Abdullah Ateyeh, Caltech Class of 2023

"Without my scholarship, I would not have been able to attend this world-class institution and immerse myself in the amazing extracurriculars and opportunities Caltech offers. I did research in astronomy—something I've wanted to do since I was a kid. I've made an amazing group of friends through Avery House, but also through the acapella group Out of Context. I'm extremely grateful for donor support for students like me. I can't wait to show the world that your investment in my future was well worth it."

Abdullah Ateyeh, pictured above, studies applied and computational mathematics.

Nick Hutzler, BS '07, Caltech Assistant Professor of Physics

"As a donor, alumnus, and faculty member, I now have a deep appreciation for the importance of unrestricted gifts to the Caltech Fund. Most donors want to fund the lasers; they want to fund the lab space. However, unrestricted funds cover everything else not paid for through grants—things that are vital, even if less exciting. We couldn't run our lasers or the lab without these other resources and people."

Nick Hutzler pictured with his wife, Caltech alumna Mary Wahl (BS '08) and their son, Isaac

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The 2021 Distinguished Alumni Award Recipients

Caltech's annual Distinguished Alumni Awards recognize "a particular achievement of noteworthy value, a series of such achievements, or a career of noteworthy accomplishment." The 2021 luminaries include a veteran NASA astronaut who helped lead a revival of American spaceflight; a chemistry alumna who invests in humankind's transition to sustainable energy sources; a former director of the Jet Propulsion Laboratory who oversaw decades of exploration; and a university president who traveled a winding path from expert on the composition of Mars to academic leader advancing research, education, and equity.

2021 DISTINGUISHED ALUMNI AWARD RECIPIENT

Robert Behnken

(MS ’93, PhD ’97, Mechanical Engineering)

NASA Astronaut

For his accomplished career as an astronaut on three space missions, including his history-making journey in 2020 as part of the first crew to reach Earth orbit aboard a commercially developed and operated spacecraft, as well as for his work as a public advocate for science and engineering.

Robert Behnken’s third trip into space began long before blastoff. It started with the opportunity to help shape a historic mission.

Not only did Behnken co-lead the 2020 mission aboard the SpaceX Crew Dragon capsule that became the first commercially operated craft to bring American astronauts to space, but he also worked with SpaceX in the months leading up to the launch to help define problems and identify the solutions that would make the flight a success.

“The technology is a critical aspect, but often the people who ride on it aren’t involved in the design,” he says. “We were pretty lucky to be connected to the development process.”

Coming into the project with an aggregate of about a month spent in orbit, not to mention six spacewalks, Behnken had ample experience to draw from. He also benefited from a tightly knit team, as the other astronaut on the SpaceX flight was his best friend, Douglas Hurley. Behnken says the camaraderie and hard-earned experience crew members share creates a familiarity that breeds efficiency. “You get to know what they’ll do in various situations,” he says.

Behnken credits the balance of curiosity and skepticism nurtured at Caltech for his outlook on life. He was an early protégé of Richard Murray (BS ’85), now the Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering and William K. Bowes Jr. Leadership Chair in the Division of Biology and Biological Engineering. In Murray’s research group, Behnken found a close group of lab mates and a mentor who largely treated him as an equal and instilled a worldview he has carried with him—even when that world is far below his feet.

“At Caltech, students have a healthy amount of cynicism,” he says. “They ask, ‘Is this true? And do I really understand why it’s true or false?’ If you’re going to eventually fly on a rocket ship into space, as I did, having healthy cynicism is probably in your best interest.”

2021 DISTINGUISHED ALUMNI AWARD RECIPIENT

Barbara Burger

(PhD ’87, Chemistry)

President of Technology Ventures and Vice President of Innovation, Chevron

For her long and extraordinary career as a business leader at Chevron, spanning roles in science and business, marketing, and investment; her contributions to advancements in the energy transition; and for her prominent role as a mentor and advocate for women in science and business.

Barbara Burger invests in the future. As president of Chevron Technology Ventures, the energy company’s venture capital firm, she seeks out emerging technologies to aid in the worldwide transition toward a lower carbon future and funds new, innovative companies with big ideas. “Transitioning to a lower carbon energy system is a big, gnarly problem, and if we get it wrong, some communities will be disadvantaged more than others,” she says. “When I’m done, hopefully we’ll have planted some seeds and established some good momentum.”

The nature of her role requires that Burger be up to speed on research at the frontiers of an array of disciplines. Fortunately, adaptability has always been her forte. After graduate school at Caltech under the mentorship of John Bercaw, now the Centennial Professor of Chemistry, Emeritus, Burger joined Chevron as a research chemist. Later, she happened upon an internal posting for a technical specialist in aviation and, although she did not have direct experience in aerospace engineering, secured the job.

Burger credits her Caltech education for the confidence and courage to try new things. “I always say, ‘If I have all the experience you’re looking for, why do I want the job?’” she notes. “I’m at my best when I’m learning. I have such breadth in my career because I haven’t been afraid to go into places where I don’t know everything.”

Perhaps her biggest investment in the future is through her support of Caltech women who are interested in making their way down the less-well-traveled career path, as she did. To make that possible, in 2019 Burger endowed a set of resources at the Institute that includes a fellowship for doctoral students in chemistry who aspire to careers outside the academy.

“I’m a big believer in catalysts,” she says. “You want somebody who has a lot of potential to get that little catalyst to help them get started.”

The more that current and future students can glean from Burger’s generosity and counsel, the more extraordinary minds there will be to confront society’s challenges. Especially the biggest, gnarliest ones.

2021 DISTINGUISHED ALUMNI AWARD RECIPIENT

Charles Elachi

(MS '69, PhD '71, Electrical Engineering)

Professor Emeritus of Electrical Engineering and Planetary Science, Caltech

For his distinguished leadership in space exploration and planetary science as the longtime director of the Jet Propulsion Laboratory (JPL), where he was instrumental to realizing missions across the solar system including our own planet Earth, and for his many contributions helping to map out NASA's long-term scientific future.

In 45 years at JPL, which Caltech manages for NASA, Charles Elachi innovated crucial spaceflight technologies and oversaw missions that landed rovers on Mars. But spaceflight was not what initially drew him to Southern California.

"I decided to come to Caltech not because it was the best school in the world, but because it's near Hollywood," Elachi laughs. "Fortunately, it's also the best school in the world."

Elachi joined JPL in 1970, while working on his PhD at Caltech, and achieved early-career success when a radar system he developed was chosen as the first experiment on the space shuttle *Columbia*'s second flight, in 1981. The instrument produced rich data not only for earth science but also for archaeology, penetrating meters into the sands of Egypt from space in order to reveal ancient, undiscovered drainage channels. The results were featured on the front cover of *Science* and reported in *National Geographic*.

After he was named JPL director in 2001, Elachi sought to imbue the lab's activities with the intrepid spirit of Theodore Roosevelt, adopting his axiom "Dare mighty things" as JPL's motto. Those mighty things included landing three rovers on Mars; launching powerful space telescopes to examine distant stars, black holes, and exoplanets; and sending into orbit satellites to probe Earth's gravity, ocean, and climate systems.

According to Elachi, a pioneering spirit and the willingness to face down failure are key to JPL's success. And he practiced what he preached. After attending a 2013 talk in San Francisco by an expert on drones, Elachi wondered: Could JPL fly a drone on Mars? After eight years of work by inventive, persistent engineers who brought this idea to life, the *Ingenuity* helicopter successfully flew on the Red Planet in 2021.

"I used to tell people, 'The wilder it is, the more interested we are in the idea,'" Elachi says. "Maybe only one out of 10 ideas works. But that's fine. That's how you open new horizons."

2021 DISTINGUISHED ALUMNI AWARD RECIPIENT

Laurie Leshin

(MS '89, PhD '95, Geochemistry)

President, Worcester Polytechnic Institute (WPI)

For her barrier-breaking leadership at universities such as Worcester Polytechnic Institute, which has been recognized for both teaching and research excellence and essential strides in diversity, equity, and inclusion under her guidance as the first woman to serve as president; and for her accomplishments as a distinguished geochemist and space scientist.

Since Laurie Leshin became WPI's first female president in 2014, she has worked to amplify the school's longtime focus on project-based learning. During her tenure, student participation has grown from 60 to 90 percent in the Global Projects Program, which connects diverse teams of undergraduates and faculty mentors with project centers across six continents, allowing them to work on challenges such as improving STEM education in Ghana, sanitation in Thailand, and public transportation in Russia.

"When I first joined WPI I thought 'That's the secret sauce,'" she says. "It's almost a moral imperative that we scale the program up."

Leshin has also prioritized diversity, equity, and inclusion. The school has one of the highest percentages of female undergraduates among STEM institutions, and the National Institutes of Health recently honored the university for enhancing faculty gender diversity. Although proud, Leshin notes there remains much to be done, especially to bring underrepresented people of color into STEM. With the world facing manifest difficulties, a waste of potential is a detriment to all. "There are thorny problems, whether it's climate change or global health, food security or cybersecurity," she says. "We need all the brains we can get working on this stuff."

Leshin herself embraced big scientific challenges at a young age. As a 10-year-old, she saw the Viking landers' pictures from the surface of Mars and was inspired by the similarity of the arid scenery to that of her home in Arizona. Just a few years later, Leshin was a NASA intern working on newer missions of that very same Viking program. She would return in 2005 as deputy director of NASA's Exploration Systems Mission Directorate. She also served on the Mars Science Laboratory Science Team that analyzed data collected by the *Curiosity* rover at the Jet Propulsion Laboratory, which Caltech manages for NASA. Even after Leshin became a dean at Rensselaer Polytechnic Institute in 2011, an overlap with the Mars Science Laboratory's calendar saw her split her time between two worlds.

As a WPI colleague pointed out, Leshin has approached all these challenges with a Caltech mindset: propose a hypothesis, test the idea, and apply the lessons to make a decision and move forward. "It has much to do with my Caltech training," Leshin says. "It becomes your lens on the world."