

SCIENCE

*Education and Outreach Programs
In Washington State*

A brochure
highlighting six
innovative
and representative life
science programs

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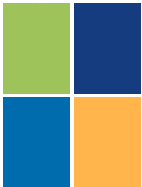
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Washington Science Olympiad

Science Olympiad



The online life science directory features over 200 education and outreach programs located throughout Washington State that encourage and promote careers in these areas, including summer camps, certification programs, student/teacher outreach programs, and college or university programs.

Programs that were selected included a focus on at least one of the following topics: **Biology, Biotechnology, Chemistry, Health care, Medical devices, Nursing, Pharmaceuticals, Public health.**

Log on to search by program location (City or County), Ages Served, and/or Life Science Topic. Read short program descriptions, find out when programs' events occur and follow links to programs' Web Sites.

This brochure highlights six innovative and representative life science outreach programs in Washington State. Although they are located in different cities, many of the programs serve participants throughout the state.

Program Name: Cougar Quest

Organization Name: Washington State University

Year Founded: 2000

Location: Pullman

Areas of Life Science: Biology, Biotechnology, Chemistry, Nursing, Pharmaceuticals

Participants served: Middle School (grades 6-8), High School (grades 9-12). Focus on At-risk, Females, Racially/ethnically diverse, Rural, Homeless, Individuals with specific medical conditions

When it is delivered: Summer-only

Brief Description: Cougar Quest is an academic summer camp on the campus of Washington State University designed for students in grade 6 through 12. It is a week-long camp where students take part in hands-on activities led by university faculty.

Why this program is unique/successful: Cougar Quest is proud to have the university's world class faculty working with the students during experiential learning activities. With only a handful of residential summer academic camps in the nation, Cougar Quest stands out because it is affordable and shorter in duration (six days). Students are supervised 24 hours a day and the 1:10 camper to counselor ratio provides a personal experience. Additionally, students connect with students who are different than they are as the participants feature economic diversity, cultural and religious diversity, individuals with disabilities, and out-of-state students.

Contact Name: Kim Mueller

Contact E-mail: cougarquest@wsu.edu

URL: <http://www.cougarquest.wsu.edu>

Program Name: Project HOPE (Health Occupations Preparatory Experience)

Organization Name: Western Washington Area Health Education Center

Year Founded: 1988

Location: Seattle

Areas of Life Science: Medicine, General Health Care, Nursing, Public Health

Participants Served: High School Juniors and Seniors (grades 11-12). Focus on Racially/ethnically diverse, Rural, Urban

When it is delivered: Summers only

Brief Description: Our program recruits high school students from medically underserved communities across the state and links them up with 6-week, paid health care internships in their community. The students are required to document their experiences in a journal and have the opportunity to participate in an overnight mini camp on the University of Washington campus.

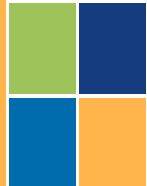
Why this program is unique/successful: We are focused on students from communities underrepresented in the health professions. A very large percentage of these students do pursue a professional degree in the health field.

Contact Name: Christine Lindquist

Contact E-mail: wwahec@wwahec.org

URL: <http://www.wwahec.org>





Program Name: Science Education Partnership (SEP)

Organization Name: Fred Hutchinson Cancer Research Center

Year Founded: 1991

Location: Seattle

Areas of Life Science: Biology, Biotechnology, Molecular Biology, Genetics, Biomedical Research

Participants served: Professional development or training, In-service teacher training, Doctoral students (Ph.D. candidates)

When it is delivered: Year around

Brief Description: The Science Education Partnership is a professional development program for secondary school science teachers in Washington. SEP offers the following:

- Professional training in local research labs and at the Hutchinson Center
- Access to the Kit Loan Program during the school year
- Opportunities to work with other science educators in life science
- Professional development opportunities and on-going support throughout the school year
- \$500 stipend and optional graduate level credits

University graduate students in Molecular and Cellular Biology work with the program as teaching assistants. SEP works with these graduate students to improve their ability to communicate science and gives them a variety of opportunities to practice through working with teachers, students, and the community.

Why this program is unique or successful: SEP was developed by teachers and scientists working together to create a program well-matched to the interests, needs, and resources of both groups. Our content areas include topics that are often in the news and so are of great interest to students and teachers. We help teachers learn within these areas and then provide access to kits and equipment so that their students can learn too.

A consistent goal has been to build a professional learning community so people stay engaged in teaching and learning over many years. One aspect of that network is the group of mentor scientists. Not only are scientists from the Hutchinson Center involved in SEP, but many regional life science research groups partner with us. We strive for high quality in all that we do and invest time in evaluation and reflective practice to keep improving.

Contact Name: Nancy Hutchison, Penny Pagels, or Deanna Stelling

Contact E-mail: sep@fhcrc.org

URL: <http://www.fhcrc.org/science/education/educators/sep>

Program Name: Science and Engineering Education Programs: Academies
Creating Teacher Scientists (ACTS)

Organization Name: Pacific Northwest National Laboratory

Year Founded: 1986

Location: Richland

Areas of Life Science: Biology, Biotechnology, Chemistry, Environmental Sciences, Medical Devices, Public Health, Pharmaceuticals

Participants served: Professional development or training, Pre-service teacher training, In-service teacher training. Focus on Ethnically Underrepresented, Females

When it is delivered: Summer-only

Brief Description : Three consecutive summers of institutes intended to immerse teachers directly into the nature of mathematics, science, technology, and engineering by providing them hands-on/minds-on learning scenarios based on research conducted at PNNL. These experiences intend to build the confidence and competence of teachers by providing opportunities of renewal, revitalization, and recognition through these learning experiences and through the development of Professional Learning Communities. The content understanding of teachers as well as their knowledge of the nature of mathematics and science will be deepened through a valued partnership between teachers and mathematicians/scientists.

What makes this program unique/successful: ACTS aligns its program with the State and National Science Education Standards. A major goal of the program is to create leaders in classrooms, buildings, and districts at community, state, and national levels and to establish project accountability measures to ensure continuous improvement in curriculum implementation, professional development and the use of formative assessment to support student achievement. By the end of the program, participating teachers are better able to improve student achievement in mathematics, physical science, science & technology, the nature of science, the nature of inquiry and other academic disciplines.

Contact Name: Royace Aikin

Contact E-mail: royace.aikin@pnl.gov

URL: <http://science-ed.pnl.gov/index.stm>





Program Name: Women in Biotechnology and Information Technology (WIBIT)

Organization Name: Tincan

Year Founded: 1994

Location: Spokane

Areas of Life Science: Biotechnology

Participants Served: In-service teacher training, Middle School (grades 6-8), High School (grades 9-12). Focus on At-risk, Females, Racially/ethnically diverse, Rural, Teachers

When it is delivered: After-school, Summer

Brief Description: WIBIT focuses on integrating biotechnology and information technology in an after-school program for middle school girls. The project operates in two middle schools, with 15 students per grade in each school. The program has separate 7th and 8th grade curricula:

7th grade: The girls make a biotech product (soda pop) and record their experiments in fermentation, flavoring, amounts of sugar, and other variables as they work toward producing their final product. Their scientific observations are used to describe their product in the e-commerce site that they develop to sell their soft drink.

8th grade: The girls learn forensic biology and biotechnology techniques, such as analysis of blood at a "crime scene". Their final product is a computer mystery game that incorporates the use of scientific techniques in solving a crime. The first year of each curriculum is taught by TINCAN staff that includes both scientists and educators. After testing the curriculum, it is taught to a teacher in the participating school who then teaches the after-school program on a continuing basis.

What makes this program unique/successful: Because our programs primarily take place during out-of-school time, we make them a fun experience for the participants. We choose biotechnology topics that are intrinsically appealing to teens. The programs also emphasize team-building, because science is collaborative. In some schools, students are chosen to participate, giving involvement in the program the sense of being an honor.

Contact Name: Karen Michaelson

Contact E-mail: kmichaelson@asisna.com

URL: <http://www.tincan.org>



Program Name: Washington Science Olympiad

Organization Name: Science Olympiad

Year Founded: 1985

Location: Cheney

Areas of Life Science: Biology, Biotechnology, Ecology, Entomology, Genetics, Health Science

Participants served: Middle School (grades 6-8), High School (grades 9-12)

When it is delivered: After-school

Brief Description: Science Olympiad is an international nonprofit organization devoted to improving the quality of science education, creating a passion for learning science and providing recognition for outstanding achievement in science education by both students and teachers. These goals are accomplished through: classroom activities, research, professional development workshops and intramural, district, regional, state, national and international tournaments. Teams of students prepare projects for many months for these tournaments under categories designated by the national rule book.

Why this program is unique/successful: Science Olympiad is extremely popular with Life Science educators not only because it relates strongly to the National Science Education Standards for Life Science, but also because it provides students opportunities to apply what they have learned by working on projects in exciting and interesting categories such as Designer Genes, Disease Detectives, Health Science and Don't Bug Me.

Disease Detectives is a model event where teams solve interesting current health problems by using what content they have learned in the classroom and problem solving skills to determine the source and solutions to many disease problems that they and their community face during the year.

Contact Name: Jean Cavanaugh

Contact E-mail: statedirector@washingtonscienceolympiad.com

URL: <http://www.washingtonscienceolympiad.com>



Online Program Directory

www.pugetsoundcenter.org/wdc

Log on to the online program directory to find more outreach and education programs in Washington.

Life Science Central

www.LS-central.com

The Life Science Central Web Site features education and career information in life science fields specific to the state of Washington.

Access career information such as education paths and university or college programs, a career tree, position and salary information, an overview of the life science industry, and employer profiles. Video interviews explore the work of local employees.

Resources and online links are available to explore and learn about life science. K-12 teachers can log on for curriculum information, lesson plans and links other online resources.

Web Site launched in December 2006.

www.pugetsoundcenter.org/wdc

Prepared for **Workforce Development Council of Seattle-King County**

By **Puget Sound Center for Teaching, Learning and Technology**

21540 30th Drive SE, Suite 310

Bothell, WA 98021

425.368.1020



PUGETSOUNDCENTER

for teaching, learning and technology