INNOVATING OREGON'S FUTURE

A Targeted STEM Strategic Plan

December 2015

STEM Investment Council

Created to assist the Chief Education Officer with the development and implementation of a long-term strategy to advance the state's STEM goals.

By 2025:

- **Double the number of students proficient or advanced in math and science.**
- **Double the number of STEM degrees and credentials.**

STEM Investment Council Vision

To build an inclusive, sustainable, innovation-based economy...by empowering individuals… [with] skills and mindsets necessary to:

- **Fully contribute to an increasingly complex and technologically rich global society**
- **Address high-demand workforce and industry needs**
- **Improve the prosperity of all individuals and communities across the state**
- **Become creative, life-long learners who can adapt to changing social and economic conditions**

Oregon Is on the Move

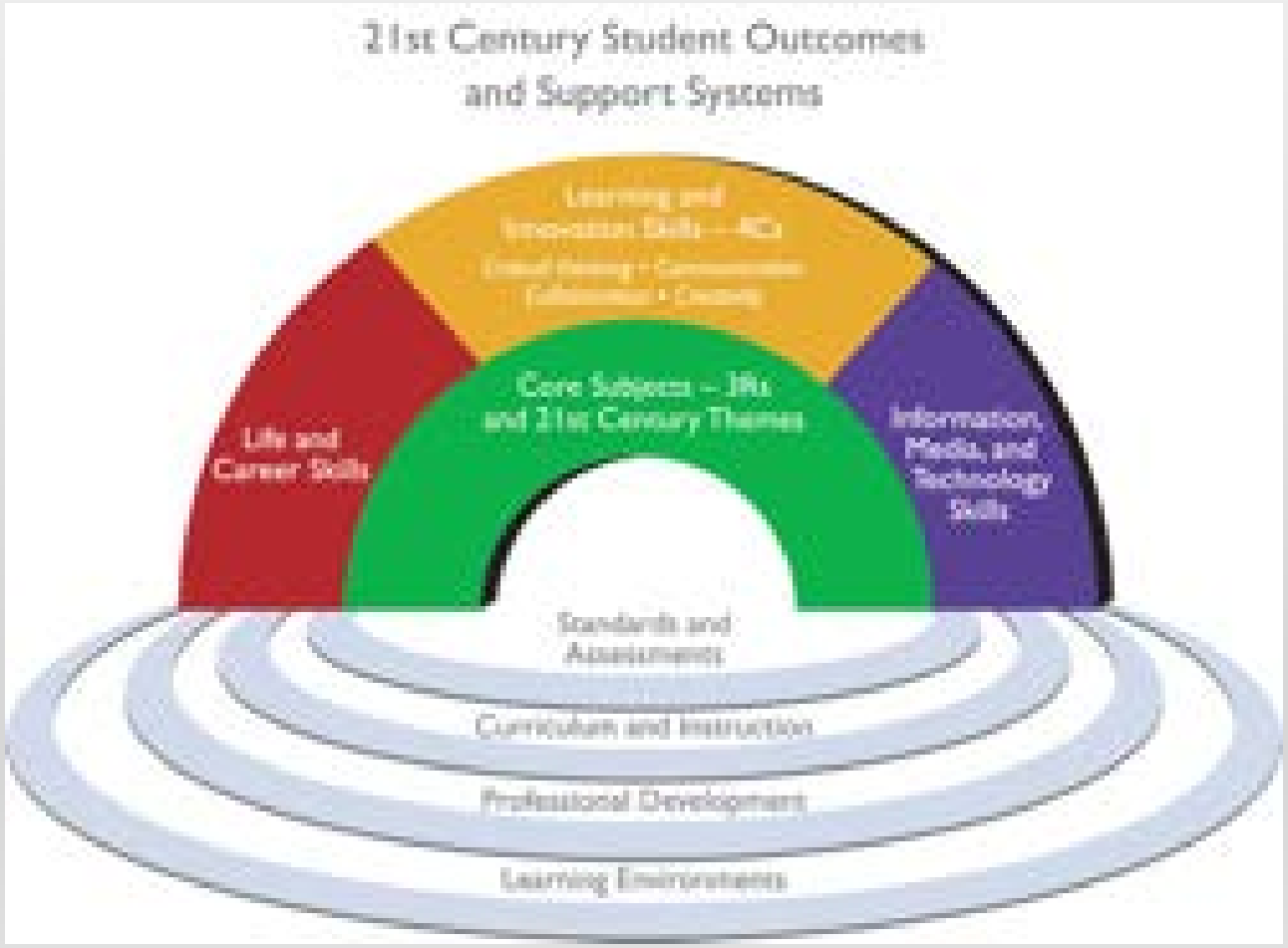
Economic Growth

- 22,000 new jobs in 2013, driven by STEM
- Nation's 8th fastest growing economy
- By 2020, 40,000 new job openings in STEM per year
- Most in-demand industries: Healthcare, Manufacturing & Information Services

Prosperity for all students

What skills are necessary to succeed in tomorrow's world?

- Creativity and Innovation
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity and Accountability
- Leadership and Responsibility



Oregon's Imminent Threat

4-year Graduation rate one of the lowest in the country.

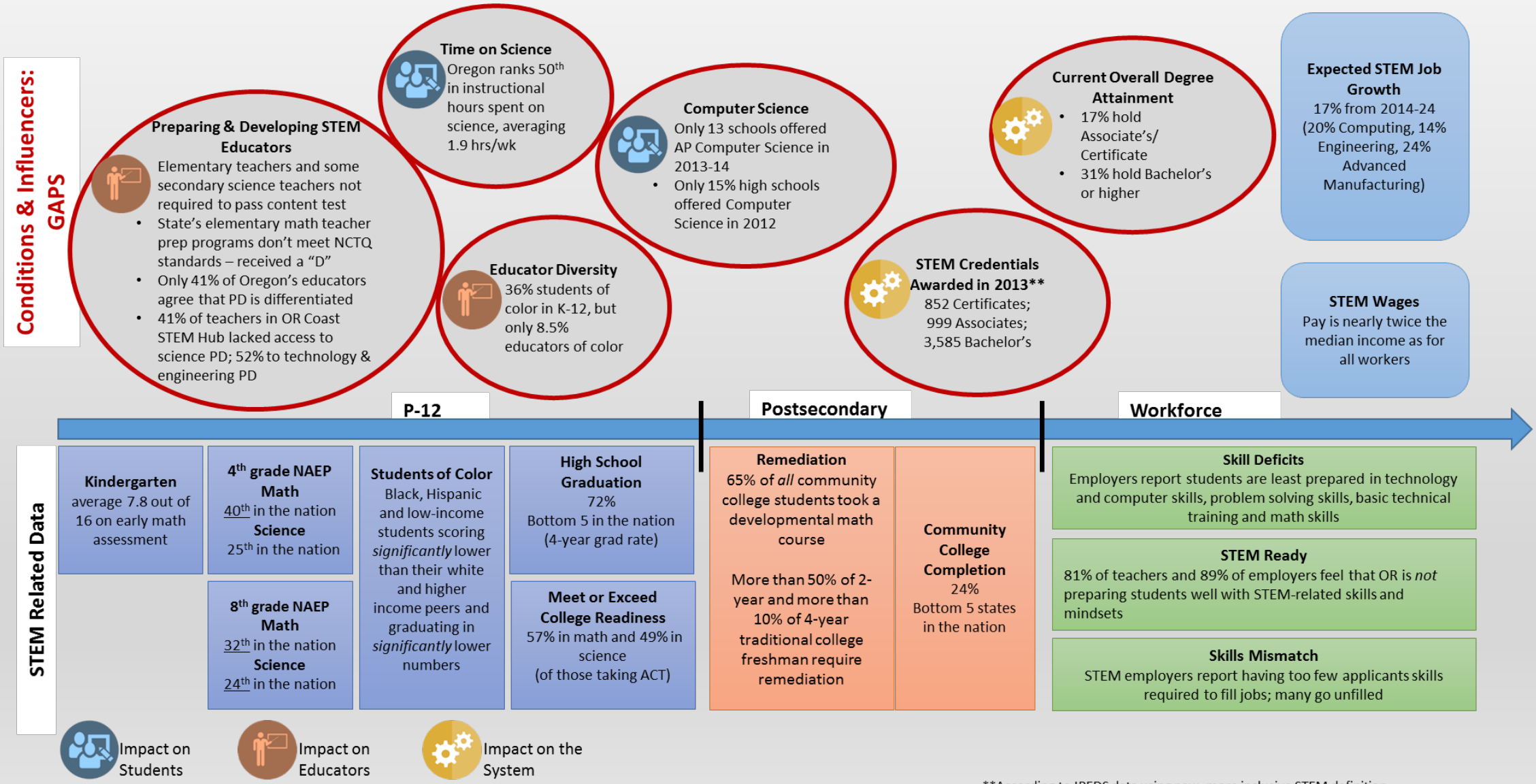
Student performance is stuck in the middle

- 40th in nation on 4th grade math
- 25th in nation on 4th grade science
- 32nd in nation on 8th grade math
- 24th in nation on 8th grade science

Students of color and low-socioeconomic status significantly trail their peers.

- Averaging 18+ points lower on math benchmarks

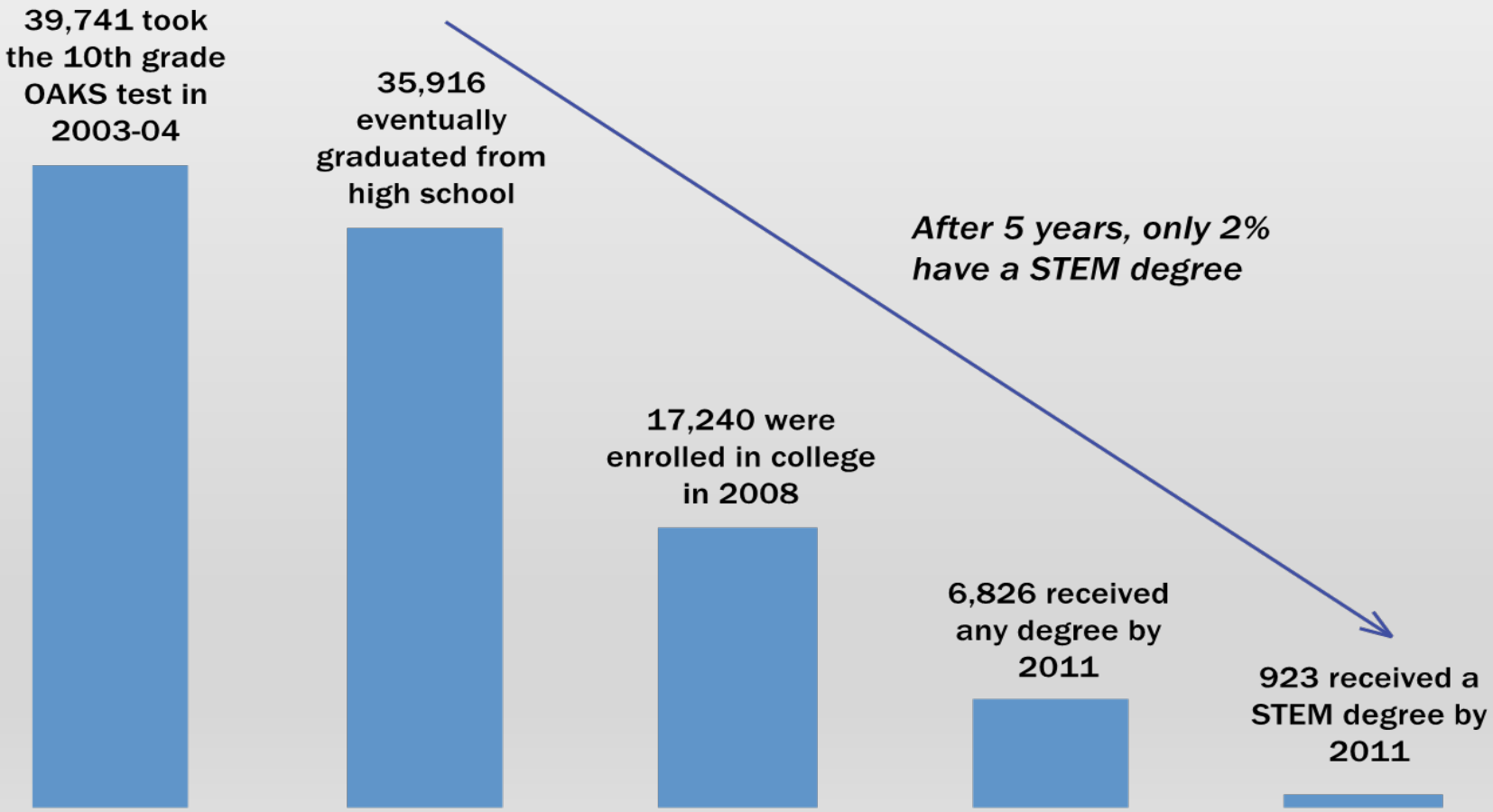
STEM Policy and Investment Gaps



**According to IPEDS data using new, more inclusive STEM definition

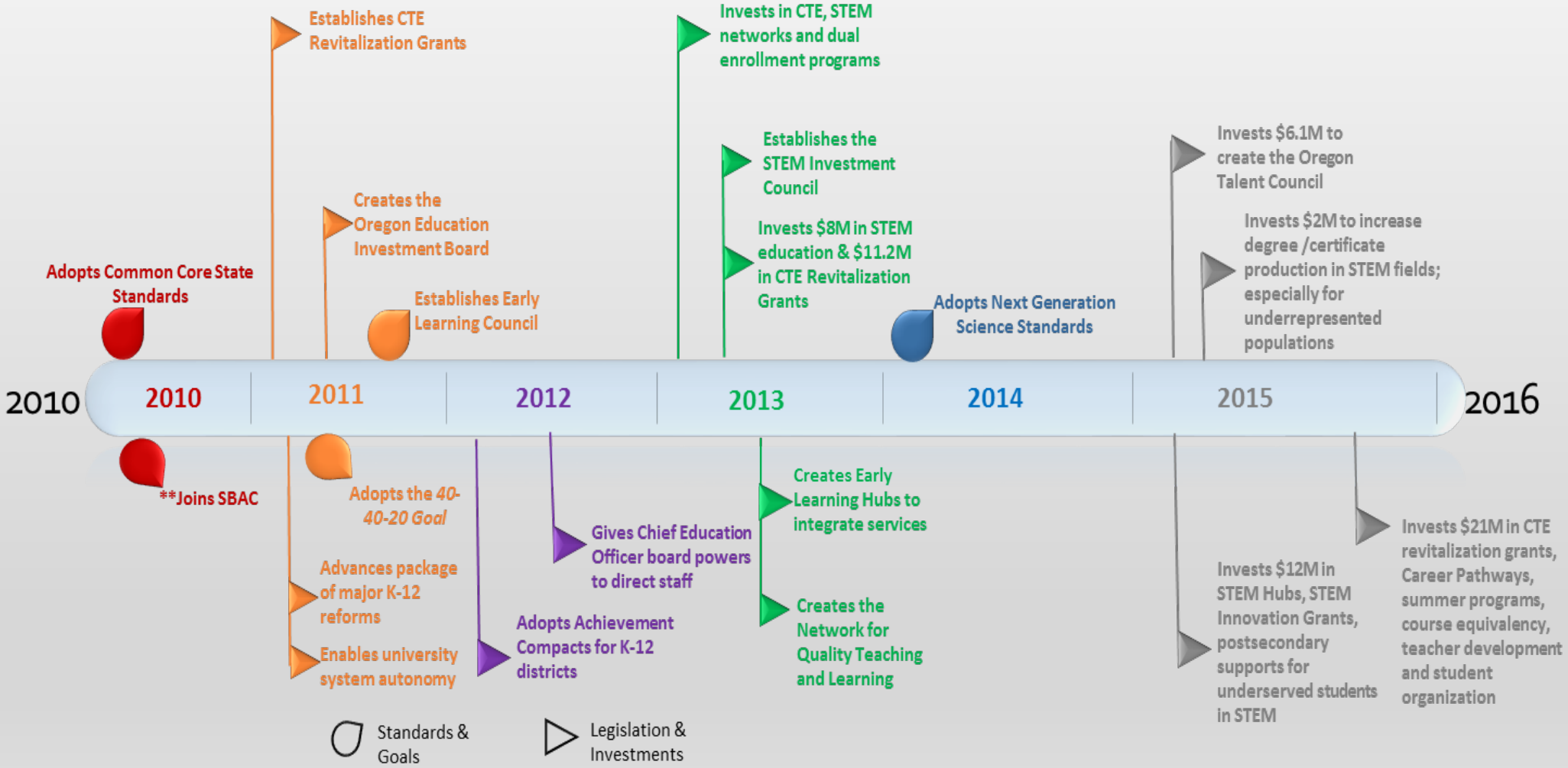
Gaps Correlate with Mediocre STEM Results

- STEM Outcomes for the Class of f2005



Source: ECONorthwest analysis of ODE and National Student Clearinghouse data.

Closing the Gaps:
STEM+CTE Education Goals, Policies and Investments



**Offers an "*opt-out*" provision

STEM Investment Council: *Beliefs*

All people have creative potential

Each student deserves an opportunity at prosperity

Diversity is our strength

Engaged learners succeed

Education is a collective responsibility

Innovation is the cornerstone of prosperity

Learning takes courage, persistence, and humility

STEM skills are essential skills

All learning is cross disciplinary

The best way to learn STEM is to DO it

STEM Investment Council: *Goals*

1.  **Inspire and empower our students** to develop the knowledge, skills, and mindsets necessary to thrive in a rapidly-changing, technologically rich, global society.

2.  **Ensure equitable opportunities and access** for each and every student to become a part of an inclusive innovation economy.

3.  **Continuously improve the effectiveness**, access to resources, and the number **of** formal and informal **STEM educators**.

4.  **Create sustainable and supportive conditions** to achieve STEM outcomes aligned to Oregon's economic, education, and community goals.

Legend:  Impact on students  Impact on educators  Impact on system

STEM Investment Council: *Goals*

Goal #1: Inspire and empower our students to develop the knowledge, skills, and mindsets necessary to thrive in a rapidly-changing, technologically rich, global society.

PRIORITY OUTCOMES:

1. Increase time on science in elementary school.
2. Transform mathematics instruction with a focus on application.
3. Increase computer science and digital literacy.

STEM Investment Council: *Goals*

Goal #2: Ensure equitable opportunities and access for each and every student to become a part of an inclusive innovation economy.

PRIORITY OUTCOMES:

1. Double the number of underserved and underrepresented STEM students participating in informal, out-of-school STEM learning opportunities.
2. Double access to quality support services and pre-college transition/bridge programs.
3. Increase access to STEM role models and professional networks.

STEM Investment Council: *Goals*

Goal #3: Continuously improve the effectiveness, access to resources, and the number **of** formal and informal **STEM educators**.

PRIORITY OUTCOMES:

1. Provide sustained, high-quality professional development opportunities to at least 50 percent of Oregon's STEM educators.

STEM Investment Council: *Goals*

Goal #4: Create sustainable and supportive conditions to achieve STEM outcomes aligned to Oregon's economic, education, and community goals.

PRIORITY OUTCOMES:

1. Double the state's STEM & CTE investment.
2. Create a data dashboard of key STEM.

Tracking Our Progress

Data & Metrics Subcommittee workplan

- Develop both leading and lagging indicators that enable us to:
  1) Communicate and monitor the change that we seek (data dashboard)
  2) Assess the effectiveness of Hubs and other investments
- Collect longitudinal data to track student progress
- Assess the alignment of selected indicators with outcomes

Tracking Our Progress

Elementary

- Kindergarten readiness in math
- Elementary time on science
- 4th Grade math and science achievement scores

Middle School

- Expressed interest in STEM
- Underserved students participating in out-of-school STEM programs
- 8th grade math and science achievement scores

High School

- 9th/10th grade STEM-CTE participation rates
- High school graduation rates
- Students declaring a postsecondary STEM interest

Post-secondary

- Enrollments in developmental mathematics
- Underserved student participation in STEM-related research opportunities and internships
- Postsecondary STEM degrees and certificates

Workforce

- Time to fill STEM job openings
- Employment rates within one year of credential
- % of imported talent

Feedback

https://www.surveymonkey.com/r/99K752J

Next Steps

- Incorporate additional feedback from Summit
- Agency & Board discussions
- Regional discussions in February/March
- Finalize plan
- Launch in May