

IMPACT

University of Idaho
Extension

Blaine County

208-788-5585, Fax: 208-788-5587
302 First Avenue South, Hailey, ID 83333

STEM outcomes in Blaine County

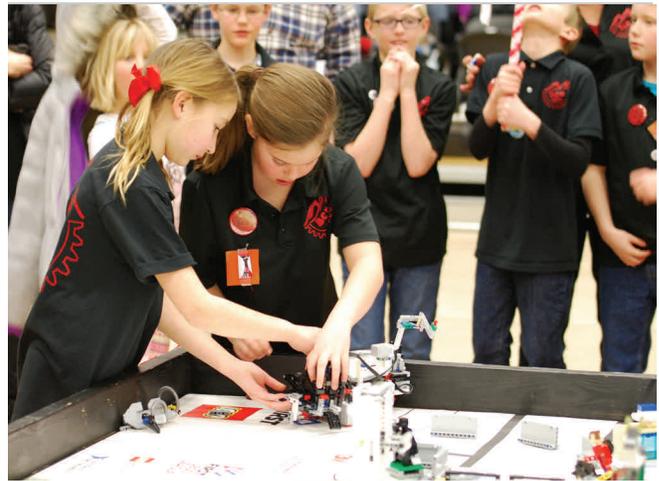
AT A GLANCE

University of Idaho Extension 4-H Youth Development and Blaine County public schools provided 150 youth with 3,860 hours of hands-on STEM training.

The Situation

Idaho is facing a crisis. According to the Idaho STEM Action Center, “Idaho citizens are not entering the STEM pipeline at a rate that will meet the current and future workforce needs of Idaho employers and sustain Idaho’s economic development and future prosperity.”¹ According to the Idaho Department of Labor, by 2025, Idaho will lack approximately 63,000 individuals needed to fill a range of careers, from construction and service jobs to medical and technology positions, many of which require STEM-related skills. As such, Idaho must build a highly skilled STEM workforce in order to increase investment and business opportunities in our state.

While STEM education is vital, Blaine County School District tech classes provide limited opportunities for youth to engage in hands-on robotics and coding. There are not enough hours in a school day to allow students to immerse themselves in valuable STEM programming. Research shows that STEM exploration time allows youth to learn the 21st century workforce skills that employers demand, including critical thinking, problem solving, collaboration and innovation. Thus, it was evident that youth in Blaine County would benefit from increased STEM educational opportunities. Afterschool programs are one way of increasing youth hours with STEM. According to *Afterschool Alliance*, afterschool enrichment opportunities positively impact both academic and behavior development.² In addition, the *Afterschool Alliance*



BCBots team members placing their robot to conquer the challenge.

cites that afterschool programs help close the opportunity gap for underserved and underrepresented children and youth.

Our Response

After-School STEM Education: To meet the growing need of 21st century careers and encourage STEM career-bound college graduates, University of Idaho Extension 4-H Youth Development in Blaine County formed a Robotics Coalition with the Blaine County School District. With the 4-H/Blaine County School District Coalition, 80 students were allowed additional afterschool hours and updated robotics equipment for hands-on STEM training. Funding from the James and Barbara Cimino Foundation and Power Engineers allowed the coalition to purchase advanced STEM equipment, including a new generation of VEX-IQ robot kits for middle school and EV3 Lego kits for elementary youth. Thanks to the increased afterschool hours and new equipment, the BCBots

Robotics teams were able to enroll in a variety of state and national competitions.

4-H STEM Camps: To expand STEM education beyond the schools, Blaine County 4-H conducted three week-long STEM summer camps with the help of a University of Idaho summer intern and part-time STEM educator. The camps and extra staff were funded through University of Idaho Extension, the Campfire Foundation, and the James and Barbara Cimino Foundation. The programs focused on building a robot using sensors and programming obstacles to achieve basic engineering and coding skills. Students also learned teamwork and interpersonal skills. More than 70 youth participated in the three camps. With the help of our bilingual UI summer intern, one summer camp had 85 percent Hispanic youth enrollment – allowing us to reach a population that typically has lower participation rates in STEM training.

Program Outcomes

The 4-H/Blaine County School District Robotics Coalition allowed 80 youth to participate in increased STEM training, allowing these youth to develop analytical, problem-solving and critical-thinking skills. In addition, the afterschool program closed an opportunity gap for underserved youth, whose working parents rely on afterschool programs. As the need for transportation was eliminated, kids could stay at school and participate with no additional program fees.

According to post-survey data for the 2016 Idaho middle school summer programs (including Blaine County), “The majority of students reported increased interest in STEM, confidence in problem solving, and the ability to work with a team after participating in Zero Robotics.” In addition, 94 percent of students who participated in the summer robotics programs reported interest in taking classes in computing/programming and 97 percent reported an interest in taking advanced science and math classes in middle school and high school. Notably, 92.5 percent reported an interest in pursuing a career in computing/programming, science or math.³

The extra time with the robot kits paid off, as evidenced with the BCBots winning local competitions, and competing in the 2016 VEX Worlds competition in Louisville, Kentucky. After the second year with the additional kits, two FIRST Lego BCBots teams took top awards in 2017 at the state competition.

Offering afterschool STEM programming through the coalition allowed more students to develop the personal tools needed for the 21st century workforce careers that are shaping Idaho.

The Future

With the successful partnership, the coalition plans to continue to involve youth in STEM education in Blaine County.

Cooperators and Co-Sponsors

Blaine County School District

References

¹ Idaho STEM Action Center, <https://stem.idaho.gov/about-the-center>

² STEM Learning in Afterschool: An Analysis of Impact and Outcomes, Afterschool Alliance, <http://www.afterschoolalliance.org/STEM-Afterschool-outcomes.pdf>

³ Zero Robotics: 2016 Middle School Summer Program – Idaho Results, zerorobotics.mit.edu

FOR MORE INFORMATION

Kathi Kimball, 4-H Program Coordinator
University of Idaho Extension, Blaine County
302 First Avenue South
Hailey, ID 83333
Phone: 208-788-5585
Fax: 208-788-5587
Email: kkimball@uidaho.edu

Lauren Golden, Extension Educator
University of Idaho Extension, Blaine County
302 First Avenue South
Hailey, ID 83333
Phone: 208-788-5585
Fax: 208-788-5587
Email: lgolden@uidaho.edu

Sarah Busdon, Administrative Assistant
University of Idaho Extension, Blaine County
302 First Avenue South
Hailey, ID 83333
Phone: 208-788-5585
Fax: 208-788-5587
Email: sarahb@uidaho.edu