

Mathematics, Engineering, Science Achievement (MESA) “Leading Change”



Rev 03/10



To be covered in this presentation:

- Industry's workforce crisis
- Science and math education in California: a grave challenge
- Why California needs MESA
- The MESA program
- The San Diego MESA Alliance & Culture
- Engagement with Industry



Industry's Workforce Crisis

- In 2001, ~ 14,000 California jobs requiring science or engineering degrees went unfilled.
- Fewer than 20,000 science and engineering graduates are produced annually in CA.
- Engineers and/or other technical professionals retire within 10 or even 5 years

Workforce Crisis cont'd

- According to the National Math and Science Initiative website <http://www.nationalmathandscience.org/index.php/staying-competitive/>
 - U.S. students recently finished 15th in reading, 19th in math, and 14th in science out of 31 countries
 - Rate of American students who perform at or above the proficient level in science:
 - Only 29% of fourth grade students
 - A third of eighth grade students
 - Barely 18% of 12th grade students
 - High School math and physical science teachers did not major in or are not certified to teach these subjects
 - In 2000, only 4.4 percent of the science and engineering jobs were held by African Americans and only 3.4 percent by Hispanics.

Science and math education: A grave challenge



California ranks

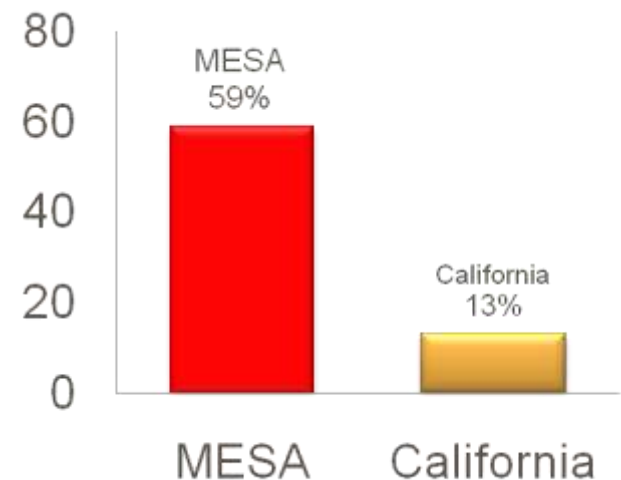
- **49th** among all states in students taking advanced science courses
- **48th** for eighth grade proficiency in science
- **35th** for high school students taking advanced math courses

Why California needs MESA

- The number of MESA high school seniors who went to college directly after graduation is higher than the state average.

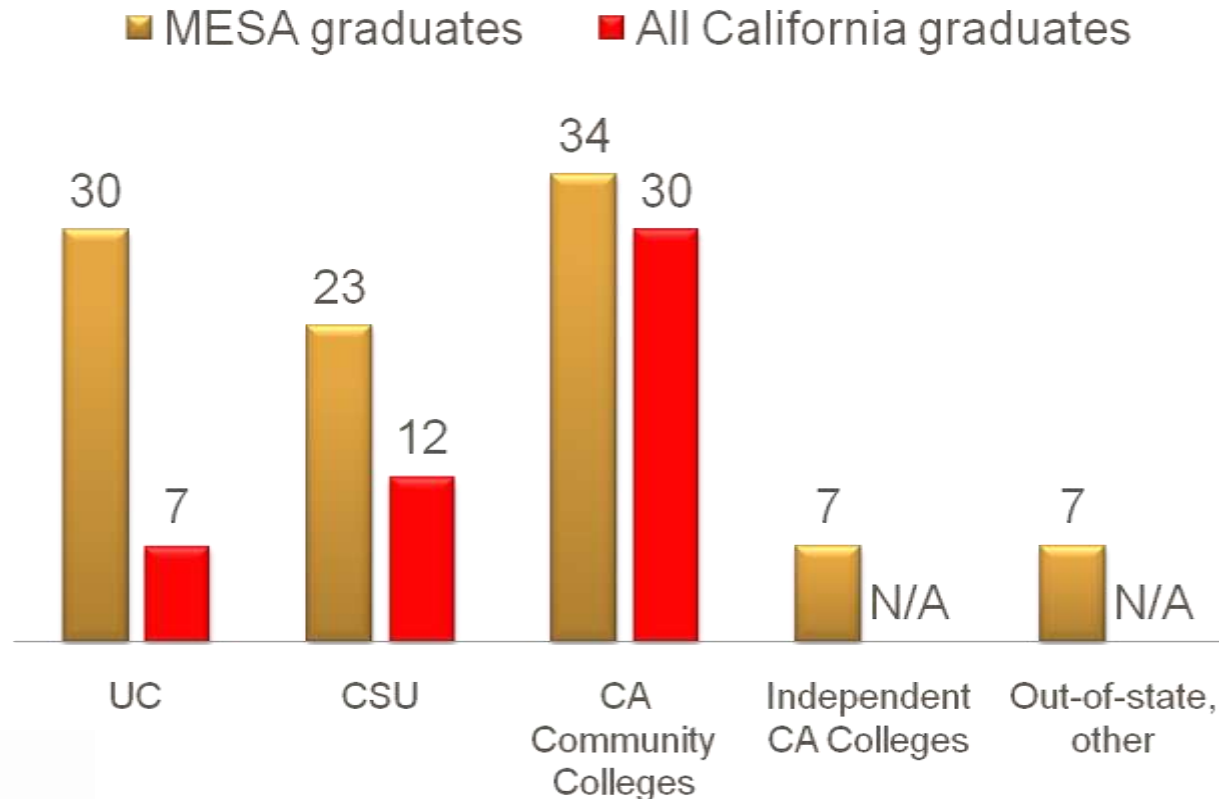


- The UC eligibility rate for MESA's high school seniors is more than four times higher than the state average.



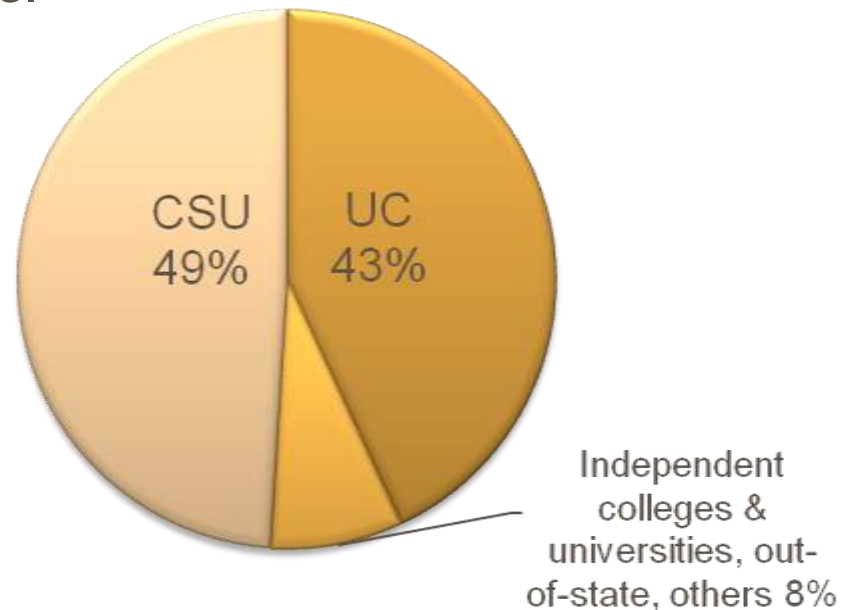
Why California needs MESA

- The vast majority of MESA high school graduates go on to higher education.



Why California needs MESA

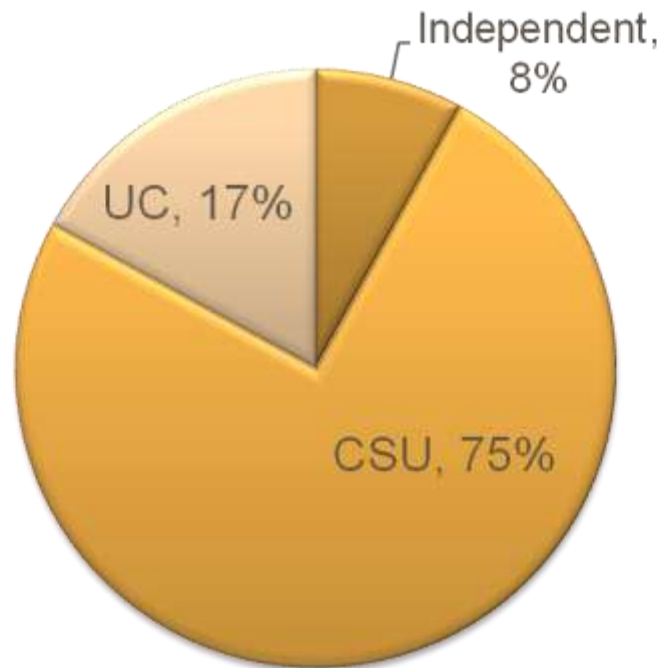
- Most MESA community college students transfer to four-year institutions.



- **100%** of MESA community college students transferred to four-year institutions as science, engineering or math majors.

Why California needs MESA

- The MESA Engineering Program demonstrates a model that is applicable across all four-year institutions.



Why California needs MESA (continued)

- California MESA has been replicated in **14 states**.
- Nearly **100 companies** work with MESA because of its outstanding track record.



MESA Programs

- MESA Schools Program
- MESA Community College Program
- MESA Engineering Program



Who MESA Serves (2008-2009)

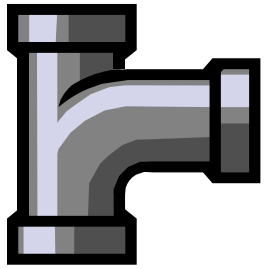
Total students served: 20,249

- MSP: 15,187
 - 316 elementary, middle and high schools
 - 94 school districts.

- MCCP: 2,837
 - 33 California community colleges

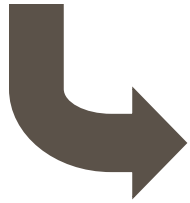
- MEP: 2,225
 - 9 CSU, 2 UC, 1 independent centers





MESA Divisions

... the San Diego MESA Alliance Pipeline ~ 2000 students



Pre-College ~ 1350 students

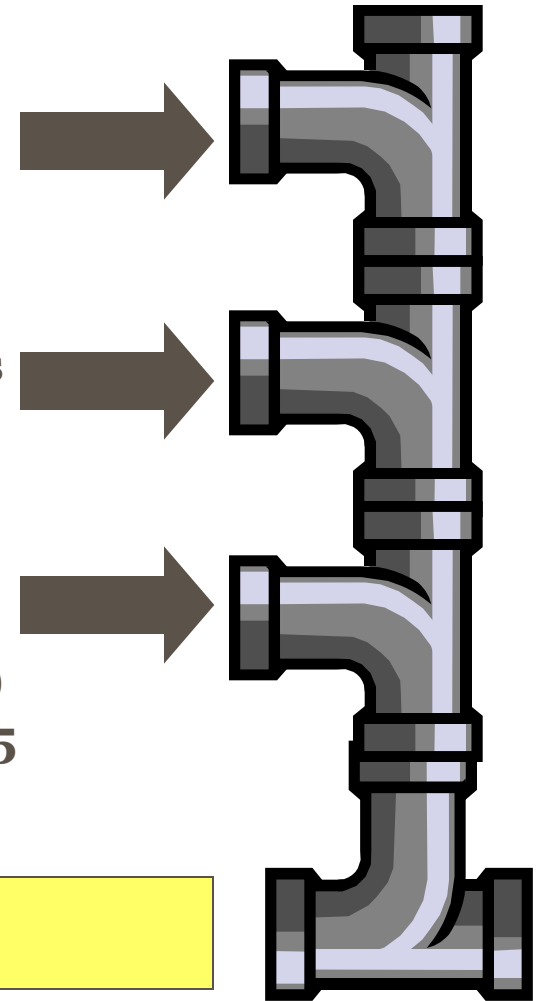
- ✓ MESA Schools Program (MSP)
- ✓ San Diego – 550+
- ✓ Imperial Valley – 800+

Community College ~ 350 students

- ✓ California CC Program (CCCP)
- ✓ San Diego City College – 200
- ✓ Southwestern College - 150

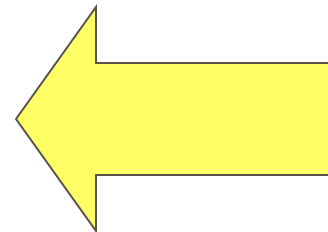
University ~ 265 students

- ✓ MESA Engineering Program (MEP)
- ✓ San Diego State University - 265



INDUSTRY

or Graduate School



San Diego MESA Alliance

- Shares One Industry Advisory Board
- Shares Best Practices
- Hosts Annual Signature Events
 - Leadership Development
 - Career Development
 - Competitions
- Instills MESA Culture, Family and Tradition



Industry Engagement



- As important (or more) as Classroom teaching
- Advisory Board
 - Direct Access to students
 - Paid Interns-SPSD
 - Future hires
- Develop tomorrow's technical workforce

Industry Engagement

- Current San Diego MESA supporters
 - Long-time Industry Advisory Board Members
 - Recent hosts for student interns



Student/Alumni Panel

- Dolores Ventura – SDSU CE Alumna, IAB member
Marcus Schaffer – SDSU, EE Graduating Senior
Jessica Daniels – SWC, Computer Science
Kiedra Taylor – SDCC, Aerospace Engineering
Luis Martinez – MSP Alumnus, SDSU ME
Freshman