

Date of Hearing: April 6, 2022

ASSEMBLY COMMITTEE ON EDUCATION
Patrick O'Donnell, Chair
AB 1923 (Mathis) – As Amended March 28, 2022

SUBJECT: Science, Technology, Engineering, and Mathematics Partnership Academies

SUMMARY: Requires the Superintendent of Public Instruction (SPI) to prioritize proposals for new California Partnership Academies (CPAs) in a manner that addresses the participation of pupils traditionally underrepresented in career technical education (CTE) or science, technology, engineering and math (STEM) programs or professions. Specifically, **this bill:**

- 1) Requires the SPI to prioritize proposals for new CPAs in a manner that addresses the participation of pupils traditionally underrepresented in CTE or STEM programs or professions.
- 2) Requires that “pupils traditionally underrepresented” for purposes of this program, include but not be limited to, pupils from the following:
 - a) Rural communities;
 - b) Economically disadvantaged regions;
 - c) Regions with high “at-promise pupil” rates, as defined; and
 - d) Regions with a low to moderate number of existing academic partnerships.
- 3) Adds STEM courses to the CTE courses required to be provided to the pupils at each grade level participating in CPAs.
- 4) Adds STEM courses to the existing requirement to offer CTE courses in high skill occupations of regional and local economic need.
- 5) Adds STEM courses to the requirement that, whenever possible and appropriate, the school district offer CTE courses that also meet the subject requirements for admission to the California State University (CSU) and the University of California (UC).

EXISTING LAW:

- 1) Establishes the CPA program as a state-school-private sector partnership to provide combined academic and occupational training to at-promise high school pupils in grades 10-12 who present a high risk of dropping out of school, and motivating those pupils to stay in school and graduate from high school.
- 2) Defines “at-promise pupil” as a pupil enrolled in high school who is at risk of dropping out, as indicated by at least three of the following criteria:
 - a) Past record of irregular attendance (absent 20% or more of the school year);

- b) Past record of underachievement in which the pupil is at least one-third of a year behind the coursework or credits achieved for the respective grade level;
 - c) Past record of low motivation or disinterest in the regular school program;
 - d) Disadvantaged economically;
 - e) Scoring below basic or far below basic in mathematics or English language arts (ELA) on the standardized test, as defined; and
 - f) Maintaining a grade point average of less than or equal to 2.2.
- 3) Authorizes enrollment in a CPA of up to one-half of pupils who do not meet the at-promise criteria.
 - 4) Establishes funding and grant amounts to be awarded to school districts for purposes of planning, establishing and maintaining academies, and expresses legislative intent to expand the CPA program.
 - 5) Requires the SPI to ensure that the CPA planning grants are equitably distributed among high-wealth and low-wealth school districts in urban, rural, and suburban areas.
 - 6) Requires districts and participating businesses to each provide 100% matching funds for all state funds received for CPA programs; provides that the match may be in the form of direct and in-kind support; and requires the district to establish an advisory committee consisting of specified individuals and representatives.
 - 7) Requires each district operating CPAs to annually certify information to the SPI regarding the number of qualified students enrolled during the just completed school year, by grade level, and for each academy operated by the district, as well as an assurance that each academy is established as a “school within a school.”
 - 8) Establishes the Green Technology Partnership Academies and the Goods Movement Partnership Academies, commencing with the 2009-10 school year, and requires, when funds become available for additional partnership academies, the SPI to issue grants for the establishment of such partnership academies in each of the nine economic regions established by the state.
 - 9) Authorizes the Career Technical Education Incentive Grant (CTEIG) Program as a state education, economic, and workforce development initiative with the goal of providing pupils in kindergarten through 12th grade with the knowledge and skills necessary to transition to employment and postsecondary education. Authorizes \$300 million in annual funding to be apportioned to the CTEIG program, subject to an annual appropriation and beginning with the 2021-22 fiscal year. (EC 53070).
 - 10) Authorizes the K-12 component of the Strong Workforce Program (SWP) to create, support, or expand high-quality CTE programs at the K-12 level that are aligned with the workforce development efforts occurring through the SWP, and authorizes, commencing with the 2018-19 fiscal year, and subject to an annual appropriation, \$150 million to be apportioned

annually by the California Community College Chancellor's Office (CCCCO) to local consortia. (EC 88827)

- 11) Federal law, the Strengthening Career and Technical Education for the 21st Century Act, reauthorizes the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins) provides federal support for CTE programs and focuses on improving the academic and technical achievement of CTE students, strengthening the connections between secondary and postsecondary education and improving accountability.

FISCAL EFFECT: Unknown

COMMENTS:

Need for the bill. According to the author, “By establishing 100 Science, Technology, Economics and Mathematics grants for California Partnership Academies, AB 1923 is a key step to overcoming the barriers facing those within disadvantaged communities from excelling in STEM fields. This bill would create a better foundation for the future of our children and the future of the California economy.

The future is coming towards us no matter what; already we have self-driving cars, phones that can find any information in seconds, and a whole new type of sporting event involving nothing but computers and innovation. By planting the seeds, in the form of new Partnership Academics focused on STEM, and nurturing the children in the state of California with these fields, we are setting them up for a bigger and brighter future. A future full of knowledge, innovation, and expertise in the field of STEM.”

College and career readiness is a state priority. Each LEA's Local Control and Accountability Plan (LCAP) must demonstrate, among other priorities, how they are ensuring that all students are being prepared to be college and career ready. The College and Career Readiness Index displayed on each LEA's dashboard includes data on the number of students completing a CTE pathway. CDE notes that over 90% of districts report that CTE is now embedded into their LCAP.

Overview of California Partnership Academies. A CPA is a small learning community within a larger high school that is designed to prepare students for both college and careers, organized around a career-related theme. Under the CPA model, a team of teachers work with the same group of students over several years, aligning instruction across disciplines, while employers provide internships and other opportunities for students to learn outside the classroom. Each CPA frames its curriculum around one of the 15 CTE industry fields. 500 CPAs have been funded since the program's inception in the 1993-94 fiscal year. According to the CDE, there are currently 370 CPAs in operation in the state, representing the following industry sectors:

- Arts, Media, and Entertainment;
- Building and Construction Trades;
- Business and Finance;
- Education, Child Development, and Family Services;
- Energy, Environment, and Utilities;

- Engineering and Architecture;
- Fashion and Interior Design;
- Health Science and Medical Technology;
- Hospitality, Tourism and Recreation;
- Information and Communication Technologies;
- Manufacturing and Product Design;
- Manufacturing and Product Development;
- Marketing, Sales, and Service;
- Public Services; and
- Transportation.

Demographics, as reported by CDE, of current participants in CPAs is:

- Gender: 8,496 students (52%) female; and 7,761 students (48%) male;
- Ethnicity:

Hispanic or Latino	8849
Not Hispanic or Latino	7490
American Indian or Alaskan Native	684
Asian	2004
Black or African American	1869
Native Hawaiian or Other Pacific Islander	216
White	9560
Multiple	1436
Filipino	570

According to a 2011 report prepared for the CDE by the Career Academy Support Network at UC Berkeley, 467 CPAs submitted reports to the CDE for the 2009-10 school year. These academies operated in 278 of the state’s 1,264 comprehensive high schools. Most high schools with CPAs ranked below average on the state’s Academic Performance Index. The 437 CPAs that provided student-level data enrolled 48,436 students in grades 10-12—about 3% of the state’s 1.6 million students in these grades. CPAs serve 36 of California’s 58 counties, and the state’s six most populous counties—Los Angeles, Sacramento, Alameda, Riverside, San Diego, and Contra Costa—have a total of 287 CPAs.

In order to receive the full amount of state funding, an academy must show that at least 50% of the students in each incoming class of CPA sophomores meet three of the following six “at-risk” criteria: 1) having a poor attendance record; 2) being significantly behind in credits; 3) demonstrating low motivation for the regular school program; 4) being economically disadvantaged; 5) having low state test scores; or 6) having a low grade point average. Data from this earlier evaluation suggested that CPA students were 53% female and 47% male. CPA student gender balances vary considerably among industry sectors, from Fashion and Interior Design (2 academies) which is 79% female to Manufacturing and Product Development (8 academies) which is 78% male. Compared to the state as a whole, CPAs enroll larger

percentages of Hispanic and African American students: 59% of students enrolled are Hispanic, 16% are Caucasian, 10% are Asian, and 9% are African American.

Sources of CPA support. There are three sources of supplemental support for CPAs: grants from the state; financial or in-kind support from the host district, required to be at least equal to the state grant; and financial or in-kind contributions from local employers, also required to be at least equal to the state grant. The state grant is therefore leveraged at least two-to-one by local matching contributions.

In the 2021-22 fiscal year, year one grants of \$81,000 were allocated to 9 high schools and 109 year two grants of between \$63,000 to \$81,000 per school were allocated, for a total CPA allocation of \$9.4 million. An additional 19 schools were funded under the Clean Technology CPA program with grants ranging from \$55,000 to \$144,750 per school, for a total of \$2.5 million.

Prioritization for CPA funding. Current law authorizes the SPI, when funds become available for new partnership academies, in establishing the criteria for the awarding of CPA grants, to consider district indicators of need such as the number or percent of pupils in poverty or with limited English proficiency and the dropout rate.

This bill would require the SPI to prioritize proposals for new partnership academies to address the participation of pupils traditionally underrepresented in CTE or STEM professions, as defined by pupils from rural communities, economically disadvantaged regions, and regions with high “at-promise pupil” rates. *The Committee may wish to consider* whether there is a direct link between underrepresented pupils and the largely geographic designations being proposed by this bill.

Underrepresentation in STEM education. STEM education includes four specific disciplines—science, technology, engineering, and mathematics—in an interdisciplinary and applied approach. STEM teaches and trains students to engage in critical thinking, inquiry, problem solving, collaboration, and what is often referred to in engineering as design thinking. In recent years the state has undertaken a number of policy reforms to address STEM teaching and assessment practices, curriculum, and policies that expand STEM opportunities for all students.

A 2021 report by the Pew Research Center, *STEM Jobs See Uneven Progress in Increasing Gender, Racial, and Ethnic Diversity*, identified the following:

- Black and Hispanic workers remain underrepresented in STEM workforce compared with their share of all workers, including in computing jobs, which have seen considerable growth in recent years;
- The representation of women varies widely across STEM occupations. Women make up a large majority of all workers in health-related jobs, but remain underrepresented in other job clusters, such as the physical sciences, computing and engineering;
- Black and Hispanic adults are less likely to earn degrees in STEM than other degree fields, and they continue to make up a lower share of STEM graduates relative to their share of the adult population;

- While women now earn a majority of all undergraduate and advanced degrees, they remain a small share of degree earners in fields like engineering and computer science – areas where they are significantly underrepresented in the work force;
- The gap in STEM workforce representation is especially large for Hispanic adults. Hispanic workers make up 17% of total employment across all occupations, but just 8% of all STEM workers. Their share of all STEM workers is up 1% since 2016, in line with their growth in the overall workforce; and
- Black workers comprise 11% of all employed adults, compared with 9% of those in STEM occupations. Their share is lower in some STEM job clusters, including just 5% in engineering and architecture jobs. There has been no change in the share of Black workers in STEM jobs since 2016.

Recommended Committee amendments. Committee staff recommend that the bill be amended to:

- 1) Clarify the required prioritization of funding for new partnership academies in school districts based upon criteria including, but not limited to, the school district's enrollment of:
 - a) Unduplicated pupils, as defined in Section 42238.02;
 - b) Pupils from groups historically underrepresented in career technical education or STEM programs or professions; and
 - c) At-promise pupils.
- 2) Authorize the SPI to also consider prioritizing funding for new CPAs for those school districts located in rural areas and economically disadvantaged regions.

Arguments in support. The California Chamber of Commerce notes “put simply – STEM education is good for both workers and for California’s economy. California’s rapidly growing technology sector will need more workers in the coming decades than our present pipeline produces. Without increases to STEM education, Californians will miss out on these high-quality jobs and California’s economy will be slowed by the lack of available qualified candidates. Existing law recognizes this reality, and the state has attempted to improve STEM education through a variety of means over the past decade.

AB 1923 adjusts slightly these aims to address our STEM needs by increasing opportunity for the sector of our upcoming workforce that is most likely to presently miss such opportunities – underrepresented groups such as rural communities, economically disadvantaged groups, and others who might otherwise not have exposure to a potential career in STEM. In other words – AB 1923 aims to solve the state’s skills gap by filling it with those who are presently unlikely to have such opportunities. We view this as a solution that improves equity concerns across California, and simultaneously will help ensure that California’s economy can continue to grow based on the skills of California’s youth.”

Related legislation. AB 2085 (O'Donnell) of the 2021-22 Session requires consolidation of specified K-12 CTE programs, increases ongoing funding for the CTEIG, administered by the CDE to \$450 million per year, requires specified CTE staffing at the state and regional level to support local CTE programs and pathways, and deletes authorization for the K-12 SWP Program administered by the CCCCCO.

AB 2979 (Burke) of the 2017-18 Session would have established the CTE Pathway Completion to recognize high school graduates who have attained a high level of knowledge and proficiency in fields of study within one of the 15 industry sectors described in the California CTE Model Curriculum Standards. This bill was held on the inactive file in the Senate.

AB 2237 (Olsen) of the 2015-16 Session would have established the STEM Partnership Academies for the purpose of providing grants to school districts to establish up to 100 academies in STEM occupations. This bill was held in the Assembly Appropriations Committee.

AB 252 (Holden) of the 2015-16 Session would have established the Advanced Placement (AP) STEM Access Grant Program to be administered by the CDE to help high schools establish or expand their AP STEM curriculum. This bill was held in the Senate Appropriations Committee.

AB 2072 (Chang) of the 2015-16 Session would have established the State Seal of STEM, to be affixed to high school diplomas of qualified students, to recognize students who have attained a high level of proficiency in the STEM subjects. This bill was held in the Senate Appropriations Committee.

AB 1258 (Chau) of the 2015-16 Session would have established a Computer Science Start-Up Courses Grant Pilot Program and a Computer Science Educator Training Grant Pilot program, for the purposes of providing grants to school districts to establish and maintain computer science courses and provide professional development for educators to teach computer science. This bill was held in the Senate Appropriations Committee.

SB 1354 (Hancock), Chapter 650, Statutes of 2010, revised the criteria for identifying pupils that are "at risk" for purposes of enrollment in California Partnership Academies and required school districts to provide an assurance that each CPA pupil will be provided with career technical education courses that are part of an occupational course sequence that targets comprehensive skills and meets specified requirements.

AB 2855 (Hancock), Chapter 685, Statutes of 2008, establishes, commencing with the 2009-10 school year, the Green Technology Partnership Academies and the Goods Movement Partnership Academies as two new categories of CPAs.

AB 519 (Committee on Budget) Chapter 757, Statutes of 2008, appropriates \$12,500,000 in one-time funding to the CDE to provide grants to schools create CPAs that focus on clean technology and energy businesses and provide skilled workforces for the products and services for energy or water conservation, or both, renewable energy, pollution reduction, or other technologies that improve the environment in furtherance of state environmental laws.

SB 830 (Kehoe) of the 2007-08 Session would have provided for the expansion of the number of CPAs, revised funding formulas and requirements for school districts operating academies, and

revised the eligibility criteria to allow for the participation of 9th grade students. This bill was held in the Assembly Appropriations Committee.

REGISTERED SUPPORT / OPPOSITION:

Support

California Chamber of Commerce

Opposition

None on file

Analysis Prepared by: Debbie Look / ED. / (916) 319-2087