

A Conversation with President Rosenbaum

Caltech's leader reflects on questions

big and small; past, present, and future.



Thomas F. Rosenbaum, the Sonja and William Davidow Presidential Chair and professor of physics, is in his 12th and final year as Caltech's ninth president. Rosenbaum's time as president has encompassed two full terms and part of a third—the longest anyone has served in the position since Lee DuBridge, who had the job for 23 years (1946–69).

"Clearly, this isn't the year I envisioned," Rosenbaum says, seated at the wooden conference table in his office, reflecting on how he had imagined his final months as president when he first began contemplating retirement.

The challenges facing American colleges and universities over the past year have been well documented: from cuts in federal support of university-led research to a potential reduction in indirect cost rates on federal research awards. Yet, Rosenbaum has remained steadfast in his approach. "Many of the core principles remain unchanged," he says. "This moment offers a chance to reaffirm our deep commitment to academic freedom, scientific inquiry, and the pursuit of truth and discovery."

Rosenbaum's steady leadership and dedication to Caltech's core mission and values have also guided the Institute through a global pandemic and a devastating natural disaster in a manner that underscores his commitment to cultivating a thriving, supportive, and inclusive community of scholars that is a destination of choice for the brightest in science, engineering, and technology.



Since Rosenbaum took office in 2014, increases in financial aid and scholarship support have made a Caltech education more affordable, and the student experience on campus has been enriched with an ever-wider variety of co-curricular experiences.

"Under Tom's guidance, and as a result of the enhancements he has overseen to the student experience, including increasing the Institute's investment in student scholarships, fellowships, and supporting programs, Caltech is better equipped to attract the brightest and most talented future scientists and engineers," says Dave Thompson (MS '78), chair of Caltech's Board of Trustees.

During Rosenbaum's tenure, many Caltech researchers have garnered prestigious prizes and honors, a direct result of having the resources and freedom to create, experiment, and define new areas of inquiry. In addition to three Caltech faculty members who were awarded the Nobel Prizes (two in 2017 for the detection of gravitational waves and one in 2018 for the creation of a bioengineering method that leverages the principles of evolution to develop new and better enzymes in the lab), Institute researchers have received National Medals of Science, Breakthrough Prizes, Kavli Prizes, MacArthur Fellowships, and other significant honors.

Caltech magazine recently joined Rosenbaum for an inside look at his office and the objects he keeps on display (see page 23), as well as a discussion of how his past experiences have shaped the office of the president, both physically and philosophically.

At your inauguration, you named five Caltech hallmarks that would "yield intellectual magic": excellence, ambition, focus, intimacy, and perspective. Have they stood the test of time?

These are Caltech qualities that have borne up superbly under all kinds of pressures and need to be preserved. Eleven-plus years later, I would like to take the liberty to add "fearlessness" to the list—no fear in pursuing the most impactful problems out there no matter the obstacles.

How has Caltech changed since 2014?

New buildings, new initiatives, great new students, post-docs, staff, and faculty. But the Caltech ethos remains the same: get better, not bigger, while creating knowledge for the ages and technologies that improve people's lives today.

The higher-education landscape is shifting radically as you wrap up your presidency. How do you think Caltech and this community can best meet the moment?

Continue to think big. I fear our country is losing its appetite for the transformative investments that change the world of science and technology, from cancer cures to moonshots to LIGO [the Laser Interferometer Gravitational-wave Observatory, which is funded by the National Science Foundation and operated by Caltech and MIT]. We need to step up.

What makes the intertwined nature of Caltech and JPL so special?

One of my favorite quotes is Freeman Dyson's riff on *Hamlet*: "There are more things in heaven and Earth than are dreamed of in our present-day science. And we shall only find out what they are if we go out and look for them." That is what campus and JPL do better together than any other place in the world.

What do you hope for the future of the Lab?

That the government maintains the nation's deep-space capability that resides at JPL and its people need to be

supported for the long term. We could bring those rocks home from Mars and potentially learn if microbial life existed somewhere beyond Earth!

During your presidency, Caltech's physical campus evolved significantly with the construction of new buildings to support expanding research programs in neuroscience, sustainability, quantum science, and more. How does this evolution mirror your broader goals and aspirations for the Institute?

We want to keep the core campus small and preserve our open and interactive culture but, at the same time, have an impact on the world in as many areas as we can. This requires state-of-the-art facilities on campus to pursue cross-disciplinary endeavors where Caltech either has a discriminating advantage, or the problem is so important that we have to play. In addition, we amplify our position and contributions by running large off-campus endeavors, such as JPL, the Keck telescopes, LIGO, and an earthquake early warning system.

During the last 11-plus years, you have focused in part on student life and expanding access to cultural experiences. Why was this initiative important to you?

I believe that college and grad school are about far more than getting a good job. Obtaining the quantitative skills to be able to make contributions to society is a necessary and laudatory goal, but as important is stretching oneself to develop lifelong passions. We can do both at Caltech.

How do you hope the faculty, students, and staff remember your leadership?

That Caltech was the place where they realized their full potential.

What has been your favorite part of being a university president?

The people! Where else do you have an excuse to interact with so many talented, accomplished individuals across the intellectual spectrum? Keeping Caltech going through social unrest, a pandemic, catastrophic wildfires, and executive orders has been trying. Fortunately, I can depend on a dedicated leadership team and a tight-knit community to help see us through.

How has the Caltech community shaped you as a leader? As a person? As a scientist?

We depend on one another, we prize the collaborations, and we savor the serendipitous interactions. It is a modality that cuts across the personal and the professional.

What one aspect of the role most surprised you?

The president is seen as the instantiation of the Institute. That goes with the territory but doesn't really represent what Caltech is about.

What scientific or technological breakthrough most surprised you?

The observation of gravitational waves by LIGO, the most sensitive instrument ever built. And not only the initial discovery but the fact that we are now observing a black hole merger a week, permitting astronomy on Kip Thorne's "warped side of the universe."

What was the quirkiest tradition you discovered here?

Blaring Wagner's "Ride of the Valkyries" at 7 a.m. during finals.

What are your plans after you step down?

I'd like to build up my lab group and learn some new physics. I also serve on two nonprofit boards, so I hope to continue to advance science and society through them.

What's on your reading list right now?

I just finished Dorothy Dunnett's eight-volume novelistic rendition of mercantile and military life in the late 1400s, *The House of Niccolò*. On my nightstand are essays by Zadie Smith and Christian Wiman, a historical novel by Hilary Mantel, and a biography of John Lewis.

Five rapid-fire questions to close:

What is your go-to coffee order?

Small cappuccino with low-fat milk (but fully caffeinated!).

Your favorite spot on campus?

My lab, followed by the Red Door.

Your hidden talent?

Hitting the occasional bucket from half court.

The most-used app on your phone?

New York Times. Maybe that will regularize when I step down.

Next on your bucket list?

Antarctica or Iceland. Not that I miss the cold. 🇨🇪

Inside
Look

President Thomas F. Rosenbaum

Caltech's president
takes pride in the
importance of ideas and
objects within his office • • •

By Omar Shamout