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.

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

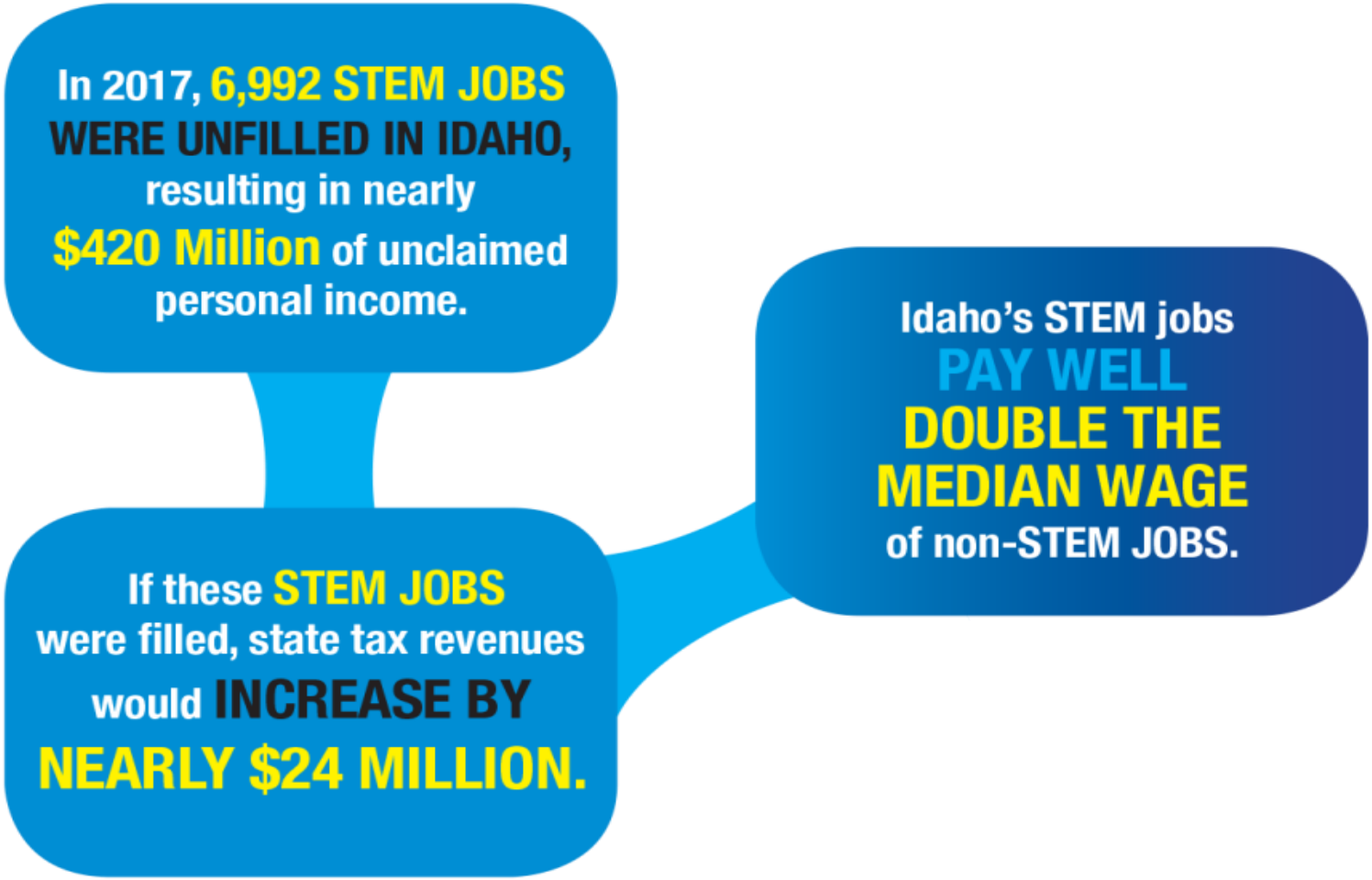
Within 20 years,
80% OF JOBS
will require skills in
TECHNOLOGY.

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



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

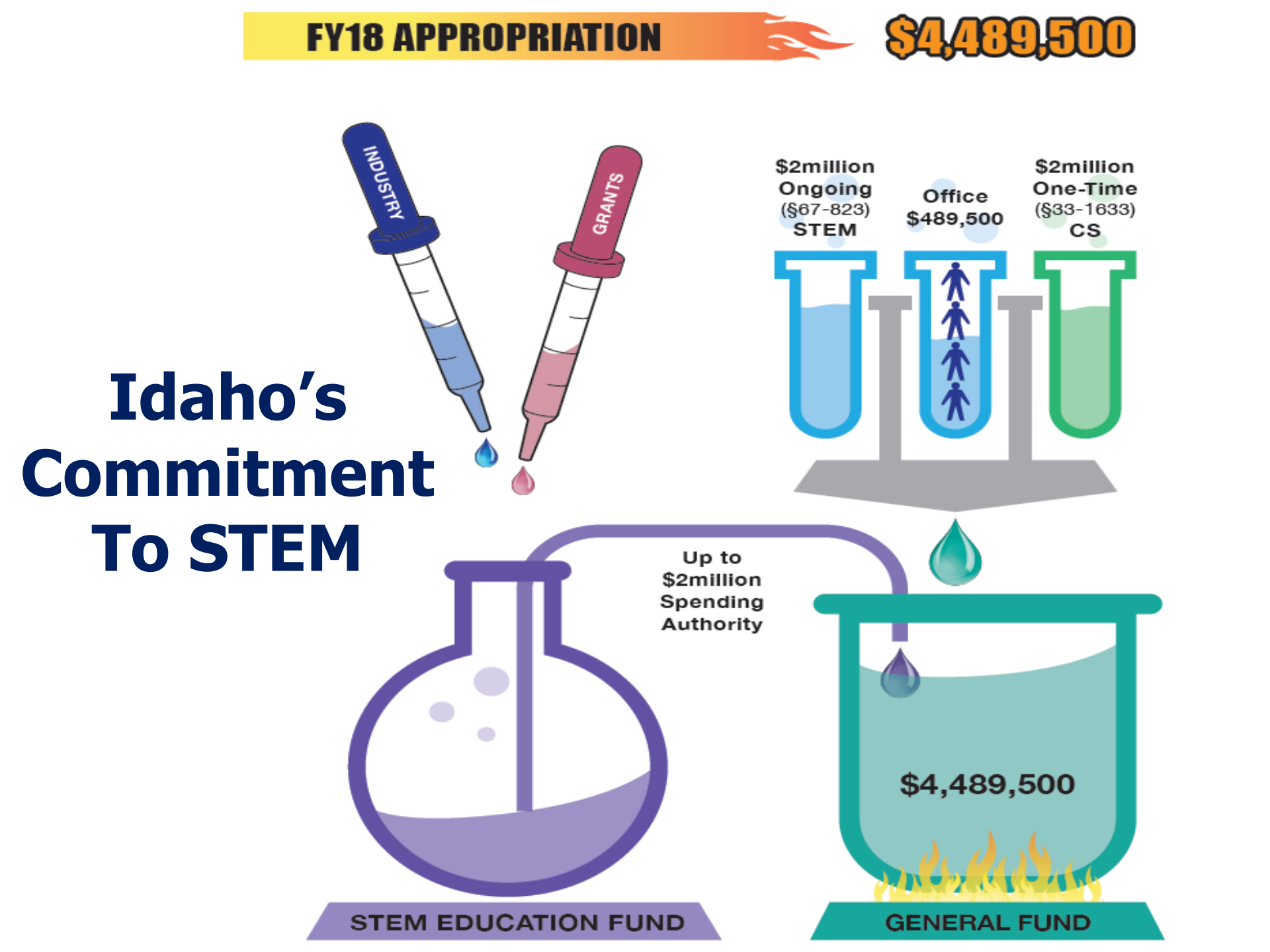
- Regional Idaho Science and Engineering Fairs
- FIRST Robotics Expansion Grant & Student Travel Grants
- FabSLAM – 3D Fabrication Middle School Competition
- BotBall Competitions (Regional and International)
- Invent Idaho's Lead Sponsor
- CTE student competition travel
- Future Cities competition and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

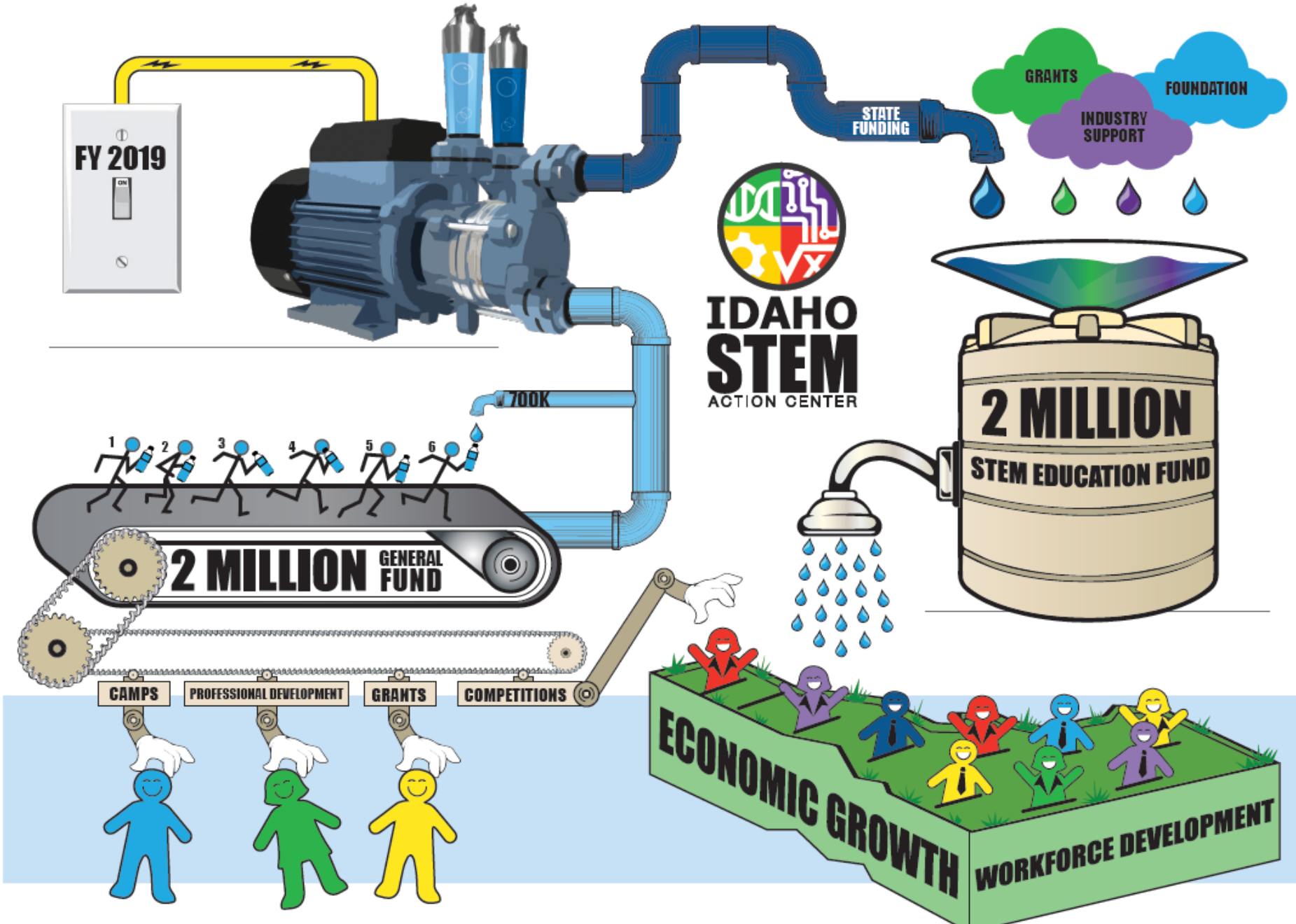
GOAL #2: Align education and workforce needs throughout Idaho

- 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

Idaho's Commitment To STEM




FY 2019
STATE FUNDING
GRANTS
FOUNDATION
INDUSTRY SUPPORT
IDAHO STEM ACTION CENTER
700K
2 MILLION
STEM EDUCATION FUND
1
2
3
4
5
6
2 MILLION GENERAL FUND
CAMPS
PROFESSIONAL DEVELOPMENT
GRANTS
COMPETITIONS
ECONOMIC GROWTH
WORKFORCE DEVELOPMENT

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

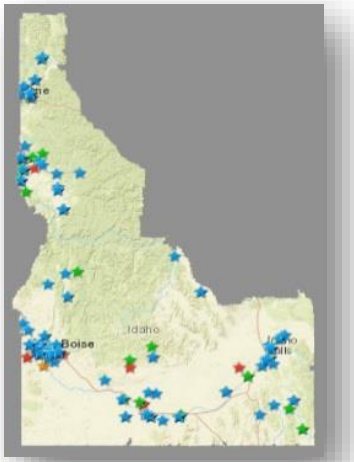
- Focused on student projects, especially related to competitions
- Industry and higher ed support for educators whose students are working on projects that could benefit from additional outside-the-classroom support
- One of the most powerful tools for retention of students (especially females) in STEM 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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-STEM Action Center

-Executive Office of the Governor

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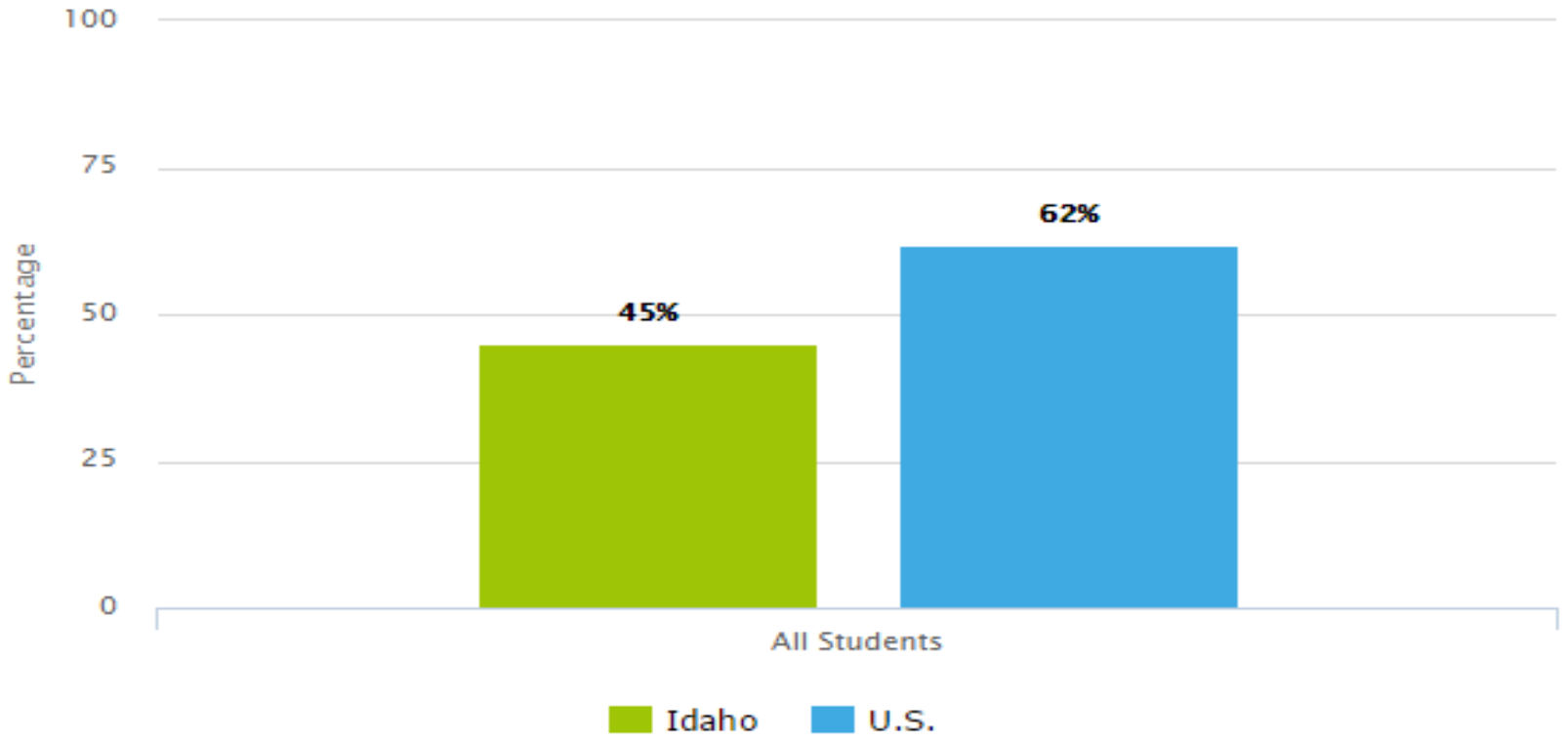
Questions? Ideas? Feedback? Suggestions? What are we missing?

Idaho Teachers Need Resources –

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

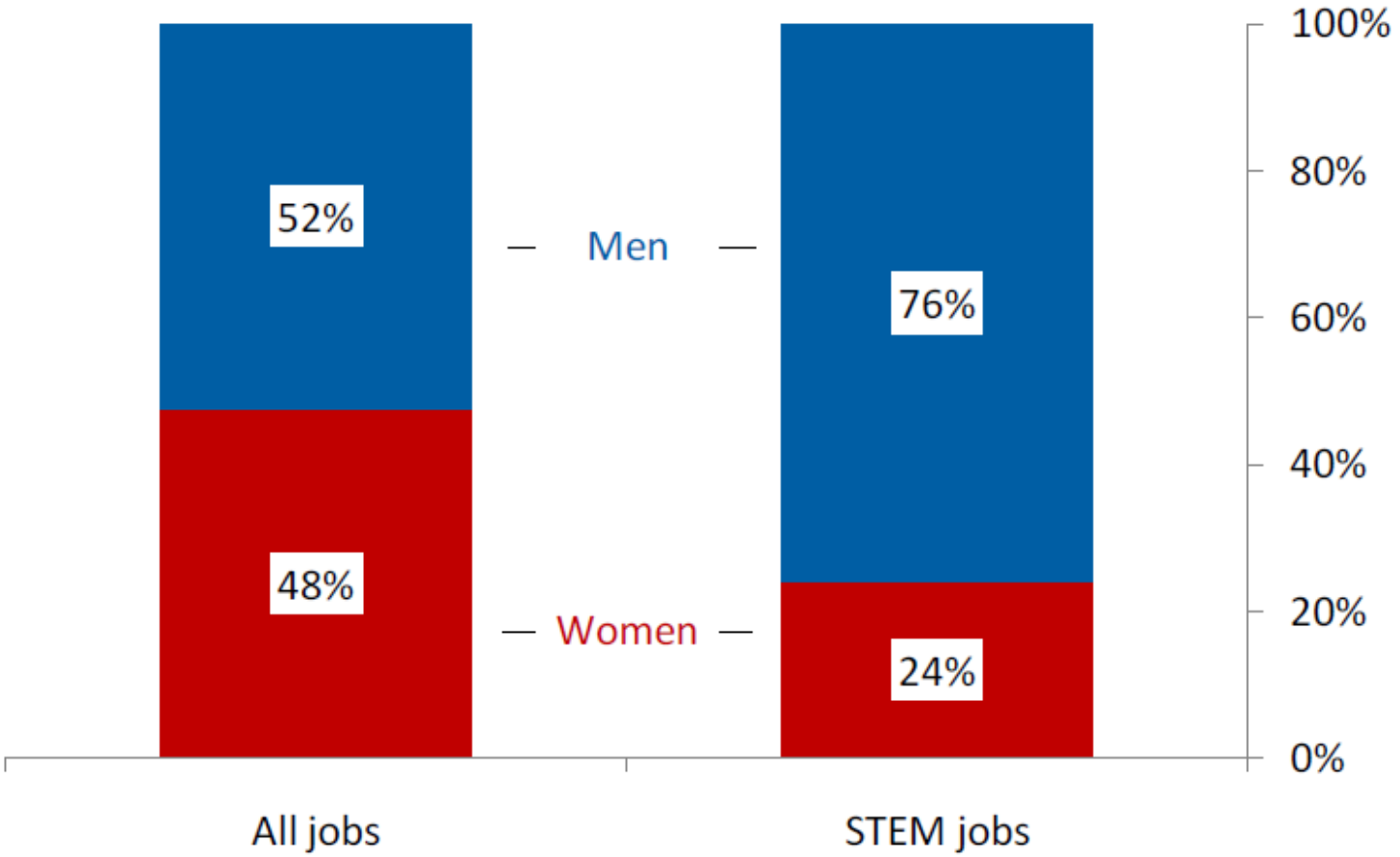


Source: U.S. Dept of Education, 2015

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%

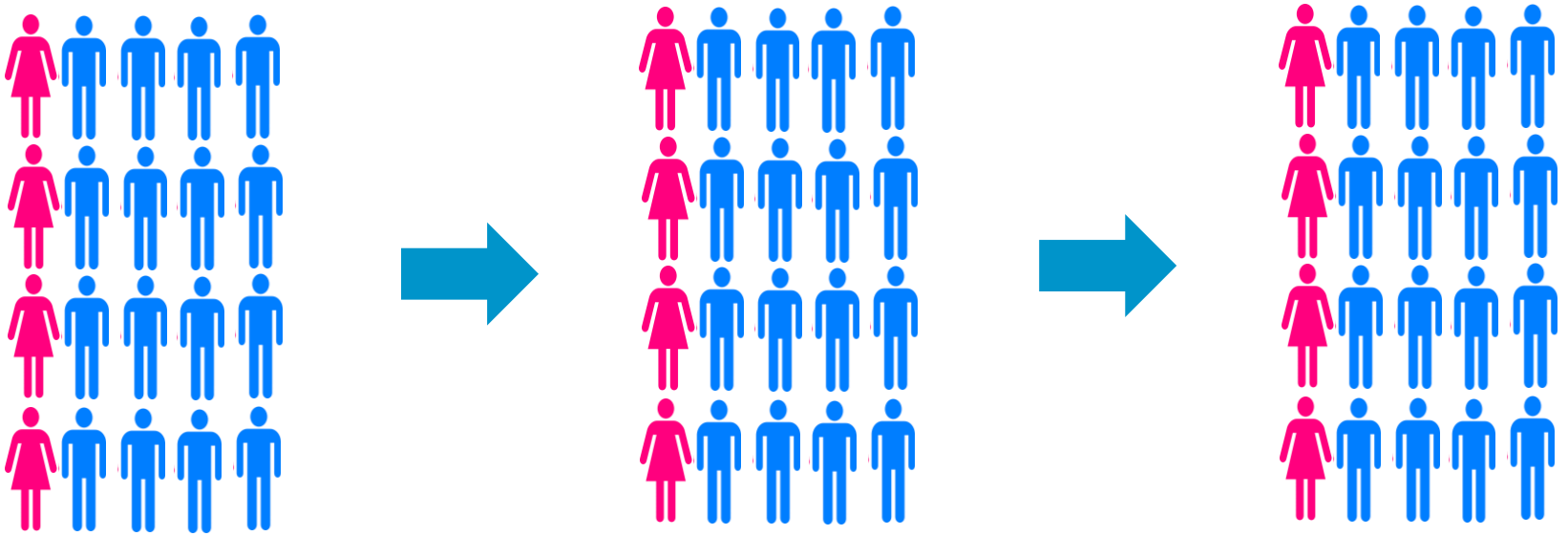
Source: Idaho State Board of Education

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



High school computer science

University computer science

Software workforce

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.

Sources: College Board, National Center for Education Statistics, Bureau of Labor Statistics