Science and Math Teacher Initiative (CalTeach)
Program Highlights Report
In California and beyond, demand is growing for high-quality math and science teachers. Due in large part to significant decreases over the last few years in the number of people pursuing teaching credentials, there is a critical shortage of well-prepared teachers, particularly in math and science. A projected wave of teacher retirements, coupled with increasing K-12 enrollment, threatens to worsen this shortage.

The Science and Math Teacher Initiative (CalTeach) was created to address this challenge. Launched in 2005 by the University of California (UC), CalTeach has been successfully recruiting, preparing and inspiring potential teachers 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 augment their studies with a sequence of CalTeach courses that introduce them to teaching while they concurrently complete undergraduate degrees. These courses, together with research opportunities and direct work in K-12 classrooms, complement participants’ discipline-specific studies and prepare them to seek a teaching credential while or after earning a bachelor’s degree.

**Features** CalTeach provides students with the skills, experience and tools to pursue a teaching credential and eventually a career in teaching. Through rigorous CalTeach courses, students learn conceptual teaching skills, and practice these methods in local K-12 classrooms, primarily through field experiences offered through their courses and through intensive summer internships at local schools. Experienced mentor teachers oversee student on-site work in K-12 math and science classrooms. Additionally, nearly all CalTeach programs offer a minor or concentration in math and/or science education that focuses specifically on teaching in those disciplines.

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

In collaboration with UC faculty and graduate students, CalTeach programs sponsor research projects that contribute to best practices in preparing and supporting math and science teaching and learning. Sample research topics include assessing CalTeach graduates’ preparedness for teaching, the effect of field experiences on attitudes toward teaching and public education and effective methods for tracking CalTeach graduates as they enter teaching careers.
YEAR IN REVIEW

CalTeach continues its successful recruitment and preparation of UC undergraduates for careers as math or science teachers. Despite the statewide trend of decreases in the number of people entering the teaching profession, CalTeach enrollment is on the rise. The sections that follow highlight recent outcomes related to impact, diversity and preparation, which together provide an overview of the program’s achievements.

“CalTeach provided many great opportunities for me, such as the chance to observe and be mentored by outstanding teachers. These opportunities have helped me build my experience and confidence, thus strengthening my choice to pursue a career as a STEM educator.”

ALUM, UC RIVERSIDE CATEACH-SMI
IMPACT

CalTeach addresses the state’s need for more math and science teachers.

Since its inception, Cal Teach has enrolled 7,877 participants, of whom 1,085 have gone on to receive teacher credentials in either math or science.

CalTeach continues to grow.

In 2012-13, CalTeach enrolled 1,738 participants, an increase of 6 percent over the previous year. At this rate, the program can be expected to attract more than 2,000 participants annually by 2015-16.

CalTeach graduates are becoming math and science teachers.

Since 2006-07, the number of credentials awarded to CalTeach graduates has steadily increased, despite a diminishing number of teacher credentials being awarded across the state.

UC graduates who earn a math or science credential are also, increasingly, CalTeach graduates.

In 2012-13, CalTeach graduates accounted for 40 percent of all math and science credentials awarded to UC baccalaureates.

CalTeach graduates are enrolling in UC Teacher Education Programs.

In 2012-13, 183 CalTeach graduates pursued a math or science credential at a teacher education program (TEP) at one of the state’s public institutions of higher education. Of those, 147 (80 percent) enrolled in a TEP at the University of California.

CalTeach graduates pursue careers in public education.

CalTeach reaches students and schools throughout the state. Altogether, 14 percent of CalTeach alumni have pursued careers in public schools throughout California, many in high-need communities.

“CalTeach helped me discern whether or not I wanted to pursue teaching because I was seeing real teachers, students and schools at work.”

TEACHER AND ALUM, UCLA CALIFORNIA TEACH

*Numbers displayed on the map do not include 127 CalTeach alumni for whom geographic data are missing.
**DIVERSITY**

CalTeach graduates in STEM majors are highly diverse.

In comparison to UC STEM majors, CalTeach graduates are more diverse across an array of demographic indicators, including:

- **Female**
  - Cal Teach: 59%
  - UC: 46%

- **Underrepresented minorities**
  - Cal Teach: 21%
  - UC: 15%

- **First-generation college student**
  - Cal Teach: 43%
  - UC: 37%

Consistent with the program’s mission to prepare prospective educators that reflect the growing diversity of California’s K-12 students, nearly 65 percent of 2012-13 CalTeach graduates were students of color, including underrepresented minorities and students from Asian backgrounds.

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**PREPARATION**

CalTeach attracts STEM majors systemwide.

Across all UC campuses, most CalTeach participants are majoring in STEM fields. In 2012-13, nearly 70 percent of all participants were STEM majors, with most majoring in the biological/life sciences or mathematics/statistics.

- 407 biological/life sciences
- 348 mathematics/statistics
- 155 physical sciences
- 136 other STEM
- 90 engineering
- 56 interdisciplinary/multiple STEM
- 19 computer science

CalTeach participants are working in high-need schools.

In 2012-13, CalTeach students participated in field placements in 206 K-12 schools where they gained real world classroom experience. Although these field placements occurred throughout the state in schools with a variety of economic and education characteristics, nearly 40 percent were in schools that were low-performing and high-need, based on the state’s Academic Performance Index (API, 1-5).

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**FUNDING**

In addition to state funding, CalTeach programs on every campus are supported by a combination of government, foundation, private industry and other extramural sources.

All CalTeach programs have received support from the National Science Foundation, through the Noyce Scholars program and in some cases through NSF S-STEM grants, to provide scholarships, fellowships, stipends and programmatic support intended for the recruitment and preparation of STEM majors and professionals to become K-12 teachers.

CalTeach has also been supported financially by private corporations such as Amgen, Agilent, Bechtel, Hitachi, JP Morgan Chase and through partnerships with Math for America, 100Kin10, the National Math Education Advancement Foundation, the Knowles Science Teaching Foundation, the Howard Hughes Medical Institute and the National Math and Science Initiative. Finally, every UC campus that houses a CalTeach program provides significant monetary and in-kind resources through 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:

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

Data sources for this report include the following:
• California Commission on Teacher Credentialing (CTC)
• California Department of Education (CDE)
• California State Teachers’ Retirement System (CalSTRS)
• California State University
• University of California