



**IDAHO**  
**STEM**  
ACTION CENTER



# **Senate Education Committee Presentation**

**February 17, 2016**

**Angela Hemingway**

**Executive Director**

# STEM Board



**Dr. Dave Hill / Chair**

State Board of  
Education member



**Dee Mooney / Vice Chair**

Executive Director,  
Micron Foundation



**Kenneth Edmunds**

Director, Idaho  
Department of Labor



**Von Hansen**

CEO, AlertSense Inc.



**Dr. Lorna Finman**

CEO, LCF Enterprises



**Megan Ronk**

Director, Idaho  
Department of Commerce



**Dr. Mark Peters**

Director, Idaho  
National Laboratory



**Jeff Williams**

CEO (retired),  
Glanbia Foods



**Dr. Chuck  
Zimmerly**

Community Relations  
Officer, State Department  
of Education

# Purposes of the Center as dictated in §67-823

- Conduct STEM needs analyses of industry and education
- Identify and coordinate K-16 STEM education activities focused on workforce needs
- Engage industry to support STEM education outcomes
- Support high-quality professional development for educators
- Serve as a STEM research and resource center
- Support student STEM competitions
- Highlight innovative STEM practices
- Support STEM pilot projects

# MISSION

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

# VISION

Produce a STEM competitive workforce by implementing Idaho's K-Career STEM education programs aligned with industry needs.



# Idaho is expected to see robust job growth

Between 2014 and 2024 in Idaho

STEM jobs will grow

17%

All other jobs will grow

16%

- ▲ 14% Computing
- ▲ 9% Engineering
- ▲ 23% Advanced Manufacturing

*Source: Economic Modeling Specialists,  
International, 2015*

# STEM Jobs in Idaho Pay Well

Median earnings in Idaho STEM jobs are:

**\$32.13 /hour**

Median earnings in Idaho all other jobs are:

\$15.59 /hour

*Source: Economic Modeling Specialists,  
International, 2015*

# Unclaimed STEM Labor Wages in Idaho

Median  
STEM  
Wage  
\$32/hr

3,800  
STEM  
Jobs  
Unfilled





\$254M  
Unclaimed Labor  
Wages Annually

# CURRENT ACTIONS FY2016

Turn  
Knowledge  
Into Action!



# Impact In First 5 Months

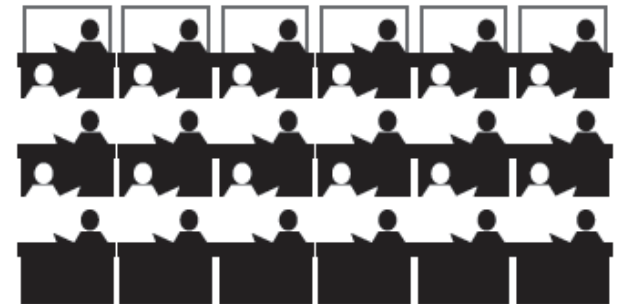
-  \$75,000 PK12 STEM & Family STEM Event Grants
-  \$50,000 FabSlam 3D design training
-  \$50,000 FIRST Robotics Regional Competition
-  \$15,000 Student Travel Grants



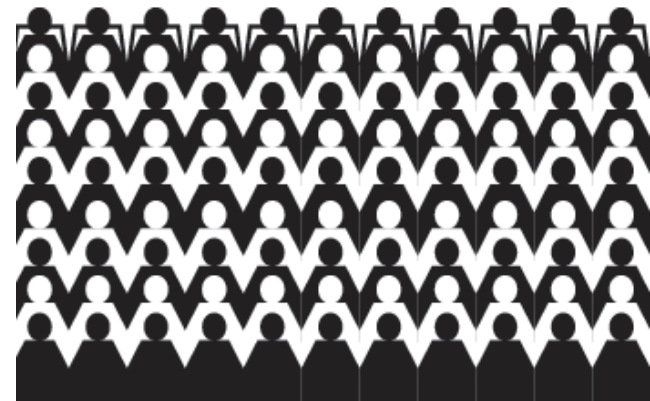
**OVER 200 BUSINESSES**



**OVER 1,200 EDUCATORS**

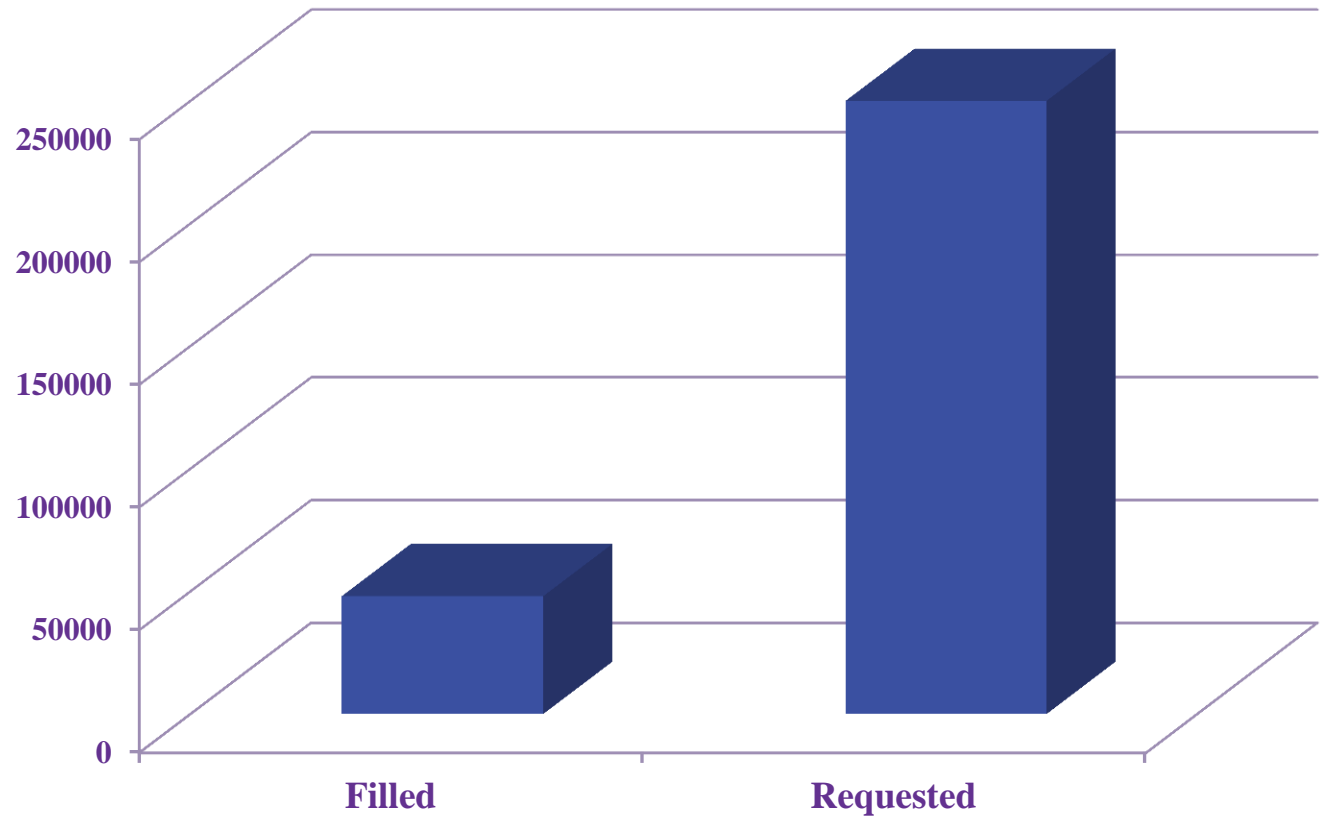


**OVER 8,000 STUDENTS**



# December 2015

- 104 applicants with over \$250,000 in need
- 23 grants of up to \$2,500 awarded



**PK12 STEM Grants - \$50,000**

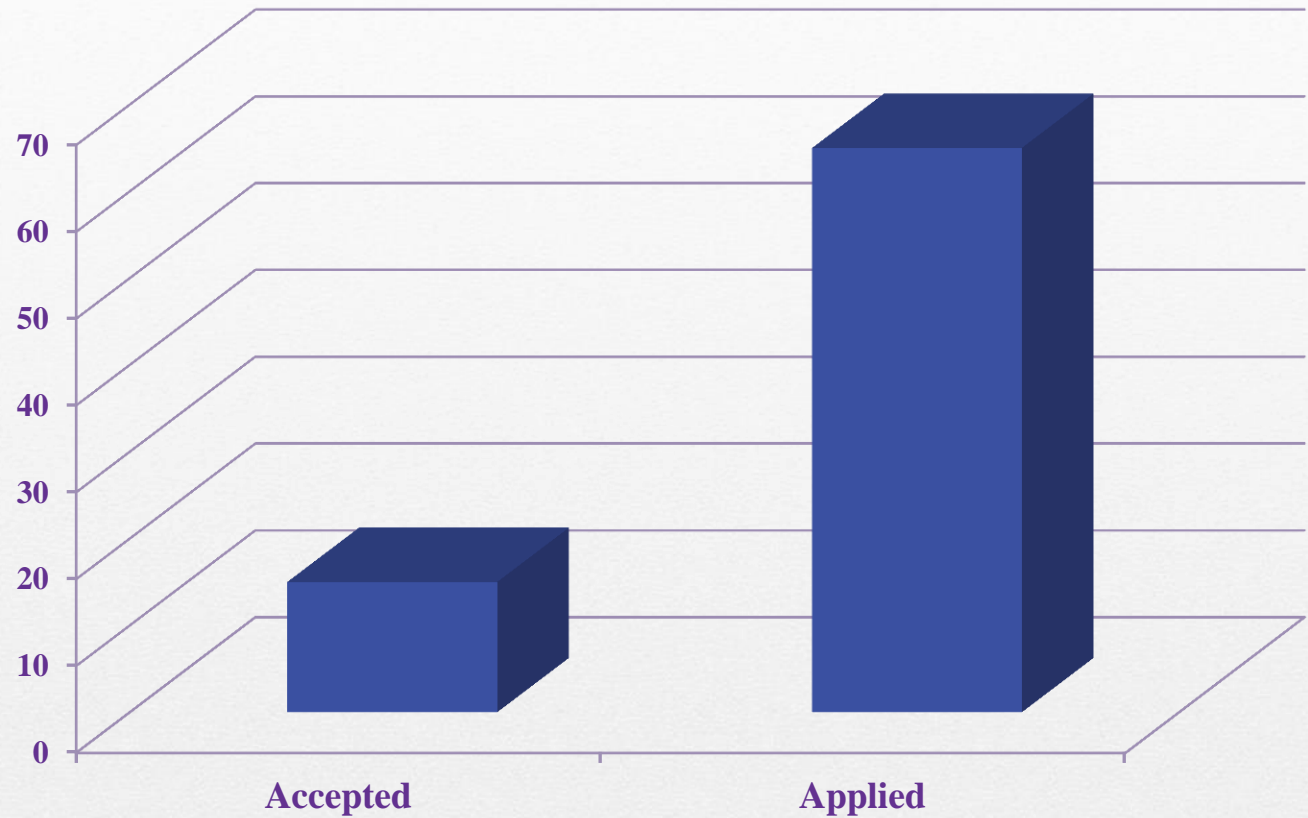


- Idaho Math and Science Conference
- i-STEM Teacher Institutes
- FABSlam – 3D Fabrication Professional Development
- Digital Library Access for Higher Education

**Professional Development \$90,000**

# Occurs March 14 – 16, 2016 at Discovery Center

- 65 applicants in one week
- 15 educators selected



**FabSLAM 3D Design and Fabrication**



- FIRST Robotics Regional Competition & Student Travel Grant
  - *March 30 – April 2<sup>nd</sup> at Taco Bell Arena*
- Invent Idaho Sponsor
- Khan Academy's LearnStorm Math Event
- FABSlam – 3D Fabrication Competition

**Student Competitions - \$90,000**

# Industry & Education Partnerships



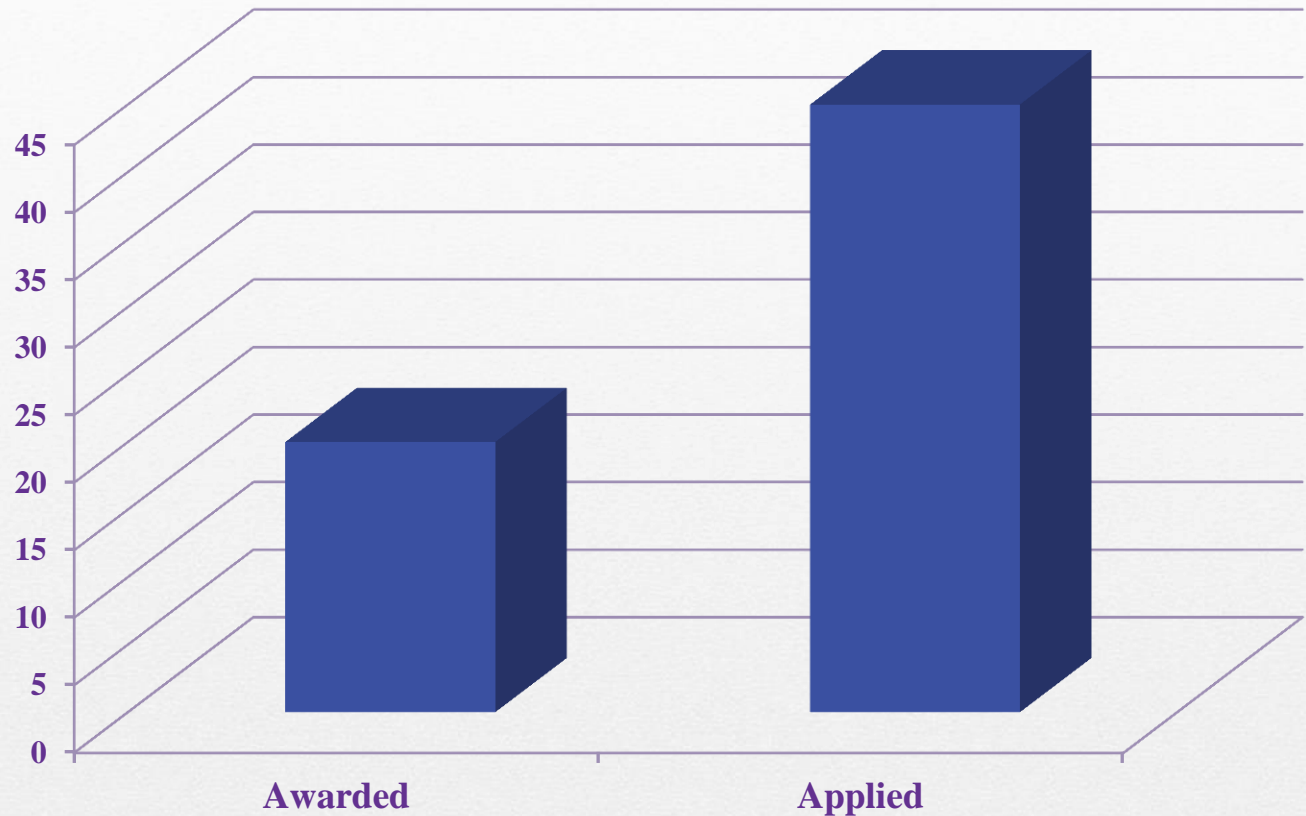


# Family STEM Events Encouraging Community Engagement

- \$20,000 Tesoro grant received = funding for 20 Family STEM events
- Supported Hour of Code

# Educators are eager to host Family STEM Events

- 45 applicants
- 20 will be selected



**Family STEM Events, Supported by Tesoro**





**Idaho STEM Educators of the Year -  
\$8,000**

**INDEEDS** Award – **Industry's Excellent Educators**  
Dedicated to **STEM**

✦ Annual Elementary and Secondary Award ✦

# Pi Day FUNd-Raiser at Telaya

Partnering with KBOI2-TV with the  
Goal of:

- Raising the remaining \$72,000 for summer events including STEM Camps and Educator Computer Science Workshops
- Kicking off the STEM Matters Campaign by seeking industry support to raise awareness of STEM as the foundation for tomorrow's workforce
- Increasing industry engagement in Idaho STEM
- Ultimately, raising \$1M from industry to support ongoing STEM projects



# Metrics to Measure Outcomes/Impact

As Dictated in §67-823, the Center shall track and compare growth of students participating in Center activities to those that do not in the areas of:

- Number who are performing at grade level in STEM classes
- Student performance
- Graduation rates
- Number who graduate from Idaho and begin post-secondary programs
- Number that take STEM education courses at higher education institutions
- Number of educators receiving high-quality professional development

# Additional Metrics to Develop

- Assessment subpopulations breakdown (ISAT, NAEP, SAT/ACT)
- Growth data in student growth percentile (SGP)
- Gap analyses including assessments (NAEP and ISAT) and industry
- Industry needs assessment including educators
- Work with State Board of Education regarding metrics of the STEM Statewide Strategic Plan
- Qualitative variables related to STEM Family Nights and Educator Grants
  - Student impact surveys including assessments
  - Pre- and post-surveys on STEM attitudes and STEM awareness
  - Communities of practice to share best practices



# The Future

## FY2017 Governor's Recommendations



# Projects and Programs

## DU#1, \$2M Ongoing, General Fund

**\$100,000**

- Conduct needs and gap analyses of industry and education
- STEM Action Center program evaluation

**\$275,000**

- K-16 STEM education
- Coordinate workforce needs with K-16 STEM education

**\$150,000**

- Database creation
- Professional development, competitions, grants, scholarships and resources for educators and workforce

**CUMULATIVE TOTAL: \$525,000**

# Projects and Programs

## DU#1, \$2M Ongoing, General Fund

**\$500,000**

- Support high-quality STEM professional development
- Support scholarships for STEM education or training

**\$250,000**

- Support PK12 STEM grants for educators
- Includes resources and curricular materials

**\$100,000**

- Support community STEM events
- Encourage community engagement and industry involvement

**CUMULATIVE TOTAL: \$1,025,000**

# Projects and Programs

## DU#1, \$2M Ongoing, General Fund

**\$250,000**

- Intel Science & Engineering Fair (Post-secondary & industry)
- Grant for students

**\$250,000**

- National competitions
- FIRST Robotics, Invent Idaho, Science Olympiad
- Other competitions

**\$125,000**

- Engage industry to support mentorship & internship programs
- Create actionable database connecting educators & industry

**CUMULATIVE TOTAL: \$2,000,000**



# STEM Education Start-Up Fund

## Investment in Idaho's Future

### Governor's Recommendation, DU#6

- Demonstrates public sector commitment to development of STEM-prepared workforce and long-term economic stability
- Encourages industry participation and financial support
- Builds long-term partnerships
- Creates sustainability of programs
- \$2M FY2017 spending authority



# Computer Science Initiative

## DU #2 & DU #6

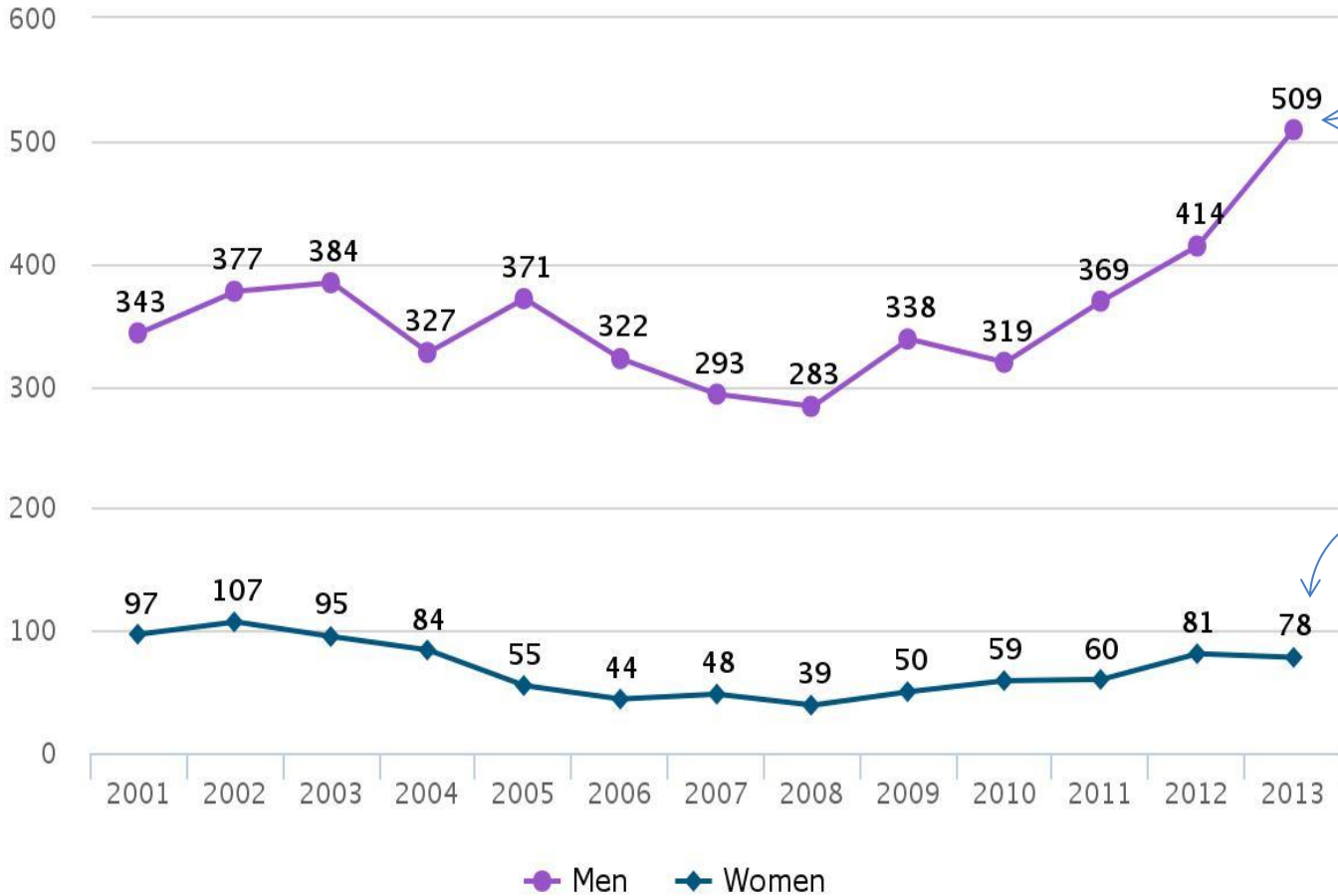
### Governor's Recommendation

\$2M spending authority (DU#2) from STEM Education Fund (DU#6) provides the opportunity to address pressing workforce needs including Kindergarten through Career computer science



# Idaho Ranks 49<sup>th</sup> in Women Earning Computer Science Degrees

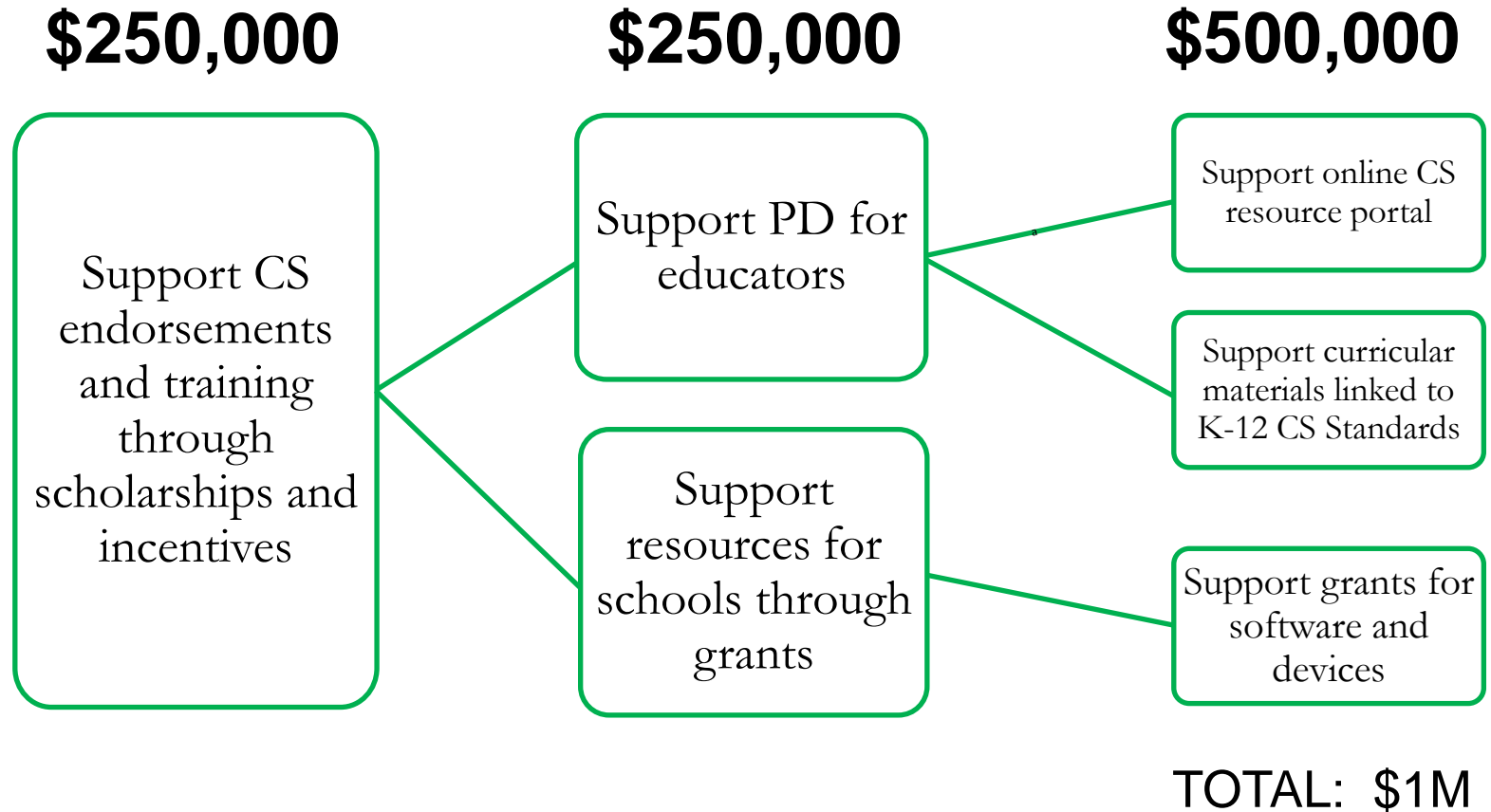
Number of computing degrees/certificates in Idaho



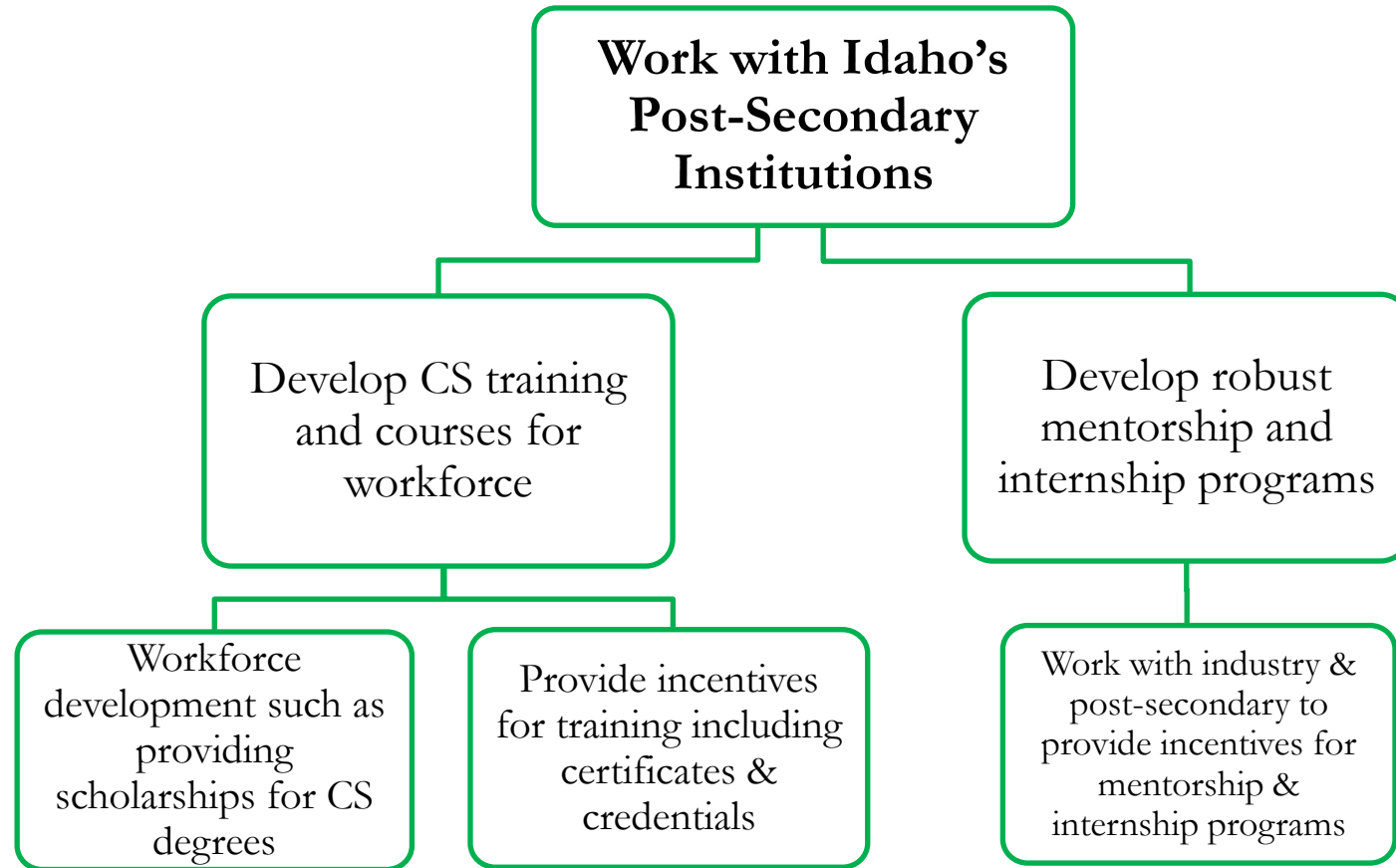
Source: U.S. Dept of Education 2001 – 2013

# Collaborate to Support Idaho Educators

## DU#2, \$2M Spending Authority



# Collaborate to Support Idaho's Workforce DU#2, \$2M Spending Authority



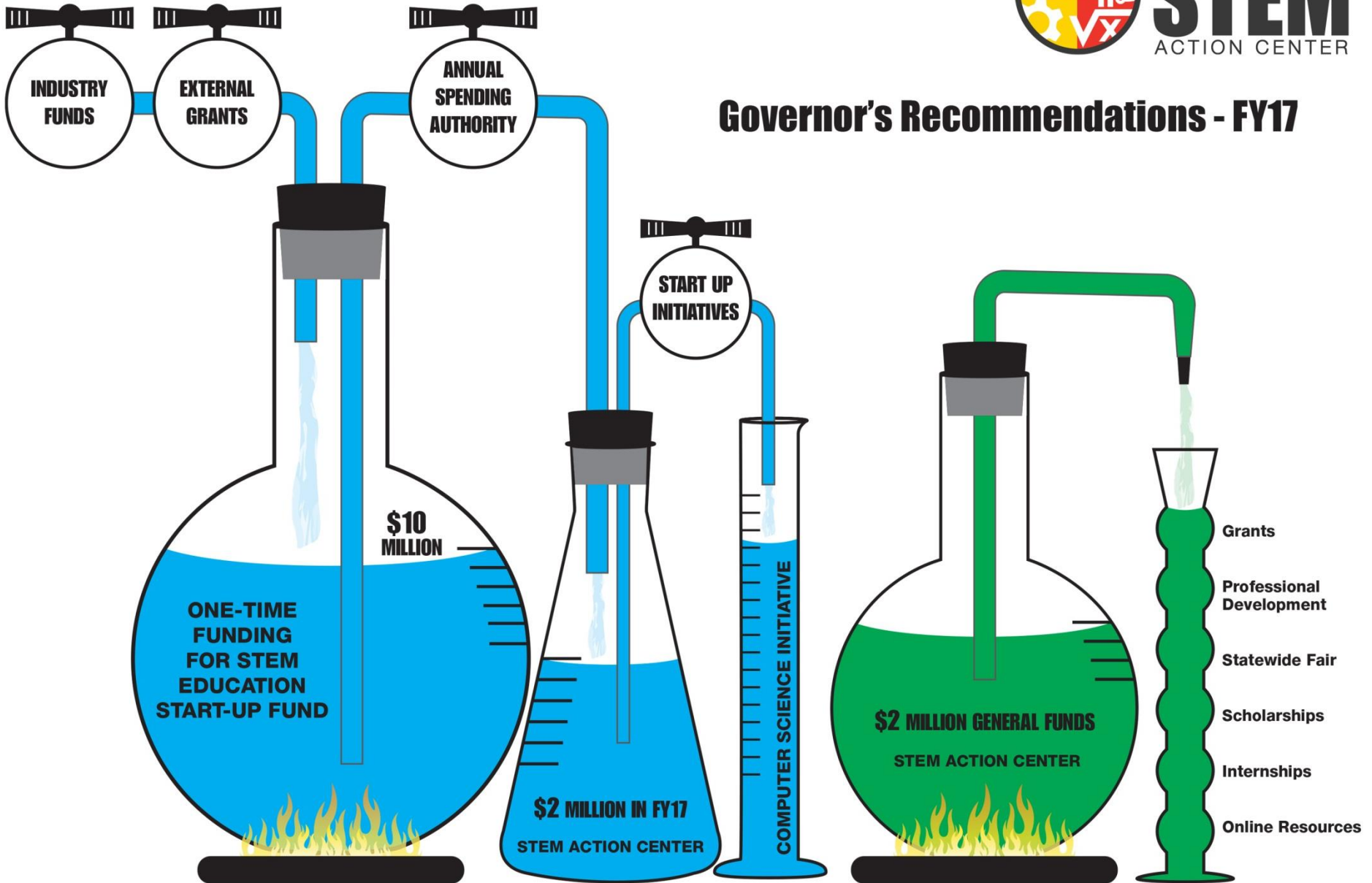
**CUMULATIVE TOTAL: \$2M**

# Program Manager for CS Initiative DU#5, FTP

## Oversee all aspects of initiative including:

- Working with industry to gain support and sponsorships
- Working with higher education to develop courses for training both the new and existing workforce
- Working to develop robust mentorships and internship programs
- Working to develop PD and resources for educators
- Developing incentives for training resulting in certificate or credential

TOTAL: \$99,000



# STEM Matters and Pi Day FUNd-Raiser

**WHEN:** March 14, 2016, 6:30 p.m. – 9:00 p.m.

**WHERE:** Telaya, Garden City, Idaho

**WHO:** Open to the public

**COST:** \$25/person includes

**GOAL:** The Action Center has successfully raised \$30,000 in our first 6 months, but we want to raise more! Help us support innovative STEM activities, projects, camps, and professional development throughout Idaho by pledging to our cause. You can also purchase your very own 3D printed T-Rex or Saber Tooth tiger skull, Pi Vase, and other great items.

