

34 faculty and alumni have won 35 Nobel Prizes

The RICHTER SCALE was developed

The **Jet Propulsion Laboratory** was born

Richard Feynman wrote the book on physics

Pluto

was demoted

LIGO was invented

EINSTEIN was a visiting professor for three years, and today we curate his papers

The Clean Air Act

had its start

The **Keeling Curve** originated

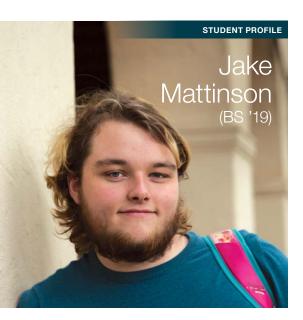
Linus Pauling identified the nature of the chemical bond







Caltech's students excel in one of the world's most rigorous academic environments. They come to Caltech from all over the United States—and across the globe bringing with them diverse experiences, perspectives, and passions. What they share is an unbridled sense of curiosity and an extraordinary aptitude for and interest in science, engineering, and technology.



HOMETOWN: Northridge, Calif. ACADEMIC FOCUS: Physics, with a minor in computer science. **PROFESSORS:** "Most of my professors are pretty interesting. Many are definitely characters who make my experiences unique, and I have some really great relationships with them." HOUSE LIFE: "My favorite part of Ricketts House is the attitude derived from our official motto: 'Prend moi tel que je suis,' which is French for 'Take me as I am.' It's rare to find an environment this supportive of differences." OUTSIDE OF CLASS: "I played Scotty in Boldly Go! and Claudio in Much Ado About Nothing, both Caltech productions."

POST CALTECH: "I hope to go on to get a PhD. I really enjoy teaching and would like to work in physics education policy."

undergraduate 979 students

1,261

graduate students

8% undergraduate admission rate



Caltech's mascot is the beaver—an homage to nature's engineer.

"The truth shall make you free."

CALTECH'S MOTTO

HOMETOWN: Kolkata, India WHY CALTECH? "The work I do here, the things I learn, they matter immensely to both the scientific community and the industry I will work in." ACADEMIC FOCUS: Double major in mechanical engineering and business, economics, and management. PROFESSORS: "They are some of the most brilliant people in the scientific community, and they all seem very willing to work with students and encourage open discussion." AS AN INTERNATIONAL STUDENT: "Sunshine and American cheer—these are the new constants of my life." **OUTSIDE OF CLASS:** "I head business and outreach for Caltech's Formula SAE racing club, as well as the Robotics Team. Apart from that, I'm part of Caltech's Dhamaka dance troupe."

Mohar Chatterjee (BS '19) STUDENT PROFILE

WOMEN MENTORING WOMEN

The program began as a way to connect female postdocs and graduate students. It has since grown to include staff members and undergraduates.

Today, the program has 89 mentor-mentee pairs.

CALTECH STUDENT BUCKET LIST

Visit The Huntington Library, Art Collections, and Botanical Gardens

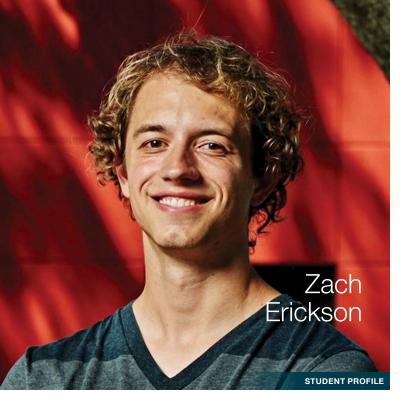
Eat at Tommy's

Build something in the machine shop

Have dinner at the **Athenaeum**

See the **LA Basin** from Mount Wilson

Get lunch at Ernie's food truck



Fourth-year graduate student in geological and planetary sciences

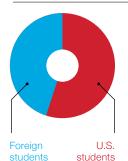
HOMETOWN: Anoka, Minn.

RESEARCH FOCUS: Using measurements from autonomous underwater vehicles to characterize phytoplankton blooms throughout the world's oceans and estimate the amount of carbon-containing biomass they export into the ocean depths.

WHY CALTECH? "I wanted a place with scientific rigor but also a strong graduate student community."

EXTRACURRICULAR ACTIVITIES: President of the student club Science & Engineering Policy at Caltech; cofounder of the Caltech Bikeshare program; participant in the Caltech chamber music program.

WAY OFF CAMPUS: Research trips to Antarctica, where he's caught sight of penguins and whales and "towering chunks of ice surrounded by the clearest water you've ever seen."



In 2016–2017, 48 percent of the graduate population are foreign students. The top five countries from which students hail are China, Canada, South Korea, India, and Taiwan.

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Excellence Ambition Perspective

Three values that define and drive Caltech

An ambitious faculty and student body conduct their research and studies as members of a community committed to an uncompromising standard of excellence.

Caltech's scholars venture into uncharted territory, taking ambitious intellectual risks to revolutionize our understanding of the world around us.

Being able to view a problem from new perspectives, understanding art and history, society and culture, is vital to ensuring that our scientific and technological discoveries achieve the most profound impact.

DIVERSITY

"Caltech can only sustain its excellence and remain a destination of choice by continuing to welcome and support individuals from a wide variety of backgrounds."

- CALTECH PRESIDENT THOMAS F. ROSENBAUM

THE CALTECH HONOR CODE

No member of the Caltech community shall take unfair advantage of any other member of the Caltech community.

SUSTAINABILITY

Since creating the Office of Sustainability in 2008, the campus has:

- reduced water consumption by 40%
- reduced direct greenhouse gas emissions by 25%
- reduced waste generated by 35%
- reduced energy use intensity (kbtu/sq. ft.) by 2%



Caltech has almost **5,000 solar panels** on 11 structures across campus.

The campus generates about 80% of its power on-site.



Founded in 1891 as Throop University, Caltech has been on its present campus since 1910 and became the California Institute of Technology in 1920. Though the Institute has grown over the decades, it remains a small campus with an intimate learning environment.

Students may choose from 26 options (majors) in 6 academic divisions

- Biology and Biological Engineering
- Chemistry and Chemical Engineering
- Engineering and Applied Science
- Geological and Planetary Sciences
- Humanities and Social Sciences
- Physics, Mathematics and Astronomy

A Caltech education is notable for its challenging curriculum, close collaborations with faculty, and small class size.

Our students work toward undergraduate and graduate degrees alongside their intellectual equals in an atmosphere of close collaboration and mutual support.



Premed Program

Joint programs with area medical centers provide Caltech students with clinical research experience in preparation for applying to medical schools.



3:1 student/ faculty ratio

95%

of undergraduates participate in research

Caltech students may hone their writing skills at the **Hixon Writing Center** through collaborative, interactive one-on-one tutoring.

Center for Teaching, Learning, and Outreach

This campus center supports course and curriculum development, tutoring programs, and partnerships with local schools.



Athletics facilities

- Two gymnasiums
- One 3,500-squarefoot weight room
- Two 25-yard pools
- Four racquetball courts
- Eight tennis courts

Popular physical education courses include:

- Hikina
- Flying saucers
- Half-marathon training
- Rock climbing

With **20 DIVISION III VARSITY TEAMS**, Caltech

competes primarily in the Southern California Intercollegiate Athletic Conference (SCIAC).

80% OF STUDENTS

participate in **intercollegiate**, club, **intramural**, or informal **recreational** activities.

2 OUT OF 3 Caltech undergrads play at least one musical instrument or sing in the Caltech Glee Club and Chamber Singers. The Caltech Symphony performs 3 to 4 major concerts a year. Caltech musicians also play with the Concert Band, the Caltech Jazz Band, or

chamber music groups.

Theater Arts Caltech

produces and performs

2 or more plays each academic year.

There are more than 100 student clubs and sports organizations on campus, ranging from juggling and alpine climbing to entrepreneurship and robotics.

The *Caltech Y* offers hundreds of opportunities to get involved in **educational** programs, **outdoor** adventures, **community** service, **social** activities, and **cultural** events.



SURF (Summer Undergraduate Research Fellowships)

Every summer, Caltech students can do research with experienced mentors working at the frontier of their fields. From writing proposals to presenting results, students experience the process of research as a creative intellectual activity.

80% of all undergrads participate in Caltech's SURF

10 weeks of research

\$6,000 stipend

85%

of undergraduate students live in Caltech housing. They choose among **8 on-campus houses** where they study, socialize, and dine together. Students remain part of the same close-knit community **all 4 years**.

450

graduate students live in campus apartments.

STUDY ABROAD

Caltech students study around the globe in cities including Cambridge, London, Copenhagen, Edinburgh, Paris, and Melbourne.





TRADITIONS AND PRANKS

Traditions are very much a part of Caltech campus life. Caltech students also have a history of creating elaborate pranks to celebrate their school pride.



At the Rose Bowl in 1961, students tricked a stadium full of dedicated Washington Huskies fans into holding up flip cards that spelled out Caltech.

Every Halloween night, students dunk pumpkins in liquid nitrogen and drop them from Caltech's tallest building—Millikan Library—to see if they give off a brief glow as they hit the ground and shatter.

"Caltech is a really small, tight-knit community, and that's something I have come to cherish."

JENNY HE (BS '17)





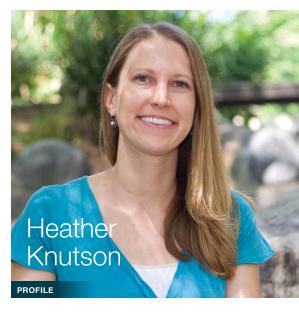


Caltech has one of the nation's lowest student-to-faculty ratios, with 300 professorial faculty members offering a rigorous curriculum and access to hands-on research to approximately 1,000 undergraduates and 1,260 graduate students. The Institute's faculty members direct discipline-defining research in science and engineering while providing their students with the tools to pursue their own investigations.

Caltech faculty and graduate student teaching assistants find the support they need to be **excellent educators** through seminars, practical training, and teaching resources offered by the Caltech Project for Effective Teaching.

Caltech faculty, alumni, and trustee honors:

National Medal of Science	58
National Medal of Technology and Innovation	13
National Academy of Sciences	72
National Academy of Engineering	42
American Academy of Arts and Sciences	102



Assistant Professor of Planetary Science

RESEARCH FOCUS: Studying the temperature, compositions, and atmospheric circulation patterns of planets orbiting other stars (also known as "exoplanets").

WHY CALTECH? "The great thing about being here is that there are not only top-notch telescopes that you can get time on, but there are actually telescopes that you can drive to."

FAST FACTS

The CaltechAUTHORS repository contains more than

60,000

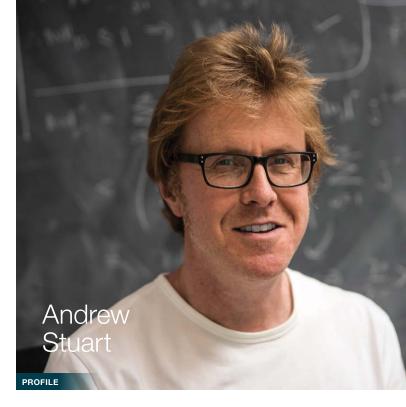
publications by Caltech researchers

It currently grows at the rate of more than

3,000 new papers per year

"Our goal at Caltech is to discover things that can transform our world. This objective also means that we take responsibility for ensuring that people everywhere have a reasonable chance of learning about our work."

- MORTEZA GHARIB, HANS W. LIEPMANN
PROFESSOR OF AERONAUTICS
AND BIOINSPIRED ENGINEERING



Bren Professor of Computing and Mathematical Sciences

RESEARCH FOCUS: Studying how the current era of data acquisition interacts with centuries of human intellectual development of mathematical models that describe the world around us.

WHY CALTECH? "What has always driven my interest in mathematics is the potential for diverse applications and the role of mathematics in unifying these different fields. Caltech provides enormous potential for collaboration."



Albert Billings Ruddock Professor of Biology Recipient of the 2016 Richard P. Feynman Prize for Excellence in Teaching

RESEARCH FOCUS: Investigating the mechanisms that control blood stem cell differentiation and the development of T lymphocytes—white blood cells that play an important role in immunity. FIRSTS: Defined the gene regulatory network and component molecular mechanisms through which blood stem cells are transformed into committed T cells.

STUDENTS SAY: "She constantly returns to the idea of what will help students learn best and what will train them effectively." "... She showed us that biology was not simply a 'memorization game,' but rather a logic puzzle."

ROTHENBERG ON TEACHING: "That incredible connection between the way you appreciate the complexity of the world and the way you can give students the tools to see things that you never saw before—it's really beautiful."

Tech transfer

Caltech's Office of Technology Transfer and Corporate Partnerships

helps scientists and engineers at Caltech and JPL transfer the fruits of their research to the commercial sector.

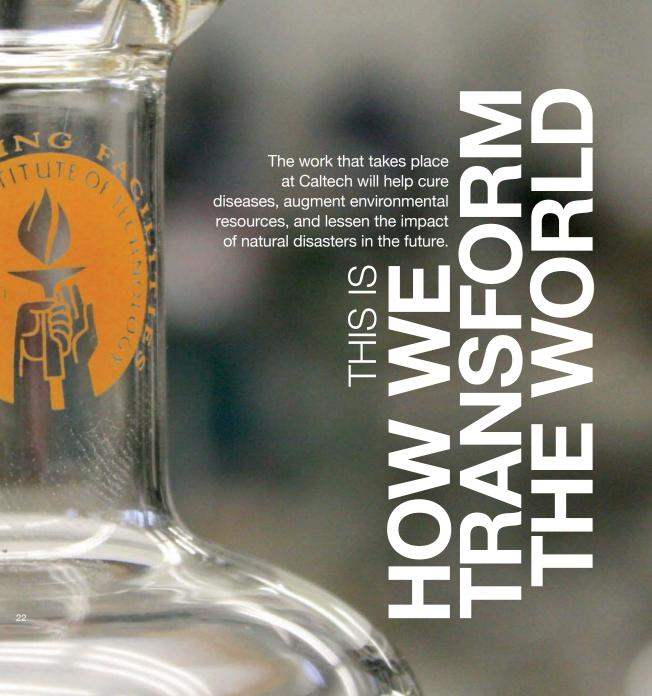
IN 2016:

196 U.S. patents issued

1,922 U.S. patents active

229 invention disclosures submitted for Caltech

9 startup companies launched



IN THE PAST YEAR. CALTECH FACULTY HAVE:

Detected **gravitational** waves 100 years after Einstein's prediction, opening an unprecedented new window onto the cosmos.

Taken a vital next step in **ultrasound design**, imaging not just anatomy but specific cells and molecules deeper in the body.

Developed a design for a **giant space telescope** that would be assembled—
in space—by
six-armed robots

Found evidence for a **ninth planet** that has a mass

about 10 times that of

Earth and would take

between 10,000 and 20,000

years to make 1 full

orbit around the sun.

Discovered a link
between intestinal
bacteria and
Parkinson's disease,
showing that changes in
gut bacteria contribute to
the deterioration of motor
skills that is the hallmark
of this disease.

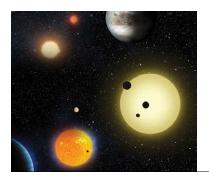
Discovered that a socialaffiliation hormone promotes cooperation in risky situations, which could have practical applications where mutual trust and cooperation are important for success.

break through

THE CALTECH CAMPAIGN

In 2016, the Institute launched Break Through: The Caltech Campaian. a \$2 billion philanthropic initiative that will provide Caltech's scholars and inventors with resources to discover and innovate for aenerations to come. To take part, visit breakthrough. caltech.edu.





RECENTLY AT JPL

Dawn completes its primary mission

The Dawn spacecraft explored protoplanet Vesta and dwarf planet Ceres. This was the first mission to orbit two extraterrestrial solar system targets and the first to orbit any object in the main asteroid belt, between Mars and Jupiter.

Kepler mission announces largest-ever batch of planets

The Kepler mission verified 1,284 new planets—the single largest finding of planets to date. Among those are nearly 550 that, based on their size, could be rocky planets like Earth.

Curiosity climbs the basal layer of Mt. Sharp

The Curiosity Mars rover continued its exploration of the planet, sending back stunning images of the "Murray Buttes" region of lower Mount Sharp.

Juno arrives at Jupiter

After an almost five-year journey to the solar system's largest planet, the Juno spacecraft successfully entered Jupiter's orbit during a 35-minute engine burn.





Caltech's newest institute is the Tianqiao and Chrissy Chen Institute for Neuroscience at Caltech, established in December of 2016. The institute brings together scientists and engineers from all six divisions to deepen our understanding of the brain.

The Caltech-Huntington Humanities Collaborations, launched in the fall of 2016, is currently bringing scholars together across disciplines to explore "Violence and Order Past and Present."

The Caltech Seismological Laboratory is the Institute's center for seismic studies and the preeminent source for earthquake information in Southern California and around the world.

In just one decade, the **Kavli Nanoscience Institute** has realized breakthroughs in areas ranging from nanoscale photonics to materials science to biotechnology.



Senior Research Engineer, Palomar Observatory Thomas W. Schmitt Annual Staff Prize winner 2016

JOINED CALTECH: 1984

ON THE JOB: Henning designs and maintains control systems to guide and safeguard Palomar's three telescopes. Because he is so familiar with telescopes' inner workings, he is often involved in troubleshooting and improvements at the observatory.

NICKNAME: "The Wizard," because Henning

NICKNAME: "The Wizard," because Henning has a solution to every challenge.

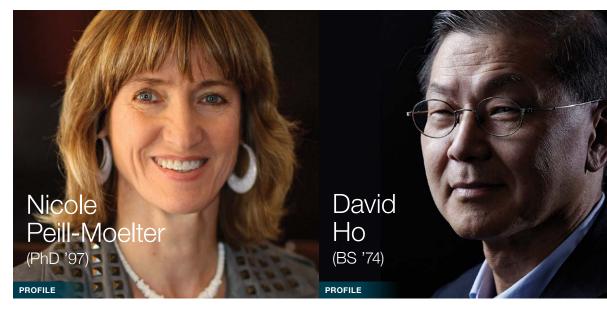
WHY HE LOVES HIS WORK: "I enjoy working with our dedicated, hardworking staff. And getting the telescopes to perform new tricks is a lot of fun; there is always an opportunity to be creative."







Caltech's more than 23,000 living alumni include Nobel Prize—winning scientists (20, to be exact), Academy Award—winning artists, trailblazing corporate executives, successful entrepreneurs, academic leaders, medical pioneers, and technological innovators.



Senior Director of Environmental Sustainability, Akamai Technologies

In 2009, at the behest of then-CEO Paul Sagan, Peill-Moelter established Akamai's corporate environmental sustainability program. Responsible for global strategy and execution, she is helping to accelerate private-sector decarbonization of operations by developing innovative models for corporate renewable energy procurement.

Director and Chief Executive Officer, Aaron Diamond AIDS Research Center

Ho's discovery in the mid-1990s that HIV is never dormant, but is constantly mutating and continuing its assault on the immune system, directly led to the antiretroviral therapies that have dramatically increased lifespans for those affected by the disease.



Reporter, NPR Science Desk

Doucleff, who reports for NPR on everything from vaccinations to the microbiome, was on the team that won a George Foster Peabody Award in 2014 for its in-depth coverage of the Ebola outbreak in West Africa.

Associate Professor, Department of Mathematics, UC Berkeley

Agol was awarded the 2016 Breakthrough Prize in Mathematics for his work on the topology and geometry of three-dimensional spaces, such as our universe. He is also acclaimed for solving five major conjectures posed by math giant William Thurston.





Vice President of Product, Airbnb

Zadeh was the third engineer hired by Airbnb, which now has more than 3 million listings in over 190 countries wordwide; his oversight of Airbnb's mobile apps and website landed him on *Fortune* magazine's "40 Under 40" list in 2016.

JPL Engineer

Steltzner led the entry, descent, and landing team on the Mars Curiosity Rover project—which used an innovative sky-crane landing system that his team designed—and was named, in 2016, to the National Academy of Engineering. He is currently investigating how NASA's next Mars rover might collect samples for possible return to Earth.









Bechtel Residence

Named for Caltech Life Trustee Stephen D. Bechtel, Jr., the Bechtel Residence will provide undergraduate housing to 212 students, allowing 95 percent of undergrads to live on campus and fully participate in residential life. Students provided input from the outset of the design process, and the finished residence, at the northeast edge of campus, will feature a large interior courtyard and six interconnected structures to encourage interactions. The residence will open to students in September 2018.

North Athletic Field

The field has been upgraded by replacing the grass with high-quality artificial turf. The synthetic turf has a longer life span and also provides a more durable and uniform playing surface, allowing yearround use for a wide range of campus activities. This is also one of many steps taken by the Institute to save water.

Athenaeum kitchen addition

A new 1,900-square-foot kitchen addition, the Rath Al Fresco Pavilion, at the Athenaeum—the Institute's faculty club—will offer members a variety of grab-and-go lunchtime options starting mid-April of 2017. The summer al fresco dinner from May through October will be located in a peaceful newly landscaped terrace setting under the deodar cedars.

CLICK HERE FOR HISTORY

For more on the campus and its buildings, both past and present, visit our interactive history map at www.caltech.edu/historymap.





Caltech is an integral part of and partner with the city of Pasadena. Together with JPL, we are the city's largest employer, and over the years our campus has become a cultural and intellectual magnet for visitors from the surrounding community.



Visiting Speakers

Notable speakers who visited Caltech in 2016 include entrepreneur and philanthropist Bill Gates (above); surgeon, writer, and public health researcher Atul Gawande (right); and actor, writer, and science communication advocate Alan Alda.



Earnest C. Watson Lecture Series

Nine times a year, professors and researchers based on campus and at JPL present their work to the public. Topics in 2016 included Planet Nine, DNA origami, algorithmic magic, and extrasolar space weather.



On Stage

Each season, Caltech welcomes the public to performing arts events ranging from theater and music to dance and comedy. In the last year we welcomed a jazz ensemble, Japanese drummers, a Mauritanian storyteller (Noura Mint Seymali, above, at left), and Irish folk musicians, among others.



ABCs of STEM

Caltech brings STEM to life for Pasadena-area students and teachers. In 2016 our school year programs directly reached over 3,300 students and teachers and another 12,000 students in participating teachers' classes.

Our combined summer programs reached 930 young people, from 4-year-olds to high school researchers embedded in Caltech labs.

Caltech Associates

This vibrant philanthropic organization of approximately 2,000 community members, business leaders, entrepreneurs, and academics supports Caltech and takes part in a roster of scholarly and social events on and off campus.

On Location

Over the years, the Caltech campus has appeared in several well-known TV shows and movies.



Modern Family The X-Files The Big Bang Theory Silicon Valley Transparent Mission: Impossible Entourage Legally Blonde Numb3rs The West Wina











Getting Social

We connect with students, alumni, and the wider world through Facebook, Twitter, YouTube, Instagram, and Snapchat.



The Caltech campus is located in Pasadena, California, a vibrant city 10 miles northeast of downtown Los Angeles and minutes from the San Gabriel Mountains.

Average high temperature

PASADENA IS THE HOME OF:

Tournament of Roses Parade

Norton Simon Museum

The Huntington Library, Art Collections, and Botanical Gardens

Old Town Pasadena

The Pasadena Playhouse



Downtown Los Angeles is a few stops away on the Metro Gold Line



Hollywood is 25 minutes from Pasadena



The Rose Bowl Stadium is 10 minutes from Caltech's campus









Caltech

Located in the heart of the city of Pasadena, at the foot of the San Gabriel Mountains, Caltech is minutes from downtown Los Angeles and less than two hours from beaches, mountains, deserts, and the best that Southern

California has to offer.

10 miles

5 miles

20 miles

Disneyland



Palm Springs 105 miles



San Diego 130 miles





San Francisco 380 miles



Channel Islands National Park 70 miles



Joshua Tree National Park 125 miles







Campus Tours

Prospective students are encouraged to visit campus and see life at Caltech firsthand. To find out more, visit admissions.caltech.edu.

Architectural tours offer visitors and residents a unique perspective on Caltech. For reservations and information, call 626-395-4656.

Caltech 1200 East California Blvd., Pasadena, CA 91125

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