

How a Secret Phone Call Launched One Career—and Now Dozens More

Hideo Ikawa never imagined attending graduate school at Caltech. When his wife, **Yoshiko**, secretly called the Registrar's Office, he was already 28 years old.

Born in Japan and orphaned shortly after World War II, Ikawa had studied engineering in high school in Japan. When he heard about a Korean War GI Bill program that offered an opportunity to attain a college education, he left school to enlist in the U.S. Army in Tokyo. After basic training in California, he was assigned to serve in Korea and Japan. Five years later, newly married in Japan and discharged stateside, he came to the Northrop Institute of Technology in Inglewood to earn a BS in aeronautical

engineering, a childhood dream. After graduation he began work at General Dynamics–Pomona. Yoshiko decided that he should pursue an advanced degree. She set her mind on Caltech, Ikawa remembers.

"I said, 'Oh, no, that's impossible!' I never thought I'd make it to Caltech with my background, but that was her choice. She obtained the application form."

His next stroke of good fortune came in the person of aeronautics professor Ernest Sechler. Then director of GALCIT (the Graduate Aerospace Laboratories at Caltech), Sechler was responsible for admissions. According to his colleague Hans Liepmann, he "had an unbelievably intuitive understanding of the potential of an incoming student."

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Sechler not only admitted Ikawa, but also provided partial funding. He gave all of the self-supporting GALCIT master's students their third-quarter tuition free, saying that he wanted them to concentrate on their studies, free of financial worry. Ikawa says, "That really helped and also motivated us. 'Gee, this is some different kind of school!' Caltech is a private institution, and for a private institution to give you free tuition is remarkable. So



Hideo Ikawa (MS '64, PhD '73).

that motivated me to study hard."

Reflecting on that assistance and their Caltech years, the Ikawas began giving back. Now Hideo has pledged to fund GALCIT's first new endowed graduate fellowship in 30 years, in memory of Yoshiko.

The new fellowship is much needed—in fact, GALCIT has launched an initiative to secure funding for 10 named graduate fellowships endowed by alumni and friends. The fellowships will help top scholars develop their talents and work on the great projects of their day, as Ikawa did.

After earning his master's degree in 1964, Ikawa helped develop the Saturn S-II stage for the Apollo/Saturn V project at Rockwell International. "Once the program passed the third flight-test program, the missions started to get routine and I wanted more challenge."

Yoshiko urged him to return to GALCIT for a PhD in 1968. He studied experimental fluid dynamics under

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Hideo and Yoshiko Ikawa attending Caltech's 1973 commencement.

Caltech Legacies

The daughter of one of Caltech's early researchers, **Little Mackeown Hicks** believed in the value of higher education.

She saw first-hand how discoveries by her father, Caltech electrical engineering professor S. Stuart Mackeown, could advance Southern California's industrialization. Through research in Caltech's High-Voltage Lab in the 1920s, Mackeown helped develop high-voltage transmission lines and furnish

lightning protection for the oil industry's storage tanks. He also served as a Navy lieutenant commander assigned to the Institute's Radio Development Section during World War II.

Similarly, by pursuing her own passions at Scripps College, Hicks built a fruitful life in travel and art. A proud alumna, Hicks remained engaged with her alma mater years after graduating, serving as its alumnae association president, and president of the Pasadena and Orange County chapters.

It was the profound impact of such

life and learning experiences that inspired her to make a bequest to Caltech, creating in her parents' names the Little and Stuart Mackeown Endowed Scholarship Fund. The gift establishes an enduring legacy for Hicks' parents and will support generations of bright, passionate scholars in their own educational journeys.



Little Mackeown Hicks

A Secret Phone Call

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professors Toshi Kubota and Lester Lees. “Kubota was very strict but also friendly. I had to work almost day and night. Every day, we’d go to Chandler to have a coffee break and shoot the breeze, discuss each individual’s research and how we were progressing. We had a very good time.” Ikawa remains grateful for the help he received from his hypersonic-group colleagues and the GALCIT faculty—especially professors Roshko, Sechler, Lees, and Kubota—as he earned his PhD.



Derek Rinderknecht (PhD '08), Hideo Ikawa, graduate student Hesham Azizgolshani, and John Meier (PhD '11).

Upon graduation in 1973, he returned to Rockwell International and participated in the Space Shuttle program and advanced spacecraft development programs. He joined Northrop Grumman in 1987, retiring in 2001 due to Yoshiko’s health. He remembers 2003 as his saddest year—it was the year of the Space Shuttle *Columbia* accident and the year that Yoshiko passed away.

He wishes that Yoshiko could have participated when the new fellowship was announced this year at a Reunion

A Wealth of Options

People who would like to make gifts often instinctively reach for the checkbook, unaware of the variety of giving methods available to them. In fact, they can combine methods to maximize tax benefits, financial security, and the pleasure of seeing the best possible gift outcome.

Caltech’s supporters write checks and donate securities, give personal property and real estate, and name Caltech as a beneficiary of their estates, life-insurance policies, retirement plans, trusts, annuities, and funds. It takes some thought for donors to plan the approach ideally suited to their financial situation and philanthropic objectives, but

Caltech’s gift-planning experts can help, and the effort pays off.

For example, to fund a new fellowship, Hideo Ikawa is using a combination of outright contributions during his lifetime and a bequest of his home. He and his advisor are working with Caltech to design a gift that simultaneously offers him financial flexibility and the opportunity to see his gift at work. When it is fully endowed, the fellowship will support student after student. The outright component will help students immediately, giving Ikawa opportunities to meet some of the students who benefit from his generosity.

Weekend GALCIT luncheon. “I’m sure,” he says, “that she is very happy for the day’s occasion.”

Ikawa continues to keep up with hypersonic-group colleagues and meet current students. On a recent visit, he chatted with students Nick Parziale and Joe Jewell, who use the T5 Hypervelocity Shock Tunnel to simulate hypersonic forces and heat acting on objects flying through our atmosphere—from hypersonic aircraft to disintegrating meteorites. In GALCIT’s Center for Bioinspired Engineering, Ikawa met John Meier (PhD '11), student Hesham Azizgolshani, and senior research scientist Derek Rinderknecht (PhD '08), who are developing microimpedance pumps—valve-

less systems that can safely transport fragile molecules like blood cells and proteins through medical devices.

GALCIT looks different than it did when he studied there, Ikawa says—there are new labs, computers everywhere, and dramatic upgrades in experimental equipment. But the students haven’t changed. “The students when I was there and the students now—they all work hard, they have a goal.”

Thanks to Yoshiko’s confidence and occasional direct action, Hideo came to Caltech and surpassed his goals. Now, students far into the future will have those opportunities, too, supported by the Yoshiko and Hideo Ikawa Graduate Fellowship.

Recognize This Alumnus?

Photo courtesy of Big T



A pioneering researcher in aeronautics and aerospace, this alumnus was born with a wingman—his identical twin, Milton.

Together, they enrolled at Caltech in 1932, survived theoretical physics as undergraduates, excelled in the burgeoning discipline of aeronautics as graduate students and PhDs, and met their wives at the same Institute event. (They had a joint wedding.)

“I wouldn’t have traded that experience for anything,” this alumnus said, adding, “there wasn’t a professor on campus who could tell us apart.” An especially memorable exchange was with Theodore von Kármán, who, after accepting the brothers into GALCIT,

said that while he couldn’t distinguish between them, he still expected two dissertations. “Each of you can do one, one of you can do both, or both of you can do both,” he said.

After receiving his PhD, this alumnus joined Douglas Aircraft. There, he worked on aerodynamics and flight testing, and led a research team that shaped U.S. aircraft design by developing new approaches for designing airfoils and improving aerodynamics.

An offer to establish the aerospace department at Johns Hopkins University—which he did, modeling it on Caltech’s—swept him and his wife, **Catharine**, and their family east for more than a decade. From there, he stopped at UC Santa Cruz before returning to Caltech in 1969 as chair of the Division of Engineering and Applied

Science. Caltech, he said, was where transformational science happened.

Since retiring, he has continued to support Caltech. He pulls up a chair at the Athenaeum’s center table each day and is an Associates lifetime member. Following his brother’s death in 1980, **Francis Clauser (BS '34, MS '35, PhD '37)** established with Catharine and his sister-in-law, Virginia, the Milton and Francis Clauser Doctoral Prize. The prize fund, supported through a charitable gift annuity and annual gifts, is a testament to the brothers’ Caltech experience and the profound impact that Caltech research can have.



How One Caltech Couple Fixed on a FLIP

Caltech alumni **John** and **Karen (Eaton) Garth** have two special connections to the Institute. Karen was among the initial group of undergraduate women admitted to Caltech. She and 29 other women became freshmen in 1970, changing the Institute forever. She and John were also both members of Ricketts House, where they met. They married after graduating in 1974, one of several couples to wed from that historic class.

When Karen arrived at Caltech, she and the other pioneering female undergraduates were photographed and written about as if they were a newly discovered species. One of seven women in Ricketts, Karen has described the experience as “interesting.” John and Karen are one of at least seven couples from Ricketts during the time they were at Caltech who eventually married.



John and Karen met while they were both living in Ricketts House as undergraduates.

The Garths wed while Karen was pursuing her MD degree at the University of Kansas and after John received his master's degree in physics from UC Berkeley. They eventually settled in Gilroy, California. Karen developed a busy diagnostic radiology medical practice in Gilroy and Hollister, and later became the medical director of the Mammography Center of Monterey. John became a senior software engineer for IBM, authoring or coauthoring at least 15 patents in database technology.

Recently retired to Nevada, the Garths have stayed close to Caltech, frequently attending Seminar Day and the Alumni College. They are also life

“It really is a unique environment that fosters very special people who can make a major contribution to the scientific world, and we want to continue to support the development of that sort of creativity and advances in science.”

members of the Caltech Associates. Last April, they contacted the Office of Gift Planning to discuss the possibility of giving back to their alma mater and establishing a life-income gift.

A financial transaction had left the Garths with a large tax liability, but they learned that they could reduce it by



John (BS '74) and Karen Garth (BS '74).

gifting appreciated mutual funds to create a FLIP Charitable Remainder Unitrust (CRUT). They would avoid the immediate capital-gains taxes that would have resulted from selling the mutual funds, receive a charitable income-tax deduction, and establish a retirement income stream at a competitive payout rate. At the same time, the trust will eventually be used to establish a legacy with the Institute in the form of an endowed

professorship or graduate fellowship.

“We had been thinking of creating a charitable gift annuity, but when we looked at the different options, we decided that the FLIP CRUT was probably better for us,” says Karen. “Over a period of time, the income could grow potential-

ly more than if it was in an annuity.” As for eventually helping Caltech, she adds, “It really is a unique environment that fosters very special people who can make a major contribution to the scientific world, and we want to continue to support the development of that sort of creativity and advances in science.”

Gifts by Will

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

Alexander Engel left his estate to Caltech. His bequest of \$1,070,000 established the Alexander Engel Endowed Scholarship Fund.

Robert B. Grossman (BS '33) provided for the Institute through a bequest of more than \$1,290,000.

From the estate of former student **John E. Kushner**, Caltech received a \$312,800 unrestricted gift.

The Institute has received \$78,100 from the estate of **Le Val Lund Jr. (BS '47)**. This gift will support Caltech's Civil Engineering program.

From the estate of **Elizabeth H. Morgan**, the Institute received \$5,200 in memory of her late husband, **Wendal A. Morgan (BS '33)**.

Did You Know?

When the Garths contacted Caltech's Office of Gift Planning to discuss a financial transaction that would trigger a high tax bill, they learned that a FLIP Charitable Remainder Unitrust (CRUT) would not only solve their tax problem, but it would provide an income-tax deduction and a lifetime supplemental retirement income. Just as important to the Garths, it would eventually support Caltech.

The “FLIP” aspect allows you to donate assets now, but limit income payments until a later specified time, such as the date you plan to retire.

What are the advantages?

- Create a supplemental retirement plan that can grow assets on a tax-deferred basis until needed later
- Take an income-tax deduction now, while deferring the income
- Avoid immediate capital-gains taxes
- Support Caltech while leaving a lasting legacy

If you or your professional advisor would like more information on the benefits of a FLIP Unitrust, please contact the Office of Gift Planning.

Caltech was named a beneficiary in the will of **Virginia Pihos**. Her gift of more than \$2,100 will provide financial-aid support in memory of her son, **Gregory G. Pihos (BS '68)**.

Friends of Caltech, **Dieter H. and Elisabeth S. Riehl**, named the Institute as a beneficiary of their family trust, gifting \$600,000 to date.

From the estate of **Josephine Skiba**, Caltech has received \$2,392,400, which will provide support for the Jo and Roger Skiba Endowed Scholarship Fund.

Frederick C. Vote named the Institute as the beneficiary of a life insurance policy. His gift of more than \$12,000 established the Erika C. Vote SURF Endowment in honor of his late daughter.

Austin L. Wahrhaftig (PhD '41) provided for Caltech through an unrestricted bequest of \$35,900.

Torchbearers of Caltech

The Torchbearers of Caltech was established in 1985 for the purpose of honoring and thanking alumni and friends who have invested in the future of the Institute. Private financial support provides valuable resources for essential campus initiatives, including scholarships, fellowships, discretionary funds, and professorships.

Membership is extended to individuals who have provided for Caltech in their wills or living trusts, designated the Institute as a beneficiary of life insurance or retirement accounts, or established life-income gifts for the benefit of Caltech. Life-income gifts include charitable remainder unitrusts, charitable gift annuities, or a remainder interest in a residence.

In recent months, Caltech has added three new members to the Torchbearers Honor Roll:

Robert E. Ireland

James C. Savage (PhD '57)

(one member wishes to remain anonymous)

If you would like information on a particular deferred gift vehicle or assistance with the wording of a bequest, please contact Caltech's Office of Gift Planning.

IRA Charitable Rollover

If you are 70½ or older, you can make a tax-free gift of up to \$100,000 from your traditional IRA. Gifts for 2011 can be made until **December 31, 2011**. If you have questions or would like more information, please contact the Office of Gift Planning.



Contact Us

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

Allyson B. Simpson

Philanthropic Planner

Oliver Mueller

Associate Philanthropic Planner

Debbie P. Bills

Manager of Trusts and Bequests

Phone: 626-395-2927

Email: giftplanning@caltech.edu

Web: giving.caltech.edu/gp



Office of Gift Planning
California Institute of Technology
Mail Code 5-32
Pasadena, CA 91125



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Recognize This Alumnus?



Photo courtesy of Big T

He spent two years at Kansas City J. C. before entering Caltech. Since coming here he has been elected to Tau Beta Pi. Drama interest is evident. He played in the Greek Play Menaechmi and is a member of the Drama Club. (Courtesy of Big T)

See inside for more.

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Class of

What's Inside

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