

Caltech is defined by its people: leaders who collaborate across disciplines, launch new fields of study, and expand human knowledge.

Kip Thorne (BS '62) and Barry Barish, physicists with the Laser Interferometer Gravitational-wave Observatory (LIGO), were awarded the Nobel Prize in Physics for the first detection of gravitational waves—ripples in space-time—emanating from merging black holes.



Nobelist and chemical engineer Frances Arnold pioneered the technique of directed evolution, which creates new enzymes that can be used in medicine, neurobiology, and alternative energy.

Alum Leroy Hood (BS '60, PhD '68) invented the automated DNA sequencer, which helped launch the field of genomics and enabled the Human Genome Project.



Electrical engineer Azita Emami developed a pressure-sensing eye implant that could help glaucoma patients monitor their condition and prevent blindness.

This is Caltech



Learn more about
Caltech online:



fearless
curious
ambitious
innovative
unparalleled

Caltech

Caltech's unwavering commitment to **interdisciplinary collaboration**, the development of **state-of-the-art instrumentation**, and the pursuit of **high-risk, high-reward research** allows it to address fundamental questions in science and engineering.



“In our group, we have chemical engineers, chemists, mechanical engineers, and materials scientists all coming together to do something big. We're going after really, really difficult problems and uncovering Mother Nature's secrets.”

Karthish Manthiram

Professor of Chemical Engineering and Chemistry, and William H. Hurt Scholar

Caltech's
Resnick
Sustainability
Institute (RSI)

addresses the challenges of climate change and explores new opportunities for sustainability.

The American
Institute of Mathematics
(AIM) recently moved its home to the Caltech campus, where it hosts in-depth collaborations to solve long-standing math problems.

For two decades, Caltech's Kavli Nanoscience Institute (KNI) has facilitated groundbreaking research in nanoscale photonics, materials science, and biotechnology.

“Caltech germinates entirely new fields of sciences, through our faculty but also through our students and postdocs in their post-Caltech careers. Through the Merkin Institute, we have a vehicle to channel such discoveries into novel ways to understand and improve the human experience.”

Viviana Gradinaru (BS '05)
Allen V. C. Davis and Lenabelle Davis Leadership Chair of the Richard N. Merkin Institute for Translational Research



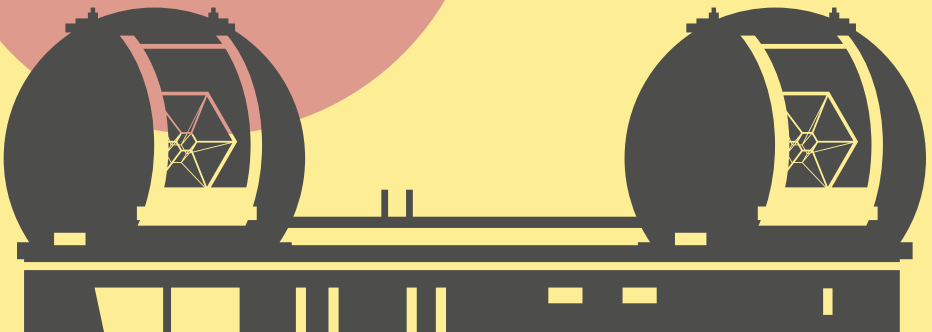
The Merkin Institute for Translational Research helps Caltech scientists transform laboratory breakthroughs into advances in human health.



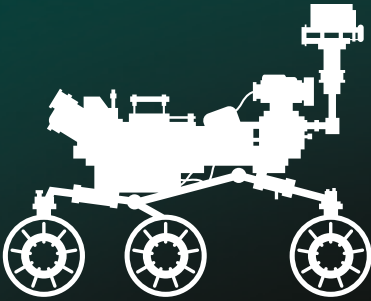
Scientists in the Chen Institute for Neuroscience at Caltech deepen understanding of how the brain works.

From the ground-based Owens Valley Radio Observatory, W. M. Keck Observatory, and Palomar Observatory to the space-based NuSTAR and SPHEREx missions, Caltech's network of observatories allows researchers to open new vistas on the solar system and universe.

In partnership with Amazon Web Services (AWS), Caltech pioneers quantum computing technologies in the AWS Center for Quantum Computing.



The **Jet Propulsion Laboratory (JPL)** was founded by Caltech researchers in the 1930s and is now managed by the Institute for NASA. This partnership has propelled JPL to be the leading center for robotic exploration of Earth, the solar system, and the universe's more distant expanses.

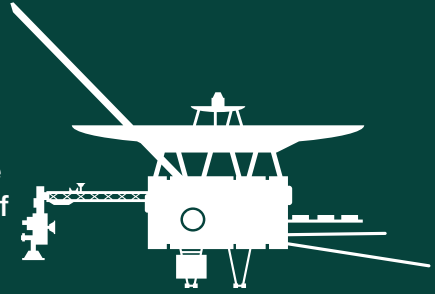


The Mars rovers **Perseverance** and **Curiosity** are exploring the Red Planet for signs that it could have supported microbial life.

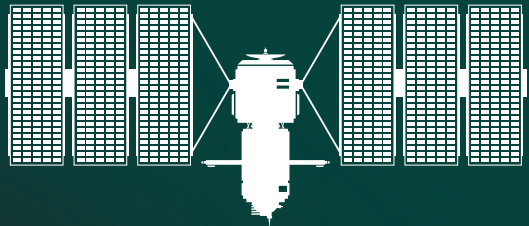


The **Europa Clipper** spacecraft making its way toward Jupiter's moon will investigate whether conditions suitable for life exist below its icy surface.

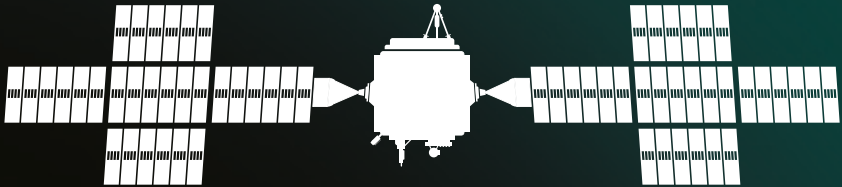
The twin explorers **Voyager 1 and 2**, launched in the 1970s, gave humanity its first up-close images of the solar system's outer planets.



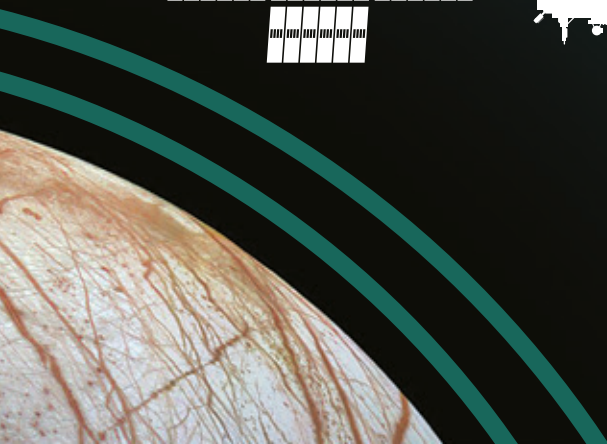
The **Surface Water and Ocean Topography (SWOT)** satellite is performing the first global study of how water bodies on Earth change over time.



The **Psyche orbiter** is heading to a unique metal-rich asteroid orbiting the Sun between Mars and Jupiter to learn more about a building block of planet formation: iron cores.

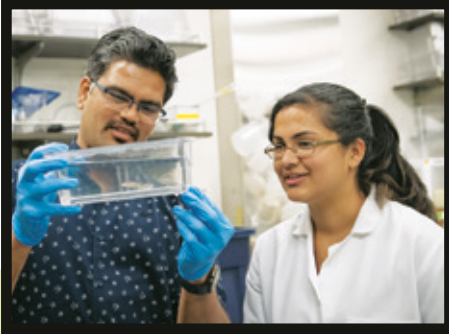
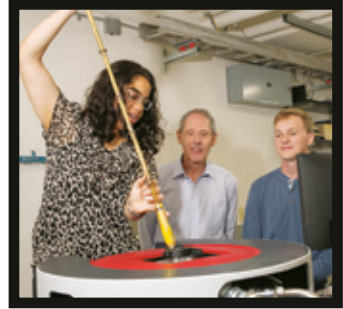


An image of Jupiter's icy moon Europa taken by NASA's Galileo spacecraft.



Caltech's small and highly **collaborative community** embraces an ethos of shared knowledge and embodies excellence in all ways.

1,000 undergraduates and **1,400** graduate students have all proven their academic aptitude before arriving on campus, earning a spot in their class amid fierce competition.



.....
600 postdoctoral scholars work closely with faculty to make discipline-defining research contributions.

Caltech's **Honor Code** guides all of the Institute's students, faculty, and staff.

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



300 professorial faculty are known for their expertise, creative thinking, and courage to tackle complex problems in new ways.

8,000 employees (2,500 on campus and at off-site observatories, plus 5,500 at JPL) make Caltech's research and education mission possible.



.....

25,000 living alumni include Nobel Prize-winning researchers, Academy Award-winning artists, entrepreneurs, corporate executives, academic leaders, medical pioneers, and technological innovators.



Alumna **Laurie Leshin** (PhD '95), far right, is the first female director in the history of JPL.

Caltech students learn the foundations of science in **the classroom and the laboratory** while working closely with the Institute's renowned faculty.

“Doing a PhD, it's kind of like you are learning and contributing at the same time. You are trying to construct your own science story. You are trying to shine the light on an unknown fact to the rest of the world. And at the same time, you learn all these skills that will help you uncover more in the future.”

—Jieyu Zheng, graduate student



All Caltech undergrads enroll in at least one course within the **Resnick Sustainability Center (RSC)**. Classes within the Resnick Center connect multiple disciplines and are infused with sustainability concepts, case studies, problem-set questions, field trips, and exercises.



Across its six academic divisions, Caltech offers:

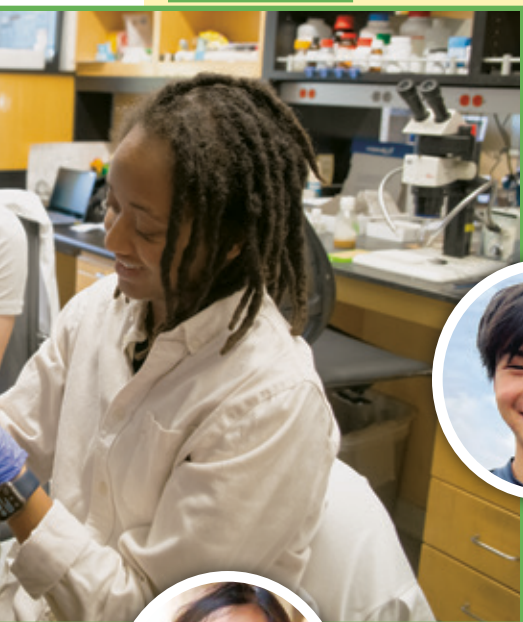
26 different undergraduate academic options (majors)

27 graduate options

Small class and lab sizes are pillars of the Caltech experience, exemplified by a **3:1** student-faculty ratio.



91% of undergraduates participate in research either during the academic year or as part of a Summer Undergraduate Research Fellowship (SURF) program. SURF students conduct research with a faculty mentor over 10 weeks and then present their findings publicly.



“Caltech is tough, but we knew that coming in. And yet we do it anyway. We attend lectures, grind out problem sets again and again despite—even because of—the challenge. On top of all that, we find time to watch musicals, go on hikes, paint murals, and orchestrate string ensembles. There’s something beautiful about that.”

—Albert Huang,
undergraduate student



“Everyone in this school is so genuinely passionate about one specific research interest or academic interest. Their passion is something that you can appreciate and you always learn new things from.”

—Sanvi Pal, undergraduate student

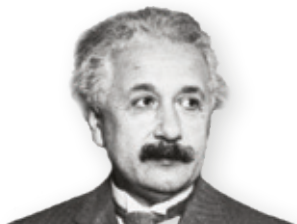
Caltech’s **core curriculum** prepares students for the interdisciplinary nature of science and engineering. After the core, students are deeply familiar with the basic sciences, mathematics, the humanities, and the social sciences.



The ambitious problem solvers who come to Caltech bring **diverse experiences and perspectives**, and an extraordinary aptitude for STEM.



Two-thirds of Caltech's undergraduates play a musical instrument and **25%** participate in an NCAA Division III sport.



Albert Einstein spent three winters as a visiting professor at Caltech in the 1930s. Today, the Institute is home to the Einstein Papers Project, whose scholars and staff collect, transcribe, annotate, and publish the famed physicist's papers.



Among the 2023 graduates:

43% are attending graduate or professional school

44% accepted a full-time job with a median post-graduation starting salary of

\$115,000

Caltech hosts the annual Southern California Science Olympiad State Tournament for middle and high school students. The Science Olympiad Planning Team is one of **134** student-led campus clubs.



The annual **ME 72 Engineering Design Competition** pushes students to the limits of possibility as they build robots to compete in a one-of-a-kind competition.

The **Caltech Y** helps students broaden their worldviews and raises social, ethical, and cultural awareness through teamwork, community engagement, activism, and leadership.



Caltech's distinctive approach to research and education has an **outsized impact** on society.

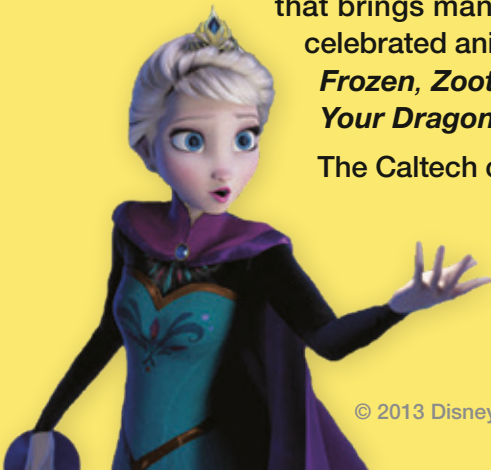
The Institute has built a vibrant **innovation ecosystem** on campus and in the local community through courses on the fundamentals of entrepreneurship, dedicated incubator spaces for startups, the Bill Gross Business Plan Competition, and the support of two entrepreneurs in residence.



Institute researchers have served as scientific advisors on films such as *Interstellar*, *Ant-Man*, and *Nope*.

Its alumni have helped develop the technology that brings many of Hollywood's most celebrated animated films to life, including *Frozen*, *Zootopia*, and *How to Train Your Dragon*.

The Caltech campus has appeared in TV shows such as *Modern Family*, *The West Wing*, and *The Big Bang Theory* (whose main characters are affiliated with Caltech).

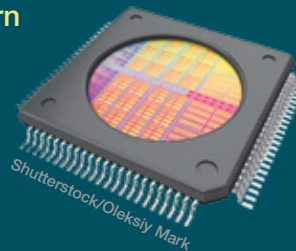


Caltech is a world-renowned research university that transforms science, engineering, and society.



Caltech neuroscientists have created neuroprosthetics that can interpret the intentions of patients with paralysis, allowing them to control assistive devices.

Caltech trailblazers paved the way for modern computing and smartphones when they created very-large-scale integration (VLSI), the process of combining millions to billions of transistors into a complex digital system on a single silicon chip.

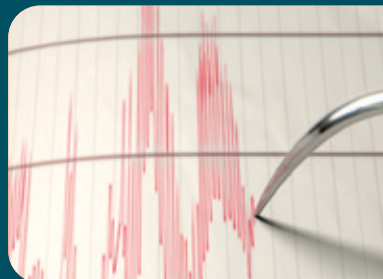


Caltech researchers discovered the link between automobile exhaust and smog, and the existence of toxic lead in many materials around the world, both of which prompted the development of environmental and consumer protections.



Shutterstock/The Tree Image

Caltech seismologists invented the Richter scale in 1935 to measure earthquake magnitude and also developed its successor, the moment magnitude scale.



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Caltech faculty, alumni, and postdoctoral scholars have earned:



National Medals of Science



Nobel Prizes



National Medals of Technology and Innovation



MacArthur Fellowships

Joe Parker, director of Caltech's Center for Evolutionary Science, was named a **MacArthur Fellow** in 2024 for his work uncovering the origins of symbiosis in rove beetles and the evolution of complex organismal traits.



The **Office of Technology Transfer and Corporate Partnerships (OTTCP)** supports the transfer of science and engineering knowledge created by our researchers to maximize societal impact.

2,000+ active U.S. patents

100+ Caltech-affiliated start-ups have launched over the past decade.

OTTCP operates the Caltech Seed Fund, which deploys **\$1.5 million** per year to help promising Caltech-affiliated start-ups get off the ground.



The **Caltech Science Exchange** is a free public resource that offers trustworthy answers, clear explanations, and fact-driven conversation on critical topics in science and technology such as artificial intelligence, quantum science, and neuroscience. Discover more at scienceexchange.caltech.edu.

Caltech develops cutting-edge technologies, addresses fundamental scientific questions, and pursues solutions to the world's greatest challenges.

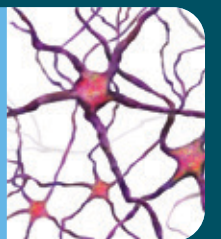
The **Center for Autonomous Systems and Technologies (CAST)** is developing self-driving robots, including prototypes for an autonomous flying ambulance and drone swarms that will provide support during a natural disaster.



National Science Foundation/LIGO/Sonoma State University/A. Simonnet

Researchers at Caltech showed that neutron star mergers are behind the creation of some heavy elements such as gold and platinum.

Caltech's neuroscience researchers have probed the psychology of the stock market, pinpointed neural regions that govern economic anxiety, and identified neurons that alert your brain when you make a mistake.



Caltech's **Space Solar Power Project (SSPP)** was the first to wirelessly transmit power in space, a demonstration of the technology that could one day allow humans to harvest power in space and beam it to Earth.