



RETROSPECTIVE: ENGINEERING SCHOLARSHIPS

AN OVERVIEW OF 1985–2014 GRANTMAKING
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SUMMARY OF SUPPORT

From 1985 to 2014, the S. D. Bechtel, Jr. Foundation provided over 150 promising students access to high-quality education in engineering. This support included need-based financial aid at some of America's top universities as well as support of other scholarship funds. In some cases, the Foundation specified its support for populations that have been historically underrepresented in engineering, including women and students of color.

In total, this portfolio encompasses 128 grants across 30 years. Grants totaled \$6.9 million to 25 organizations and universities, with the largest share (\$4.14 million) going to the named "Bechtel Engineering Scholarships."

Scholarship Objectives:

- Recognize and reward talented young engineering students
- Provide the financial means of attracting, retaining, and motivating qualified young engineering students within the university setting
- Promote the overall visibility of the engineering profession
- Increase the number of underrepresented students in the engineering profession, particularly women and minorities

BECHTEL ENGINEERING SCHOLARSHIPS – \$4.14 MILLION

Bechtel Engineering Scholarships were named awards at 14 campuses across the U.S., including both public and private universities from 2005 to 2014. These grants, totaling \$4.14 million, typically offered four years of support to the institutions. They funded scholarships for promising undergraduate and graduate students with demonstrated need, as chosen by the school's faculty and staff. The schools were selected based on their stellar reputation for engineering education, and history of graduating students ready for the challenging demands of engineering positions.

Courtney Cortez, one 2013 recipient of a Bechtel Engineering Scholarship at Texas A&M University, wrote:

My plans are to receive a degree in electrical engineering, and I consider myself so fortunate to be working towards this degree at Texas A&M University. I know there is much hard work in my future, and it really helps to know I have your encouragement. The assistance you are providing will be of great help in paying for my education and lightening my family's financial burden.

In 2013, in light of the Foundation's spend-down plan, the decision was made to conclude all planned engineering scholarships grants by the end of 2014.

PARTICIPATING UNIVERSITIES: BECHTEL ENGINEERING SCHOLARSHIPS

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|  | Yale University \$360,000 2007–2014 |
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|  | Santa Clara U. \$360,000 2008–2012 |
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|  | U. Maryland \$180,000 2009–2012 |
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|  | Texas A&M \$180,000 2009–2013 |
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|  | MIT \$360,000 2009–2015 |
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|  | Boston U. \$180,000 2007–2012 |
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|  | Smith College \$360,000 2007–2014 |
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|  | Stanford U. \$540,000 2005–2014 |
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|  | Georgia Tech \$180,000 2009–2013 |
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|  | UT Austin \$180,000 2009–2012 |
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|  | Penn State \$180,000 2009–2013 |
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|  | UC Berkeley \$540,000 2005–2014 |
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|  | CalTech \$360,000 2007–2014 |
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|  | Polytechnic \$180,000 2009–2012 |
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OTHER SCHOLARSHIP FUNDS – \$2.76 MILLION

Along with the named Bechtel Engineering Scholarship grants to selected universities, the Foundation worked with a number of nonprofit organizations to provide scholarships for undergraduate and graduate education in engineering, often to support traditionally underrepresented populations. These grants accounted for \$2.8 million of the entire engineering scholarships portfolio.

National Action Council for Minorities in Engineering (NACME): 14 grants, 1994 to 2012, totaling \$795,000.

The largest commitment in this arena went to the National Action Council for Minorities in Engineering (NACME), which Mr. Bechtel co-founded in 1973. NACME strives for its vision of an “engineering workforce that looks like America,” by providing engineering scholarships, supporting middle, high school, and community college engineering programs, and advocating for STEM education to policymakers.

The Foundation funded the NACME Scholars Engineering Program, which provided block grants to colleges and universities, to be awarded to talented African American, American Indian, and Latino students enrolled in engineering programs. Each student was eligible to receive up to \$2,500 per year for five years.

The Foundation also supported a model Bay Area program called “Partnership for Engineering Education” through NACME, which benefitted minority students in West Contra Costa high schools. The grant provided these students the opportunity to enroll in college-level math and introductory engineering courses at Contra Costa College and City College of San Francisco to strengthen the likelihood of enrollment in college engineering programs. From 2009 to 2011, eight to 11 students were named NACME Scholars each semester; 61 students were supported in all. Of that group, 90% (55) passed their college courses, many with top marks.

Massachusetts Institute of Technology: One grant, 2012, totaling \$500,000 (supporting six graduate fellowships).

As one of the pre-eminent engineering institutions in the country, MIT was a logical choice for Bechtel Engineering Scholarships. In addition, the Foundation established a graduate fellowship in engineering in honor of Joseph P. Kearney, a prominent leader of Pacific Gas & Electric, and the founder of the Powering A Generation Project. Mr. Kearney’s bachelor’s degree in mechanical engineering, master’s degree in nuclear engineering, and doctorate in nuclear engineering were all earned from MIT.

The grant provides \$500,000 for six one-year graduate fellowships from academic years 2013 to 2019. The selection criteria pays tribute to the fellowship's namesake by awarding the funds to graduate students whose studies focus on nuclear engineering and have the potential to contribute to innovation and entrepreneurship in the field. Sam Shaner, a graduate student awarded the fellowship in 2013, received the Ronald I. Heller Prize for significant impact on the quality and overall spirit of entrepreneurship at MIT.

National Society of Black Engineers: Two grants, 2008 to 2012, totaling \$360,000 (supporting 24 scholarships).

According to a 2013 report from the U.S. Census Bureau, African Americans make up just 6.4% of the STEM workforce, and are the second most underrepresented population in STEM after Hispanics. Starting in 2008, the Foundation worked with the National Society of Black Engineers, providing a four-year renewable grant for undergraduate engineering scholarships. That \$180,000 grant ran until 2011, when another four-year commitment was made.

To be eligible for these scholarships, students must have majored in civil or mechanical engineering, and maintained a 3.0 GPA. Each scholarship awarded \$15,000 to defray the costs of room and board.

Achievement Rewards for College Scientists: 30 grants, 1985 to 2014, totaling \$298,000.

Achievement Rewards for College Scientists (ARCS) provides financial support to U.S. citizens studying to complete degrees in science, engineering, and medical research across 54 partner universities in the U.S., including seven in California. With 30 grants made explicitly for scholarships, totaling \$298,000, the Foundation was one of the largest funders in the organization's 50-plus year history.

The final phase of grantmaking to ARCS went to scholarships for students pursuing studies in the sciences, math, engineering, or medicine at Bay Area universities. This started in 2009, and funding continued through the 2014–2015 academic year, covering \$120,000 in scholarships (\$20,000 per scholarship). Recipients studied bio-molecular engineering, civil engineering, and material science, among other disciplines.

Marines' Memorial Association: Seven grants, 2005 to 2016, totaling \$250,000 (supporting 45 scholarships).

The Marines' Memorial Association, headquartered in San Francisco, maintains a membership of over 21,000 veterans and active duty personnel from all branches of the military. In 2005, funds were provided by the Foundation to establish the Bechtel Engineering and Science Scholarship program, for family members of veterans and active duty members. Along with \$225,000 for these scholarships, \$25,000 was allocated to help establish an endowment for the scholarship fund.

American University of Cairo: Two grants, 2001 to 2007, totaling \$180,000 (supporting three scholarships).

The American University of Cairo (AUC) has long been a home for U.S. students in the Middle East. The first grant to AUC was in 2001, in which \$10,000 was provided for one scholarship “to be given to a talented public school student who is majoring in engineering.” Six years later, a five-year pledge of \$170,000 to fund Public School Fund Scholarships went to two women working towards their bachelor’s degrees in construction engineering at AUC.

UC Berkeley Center for Underrepresented Engineering Students: Four grants, 2005 to 2008, totaling \$100,000.

United Negro College Fund: Two grants, 2008 to 2012, totaling \$90,000 (supporting four scholarships).

Pi Beta Phi: Nine grants, 2002 to 2014, totaling \$83,000.

Hispanic Scholarship Fund: One grant, 2008, totaling \$50,000 (supporting two scholarships).

Chi Epsilon: Six grants, 2006 to 2012, totaling \$22,000.

Tau Beta Pi: Two grants, 2002 to 2005, totaling \$15,000.

Oakland Technical High School: 11 grants, 2000 to 2010, totaling \$11,000 (supporting 11 scholarships). These grants continued the giving started by the Bechtel Wives of the Bay Area association.

WHERE ARE THEY NOW?

Over 150 students were supported by the Foundation's engineering scholarships from 1985 to 2014. Here is what we know about a few of them.

The two women supported by the Foundation at the American University in Cairo are **Aya Mohamed Abdel Bary Diab** and **Yasmin Abd El Rahman El Hakim**. Yasmin wrote that she chose to study construction engineering because of her interest in "helping people in slums so that they can have better houses and places to live because in those areas they lack proper structural designs and urban planning." For Aya, a degree at UAC provided not only engineering preparation, but also English language courses, and a work-study program that previews the demands of a career in construction.

Alejandro Levander, who put his scholarship toward a Ph.D. in engineering at UC Berkeley, wrote:

Receiving the ARCS Fellowship as an incoming graduate student gave me the freedom to choose advisors and which projects to work on. I arranged to be co-advised by two of the semiconductor specialists in the Materials Science and Engineering Department. My advising relationship could not have been forged without the help of the ARCS fellowship.

Alejandro completed his Ph.D. and is now a senior semiconductor engineer in the solar industry.

Michael Street, whose scholarship was provided through the National Society of Black Engineers, wrote:

The Bechtel Foundation Scholarship will support my career goals tremendously. The scholarship will cover books and living expenses for my remaining undergraduate career, seed future investments for my business, enable a yearlong service trip, and finance global travel for engineering research.

Since graduation from Morehouse College, Michael completed MIT's building technology program, and is currently a graduate research fellow at the Georgia Institute of Technology, where he hopes to pursue a Ph.D.

De'Andre Cherry, from Oakland, studied applied physics and mechanical engineering at Morehouse College as the United Negro College Fund – Bechtel Scholar. De'Andre is now pursuing a master's degree at the Joint School of Nanoscience and Nanoengineering in North Carolina.

Joseph Fisher, another UNCF-Bechtel Scholar, became interested in sustainability and waste management, and earned a certificate for his interdisciplinary work on the topic at North Carolina A&T University. While there, he also served as president of his campus chapter for the American Society of Chemical Engineers.

As a result of the Foundation's grant, the Hispanic Scholarship Fund awarded a scholarship to **Chelsea Phares Devlin**, who graduated with a double major in civil engineering and mathematics from California Polytechnic University in San Luis Obispo. Chelsea is the first person in her family to graduate from college, and wrote:

I am privileged to have all of these experiences. I honestly can say that I would not have been able to achieve these dreams without the help of the Bechtel's Scholarship Award . . . I have also been able to do volunteer work and focus on my academics because of my scholarship. I cannot express my gratitude enough!

The second student awarded a scholarship from the Hispanic Scholarship Fund was **Steven Scano**, who studied civil and environmental engineering at UC Berkeley. Like Chelsea, Steven's scholarship provided him with the ability to participate in community service projects, including an internship at the Redwood City Engineering and Construction Department. He wrote of the experience:

Throughout the project, from planning and design to the creation of contract documents, bidding and finally to construction, I worked side-by-side with amazing engineers. As a result, I learned a great deal about civil engineering and have discovered how civil engineers impact cities and communities as a whole.

Chelsea is currently a civil engineering consultant at RBF Consulting. Steven is a quality control manager for the Conco Companies, a large commercial contracting company.