

SCIENCE, TECHNOLOGY,
ENGINEERING AND MATH
(STEM):

VITAL SIGNS &
LEADERSHIP OPPORTUNITIES
FOR WASHINGTON

Patrick D'Amelio and Caroline King, Washington STEM

A horizontal bar at the top of the page, divided into an orange section on the left and a blue section on the right.

WASHINGTON STEM

WASHINGTON STEM

**Reimagining
STEM
education
for every
student in
Washington**



WHAT WE DO

We're bridging

EDUCATION + ECONOMY

How Washington STEM is

ADVANCING STEM EDUCATION

across the state.

BY INVESTING IN + LIFTING UP

BREAKTHROUGH IDEAS



+

PROMISING PRACTICES



In 3 key areas:

1 TEACHING + LEARNING



2 OUT-OF-SCHOOL EXPERIENCES



3 POWERFUL PARTNERSHIPS



To build

FOR SUCCESSFUL STUDENTS, THRIVING COMMUNITIES

+ A VIBRANT WASHINGTON



A STEM MOVEMENT



PRIORITIES



- Advance effective implementation of Common Core State Standards and Next Generation Science Standards
 - ▣ Implementation models + public support
- Strengthen STEM pathways
 - ▣ Early learning – K12 – postsecondary – jobs
- Improve outcomes for all young people
 - ▣ Underserved and underrepresented are focus

COMMON CORE:

Transforming teaching and learning

Skip Counting With Counting Collections

Grades K-2, Math, Strategies

Common Core Standards: Math.2.NBT.1a Math.2.NBT.2

Like 64

SHARE:    



00:00 | 11:48   NEXT

STEM PROFESSIONALS: Bringing STEM to life



IMPACT TO DATE

\$4.1 million
invested across
WA

24,000
students served

8,000
educators
supported

1st statewide
summit
convened

STEMx, multi-
state network
launched



A horizontal bar at the top of the slide, divided into an orange section on the left and a blue section on the right.

2012 STEM VITAL SIGNS

2012 STEM VITAL SIGNS

- Produced by Change the Equation + American Institutes for Research
 - ▣ Input by WA team
- State of STEM around U.S.
 - ▣ Reports for 50 states + D.C.
- Key statistics
 - ▣ Demand
 - ▣ Pipeline
 - ▣ Expectations
 - ▣ Challenging Content
 - ▣ Teachers
 - ▣ Resources

DEMAND

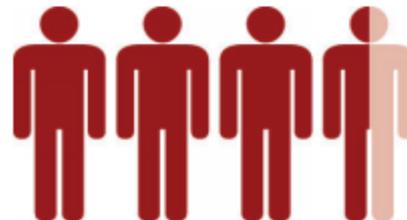
STEM SKILLS ARE IN DEMAND

In Washington, STEM skills have stayed in demand even through the economic downturn.

STEM:
2.1 jobs for every
1 unemployed person



Non-STEM:
3.7 unemployed people for every
1 job



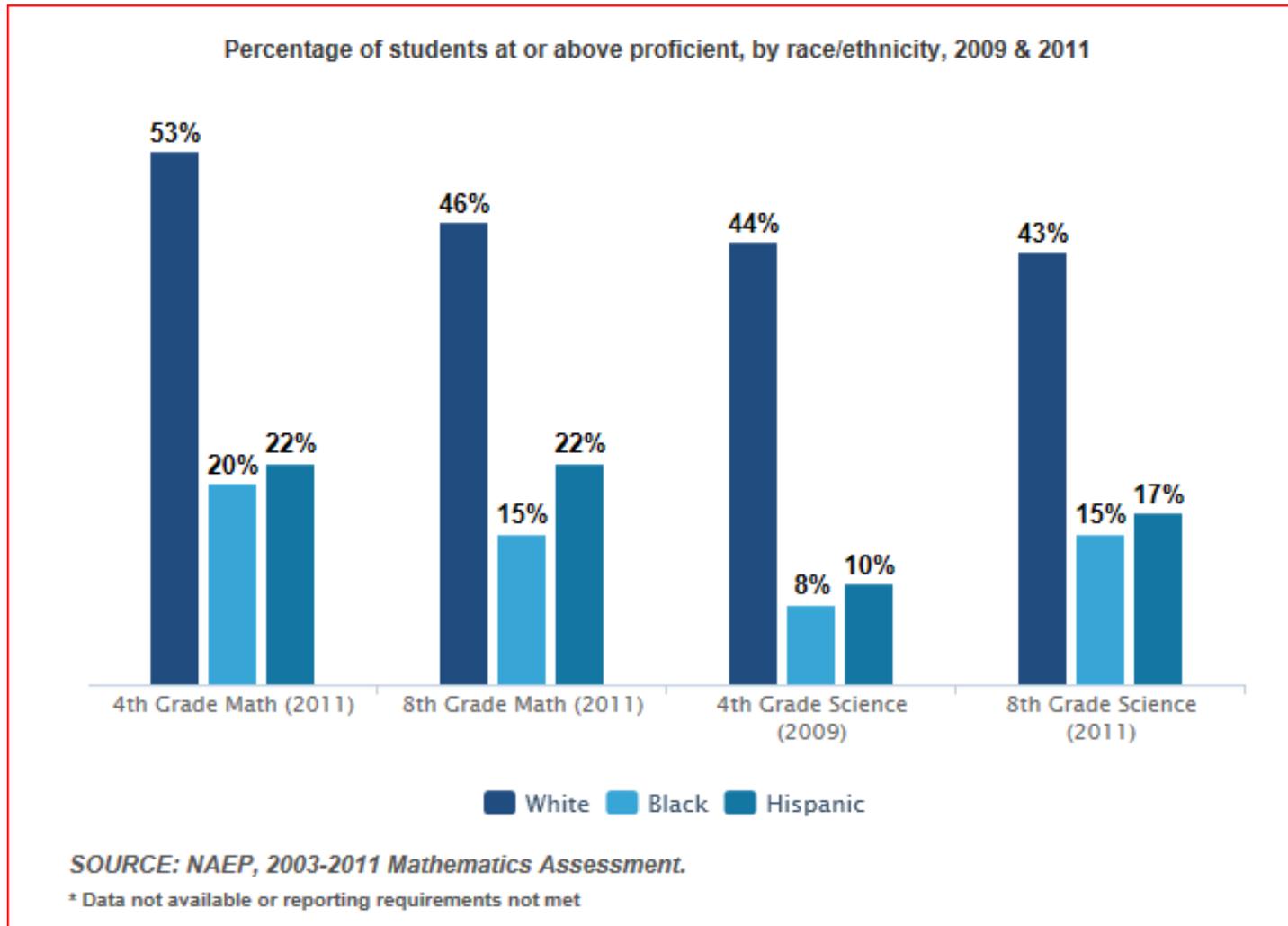
PIPELINE

2 HOURS



*Almost half of Washington's 4th grade teachers report teaching science less than two hours per week. **Only four states reported less science instruction.***

PIPELINE



PIPELINE

COMMUNITY COLLEGES

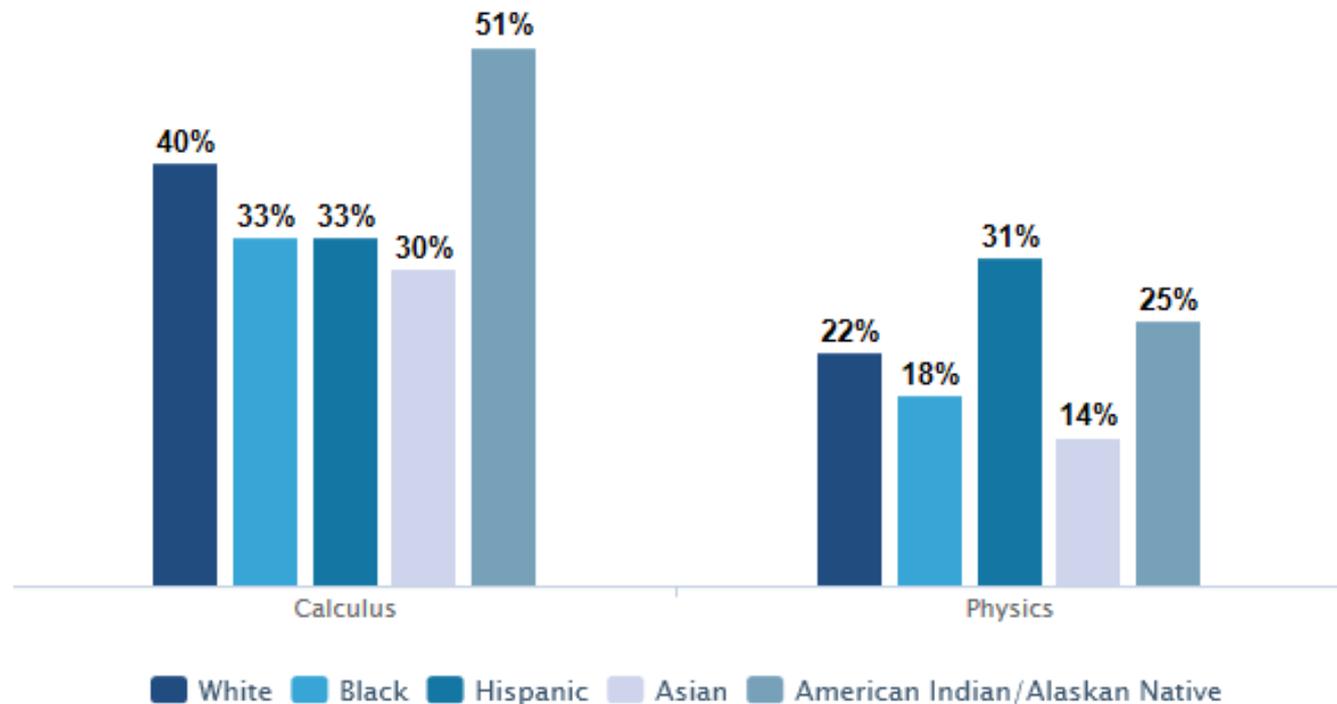
- 51% of community college students need math remediation
- \$93M = cost to WA

STEM DEGREES & CERTIFICATES

- Only 10% of all degrees earned in WA
- STEM degree earners:
 - 31% Women
 - 2% African-American
 - 4% Latino

CHALLENGING CONTENT

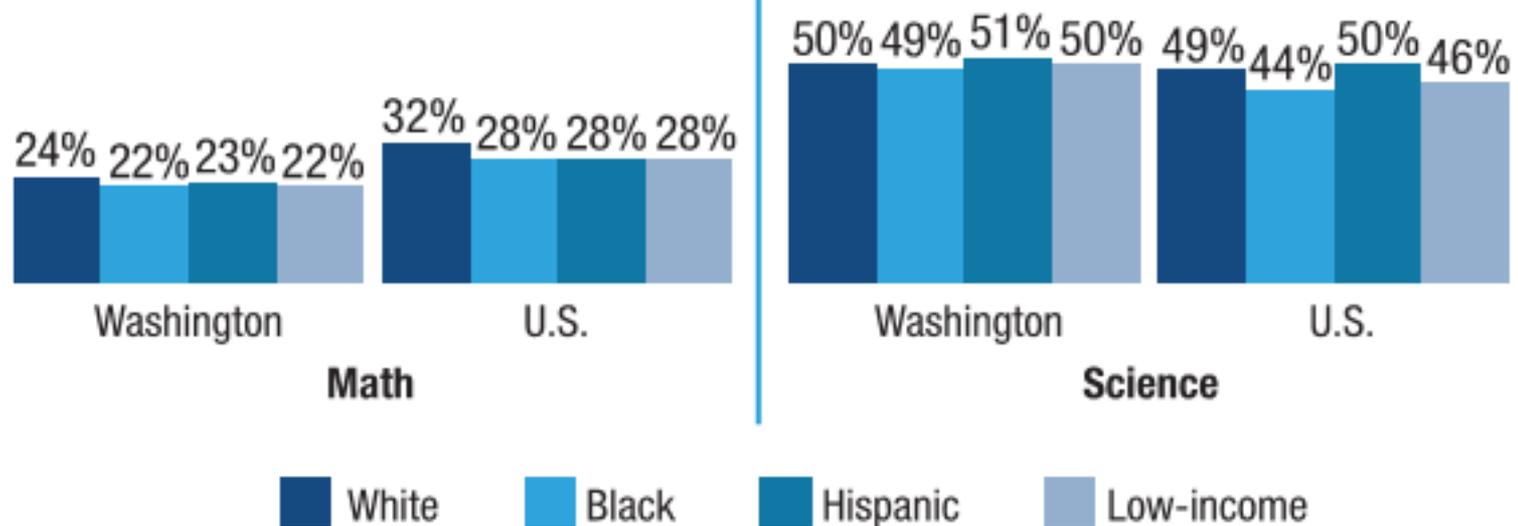
Percentage of students in schools that do not offer challenging math and science classes, by race/ethnicity, 2009



SOURCE: U.S. Department of Education, Office of Civil Rights, 2009

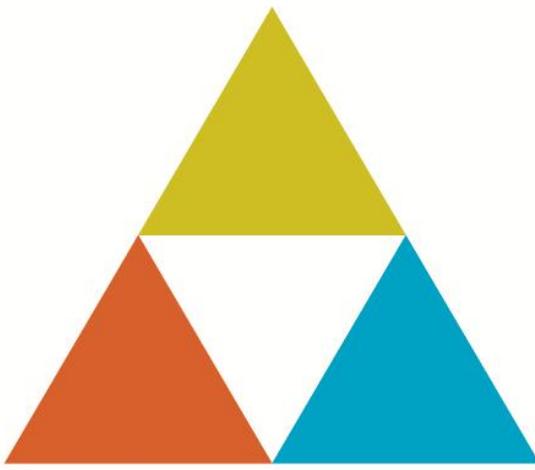
TEACHERS

8th graders whose teachers have an undergraduate major in the subject they teach, 2011



Source: NAEP, 2011.

DEMAND

3x 

*In the last 10 years, **growth in STEM jobs** has been three times greater than non-STEM jobs.*

24%

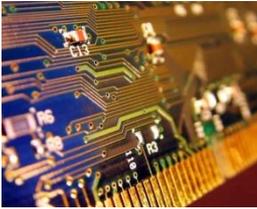
*By 2018, we'll see a 24% increase in STEM jobs – **seven points above the national average.***

DEMAND



1st

Washington's rank in concentration of STEM jobs



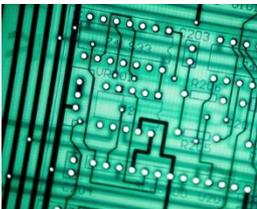
1st

Washington's rank in the creation of software companies



2nd

Washington's rank on the 2010 "New Economy" index for innovation and entrepreneurship



4th

Washington's rank in the nation in technology-based corporations

DEMAND



49th OUT OF 50

“The mismatch between the skills required for available jobs and individuals with those skills is **growing faster than all but one other state.**”

30,000

**JOBS IN WASHINGTON
WILL GO UNFILLED**

*Between 2012 and 2017, almost 30,000 jobs in Washington will go unfilled due to a **lack of qualified STEM candidates.***



STEM

= OPPORTUNITY



LEADERSHIP OPPORTUNITIES

LEADERSHIP OPPORTUNITIES

- **Adopt Next Generation Science Standards**
- **Effectively implement Common Core**
 - Embed in basic education
 - Foster connections: out of school, early learning, postsecondary
 - Align graduation requirements and electives
 - Focus teacher preparation, support and evaluation
- **Incent progress and provide support in accountability system**



DISCUSSION

JOIN US

Find tools and resources at
www.washingtonstem.org

Join Washington STEM on
Facebook

Follow us on **Twitter**
[@washingtonstem](https://twitter.com/washingtonstem)

