VITAL SIGNS

WISCONSIN

Business leaders in Wisconsin 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.

Wisconsin students have made some progress in math over the past decade. Yet not enough students--least of all minorities--are getting exposed to challenging content to prepare them for college and careers. For example, few eighth graders have teachers with undergraduate majors in math or science. The good news is that those teachers are much more likely than teachers in other states to say they have the resources they need, though black students are least likely to have access to such teachers.

WISCONSIN NEEDS MORE STEM TALENT

STEM fields are growing in Wisconsin

Between 2017 and 2027:

STEM jobs will grow

8%

Non-STEM jobs will grow

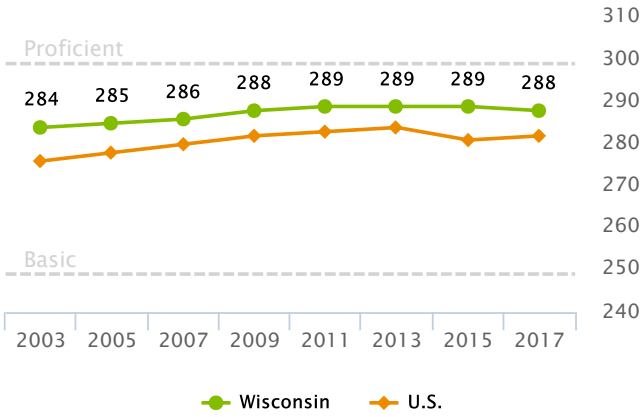
4%

THE WISCONSIN STEM SKILLS SHORTAGE STARTS EARLY

The state has made progress in math

Wisconsin has made some progress in K-12 math, but it still has far to go.

Trends in 8th grade math scores, 2003-2017

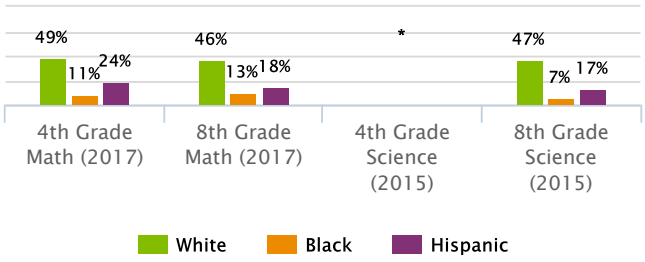


SOURCE: U.S. Department of Education, 2003–2017

Students of color lag farthest behind

Closing achievement gaps must remain a priority.

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



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

*Data not available or reporting requirements not met.

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

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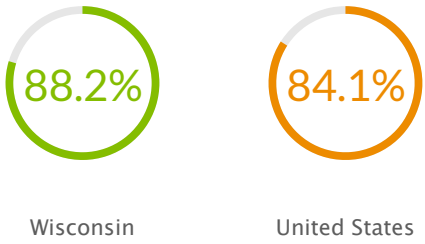
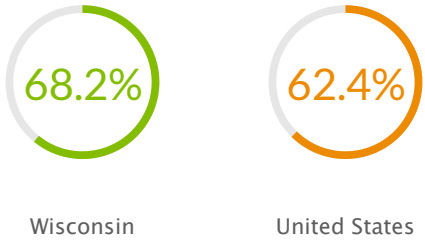
The state must plug the gaps in the STEM pipeline

The Wisconsin STEM pipeline loses young people at every level of the education system. Some fail to graduate from high school and many do not finish college, which narrows the pipeline of students who can gain advanced STEM skills. The two-year college graduation rate is particularly low. Of those students who do graduate, few get a post-secondary degree in STEM.

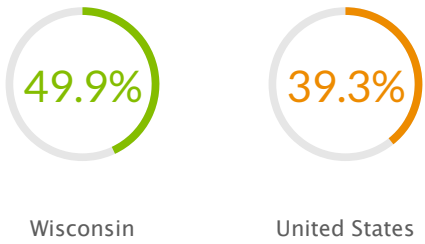
What percentage of high school students graduate? (2014-2015)



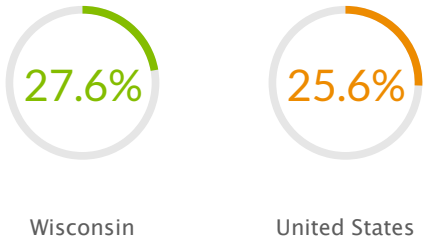
Of high school graduates who enter a 4-year degree program, what percentage graduate? (2012-2013)



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



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



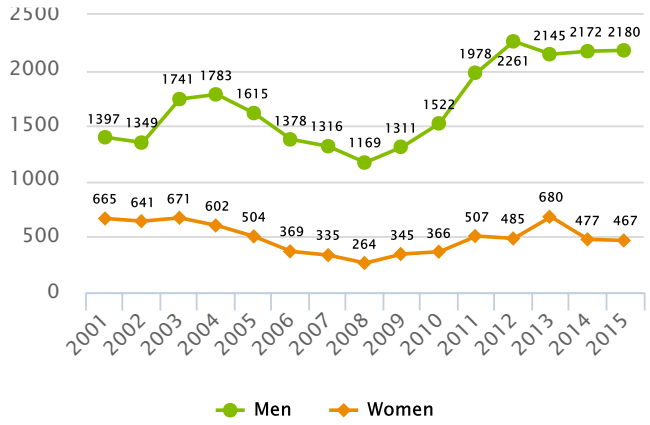
TAP WISCONSIN'S FEMALE AND MINORITY TALENT

Together, females and minorities make up more than half of Wisconsin'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 Wisconsin

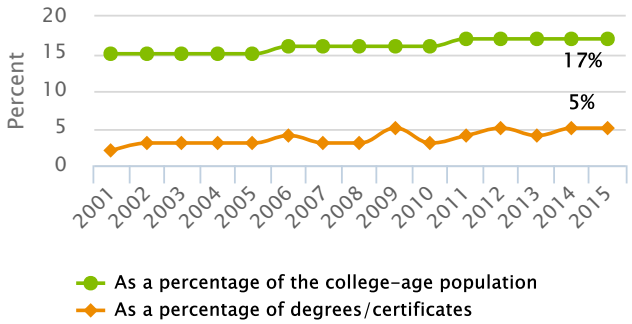


SOURCE: U.S. Department of Education, 2001–2015

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 Wisconsin earning engineering degrees/certificates



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

*Data not available or reporting requirements not met.

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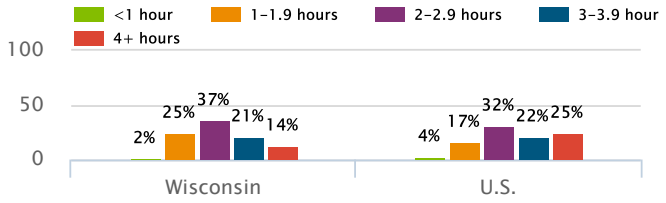
GIVE WISCONSIN STUDENTS ACCESS TO BETTER STEM LEARNING OPPORTUNITIES

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

The state should make time for elementary science

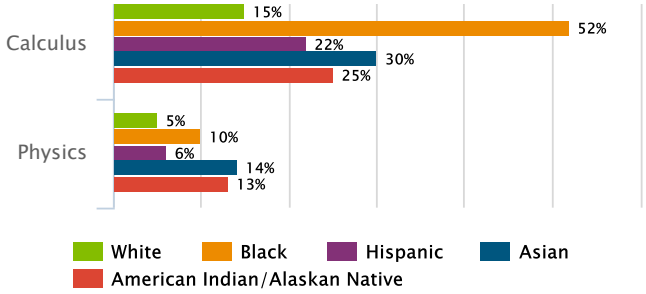
Hours per week spent on science, grades 1-4, 2015



The state should improve access to advanced courses

Many students lack access to such courses.

Students in Wisconsin 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 Wisconsin:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	14%	9%
White	15%	10%
Black	3%	1%
Hispanic	7%	3%
Asian	22%	14%
American Indian/Alaskan Native	5%	4%

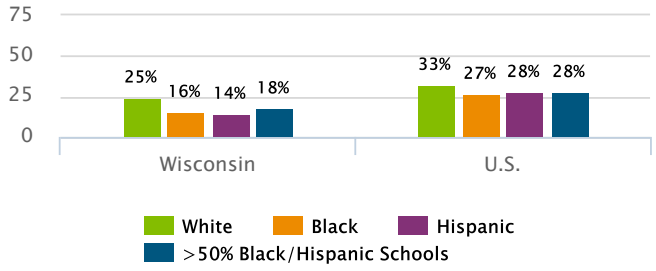
EDUCATION COMMISSION OF THE STATES

DEVELOP AND RETAIN TALENTED STEM TEACHERS IN WISCONSIN

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

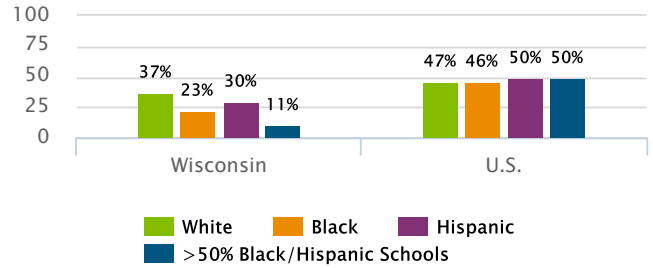
Boost teachers' content knowledge

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

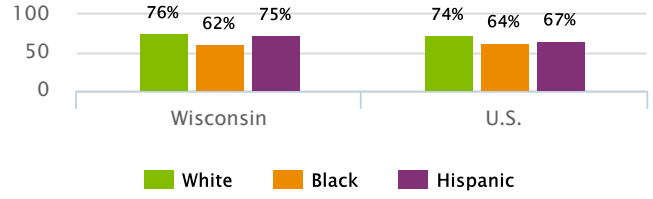


SOURCE: U.S. Department of Education 2015

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.

WISCONSIN

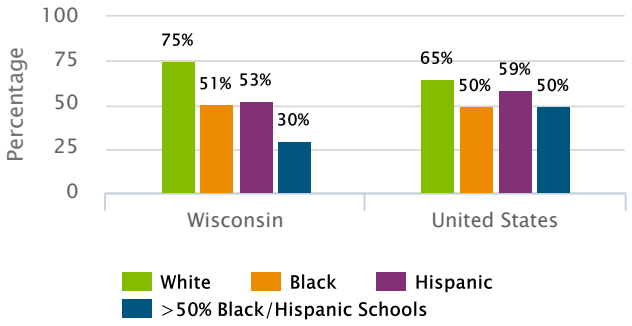
VITAL SIGNS

GIVE WISCONSIN SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

Wisconsin stands out for providing most of its teachers and students with the facilities and teaching materials they need to succeed, yet students of color are least likely to enjoy these advantages.

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

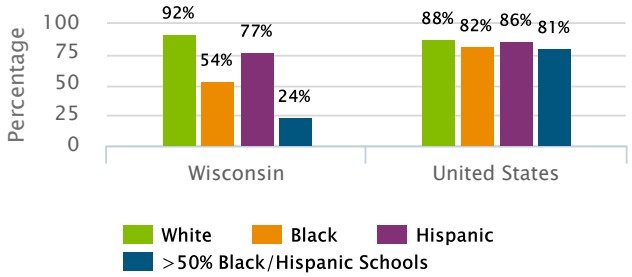


SOURCE: U.S. Department of Education, 2015

*Data not available or reporting requirements not met.

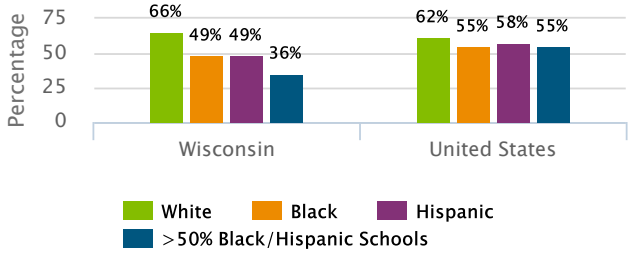
The state should maintain access to science facilities and supplies

Eighth-graders whose schools have science labs, 2015



SOURCE: U.S. Department of Education, 2015

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



SOURCE: U.S. Department of Education, 2015

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