



2022 Endowment Report

October 1, 2021, through September 30, 2022

Caltech



Students gathered on Olive Walk, outside the Red Door Café

A NOTE OF THANKS



On behalf of the Board of Trustees, I want to thank you for your commitment to Caltech. As an alumnus and donor, I am grateful for your support, and I share your pride in the power of philanthropy to sustain and amplify the Institute's extraordinary impact on science, technology, and society.

This report summarizes the performance of Caltech's endowment from October 1, 2021, through September 30, 2022. It chronicles the skill and prudent long-term focus with which Caltech stewards our investments.

But we know that the numbers tell only part of the story. With support from Caltech's endowment, biologists developed a new type of vaccine that protects against a variety of betacoronaviruses, including those that caused the SARS and COVID-19 pandemics. Astronomers found evidence of the most tightly knit pair of supermassive black holes ever observed. An interdisciplinary team made final preparations for a demonstration launch to test their vision of harvesting solar energy in space. And Caltech united a diverse community of scientists investigating quantum systems and the potentially

revolutionary advances they can bring across fundamental research, computing, pharmaceuticals, and many other fields.

Gifts enhance every aspect of Caltech, and our endowment contributions in particular assure the Institute's sustained financial stability and overall excellence. Annual endowment payout fosters the freedom, flexibility, and fiscal security that spark innovation and discovery. It also helps ensure that we can admit students based entirely on their ambition and strengths, and equip them to thrive through graduation and beyond.

Together, we are advancing education and research to create a better world.

With appreciation,

David Thompson (MS '78)

*Chair, Caltech Board of Trustees
President and Chief Executive Officer (Retired),
Orbital ATK, Inc.
March 2023*

PROVIDING A RELIABLE, ENDURING SOURCE OF FUNDING

Over the last 10 fiscal years, the Caltech endowment investment pool has grown from \$1.826 billion to \$3.454 billion, an increase of 89.2 percent, representing a 6.6 percent compound annual growth rate. The fiscal year ending September 30, 2022, served as an unobtrusive reminder as to why we must continue to focus on the long-term investment horizon and not be distracted by either large upswings, as in fiscal year 2021, or moderate downswings, as in fiscal year 2022. We implement this long-term approach in two primary ways.

First, we don't attempt to time the market. We have constructed a highly diversified portfolio that, while equity oriented, is designed to perform well through economic cycles. In particular, we spread our investments widely enough—by asset class, geography, liquidity, currency, manager, and industrial sector—to avoid “risk of ruin,” a situation in which one has lost so much that recovery is nearly impossible.

Second, the endowment payout formula does not respond to dramatic upticks or downticks in the endowment investment pool's valuation, providing the Institute and specific payout recipients with a reliable, enduring source of funding for undergraduate scholarships, graduate fellowships, professorial chairs, important research, exciting cross-disciplinary centers and institutes, and other activities that we and our generous donors believe can ultimately change the course of science, technology, and engineering.

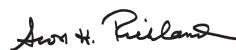
Nonetheless, Caltech's endowment value declined by 15.1 percent during the fiscal year. This decline was driven by the global equity market's decline of –20.7 percent, as represented by the total return of the MSCI All-Country World Index, prompted by rising interest rates promulgated by central banks attempting to stifle the inflationary impact of well over a decade of fiscal stimulus. The endowment investment pool's fiscal year *investment performance* of –13.3 percent was disappointing on both an absolute and a relative basis, underperforming our benchmark by 5.1 percentage points. The underperformance cannot be attributed to any particular asset class—the “perfect storm” resulted in every asset class underperforming its benchmark,

led by our alternative securities portfolio (representing a 25.0 percent portfolio allocation), which generated a –10.3 percent return and underperformed its benchmark of –4.1 percent by 6.2 percentage points.

While fiscal year 2022 represents only one year's performance, we don't take such performance lightly. We have been thoroughly analyzing the performance of each of our managers to review what worked, what didn't, and why. And in the cases where we believe managers may have strayed from their stated mandate and strategy, or executed particularly poorly, we are making appropriate adjustments. ***To keep this in perspective, however, even with this year's troubling performance, over the last 10 years the endowment's investment performance of 8.1 percent per annum has handily beat its benchmark of 6.5 percent per annum by 1.6 percentage points.***

Finally, I would be remiss in not mentioning cryptocurrencies and venture capital—two areas often in the media and undergoing significant revaluation. On the crypto front, while over the last several years we spent an enormous amount of time studying it, we could not get comfortable with the risks, many of which have now been realized. Our overall exposure to the sector was well less than one-fourth of 1 percent of the endowment investment pool portfolio and is even less today. The venture capital sector continues to evolve. We have always taken a measured approach here: Our target allocation to venture capital is just 5 percent. This has worked against us in the last several years as venture valuations skyrocketed. We suspect our low allocation now will work in our favor as valuations adapt to the new economic realities.

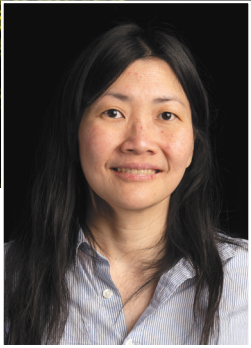
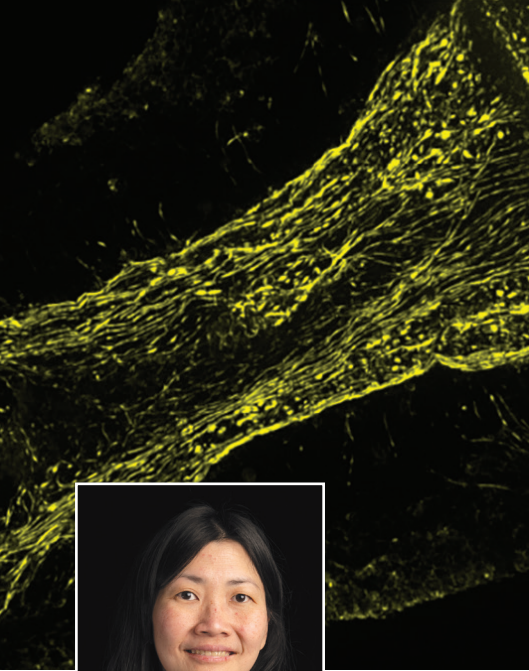
On behalf of Caltech's Investment Office, thank you for your continued support of Caltech and the endowment.



Scott H. Richland
Chief Investment Officer
March 2023



* October 1, 2021, through September 30, 2022



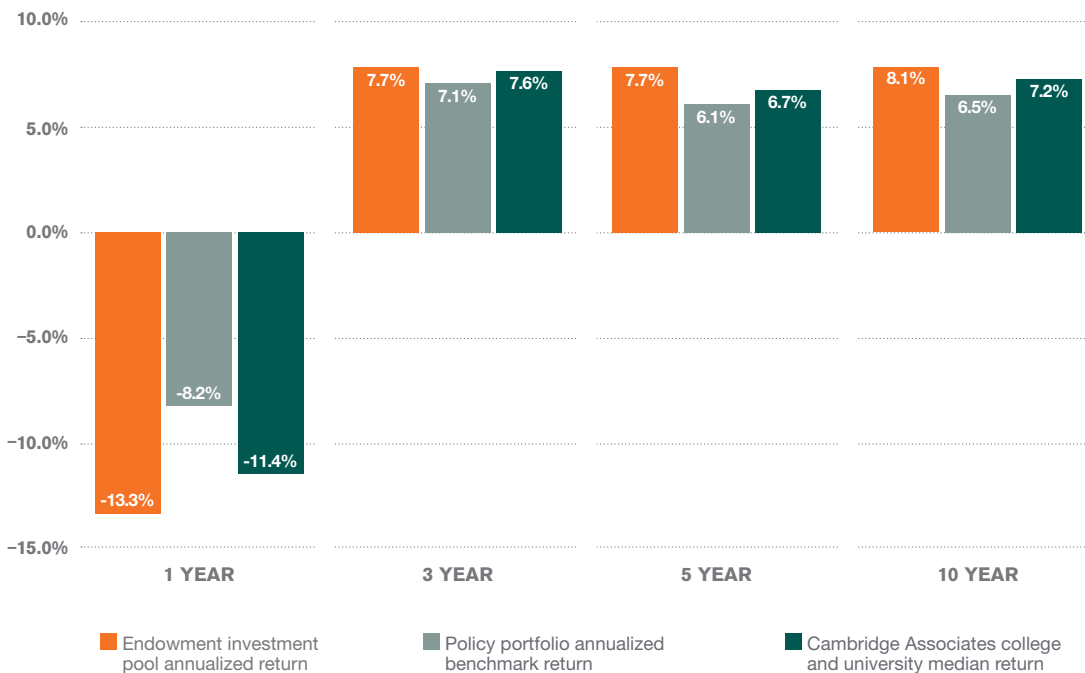
Supported in part by the Trimble Fund, researchers in the laboratory of biology professor Lea Goentoro have discovered certain nutrient conditions that enable different animals—including species never previously shown to regrow limbs after injuries—to begin to regenerate amputated appendages. The work supports the hypothesis that the ability to regenerate is innate across diverse species and can be triggered under the right conditions. Left: Moon jellyfish regrowing muscle. Middle: Fruit fly regrowing limb. Right: Mouse regrowing digit tip.

ENDOWMENT PERFORMANCE, FISCAL YEAR 2022

Endowment Investment Pool Return

As illustrated in the chart below, Caltech's endowment investment pool generated a -13.3 percent return for fiscal year 2022, lagging its benchmark policy portfolio by 5.1 percentage points. For the three-, five-, and 10-year

periods ended September 30, 2022, investment pool returns beat their benchmarks by 0.6, 1.6, and 1.6 percentage points, respectively. Over the last five years, the added value generated by this outperformance of the portfolio was over \$216 million.

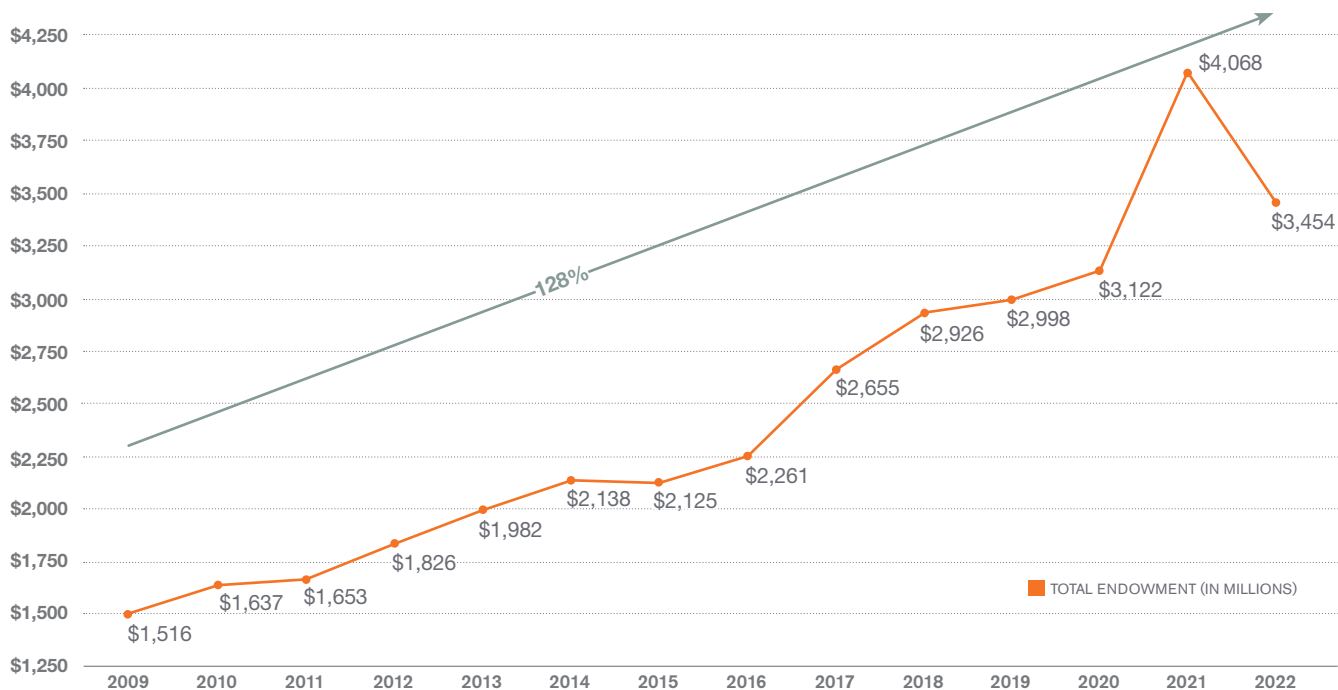


LAST FIVE YEARS:
\$185.3M
 in student financial aid from endowment

Growth of the Total Endowment

The market value of Caltech’s total endowment ended the fiscal year at \$3.5 billion. Since the end of fiscal year 2009, the beginning of the recovery from the 2008 financial crisis, Caltech’s total endowment value (net of outflows) has grown at a compound annual rate of 6.5 percent and has supported Caltech’s research programs and people with almost \$1.7 billion in payout.

\$1.9 BILLION
increase in total
endowment since FY09



Total endowment includes the investment pool and separately invested endowments.

Asset Class Allocation and Performance

All of the endowment investment pool’s asset classes underperformed their respective benchmarks for the fiscal year ending September 30, 2022. The overall public equities portfolio (both global developed and emerging markets equities) returned –26.0 percent, lagging its composite benchmark by 4.0 percentage points. The private equity portfolio (which includes both buyout and venture capital funds) also lagged, returning –5.8 percent, while its respective benchmark was –0.1 percent. With

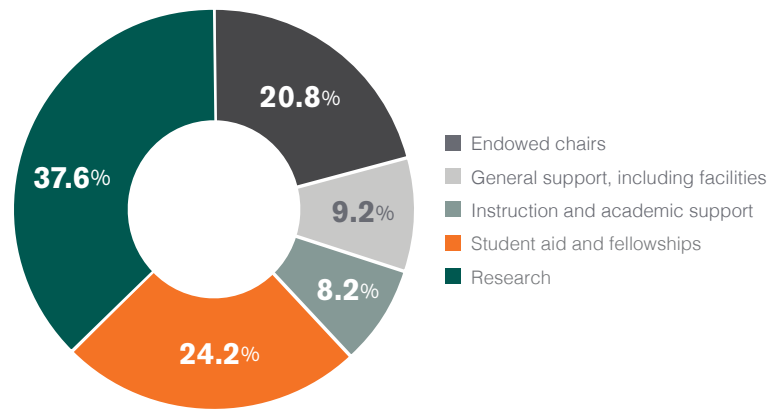
regard to real assets, both our real estate and energy portfolios had positive performance, at 4.6 percent and 18.4 percent, respectively. However, real estate underperformed its benchmark by 5.7 percentage points, and private energy and infrastructure, despite showing continued signs of recovery as the industry has recovered, lagged behind its benchmark by 6.1 percentage points. Our alternative securities portfolio returned –10.3 percent, lagging its benchmark by 6.2 percentage points.

	Allocation	FY 2022 Asset Class Returns	FY 2022 Benchmark Returns
Global developed markets equities	24%	–24.5%	–19.6%
Emerging markets equities	7%	–29.9%	–28.1%
Alternative securities	25%	–10.3%	–4.1%
Private equity and venture capital	26%	–5.8%	–0.1%
Real assets*	12%	10.6%	16.1%
Global fixed income	1%	–21.8%	–17.7%
Cash and other	5%	0.5%	0.6%

* Primarily real estate, energy, and commodities

ENDOWMENT PAYOUT, FISCAL YEAR 2022

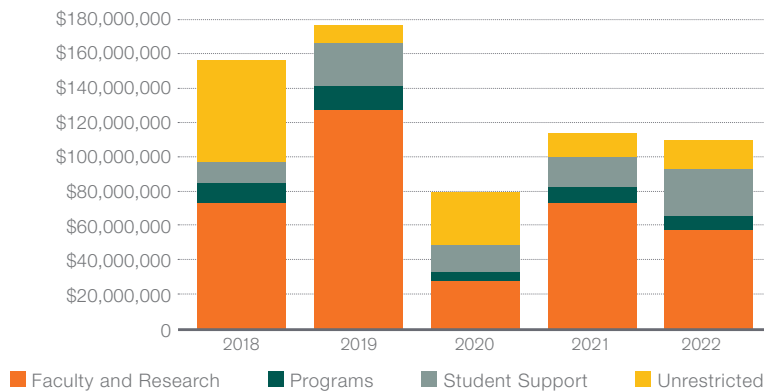
In fiscal year 2022, **\$168 million in endowment payout contributed almost 20 percent of Caltech's operating budget**, supporting research and education in many ways. Endowed fellowships, for example, afforded graduate students the freedom to pursue their passions, unconstrained by the limitations of traditional funding sources. And endowed scholarships enabled talented and ambitious undergraduates to devote themselves to learning without worrying about the cost of their education or graduating under a burden of debt.



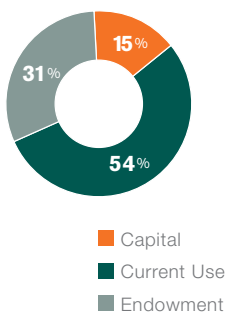
GIFTS TO THE ENDOWMENT

In fiscal year 2022, cash gifts to the endowment investment pool totaled **\$109.6 million**. Over the five-year period beginning with fiscal year 2018, the cumulative total of cash gifts to endowed funds was \$637 million.

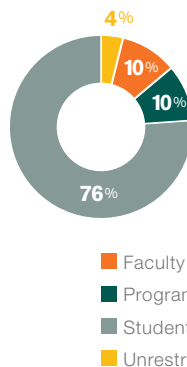
Cash Gifts to Endowed Funds
FIVE-YEAR TOTAL: \$637 MILLION



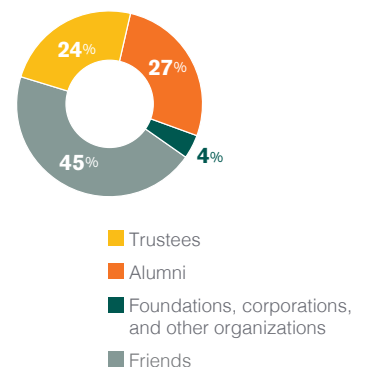
FY 2022 Cash Gifts to Endowment, Capital, and Current Use: \$357.8 Million



FY 2022 Endowment Gifts by Purpose: 812 Gifts



FY 2022 Endowment Gifts by Donor Group: \$109.6 million



MANAGEMENT OF THE ENDOWMENT INVESTMENT PORTFOLIO

The Caltech Investment Office reports jointly to the Institute's president and the Board of Trustees' Investment Committee, which has primary responsibility for setting investment policy, overseeing policy implementation, and approving major investments. The committee meets at least quarterly to discuss and review asset allocation, investment policies, new investments, and portfolio performance. Committee members also interact with the Investment Office between regularly scheduled meetings to discuss specific investments and time-sensitive opportunities. The members bring extraordinary expertise in both specific asset classes and the investment industry in general.

The Investment Office

The Investment Office develops recommendations on investment policies, strategies, and asset allocations for review and approval by the Investment Committee. With the

general guidelines in place, the Investment Office then identifies investments and what it considers to be best-in-class asset managers around the world who can effectively implement the adopted investment strategies. The office focuses primarily on medium- to long-term performance, identifying global trends and investment opportunities that may develop over many years. While quarter-to-quarter performance is closely monitored, and appropriate portfolio adjustments are made from time to time, the primary goal is to earn long-term rates of return that support the annual endowment payout and maintain the endowment's inflation-adjusted purchasing power, allowing it to support Caltech's activities for generations to come.

For more information about asset allocation, risk management, and endowment liquidity, please visit <https://bit.ly/investmentprinciples>.

INVESTMENT COMMITTEE MEMBERS

Timothy J. Sloan, Chair

Senior Adviser and Partner, Fortress Investments, LLC

Joshua S. Friedman, Member*

Co-Founder, Co-Chairman, and Co-Chief Executive Officer, Canyon Partners, LLC

G. Bradford Jones, Member

Founding Partner, Redpoint Ventures

David L. Lee (PhD '74), Member

Chair Emeritus, Caltech Board of Trustees
Managing General Partner, Clarity Partners, L.P.

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Li Lu, Member

Founder and Chairman, Himalaya Capital

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and Professor of Physics, Caltech

David W. Thompson, Ex Officio Member

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Orbital ATK, Inc.

Susan Schnabel, Advisory Participant

Co-Founder and Co-Managing Partner, aPriori
Capital Partners

Lance N. West (MS '83), Advisory Participant

Retired Chairman and Chief Executive Officer, Centerbridge
Partners Europe, L.L.P.

* Past Investment Committee Chair

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ABOVE:

Resnick Sustainability Institute Graduate Research Fellow Zachary Lee (pictured) worked with Steven Low, the Frank J. Gilloon Professor of Computing and Mathematical Sciences and Electrical Engineering, and Caltech alum and entrepreneur George Lee on the Adaptive Charging Network, a smartphone-enabled platform that parking garages can use to maximize the efficiency and minimize the cost of large-scale EV charging.

COVER:

Neural-Fly, a deep-learning method that helps autonomous flying vehicles learn to navigate real-world weather and wind conditions, is a major step forward toward truly useful drone technology. It was developed by a team of Caltech researchers including Soon-Jo Chung, the Bren Professor of Control and Dynamical Systems and a senior research scientist at the Jet Propulsion Laboratory, and graduate students Michael O'Connell (MS '18) and Guanya Shi, and tested in the Real Weather Wind Tunnel at Caltech's Center for Autonomous Systems and Technologies.