have already been solved, setting aside details of a problem that are less important, and identifying and refining the steps needed to reach a solution. CS also complements the President's Nation of Makers initiative, which focuses on the growing democratization of the hardware and software tools needed to design and make just about anything.

THE PRESIDENT'S PLAN TO EXPAND CS FOR ALL

Over the past seven years, President Obama has led an ambitious effort to expand science, technology, engineering and math (STEM) opportunities for American students. From starting the tradition of the White House Science Fair to launching the "Educate to Innovate" initiative, the President's efforts are helping more than 50,000 new STEM teachers get trained, have catalyzed more than $1 billion of private-sector investment for STEM education, and have expanded opportunities for students who are traditionally underrepresented in STEM fields.

In 2014, President Obama became the first President to write a line of code, and issued a broad call to action to expand CS across the nation's classrooms. In just the past three years, 17 states have allowed CS to count towards graduation requirements, and growing list of states like Arkansas and Washington are creating high-quality CS learning opportunities in elementary and middle school, and providing greater access to CS courses in high school. Under the President's TechHire and ConnectED initiatives, more than 500 employers have partnered with 35 cities, states, and rural areas to expand access to tech jobs, and the connectivity divide in schools has been cut by about half since 2013. Major school systems such as New York City, Chicago and San Francisco have announced plans to offer CS to every student throughout elementary, middle and high school, with strong support from business leaders, philanthropists, and non-profits. In addition, the President signed the bipartisan ESSA law in December 2015, which expands the opportunities that states and districts have to offer CS and other rigorous STEM coursework.

<u>Historic Investment to Empower States and Districts</u>

The President's Computer Science for All plan builds on the momentum at the state and local level. The President's upcoming budget will include $4 billion in funding at the [Department of Education](), available over three years, for states to increase access to CS in P-12 classrooms. Under the program, states would submit comprehensive five-year "Computer Science for All" plans, and every state with a well-designed strategy would receive funds. In addition to state-level grants, the budget will also dedicate $100 million in competitive grants specifically for leading districts to execute ambitious CS expansion efforts for all students, including traditionally underrepresented students, and serve as models for national replication.

The funds would give states and districts the resources to train both existing and new teachers to teach CS, build effective regional collaborations, and expand access to high-quality learning materials and online learning options. States and districts could use these funds to provide access to CS courses to every high school student within five years, create a progression of CS learning experiences in elementary and middle schools, and ensure additional support and resources for students traditionally underrepresented in STEM fields.

Participating states and districts would also be encouraged to create plans for expanding overall access to rigorous STEM classes, utilizing CS as a catalyst for increased interest in STEM more broadly, and reducing course equity gaps for all students, including underrepresented groups such as minorities, girls, and youth from low-income families. For high school students, this could include expanded access to AP, International Baccalaureate, dual-enrollment, and other rigorous coursework that lead to college and career readiness, and to earn college credit while in high school. For students in the early grades through middle school, these plans could support implementation of high-quality curriculum, instruction, and learning opportunities that promote computational thinking and that lay the groundwork for CS and STEM coursework in high school.

States and districts would also be encouraged to build robust regional collaborations, such as with industry, non-profits, and out-of-school providers, as well as securing potential financial and in-kind support from private partners.

<u>Action by Federal Agencies Starting This Year</u>

The Administration is also announcing Federal actions to expand CS in K-12 education starting this year. These include actions by the Department of Education (ED), the [National Science Foundation]() (NSF), [the Corporation for National and Community Service]() (CNCS), the Department of Defense (DoD) and the U.S. Patent and Trademark Office (PTO), within the Department of Commerce.

- NSF is committing $120 million for the *Computer Science for All* initiative over the next five years: Under this Administration's tenure, NSF has funded efforts to build the necessary research foundations for implementing effective academic CS instruction in U.S. schools. NSF has funded the development of prototypes of instructional materials, assessments, teacher professional-development programs, and teacher resources, including a new introductory CS high-school course, Exploring Computer Science (ECS), and a new AP CS Principles (CSP) course framework. Both ECS and CSP are designed to be academic, rigorous, and engaging for all students, with equity and access at their core. As the lead Federal agency for building the knowledge base for CS education, NSF will make available $120 million over the next five years to accelerate its ongoing efforts to enable rigorous and engaging CS education in schools across the nation. These funds will support continued prototyping of instructional materials, scalable and sustainable professional-development models, approaches to pre-service preparation for CS teachers, and teacher resources at the K-12 grade levels. This acceleration could enable as many as 9,000 additional high-school teachers to be well prepared to teach CS over the next five years.

- CNCS is committing $17 million to support teacher training: CNCS — the Federal agency that engages millions of Americans in service and in developing community solutions through its AmeriCorps, Senior Corps, and Social Innovation Fund programs — is committing up to $17 million in Segal AmeriCorps Education Awards over the next three years to support teacher training in CS education. CNCS, in partnership with NSF, will collaborate with 100Kin10 to help thousands of teachers access the AmeriCorps Educational Awards, which will help pay for the training teachers need to learn CS fundamentals, and educate and inspire the next generation of great innovators, problem-solvers, and STEM educators. In addition, 100Kin10 is pledging to support its growing network of more than 200 partners, which includes Center for STEM Education-TRC at UT Austin, Colorado Education Initiative, New York Academy of Sciences, Industry Initiatives for Science and Math Education (IISME), Roadtrip Nation, SRI International, Teach For America, the University of New Hampshire, The UTeach Institute and others, to directly prepare and support no fewer than 10,000 teachers to teach CS by 2021. As part of that commitment, 100Kin10 will launch a $1 million "coopetition" to identify and network leading-edge efforts to prepare and support engineering in K-12 schools in the state of New York, with a focus on CS.

- The Department of Defense (DoD) and NSF are collaborating with the National Math and Science Initiative (NMSI): DoD and NSF will collaborate with the NMSI, a non-profit, to implement the new AP CS Principles course within the

NMSI College Readiness Program for Military Families, providing teacher and student support interventions at 200 DoD-related NMSI sites across the country.

- <u>NSF will also collaborate with the private sector to support high-school CS teachers:</u> As part of its $120 million investment, NSF will provide $5 million to pilot and expand professional-development approaches in CS to additional schools across the United States, with funding from industry that will enable teachers to attend those pilot programs. Infosys Foundation USA will be a founding member of this public-private collaboration with a $1 million philanthropic donation, and, as an initial participant, Tata Consultancy Services is providing additional support in the form of grants to teachers in 27 U.S cities. This collaboration will ultimately provide opportunities for as many as 2,000 middle- and high-school teachers to deepen their understanding of CS.

- <u>CS Teacher Institutes:</u> The Department of Education's Office of Career, Technical, and Adult Education (OCTAE) and NSF will participate in a joint effort to expand the field of CS educators in Career and Technical Education (CTE) programs. This effort will create a first cohort of educators who will provide additional CS professional development for educators across the country. In addition, PTO will also launch a national network of teacher training institutes, open to districts across all 50 states, to upgrade existing CS professional development with new robotics programming and intellectual property modules that can animate the interests of all students, including young girls and students of color.

- <u>Creating 21st Century Learners and Coders:</u> The U.S. Department of Education's 21st Century Community Learning Centers (21st CCLC) program, funded at more than $1 billion and the Federal government's largest investment in afterschool and extended day programs, will increase awareness of high-quality CS resources for out-of-school programs. The 21st CCLC program will showcase promising practices and resources within its network of State Directors, site Directors, and front-line staff, and will feature CS in the STEM session at the program's Summer Institute.

- <u>Guidance for Additional Funding Opportunities at ED:</u> Building on the STEM Act of 2015 and new ESSA, ED will release a Dear Colleague Letter this year that will include guidance on funding opportunities for STEM and CS. ED will also release a report entitled "STEM 2025" in the spring. The report will detail considerations for the next ten years in P-12 STEM education, including a discussion on the importance of computational thinking and other CS-related activities.

<u>STATE AND LOCAL ACTION TO EXPAND CS FOR ALL</u>

States and cities have been leaders in the movement to expand CS education. In 2014, responding to the President's call to action, [more than 60 school districts committed](#) to give more of their students an opportunity to learn CS. In just the past year, both Republican and Democratic state leaders have championed ambitious CS efforts, and New York City announced an aggressive 10-year plan to give CS opportunities to all one million of its students. Today, leaders at the state and local level are announcing new and expanded commitments to expand CS, including:

- The State of Delaware is expanding CS education to 13 additional high schools, and launching an online CS course option for all of its students. Delaware will designate CS as a statewide Career and Technical Education (CTE) program of study. The CTE program includes a defined sequence of courses, advanced-standing agreements with in-state two- and four-year post-secondary institutions, a professional learning model for teachers that pairs face-to-face instruction with online support, and incentive funding for school systems to offset costs associated with program start-up and teacher training. The course sequence includes a curriculum focused on the cultural and economic significance of CS, while also providing students with the skills necessary to enter a high-demand occupation. In the 2016-2017 school year, more than 18 high schools — up from five in 2015 — will participate in the model, which represents 40 percent of all eligible high schools in the State. For students in schools where CS is not available, Edhesive's large-scale CS Massive Open Online Course (MOOC) has been made available through the Delaware Department of Education at no cost to participating students. Through the MOOC, students have to access coursework that prepares them to complete the CS AP exam.

- The Hawaii State Department of Education's (HIDOE) will expand its efforts to integrate CS across the K-12 progression. HIDOE's vision integrates CS education with other core subjects such as writing, science, technology, engineering and mathematics. HIDOE is committed to providing students with CS opportunities throughout their K-12 education with qualified instructors available to teach CS. To achieve this goal the Department has been sponsoring Code.org workshops for K-5 teachers and is partnering with the National Security Agency to sponsor GenCyber summer camps this year for K-8 grade teachers. Later this year, HIDOE will also offer integrated STEM-learning professional-development opportunities with a cyber-literacy and cybersecurity theme to 6-8th grade teachers. Additional steps to move CS forward in high schools include: adding the new AP CS Principles course to a number of relevant career and technical education (CTE) and education-technology courses, creating workforce-ready students through a cybersecurity CTE sequence, and expanding student opportunities for cyber-competitions.

- More than 30 K-12 public school district leaders, representing more than one million students, are committing to expand CS education in their districts. As part of a commitment from Digital Promise's League of Innovative Schools (League), 30 school-district leaders across the country—from Alaska to Alabama—are committing to offering high-quality CS education to over one million students. For example, Coachella Valley Unified School District (CA) is announcing that in the coming school year, every school in the district will have a CS or technology-centric class or program, impacting more than 18,000 students. Piedmont City Schools (AL) plans to make CS a graduation requirement beginning with ninth grade students in the 2016-2017 school year. Houston Independent School District (TX), in partnership with Code.org, will develop #HISDecoded, a districtwide effort to triple the number of teachers trained in CS, and to immerse the district's 201,946 students in scripting and programming experiences from the first day of kindergarten to the last day of senior year. San Francisco Unified School District (CA) and Vista Unified School District (CA) will expand CS to all students in grades K-12. And Cajon Valley Union School District (CA), in partnership with Code To The Future, is launching the first K-5 CS school and the first elementary Language Academy where CS is taught in Spanish in the U.S. To complement these efforts, Digital Promise will develop a set of CS instruction micro-credentials to provide educators with recognition for the skills and competencies they develop in a variety of settings.

- Broward County Public Schools (BCPS), the nation's 6th largest public school system, is announcing a goal for every student to have some exposure to CS while in school. More than 38,000 students at 180 schools in Broward County, Florida are now participating in CS courses and curricula, which is a significant increase from just 240 students in 2013. With support from Code.org, NSF, and the University of Chicago, BCPS will build on this momentum with a goal of reaching every student and school in Broward County. This year, 100 percent of the District's 34 high schools offer CS courses. In addition, by the 2016-2017 school year, nearly all of the 34 BCPS high schools will offer AP CS Principles, as well as career-relevant courses in applied cybersecurity, applied robotics, information technology, Java development and programming, digital media, game simulation, animation, or web development.

- Allegheny Intermediate Unit (AIU), which serves over 100,000 students in Pennsylvania, will collaborate with Code.org to triple the number of CS-ready educators in the district by 2017. In addition to new science, technology, engineering, arts, and mathematics (STEAM) grants, AIU will offer over 100 free professional development sessions this year, which will be primarily focused on infusing CS principles into other content areas. Additionally, elementary-school students in the Fox Chapel Area School District (FCASD) in Pennsylvania will

engage in a full coding curriculum in 2016-2017, and teachers in the middle and high schools of FCASD will be provided free regional professional-development opportunities in the areas of CS, coding, and digital fabrication.

- The second-largest school district in Illinois is committing to give all 12,000 of its high school students exposure to CS by integrating it into its math classes. With support from the Bosch Community Fund, High School District 214 in Arlington Heights, Illinois, will develop a new math curriculum that will be implemented over the next three years. The new curriculum, along with associated professional-development opportunities, will integrate coding so that students learn the logic and language of CS while learning mathematics. District 214 will also support 1,000 students in an integrated four-year high-school IT Pathway program.

In addition to the specific commitments highlighted, a growing list of K-12 district leaders are committing to support the President's vision of expanded computer science curricula for K-12 students, including:

- Albemarle County Public Schools, VA
- Avonworth School District, PA
- Charlotte-Mecklenburg Schools, NC
- Elizabeth Forward School District, PA
- Elizabeth Public Schools, NJ
- Freehold Regional High School District, NJ
- Henry County Public Schools, VA
- Highline Public Schools, WA
- Iredell-Statesville Schools, NC
- Juab School District, UT
- KIPP DC, DC
- Lincoln Public Schools, NE
- Mentor Public Schools, OH
- Mineola Union Free School District, NY
- Oakland Unified School District, CA
- Onslow County Public Schools, NC
- Orange County Public Schools, FL
- Richland School District Two, SC
- Rowan-Salisbury Schools, NC
- Santa Ana Unified School District, CA
- Sitka School District, AK
- South Fayette Township School District, PA
- Spartanburg District 7, SC
- Utica Community Schools, MI
- Vancouver Public Schools, WA

PRIVATE-SECTOR ACTION TO EXPAND CS FOR ALL
Businesses, philanthropies, and non-profits are also playing a major role in building a movement to expand CS nationally. Today, the following organizations and companies are announcing investments they are making to give more students across the country access to CS:

- Apple is committed to expanding coding opportunities for children with continued investment in training workshops and curriculum development. Swift was designed by Apple to be a simple, easy to use programming language, and will give more students and teachers an opportunity to have access to technology and programming tools. Apple will continue expanding its Swift coding workshops at its retail stores and will work with ConnectED schools across the country to teach coding content and curriculum to communities, students and teachers. In the past year, Apple hosted more than 1,600 workshops at all 465 Apple Stores worldwide as part of Hour of Code. It has also committed more than $40 million to Thurgood Marshall College Fund to expand the pipeline of traditionally under-represented minorities into careers in computer science and technology, and invested more than $10 million with NCWIT to expand the number of women and girls in the technology sector.

- Cartoon Network is launching a $30 million initiative to engage young people in creative coding. Cartoon Network is committed to growing the next generation of creators by engaging with children at the intersection of art and technology. Driving that effort will be original long-form content around coding and characters that code in two new series: *The Powerpuff Girls* and a new yet-to-be named series. These series will include storylines and characters that reflect the diversity of children today and encourage interest in STEM. In partnership with Scratch, a project of the Lifelong Kindergarten Group at the MIT Media Lab, and the Scratch Foundation, Cartoon Network will create free coding tutorials integrating characters from both series. In addition, Cartoon Network is announcing the development of a new PSA campaign targeting children ages 6-11, highlighting positive STEM role models, and connecting creativity with STEM disciplines. To maximize these efforts, Cartoon Network will form a Board of Advisors (BOA) that will include Mitchel Resnick, LEGO Papert Professor of Learning Research, and Director of the Lifelong Kindergarten group at the MIT Media Lab. To amplify its efforts around STEM and coding, Cartoon Network will use its media platform, which reaches more than 94 million homes and 41 million unique users across its sites and apps.

- Facebook will expand its outreach to parents, guardians, and learners in communities that are under-represented in the technology sector, and connect them to the resources to get started on how to code. Through an online resource center, TechPrep, Facebook will help bridge the gap between potential interest and opportunity by bringing together hundreds of resources curated based on who they are and what they need, while considering factors such as age range, skill level, what kind of resources they are looking for, and where they live. Through research with McKinsey, Facebook found that 77 percent of parents and guardians do not know how to help their child pursue computer-science or programming degrees. This percentage increases to approximately 83 percent for

lower income and non-college-graduate parents or guardians, yet being encouraged to pursue computer science by a parent or guardian is a primary motivator for women, African-Americans, and Hispanics. TechPrep is free and available in both English and Spanish.

- Google is announcing plans to invest an additional $23 million in 2016 to support K-12 CS education, reaching an additional five million students. As part of Google's ongoing work to equip the next generation with the skills to be creators, not just consumers, of technology, Google will invest in CS programs and research focusing on girls and under-represented minorities. Google will expand CS First, its free CS program, to reach one million students this year. Google's Made with Code initiative will also work to inspire and engage more than four million teen girls this year to try coding. Google will:
  - *Give more K-12 teachers resources* to access high-quality CS professional-development opportunities and training through Google's CS for High School award.
  - *Conduct research* to gain a deeper understanding of how to increase student awareness of and access to CS education.
  - *Develop and share innovative CS programs* to engage all students with technology, including a curated collection of lesson plans and resources, and initiatives, like Google Summer of Code, offering mentors and stipends to student developers who write code for various open-software programs.
  - *Support non-profit organizations* like Code.org and the National Girls Collaborative Project, through Google's RISE Awards, Google.org, and Google Fiber.
  - *Work with Hollywood studios*, writers, and advocacy groups to dispel stereotypes and showcase positive portrayals of girls, women, and underrepresented minorities in tech.

- Microsoft is announcing its campaign to have all states adopt "Make CS Count" policies and invest in CS education. In September 2015, Microsoft announced a $75 million effort to expand K-12 CS education, which will allow its TEALS (Technology Education and Literacy in Schools) program to increase fivefold over the next three years to nearly 30,000 students in 700 schools in 33 states. As a complement to this investment, Microsoft is today announcing a 50-state policy push to have states invest in CS education. Through direct interactions with state leaders, and by working with other business and non-profits, Microsoft will make the case for states to take advantage of the new opportunities and funds made available for CS education under newly signed ESSA. Microsoft will also set a national goal to have all 50 states adopt policies to allow CS to count towards high-school graduation – rather than the 28 that allow it today.

- Qualcomm will collaborate with Virginia Tech to create a Thinkabit Lab—part makerspace, lab, and classroom—on its campus, with the goal of supporting CS education for middle school students in the region. In 2014, Qualcomm opened its first Thinkabit Lab in San Diego, and since, more than 5,300 local students have had the opportunity to engage in hands-on learning in classes led by Qualcomm engineers and career coaches. Qualcomm is announcing that it will open a Thinkabit Lab in Falls Church, Virginia, in collaboration with Virginia Tech College of Engineering's Department of Engineering Education and Virginia Tech's School of Education. The new lab will serve the region's students and give faculty the opportunity to conduct research that will create a set of academic program experiences in CS and engineering, helping teachers and school administrators to help ensure that teachers can incorporate these subjects into existing K-12 science and mathematics curricula.

- Salesforce.org is announcing its plan to invest $13 million in 2016 to support CS and STEM education. To start, Salesforce.org will give a $1 million grant to Education SuperHighway to upgrade and expand broadband in K-12 public schools nationwide—so every student can take advantage of the promise of digital learning. The new 2016 investments build on Salesforce's leadership in CS and STEM education, including more than $20 million in grants over the three years, more than 20,000 volunteer hours in schools specifically to expand CS and STEM education, and a strategic partnership with the San Francisco Unified School District (SFUSD) that contributed to SFUSD's ambitious city-wide CS initiative.

Additional Steps to Support Teachers and Schools Expanding CS Education

- Advance Kentucky, which has AP expansion programs in more than 90 high schools, is committing to expand adoption of the new AP CS Principles course in those schools. The public-private collaboration behind this commitment includes Kentucky Coders, the Kentucky Department of Education, and the Kentucky Science and Technology Corporation.

- Code.org is committing to expand access to K-12 CS by preparing 25,000 additional teachers to teach CS this year. Code.org hosts CS instruction workshops for K-12 teachers throughout the country and in partnership with the nation's largest school districts, such as Chicago, Los Angeles Unified, and Broward County. Workshop participants learn how to teach CS modules for grades K-5 and middle school, as well as year-long courses in high school. In December 2014, Code.org committed to preparing 10,000 teachers in 2015 to teach CS, and exceeded that goal by preparing a total of 16,000 teachers. In 2016, Code.org will host workshops and build a nationwide network of professional learning partners who can carry on this work locally. Through these efforts,

Code.org is committing to reach 25,000 new teachers, who in turn will bring CS education to approximately one million students annually.

- CSTA will pilot a digital badging and portfolio program to capture and track what professional development a teacher obtains, mapped back to K-12 CS content standards. The micro-credentialing effort will provide teachers a means to demonstrate competence in CS, particularly among those states where no certification or educational pathway to certification currently exists. Over the next five years, CSTA expects to expand the model to all 22,000 CSTA members as part of a broader set of initiatives to build the pipeline of CS teachers.

- The Cyber Innovation Center (CIC) is committing to reach 10,000 teachers over the next two years through its CS, cybersecurity, and STEM focused curricula. Based in Louisiana, CIC is centrally located among twenty-three colleges and universities that collectively serve over 100,000 students. Through its multi-disciplinary, project-driven curricula, the CIC will offer teachers a flexible and modular set of resources to be used in CS, STEM, and even English and language arts classes. The CIC has also committed to delivering tailored professional development to teachers in 50 different communities across the country. Additionally, the CIC has committed to engaging 1,000 underserved students, including girls and minorities, by hosting hands-on educational and awareness events focused on CS and cybersecurity.

- Major CS education programs will prepare an additional 300 educators to teach computer science courses this summer. This July, three of the largest, evidence-based CS education programs, Exploring Computer Science, CS Principles, and Bootstrap, will come together to offer CSPdWeek: five days of professional development to teachers from around the country, bringing high-quality CS training to educators who collectively serve more than 10,000 students. CSTA and Colorado School of the Mines will work together to support the event, which is the first of its kind to focus on building the larger community of CS education, rather than training teachers in curriculum from just one provider. ECS will also work with CSTA and others to identify, recruit, and support CS teachers of color who can be role models, and highlight student work that showcases how CS knowledge and skills can be used to address social or environmental community issues important to youth.

- The National Center for Women & Information Technology (NCWIT) will equip 1,400 school counselors with tools for advising high-school students on CS education and career pathways. The NCWIT Counselors for Computing (C4C) program helps counselors paint a new picture of who is right for computing and supports their strategic action toward increasing access to CS education and career pathways for all students. Through a $1 million commitment, NCWIT will

scale up its Counselors for Computing initiative to equip 1,400 new school counselors with training and resources, equipping more than half a million students for growing and lucrative careers in technology. In addition, NCWIT will partner with Intel to host a convening on Native American students' and tribes' access to technology careers, and will host with Google a conversation on the image of African-American girls in technology. Also with Google, NCWIT will bring together leaders in computing-outreach programs to identify promising practices, evaluation and outcomes measurement, and scaling program activities for students nationwide.

- NPower will deploy its volunteer network of technology professionals to help 15,000 additional students access innovative CS programs. Since launching in 2011, NPower's skills-based volunteer program, The Community Corps (TCC), has registered more than 9,000 technology professionals and implemented CS-education programs in collaboration with partners such as Tata Consultancy Services, NYCDOE Career & Technical Education, Citi, American Express, Mars, Accenture, LinkedIn, and Google. Over the next two years, TCC will inspire students by having more than 1,100 technology professionals visit schools and discuss their work, have roughly 1,000 technology professionals support the teaching of CS and coding in more than 150 schools, and launch a pilot to have TCC volunteers mentor CTE students in New York City to help develop critical professional skills. TCC's initiatives will launch in one or more locations across New York, Texas, Illinois, and Florida, with plans to grow nationally and with a focus on serving schools where 50 percent or more of students qualify for free or reduced lunch.

- Project Lead The Way (PLTW) will develop a new one-year cybersecurity course to be piloted initially in 40 high schools within the next two years. The pilot will be part of a major effort by PLTW to expand access to CS offerings in K-12 schools. Over the next three years, PLTW plans to add multiple new high-school offerings to its existing Introduction to CS and CS Principles courses. These new full-year courses include a course aligned to the AP CS A framework, and a cybersecurity course, developed in close coordination with cybersecurity experts including the Security Advisor Alliance. PLTW is a non-profit that empowers K-12 students to build and demonstrate in-demand transportable skills by applying problem-solving strategies to real-world challenges.

- #YesWeCode will launch a three-year pilot with Oakland Unified School District to give 5,000 underrepresented students the opportunity to take CS courses, and earn college credit for doing so. #YesWeCode will also work with leading companies such as Twitter and Zynga to provide technical internships for Oakland youth. #YesWeCode plans to use lessons learned from Oakland to expand these models nationally, and will host a national convening of

community colleges later in the year. #YesWeCode will also partner with Collective Shift – LRNG to create and curate a set of digital badges that students can collect to showcase their creativity and skills as they complete CS projects.

Additional Steps to Create Out-of-School Opportunities to Learn CS

- CodeNow is committed to helping 1,000 underrepresented high school students learn to code this year. CodeNow focuses on reaching underrepresented students and exposing them to creativity and opportunities in technology. Through their weekend hands-on trainings known as "CodeNow in a Box," the organization brings together students eager to learn and provides engineers from major technology companies the opportunity to teach. Adobe, Infor, Infosys Foundation USA, and Opera Media Works will work with CodeNow to reach their 2016 goal.

- Project CODEt, an organization run by high school students, is pledging to impact 1,000 students this year. Using a near-peer model, Project CODEt targets its outreach to elementary- and middle-school students, and helps them get excited about CS by meeting and working with older students who are doing creative CS projects, thereby emphasizing the ideals of CS equality and early exposure.

- Destination Imagination (DI) and Oracle Academy (OA), are committing to engage at least 10,000 students in CS this year with the release of their "Dear Hero" and "Co{DI}ng Space" challenges. The challenges are designed to encourage students of diverse backgrounds, and will incorporate artistic expression, story boarding, teamwork, and presentation skills.

- Luma Lab, a hybrid coding and entrepreneurship afterschool and summer program, will expand to three additional schools in Washington D.C. this year. The program challenges students to solve community issues through the design and development of mobile application prototypes. Luma Lab exposes students to several facets of technology including user experience, mobile app development, and public speaking, leadership and product management, and at the end of the program, students present their work at a mobile app pitch competition.

- Mozilla Foundation is launching a new open-source Web Literacy 2.0 initiative. Under the initiative, students, teachers and others will have access to training workshops to both learn and teach web literacy skills, including web mechanics, coding, remixing, privacy, community participation, open practices, and sharing. The program's free curricular resources and credentials will be structured to promote 21st century skills in collaboration, communication, creativity, and

problem-solving. To start, the Mozilla Foundation plans to build collaborations to train 500 people this year, who will in turn teach 20,000 individuals to be web literate and citizens of the open web. Mozilla will also launch its first-ever Web Literacy Leaders program, a six month fellowship focused on teaching web literacy and advocating for equitable access to the Web as an open and public resource.

- NCWIT, the U.S. Department of Housing and Urban Development (HUD), and Google will launch a pilot to expand CS education to 400 girls in HUD-supported public housing. NCWIT's AspireIT program connects high school and college women with K-12 girls interested in computing using a near-peer model, in which program leaders teach younger girls fundamentals in programming and computational thinking in fun and creative environments.

- San Antonio Youth Code Jam is committing to provide at least 1,000 students in grades 4-12 with coding opportunities, at events where youth, alongside their parents, can explore various programming languages and interact with volunteer mentors free of charge. Through support from the 80/20 Foundation, Rackspace, Google Fiber and others, the program will expand to include summer computing camps with scholarships for low-income and underrepresented students, and opportunities specifically for teens on the autism spectrum.

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