



UNIVERSITY
OF
CALIFORNIA

CalTeach

Science and Math Teacher Initiative

Program Highlights Report
2017–18 Outcomes

OVERVIEW The University of California Science and Math Teacher Initiative, also known as CalTeach, helps to address California's shortage of well-qualified K–12 mathematics and science teachers by improving California's undergraduate pipeline to mathematics and science teaching credentials.

California's position as a global leader in technology and innovation is challenged by a shortage of the math and science teachers needed to prepare future generations for the workforce.¹ Several factors contribute to this shortfall, which is nationwide in scope and is expected to worsen. These include significant decreases over the last few years in the number of people pursuing teaching credentials, in California and beyond; a projected wave of teacher retirements; and increasing K–12 enrollment in the near future.

The CalTeach program was launched by UC in 2005 to address the state's need for qualified teachers. CalTeach recruits and prepares talented undergraduates to explore careers as math or science educators. Housed at all nine of UC's undergraduate campuses — Berkeley, Davis, Los Angeles, Irvine, Merced, Riverside, San Diego, Santa Barbara and Santa Cruz — programs invite students majoring in math or science to add a sequence of CalTeach courses and fieldwork experiences that introduce them to teaching while they complete undergraduate degrees. These courses, together with research opportunities and hands-on experience in K–12 classrooms, complement participants' discipline-specific studies and prepare them to seek a teaching credential along with their B.A.

FEATURES

CalTeach gives students the skills and experience to pursue a teaching credential. Participants learn and practice conceptual teaching skills in courses held at local K–12 classrooms and through field experiences and summer internships at local schools. Mentor teachers oversee participants in K–12 math and science classrooms. Most CalTeach programs also offer a minor or concentration in math and/or science education that focuses on teaching those subjects.

Three UC campuses — Berkeley, Irvine and Los Angeles — offer accelerated credential programs that provide CalTeach students with two options: earn a teaching credential along with the baccalaureate degree, or combine the last year of undergraduate studies with the first year of credential studies.

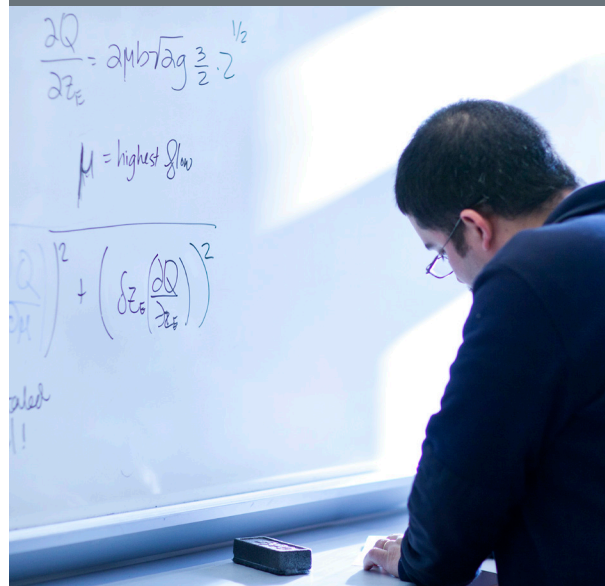
In collaboration with UC faculty and graduate students, CalTeach programs also sponsor research that contributes to our understanding of effective practices for math and science education. Sample research topics include CalTeach graduates' preparedness for teaching, the effect of field experiences on attitudes toward teaching and public education, and effective methods for tracking the CalTeach graduates who enter teaching careers.

CalTeach reaches students and schools throughout the state. Since its inception, more than 15,000 UC undergraduate students have explored careers in teaching math or science through CalTeach. Of these, roughly 2,000 CalTeach participants have gone on to receive single-subject math and science credentials, and more than 1,700 CalTeach alumni have pursued teaching in California's public schools.

"CalTeach was an integral part of my path to becoming a STEM educator. The program offered preparation for the teaching exams, invaluable classroom experience and extensive professional development. Thanks to this program, I am now working on a secondary math teaching credential and a master's of education at UC Riverside, fulfilling my dream of becoming a teacher."

SAVANNAH SPRAGUE
ALUMNA, UC RIVERSIDE CALTEACH

¹Linda Darling-Hammond, Leib Satcher and Desiree Carver-Thomas, *Teacher Shortages in California: Status, Sources, and Potential Solutions* (Palo Alto, CA: Learning Policy Institute, 2018).



“The CalTeach program allows undergraduates to get meaningful classroom experience in order to confirm that a teaching career is right for them. They enter teacher training programs better prepared than non-participants. I have witnessed outstanding teachers in our district who had their start at CalTeach. The students, their host teachers and instructors, and, ultimately, the community all benefit from CalTeach. I am happy to be a donor to this wonderful program.”

VIVIAN MOUTAFIAN

MENTOR TEACHER, UC SANTA CRUZ CALTEACH
TEACHER, WATSONVILLE HIGH SCHOOL

“The partnership between UC Merced and UC Berkeley allows students to earn their bachelor of science degree and step into a classroom with a teaching certificate. Our students benefit as they advance their academic and career goals. We benefit as these talented and diverse scholars are now teaching in our classrooms. CalTeach is creating educational transformation in the Central Valley.”

CHARLES T. NIES

VICE CHANCELLOR, STUDENT AFFAIRS
UC MERCED

PROGRAM OFFERINGS

CalTeach provides a rich array of academic and career preparation opportunities for students interested in pursuing a math or science teaching credential. Its components are grounded in current research on the best practices in teacher preparation. Although campus programs have distinct approaches to teacher preparation, common features across CalTeach programs include:

- Equity in STEM teaching and learning
- Recruiting and advising
- Coherent curriculum
- Field experiences and mentor teacher support
- STEM partnerships
- Teacher professional growth experiences
- Ongoing program evaluation and research
- Faculty leadership, collaboration and research

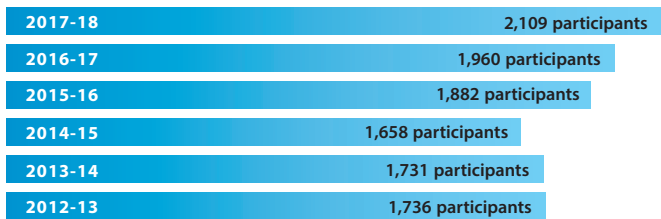


YEAR IN REVIEW In 2017–18, CalTeach continued to expand its recruitment and preparation of UC undergraduates for careers as math or science teachers. Despite statewide decreases in the number of people entering the teaching profession, participation in CalTeach continues to flourish. The following sections provide an overview of the program’s recent achievements.

IMPACT

CalTeach continues to grow

Since its inception, more than 15,000 UC undergraduate students have participated in a CalTeach program on one of nine UC campuses. In 2017–18, CalTeach total student participation was 2,109, the highest annual enrollment in the program’s history.



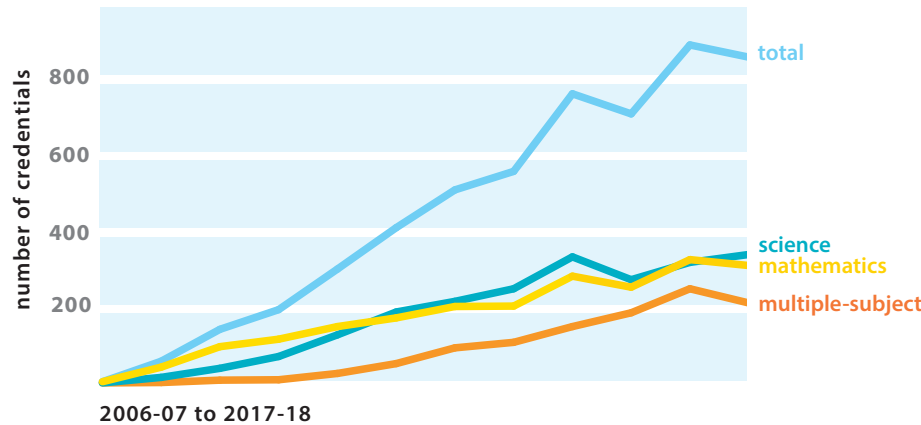
CalTeach graduates pursuing math or science credentials are enrolling in teacher education programs across the state, and many are enrolling in UC’s Teacher Education Programs (TEPs)

In 2017–18, 174 CalTeach graduates pursued a math or science credential at a TEP offered at one of the state’s public institutions of higher education. Of those, 110 (63 percent) enrolled in a UC TEP.



CalTeach graduates are earning math and science teaching credentials

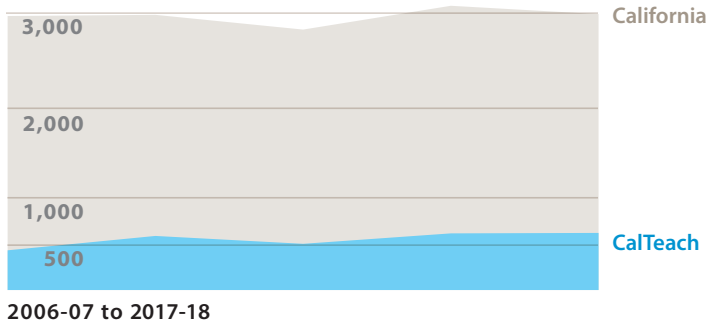
In 2017–18, 827 math, science and multi-subject credentials were awarded to alumni of the CalTeach program. This increase is in alignment with the growing number of participants in recent years.



Building the next generation of education leaders
Through 2017–18, 55 CalTeach alumni have gone on to earn an administrative services credential, a prerequisite for becoming a K–12 school administrator.

A significant proportion of UC baccalaureates who go on to earn a math or science credential have participated in CalTeach. In 2017–18, CalTeach alumni earned more than 21 percent of all math and science single-subject credentials awarded in California.

Math & Science Single-Subject Credentials



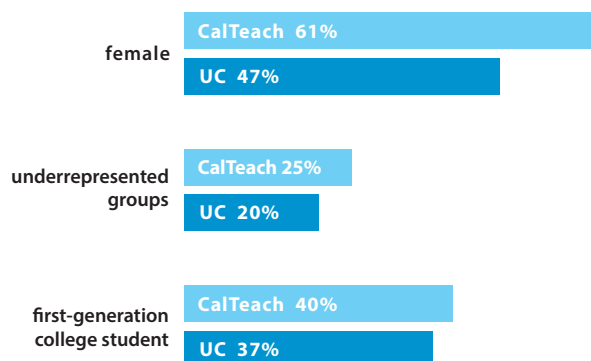
Data sources for this report include the following:

- California Commission on Teacher Credentialing (CTC)
- California State Teachers’ Retirement System (CalSTRS)
- California State University Office of the Chancellor
- CalTeach Administrative Data
- University of California Data Warehouse

DIVERSITY

CalTeach graduates in STEM majors are highly diverse

In comparison to all STEM majors at UC, CalTeach graduates are more diverse across demographic indicators, including gender, ethnicity and families' college background.



In keeping with the program's mission to prepare educators who themselves reflect the growing diversity of California students, nearly three-quarters of 2017–18 CalTeach STEM graduates were from underrepresented² or Asian backgrounds.

CalTeach participants are working in high-need schools

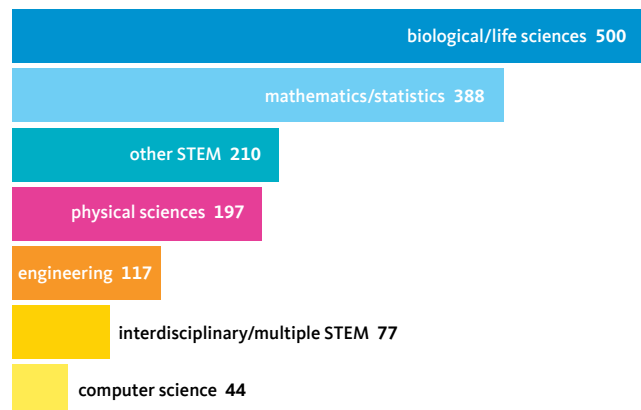
In 2017–18, CalTeach students participated in field placements in more than 200 K–12 schools ranging widely in economic and educational characteristics, where they gained real-world classroom experience. More than 30 percent of field-placement hours were earned in high-need schools designated as having LCFF+ status, meaning that more than 75 percent of students are identified as English learners, foster youth and/or qualify for free/reduced-price meals under the National School Lunch Program (NSLP).³

PREPARATION

CalTeach attracts STEM majors systemwide

Across all UC campuses, the majority of CalTeach participants are majoring in STEM fields. In 2017–18, nearly 73 percent of all participants were STEM majors, with most majoring in the biological/life sciences or mathematics/statistics fields.

1,533 CalTeach STEM undergraduates by major 2017–18



²Includes African American, Chicanx/Latinx, American Indian and Alaska Native.

³LCFF+ replaces API decile ranks 1–5 as a definition of “high-need.”



FUNDING

In addition to its state funding allocation, CalTeach is supported by government, foundation, private industry and other extramural sources. All CalTeach programs receive support from the National Science Foundation (NSF) and, in some cases, through NSF S-STEM grants and the Noyce Scholars program. This funding provides scholarships, fellowships, stipends and programmatic support for the recruitment and preparation of STEM majors and professionals to become K–12 teachers.

CalTeach also receives funds from corporations including Amgen, Agilent Technologies, Bechtel, Hitachi, JPMorgan Chase and Verizon, and through partnerships with 100Kin10, the Hearst Foundations, the Howard Hughes Medical Institute, the Knowles Science Teaching Foundation, Math for America, the National Math Education Advancement Foundation, National Math and Science Initiative, The Allergan Foundation, Tides Foundation and the UTeach Institute.

Finally, every UC campus that is home to the CalTeach program provides significant monetary resources from its own academic departments, as well as in-kind contributions in the form of dedicated faculty and administrator time, classroom space, student scholarships and other kinds of support.

CalTeach programs are housed at each of UC's nine undergraduate campuses. To donate to CalTeach, please contact one of the campuses listed below.

Berkeley	calteach.berkeley.edu
Davis	mast.ucdavis.edu
Irvine	calteach.uci.edu
Los Angeles	cateach.ucla.edu
Merced	calteach.ucmerced.edu
Riverside	smi.ucr.edu
San Diego	physicsciences.ucsd.edu/academics/cal-teach
Santa Barbara	education.ucsb.edu/calteach
Santa Cruz	calteach.ucsc.edu

For more information about CalTeach, visit calteach.universityofcalifornia.edu

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