



STEM Diversity: Who Benefits?

Successful efforts to increase diversity in STEM (Science, Technology, Engineering, and Mathematics) education serve:

OREGON K-12 EDUCATION

Precollege students

- Build a community of student peers who value learning and achievement and who aspire to go to college
- Build student relationships and interactions with possible mentors and role models—including university faculty, college students, and industry professionals
- Nurture students’ expectations of academic excellence and success
- Provide opportunities for students to find personal meaning and relevance for STEM learning
- Increase on-campus experiences and other college-connection opportunities to help students build familiarity with, comfort in, and confidence as part of a higher education community
- Build versatile skills for success—problem solving, collaboration, communication, and presentation
- Provide opportunities for students to earn scholarships and internships



PSU-MESA, Diapolo Photography

K-12 School districts

- Increase retention and graduation of underrepresented and underserved students
- Provide access to instructional materials that meet national and state science and math standards and benchmarks as well as provide professional development for teachers
- Enhance teaching and learning opportunities that are not possible under limited budgets, provide equipment and resources for in-school and out-of-school time learning
- Increase involvement with the student families
- Foster school university partnerships and interaction with colleges and universities, their faculty and staff, resources, and facilities
- Provide opportunities for student community service
- Contribute to a broad base of partners to educate future voters about STEM and STEM-related issues

K-12 Teachers

- Increase professional development and growth in STEM content and pedagogy
- Provide opportunity for interactions with university faculty and industry professionals
- Nurture a learning community within which to participate, network, and collaborate
- Provide regular opportunities to explore and benefit from the STEM resources in academia and business and industry

Businesses and industries

- Build connections to future employees and potential customers
- Actively engage employees in STEM education and outreach
- Provide on-going opportunities to reach families involved in STEM-related activities
- Provide opportunities to engage youth in career awareness experiences and focused internships
- Build a network of partners supporting the academic success and educational attainment of underrepresented and underserved youth
- Strengthen partnerships to educate future voters about STEM and STEM-related issues
- Enhance corporate citizenship, increases employee pride and satisfaction in supporting families and the community



OIT - Precollege Programs

Comment [H1]: I'm unsure what is intended with this one. Is it ongoing opportunities for businesses to reach families?

OREGON BUSINESS

OPAS Vision for the Year 2020 – All Oregonians have the opportunity to choose and successfully pursue engineering or applied science as their field of study and career, thereby helping Oregon’s industries innovate and prosper in the global economy.

Community members

- Strengthen partnerships for the positive development, school success, and college readiness of the community's youth
- Build opportunities for communities to learn about the role and process of STEM-related research and to develop meaningful connections for STEM content and research
- Foster stronger family and community knowledge and familiarity with higher education system and its benefits, contribute to the development of a college-going culture
- Build opportunities to engage youth in service to their community



OSU – The SMILE Program

Families

- Provide opportunities for adults to model high expectations for their children's success and attainment
- Provide opportunities for families to learn more about higher education and career options for their children, connections to the people and resources of academia and industry
- Provide safe environments for their children to learn, explore, and build aspirations
- Build venues for students to practice important skills: asking questions, soliciting help, problem-solving, persistence, research, and self-management of time, information, and projects
- Give families knowledge of financial resources to help pay for college for their children
- Build avenues to explore lifelong learning trajectories
- Provide mentors to the support the success of their children

Colleges and universities

- Increase access to pools of historically underrepresented, low-income, first-generation-college, female, and disabled students who are prepared for university study
- Engage partners in Oregon communities, supporting positive youth development and promoting higher education access, readiness, and success
- Sustain connections to underserved populations through long-term, on-going academic enrichment and college readiness programs
- Provide venues for faculty and student engagement with K-12 students, teachers and administrators and families throughout Oregon through a variety of learning opportunities on college campuses, at school, and in the communities
- Provide opportunities for collaborations with school districts, businesses, and local, state and national agencies
- Contribute to a broad base of partners to educate future voters about STEM and STEM-related issues
- Contribute data to inform state and national conversations around higher education access, closing the achievement gaps, broadening participation in STEM careers, and school-university partnerships
- Build an infrastructure for education, outreach, and broader impact that does not require faculty to hire an outreach coordinator or to directly oversee logistics of outreach

University faculty, graduate students, and undergraduate students

- Provide opportunities for faculty and students to share research results with precollege teachers and students and to support teachers' professional development; builds experience translating research for communicating with teachers, students, and other public audiences
- Foster opportunities for faculty and students to develop instructional materials and protocols related to university research and within the context of the discipline to support the in-school and out-of-school learning experiences of students
- Experience working with teachers and students for those graduate students and faculty who expect that STEM outreach education will be an important part of their careers, improving their teaching, learning and communication skills
- Foster interactions that promote respect for, acceptance of, and collaboration with individuals from diverse ethnic, educational, social class, ability, and language backgrounds



Saturday Academy, Apprenticeships in Science and Engineering