Senate Education Committee Presentation

Dr. Angela Hemingway

January 21, 2020
STEM and Idaho’s Economy

In 2019, 7,633 STEM jobs were unfilled in Idaho, resulting in nearly $516 million of unclaimed personal income.

Idaho’s STEM jobs pay double the median wage of non-STEM jobs.

If these STEM jobs were filled, state tax revenues would increase by over $27 million.

Source: Idaho Department of Labor
2019 (actual)*
- 7,633 unfilled STEM jobs
- $27.2 million in lost tax revenue
- $516 million in lost personal income

2026 (projected**)
- ~105,000 total STEM jobs
- ~$373 million in potential tax revenue
- ~$7 billion in potential personal income

STEM AC COMPUTER SCIENCE IMPACT

- Percentage change in secondary students taking CS: 18%
- Percentage change in secondary teachers teaching CS: 11%

School Year 17-18 vs School Year 18-19

~61% of STEM AC’s budget already supports rural communities, educators, and students

Unfilled Idaho STEM jobs and Projections

802 W. Bannock St., Ste. 900 Boise, ID 83702
208.332.1729 | Angela.Hemingway@stem.idaho.gov
21st Century Skill Development
Idaho STEM Statutes

- Idaho Code 67-823: STEM Action Center
- Idaho Code 33-1633: Computer Science Initiative
- Idaho Code 67-824: STEM Education Fund
- Idaho Code 33-4701: STEM School Designation
- Idaho Code 33-523: STEM Diploma
- Idaho Code 33-1634: Computer Science for All
- Idaho Code 63-3029A: STEM AC as an Idaho Education Tax Credit
Engineering innovative opportunities for educators, students, communities, and industry to build a competitive Idaho workforce and economy through STEM and computer science education.

A diverse, equitable, thriving ecosystem for a prosperous, STEM-literate Idaho
STEM AC Strategic Goals

1. Advance equitable **access** to high-quality STEM+CS opportunities for educators, students, and communities

2. **Align** education and workforce needs throughout Idaho

3. Increase **awareness** of the importance of STEM throughout Idaho
As Legislated in Idaho Code (§67-823, §33-1633, §33-4701, §33-1634, and §33-523)

• Support high-quality STEM and CS **professional development** for educators
• Distribute **grants** to students, educators, and communities
• Engage **industry** to support STEM/CS educational outcomes
• Support student STEM and CS **competitions**
• Serve as a **resource** center for instructional materials and best practices
• Identify and recognize high-quality **STEM Schools**
• Increase awareness of **Idaho’s STEM Diploma**
• **Work well with other** agencies and partners!
White House STEM Strategic Plan
Dec. 2018 - 2023

Goals:
• Build strong foundations for STEM literacy
• Increase diversity, equity, and inclusion in STEM
• Prepare the STEM workforce for the future

Pathways:
• Develop and enrich strategic partnerships
• Engage students where disciplines converge
• Build computational literacy
65 STEM Ecosystem Stakeholders

• **Higher Education:** BSU, UI, ISU, CWI, CSI, CEI, NIC
• **K12 Education:** Superintendent, Principal, Teacher, Coach
• **Partners in Equity:** Tribal and Hispanic Education
• **Out-of-School Educators:** libraries, museums, makerspace, afterschool programs, early learning
• **Industry Partners:** Micron, INL, Chobani, Hecla, ITC, IBE, St. Luke’s, SEL, Vynyl
• **State Agency Partners:** OSBE, SDE, CTE, WDC, IPTV, ICfL, ICfA, ISHS, IDLA, Military, Dept. of Commerce
• Legislators and the Governor’s Office
Intended Ecosystem Meeting Outcomes

• Developed a **shared understanding** of the importance of the STEM ecosystem approach

• Crafted shared **aspirations, priorities, and indicators of success** for Idaho STEM Ecosystem

• Identified of **constraints** that stand in the way of success

• Developed an outline of **action plan** for Idaho, including identification of work groups, general governance structure, and timeline
FY20 Appropriation: $5,668,400

- SCIENCE INITIATIVE: $1 million One-Time Cash
- INDUSTRY: $1 million Raised
- GRANTS: ~$2.06M Ongoing OE
- $501,000 Ongoing PC

$2,106,000 Spending Authority
$2,562,400 Cash

DEDICATED FUNDS
GENERAL FUND

FY21 Recommendation: $6,149,700

- SCIENCE INITIATIVE: $1M Recommended Supplemental for Funds Raised
- INDUSTRY: $1 million Raised
- GRANTS: ~$2.04M Ongoing OE
- $503,400 Ongoing PC
- $500,000 Ongoing Cash

$3,102,600 Spending Authority (without cash)
$3,047,100 Cash

DEDICATED FUNDS
GENERAL FUND
## Budget Analysis by Goal (FY19 & FY20)

<table>
<thead>
<tr>
<th>Goal Description</th>
<th>FY19 – Actual</th>
<th>FY20 – Proposed (July 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GOAL 1 ACCESS: STEM+CS Grants</strong></td>
<td>12%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>GOAL 1 ACCESS: STEM+CS Professional Development</strong></td>
<td>26%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>GOAL 2 ALIGNMENT: Competitions, Externships, Partnerships, Sponsorships, Mentorships, STEM Schools, Research</strong></td>
<td>42%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>GOAL 3 AWARENESS: Outreach/Awareness Activities</strong></td>
<td>5%</td>
<td>11%</td>
</tr>
<tr>
<td>Operating Expenses (rent, office, IT, supplies, software, contracts, travel, conferences)</td>
<td>14%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Our Opportunities –

STEM.Idaho.gov/apply

• **Goal 1: Equitable access**
  High-quality Professional Development
  – i-STEM
  – STEM Leadership Training

• **Goal 2: Align education and workforce**
  – Teacher Externships

• **Goal 3: Increase Awareness**
  – Invite to upcoming STEM events
Goal 1 **Access:** ($1.2M, 27% budget)

- **i-STEM Summer Institutes** in six regions with SDE and industry
  - Cost: $500,000
  - Partnerships: $158,000

- **STEM Leadership Training** with OSBE
  - Cost: $120,000
  - Partnerships: $100,000
Goal 2: **Align STEM education and workforce**

**Teacher Externships**

- Teachers worked 5 weeks in Idaho businesses
- Total Cost = $80,000
- WDC Grant = $55,000
- Idaho Power = $2,500
- At least 27 businesses asking for externs for summer 2020
STEM Designated School (§33-4701) 2019 – 2023
Cost: $40,000

- Barbara Morgan STEM Academy, K-5, West Ada
- Bingham Academy, 9-12, Blackfoot
- Galileo STEM Academy, K-8, West Ada
- Temple View Elementary, PK-6, Idaho Falls
Current Applicants for Designation 2020 - 2024

- **Southside Elementary**, K-6, Lake Pend Oreille District
- **N. Idaho STEM Charter Academy**, K-12, Rathdrum

**STEM Diploma (§33-523)**
Goal 2: **Align STEM education and workforce**

**Student Competitions**

(Cost: $120,000 + $136,000 industry)

- State and National Competition Travel
- Regional Idaho Science and Engineering Fairs
- IDX – 3D Fabrication Middle School Competition
- Robotics: FIRST, VEX, Botball
- Congressional App Challenge
- MakerMinded
- eCybermission
- Invent Idaho
- Future Cities
- Science Olympiad
- Science Bowl
### GOAL 2: Align STEM education & workforce

**Funds Raised in FY20**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idaho National Laboratory</td>
<td>$113,000</td>
</tr>
<tr>
<td>Micron Technology Foundation</td>
<td>$112,000</td>
</tr>
<tr>
<td>Battelle</td>
<td>$63,000</td>
</tr>
<tr>
<td>JR Simplot Company Foundation</td>
<td>$50,000</td>
</tr>
<tr>
<td>Laura Moore Cunningham Foundation</td>
<td>$50,000</td>
</tr>
<tr>
<td>Dutch Bros.</td>
<td>$32,000</td>
</tr>
<tr>
<td>Citizen Schools</td>
<td>$26,000</td>
</tr>
<tr>
<td>Power Foundation</td>
<td>$26,000</td>
</tr>
<tr>
<td>J.A. &amp; Kathryn Albertson Foundation</td>
<td>$25,000</td>
</tr>
</tbody>
</table>
Total In-Kind Donations, FY20

$1.65M

Includes grant reviewers, competition judges, training room space, mentors, industry partnerships, and media coverage
Idaho offers CS to preservice teachers.
Idaho requires all secondary schools offer CS (§33-1634).
Idaho allows CS to count as a graduation requirement.
Idaho allows CS to count as an admission requirement at higher education.

Idaho has a state plan and K-12 CS standards.
Idaho has allocated PD funding.
Idaho has certification pathways for teachers.
Idaho has a CS position.
STEM Resources Portal through IDLA

https://resources.stem.idaho.gov/

STEM Resource Portal

Featured Resource
Continuing Education through Professional Development

Computer Science
Find more CS Resources

Full Resource Catalog
View Resource Catalog Offerings.

Mentorship Portal
A place to become a mentor.

STEM Workforce Statistics
Find valuable Idaho workforce stats!

Add A Resource
Got a resource to add?

Connect to Local Manufacturers
Find Tours, Guest Speakers, Opportunities and more

i-STEM
By educators for educators.
What We Know

**Students**
- 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
Mentorship Platform through IDLA

One of the most powerful tools for retention of students in STEM is having a **strong mentor**!

Available NOW!
Populated with 500 teachers and 150 mentors

https://mentorship.stem.idaho.gov/
**GOAL 3: Increase awareness of the importance of STEM**

### Strategic Plan

### Performance Report Metrics

<table>
<thead>
<tr>
<th></th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Engagements</td>
<td>10,428</td>
<td>204,000</td>
<td>406,239</td>
<td>442,318</td>
</tr>
<tr>
<td>Educators Interactions</td>
<td>1,200</td>
<td>4,800</td>
<td>12,633</td>
<td>35,768</td>
</tr>
<tr>
<td>Community STEM Events</td>
<td>45</td>
<td>140</td>
<td>143</td>
<td>288</td>
</tr>
<tr>
<td>Cash</td>
<td>$72,000</td>
<td>$205,000</td>
<td>$750,500</td>
<td>$1,346,800</td>
</tr>
<tr>
<td>In-Kind Donations</td>
<td>Did not track</td>
<td>$662,000</td>
<td>$1,787,400</td>
<td>$4,446,500</td>
</tr>
</tbody>
</table>
Goal 3: Increase Awareness: Upcoming STEM AC Events

ISEF (3 Regions) BSU
Mar. 6, 2020

FIRST Robotics
Ford Idaho Center
Mar. 26-28, 2020

STEM on the Blue
April 24, 2020
Dr. Angela Hemingway

- Executive Director
- STEM Action Center
- Executive Office of the Governor

Phone: 208-332-1726

Email: Angela.Hemingway@STEM.Idaho.gov