

AB 2329: Computer Science for All

Summary:

AB 2329 requires the Superintendent of Public Instruction (SPI) to convene a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan. The recommendations will be considered for the development of a computer science strategic implementation plan by the State Board of Education. This plan will help ensure that every student and especially those students from under-represented communities have access to computer science education.

Background:

California is home to a rapidly-growing technology sector. It is vital that students obtain the proper preparation for jobs in the technology workforce. Last year, there were over 600,000 tech jobs open across the United States. By 2018, 51 percent of all STEM jobs are projected to be in computer science-related fields. In California, there are currently 86,436 open computing jobs. This is 4 times the average demand rate in California.

However, there are still challenges to accessing computer science education. Only one out of four K-12 schools teaches any computer science, leaving 75 percent of students today without the opportunity to develop skills that could help them thrive in the future. At the high school level, only 1% of California high school students in the 20 largest school districts are enrolled in any computer science course.¹

Exposure to computer science at a young age has the potential to address the diversity gap in computer science fields. Girls who take AP computer science in high school are ten times more likely to major in computer science in college. African-American and Latino students who take this course in high school are over seven times more likely to major in this field.²

AB 2329 supports President Obama's Computer Science for All ("CSForAll") Initiative, which aims to give all students across the country the opportunity to learn computer science in school.

Providing recommendations for the computer science implementation plan will move California schools forward in a coordinated fashion to expose more children to computer science at a younger age and will prepare them for technology jobs that California has to offer. This bill will help better position California with necessary research and development to leverage future federal funds for computer science education.

Ultimately, AB 2329 will help the state reach the goal of having computer science curriculum in every school.

This bill:

Specifically, this bill:

- Requires the SPI to convene an advisory panel on or before September 1, 2017 to develop a computer science strategic implementation plan.

¹ Level Playing Field Institute, Disparities in Access to Computer Science Courses in California High Schools (May, 2015).

²<http://research.collegeboard.org/sites/default/files/publications/2012/7/research-report-2007-4-ap-students-college-analysis-five-year-academic-careers.pdf>

- Requires the advisory panel to report any necessary legislative changes and recommendations for the strategic implementation plan to the State Board of Education, the Department of Education and the Legislature by July 1, 2018.
- The recommendations will include, at minimum, the following:
 - Broaden the pool of teachers to teach computer science.
 - Ensure all students have access to computer science courses.
 - Procure a pathway for computer science to count toward high school graduation and college admission.
 - Provide access to computer science in both college and career pathways.
 - Ensure school districts have adequate broadband connectivity and access to hardware and software.
- Requires the advisory board to be comprised of the individuals who are representative of California's diversity and perspectives in computer science education including representatives from the CA Department of Education, current K-12 teacher, University of California, and the private sector industry.
- Requires the Superintendent to appoint a statewide computer science liaison position to the advisory board. This position will coordinate and ensure that the efforts of the advisory board's recommendations are implemented to achieve the intentions of the computer science strategic implementation plan.
- Requires the Department of Education and State Board of Education to consider the recommendations made by the advisory board. Based off of the recommendations, the Department of Education and State Board of Education will develop and adopt a

computer science strategic implementation plan.

- Requires the State Board of Education will submit the computer science strategic implementation plan to the Legislature on January 1, 2019.

Support:

- TechNet (Sponsor)
- Lieutenant Governor Gavin Newsom (Sponsor)
- Alliance for California Computing Education for Students and Schools
- American Association of University Women of California
- California Chamber of Commerce
- California Manufacturers & Technology Association
- Children Now
- Code.org
- Los Angeles Unified School District
- Microsoft Corporation
- Entertainment Software Association
- CalInnovates
- San Francisco Chamber of Commerce
- Bay Area Council
- San Jose Chamber of Commerce
- Silicon Valley Leadership Group
- Los Angeles Chamber of Commerce
- Valley Industry and Commerce Association
- San Diego Chamber of Commerce
- Group of small California technology companies
- Ebay
- Million Women Mentors – California
- Oracle
- Hewlett Packard
- California Technologies
- Facebook
- SolarCity
- Intel
- Qualcomm
- Dell
- Paypal
- Amazon Web Services
- General Motors

- Lyft
- Bloom Energy
- Accenture
- Cisco
- Yahoo
- Intuit
- California Federation of Teachers

Staff:

Sarah E. Brady, Ph.D.

Legislative Director

Office of Assemblywoman Bonilla

Sarah.brady@asm.ca.gov

916-319-2014



AB-2329 Computer science strategic implementation plan. (2015-2016)

Current Version: 09/27/16 - Chaptered

Compared to Version: 05/27/16 - Amended Assembly ▼

[Compare Versions](#) ⓘ

SECTION 1. (a) The Legislature finds and declares all of the following:

(1) Computer science education is not only about access to computers. It is about innovation and development of technology. Computer science education builds pupils' computational and critical thinking skills, which enables them to create, and not simply use, the next generation of technological tools. This fundamental knowledge is needed to prepare pupils for the 21st century regardless of their ultimate field of study or occupation.

(2) Computer science drives job creation and innovation throughout our state's economy. Providing access to computer science education is a critical step for ensuring that California remains competitive in the global economy and strengthens its cybersecurity. Last year, there were over 600,000 technology jobs open across the United States, and, by 2018, 51 percent of all science, technology, engineering, and mathematics (STEM) jobs are projected to be in computer science-related fields. In California, there are currently 86,436 open computing jobs, which is four times the average demand rate in California.

(3) Computing occupations make up two-thirds of all projected new jobs in STEM fields, making computer science one of the most in-demand college degrees. However, California only had 3,525 computer science graduates in 2014 with only 15 percent female graduates.

(4) There are fewer advanced placement (AP) examinations taken in computer science than in any other STEM subject area. Of the high school pupils in California who took the AP computer science examination in 2015, only 26 percent were female, only 973 were Latino, and only 148 were African American. Only 242 schools in California, or 16 percent of California schools with AP programs, offered the AP computer science course in the 2013–14 school year.

(5) President Obama's Computer Science for All initiative builds on the momentum at the state and local level. The President's upcoming budget proposes funding for the United States Department of Education, available over three years, for states to increase access to computer science education in elementary and secondary education classrooms. Under the program, states would submit comprehensive five-year "Computer Science for All" plans in order to be eligible for federal funding, and every state with a well-designed strategy would receive funds. In addition to state-level grants, the budget will also dedicate funds for competitive grants specifically for leading districts to execute ambitious computer science education expansion efforts for all pupils, including traditionally underrepresented pupils, with those efforts to serve as models for national replication.

(6) However, access to computer science education for all pupils is still a **challenge challenge**, especially for underrepresented communities. Only one out of four K–12 schools teaches any computer science, leaving 75 percent of pupils today without the opportunity to develop skills that could help them thrive in the future.

(7) Exposure to computer science at a young age has the potential to address the diversity gap in computer science fields. Girls who take AP computer science in high school are 10 times more likely to major in computer science in college. African American and Latino pupils who take this course in high school are over seven times more likely to major in this field.

(8) A Google-Gallup survey found that **9 nine** out of 10 parents say they want computer science taught in their schools, and the majority of parents and teachers believe it should be required learning for 21st century pupils.

(9) Computer science has often been confused with broader technology education in schools. California should adopt distinct standards for computer science focused on both the creation and use of software and computing technologies at all levels of K–12 education.

(b) It is the intent of the Legislature that all pupils in kindergarten and grades 1 to 12, inclusive, have access to computer science education, with a strong focus on pupils underrepresented in computer science, including girls, low-income and underserved school districts, and rural and urban school districts.

(c) It is the intent of the Legislature that the only predetermined outcome be to increase access to computer science in California schools and to account for disparate views as recommendations are provided.

SEC. 2. Chapter 19 (commencing with Section 53310) is added to Part 28 of Division 4 of Title 2 of the Education Code, to read:

CHAPTER 19. Computer Science Strategic Implementation Plan

53310. (a) On or before September 1, 2017, the Superintendent shall convene a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan. The advisory panel shall hold public meetings, post the location and time of the meetings, and post agendas online. Members of the advisory panel shall possess expertise in computer science. ~~The advisory panel shall consist of, but not necessarily be limited to, the following members:~~

(b) The advisory panel shall consist of, but not necessarily be limited to, the following members:

~~(a)~~ (1) The Superintendent or his or her designee, who shall serve as ~~the~~ cochair of the advisory panel.

~~(b)~~ (2) A representative of the Governor, who shall serve as ~~the~~ cochair of the advisory panel.

~~(c)~~ (3) A representative designated by the Senate Committee on Rules.

~~(d)~~ (4) A representative designated by the Speaker of the Assembly.

~~(e)~~ (5) ~~(1) (A) Three Six~~ K-12 teacher representatives, designated by the Superintendent.

~~(2) (B)~~ It is the intent of the Legislature that these representatives include ~~one elementary teacher, one two elementary school teachers, two~~ middle school ~~teacher, teachers,~~ and ~~one two~~ high school ~~teacher. teachers who are all currently teaching.~~

~~(3) (C)~~ It is further the intent of the Legislature that these representatives include one teacher from a large urban school district and one from a rural school district.

~~(f)~~ (6) A representative representing the Commission on Teacher Credentialing.

~~(g)~~ (7) A ~~representative~~ *credentialed teacher* representing the Computer Science Teachers Association.

~~(h)~~ (8) A representative of the private sector technology industry, designated by the Superintendent.

~~(i)~~ (9) A ~~representative~~ *faculty member* from the University of California.

~~(j)~~ (10) A ~~representative~~ *faculty member* from the California State University.

~~(k)~~ (11) A ~~representative~~ *faculty member* from the California Community Colleges.

~~(l)~~ (12) A ~~representative~~ *faculty member* from a private postsecondary educational institution, designated by the Superintendent.

~~(m)~~ (13) A ~~representative~~ *credentialed teacher* from the Instructional Quality Commission.

~~(n)~~ (14) A representative from ~~a~~ *an equity-focused organization knowledgeable of* computer science/STEM education ~~and research program, programs,~~ designated by the Superintendent.

~~(o)~~ (15) A representative from a parent organization, designated by the Superintendent.

~~(p)~~ (16) A representative representing school administrators and superintendents, designated by the Superintendent.

~~(q)~~ (17) A pupil enrolled in a public school, designated by the Superintendent.

~~(r)~~ (18) A representative from a county office of education, designated by the Superintendent.

(c) Administrators from the University of California, the California State University, and the California Community Colleges may serve as advisers to the advisory panel to provide input on the computer science strategic

implementation plan.

53311. (a) On or before July 1, 2018, the computer science strategic implementation advisory panel shall submit recommendations for a computer science strategic implementation plan to the department, the state board, and the Legislature that includes, at a minimum, recommendations on all of the following:

(1) Broadening the pool of teachers to teach computer science. These recommendations may provide, among other things, for the following:

(A) Providing training and professional development for education in computer science pursuant to Section 60605.4.

(B) Creating a teacher certification pathway in computer science.

(C) Expanding scholarship eligibility and loan forgiveness programs for computer science teachers in low-income and underserved school districts and rural and urban school districts.

(2) Defining computer science education principles that meet the needs of pupils in kindergarten and grades 1 to 12, inclusive.

(3) Ensuring that all pupils have access to quality computer science courses. These recommendations may provide, among other things, for the following:

(A) Scaling up computer science education coursework so that all high schools teach at least one computer science course.

(B) Providing access to computer science in both college and career pathways.

(C) Ensuring school districts have adequate broadband connectivity and infrastructure and access to hardware and software. This may include, but is not limited to, the development of grant programs that prioritize high-need school districts.

(D) Removing local policy and regulatory barriers that local educational agencies face when implementing computer science education.

(E) Increasing the participation of pupils traditionally underrepresented in computer science education.

(b) The recommendations shall be submitted to the Legislature in conformance with Section 9795 of the Government Code.

(c) Upon completion of the recommendations for a computer science strategic implementation plan, the computer science strategic implementation advisory panel established pursuant to Section 53310 shall ~~cease~~: *cease to exist.*

53312. (a) The Superintendent shall appoint a statewide computer science liaison within the department to serve the computer science strategic implementation advisory panel, including, but not limited to, in the following ~~the~~ actions:

(1) Coordinating the efforts of the advisory panel by writing up the recommendations of the advisory panel members and disseminating them to all stakeholders.

(2) Soliciting input and public comments.

(3) Preparing the necessary legislative reports to share the advisory panel's recommendations.

(4) Ensuring that the advisory panel's recommendations ~~are considered in order to achieve the intentions of the computer science strategic implementation plan~~: *adopted by the state board are implemented.*

(b) The duration of the liaison's role shall only be ~~through the implementation of the computer science content standards and curriculum frameworks in order to ensure that the recommendations from the computer science strategic implementation advisory panel are considered for implementation~~: *for a limited period of time subsequent to the adoption by the state board of academic content standards in computer science and the curriculum framework for computer science in order to provide technical assistance and support to local educational agencies in commencing implementation of the computer science academic content standards and curriculum framework.*

53313. The department and state board shall consider the recommendations submitted by the computer science strategic implementation advisory panel pursuant to Section ~~53311, shall develop and adopt~~ 53311. *The department shall develop, and the state board shall adopt,* a computer science strategic implementation ~~plan,~~ *and plan on or before January 1, 2019. The department* shall submit the plan *adopted by the state board* to the Legislature in conformance with Section 9795 of the Government Code on or before January 1, 2019.

53314. If state or federal funds are not available or sufficient for purposes of this chapter, the computer science strategic implementation advisory panel may evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the computer science strategic implementation plan, and ensuring that the ~~recommendations are considered by the appropriate stakeholders.~~ *computer science strategic implementation plan adopted by the state board is implemented.*

53315. This chapter shall become inoperative on July 31, 2020, and, as of January 1, 2021, is repealed, unless a later enacted statute, that becomes operative on or before January 1, 2021, deletes or extends the dates on which it becomes inoperative and is repealed.

SENATE COMMITTEE ON EDUCATION

Senator Carol Liu, Chair
2015 - 2016 Regular

Bill No: AB 2329
Author: Bonilla
Version: June 14, 2016
Urgency: No
Consultant: Lynn Lorber
Hearing Date: June 22, 2016
Fiscal: Yes

Subject: Computer science strategic implementation plan

SUMMARY

This bill requires the Superintendent of Public Instruction (SPI) to convene a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan.

BACKGROUND

Existing law:

- 1) Requires the Instructional Quality Commission (IQC) to *consider* developing and recommending to the State Board of Education (SBE), by July 31, 2019, computer science content standards based on recommendations developed by a group of computer science experts. (Education Code § 60605.4)
- 2) Requires the SPI, in consultation with the SBE, to *consider* convening the group of experts to develop recommendations for computer science content standards. (EC § 60605.4)
- 3) Authorizes a school district to award a student up to one mathematics course credit for successfully completing an “a-g” approved computer science course, if the district requires more than two courses in mathematics for graduation from high school. (EC § 51225.3 and § 51225.35)
- 4) Requires the California State University, and requests the University of California (UC), to develop guidelines for high school computer science courses to be approved for admission, and encourages the UC to ensure that computer science courses that satisfy the math subject area requirements for admission build upon fundamental math content in courses that align with the academic content standards. (EC § 66205.5)

ANALYSIS

This bill requires the SPI to convene, by September 1, 2017, a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan. Specifically, this bill:

- 1) Requires the advisory panel to consist of but not be limited to the following members:
 - a) The Superintendent of Public Instruction (SPI) or his or her designee, who is to serve as the co-chair.
 - b) A representative of the Governor, who is to serve as the co-chair.
 - c) A representative designated by the Senate Rules Committee.
 - d) A representative designated by the Speaker of the Assembly.
 - e) Six K-12 teacher representatives, designated by the SPI. This bill states intent that these representatives include two elementary teachers, two middle school teachers, and two high school teachers who are all currently teaching. This bill further states intent that these representatives include one teacher from a large urban school district and one from a rural school district.
 - f) A representative of the Commission on Teacher Credentialing.
 - g) A credentialed teacher of the Computer Science Teachers Association.
 - h) A representative of the private sector technology industry, designated by the SPI.
 - i) A faculty member from the University of California (UC).
 - j) A faculty member from the California State University (CSU).
 - k) A faculty member from the California Community Colleges (CCCs).
 - l) A faculty from a private postsecondary educational institution, designated by the SPI.
 - m) A credentialed teacher from the Instructional Quality Commission.
 - n) A representative from an equity-focused organization knowledgeable of computer science/STEM education programs, designated by the SPI.
 - o) A representative from a parent organization, designated by the SPI.
 - p) A representative of school administrators and superintendents, designated by the SPI.
 - q) A student enrolled in a public school, designated by the SPI.
 - r) A representative from a county office of education, designated by the SPI.

- 2) Authorizes administrators from the University of California (UC), California State University (CSU) and California Community Colleges (CCCs) to serve as advisors to the advisory panel to provide input on the computer science strategic implementation plan.
- 3) Requires the advisory panel to hold public meetings, post the location and time of the meetings, and post agendas online.
- 4) Requires the computer science strategic implementation advisory panel to submit recommendations for a computer science strategic implementation plan to the California Department of Education (CDE), the State Board of Education (SBE), and the Legislature that includes, at a minimum, recommendations on all of the following:
 - a) Broadening the pool of teachers to teach computer science. This bill authorizes these recommendations to provide for, among other things, the following:
 - i) Providing training and professional development for education in computer science pursuant to academic content standards that have yet to be developed.
 - ii) Creating a teacher certification pathway in computer science.
 - iii) Expanding scholarship eligibility and loan forgiveness programs for computer science teachers in low-income and underserved school districts and rural and urban school districts.
 - b) Defining computer science education principles that meet the needs of K-12 students.
 - c) Ensuring that all students have access to quality computer science courses. This bill authorizes these recommendations to provide for, among other things, the following:
 - i) Scaling up computer science education coursework so that all high schools teach at least one computer science course.
 - ii) Providing access to computer science in both college and career pathways.
 - iii) Ensuring school districts have adequate broadband connectivity and infrastructure and access to hardware and software. This bill authorizes this to include but not be limited to the development of grant programs that prioritize high-need school districts.
 - iv) Removing local policy and regulatory barriers that local educational agencies face when implementing computer science education.

- v) Increasing the participation of students traditionally underrepresented in computer science education.
- 5) Requires the California Department of Education (CDE) and State Board of Education (SBE) to consider the recommendations submitted by the computer science strategic implementation advisory panel, and requires the CDE to develop and adopt a computer science strategic implementation plan, and submit the plan to the Legislature by January 1, 2019.
 - 6) Requires the Superintendent of Public Instruction (SPI) to appoint a statewide computer science liaison within the CDE to serve the computer science strategic implementation advisory panel, including but not limited to the following actions:
 - a) Coordinating the efforts of the advisory panel by writing up the recommendations of the advisory panel members and disseminating them to all stakeholders.
 - b) Soliciting input and public comments.
 - c) Preparing the necessary legislative reports to share the advisory panel's recommendations.
 - d) Ensuring that the advisory panel's recommendations are considered in order to achieve the intentions of the computer science strategic implementation plan.
 - 7) Provides that the duration of the liaison's role is only through the implementation of the computer science content standards and curriculum frameworks in order to ensure that the recommendations from the advisory panel are considered for implementation.
 - 8) Provides that the computer science strategic implementation advisory panel is to cease upon completion of the recommendations for a strategic plan.
 - 9) Authorizes the computer science strategic implementation advisory panel, if state or federal funds are not available or sufficient for the purposes of this bill, to evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the strategic implementation plan, and ensuring that the recommendations are considered by the appropriate stakeholders.
 - 10) States legislative findings and declarations relative to the value of computer science education.
 - 11) Sunsets the provisions of this bill on July 31, 2020.

STAFF COMMENTS

- 1) ***Need for the bill.*** According to the author, existing law requires the Instructional Quality Commission (IQC) to consider developing and recommending to the

State Board of Education K-12 computer science content standards by July 31, 2019, and requires the Superintendent of Public Instruction (SPI) to consider convening a panel of experts to develop recommendations on computer science standards. However, existing law is permissive and contingent upon funding; the Instructional Quality Commission (IQC) has not considered developing computer science standards, nor has the SPI convened a panel of experts. “In order to address all of the barriers, it is necessary to have a coordinated approach that involves all of the appropriate stakeholders. Computer science drives job creation and innovation throughout California’s economy. Currently, there are 86,436 computing jobs available in the state and by 2018, 51% of all science, technology, engineering, and math (STEM) jobs in the United States will be in computer science-related fields. However, California only had 3,525 students graduate with a computer science degree in 2015. We need to increase access to computer science courses in K-12 education, especially for underrepresented groups. Almost 9,000 students took the advanced placement (AP) computer science exam in California in 2015. Less than 150 were African American and less than 400 were Hispanic.”

- 2) **Advisory panel.** Existing law requires the SPI to consider convening a panel of experts to develop recommendations on computer science standards. However, existing law is permissive and contingent upon funding; this advisory panel has not been convened. This bill requires the SPI to convene, by September 1, 2017, a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan.
- 3) **Liaison.** This bill requires the SPI to appoint a statewide computer science liaison within the California Department of Education to serve the advisory panel and, pursuant to amendments recommended in #12, provide technical assistance and support to local educational agencies in implementing the computer science standards and framework (assuming standards and framework are adopted by the State Board of Education). Staff is unaware of other measures that have assigned an individual to staff the issue and see it through implementation.
- 4) **Clarifying amendments.** Staff recommends the following amendments:

On page 7, lines 18-35: (a) The Superintendent shall appoint a statewide computer science liaison within the department to serve the computer science strategic implementation advisory panel, including, but not limited to, in the following the actions:

- (1) Coordinating the efforts of the advisory panel by writing up the recommendations of the advisory panel members and disseminating them to all stakeholders.
- (2) Soliciting input and public comments.
- (3) Preparing the necessary legislative reports to share the advisory panel’s recommendations.
- (4) Ensuring that the advisory panel’s recommendations **adopted by the state board are implemented** ~~are considered in order to achieve the intentions of the computer science strategic implementation plan.~~

(b) The duration of the liaison's role shall only be for a limited period of time subsequent to the adoption by the state board of academic content standards in computer science and the curricular framework for computer science in order to provide technical assistance and support to local educational agencies in commencing implementation of the computer science standards and framework through the implementation of the computer science content standards and curriculum frameworks in order to ensure that the recommendations from the computer science strategic implementation advisory panel are considered for implementation.

On page 7, lines 36-40 and page 8 lines 1-2: The department and state board shall consider the recommendations submitted by the computer science strategic implementation advisory panel pursuant to Section 53311, The department shall develop, and the state board shall adopt, a computer science strategic implementation plan on or before January 1, 2019, and The department shall submit the plan adopted by the state board to the Legislature in conformance with Section 9795 of the Government Code on or before January 1, 2019.

On page 8, lines 3-10: If state or federal funds are not available or sufficient for purposes of this chapter, the computer science strategic implementation advisory panel may evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the computer science strategic implementation plan, and ensuring that the computer science strategic implementation plan adopted by the state board is implemented recommendations are considered by the appropriate stakeholders.

On page 7, line 21, strike the second "the."

- 5) **Fiscal impact.** According to the Assembly Appropriations Committee, this bill imposes:
 - a) General Fund administrative costs of approximately \$270,000 for the California Department of Education to staff the stakeholder group. Costs include review of potential member applications, arranging meeting logistics and travel for members, preparation of meeting materials, and reports to the Legislature. Staff notes that this estimate does not include the three additional stakeholder members pursuant to recent amendments.
 - b) Proposition 98/General Fund cost pressure, in the millions of dollars, to implement the recommendations of the advisory board.

- 6) **Related legislation.** AB 2275 (Dababneh, 2016) authorizes a person who possesses a single subject teaching credential in business, industrial and technology education, mathematics, or science or a designated subjects career technical education teaching credential to teach computer science to all students, including students enrolled in a general education or college preparatory course or a career technical education pathway. AB 2275 was never heard.

- 7) **Prior legislation.** AB 1258 (Chau, 2015) required the Superintendent of Public Instruction (SPI) to establish a computer science education grant pilot program for local educational agencies to establish, expand and maintain computer science courses and provide professional development in computer science. AB 1258 was held in the Senate Appropriations Committee.

AB 1530 (Chau, 2014) required the SPI to consider identifying, developing or revising model curriculum on computer science for kindergarten - 6th grade. AB 1530 was held in the Senate Appropriations Committee.

AB 2110 (Ting, 2014) required the Instructional Quality Commission to consider incorporating computer science curriculum content into the mathematics, science, history-social science, and English language arts/English language development frameworks. AB 2110 was held in the Senate Appropriations Committee.

SUPPORT

Accenture, LLP
Alliance for California Computing Education for Students and Schools (ACCESS)
Amazon
Bloom Energy
CA Technologies
California Chamber of Commerce
California School Boards Association
CALinnovates
Cisco Systems Limited
Code.org
Common Sense Kids Action
eBay Inc.
General Motors
HP Inc.
Intel
Intuit
Level Playing Field Institute
Lieutenant Governor Gavin Newsom
Lyft
Microsoft
Million Women Mentors
Oracle
PayPal
Qualcomm
Silicon Valley Leadership Group
SolarCity
TechNet
Yahoo!

OPPOSITION

None received.

-- END --

May 26, 2016

Dear Chairwoman Gonzalez,

I am writing to let you know that I support Assemblywoman Bonilla's Assembly Bill (AB) 2329, and I respectfully ask for your support. I am an 8th grade, male African-American student in public school in Palo Alto, and I will be starting high school here in the fall.

We are lucky in our school district to have computer science courses available as electives. However, even though we are in the heart of Silicon Valley, most students that I know are not really exposed to computer science. As an elective, you have to fit it into your schedule, and it seems like only those who are already "in the know" seek it out. I am going to take the CS electives in high school, but very few students from underrepresented groups that I know seem to be pursuing computer science here.

We do have a program through the school district and the city with the company Palantir that helps underrepresented students get exposed to coding, which I hope to try, and to encourage my friends to try also. It would be nice if other companies did the same thing for students across California.

I am concerned that the process for modernizing the public schools is very slow, and that kids all over California are missing out on a 21st century education. We should have computer science in all the schools, and it should be a graduation requirement, or it should be accepted as an alternative to science or language for UC/CSU admission.

It needs to be done in a way that reaches every student, so everyone gets taught coding, just like English and math. Thank you for reading my letter.

Sincerely,

Dante Kirkman

Dante Kirkman
1605 Mariposa Avenue
Palo Alto CA 94306



July 6, 2016

The Honorable Ricardo Lara
Chair, Senate Appropriations Committee
State Capitol, Room 5050
Sacramento, CA 95814

Subject: AB 2329 (Bonilla) - Computer Science for All - CO-SPONSOR

Dear Chairman Lara:

TechNet is proud to co-sponsor Assembly Bill (AB) 2329 and respectfully asks for your support. This important legislation establishes a computer science strategic implementation advisory panel under the Department of Education to develop recommendations for a computer science implementation plan. The recommendations will be used for the development and adoption of a computer science strategic implementation plan by the State Board of Education. This plan will help ensure that every student and especially those students from under-represented communities have access to computer science education.

California is home to a rapidly-growing technology sector. It is vital that students obtain the proper preparation for jobs in the technology workforce. Last year, there were over 600,000 tech jobs open across the United States. By 2018, 51 percent of all STEM jobs are projected to be in computer science-related fields. In California, there are currently 86,436 open computing jobs. This is four times the average demand rate in California.

However, there are still challenges to accessing computer science education. Only one out of four K-12 schools teaches any computer science, leaving 75 percent of students today without the opportunity to develop skills that could help them thrive in the future. At the high school level, only 1% of California high school students in the 20 largest school districts are enrolled in any computer science course.

AB 2329 supports President Obama’s Computer Science for All (“CSForAll”) Initiative, which aims to give all students across the country the opportunity to learn computer science in school.

Providing recommendations for the computer science implementation plan will move California schools forward in a coordinated fashion to expose more children to computer science at a younger age and will prepare them for technology jobs that California has to offer. This bill will help better position California with the necessary research and development to leverage future federal funds for computer science education. Ultimately, this plan will help the state reach the goal of having computer science curriculum in every school.

For these reasons, TechNet is proud to co-sponsor AB 2329. If you have any questions, I can be reached at adeveau@technet.org or by calling my cell at (805) 234-5481.

Sincerely,



Andrea Deveau
Executive Director
TechNet

CC: Assemblymember Susan Bonilla
Senate Appropriations Committee

September 13, 2016

The Honorable Jerry Brown
Governor of the State of California
State Capitol
Suite 1173
Sacramento, CA 95814

Dear Governor Brown,

California is the global leader in technology and innovation. We are home to some of the most iconic technology companies in the world, as well as the most dynamic startups. The technology sector has driven job creation, innovation, and economic growth over the past three decades.

One of the key challenges, however, is to ensure that more Californians of all backgrounds can participate in the economic opportunity created by the technology sector. This requires that our schools and other enrichment programs ignite the spark of interest in technology and provide students with the foundational skills they need to pursue it. The goal: Every student in California should have the opportunity to take computer science or similar technical courses.

Yet, today, most of California's students receive little or no exposure to these subjects. As a matter of basic fairness in ensuring economic opportunity for all, and for the continued growth of the technology industry, we believe that this needs to change.

That is why we strongly urge you to sign Assembly Bill 2329 (Bonilla). This critical legislation establishes a panel of experts who will develop strategic recommendations for a statewide computer science plan. In doing so, you will open up avenues of opportunity for millions of California's students, improve their education, and ultimately help them obtain meaningful, well-paying jobs.

Nationally, elected leaders are embracing the value of computer science education. Earlier this year, 28 governors, 45 CEOs, dozens of K-12 and nonprofit leaders, and 136,000 individuals called on Congress to do more to fund computer science education across the country. Twenty-four states have approved policies to expand computer science education since 2013. Momentum is growing.

With this legislation, California has the opportunity to take a leadership role on computer science education. This is particularly important since our state has nearly 75,000 computing jobs open today, and does not have the skilled workforce to fill them. If we do nothing, this challenge will become more problematic in the future.

The state has a significant way to go. Only one out of four K-12 schools teaches any computer science, leaving 75 percent of students today without the opportunity to develop skills that could help them thrive in the future. At the high school level, only one percent of California students in the 20 largest school districts are enrolled in any computer science course. In 2015, only 8,688 students sat for the AP computer science exam, while well over 70,000 students took an AP calculus exam. Of those who took the AP computer science exam, only 2,258 were female, only 973 were Hispanic, and only 148 were African-American.

To prepare each student in California to succeed in a global, interconnected, and technology-driven economy, we must provide them with access to computer science education. AB 2329 will do just that, and we strongly urge you to sign it into law.

Sincerely,

Michael Gregoire
Chief Executive Officer
CA Technologies

Brad Smith
President and Chief Legal Officer
Microsoft

Greg Becker
President & Chief Executive Officer
Silicon Valley Bank and SVB Financial Group

KR Sridhar
Founder & Chief Executive Officer
Bloom Energy

Ted Schlein
Managing Partner
Kleiner Perkins

Michael Bell
President & Chief Executive Officer
Silver Spring Networks

Frank Mycroft
Founder & Chief Executive Officer
Booster Fuels

Hadi Partovi
Founder & Chief Executive Officer
Code.org

Terry Howerton
Chief Executive Officer
TechNexus

Ron Conway
Founder
Silicon Valley Angel

Stephan Kasriel
Chief Executive Officer
Upwork Inc.

Lyndon Rive
Chief Executive Office & Co-Founder
SolarCity

Pasquale Romano
President & Chief Executive Officer
ChargePoint

Assembly Bill No. 2329

CHAPTER 693

An act to add and repeal Chapter 19 (commencing with Section 53310) of Part 28 of Division 4 of Title 2 of the Education Code, relating to school curriculum.

[Approved by Governor September 27, 2016. Filed with
Secretary of State September 27, 2016.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2329, Bonilla. Computer science strategic implementation plan.

Existing law requires the Instructional Quality Commission, on or before July 31, 2019, to consider developing and recommending to the State Board of Education computer science content standards for kindergarten and grades 1 to 12, inclusive, pursuant to recommendations developed by a group of computer science experts convened by the Superintendent of Public Instruction in consultation with the state board.

This bill would require the Superintendent to convene, on or before September 1, 2017, a computer science strategic implementation advisory panel composed of 23 members, as specified, to develop and submit recommendations for a computer science strategic implementation plan to the State Department of Education, the state board, and the Legislature on or before July 1, 2018. The bill would require the department and the state board to consider the advisory panel's recommendations; the department to develop, and the state board to adopt, a computer science strategic implementation plan on or before January 1, 2019; and the department to submit the plan adopted by the state board to the Legislature on or before January 1, 2019. The bill would require the Superintendent to appoint a statewide computer science liaison to serve the advisory panel, as provided. The bill would authorize the advisory panel, if state or federal funds are not available or sufficient for purposes of these provisions, to evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the computer science strategic implementation plan, and ensuring that the computer science strategic implementation plan adopted by the state board is implemented. The bill's provisions would be repealed on January 1, 2021.

The people of the State of California do enact as follows:

SECTION 1. (a) The Legislature finds and declares all of the following:

(1) Computer science education is not only about access to computers. It is about innovation and development of technology. Computer science education builds pupils' computational and critical thinking skills, which enables them to create, and not simply use, the next generation of technological tools. This fundamental knowledge is needed to prepare pupils for the 21st century regardless of their ultimate field of study or occupation.

(2) Computer science drives job creation and innovation throughout our state's economy. Providing access to computer science education is a critical step for ensuring that California remains competitive in the global economy and strengthens its cybersecurity. Last year, there were over 600,000 technology jobs open across the United States, and, by 2018, 51 percent of all science, technology, engineering, and mathematics (STEM) jobs are projected to be in computer science-related fields. In California, there are currently 86,436 open computing jobs, which is four times the average demand rate in California.

(3) Computing occupations make up two-thirds of all projected new jobs in STEM fields, making computer science one of the most in-demand college degrees. However, California only had 3,525 computer science graduates in 2014 with only 15 percent female graduates.

(4) There are fewer advanced placement (AP) examinations taken in computer science than in any other STEM subject area. Of the high school pupils in California who took the AP computer science examination in 2015, only 26 percent were female, only 973 were Latino, and only 148 were African American. Only 242 schools in California, or 16 percent of California schools with AP programs, offered the AP computer science course in the 2013–14 school year.

(5) President Obama's Computer Science for All initiative builds on the momentum at the state and local level. The President's upcoming budget proposes funding for the United States Department of Education, available over three years, for states to increase access to computer science education in elementary and secondary education classrooms. Under the program, states would submit comprehensive five-year "Computer Science for All" plans in order to be eligible for federal funding, and every state with a well-designed strategy would receive funds. In addition to state-level grants, the budget will also dedicate funds for competitive grants specifically for leading districts to execute ambitious computer science education expansion efforts for all pupils, including traditionally underrepresented pupils, with those efforts to serve as models for national replication.

(6) However, access to computer science education for all pupils is still a challenge, especially for underrepresented communities. Only one out of four K–12 schools teaches any computer science, leaving 75 percent of pupils today without the opportunity to develop skills that could help them thrive in the future.

(7) Exposure to computer science at a young age has the potential to address the diversity gap in computer science fields. Girls who take AP computer science in high school are 10 times more likely to major in computer science in college. African American and Latino pupils who take

this course in high school are over seven times more likely to major in this field.

(8) A Google-Gallup survey found that nine out of 10 parents say they want computer science taught in their schools, and the majority of parents and teachers believe it should be required learning for 21st century pupils.

(9) Computer science has often been confused with broader technology education in schools. California should adopt distinct standards for computer science focused on both the creation and use of software and computing technologies at all levels of K–12 education.

(b) It is the intent of the Legislature that all pupils in kindergarten and grades 1 to 12, inclusive, have access to computer science education, with a strong focus on pupils underrepresented in computer science, including girls, low-income and underserved school districts, and rural and urban school districts.

(c) It is the intent of the Legislature that the only predetermined outcome be to increase access to computer science in California schools and to account for disparate views as recommendations are provided.

SEC. 2. Chapter 19 (commencing with Section 53310) is added to Part 28 of Division 4 of Title 2 of the Education Code, to read:

CHAPTER 19. COMPUTER SCIENCE STRATEGIC IMPLEMENTATION PLAN

53310. (a) On or before September 1, 2017, the Superintendent shall convene a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan. The advisory panel shall hold public meetings, post the location and time of the meetings, and post agendas online. Members of the advisory panel shall possess expertise in computer science.

(b) The advisory panel shall consist of, but not necessarily be limited to, the following members:

(1) The Superintendent or his or her designee, who shall serve as cochair of the advisory panel.

(2) A representative of the Governor, who shall serve as cochair of the advisory panel.

(3) A representative designated by the Senate Committee on Rules.

(4) A representative designated by the Speaker of the Assembly.

(5) (A) Six K–12 teacher representatives, designated by the Superintendent.

(B) It is the intent of the Legislature that these representatives include two elementary school teachers, two middle school teachers, and two high school teachers who are all currently teaching.

(C) It is further the intent of the Legislature that these representatives include one teacher from a large urban school district and one from a rural school district.

(6) A representative representing the Commission on Teacher Credentialing.

(7) A credentialed teacher representing the Computer Science Teachers Association.

(8) A representative of the private sector technology industry, designated by the Superintendent.

(9) A faculty member from the University of California.

(10) A faculty member from the California State University.

(11) A faculty member from the California Community Colleges.

(12) A faculty member from a private postsecondary educational institution, designated by the Superintendent.

(13) A credentialed teacher from the Instructional Quality Commission.

(14) A representative from an equity-focused organization knowledgeable of computer science/STEM education programs, designated by the Superintendent.

(15) A representative from a parent organization, designated by the Superintendent.

(16) A representative representing school administrators and superintendents, designated by the Superintendent.

(17) A pupil enrolled in a public school, designated by the Superintendent.

(18) A representative from a county office of education, designated by the Superintendent.

(c) Administrators from the University of California, the California State University, and the California Community Colleges may serve as advisers to the advisory panel to provide input on the computer science strategic implementation plan.

53311. (a) On or before July 1, 2018, the computer science strategic implementation advisory panel shall submit recommendations for a computer science strategic implementation plan to the department, the state board, and the Legislature that includes, at a minimum, recommendations on all of the following:

(1) Broadening the pool of teachers to teach computer science. These recommendations may provide, among other things, for the following:

(A) Providing training and professional development for education in computer science pursuant to Section 60605.4.

(B) Creating a teacher certification pathway in computer science.

(C) Expanding scholarship eligibility and loan forgiveness programs for computer science teachers in low-income and underserved school districts and rural and urban school districts.

(2) Defining computer science education principles that meet the needs of pupils in kindergarten and grades 1 to 12, inclusive.

(3) Ensuring that all pupils have access to quality computer science courses. These recommendations may provide, among other things, for the following:

(A) Scaling up computer science education coursework so that all high schools teach at least one computer science course.

(B) Providing access to computer science in both college and career pathways.

(C) Ensuring school districts have adequate broadband connectivity and infrastructure and access to hardware and software. This may include, but is not limited to, the development of grant programs that prioritize high-need school districts.

(D) Removing local policy and regulatory barriers that local educational agencies face when implementing computer science education.

(E) Increasing the participation of pupils traditionally underrepresented in computer science education.

(b) The recommendations shall be submitted to the Legislature in conformance with Section 9795 of the Government Code.

(c) Upon completion of the recommendations for a computer science strategic implementation plan, the computer science strategic implementation advisory panel established pursuant to Section 53310 shall cease to exist.

53312. (a) The Superintendent shall appoint a statewide computer science liaison within the department to serve the computer science strategic implementation advisory panel, including, but not limited to, in the following actions:

(1) Coordinating the efforts of the advisory panel by writing up the recommendations of the advisory panel members and disseminating them to all stakeholders.

(2) Soliciting input and public comments.

(3) Preparing the necessary legislative reports to share the advisory panel's recommendations.

(4) Ensuring that the advisory panel's recommendations adopted by the state board are implemented.

(b) The duration of the liaison's role shall only be for a limited period of time subsequent to the adoption by the state board of academic content standards in computer science and the curriculum framework for computer science in order to provide technical assistance and support to local educational agencies in commencing implementation of the computer science academic content standards and curriculum framework.

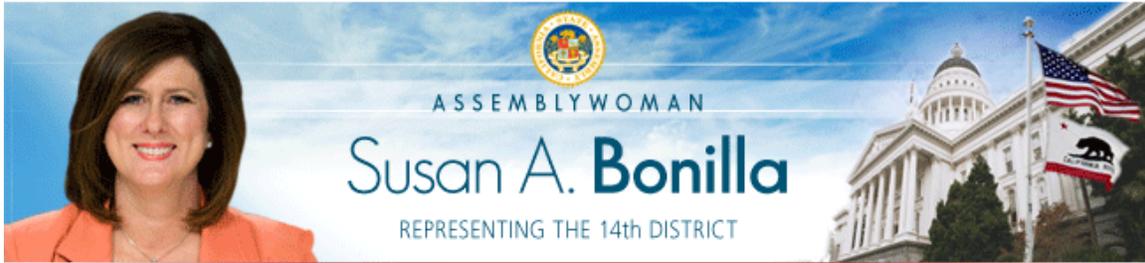
53313. The department and state board shall consider the recommendations submitted by the computer science strategic implementation advisory panel pursuant to Section 53311. The department shall develop, and the state board shall adopt, a computer science strategic implementation plan on or before January 1, 2019. The department shall submit the plan adopted by the state board to the Legislature in conformance with Section 9795 of the Government Code on or before January 1, 2019.

53314. If state or federal funds are not available or sufficient for purposes of this chapter, the computer science strategic implementation advisory panel may evaluate the process and ability to accept grants and receive donations and other financial support from public or private sources for purposes of convening the advisory panel, preparing the computer science strategic implementation plan, and ensuring that the computer science strategic implementation plan adopted by the state board is implemented.

53315. This chapter shall become inoperative on July 31, 2020, and, as of January 1, 2021, is repealed, unless a later enacted statute, that becomes

operative on or before January 1, 2021, deletes or extends the dates on which it becomes inoperative and is repealed.

O



AB 1756: Incentivizing the Creation of Four-Year Integrated Teacher Credential Programs

Summary:

AB 1756 gets qualified teachers into classrooms more quickly while saving students at least a year of student loan debt. AB 1756 incentivizes public and private nonprofit postsecondary institutions to create teacher preparation programs that allow students to earn a baccalaureate degree and their teaching credential concurrently within four years.

Background:

California suffers from a shortage of qualified teachers. In 2015, more than 3,900 open teaching positions remained in mid-October. Meanwhile, enrollment in teacher credential programs has plummeted by more than 70% in the last decade. Many students choose not to enter the teaching profession because of the low earning potential and the high student loan debt.

More than two-thirds of all teachers accrue student loan debt in order to pay for higher education. This results in an average debt of \$20,000 for teachers with a baccalaureate degree and \$50,000 for those with a master's degree. That is \$8,000 more than the average debt for someone with an MBA.

AB 1756 will tackle this problem by creating a mechanism to design and promote streamlined baccalaureate degree – teaching credential combined programs so that we can get teachers into the classroom sooner and avoid thousands of dollars of student loan debt for budding teachers.

In California, it is most common for a student to earn their baccalaureate and then complete a teaching credential program. This increases the number of years of schooling the student must pay for and delays their entrance into the workforce. In addition, the students still have to complete their student teaching where they have no earning potential as they work full time in the classroom with no compensation.

Contacts: Sarah Brady, Ph.D., Office of Assemblywoman Susan A. Bonilla, 916-319-2014, Sarah.Brady@asm.ca.gov

AB 1756 creates a grant program for all California public or private nonprofit postsecondary institutions to create teaching credential programs that allow students to earn their baccalaureate degree, finish their teaching credential, and complete their student teaching within four years. This saves teachers one full year of tuition costs as well as the cost of living.

Credential programs that combine baccalaureate studies with credential work already exist, however, most are longer than four years. Enrollment is also very small. In 2013-14, there were 6,992 students in teacher credential programs at CSU while there were only 323 students in their combined programs.

AB 1756 addresses these hurdles by using one-time funding to provide the support the faculty need to create four year programs and to increase the recruitment of students who know they want to be teachers when they begin college. Public and private nonprofit postsecondary institutions will be eligible for grants to create four-year integrated teacher credential programs and to recruit students to these programs.

Quality teacher credential programs that allow students to earn their baccalaureate degree, finish their teaching credential, and complete their student teaching in four years are desperately needed. They will save students student loan debt and living expenses, shorten the pipeline to a full-time job, and help get fully trained teachers into the classroom more quickly – playing a role in solving California's teacher shortage.

This bill:

Specifically, this bill:

- Clarifies that a baccalaureate may be earned concurrently with a teaching credential

- Specifies that these programs may be completed within four years, including student teaching
- Creates a grant program for public and private postsecondary institutions to provide quality four year integrated teacher credential programs administered by the California Commission on Teacher Credentialing
- Grants will be \$250,000
- Grants can be used to improve existing programs, create new ones, build partnerships with community colleges, and recruit students to these programs

Support:

Superintendent of Public Instruction, Tom Torlakson
Association of Independent California Colleges and Universities (AICCU)
California Catholic Conference, Inc.
EdVoice
California Chamber of Commerce
California Federation of Teachers
CSU Education Deans and Associate Deans
The Arc and United Cerebral Palsy California Collaboration
San Francisco Unified School District (SFUSD)
School Employees Association of California (SEAC)
Los Angeles Unified School District (LAUSD)
California Council on Teacher Education

Contact:

Sarah E. Brady, Ph.D.
Legislative Aide
sarah.brady@asm.ca.gov
916-319-2014

Questions #1: What is the estimated cost for faculty release time to redesign courses to fit within a four year integrated model?

Institution A (traditional student population):

-- Typically pay faculty a \$1000 stipend to redesign courses. If it is a program redesign or build-out we give 1-2 courses releases valued at about \$10,000-\$12,000 per release (3-unit, 1 semester course). This can fluctuate depending on the faculty's base salary.

Institution B (non-traditional and transfer student population):

-- We would focus funding on getting the MS program off the ground. We do not believe it is feasible to do the SS at our institution since we don't have the depth of content courses needed.

Institution C (mix population):

-- Our existing teacher preparation coursework is taught by undergraduate content faculty. A release of (3) units per faculty @ the university rate of \$2,500 would be appropriate. We are estimating the need for ten faculty:

Ten (10) faculty @ \$7,500 for a 3-unit course release = \$75,000

Meals = \$5,000

Supplies = \$2,000

Total = \$82,000

Questions #2: What is the estimated cost to fund program coordinators to support faculty collaboration?

Institution A (traditional student population):

-- Program coordinators would receive stipends and course releases valued at about \$30,000/year.

Institution B (transfer and returning/adult student population):

-- If we were to focus on one IHE/CC partnership it could cost:

- \$12,500 Program Coordinator (Community College)
- \$12,500 Program Coordinator (University)

If we want to set up more than one partnership then the cost would go up based on the number of community college coordinators and students we would serve.

Institution C (mix population):

-- We would anticipate the need to have a full-time faculty member working with the undergraduate faculty to coordinate and support the collaboration processes. This release has an anticipated cost of \$99,750.

- Salary = \$75,000 with benefits @ 33% = \$99,750

Questions #3: What is the estimated cost of creating summer courses for integrated program students?

Institution A (traditional student population):

-- Course development stipends are \$1,000 per course. For the summer, this could be an additional \$5,000.

-- Institution A noted that their full development costs would be very similar to Institution C (including scholarship funds).

Institution B (transfer and returning/adult student population):

- \$540,000 Full Scholarship for summer classes over 4 years since financial aid does not cover summers
 - (12 units, 4 classes at \$1,500/class=\$6,000); each summer x 3 summers \$18,000
X 30 candidates)

+ \$25,000 (cost of coordinators, as listed above)

\$565,000 (for an estimated 30 candidates)

Institution C (mix population)

-- We anticipate that the redesign of these courses would cost approximately \$3,000 per unit for faculty stipends and materials.

(12) units x \$3,000 = \$36,000

Should we be able to offer tuition remission for our candidates, I would hope that there is enough funding to pay for the first twelve (12) units per candidate.

- 12 units x \$600 = \$7,200 **per candidate** (scholarship)
 - **60 candidates** @ \$7,200 per candidate = \$432,000
- Development costs = \$217,750
- **Development and candidate support for 60 candidates = \$649,750**
- Annual ongoing costs = \$432,000

SF State University (SFSU)'s Graduate College of Education commends Assemblywoman Bonilla on the visionary bill that aims to amend Section 44259.1 of the Education Code, relating to teacher credentialing.

SFSU envisions AB 1756 as a mechanism for creating a sustainable regional model that will address critical needs in the recruitment, preparation and retention of high quality new teachers in Northern California's urban and rural areas. This model proposes to expand the quantity and enhance the quality of K-12 educators in northern California through the development of a new four-year integrated program of professional educator preparation. In order to accomplish this, we envision a 3-year transition model to bring about comprehensive and sustainable change. The central infrastructure to create and sustain a high quality program that embodies research-based evidence and best practice is the development of a ***Center for Future Educator Pathways***. The model builds upon the strong partnership among San Francisco State University's College of Education and key interdisciplinary faculty across campus (e.g., Mathematics, History, English); 24 urban and rural school districts (San Francisco Unified, San Mateo County Office of Education, with its 23 school districts); and community colleges (e.g., CCSF, Skyline, Canada). The model we propose is designed to increase the number of highly qualified new teachers who will commit to working in high need schools and builds upon the Partnership's experience in preparing teachers from non-traditional and underrepresented backgrounds, enabling them to become successful teachers. The model includes curriculum development for pre-service candidates and novice teachers (i.e., induction), as well as the development of strategic recruitment strategies to increase the number of highly qualified new educators from traditional, non-traditional, and historically underrepresented backgrounds who will commit to working in high-need schools.

The Center will form the hub of the transition to a four-year professional educator preparation program through (a) initially bringing a team of university education faculty together with key interdisciplinary partners in designing the program; and (b) building on strong partnerships with various units on the university campus, local school districts, community college districts, and community organizations to ensure that the program is innovative and responsive to the current challenges and opportunities for K-12 education in the region. These partnerships are key to developing seamless pathways into educator preparation programs, expanding future educator outreach and recruitment efforts, addressing barriers for future educator candidates, ensuring that coordinated induction/mentoring is available to support recent graduates (i.e., novice teachers) during their first three years of teaching, providing coordinated services and support to help candidates in educator preparation programs achieve success, and aligning the preparation of future educators with the current needs of local schools in our community.

Key goals are to:

- Increase the number of highly qualified K-12 teachers to work in high need schools
- Establish systemic improvements in the recruitment of pre-service teacher candidates, including those from underrepresented backgrounds
- Establish systemic improvements in the preparation of pre-service teacher candidates, including high quality preparation in technology uses and STEM
- Implement systemic change in partnership with key institutions to support coordinated pathways for career advising, employment and systemic mentoring/induction for new teachers

Design elements are to:

- Form a design team of faculty to review current credential programs at SFSU in areas of Multiple Subjects; Single Subjects; and Special Education and to create a new four-year integrated program of professional preparation.
- Increase outreach and recruitment for future educator programs in high schools (teaching academies), undergraduate programs across the University (STEM, foreign languages, humanities, social sciences, and other disciplines), community colleges (transfer students), and educational paraprofessional programs in school districts.
- Bridge and develop new pre-educator and educator preparation pathways (e.g., entering student program for underrepresented minorities, new undergraduate majors and minors in Education, traditional credential programs, and MAT in Education degree programs).
- Create a Future Educator Advising and Support Program that provides coordinated advising for educator preparation programs and supports students with exam preparation, professional development, and referrals for financial aid and scholarship support, daycare, and other services that address student success barriers.
- Develop an Educator Preparation Council, including K-16 faculty and current/future educator candidates to align educator preparation programs with the goals and changing needs of schools and K-12 students.
- Disseminate effective practices and provide technical assistance to K-16 institutions throughout the region through conferences, collaborative structures, and the development of a web portal that will provide interactive connectivity for collaborators at school sites and across institutions.

Estimated costs:

Our estimated costs for a 3-Year Transition Plan to a four-year integrated educator preparation program for Northern California:

Personnel: University faculty; School/Community Partners, Staff, Consultants	\$950,000/year x 3 years = \$2,850,000
Technology	\$75,000
Travel	\$50,000
Supplies	\$40,000
TOTAL	\$3,015,000

Recommendations to maximize impact

The approach that we recommend for allocation of funding would be to target the development of three centers of excellence for educator preparation in California to bring about meaningful and sustainable change. The cost of these centers would be approximately \$3 million (see above) each over a three year transition period. Each one of these centers will be responsible for disseminating effective practices and technical assistance throughout its respective region. This alternative to 40 smaller transition projects, as proposed in the bill, will lead to sustainable and visible transformational change in California public education, with the same investment of public funds. This approach will accomplish two critical goals: a) generate greater public understanding and appreciation of the need to address the California teacher shortage; and b) demonstrate how AB 1756 will ensure comprehensive change to improve high quality teacher recruitment, preparation and retention in California.

*Submitted by Judith H. Munter, Ph.D.
 Dean, SFSU College of Education, 3/31/2016*