

SMILE Annual Report

June 2016



SMILE Graduates!

We are proud to announce that all 42 current SMILE seniors are graduating high school, along with more than 95% of seniors who participated in SMILE for at least one year. We thank these accomplished students for their hard work and dedication, and wish them the best and brightest future! We welcome 20 SMILE alumnae to the OSU community this Fall!

There are six outstanding SMILE students who have been club members for the last nine years - from 4th-12th grade! This remarkable commitment demonstrates the abilities, talents, and drive that these students will apply to all their future endeavors.

9-Year SMILE Students:

Cynthia Estrada*

Nyssa High School

Jacoby Hernandez

Nyssa High School

Joshua Leckie

Siletz Valley Early College Academy

Alia Parker

Illinois Valley High School

Vanessa Ruvalcaba

Nyssa High School

Rosa Sanchez*

Nyssa High School

**Attending OSU this Fall!*



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Oregon State
UNIVERSITY

SMILE News: New Clubs & Communities

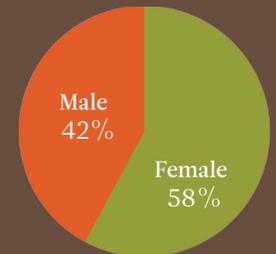
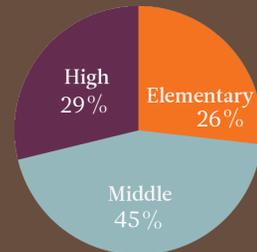


★ New clubs in 2016-17 school year

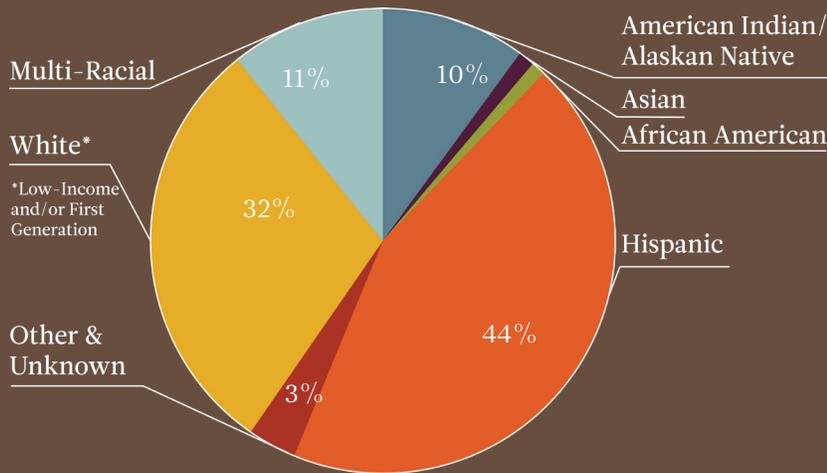
We are excited to welcome three new clubs this year! New clubs in Lebanon at both the middle and high school level will be joining the SMILE community. There will also be a new club at John McCaul Elementary in Forest Grove.

Student Demographics 2015-2016

707 SMILE students are in 37 clubs across 18 Oregon communities



In 2016 100% of current SMILE seniors graduated. More than 95% of seniors who participated in SMILE for at least one year graduated!



*Low-Income and/or First Generation

66% of SMILE students are from low-income households



SMILE Summer Bridge Program

SMILE Summer Bridge returns for its 16th year! Summer Bridge is a FREE 12-day all-inclusive immersion program designed to help new students adapt to the college environment. This year's program runs from September 6-18th. It offers an opportunity to connect with other incoming students and learn about campus resources that will help students successfully transition into college life. Students will live in residence halls, eat in dining halls, and receive a stipend for participating.

More information here:

<http://smile.oregonstate.edu/summer-bridge>

This year's Summer Bridge is made possible by a USDA Bioenergy Grant.



Meeting Challenges, Bridging Gaps

Rising to challenges and conquering them is part of SMILE's success.

Each year the program hosts Challenge days for elementary, middle and high school SMILE clubs. During Challenges, students are presented with STEM-inspired problems. They are then given tools, minimal training and a time limit in which to solve the problem. What evolves are creative, thoughtful and inspiring solutions.

Challenges are paired with College Connection days. These are influential events that connect STEM challenges to careers and introduce SMILE club members to higher education and careers they can achieve, much like their challenges.

Elementary School

The Oregon Museum of Science and Industry (OMSI) was the site of this year's Elementary School Challenge. Over 100 fourth and fifth graders gathered for an overnight STEM adventure. Club members got to explore the museum, see a planetarium show, learn about the laws of physics from



Bridge Challenge at OMSI

Sir Isaac Newton himself, and participate in three engineering challenges. These challenges involved creating a parachute that could safely land an egg; building a bridge of straw and pipe cleaners capable of holding the weight of several toy cars; and making a functional zip line.

After spending the night at

the museum, SMILE club members headed over to Portland Community College's (PCC) Rock Creek campus for their College Connection Day. They explored about the chemistry of fireworks, participated in a biology lab with rat dissection, learned about the care of zoo animals; and tried their hand at computer programming. The day also included a panel discussion with PCC students from similar backgrounds who discussed how they were inspired to attend college and pursue STEM-based careers.

Middle School

Gummy bears, marshmallows and dry pasta were the building materials used to create earthquake-proof structures at this year's Middle School Challenge held at Western Oregon University (WOU).

Over 250 students from SMILE clubs across the state teamed up to put their creativity and engineering skills to the test building structures 50 cm tall and able to withstand a simulated Magnitude 10.0 earthquake on a shake table designed and built by three OSU Mechanical Engineering students.

The students also had to carefully plan out which materials they would need and keep within a budget. Who knew 10 sticks of fettuccine would cost \$10,000? These students did.



Animal Science at PCC

Challenges continued

Keeping in budget, and on task, was all part of the challenge. Over 25 OSU student volunteers were on hand as team mentors to provide guidance and encouragement as club members worked to meet their goals in the allotted time. All the teams were able to

Who knew 10 sticks of fettuccine would cost \$10,000?

achieve the Challenge goal and some teams even built structures 90 cm tall that

were shake proof.

The next day students traveled to OSU for a College Connection Day. They toured campus, visited bioenergy and engineering labs, participated in volcanic eruption simulations, conducted bioenergy experiments and learned about STEM careers and college life.



Producing Bioplastics

High School

Teams of 120 SMILE high school students put their analytical and creative skills to the test for this year's High School Challenge. The goal – to make a flexible, bioplastic film that can be used for time-released drug delivery. They had to make bioplastic films and test them for flexibility and durability. Then teams created a prototype which theoretically could be infused with medicine that releases over time – much like a nicotine patch. Finally, the teams devised a marketing pitch for their biofilms and



Cooking the Patches

made a presentation to investors, as if they were a start-up biotech firm. In these presentations, students showed their knowledge about making the bioplastic film and its beneficial uses for drug delivery.

The following College Connection Day was held at OSU. Students visited campus and toured labs where engineers and scientists are actively creating products of the future. Students participated in an Environmental Health Science experiment, made t-shirts in the MakerSpace at the Austin College of Business, and participated in a panel discussion to answer questions about college life and debunk myths about college.

SMILE is proud to announce that 100% of current senior SMILE club members graduated this spring. Twenty SMILE alumae will join the OSU community this Fall!

SMILE Turns 30!

2017 marks a huge anniversary for the SMILE Program. Please stay tuned for details on a celebration of our three decades of success across Oregon! Thanks for your help in this accomplishment!



Monroe Middle School Club: A Day in the Stream

During their last full club meeting of the year, Monroe SMILE students spent their afternoon in Shafer Creek! As part of their StreamWebs project, students put on waders and used a net to collect macroinvertebrates at different points along the stream. They saw both a beaver dam and den in the process!

To learn more about StreamWebs, visit:

<http://www.streamwebs.org/>



SMILE News: Staff Changes



Left to Right: Nora Utevsy, Kyle Cole, Kami Hammerschmith

We are excited to welcome new staff to the SMILE office: Director Kyle Cole, Programs Coordinator Nora Utevsy, and Program Assistant Kami Hammerschmith.

Kyle comes to us with 26 years of experience as an educator and eight years of leadership with Precollege Programs (PCP) at OSU, and is excited about integrating SMILE into PCP. Nora joined the SMILE team after completing a Master's in Geology at OSU, which allowed her to discover her passion for science education in Oregon. Kami has been a member of the OSU community for over 20 years and looks forward to connecting with SMILE staff and students.

Thank You to Our Partners:

Our School District Partners!
 WOU Teaching Research Institute
 (University-School Partnership)
 Faculty: Dr. Kate Field, Dr. Steve
 Giovannoni, Dr. David Ji, Dr. Mark
 Novak, Dr. Skip Rochefort
 Oregon Community Foundation
 Americorps, Beaver Hangouts
 Kate Peterson, OSU Enrollment
 Management
 Sea Grant
 OSU 4-H & Extension
 OSU Department of Education
 Oregon Department of Education
 Oregon Museum of Science & Industry
 National Science Foundation
 US Department of Agriculture
 Portland Community College

Teacher Professional Development

A huge part of SMILE's success stems from our three annual Teacher Workshops, which are designed to connect education, research and professional experience in order to support teachers' abilities to engage their students in high quality learning.

In August, support from the University/School Partnership allowed SMILE to highlight Next Generation Science Standards, specifically focusing on Crosscutting Concepts. With support from an NSF grant with Dr. Mark Novac, we shared lessons about the ecology of riparian systems.

In January, teachers continued to explore ecology, this time through the lens of invasive species. Teachers examined classroom applications of bioenergy supported by the USDA, explored how batteries work, learned about ocean acidification, and discussed



Climbing an old growth Douglas Fir tree in H.J Andrews Experimental Forest

the role of culturally relevant practices in their SMILE clubs.

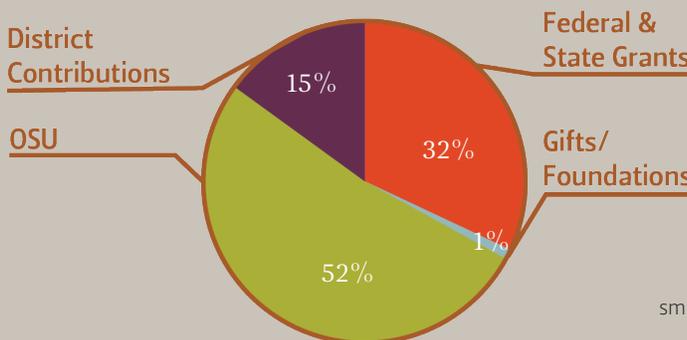
In May, SMILE teachers converged at the H.J. Andrews Experimental Forest. The group learned about ongoing research projects in the forest



Ocean Acidification in action! Teachers simulate buffering of CO₂ in oceans of varying alkalinities.

and reflected on their year. Teachers experimented with Light Detection and Ranging (LiDAR) software, forest ecosystems, and got to climb the canopy tree!

Thank you for another great year of SMILE!



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