

TECHNIQUES

A publication of
Caltech's Office of Gift Planning

FALL 2025



A portrait made at the Associates' first formal dinner at The Athenaeum. Seated, from left: Robert Millikan, Albert Einstein, Albert Michelson, William Campbell. Standing, from left: Charles St. John, Walther Mayer, Edwin Hubble, William Munro, Richard Tolman, Allan Balch, Walter Adams, Russell Ballard.

WHAT'S INSIDE

- pg.2 Inspiring Future Entrepreneurs to Reach for the Prize
- pg.4 Good News from Caltech
- pg.4 What's New for the 2026 Tax Year?
- pg.5 A Renaissance Couple Who Enriched the Lives of Others

RECOGNIZE THIS ALUMNUS?

pg.6



Caltech

Inspiring Future Entrepreneurs to Reach for the Prize

TIMOTHY D. RYAN (BS '78) ENDOWS AN ENTREPRENEURSHIP PRIZE WITH A BEQUEST THAT WILL HELP CATALYZE UNDERGRADUATE INNOVATORS.

As an undergraduate in the late 1970s, Tim D. Ryan already was harnessing his natural entrepreneurial spirit to launch the first of many businesses. He and two roommates spent nights in the campus machine shop crafting the prototype of what would become the Con Brio Advanced Digital Synthesizer and the focus of his first company. At the time, not many other Caltech undergrads were thinking about growing a business.

“When I was on campus, it was 1 percent entrepreneurial thinking,” says Ryan. “Ten years from now, I’d like to see that more as 10 or 20 percent of how undergraduates view their work.”

To help undergraduates complement their innovative thinking with business skills, he has committed to endow the Timothy Ryan Entrepreneur Prize as part of his estate. The prize supports the Timothy D. Ryan Summer Entrepreneurship Program, a 10-week summer internship that helps students translate their creative ideas into novel commercial products and potential startups. Projects have included leveraging AI for video translation and exploring neural circuits to help regulate sodium levels in humans, among others.



Pictured left to right: Don Lieberman, Tim D. Ryan, and Alan Danziger in the Caltech Hearing Lab.

“I was able to start my first company because of Caltech’s generosity and its open-door policy where students like me could pursue our ideas,” he says. “This entrepreneur prize is a way for me to pay it forward, enabling undergraduates to get through the initial startup phase.”

REVOLUTIONIZING SOUND

Ryan started out as a physics major but soon found himself intrigued by the microprocessor chip that had just been released commercially. At the time, Ryan’s roommate, Don Lieberman (BS ’77), was working with the founder of the Caltech Hearing Lab, George Zweig, on a stand-alone synthesis system to generate specifically designed sounds for mapping hearing in the cat brain. Another roommate, Alan Danziger (BS ’77), joined Ryan and Lieberman on a visit to the Stanford Artificial Intelligence Laboratory (SAIL), where sounds from acoustic instruments were being analyzed, studied, and resynthesized.

These experiences inspired the Caltech roommates. “Let’s abandon this old analog approach,” Ryan recalls of their discussion. “We’ve got microprocessors. We’ve got digital electronics. Maybe we can digitally synthesize all of it. And that’s what we did.”

They founded their company, named Con Brio, and funded a prototype with the help of real estate developer and philanthropist Samuel Oschin—a connection made through Caltech staff. Their efforts produced a device that could accurately resynthesize analyzed acoustic instrument sounds using the SAIL algorithms and resulted in introducing new ways to synthesize sounds for electronic keyboards for the music industry.



Ryan would go on to found additional companies, including Midiman, later known as M-Audio. This innovation provided interfaces to record and stream audio on a computer. In essence, it removed the need to have a stand-alone synthesizer like the Con Brio. In 2004, Avid Technology acquired M-Audio, and Ryan retired in 2006. He now shares generously of his time by counseling undergraduates participating in the summer internship program.

A LEGACY THAT LOOKS TO THE FUTURE

The percentage of Caltech undergraduates pursuing full-time jobs in industry is now at 44 percent, slightly more than the 43 percent who attend graduate or professional school, according to Caltech’s Career Achievement, Leadership, and Exploration (CALE). Resources like the Entrepreneurship Prize will allow more students to gain valuable experience earlier in their careers, says Ryan.

“I wanted to address the undergraduates,” he says, “because they’re often the ones that come up with these brilliant ideas to use technology in new and innovative ways.” As he reflects on his late nights on campus building the Con Brio prototype, Ryan envisions opportunities to provide more students with additional resources to help power their dreams.

“Caltech students are always making stuff—whether in their dorm rooms or the labs,” he says. The serial entrepreneur would like to see more spaces and equipment made available to students to help turn their concepts into actual prototypes.

Pulling from his own campus experience, Ryan hopes to enable others to achieve what he was able to achieve—and more—with the right support in place.

“Caltech is near the top of the list of things that were very formative and important to me,” he says. “I hope I can open the door for students to build businesses from their nascent ideas.”

Torchbearers Legacy Society

Membership in the Torchbearers Legacy Society is extended to those who have made provisions in their wills or living trusts, named Caltech as a beneficiary of life insurance or retirement accounts, or completed other deferred gifts—all in support of the Institute.

In recent months, the following people have joined the Torchbearers:

John and Marilyn F. Baker (Parent ’02)

Robert C. Balcer (MS ’70)

David F. (MS ’73) and Elizabeth V. Bremmer

Peter C. (BS ’57) and Barbara P. Jordan

Hiroo and Keiko (PhD ’81) Kanamori

Viviane C. Rupert (MS ’62, PhD ’73)

Timothy D. Ryan (BS ’78)

Julius Uradnisheck III (PhD ’75)

ESTATE GIFTS

The generosity and foresight of alumni and friends are crucial to Caltech’s success. Below are just a few of the many individuals who have recently supported Caltech through estate gifts.

William G. Bloom provided unrestricted support to the Institute.

Fred and Gretchen G. Eimer contributed funds to endow an undergraduate scholarship and professorship.

Eugene N. and Niesje M. Parker provided support for the physics department.

Noel F. Smyth provided unrestricted support to the Institute.

Good News from Caltech

CALTECH ASSOCIATES CELEBRATE 100 YEARS

In 1926, Henry E. Huntington welcomed 100 of Southern California’s most influential leaders to his San Marino estate to help catapult Caltech as a national leader in scientific research and discovery. These founding benefactors contributed \$1,000 annually for 10 years to the Institute and would be known as the Caltech Associates. Today, the group has grown to more than 1,600 Associates and, over the past century, has contributed more than \$2.5 billion to support the Institute’s facilities, research, faculty, and students. To celebrate their centennial, the organization has established the Associates 100 Legacy Circle, inviting members to make pledges similar to those of its founders, reaffirming their philanthropic promise for a new generation.

Continues on page 7



The Athenaeum was one of many campus buildings supported by Associates members and was the location of the group’s first formal dinner (see front cover).

What’s New for the 2026 Tax Year?

Recent changes to federal tax law could influence your charitable giving plans now and into the new year. The One Big Beautiful Bill Act, signed into law in July 2025, increases standard deductions for singles and married couples while introducing a new deduction for seniors aged 65 and older. Individuals who don’t itemize may also use an “above the line” deduction up to \$1,000 for individuals and \$2,000 for married couples, for cash donations made directly to Caltech.

“While we anticipate the impact of these changes to be minimal for most donors, it underscores the importance of planning ahead,” says Rick Robertson, executive director of the Office of Gift Planning.

Additional updates in tax policies include:

A NEW CHARITABLE DEDUCTION “FLOOR”

Starting in 2026, those who itemize deductions can only deduct charitable contributions exceeding 0.5% of their adjusted gross income (AGI). For example, on earnings of \$200,000, the first \$1,000 of giving will not count as a deduction. Due to the potential for a lower tax benefit as a result of the new AGI floor, some donors may want to consider accelerating large gifts in 2025 to maximize deductions.

ADJUSTED GROSS INCOME LIMITS

The act makes permanent a 60% AGI limit for cash gifts—allowing donors to deduct more of their charitable giving in high-contribution years. For gifts of appreciated assets, the 30% limit remains unchanged, but the continued exclusion of capital gains tax on such gifts makes them a powerful tool for philanthropy.

INCREASED LIFETIME EXCLUSION

The federal estate and gift tax exemption increases to \$15 million per individual or \$30 million for married couples. This provides an opportunity for some donors to make larger gifts during their lifetimes without incurring a gift tax. This change may prompt donors to revisit estate plans and consider charitable bequests to reduce taxable estates while leaving a lasting legacy.

QCDs LARGELY UNCHANGED

The act maintains the annual limit of \$108,000 per individual for Qualified Charitable Distributions (QCDs), indexed for inflation in future years. For donors aged 70½ and older, QCDs from IRAs remain a tax-savvy way to support charitable organizations.

A Renaissance Couple Who Enriched the Lives of Others

Irving “Irv” (BS ’37, MS ’38, MS ’39) and Shirley Ashkenas were deeply compassionate, devoted not only to their family but also to the world around them. “They learned from their parents that if you’re fortunate to be able to give, you should give,” says their daughter, Sharon Fabian, a retired school principal. “It is a very strong tenet in our family philosophy.”

For Irv, the value of service was imprinted at an early age. Born in New York City, he arrived at Caltech at the age of 16 and had just completed his third degree when World War II broke out. He would serve his country through a longstanding career in aviation and aerospace, a career that was launched at North American Aviation Corporation, where Irv was instrumental in the design of the P-51 Mustang.

A STORIED CAREER IN AVIATION

The P-51, a long-range fighter-bomber critical to the war effort, had initial challenges with overheating, but Irv helped design an air inlet to remedy the issue. “Just like an engineer, he made it work,” says Fabian. “He was very proud of the Mustang.” The P-51 was one of a number of World War II-era planes tested in the Institute’s original 10-foot wind tunnel.

Long-time family attorney and friend Mark Phillips notes that Irv was not one to speak often about his career. “It was only at his funeral I learned more about the aircraft Irv helped create,” says Phillips. Irv’s accomplishments also included work on the Northrop flying wing aircraft, on which the stealth bomber design was based, as well as early efforts on the space shuttle program.

In recognition of his achievements, Irv was named a fellow of the American Institute of Aeronautics and Astronautics and a member of the National Academy of Engineering. He was the author of five books and held eight patents for various aircraft control systems.



Irving (BS ’37, MS ’38, MS ’39) and Shirley Ashkenas

PATRONS FOR THE ARTS

Irv and Shirley had varied interests that spanned sports, travel, and the arts.

“We called Irv the Renaissance Man,” says Fabian. “He loved music, arts, sports, and was an avid learner right up to the end of his life.” Shirley was an active partner in these passions, adds their daughter. The couple contributed to the LA Philharmonic, the Music Center, and the Los Angeles Opera in addition to their support of Caltech. Shirley and Irv also supported the arts in their local schools, according to Fabian.

“They contributed their money to organizations not necessarily to keep the lights on but to provide access and education,” says Phillips. “Scholarships were very much part of their philosophy. Their contributions to the Music Center were for tickets and transportation to bring young people who had never been to the symphony.”

Fabian recounts that her father loved his time at Caltech. “He wanted me to go there, but I’m not a science person,” she recalls with laughter. When driving by campus with her own children, she would share: “That’s where Poppy went to school.”

Perhaps, Fabian wonders, her firstborn grandson might continue the Caltech tradition.

Recognize This Alumnus?



A native of Yuma, Arizona, this alumnus was offered a full scholarship to attend the University of Arizona. His parents, who had limited resources to fund his education, considered the local university the practical choice, as did his high school counselors. Yet, this alumnus' heart and mind wanted Caltech. In his junior year of high school, his science teacher drove him and other talented students to Pasadena for Seminar Day. Witnessing Caltech's faculty and students perform experiments in the laboratory and hearing them discuss their research was thrilling.

Thanks to Caltech's scholarship support, he accepted an offer of admission. Still, finances were a concern.

In the late 1960s and early 1970s, classmates would see this alumnus selling tickets at the box office and giving campus tours to prospective students to earn income. His favorite job was at The Athenaeum. This student waiter would not only serve Caltech's Nobel laureates and prominent guests, including Jane Goodall and violinist Isaac Stern, but also be provided free lunch and dinner.

"You'd get paid five bucks and get two free meals," he says. "It was nice. I ate a lot better than most college students."

After his third year at Caltech, the chemistry major realized he only needed two classes to graduate. He proposed enrolling as both an undergraduate and graduate student, and faculty in the Division of Chemistry and Chemical Engineering agreed to it. As a master's student, he could dig deeper into X-ray crystallography, and the Institute would cover his tuition.

This alumnus did more than work and study. He lent his baritone voice to the Caltech production of *The Threepenny Opera* and to Caltech's Glee Club, singing classic compositions from Brahms

and Bach. The son of a music teacher, he thought he was well-versed in octaves and harmonies until he learned that Caltech's high standards extended to every facet of campus life.

"By being pushed to perform at this incredibly high level, we became a more cohesive unit and formed a collective ego," he says. "It was very powerful."

By graduation, this alumnus had saved \$5,000, traveled up and down the state and to Hawaii with the Glee Club, and earned two degrees.

"I ended up going through two lines on graduation day, one for undergrads and one for master's students," he says. "I changed hats or whatever they do to signify degrees. It was a little different graduation experience, I ended up with two pieces of paper instead of one."

After he earned his doctorate in chemistry from Princeton University, this alumnus returned to Caltech as a postdoctoral scholar to focus on organometallic chemistry. Moving to California and performing research at his alma mater was an easy decision.

"Whether you are an undergraduate, graduate student, or postdoc, the faculty at Caltech treat you as a colleague," he says. "That makes all the difference in the world."

He then embarked on a successful career introducing physicians and hospital administrators to the then-novel technology of magnetic resonance imaging (MRI). Initially, he supported General Electric's sales team, answering questions about MRI's capabilities and the financial impact of purchasing the machine. In 1987, he launched his own MRI consultancy firm and continues to advise clients on purchasing decisions and assist with maintenance and troubleshooting issues.

Robert "Bob" Bell (BS '72, MS '72)

Grateful for the financial aid he received more than 50 years ago, **Robert "Bob" Bell** (BS '72, MS '72) wanted to help make a Caltech education more accessible for today's students. Bob and his wife, Jane, established the Robert A. Bell Family Scholarship in 2018. The couple is adding to the scholarship through gifts directly from their IRAs. This approach, known as qualified charitable distributions, satisfies their required minimum distributions without raising their income taxes.

"The scholarship support I received at Caltech was absolutely vital," he says. "It is very important for me to give students the same opportunities I had."

Still resourceful, Bell repairs lab equipment and donates it to Caltech and 20 other universities and nonprofits. He and Jane also have served as Tables for Techers hosts multiple times, an annual event that brings together alumni and students at intimate, local gatherings all over the world to connect and share a meal.

"From the beginning, my relationship with Caltech has felt like family," Bell says. "What I value most is continuing my relationship with Caltech and encouraging other folks to support Caltech in any way they can."



MEET BRIGITTA TOTH

Brigitta Toth joined the Office of Gift Planning last May as director of development, gift planning. In this role, she supports Caltech donors in structuring gifts to advance various initiatives at the Institute.



"Prior to joining the staff, I was aware of Caltech's reputation as an outstanding research and academic institution," she says. "However, as I began to investigate the position, I gained a new appreciation for the qualities that make the Institute truly a special place."

Toth came to Caltech after a 15-year career at Washington University in St. Louis (also her alma mater), where she managed a portfolio of major and planned gift prospects with an emphasis on various real estate gifts. Originally from the Chicago area, she also has worked in the private sector, including in health care and real estate.

"We are delighted to welcome Brigitta to Caltech," says Rick Robertson, executive director of the Office of Gift Planning. "She brings a wealth of experience, and she is already making valuable contributions to our team."

As a former Midwesterner, Toth appreciates seeing the San Gabriel Mountains every day and the proximity of her new home to both the ocean and desert. She enjoys gardening and spending time outdoors as well as meeting with alumni and donors.

"Getting to know our alumni and donors, hearing their stories, and helping them experience the joy of their philanthropy is the most fulfilling aspect of my work," she says. "I enjoy helping donors not only fulfill their goals but provide transformative, life-changing support to others."



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CREATE YOUR LEGACY

Like many faculty, alumni, and friends, you can support Caltech while also providing for your financial security and your loved ones' future needs.

Our experienced gift planners collaborate with you and/or your advisor to structure a gift that reflects your goals and values.



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