# Carver Mead New Ventures Fund

## Introduction

***Carver Mead*** *(BS '56; MS '57; PhD '60) developed the scaling laws for very-large-scale-integration (VLSI) technology. He stimulated a generation of researchers and practitioners to develop the design tools, test beds, and product architectures to take advantage of VLSI. These developments make possible the information technology behind all modern commerce, entertainment, science, and engineering.*

*Carver is famous for re-inventing his research agenda periodically. With John Hopfield, he created a new research agenda in computation and neural systems. With Richard Feynman, he created a research agenda in the physics of computation.*

*Carver not only pioneers research fields, he pioneers commercialization of technology. Former Caltech President Jean-Lou Chameau estimated that Carver and his students created some 140 start-up companies.*

It is through Caltech's pursuit of unfettered knowledge that our scientists and engineers make a profound impact upon the world. Carver Mead is one powerful example – among many – of the kinds of discoveries and breakthroughs that alter the way we see and live in the world and have led directly to social and economic improvements.

## Why Caltech?

**Inspiring Innovation and Expanding Impact**: Throughout the Institute's history, Caltech's extraordinary scholars focus on the

most difficult scientific and societal problems, forging breakthroughs, improving lives, and launching new fields, technologies, and industries.

**Stimulating Exploration**: Caltech is one of the world's leading science and engineering research institutions due to a proven strategy of attracting top-caliber scientists and scholars and providing an environment in which they can thrive. Caltech seeks answers to "impossible" questions, discovers new knowledge, and leads the way into the future.

**The Caltech Advantage**:

- Recruit and attract promising and accomplished scientists who are explorers, pioneers, and inventors
- Cultivate an entrepreneurial environment and cross disciplinary collaborations sustained by technical, human, and financial resources
- Emphasize fundamental science; promote high-risk, high-reward research; and solve complex scientific and societal problems
- Provide rigorous curriculum integrated with extensive opportunities for research and faculty interaction

Probably every American university would like to make the case that it is unique. We are no exception. But Caltech wants to go several steps further. We want to argue that our distinctiveness ought to be carefully protected and generously supported because it plays an irreplaceable role in the world we all share.

We believe the human enterprises of discovery and invention would be sorely diminished if Caltech didn't exist.

What constitutes this uniqueness at Caltech? It's partly our size. We are small in terms of professorial faculty (~300) and student body (~900 undergrads and 1,200 grads) – but so are many other institutions of higher learning. Size is only one part of the equation.

It's partly our focus on research and education in science and technology, and the way our investigators collaborate across disciplines. But that is not the whole story, either. Other prestigious universities can claim the same general focus, and "interdisciplinary research" has become a buzzword throughout the scientific community.

It's partly the ambitiousness of the research projects we undertake. But again, that alone does not make us special. Many other top-ranked universities do work on comparable scope and complexity.

What distinguishes Caltech is the way we *combine* these three elements. No other small institution (as our mission statement puts it) "investigate[s] the most challenging, fundamental problems in science and technology in a singularly collegial, interdisciplinary atmosphere, while educating outstanding students to become creative members of society."

## The Carver Mead New Ventures Fund

Caltech seeks to establish a dedicated and permanent named fund (an endowed fund) in Carver Mead's honor to empower and support Caltech's scientists and engineers in their pursuit of developing innovative technologies and seeding interesting ideas – perhaps even "crazy" ideas. The ultimate goal of a $5,000,000 endowment to provide an annual revenue source to seed innovative ideas stemming from the EE and CMS departments

(i.e., under the IST umbrella) and potentially to help solve large problems in health, information technology, energy, and other fields to benefit society, impact markets and industries, and improve the quality of life worldwide.

Too many product and service ideas inherent in Caltech research are never realized, because they are too “early stage” to attract investment. The Carver Mead New Ventures Fund is a philanthropic-based initiative to give such ideas a chance.  By applying seed funding, Caltech will build and support early-stage technology innovators among its faculty and research community.

A gift to the Carver Mead New Ventures Fund is a meaningful investment in Caltech’s culture of rigorous, yet untethered inquiry, and in scholarship that defines disciplines, sets agendas, and has a powerful impact on society.

## Opportunity for Impact

By contributing to the Carver Mead New Ventures Fund at Caltech, donors join a growing community of innovation and entrepreneurship committed to:

- Supporting scientific innovation through a critical early phase of commercial development
- Enhancing the potential societal impact of Caltech’s research
- Helping Caltech support cross-disciplinary researchers with an interest in both intellectual leadership and impact
- Strengthening Caltech’s ability to compete for funding sources where translational capability (i.e., commercial application) is a key consideration
- Growing ever-stronger links between the IST research enterprise among all six academic divisions and aligned Institutes, Centers and Programs

## Selection Criteria

Information Science and Technology (IST) will award seed grants to the most compelling projects or “ideas” originating from the EE and CMS departments and involving other divisions campus wide. Grants will be awarded at the discretion of the EAS Division Chairman in consultation with the Director of IST with emphasis on work showing the strongest potential to benefit society and improve the quality of lives globally.

Funding must be for research done in Caltech laboratories that are not amenable to regular federal support, and with broad & fundamental implications.  Proposals (with a maximum of 10 lines of text) must be submitted by Caltech faculty members to the director of IST.  Outside and cross-disciplinary collaborations are eligible.

## Funding Opportunities

The Carver Mead New Ventures Fund will help Caltech faculty – at a critical early stage of their work – with seed funding to bridge a funding gap that relegates many worthwhile projects to obscurity (i.e., the gap between government support for basic science and the availability of private-sector funding for emerging innovations).  The Carver Mead New Ventures Fund represents what we believe to be an accepted best practice approach and an important new mechanism for converting Caltech’s intellectual capital into partnerships to create new technologies and new fields of exploration.

## Giving to the Carver Mead Initiative

Caltech donors to this initiative have a deep commitment to IST's mission of positively impacting society through technological innovation.  They typically have been inspired by Caltech's research culture and want to play a more active role in promoting innovation and new ventures.

The Gordon and Betty Moore Foundation will match contributions to the Carver Mead initiative at the rate of $1 for every $2 raised.