

VITAL SIGNS

OREGON

Business leaders in Oregon cannot find the science, technology, engineering and mathematics (STEM) talent they need to stay competitive. Students' lagging performance in K-12 is a critical reason why. The good news is that the nation's most effective STEM education programs can help turn the tide.

Oregon students have made small gains in math over the past decade, and few eighth graders have teachers with undergraduate majors in the subject. Elementary students spend little time on science, and too many Oregon teachers lack access to science facilities and resources.

OREGON NEEDS MORE STEM TALENT

STEM fields are growing in Oregon

Between 2017 and 2027:

STEM jobs will grow

Non-STEM jobs will grow

14%

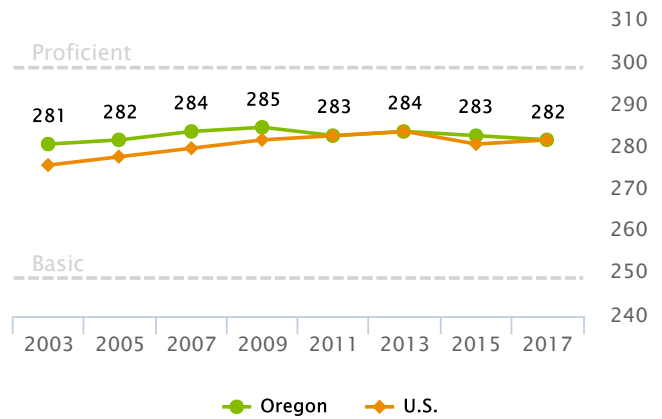
11%

THE OREGON STEM SKILLS SHORTAGE STARTS EARLY

Performance in math has been flat

Oregon has made minimal progress in eighth-grade math.

Trends in 8th grade math scores, 2003-2017

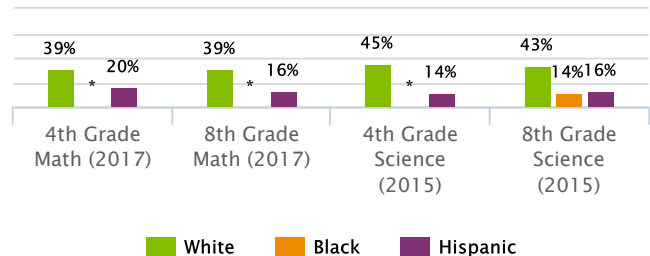


SOURCE: U.S. Department of Education, 2003-2017

Students of color lag farthest behind

Closing achievement gaps must remain a priority.

Percentage of Oregon students at or above proficient, by race/ethnicity



SOURCE: U.S. Department of Education, 2015-2017

*Data not available or reporting requirements not met.

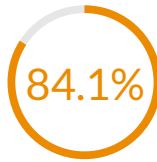
The state must plug the gaps in the STEM pipeline

The Oregon STEM pipeline loses young people at every level of the education system. Low graduation rates from high school and college narrow the pipeline of students who can gain advanced STEM skills. Of those students who do graduate, few get a post-secondary degree in STEM.

What percentage of high school students graduate? (2014-2015)

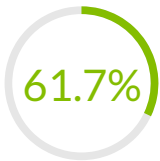


Oregon

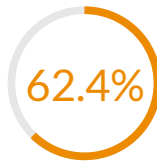


United States

Of high school graduates who enter a 4-year degree program, what percentage graduate? (2012-2013)



Oregon

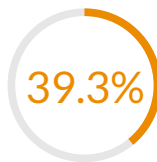


United States

Of high school graduates who enter a 2-year associate's degrees program, what percentage graduate? (2012-2013)



Oregon

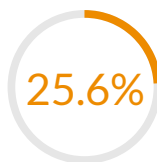


United States

What percentage of certificates and degrees is in STEM fields? (2014-2015)



Oregon



United States

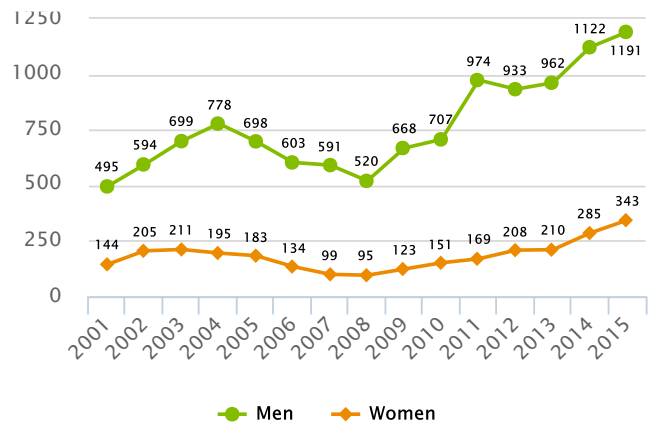
TAP OREGON'S FEMALE AND MINORITY TALENT

Together, females and minorities make up more than half of Oregon's population, yet they are much less likely to earn STEM degrees or become STEM professionals. Closing these gaps can pay big dividends in the state.

Women have lost ground in computing

The available talent in computer science would rise dramatically if the state simply closed the gender gap in these subjects.

Number of computing degrees/certificates in Oregon

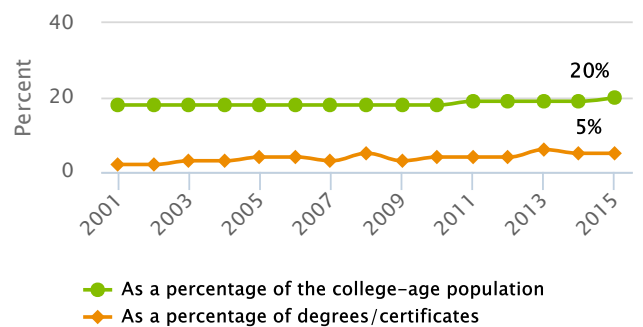


SOURCE: U.S. Department of Education, 2001-2015

People of color are gaining little ground in engineering

It is critical to prepare and inspire many more students of color to pursue STEM subjects such as computer science and engineering.

Underrepresented minorities in Oregon earning engineering degrees/certificates



SOURCE: U.S. Department of Education, 2001-2015

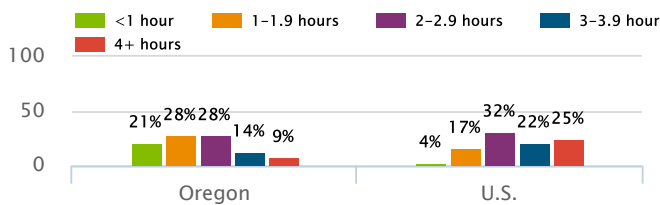
*Data not available or reporting requirements not met.

GIVE OREGON STUDENTS ACCESS TO BETTER STEM LEARNING OPPORTUNITIES

Lack of access to such opportunities severely limits young people's college and career prospects.

The state should make time for elementary science

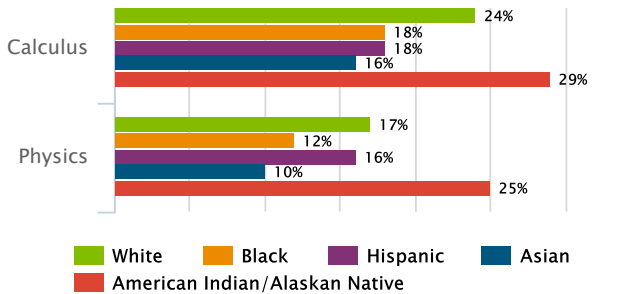
Hours per week spent on science, grades 1-4, 2015



The state should improve access to advanced courses

Many students lack access to such courses.

Students in Oregon high schools that do not offer challenging math and science courses, 2013/14



Success in Advanced Placement courses can put more students on a path to STEM careers.

Of the high school graduating class of 2015 in Oregon:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	8%	5%
White	8%	5%
Black	4%	1%
Hispanic	3%	1%
Asian	27%	18%
American Indian/Alaskan Native	3%	1%

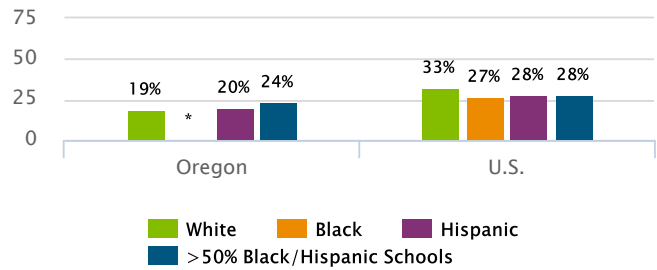


DEVELOP AND RETAIN TALENTED STEM TEACHERS IN OREGON

Research shows that teachers' content knowledge and teaching experience can affect student performance

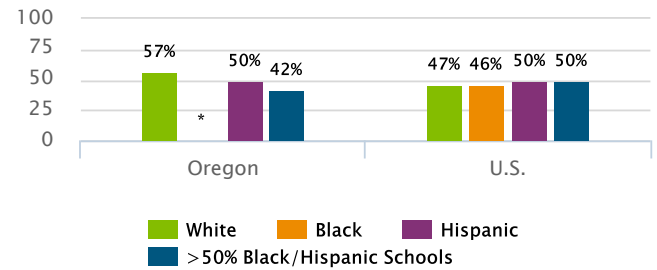
Boost teachers' content knowledge

Eighth-graders whose math teachers have an undergraduate major in math, 2017



SOURCE: U.S. Department of Education 2017

Eighth-graders whose science teachers have an undergraduate major in science, 2015

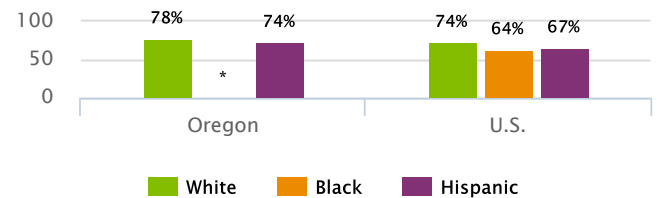


SOURCE: U.S. Department of Education 2015

Retain excellent teachers

Minority students are most likely to have inexperienced teachers

Eighth-graders whose math teachers have 6+ years of experience teaching their subject



SOURCE: U.S. Department of Education 2017

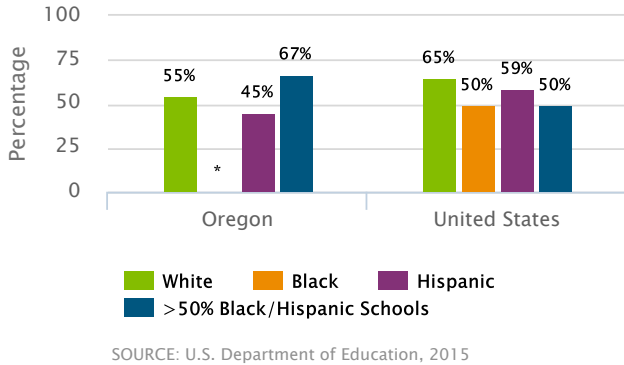
*Data not available or reporting requirements not met.

GIVE OREGON SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

Teachers in Oregon need better resources, facilities, and teaching materials to succeed.

Too many teachers lack the tools of their trade

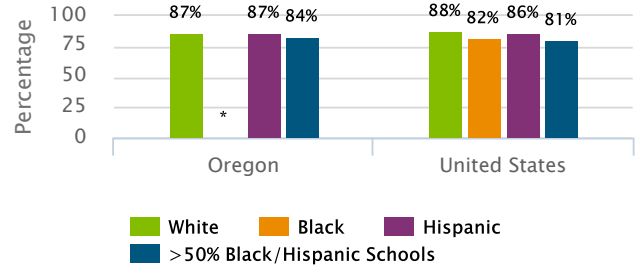
Eighth-graders whose science teachers say they have all or most of the resources they need, 2015



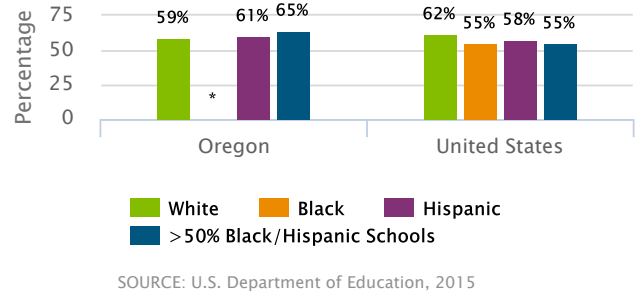
*Data not available or reporting requirements not met.

The state should improve access to science facilities and supplies

Eighth-graders whose schools have science labs, 2015



Eighth-graders whose schools report that supplies or materials for science labs are available "to a large extent," 2015



For the complete state report, methodology, and sources, see vitalsigns.ecs.org (vitalsigns.ecs.org)

Education Commission of the States serves as a partner to state policymakers by providing personalized support and helping education leaders come together and learn from one another. Through our programs and services, policymakers gain the insight and experience needed to create effective education policy.



Education Commission of the States, 700 Broadway, Suite 810, Denver, CO 80203, 303.299.3600