

## **Science, Engineering, and Technology (SET) Programming in Oregon 4-H**

prepared for

**United States Congressman  
David Wu**

National 4-H Headquarters has established a goal of reaching one million new 4-H members with Science, Engineering, and Technology (SET) programming by 2013. Oregon 4-H will do its part to reach this goal by engaging 20,000 new 4-H club members with high quality SET programming over the next five years.

Currently, 4-H extends the knowledge and research base of Oregon State University to more than 150,000 young people across Oregon through a network of 5000 volunteers and 120 faculty and staff. Through strategic deployment of resources and curriculum, 4-H offers a unique and powerful solution to the country's shortage of scientists and engineers. For years, 4-H has utilized an experiential, hands-on approach for helping young people learn science content. But, being ready for new century careers involves more than academic competence. Young people must possess life skills necessary to navigate complex human systems while acting with integrity and character.

Schools can't do it alone. Out-of-school program providers, like 4-H must be a part of the equation. Only through effective partnerships between schools and out-of-school programs can help young people reach their full potential as members of families, communities, and society.

University studies are showing that 4-H SET programming is already helping young people acquire science process skills, become interested in science and engineering careers, and graduate from high school. As a matter of fact, eighth grade students in 4-H are 1.6 times more likely to expect to go to college than youth in other out-of-school organizations. 4-H members are also more likely to have multiple adult mentors and be more civically engaged than other young people.

Across Oregon, several new and exciting programs are helping thousands of young people become science-literate citizens. Some are being supported on a pathway to a career in science, engineering, and technology. The sections below highlight some of this exciting work.

**Exxon Mobil Bernard Harris 4-H Summer Science Camp** – Sixty middle school students from nineteen Oregon Counties participated in a two-week summer science camp on the Oregon State University campus that targeted youth underrepresented in SET careers.

**Renewable Energy Curriculum** – Young people in Portland are learning about renewable energy, thanks to new curriculum developed by the United States Department of Energy and adapted by 4-H. Through the program, young people discover how they can become pioneers in the field of renewable energy while preparing themselves careers in a growing industry.

**LEGO Robotics** – Teams of 4-H youth are learning to design and program robots as a part of the 4-H LEGO robotics project. 4-H LEGO robotics kits are actively in use in Deschutes, Jackson, Josephine, Curry, Hood River, Washington, Umatilla, and Coos Counties as well as at the Warm Springs Indian Reservation.

**GPS Technologies** – Young people all across Oregon are learning how to use global positioning systems to improve human and natural systems. Young people in Hillsboro, OR are mapping the location of more than 20,000 street trees within the city. In Pendleton, they are mapping the location of almost 100 Century Farms. Other youth are using GPS technologies to identify the effects of human activity on the environment.

**Digital Media** – In Southern and Central Oregon, 4-Hers are learning to use digital media as a mechanism for self expression. They are creating audio and video productions that focus on issues of concern to them.

**Oregon 4-H Tech Wizards** – Four counties are currently replicating a successful technology mentoring program originally developed in Washington County. The program pairs young people with industry professionals in a mentoring relationship that builds technology skills and provides social supports needed to pursue post-secondary education in the sciences.

**Ecosystem Monitoring** – More than 14,000 Oregon youth participate in the award-winning 4-H Wildlife Stewards program developed in Portland nearly a decade ago. The 4-H Wildlife Stewards program teaches community volunteers to use outdoor learning centers developed on school grounds for teaching natural science to elementary students.

Oregon 4-H is supported by a mix of Federal, state, and local appropriations and augmented by private funds provided by individuals, businesses, and foundations. Federal funds are administered by the Cooperative State Research, Education, and Extension Service of USDA.

4-H is positioned to be ***the unique solution*** to America's impending shortage of skilled labor, linking the resources of America's land grant universities to communities across the United States to help grow the next generation of scientists and engineers.