



IDAHO
STEM
ACTION CENTER



Senate Education Committee Presentation
February 12, 2018

Dr. Angela Hemingway
Executive Director

Connecting STEM education and industry to ensure Idaho's long-term economic prosperity.



Engineering innovative STEM opportunities for educators, students, communities and industry to build a competitive Idaho workforce and economy.

Idaho STEM Action Center

Facts About Idaho Jobs

Idahoworks.gov has over 20,000 job opening with ~5,000 that are hard-to-fill, open for 90+ days

Idaho has the fastest population growth, the 3rd fastest job growth, and 2nd fastest tech sector growth

100% of Idaho industry believe employees should possess both technical and 21st century skills



Facts About Idaho Jobs

Within 20 years,
80% OF JOBS
will require skills in
TECHNOLOGY.

Idaho's tech
sector is
the second
fastest
growing in
the nation at

6.3%

In Idaho, **STEM JOBS**
are expected to grow
23% by 2024.

16 of the 20
FASTEST GROWING
careers in Idaho require
STEM SKILLS.



STEM Jobs in 2017

In 2017, **6,992 STEM JOBS** WERE UNFILLED IN IDAHO, resulting in nearly **\$420 Million** of unclaimed personal income.

If these **STEM JOBS** were filled, state tax revenues would **INCREASE BY NEARLY \$24 MILLION.**

Idaho's STEM jobs **PAY WELL** **DOUBLE THE MEDIAN WAGE** of non-STEM JOBS.

As Legislated in Idaho Code

(Idaho Code §67-823, §33-1633, and §33-4701)

- Support high-quality STEM and CS **professional development** for educators
- Distribute **grants** to students, educators, and communities
- Engage **industry** to support STEM/CS education outcomes
- Support student STEM and CS **competitions**
- Support STEM and CS **pilot projects**
- Serve as a **resource** center for instructional materials and best practices
- Support **traditionally underrepresented population** in STEM and CS
- Identify and recognize high quality **STEM Schools**
- **Work well with other** agencies and partners!



Legislated Goals of STEM AC

- **GOAL #1:** Coordinate & facilitate implementation of STEM programs throughout Idaho
- **GOAL #2:** Align education and workforce needs throughout Idaho
- **GOAL #3:** Increase awareness of STEM throughout Idaho



GOAL #1: Coordinate & facilitate implementation of STEM programs throughout Idaho

- **Professional Development** - High quality STEM/CS PD (next slide)
- **Grants:** PK12, CS Device, Camps, Competitions, Family/Career STEM Events, and Sponsorships
- **Camp Scholarships:** STEM, CS, and Coding



- **Competitions:** Next slide
- **Awareness Events:** Family Day at the Fair, STEM Matters Day at Capitol, and Hour of Code



Professional Development

- i-STEM Summer Institutes
- ISEF PD, travel and materials grant
- BotBall Robotics PD and Materials
- FabSLAM – 3D Fabrication PD and Showcase Events
- AP and Dual Credit PD
- Idaho Math and Science Conference PD
- Code.org PD
- Drones PD and Resources
- Virtual Reality PD and resources
- Edison Community Robotics
- Making Sense of Science
- Educurious
- FIRST Robotics



Student Competitions

- Regional Idaho Science and Engineering Fairs
- FIRST Robotics Expansion Grant & Student Travel Grants
- FabSLAM – 3D Fabrication Middle School Competition
- BotBall Competitions (Regional and International)
- Invent Idaho's Lead Sponsor
- CTE student competition travel
- Future Cities competition and travel
- Drone Competition
- Science Bowl
- Congressional App Challenge
- Math Counts
- Khan Academy LearnStorm



GOAL #2: Align education and workforce needs throughout Idaho



- Workforce Development Council, Apprenticeships, Internships, Mentorships
- Project-Based Virtual Mentorship Platform (slide later)

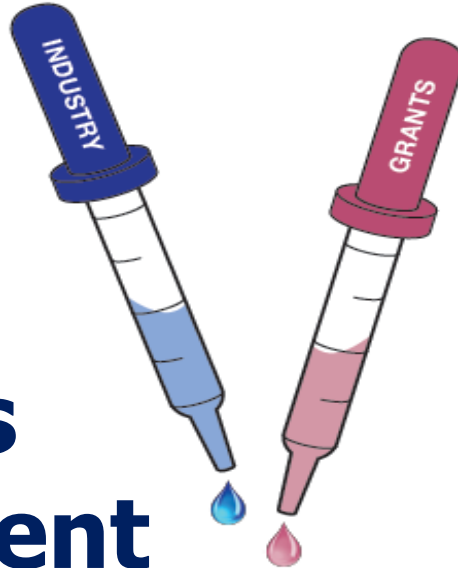


- INDEEDS Award for excellent STEM educators
- Hour of Code, Code.org, and IDLA
- CS Co-Op, Higher Ed and Industry
- CS dual credit training
- Expansion of *I Do Code* CS teacher endorsement

FY18 APPROPRIATION

\$4,489,500

Idaho's Commitment To STEM



\$2million
Ongoing
(\$67-823)
STEM

Office
\$489,500

\$2million
One-Time
(\$33-1633)
CS



Up to
\$2million
Spending
Authority



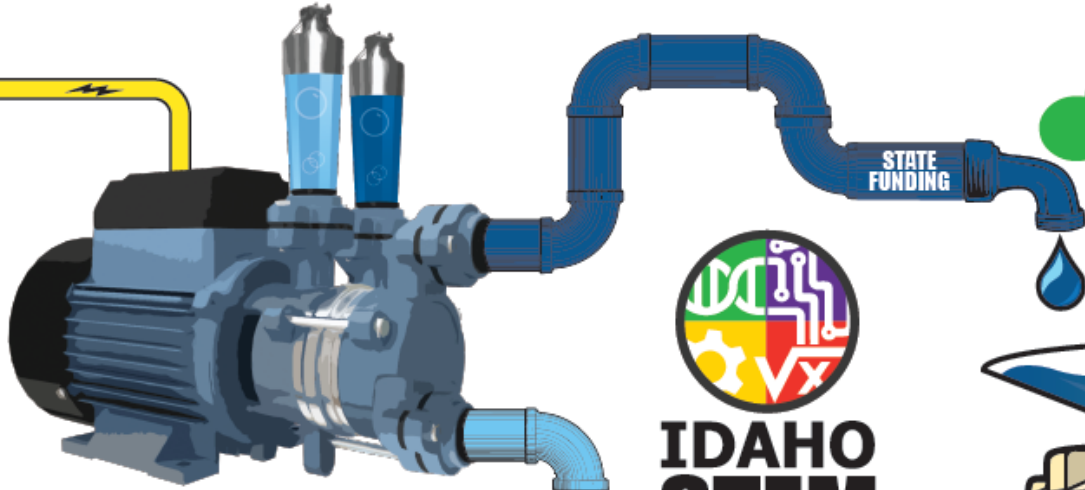
STEM EDUCATION FUND



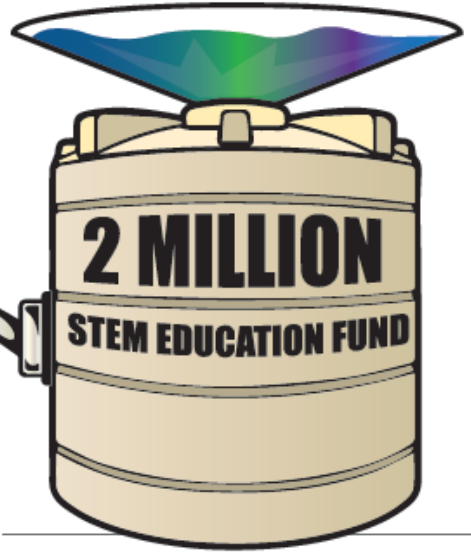
\$4,489,500

GENERAL FUND

FY 2019



**IDAHO
STEM
ACTION CENTER**



CAMPS **PROFESSIONAL DEVELOPMENT** **GRANTS** **COMPETITIONS**



What is the **STEM AC Foundation Role?**

- Create 501c3/Foundation Status
- Monetary Donations
- Cash Equivalent and In-Kind Support
- Apply for Grants
- Raise awareness of the need for STEM education and opportunities



GOAL #2: Align education and workforce needs throughout Idaho

**Donors – Anticipated Total by Feb. 2018
(Over \$600K)**

- INL - \$270K in process
- Micron - \$174K in process
- Dept. of Ed i-STEM Support – \$58K
- Andeavor (formerly Tesoro) - \$25K
- ICfL – \$23K
- Dutch Brothers - \$23K
- Cable One - \$10K
- INDEEDS Sponsorships (10 sponsors) – \$10K
- Power Engineers - \$2K
- Individual Donors (22) - \$10K
- In talks with Simplot, Clearwater, Verizon, Fluor, Switzer, etc.

GOAL #2: Align education and workforce needs throughout Idaho

Top 5 Programs Donors are Choosing

- **Educator PD and Resources: \$305K**
- **Camp Support: \$185K**
- **Competitions: \$77K**
- **Family STEM Events: \$11K**
- **INDEEDS Teaching Awards: \$10K**



Other funding sources: ESSA and STEM

- ESSA puts a greater emphasis on ensuring a **well-rounded education** and **ensuring equity**.
- **ESSA recognizes that:**
 - High-quality STEM education opportunities are essential to achieving both these goals
 - STEM learning opportunities and support for STEM teachers is very important
 - States need flexibility to set new policy and funding priorities, and they can do that to support STEM learning

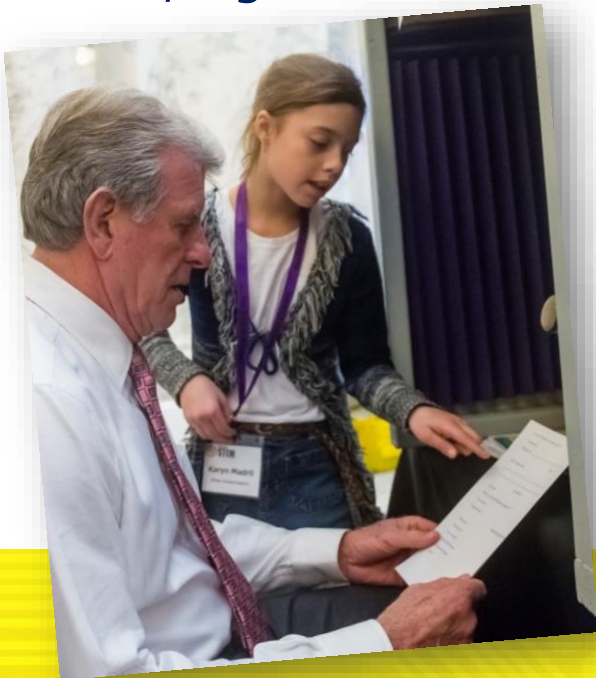
In-Kind Total

- Over \$1.1M as of February 1, 2018 (7 months)
- In the areas of judges, mentors, industry partnerships, awareness events, and media coverage



GOAL #3: Increase awareness of STEM throughout Idaho

- **Presentations:** Local, state, and national
- **Interviews** on radio, news, blogs, and magazines
- **Sponsorships of Key Events:** Hispanic Youth Conference, Inspire to Hire, IASA, ISBA, Super Conference, Western Idaho Fair, Gowen Thunder, Lights On Afterschool, etc.



- **Grants:** Family STEM Awareness and Career Awareness
- **National STEMx** Board Member
- **Governor's Designee** on Workforce Development Council

Data From Family STEM/Career Awareness Events

Students

- 36% increase in awareness of STEM careers
- 83% want to study STEM in post-secondary
- 95% say STEM is fun!

Parents

- 92% believe their community should invest more in STEM
- 99% would like their child to pursue a STEM career
- 98% want their child to have access to a mentor



Virtual, Project-Based, Statewide Mentorship Platform

- Focused on student projects, especially related to competitions
- Industry and higher ed support for educators whose students are working on projects that could benefit from additional outside-the-classroom support
- One of the most powerful tools for retention of students (especially females) in STEM is having a strong mentor
- Available NOW!
- <https://mentorship.stem.idaho.gov/>

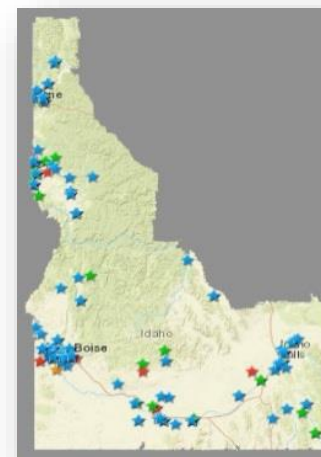


GOAL #3: Increase awareness of STEM throughout Idaho

Impact data map available:

- Map contains funding opportunities and legislative districts for all funded opportunities

[Data Map Link](#)



Other Impact Number

	FY16	FY17	FY18 (estimates)
Student Engagements	10,428	210,000	210,000+
Educator Engagements	1,200	4,800	5,000+
Community STEM Events	36	45	75+
Cash	\$72,000	\$205,000	\$600,000
In-Kind (and cash equivalent)	Did not track	\$662,000	\$1,100,000+

Legislative Awareness Areas

- Connect us with mentors, judges, volunteers, and donors
- Two additional STEM Team Members:
Financial Officer and
Research Analyst
- STEM School Designation Rollout
- I Do Code, CS endorsement – 20 vs 14 credits?
- CS Co-Op at UI?
- Ask all secondary schools to offer CS in-person or online?
- CTE vs Academic Certification?
- CTE designation tied to course not teacher?



Stay In Touch!

- Visit our **Website:** STEM.Idaho.gov
- Like Us on **Facebook!**
- Follow Us On **Twitter** @IdahoSTEMAC
- Sign up for our monthly **e-newsletter**
- **Get Involved**



Contact Information

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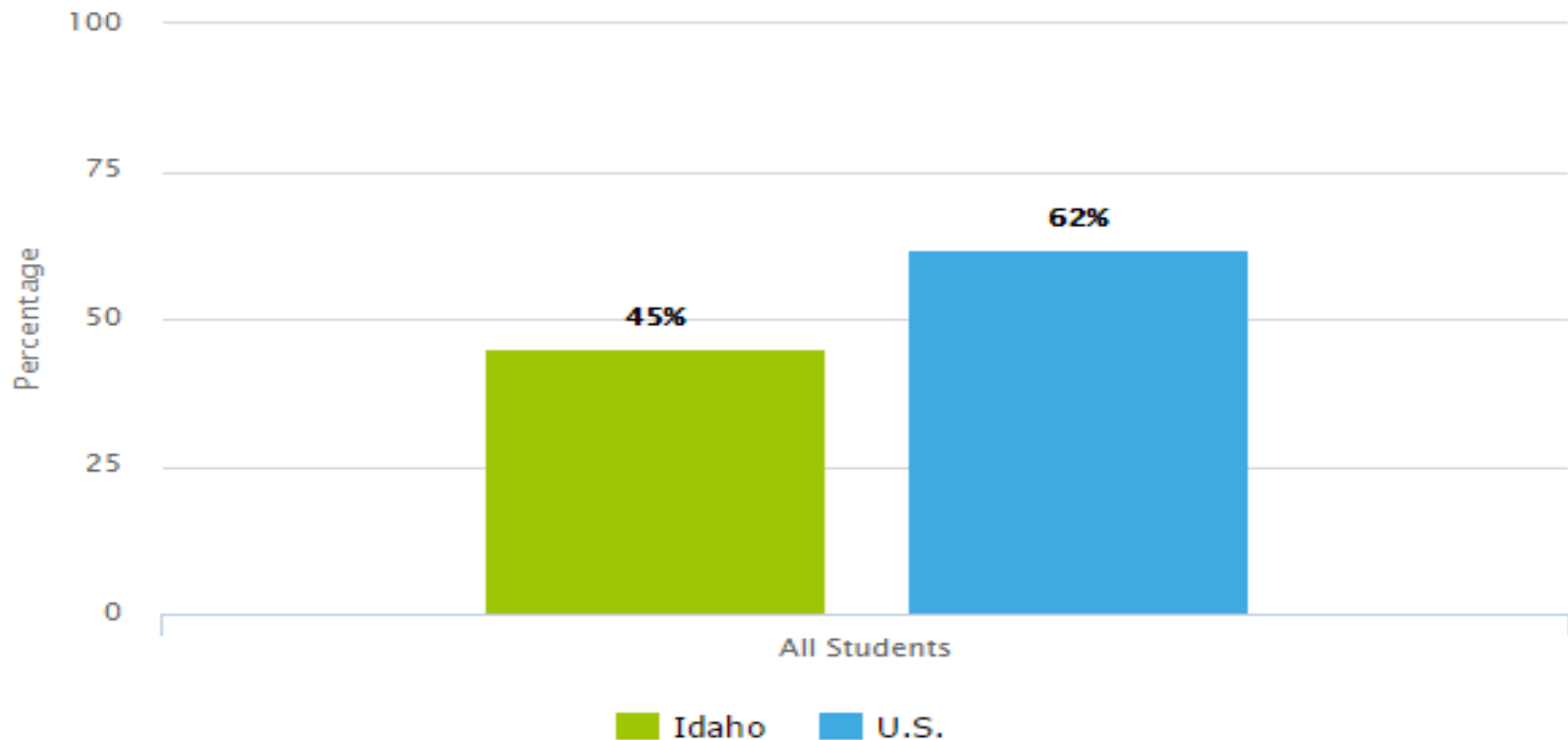


Questions? Ideas? Feedback? Suggestions? What are we missing?



Idaho Teachers Need Resources –

8th Grade Idaho Science Teachers who say they have all or most of the resources that they need

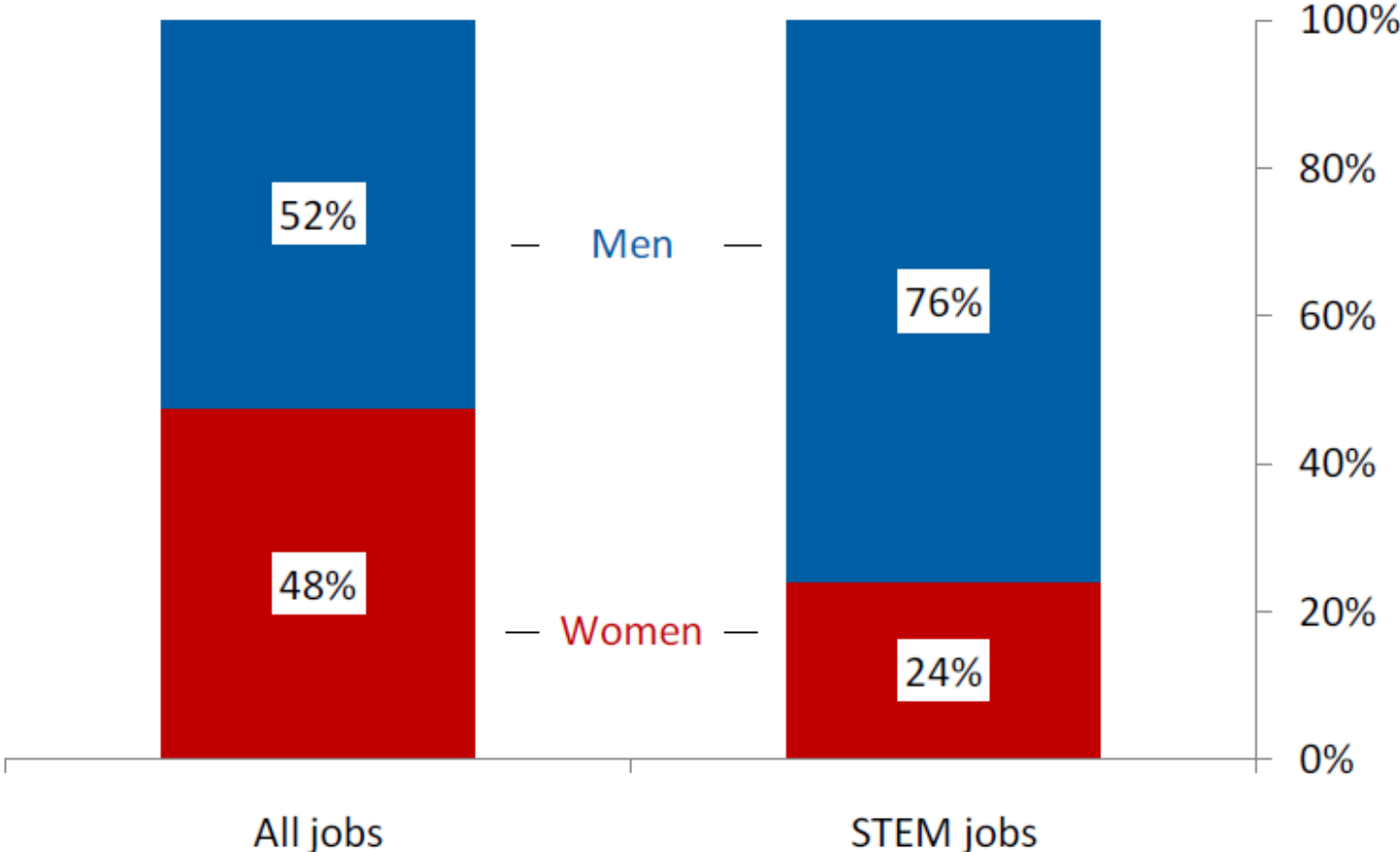


Source: U.S. Dept of Education, 2015

2017 Idaho AP Test Taking by Gender Calculus AB and Computer Sci	CALCULUS AB	CALC AB % Boys/Girls	COMPUTER SCIENCE PRINCIPLES	CSP % Boys/Girls	AP COMPUTER SCIENCE A	AP CS A % Boys/Girls
TOTAL	976	--	190		114	--
MALES	505	52%	127	67%	86	75%
FEMALES	471	48%	63	33%	28	25%

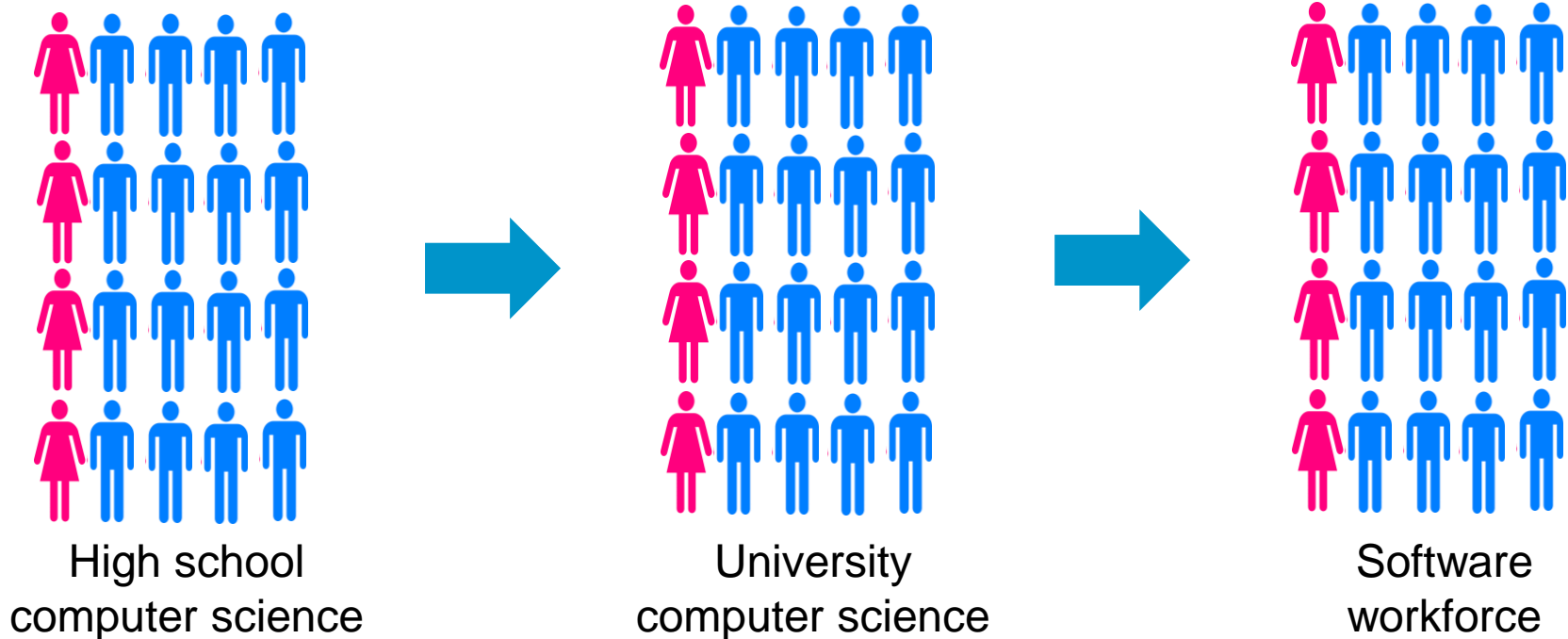
Source: Idaho State Board of Education

Percentage of Women and Men in ALL Jobs vs STEM Jobs



Source: ESA calculations from American Community Survey public-use microdata

The Diversity Issue Starts in K-12



Women who try AP Computer Science in high school are ten times more likely to major in it in college, and Black and Hispanic students are seven times more likely.