

TECHNIQUES

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Caltech

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CALTECH LEGACIES

JACK ROBERTS

"After I'd been here a short time, I said to myself, 'Gee, I've got 35 more years of this place. That sounds great!' And that's the way I've always felt since."

—John D. ("Jack") Roberts in a 1985 interview*

* It turns out he was underestimating by a quarter-century!



RECOGNIZE THIS ALUMNUS?

He's no stranger to Caltech's Seminar Days and reunion weekends.

Adapted from Big T 1953. See inside for more.

CLASS OF
'53



“On my very last trip when I was still working freight, I wore my regular jeans, but with a dress shirt and a tie. Some of the guys who didn’t know what I was doing thought I was an officer.”

—Winston Garth, retired Union Pacific conductor

NUMBERS MAN

Winston Garth is Caltech through and through. He signs receipts with a formula instead of his name. He has a 3-D printed salt shaker. Every day, he records the weather, his solar panels’ output, the altitude of solar noon, and the azimuths of sunrise and sunset.



But Garth isn’t an alumnus. He found Caltech on the internet several years before he retired in 2008. Now, he has made Caltech one of the beneficiaries of his IRA.

“I figured this is where it would do the most good,” Garth says. “I have a good feeling about the way Caltech educates students. The people I’ve met have been fantastic.”

Just as he has chosen to help others, Garth came to America with help. His family emigrated from British Malaysia in 1957, the year it became an independent commonwealth. “My parents didn’t know if things were going to go to heck,” he says. They thought it would be better if we left.”

The family took a freighter to California, bringing their piano and two cats. Because Garth’s mother had taught at a Methodist school in Kuala Lumpur, members of a church in Van Nuys knew of the family, rented a house for them, and got Garth’s father a job at J. C. Penney.

Garth was in middle school then, and he loved trains. Within a year, he was helping out at the railyard. But in high school, he discovered astronomy and archaeology. He felt torn—should he pursue college or nurture his technical interests?

“My heart was with the railroad,” Garth says. He would work for Southern Pacific—later Union Pacific—for four decades, first as a brakeman and then as a conductor.

Only the Vietnam War interrupted his career. He served as a paratrooper in Dak To in 1967 and 1968. He is a proud lifetime member of the 173rd Airborne Brigade Association.

In the early 2000s, Garth came across an online ad for a Watson Lecture at Caltech. He made the 70-mile round trip from his home in Santa Clarita. Hooked by what he heard, he attended the monthly talks for years.

“I got more and more interested,” Garth says. “The articles that come out of Caltech astonish me each time—it just doesn’t seem possible the human mind could be that creative. In all fields, from the STEM to the medical, I can’t believe that people are able to conceive some of these ideas.”

He created a gift that Caltech leaders can apply wherever they see the most benefit. But he hopes it might fund scholarships—or perhaps even a professorial chair in mathematics named for the Swiss polymath Leonhard Euler.

“He’s my idol,” Garth says. “By his mid-60s he was totally blind, but he did all the calculations in his mind and his students transcribed for him. It’s amazing, the base he set for future analysis.”

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CALTECH LEGACIES

Jack Roberts fell in love with science at Caltech.

As a teen, the Los Angeles native relished attending community open-house sessions on campus. He would marvel at the shooting sparks in a high-voltage laboratory or at rare reactions in the chemistry labs.

Thus began an academic journey that took him to UCLA, Harvard, MIT, and, eventually, back to Caltech. In 1953, he demonstrated the existence of an unstable compound called benzyne with a pattern of atomic bonds previously thought impossible. That same year, his abiding love of science carried him back to Pasadena for an appointment as professor, beginning a 60-year career that would advance both chemistry and Caltech.

“For my father, Caltech was life,” says Jack’s son Allen Roberts. “Caltech was like family to him and my mom.”

A pioneer in organic chemistry, Jack saw the possibilities in new or obscure ideas and then used or explained them in ways that moved those ideas into the scientific mainstream.

A prime example is his work with nuclear magnetic resonance (NMR) spectroscopy—originally a tool for physicists. On Jack’s initiative, Caltech became the first university in the United States to buy an NMR machine. He used it to plumb the structure of molecules, opening it up to adoption by chemists everywhere. (Readers may be familiar with NMR’s offspring, the MRI scanner.)

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SHARING A LOVE OF CALTECH, ONE GIFT AT A TIME

The late Anthony J. Larrecq (BS '29) had such deep appreciation for his alma mater that he wanted the people he loved to be connected to Caltech in some way. Through philanthropy, he made his wish come true.

*Linda Yarnes and
Anthony J. Larrecq
(BS '29)*

When Larrecq, known by his family as A. J., created a charitable remainder unitrust (CRUT) to support Caltech's libraries, he named the funds after his brother, John Larrecq, and his son, Dennis Larrecq Bridgman. He then established another CRUT to amplify basic research in the Division of Engineering and Applied Science, naming his daughters, Linda "Lyn" Yarnes and Leigh Van den Heuvel, as beneficiaries.

For Lyn and her husband, Jim Yarnes, thinking of Caltech stirs fond memories of Larrecq.

"Every time we learn of some advancement—from space engineering to microbiology—we think of A. J. and his ties to the school," Jim says. "It is like a piece of Caltech belongs to us, too."

Over the years the couple added to the CRUT, which Larrecq established for Lyn. By increasing its value, the couple received higher annual distributions from the trust.

Jim and Lyn Yarnes have also become donors to Caltech in other ways. They have given gifts of unrestricted support to Caltech, which gives the Institute flexibility to pursue its most promising opportunities. In this way, they can honor Larrecq and help foster the types of breakthroughs that Lyn refers to as "mind-boggling."

Larrecq credited his engineering studies and Caltech's culture of curiosity for his success as an engineer, inventor, and business owner. After working at General Motors and General Electric Company, Larrecq founded Power Generators, Inc., in 1945. His company created and improved tools so that fighter jets could safely take off and land on aircraft carriers. It soon became a prominent contractor for the U.S. military. As an inventor who held more than 20 patents, Larrecq continually searched for ways to improve heat transfer equipment as well as rotating and reciprocating machinery.

Larrecq led his company until he was in his late 80s. The navy celebrated his 90th birthday by inviting him aboard an aircraft carrier his company had worked on, the USS *Harry S. Truman*, and presented him with the commander's cap. Larrecq passed away at 96, in 2005.

"Jim and I thought the world of my father and my father thought the world of Caltech," Lyn says. "We're delighted to carry on the family tradition of giving to Caltech."

Continued from Page 1

CALTECH LEGACIES

Jack similarly popularized the use of radioactive isotopes to trace the course of reactions and elucidated a fundamental concept of chemistry called molecular orbital theory. He also co-wrote the influential textbook *Basic Principles of Organic Chemistry*. Among the many honors he earned were the National Medal of Science, the Priestley Medal, and—most meaningful to him personally—the American Chemical Society Award in Pure Chemistry.

Named Caltech's Institute Professor of Chemistry in 1972, Jack served the Institute in many capacities, including terms as chair of the Division of Chemistry and Chemical Engineering and as vice president, provost, and dean of faculty. He is remembered as passionate in his devotion to teaching, uncompromising in his insistence on excellence, and resolute in his caring for and encouragement of young scientists and engineers. He mentored generations of Caltech scholars—postdoctoral, graduate, and undergraduate alike.

One contribution to Caltech culture was a source of particular pride. When he first joined the Institute, he made sure his student Dorothy Semenov could follow him to Caltech, opening up graduate study to women for the first time.

In later years, Jack championed Caltech's Summer Undergraduate Research Fellowships (SURF) program. He knew the value of undergraduate research firsthand, crediting his own early lab opportunities with shaping his life. At the end of each summer, he and Edith, his high-school sweetheart and wife, would bring

SURFers to the Athenaeum, the ornate Caltech faculty club, for an annual farewell luncheon.

"He always had pictures of his little flock of SURF students from the previous year around the house," Allen says. "Whenever anybody tried to make summer plans that included my dad, they had to work around the SURF program."

The same generosity of spirit and dedication to Caltech inspired Jack and Edith to provide endowed funding for SURF. They donated their house with a charitable remainder trust. In addition to tax benefits, Jack and Edith received a regular stream of income.

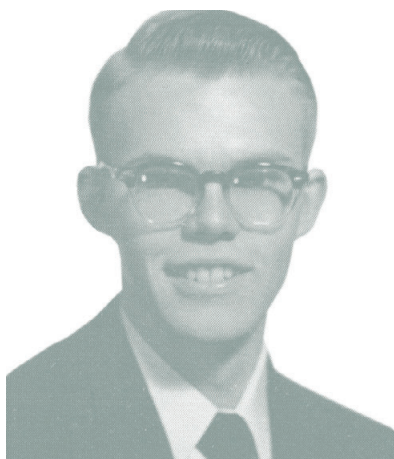
"It was a fantastic arrangement for everybody involved," Allen says.

Jack died at age 98 in 2016, preceded by Edith in 2010. Even beyond the SURF endowment they created, their memory and legacy shine on at Caltech. Friends, loved ones, and admirers created a fund in their honor to underwrite the **Jack D. and Edith M. Roberts Chemistry Center** at Caltech—a place where undergraduates can try their hand at NMR spectrometry.

**"I feel the Institute's been very good to me,
and I've tried to give it a lot in return."**

—Jack Roberts

RECOGNIZE THIS ALUMNUS?



This alumnus spent most of his undergraduate years at Caltech not with housemates but with two fellow commuters who rode with him in his huge black Buick from Alhambra to campus and back every day. Each of the three men was working toward a different degree: physics, electrical engineering, and mechanical engineering—the latter, in this alumnus's estimation, being by far the easiest of the three.

He took edifying courses from the likes of Professors Robert Daugherty, Howell Tyson, and Donald Hudson, and, after earning a BS, he mustered the gumption to complete a fifth year at Caltech to obtain an MS—also in mechanical engineering.

After a two-year stint in the U.S. Army, he pursued employment in the private sector, and throughout his career, his pride in his alma mater grew. He secured a job at Aerojet, a rocket manufacturing company established by aeronautics legend Theodore von Kármán with fellow scientists and engineers from JPL and Caltech. The alumnus then went on to work for TRW, which was co-founded by Caltech alumni Simon Ramo (PhD '36) and Dean Wooldridge (PhD '36). It was at TRW that he met Pat, the woman he was to marry.

Pat and **Dysart "Dys" (BS '53, MS '54) CoNine** share a love of science and engineering. As a matter of fact, Pat earned a BS in physics from Rensselaer

Polytechnic Institute, where she was one of five women in a graduating class of more than 700 men.

The CoNines have enjoyed many Seminar Days and reunions at Caltech—educational experiences Dys finds infinitely more fun than his college courses, because there's no homework. The couple made a bequest intention to support Caltech students. The CoNines want to ensure that, regardless of financial wherewithal, hardworking future scientists and engineers will have the opportunity to experience their own enduring pride in having attended Caltech.



Pat and Dysart (BS '53, MS '54) CoNine



Torchbearer

In recent months, the following people have joined the Torchbearers of Caltech.

HONOR ROLL:

Michael Craig (MS '77)

Edward Cuellar (BS '76)

J. Larry Hester

Kenneth Jacobsen (BS '73) and Amy Chung

Wolfgang Knauss (BS '58, MS '59, PhD '63)

Stanley Murayama (PhD '69)

Illona Neff

Donald Piepgras (PhD '84)

James Taylor (BS '70) and Pamela Taylor

ESTATE GIFTS

From the estate of **George Abdo**, Caltech received more than \$31,700 for the Physics Discovery Fund.

From the estate of **Margaret MacGillivray**, Caltech received more than \$191,000, and from the estate of **John Hackney**, Caltech received more than \$460,000. Both gifts provide unrestricted support.

From the estate of **Jeri Weiss**, Caltech received more than \$100,000, which was allocated to the Walter Baer and Jeri Weiss Postdoctoral Fellowship.

FIVE IDEAS FOR MAKING A GIFT OF YOUR REAL ESTATE



It may be easier than you think to turn your real estate into a charitable gift to Caltech.

Whether you are looking to donate your home, your second home, a rental property, a commercial building, or another real estate holding, we can help you determine the financial benefits that your gift would yield. You can use your property to support the scholars behind world-changing research and education.

Here are five common approaches and how you can make them work for you:

- If you no longer want responsibility for real estate that you own, you can give it to Caltech anytime.
- If you want to donate your home and continue to live in it, you can transfer ownership to Caltech and stay there as long as you wish.
- If you want periodic payments as a benefit of giving real estate, you can receive income for life through a charitable remainder trust.
- If you want to hold on to some but not all of your real estate, you can keep a portion of it and give the rest to Caltech.
- If you want to retain ownership during your lifetime and give through your estate, you can donate your real estate to Caltech with a bequest.

NUMBERS MAN

Garth's planned gift made him a Caltech Torchbearer, which he enjoys.

"I look forward to the annual luncheon at the president's house," he says. "I like talking to the people at my table, hearing their stories and them hearing mine, even though I'm not an alumnus."

At Caltech, Garth has found like-minded friends—and a way to help people who share his love for science and demonstrate the astounding creativity he so admires.

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Techniques is published by Caltech's Office of Gift Planning. For more information about the stories featured in this issue, or if you have questions about deferred or other planned gifts, please contact us:

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HISTORIC CAMPAIGN MARCHES ON

breakthrough
THE CALTECH CAMPAIGN

Alumni and friends have shown resounding support for *Break Through: The Caltech Campaign*, which aims to support people and ideas that are changing the world.

With \$1.38 billion raised thus far, Caltech is closer to reaching its \$2 billion target. The ultimate goal of the campaign dovetails with the motivations of the Torchbearers of Caltech: Spur the most innovative research, prepare students to become leaders, and help secure the Institute's place as an engine of discovery for generations to come. Your planned gift helps move the *Break Through* campaign forward.

To learn more, visit breakthrough.caltech.edu.

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