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YOUTH/4-H—In science and engineering, 4-H'ers are Idaho's 'can-do' kids

CONTACT TIM EWERS at tewers@uidaho.edu

WITH STUDIES FINDING that only a third of U.S. fourth- and eighth-graders are proficient in science and technology, the nation's 4-H educators have vowed to involve one million new members in 4-H's science, engineering, and technology (SET) activities by 2013.

"4-H has more than a 100-year history of engaging children in direct, hands-on, minds-on science activities," says Tim Ewers, University of Idaho Extension 4-H/youth development specialist in Moscow. "We've developed a pipeline of programs that keep kids involved from kindergarten to high school graduation and put them on a trajectory right to college. We want them to build the perception that they really can do science and engineering."

Idaho's newest SET programs emphasize club-, camp-, and school-based robotics, rocketry, and such geospatial technologies as global positioning and geographical information systems. They also serve federally funded 4-H Afterschool programs: two in Burley and Worley draw predominantly Hispanic and Native American youngsters. But whether kids are knee-deep in vegetable gardening, elbow-deep in meal planning, or sky high with rockets, 4-H has long been steeped in science.

Promoting interest in science careers. Chad Cheyney, UI Extension educator in Butte County, was impressed with impacts of the 2008 4-H National Science Experiment, in which kids nationwide investigated the properties and promise of superabsorbent hydrogels: of Arco's 20 fourth-grade participants, 18 said the project had whetted their interest in a scientific career.

During 2008, Idaho 4-H'ers also examined insect homes in Junior Master Gardener classes; applied electronic animal identification and ultrasound technologies in livestock programs; discovered the basics of computer, wood, and veterinary science; and flocked to camps in rock-etry, geocaching, geology, electricity, nutrition, and natural resources. Of those who participated in Idaho Robotics Opportunities for K-12 Students (Idaho ROKS)—a collaborative program with Idaho 4-H, the University of Idaho College of Engineering, and the Idaho Space Grant Consortium—one in three was female and one in six was minority.

With its statewide presence, Ewers says 4-H can reach urban, rural, and underserved audiences alike: youthful SET participants in Idaho tallied 26,056 in 2007-08. And with its century-long commitment to learning by doing, 4-H "gives children the time to engage in real scientific inquiry."

Grand families save Idaho millions of dollars

CONTACT HARRIET SHAKLEE at hshaklee@uidaho.edu; find resources at <http://info.ag.uidaho.edu/grandparents/>

GRANDPARENTS RAISING their grandchildren in Idaho numbered 9,792 households during 2006, 20.7% higher than in 2000. That compares with a 1.2% increase nationally.

Harriet Shaklee, UI Extension family development specialist, says that nine times as many Idaho children live with their grandparents or other kin caregivers as live in formal foster care. The "grand families" of these 18,000 children are eligible for few state programs and make minimal use of the ones for which they are eligible. According to Shaklee, if these children were placed in the foster

care system, their annual support would cost Idaho up to \$60 million a year.

About a third of Idaho's grandparent caregivers have been raising their grandchildren for five years or more—usually because of parental incarceration or substance abuse, Shaklee says. Despite the financial, social, and emotional challenges they face, she calls their stepping forward to protect young family members in time of crisis "strong testimony to the power of the extended family in America today."

Paid internships jumpstart careers

CONTACT DEBBIE GRAY at dgray@uidaho.edu

UI STUDENT JESSON BUSTER spent last summer interviewing Cascade residents and drafting a site analysis for a park to be located along 2.5 miles of the Payette River's North Fork. Molly Green started with a Grangeville need and ended up creating volleyball events, art workshops, and stories in the park to enrich the town's youth.

They were among seven University of Idaho students whose paid 6- to 8-week internships during summer 2008 gave them unique learning challenges while helping small towns meet needs. Funded in part by \$25,000 from University of Idaho Extension, the internships sent students to towns that participated in UI Extension Horizons programs aimed at reducing poverty.

"The internship required me to control the direction of my work," said Cody Gehring, who spent his summer gathering oral histories and inventorying assets likely to attract tourists to Bovill, Cottonwood, Juliaetta, Kendrick, Kooskia, Lapwai, and Troy.

"It's inspiring to see what these students and communities have accomplished, thanks to an investment from Horizons, UI Extension, and the UI's Building Sustainable Communities Initiative," said Debbie Gray, Moscow, who managed the 2008 internship program.

DID YOU KNOW?

280,000

PROJECTED SHORTFALL IN SCIENCE AND MATH TEACHERS IN THE U.S. BY 2015.

Source: *An American Imperative*, Business-Higher Education Forum, 2007, www.bhef.com