THE BEST TEACHING AND OUTREACH CREATE MOMENTS OF DISCOVERY when both teachers and students find new ways to realize their talents and ambitions. Caltech aims to create these turning points.

PRESIDENT THOMAS F. ROSENBAUM
Sonja and William Davidow Presidential Chair and Professor of Physics

BEING A GOOD TEACHER, BEING A GREAT TEACHER, IS SO INTEGRAL FOR DEVELOPING THE PASSION of the next generation of scientists. Teaching some of the brightest young minds in the current generation is just an amazing opportunity.

ANNELISE THOMPSON
Graduate Student in Chemistry
Yet the answers to complicated, broad-scale problems will likely not be found through conventional teaching methods. In 2012, Caltech established the Center for Teaching, Learning, and Outreach (CTLO) to help faculty and students develop the tools they need to creatively teach and learn complex material in the classroom and in the lab.

Virtually every member of the Caltech community is a teacher—from students who coach their classmates to Nobel laureate professors. Undergraduates become role models for peers, graduate students serve as TAs, and post-docs mentor others in the lab.

By investing in CTLO, you will ensure that all students and faculty receive access to the enhanced teaching and learning resources they need to solve problems that others have deemed "impossible." Together, we can rise to the challenge.

As a top-tier research and educational institution, Caltech is committed to shaping problem solvers who can make leaps of imagination and mentor new generations of influential, bold thinkers. Society is counting on these Caltech scientists and engineers to tackle the challenges of our time.
Caltech students have long benefitted from a 1:3 ratio of faculty to undergraduates, frequent collaboration with peers, and opportunities to conduct research with prominent scientists and engineers. Now, through CTLO, Caltech is becoming a flagship for educational excellence and innovation.

**TEACHING**

Since 2012, CTLO has launched programs for the entire campus community that aim to improve teaching skills and encourage professors to try new methods. These include an annual teaching conference, new teaching-focused courses and workshops, and TeachWeek, a campus-wide celebration of pedagogy. Instructors at all levels, from teaching assistants (TAs) through early- and later-career faculty, use CTLO resources.

With support from CTLO staff, many faculty are re-designing courses to enhance the classroom experience. Professors are refining lecture techniques and using new educational technologies, such as flipping classes so that students watch lectures online and come to class for practice and interaction, and teaching open online courses called MOOCs. Faculty and TAs may request data-driven feedback on their teaching from CTLO, and obtain expert follow-up help. When integrated, these instructional methods are helping to spark students' thinking in new ways.

**LEARNING**

When students are empowered to take ownership over their own learning process, they begin to see themselves as scientists and act as peer mentors. Through CTLO, students can now attend teaching seminars, take courses exploring educational research, and earn certificates in university teaching. Student leaders are now collaborating with faculty to design new and better courses. Professors and TAs are communicating more effectively and together creating innovative solutions that better support the learning process for students.

**OUTREACH**

CTLO helps Caltech faculty and students design and conduct compelling educational outreach projects that inspire thousands of local students, many from underserved communities, each year. Young people are introduced to STEM through summer and school-year programs, at Caltech and in schools, while K-12 teachers receive professional development, coaching, and opportunities to work alongside faculty research teams. These outreach programs are making Caltech more competitive when applying for federal research funding and are developing the next generation of scientists and engineers.

www.ctlo.caltech.edu
CTLO is helping to revolutionize the way we teach at Caltech, and that impact will be felt long into the future. Its staff has made a difference to me at every stage, from teaching me how to teach in new ways to providing in-depth assistance.

ANTONIO RANGEL
Bing Professor of Neuroscience, Behavioral Biology, and Economics
Through the work of CTLO, Caltech is building a future where the strength of the Institute’s teaching, learning, and outreach are as robust as its research. Your investment in CTLO will help to bolster the teaching and learning experience at Caltech, while also shaping new generations of leaders in science and engineering.

You can choose to support any number of CTLO’s teaching, learning, and outreach projects. Each gift—from annual contributions to named endowments that provide resources for generations to come—will enable CTLO to support increasing numbers of Caltech students and faculty in their pursuit of knowledge.

The researchers of tomorrow need great teachers, today.