

MATHEMATICS, ENGINEERING SCIENCE ACHIEVEMENT (MESA)

“When I told my friends and family that I wanted to be an electrical engineer, they laughed at me, because they had never seen a Hawaiian engineer...I had the drive and determination, I just didn't have the guidance to go to the university...When I went to Highline I joined MESA and that was the life-changing event...MESA helped me and pushed me to go to higher levels than I ever expected.”

– Kalani Plunkett, Highline College MESA electrical engineering student accepted into Washington State University and University of Michigan¹



MESA summer math scholars, courtesy of Washington STEM

Growing STEM talent

Washington MESA – Mathematics Engineering Science Achievement – helps under-represented community college students excel in school and ultimately earn STEM² bachelor's degrees. The timing couldn't be better.

Here in the home of Amazon, Microsoft, Boeing and hundreds of other tech-based companies, 25,000 jobs are unfilled because of a mismatch between the skills people have and those employers need.³ Eighty percent of those jobs are in high-demand STEM and health-care fields.⁴

MESA creates a wider, deeper talent pool that taps the potential of our diverse population. It opens doors to good jobs and a higher standard of living.

Support and inspiration

MESA has two key programs: one for K-12 students, and the other for community and technical college⁵ students. The K-12 program helps students at middle and high schools (and some elementary schools) succeed in math and science and become competitively eligible for college. The community college program takes it one step further by helping students move ahead and ultimately earn a STEM bachelor's degree.

The community college program offers:

- An orientation course that introduces students to STEM careers, learning strategies, and other tools for success.
- Academic Excellence Workshops to help students succeed in STEM courses.
- Academic advising to keep students on track.
- A designated study center where students do homework and establish a learning community.
- Personal help in transferring to a university.
- Direct administrative support for students, which includes a director, faculty, and advisor support.

Proven results

MESA serves students who are traditionally underrepresented in STEM fields, including African Americans, Native Americans, Hispanic/Latinos, Pacific Islanders and women.

Most MESA students are the first in their families to attend college, are low-income, and have not been exposed to STEM curricula and career choices. MESA changes that equation.

At participating community colleges, MESA students were more likely to persist, transfer to a university, and earn a STEM-related bachelor's degree than other under-represented students pursuing STEM studies at those colleges.⁶

Compared to the rest of the community college system, MESA colleges produce a greater share of Associate of Science-Transfer degrees (AS-T) with more diverse graduates.

- **Increased degree production:** Preliminary research results of MESA show 52 percent of students entering the MESA program between 2011 and 2013 went on to earn a two-year degree by 2016. Nearly half earned a STEM degree.⁷
- **Graduates became more diverse:** MESA colleges produced more AS-T degrees between 2010 and 2015 by graduating a greater share of under-represented students who might otherwise have chosen a non-STEM path. The colleges increased the share of STEM degrees by 5 percent for Black/African-American, Hispanic/Latino, Alaska Native/Native Americans and Pacific Islanders compared to the rest of the college system. MESA graduates are also more likely to be first generation college students (47 percent compared to 43 percent), and they are more likely to be women (30 percent compared to 26 percent).⁸

In the first MESA graduating class of 2011-12, 100 percent of the students who earned bachelor's degrees majored in STEM fields.⁹

National recognition

Started in California, MESA has been named one of the most innovative programs in the nation by Innovations in American Government, a project of the Kennedy School of Government at Harvard University.¹⁰ MESA is also a winner of the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring.¹¹

MESA answers a call from the National Academy of Sciences for our nation to “draw on the minds and talents of all Americans, including minorities who are underrepresented in science and engineering and currently embody an underused resource and a lost opportunity.”¹²

MESA provides a life-changing experience for talented students to develop their skills, succeed in college, and experience a fulfilling STEM-based career.



Sources:

1. Testimony before the House Higher Education Committee, Feb. 25, 2014.
2. STEM stands for “science, technology, engineering, math.”
3. Great Jobs Within our Reach: Solving the Problem of Washington State's Growing Skills Gap,” Washington Roundtable, March 2013.
4. Ibid.
5. Clark College, Columbia Basin College, Edmonds Community College, Everett Community College, Green River College, Highline College, Olympic College, Seattle Central College, Spokane Falls Community College, Tacoma Community College, Wenatchee Valley College and Yakima Valley College.
6. Washington MESA Community College Program Overview, Data & Highlights, by Washington MESA, Jan. 19, 2014.
7. Washington State Board for Community and Technical Colleges Research Department, Oct. 18, 2016. Forty-six percent of students earned a STEM degree or the 90 credit associate degree-direct transfer agreement with over 55 credits in calculus, statistics, science and engineering.
8. Washington State Board for Community and Technical Colleges Research Department, Oct. 18 2016.
9. Washington MESA Community College Program Overview, Data & Highlights, by Washington MESA, Jan. 19, 2014.
10. Innovations in American Government Awards, Kennedy School of Government at Harvard, awarded to California MESA in 2001.
11. Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring, California MESA 2000.
12. Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads, National Academy of Sciences, National Academy of Engineering and Institute of Medicine, 2011.