

## A Bridge to Cross-Disciplinary Learning and Discovery

Family establishes bequest to support students and honor their son

From **Mark Montague's** first visit to the California Institute of Technology, when he marched into computer science professor Alan Barr's office to question him about his research, he knew that Caltech was a perfect match.

Montague graduated from Caltech in 1993 with a bachelor's degree in engineering and applied science. He spent more than a decade working in Barr's lab, as well as in Caltech's computer graphics lab and as a contractor for the Caltech-managed Jet Propulsion Laboratory. But on that first day in Barr's office, the

*"We hope this gift will foster cross-disciplinary thinking among undergraduates and graduates; that it will teach them about how to break down walls and build bridges between them."*

inquisitive Montague was still a high school student, his dad says.

"I think that he was very impressed with what went on in that discussion, and that made up his mind for him," says his father, **L. David Montague**.

"Mark enjoyed the feeling of collegiality that existed not only amongst the students—and we noticed that too—but with the faculty," he continues. "Even though there was the requirement to take personal responsibility for your own education, there were ample opportunities to learn in different ways, and the

professors were ready and willing to treat the students as equals."

Mark valued his experience, the education, and the people he met at Caltech. And it was because of his enduring commitment to the Institute that his parents looked to Caltech to honor Mark's memory after he tragically died in a scuba-diving accident in July 2010. "At the celebration of his life, organized by his friends in the Caltech community, we learned how many lives Mark touched in positive ways" says **Nancy Montague**, an artist and former ele-

mentary school teacher.

With guidance from Caltech's Office of Gift Planning; Mark's mentor, Alan Barr; and a former colleague, computing and mathematical sciences professor Mathieu Desbrun, the Montague family established a bequest in their son's honor.

David and Nancy Montague's bequest, which equally divides most of their estate between Caltech and Cornell University—the senior Montague's alma mater—, will create the Mark "Monty" Montague Endowed Discretionary Fund. The fund will provide support, in perpe-

utive officer. Before he retired in 1990, he and his wife, **Wyllis**, began focusing on philanthropy, supporting several prestigious universities, including Caltech.

Leonhard had great respect for the Institute and, according to his son, William Leonhard Jr., believed that "getting an education is the basis for accomplishing everything." Through planned and outright gifts, the Leonhards have made a lasting impact at Caltech in an effort to create educational opportunities for students. In 1982, they established the William E. Leonhard Professorship of Geology, held since 1990 by Caltech



David, Mark (BS '93), and Nancy Montague.

tuity, for activities and programs that foster faculty and student engagement opportunities in computing and mathematical sciences at Caltech.

"We looked at what Mark gained from and contributed to the Caltech community and how we could best support and encourage that," says David Montague, who worked for more than 40 years in strategic and tactical missiles and space systems at Lockheed Martin.

"We hope this gift will foster cross-disciplinary thinking among undergraduates and graduates; that it will teach them about how to break down walls and build bridges between them," he says. "I think that was one of Mark's fortes as a systems engineer."

As created, the Montagues' discretionary fund has the potential to benefit students by enhancing Caltech's environment of learning through discovery, says Desbrun, who is also the director of computing and mathematical sciences (CMS), and information science and technology. Some activities that may be supported include establishing undergraduate research incentives, sponsoring

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## Caltech Legacies

Through two influential careers, **William Leonhard** accomplished many goals. The first career, with the military, lasted 28 years. Leonhard was a chief engineer in postwar Germany and chief of staff of the Air Force Systems Command, among other positions.

In 1966, two years after he retired with the rank of brigadier general, he joined Ralph M. Parsons (now the Parsons Corporation), the Pasadena-based engineering and construction firm, eventually becoming chairman and chief exec-

provost Edward M. Stolper, an expert in the petrology of meteoric, lunar, and terrestrial igneous rocks. Through a life insurance policy, they established an endowed fund at the Institute to provide undergraduate merit scholarships. Thanks to the Leonhards, many Caltech students of exceptional academic quality, regardless of need, will have the best possible education.



Wyllis and William Leonhard

## Achieve Peace of Mind

### A Personal Perspective on Estate Planning

I don't know about yours, but my will is old—or at least it was old until recently. In the 10 years since I penned it (before becoming a member of the Caltech staff), I've moved to a different state, gotten married, and involved myself with new charities.

Perhaps your will hasn't kept up with your life either, or you've forgotten where you put it. I have good news: it's easy to create or update a will. Inspired by recent changes in my life, I refreshed mine. It felt surprisingly good to ensure that my wishes will ultimately be carried out to help people and causes I care about.

That said, there's something else you might want to do even more. Yes, it's just what you were thinking: creating a revocable living trust. The will is crucial, but the trust can be an attractive next step for many people. That's because assets in the trust transfer without going through probate, the time-consuming, publicly exposed court process of validating a will and appraising and distributing property.

Probate can tie up assets and chip a noticeable chunk (even as much as 10 percent) off the estate.

A revocable living trust works something like a will, but it's also prudent to draft a brief will to transfer into the trust any assets that might have been overlooked—for instance, newly acquired properties, or accounts without named beneficiaries. That's called a pour-over will. If its value is below a certain threshold, it doesn't go through probate, either.

People who create revocable living trusts can change or discontinue the trusts, control their assets and receive income from them, and access principal. If they die or become incapacitated, management and assets go to the exact persons and organizations they've named, neatly side-stepping probate.

For me, the first step was a discussion with **Debbie Bills** in Caltech's Office of Gift Planning. From the minute we sat down, I could see that she loves to use her expertise to serve as a resource for

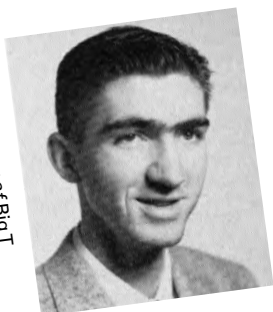


others. She helped me think over unique circumstances in my life and gave me samples of how to word a bequest. Knowing that I'm a member of the broader Caltech community, she was unfazed that I didn't detail any particular philanthropic intentions at this time.

I've only taken two steps on the journey of estate planning—getting background information and updating my will. But with a shiny new will, I can rest easier and take time to discuss a living trust with my husband. A surprising amount of peace of mind comes with that little piece of paper. If your will is outdated, missing, or entirely nonexistent, I encourage you to get started today.

## Recognize This Alumnus?

Photo courtesy of Big T



Eight miles might as well have been eight light-years, for all this paperboy in post-war Wilmar (now South San Gabriel)

knew of nearby Caltech.

But a public high school teacher named J. B. Forster (BS '27) changed the young man's life by introducing him to science, taking him and other students to Caltech lectures, and encouraging strong students to apply to Caltech.

In 1950, this alumnus won a full-tuition *Los Angeles Times* paper-carrier scholarship, which made Caltech possible for him. The surprises of his first Caltech year included the staggering amount of work and “the team of very talented students who got together to help each other.” The honor code meant that “you could leave anything lying around on campus—slide rules, books and everything—and never dream of anybody bothering it.” As a sophomore he was surprised at how much he enjoyed professor Ernest Swift's notorious chemistry course known as the “Swift Lab.” Swift became a second mentor for him, and he began doing undergraduate research in Swift's group. “From then on, things just got better.”

Swift recommended graduate study with an electroanalytical chemist at

Harvard. This alumnus did well there, but New England winters and his happy recollections of Caltech's collaborative culture made him homesick. Around then, Caltech professor Norman Davidson visited Harvard, which apparently was trying to poach the distinguished chemist. Davidson was unmovable and he used his visit as a scouting trip, recommending rising stars for junior faculty appointments at Caltech, including this alumnus.

After returning to Caltech in 1957, the newly minted Harvard PhD invented ways to count molecules attached to electrode surfaces and discovered and tested new classes of catalysts for electrode reactions. He also acted on a tip to request an interlibrary loan so he could meet a tall, lovely librarian named **Roxana**, to whom he is still married. Beginning in 1984, he served a decade as chair of the Division of Chemistry and Chemical Engineering, was elected to the National Academy of Sciences, and



was named the Elizabeth W. Gilloon Professor of Chemistry.

He always relished Caltech students' excellence. “Most departments would be happy if every now and then they had somebody who got to be pretty famous. Caltech students just go everywhere: they become distinguished professors, they become effective and important members of the industrial community . . . their impacts have been and continue to be very impressive.”

When he was ready to retire, he received a special bonus that Caltech then gave to long-time faculty who retired by a certain age. He became interested in using this bonus to establish a charitable trust at Caltech that would provide income at a higher percentage than was available from banks. This alumnus had always “felt more supportive of Caltech students than of other possible charities,” so he checked with the Office of Gift Planning and was attracted to the charitable trust, which provides a lifetime income and a tax deduction. He and Roxana learned that they could designate how the trust would be used. They chose undergraduate scholarships similar to the one that had helped him in 1950. Now **Fred Anson (BS '54)** aims to fully endow the gift so that it will support one student after another, in perpetuity. “We are pleased to be able to assist undergraduates who come and thrive at Caltech.”

## Catalyzing Lives in Science

**J**ean Karle cares a great deal about long, happy, productive lives in science. And it's only partly because she comes from a family of five scientists.

Her parents, Jerome and Isabella Karle, retired three years ago after a combined 127 years at the U.S. Naval Research Lab. He won a Nobel Prize and she a National Medal of Science for their work developing and applying methods for determining crystal and molecular structures by X-ray crystallography. Their research advanced our understanding of chemical reactions and the ways molecules work in biological contexts. The two met in graduate school at the University of Michigan in 1940—on the first day of a physical-chemistry class—and quickly became each another's chief collaborator.

"They enjoyed their careers tremendously," says Jean. Isabella alone published 350 papers. Together they parented three daughters. They never told the girls to pursue scientific careers, but all three did.

Jean's sister Madeleine trained as a geologist and worked with the Smithsonian. Her sister Louise became a theoretical chemist at Brookhaven National Laboratory. Jean, a research



Jean Karle.

strength and Caltech's educational assets of close attention to students in the classroom and laboratory.

At Caltech, Jean is creating the Dr. Jean M. Karle Endowed Scholarship Fund, which will give generations of chemistry and chemical-engineering students access to an excellent education. Interestingly, she took a multi-pronged approach to funding the scholarship without changing her day-to-day finances. She made an initial gift through a charitable gift annuity that pays her a lifetime income. She also created a bequest that will eventually fully endow the fund.

*"I chose to support Caltech to help Caltech continue to teach the finest young minds the fundamentals needed for future advancements in health, energy, materials, instrumentation, and systems technologies."*

chemist at the Walter Reed Army Institute of Research, advanced the discovery and development of new drugs for preventing and treating malaria.

The Karles have Caltech roots, which caused Jean to consider Caltech when she wanted to make more available to others a life in science like hers and her family's. Her parents studied under Lawrence Brockway (PhD '33), who was an early graduate student of Caltech legend Linus Pauling, the only person to win two unshared Nobel Prizes. They consider Pauling their scientific grandfather.

But it wasn't just her family connection that compelled Jean to reach out to Caltech's Office of Gift Planning to ask about ways to help students who share her interest in science. "I chose to support Caltech to help Caltech continue to teach the finest young minds the fundamentals needed for future advancements in health, energy, materials, instrumentation, and systems technologies." She appreciates both Caltech's scientific

Jean's parents' lives in science and the contributions they made to chemistry and biomedicine hinged on financial support of the sort that Jean's scholarship will provide. They both had free educations through their undergraduate years. Inspired and encouraged by a female chemistry teacher in the Detroit public schools, Isabella won a full scholarship to the University of Michigan. Despite Jerome's mother's ambition that he become a pianist, Jerome developed an interest in science at an early age from visits with his mother to public scientific exhibits. This interest was enhanced by a Brooklyn public-school chemistry and physics teacher. Jerome was accepted to the City College of New York, where a rigorous education was then free except for a one-dollar library card. It was a City College classmate, Herbert Hauptman, with whom Jerome shared the Nobel Prize for their later collaboration.

There will always be bright young people who need financial support to  
*Catalyzing Lives, continued on page 4*

## Torchbearers of Caltech

In recent months, Caltech has added 36 new members to the Torchbearers Honor Roll:

Fred C. (BS '54) and Roxana H. Anson

Michelle E. Armond (BS '00) and Alexander T. Ihler (BS '98)

Richard G. G. Beatty (BS '77)

Kirk M. (BS '61, MS '62) and Marjory E. Dawson

James (BS '97) and Laura Dooley (BS '97)

Joyce and Fred Hameetman (BS '62)

David (BS '62, MS '63) and Stephanie Kauffman

Miles W. McLennan (BS '61)

L. David and Nancy Montague in memory of Mark "Monty" Montague (BS '93)

Oliver E. Mueller

Kristi L. Newton

Allen P. (BS '77) and Marsha D. Nikora

Richard Peters

Joseph (BS '44) and Judy Rosener

Dr. Frederick W. Solomon (BS '77)

William C. (BS '62) and Barbara T. Straka

Joel Tenenbaum (BS '62)

Alfred W. Thiele (BS '51)

William F. (BS '62) and Susan S. Tivol

Adina W. and Melvin N. Wilson, Jr. (BS '45, MS '46)

Five members wish to remain anonymous.



## 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:

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## A Bridge

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competitions to stimulate cutting-edge technology and cross-disciplinary science, and bringing visiting scholars to campus.

“The rapidly changing landscape of computing and mathematical sciences presents many opportunities, some even with world-scale societal impact,” says Desbrun. “Through discretionary funds, CMS will be able to offer our undergraduates the means to explore these opportunities and complement their learning experience in the process.”

## Catalyzing Lives

Continued from page 3

reach their best potential. Jean’s scholarship fund will help some of them to further their scientific education. Asked about advances she’d like to see, Jean speculates on cures for diseases, prosthetics made of new materials, energy sources that don’t deplete natural resources including arable land, and sensitive instruments perfectly orchestrated in revolutionary new tools, from bioimaging microbots to future Mars rovers.

If the lives of Jean’s family are any indication, the lives she touches through her gift will unfold in deeply satisfying ways and will lead to advances no one could have predicted.

## Staff Announcements

Caltech was excited last January to name **Debbie Bills** as the new assistant director of the Office of Gift Planning. In addition to assisting with the management of the Institute’s planned-giving program, she also continues to serve as the manager of trusts and bequests. Prior to joining Caltech in 2009, Debbie directed the gift-planning program at the Webb Schools, served as associate director of gift planning at Claremont Graduate University, and previously spent time at the Institute as the associate director in the Office of Gift Planning. She earned her BA at Pomona College and is a certified specialist in planned giving. Debbie is a member and past president of the Partnership for Philanthropic Planning of Greater Los Angeles.

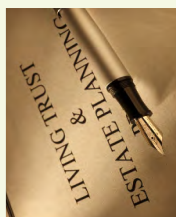
**Jim Ehlers** joined Caltech in July as the senior gift planning



Debbie Bills and Jim Ehlers.

officer. He is a certified specialist in planned giving with more than 15 years of experience in higher education, including serving as director of planned giving at Claremont Graduate University, director of planned giving at Whittier College, and a planned and annual giving officer at Harvey Mudd College. For several years, Jim has served on the board and as president of the Partnership for Philanthropic Planning of Greater Los Angeles, and he is a frequent speaker at planned giving and development conferences.

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### Recognize This Alumnus?

“The Tall One will not be forgotten by sport fans in Pasadena for a good long time; his basketball honors make up a list almost as long as he is. But aside from winning All-Conference recognition at center for three years and breaking all kinds of scoring records, he made the proud ranks of Tau Beta Pi and also was president of ACS his senior year. Next year he plans to enter Harvard grad school. Folks back in El Monte can be mighty proud.” (Courtesy of Big T)



Photo courtesy of Big T

**’54**  
 Class of

See inside for more.