



# The National Science Foundation & California

## THE NATIONAL SCIENCE FOUNDATION (NSF)

is the only federal agency whose mission includes support for all fields of fundamental science, technology, engineering, and mathematics (STEM).

“This funding ensures that we can continue our quest to find cures for the world’s most debilitating diseases, address climate change and global security, and ensure that deserving first-generation college students can afford to attend UC San Diego.”

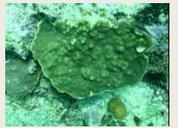
- Pradeep K. Khosla, UC San Diego Chancellor

## BY THE NUMBERS California in FY 2018

- 1<sup>st</sup>: National ranking in NSF funds
- \$1 billion**: NSF funds awarded
- 270**: NSF-funded institutions
- 2,382**: NSF grants awarded
- 39**: NSF research centers/facilities

## EXAMPLES OF NSF-FUNDED RESEARCH IN CALIFORNIA

- Researchers at NSF-supported Ekso Bionics in Richmond, CA have developed a mobile exoskeleton that allows patients with limited mobility to stand and walk in rehabilitation settings.
- Researchers at the University of California, Santa Cruz have found that corals living in a naturally acidified reef area have reduced growth rates and are less dense than corals of the same species from a part of the reef with typical seawater.
- Developed by researchers at the University of California, San Diego, a free, open-source app called "Divvy" provides a platform for machine learning researchers to publish fast, easy-to-use versions of their algorithms, without worrying about programming languages, data formats or visualization.



Courtesy: [www.research.gov/seeinnovation](http://www.research.gov/seeinnovation)

## INVESTMENT IN NSF = INVESTMENT IN CALIFORNIA INNOVATION

- 7.4 percent of all workers in California are employed as scientists, engineers, or work in technical occupations. <sup>2</sup>
- UC-affiliated startups headquartered in CA added over \$20 billion to the state economy. <sup>1</sup>
- Four Governor Gray Davis Institutes for Science and Innovation network are distributed across nine UC campus and is the largest and most significant UC system-wide initiative. <sup>1</sup>
- In fiscal year 2015, UC research employed a disclosure of 1,745 new inventions. <sup>1</sup>
- 956 – or 75.4 percent - of UC affiliated start-up companies formed between 2000 and 2015. <sup>1</sup>
- CSU campuses within the Los Angeles region sustain more than 39,000 jobs and have a \$4.4 billion impact to this regional economy. <sup>3</sup>

<sup>1</sup> UC Economic Impact Reports. Entrepreneurs, Startups, and Innovation at UC 2016

<sup>2</sup> Science and Engineering Indicator Report 2018 NSF

<sup>3</sup> Working for California: The impact of the California State University System, Office of the Chancellor, 2010



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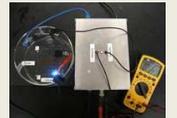
**(NSF)** not only funds cutting-edge research at institutions across the country; NSF's education initiatives ensure the U.S. will remain a global leader in innovation for generations to come.

Since 1952, NSF has supported nearly 50,000 graduate students through research fellowships.

California received **\$143 million** in NSF educational funding in FY 2018.

## EXAMPLES OF NSF-FUNDED EDUCATION PROGRAMS IN CALIFORNIA

- Through the "Be a Scientist" program, 13 undergraduate engineering students developed and implemented inquiry-based science and technology lesson plans for 863 underserved first graders and their families in Los Angeles and New York City.
- The NSF-supported Combined Array for Research in Millimeter Astronomy (CARMA) Summer School in Cedar Flat, CA allows students from around the globe learn about leading astronomical instrumentation; the students are taught radio interferometry, an observing technique used across many astrophysical fields.
- The Solar Hydrogen Activity Research Kit (SHaRK) project based at the California Institute of Technology, gives students the opportunity to learn fundamental scientific practices and concepts while attempting to solve the global energy problem.



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*"...Our research mission has never been more important to the future of our world and the people who inhabit it."*

*– John Hennessy, Former President, Stanford University & Chairman, Alphabet, Inc*

*"California's economic growth depends on its continued leadership in innovation, technology, ...and other fields that require strong math and science training."*

*– Former Governor Jerry Brown*