4-H Tech Wizards engages underserved, underrepresented youth in Multnomah County with science, technology, engineering, math education and after-school tutoring. At the same time, parents of the students are offered the assistance and education they need to support their children in their educational achievement.

The Oregon 4-H Tech Wizards program was established 12 years ago with funding from Extension’s Children, Youth, and Families at Risk initiative. Through a mentoring approach, the program literally “wraps itself around” a young person and his or her family and provides the systems and supports they need to navigate their way to higher education and careers in science, technology, engineering and math (STEM).

Three key principles are infused into the 4-H Tech Wizards program.

1. **Engagement of the family:** Building trust with the family is essential, particularly for a program that might be seen as one that would encourage a son or daughter to go off to college at a location that might be thousands of miles away. Graduates of the program are at universities all across the country and some are Bill and Melinda Gates scholars.

2. **Service Learning:** Programs must have real world relevance that is made apparent through participation in service learning activities such as community mapping, health education and environmental rehabilitation. Service learning activities help marginalized and disenfranchised youth know they matter.

3. **College Readiness:** Finally the pathway to college is a tough one. High school college fairs mean nothing to a student that believes that college is beyond their reach. This is particularly true for youth who have never had a family member go on to college. To get to college they will need the right courses, need help with forms and financial aid, and need to be prepared to live on a college campus that may be very different from their community.
4-H Tech Wizard Mentors

4-H Tech Wizard mentors inspire youth to explore science, technology, engineering and math through hands-on, real world applications in their community. Mentors provide one-on-one and small group attention in a non-formal, experiential (explore-do, reflect, apply) and science inquiry learning models delivered using culturally appropriate methodologies. Youth, under the guidance of their STEM adult mentors, learn to use emerging technology tools, science inquiry processes, work on real-world project teams, and contribute 15 hours of volunteerism through service learning projects helping others in their communities. Youth learn decision making, goal setting, higher order critical thinking skills, teamwork, personal accountability, and presentation and effective communication skills.

Volunteer mentors are essential to help youth make the most of these learning opportunities. According to recent research, youth who are provided with positive adult interactions grow to become strong, confident young adults (Tufts University, 2006).

**STEM Mentors:** STEM mentors have a passion for engaging with youth and sharing science, technology, engineering and math. STEM mentors are recruited from a wide variety of fields of study and industries. Some examples include:

- Energy, media, internet or telecommunication
- Architecture and construction
- Engineering or technology production
- Biological, chemical, or medical engineering or production
- Academic, governmental, or corporate research or quality control laboratory
- Medical or dental
- Renewable energy research or production
- Auto or other transportation mechanical engineering

**Community Mentors:** Community mentors with an understanding of young peoples’ culture, community, opportunities and challenges are integral to the success of the 4-H Tech Wizards program. Community mentors are recruited from schools, community centers, cultural centers, churches, social service organizations and families. Community mentors often work with families and other community networks to support young people participating in the 4-H Tech Wizards.

STEM and Community Mentors who participate in the 4-H Tech Wizard program receive ongoing training, support and recognition from Oregon State University faculty, staff and community partners. 4-H provides volunteers the resources and support they need to have a positive, successful mentoring experience.
Additional Program Details

The student-centered component of the Project engages low-income, underrepresented youth (grades 7-12) in 4-H Tech Wizards, a tiered mentoring program (meeting the Best Practices Standards for Mentoring Programs established by Oregon Mentors and the National Mentoring Center). During the school year youth engage in an intensive series of afterschool and weekend experiential, hands-on learning activities with real-world applications (a total of 35 content hours). During the summer youth have the opportunity to engage in a summer capstone camp, service learning project or internship (a minimum of 15 content hours). Throughout the year youth develop STEM skills and explore their interest in education and careers. The use of high tech tools serves as the “hook” that brings the youth into the program and keeps their interest.

Concurrently, parents of the participating youth learn skills and knowledge that help them support their youth. Programs include interpreting report cards, school involvement and college orientation. Parents also learn the relevance of math and science education and careers to their families through the 4-H Tech Wizards program, enabling them to better support their children’s interests. Parent education will is delivered by 4-H staff, mentors, school staff and community partners. The parent involvement component strengthens the ability of underrepresented parents to choose healthy lifestyles and utilize community health resources, as well as to become connected with the broader community through home visits, seminars and workshops, and leadership training. It provides access to educational programs that can improve the family’s economic status.

To learn more about becoming a 4-H Tech Wizards mentor, partnerships with 4-H Tech Wizards or how your school or community organization can become a host site please contact:

Jonathan Mayer
4-H Faculty Multnomah and Washington County
503-916-6074
jonathan.mayer@oregonstate.edu