Connecting STEM education and industry for Idaho’s successful economic future.
Engineering innovative opportunities for educators, students, communities, and industry to build a competitive Idaho workforce and economy through STEM and Computer Science education.

Idaho STEM Action Center, a statewide agency housed under the Office of the Governor, was created on July 1, 2015 through the work of visionary legislators, education leaders, and industry stakeholders. Idaho STEM Action Center develops unique grant, training, professional development and student opportunities aligned to Idaho’s workforce needs from early childhood through career.

Idaho STEM Action Center Impact

<table>
<thead>
<tr>
<th>Events FY 2019</th>
<th>Educator Interactions FY 2019</th>
<th>Student &amp; Community Engagements FY 2019</th>
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<tbody>
<tr>
<td>288</td>
<td>36K</td>
<td>442K</td>
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92% of Idaho parents believe that their school should invest more in STEM education.
In 2018, over 6,300 STEM JOBS WERE UNFILLED IN IDAHO, resulting in nearly $413 Million of unclaimed personal income.

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

Idaho’s STEM jobs PAY WELL! DOUBLE THE MEDIAN WAGE of non-STEM JOBS.

Within 10 years, 80% OF JOBS will require skills in TECHNOLOGY.

Idaho is 2ND IN THE NATION in implementing Code.org’s Computer Science education policy recommendations.

Computer Science
Idaho is a leader in expanding computer science education, including implementation of a state plan, K-12 CS standards and professional development.

99% of parents believe that STEM CAREERS will play an important role in the future.

Student Competitions
Participation has grown nearly 5X statewide for high school competitions since 2016.

Grants
Idaho STEM Action Center awarded 714 grants in 2018 from 21 competitive grant and PD opportunities.

Our Impact

PROFESSIONAL DEVELOPMENT
Over 45,000 students are impacted annually through our statewide i-STEM program.

Each colored dot represents a different statewide STEM program. Colored pins represent MAJOR impacts.
Our Programs

Creating access to life-shaping STEM learning opportunities for students and educators inspires Idaho’s future.

**Professional Development** – Bringing relevant Idaho STEM topics to educators and providing them with the training and materials they need to engage their students in these vital topics and skills.

**Student Competitions** – Showcasing project-based student solutions to Idaho-relevant challenges.

**Grant Opportunities** – Supporting greater access to STEM learning opportunities that support individualized solutions for Idaho’s communities.

**Awareness Building, Partnerships, and Initiatives** – Increasing awareness of the need for Science, Technology, Engineering and Math for Idaho communities, building partnerships with industry and institutions for greater access to STEM learning opportunities, and developing a STEM-literate Idaho.
i-STEM
PreK - 12 EDUCATORS

The Foundation of STEM-literacy
High-quality, relevant, and hands-on STEM opportunities for PreK-12 Idaho educators at 6 regional locations throughout Idaho. i-STEM provides content and materials focused on Idaho topics and interests to inspire educators and students, who are important contributors to Idaho’s current and future economy. Educators take valuable skills and materials back to their teaching environments from their 4-day institute workshops on topics including: 3-D design and printing, robotics team building and coding, engineering and circuitry, environmental studies and biology, energy production, geology and mining. i-STEM is building the foundation for a STEM-ready Idaho by elevating the student potential through a network of STEM-capable educators.

“i-STEM addresses industry’s need for good problem solvers coming into the workforce. This is an exciting opportunity to connect our energy-related topics with project-based learning that these teachers will take back to their students.”
– Denise Humphreys, Idaho Power

i-STEM WORKSHOPS
provided instruction on 28 STEM TOPICS

330 participating Idaho educators expected to impact over 45,000 students during the school year THROUGH i-STEM learned activities and materials provided

Professional Development
Everyone remembers the educator that made a difference.
The Industry’s Excellent Educator Dedicated to STEM (INDEEDS) Award is given to two Idaho educators who create unique opportunities for students to experience the fun and excitement of STEM by integrating real-world experiences and hands-on activities into the classroom, including relevant industry connections. Winners are selected by an industry professional for two categories: K-6th grade and 7th-12th grade. Educators are awarded $2,000 and another $2,000 for STEM initiatives at their schools courtesy of sponsors. The awarded educators also attend a STEM-related national conference.

2018 INDEEDS Award winners Laura Wommack of Plummer and John Barenberg of Marsing. Awards were presented at Idaho Technology Council Hall of Fame and Idaho Innovation Awards Gala.

“In 2018 Educators from 14 Idaho Communities were nominated by peers.

STEM topics and materials introduced by these amazing educators include: space exploration, technology, astronomy, coding, 3-D printing, robotics and virtual reality.

“Teaching STEM subjects at the secondary level in rural districts can inspire kids to go on to better-paying and highly valued STEM careers. I work hard to ensure my students and their parents have as many opportunities as kids in other places have.”
– Laura Wommack

“Kids are so curious and like to tinker and click and try things to see what happens. Making observations is the fundamental step of the scientific method, and virtual reality, augmented reality, robotics, coding and devices like tablets and Chromebooks bring learning to life and allow kids to play with things and build things and see how it all works and interacts.”
– John Barenberg
Next-level coding program
Idaho is on the cutting edge in VR technology development. From remote job training, hands-on-health applications, and empathy training to architectural design touring, VR is reframing our world and how we live in it.

The VR4Ed Coding Program is an educator professional development and student computer science education program crafted specifically for Idaho middle and high schools. Educator training provides familiarity with the program materials, 12 lesson plans to effectively instruct 3D coding on the Blocksmith platform, and an understanding of how to utilize the Virtual Reality hardware to immerse into student-built worlds or games. Educator teams guide their students through a multi-week virtual design challenge, incorporating a pre-determined theme.

Students learn logical processing, coding language, and graphics applying these skills to real-world applications through guided challenges in the Blocksmith VR platform. Participants will be able to enter the worlds they design through the use of VR viewing tools, incorporating industry perspectives into their work, and submitting projects for a virtual showcase.
STEM Peers, STEM-Inspired Careers

Each spring, Idaho STEM Action Center and its partners proudly host three regional high school science and engineering fairs for students across Idaho. These fairs offer students the opportunity to engage in original STEM research projects aligned with their interests and present their findings at the Northern, Western, or Eastern Idaho Science and Engineering Fair. Students exchange ideas and learn with other motivated students in their area at an institute of higher education.

JUDGING CRITERIA:
1. Research Question
2. Design and Methodology
3. Execution: Data Collection Analysis/Interpretation (Science Projects) or Construction/Testing (Engineering Projects)
4. Creativity
5. Presentation
   a. Poster
   b. Interview

Regional participation has grown by nearly 400% since ISEF’s beginning 2017.

72% of students plan to use the skills they learned in their future employment.

74% of students plan to continue STEM research in the future as a result of participating in ISEF.

Representative teams from each region are selected to attend and compete in the Intel International Science and Engineering Fair (Intel ISEF).
Jr. Botball and Botball

Jr. Botball – Elementary
Botball – Middle – High School

High-level computer science skills applied to hands-on, tangible projects
Through creativity and collaboration, teams use coding and robotics to perform tasks and solve competitive challenges. Educators engage in professional development to learn robotics skills, teach these skills with materials to students, and coach student competitive robotics teams. Winning teams may travel to statewide and global competitions.

Jr. Botball and Botball Competitions successes
• Team participants see more possibilities for themselves in Computer Science
• An Idaho team won first place in 2018 at the international Jr. Botball Competition
• Student teams in grades 3-6 learn and use the C programming language - the same material in a college introductory computer science course.

“Students have tried to think of other ways in which their experience in robotics can help their community. For instance, one student is from a family that runs a dairy. He was thinking of ways in which he could use coding to make his family’s business run more efficiently...and he’s only 10!”
– Magic Valley educator
What happens when you mix student innovation with 21st century skills?
Formally FabSLAM, IDX engages youth in identifying, designing, prototyping, testing, and iterating solutions to real-world problems. Educators first receive three days of professional development and then return to coach students through a multi-week digital fabrication challenge, including proper online documentation of their process and encouraging multiple design iterations throughout the challenge. Teams then present their work at the IDX Student Showcase Event, judged by a panel of industry professionals on creativity, iteration, design, and other criteria. IDX supports critical and creative thinking, problem solving, innovation, and collaboration. Idaho STEM Action Center hosts three competitions statewide.

- IDX directly impacts 2,267 students, educators and community members annually
- 42 Idaho schools, libraries, and out-of-school networks participate annually
- Winner of the 2016 Western Regional student competition was selected to serve on the White House Science Advisory Committee to shape STEM Education

**Idaho Exhibition of Ideas**
GRADES 5-9

**Student Competitions**

**NORTHERN IDAHO**
1st Place 2019  
Southside Elementary, Cocolalla

**WESTERN IDAHO**
1st Place 2019  
Murtaugh School District, Murtaugh

**EASTERN IDAHO**
1st Place  
Newcomer Center at Robert Stuart Middle School, Twin Falls
LEVELING THE PLAYING FIELD

Idaho STEM Action Center supports communities, schools, libraries, and other organizations to create STEM learning opportunities with locally-driven, self-determined programming.

**Family STEM/Career Grant**
This grant aims to improve student and parent awareness of local STEM education and career opportunities by providing support to schools that host STEM career events.

**Camp & Out-of-School Grant**
This grant provides high-quality STEM learning experiences outside of traditional classroom time to encourage sustained participation in and engagement with tangible STEM/21st-Century skills and proficiencies, as well as building local communities of learning for STEM. Priority is given to camps serving underrepresented populations in STEM.

**Student Competition Travel Grant**
Travel funds for students attending national competitions (ISEF, FIRST Robotics, Junior Botball)

Visit https://stem.idaho.gov/apply/ for all Grant Opportunities
EARLY STEM
BIRTH TO AGE 8

A Groundbreaking Idaho Initiative
Children have an innate drive to make sense of their world and their ability to construct knowledge alongside engaged adults. Research has confirmed that the brain is particularly receptive to learning math and logic between the ages of 1 and 4, and that early math skills are the most powerful predictors of later learning. The STEM Action Center is supporting early STEM learning in Idaho through partnerships, projects and professional development opportunities.

FamLAB Project supports work in Idaho to create an ecosystem that encourages and fosters children’s learning across settings, especially children from underrepresented populations. Grant funding generously provided to Idaho STEM Action Center by Joan Ganz Cooney Center at Sesame Workshop

Boise State University College of Education and the Children’s Center Partnerships an exciting multi-year project to advance STEM learning for ages 0 to 8. Through professional development and instructional coaching, early childhood professionals are learning how to engage children with and without disabilities in inclusive STEM learning environments.

Early STEM Professional Development Workshops allow early childhood practitioners to dive deeper into hands-on inquiry-based learning, the engineering design process, and work to build a community of practice with fellow attendees.
EVENTS

BUILDING AWARENESS IN IDAHO’S COMMUNITIES

The STEM Action Center and partners bring STEM Day to the Western Idaho Fair each year to provide hands-on STEM fun to families. From virtual reality headsets to robotics and Early STEM, this is an exciting STEM showcase to inspire curiosity in all ages. STEM is everywhere!

Hundreds of Idahoans converge on the State Capitol for STEM Matters Day each January to explore and celebrate innovations in science, technology, engineering, and mathematics learning. This annual event, organized by the Idaho STEM Action Center, attracts students, educators, elected officials, businesses, and STEM advocates from across the state.
PUBLIC-PRIVATE-PARTNERSHIPS - “P3”

Leveraging STEM support to a new level
Idaho businesses generously support their communities with sponsorships, program funding, and in a variety of other ways. Are you supporting an organization that is working to create access to STEM learning opportunities? The STEM Action Center may match up to 50% of a sponsor’s donation to that non-profit, school, museum or other qualifying organization and partnered with industry to provide 17 P3 awards during the 2018-2019 school year.

P3 funding brings opportunities such as
• Maker spaces
• Mentorship programs
• Community events
• STEM camps
• Robotics teams

P3 funding brings support to organizations such as
• 4-H clubs
• Girl Scouts
• Community museums and libraries
• Big Brothers Big Sisters
• Jr. Achievement and more!

Our leading P3 partners
YOU CAN SUPPORT STEM EDUCATION

Volunteer
• Judge a competition
• Review STEM grant applications
• Provide a tour of your business
• Be a STEM professional guest speaker
• Mentor a student project

Sponsor an Event or Program
• Student competitions
• Professional Development
• Grants
• Public-Private-Partnerships “P3” support your organization of choice and provide STEM AC matching funds
• Teacher Externship Program

INVESTMENTS
IDAHO STEM ACTION CENTER AND INDUSTRY PARTNERS INVEST TO BUILD A STEM-LITERATE, WORKFORCE READY IDAHO

The Idaho STEM Action Center is able to award only 66% of competitive funding opportunities

July 2018 - July 2019
- Grant Funding $658,000
- Public Private Partnership $1,200,000
- Professional Development $1,143,300
- Student Competitions $260,000
- STEM Sponsorships $893,000
MISSION

To raise and distribute funds for STEM education opportunities in Idaho for educators, students, and communities.

Idaho STEM Action Center Foundation is a 501c3 non-profit organization founded to provide an additional giving option for funding and in-kind partners. All funding supports Idaho STEM Action Center programs.

TIMELINE

Founded in September 2017
501c3 status in April 2018
Funds raised FY18 $217K
Funds raised FY19 $483K

CONNECT WITH US

IDAHO STEM ACTION CENTER
Phone (208) 332-1725
www.stem.idaho.gov

IDAHO STEM ACTION CENTER FOUNDATION
Phone (208)-332-1723
Foundation@STEM.idaho.gov