

# Bee Campus Talk and Tour

Thanks to Clark's Teaching and Learning Center (TLC) for organizing a Bee Campus Talk and Tour with Steven Clark, biology professor and Bee Campus project manager on June 5.

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## Promoting native plants



Clark College will host two events for lovers of native plants this May. Its fifth annual native plant sale will take place at the college's greenhouse on May 3, 11:00 a.m. – 7:00 p.m., and May 4, 11:00 a.m. – 5:00 p.m. Additionally, the college will host a talk on native plants on May 3, 5:30 p.m. – 6:30 p.m., in Anna Pechanec Hall room 201.

## **About the Native Plant Sale**

All of the native plants available for purchase were planted and grown by Clark College biology and environmental science students in the college's Native Plant Center greenhouse.

Community members will be able to select from a wide variety of native plants, with an emphasis on flowering perennials, self-seeding annuals, and small shrubs perfect for any yard. Species available include Yarrow, Heal All, Mock Orange, California Poppy, Red Flowering Currant, Meadow Checker Mallow, Red Osier Dogwood, and more. Other products include student-made gardener's soaps and seed balls for attracting pollinators.

Plant sales support the college's Science Consortium Fund, which supports greenhouse operations and the costs of unique field studies class trips to places such as Malheur National Wildlife Refuge in eastern Oregon and the Lava Beds National Monument in Northern California. Students who participate in the four- and ten-day trips pay \$500 to \$750. The fund offsets those expenses, making the experience accessible to more students.

The sale will take place outside the college's greenhouse, located at on the east side of campus near the intersection of E. Reserve Street and McLoughlin Boulevard. Most plants are priced at \$10 or less. Students will be available to assist customers with transporting plants to vehicles.

For more information about the plant sale, contact [nativeplantcenter@clark.edu](mailto:nativeplantcenter@clark.edu) or visit [www.clark.edu/cc/plantsale](http://www.clark.edu/cc/plantsale).

## **About the Native Plant Talk**

Clark College STEM Coordinator and biology and environmental science instructor Erin Harwood answers the question "Why

native plants?” in this informative lecture on the importance of native plants to our local ecosystem. Harwood will also cover how to select, plant, and care for native plants in your home garden. The talk will provide detailed information on approximately 10 native plants that will attract wildlife to your yard, along with other benefits. This event is free and open to the public.

Both events take place on Clark College’s main campus. Clark College is located at 1933 Fort Vancouver Way, Vancouver. Driving directions and parking maps are available at [www.clark.edu/maps](http://www.clark.edu/maps). Individuals who need accommodation due to a disability in order to fully participate in this event should contact Clark College’s Disability Support Services Office at 360-992-2314 or 360-991-0901 (VP) or visit the Penguin Union Building room 013.

*Photo: Clark College/Nova Gump*

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## **Native Plant Sale**



Clark College will host its fourth annual native plant sale on May 4 from 11 a.m. to 7 p.m. and May 5 from 11 a.m. to 5 p.m. at the Natural Plant Center, the college's greenhouse. Most plants are priced at \$10.00 or less.

Students will be available to assist customers with transporting plants to their vehicles.

The event is free and open to the public. Clark College is located at 1933 Ft. Vancouver Way, Vancouver, WA, 98663. The greenhouse is located on the east side of campus off of E. Reserve St., near the Orange 2 parking lot. Directions and maps are available online at [www.clark.edu/maps](http://www.clark.edu/maps).

All plants were propagated by Clark College biology and environmental science students. In addition to prepping these plants for sale, students have been propagating other plants in the greenhouse for use in restoration projects at various sites in Southwest Washington including the Columbia River Gorge, Trout Lake, and Clark's future site in Ridgefield, Clark College at Boschma Farms.

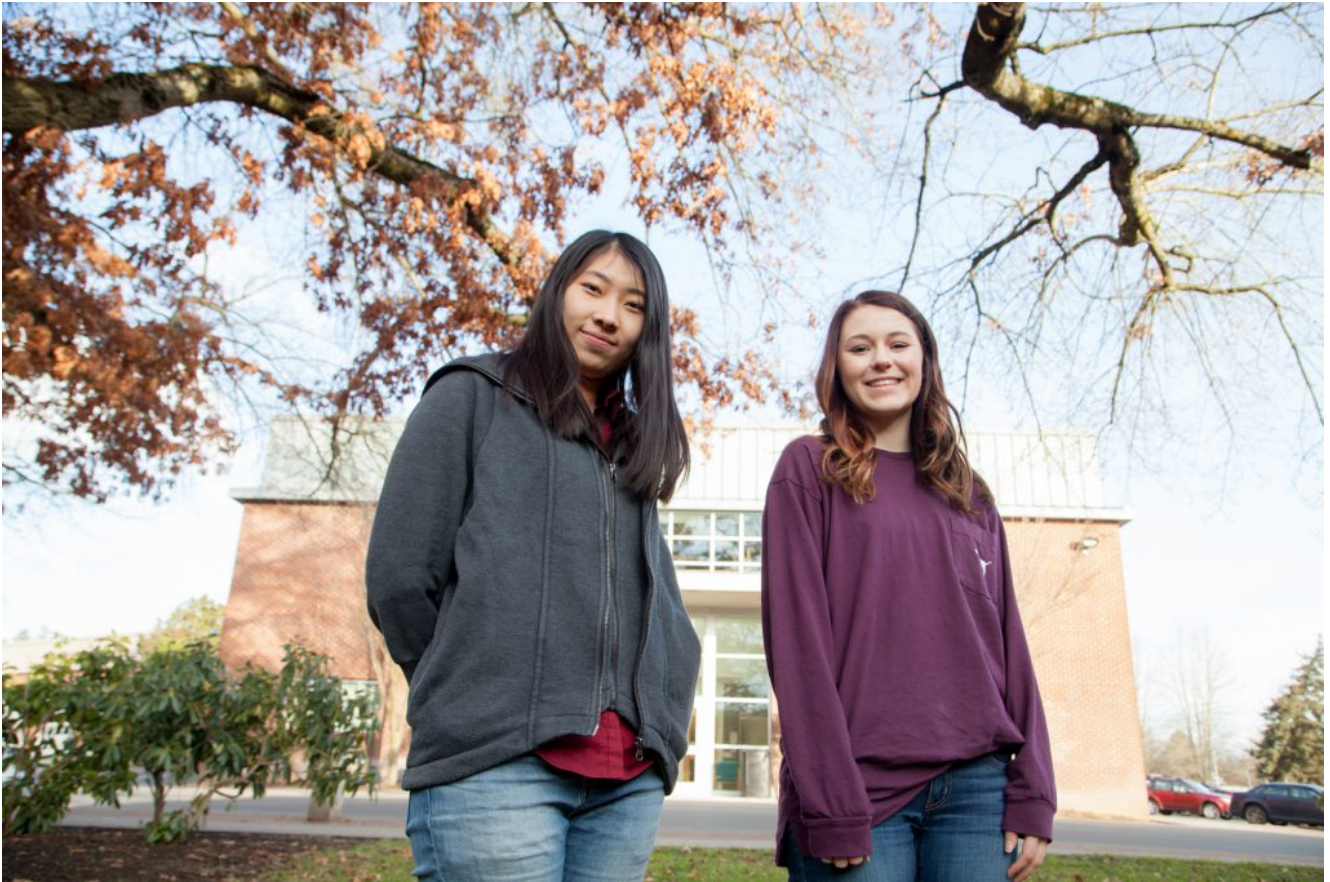
This year the sale features a variety of native perennials and shrubs along with one tree species, Western Red Cedar. Shoppers will be able to choose from among 23 different plants, including Red-flowering Currant, Native Rose, Lewis' Mockorange, Blanket Flower, Showy Milkweed, and Native Strawberry. Limited supplies of Trillium and Native Iris will be available as well. Many of these plants support the region's pollinators and make for low-intensity gardening.

Proceeds from the plant sale go to support the college's Science Consortium Fund, which helps cover the costs of a greenhouse coordinator and field studies classes. Students who participate in field studies visit places such as Malheur National Wildlife Refuge in eastern Oregon and the Lava Beds National Monument in Northern California. Students pay \$210 to \$255 for four-day and ten-day trips to these locations, which would normally cost more than \$1000 if not for the help of the consortium fund.

For more information about the sale or plants available, visit [www.clark.edu/cc/plantsale](http://www.clark.edu/cc/plantsale) or contact Erin Harwood, Clark College STEM Coordinator, at [eharwood@clark.edu](mailto:eharwood@clark.edu). Individuals who need accommodation due to a disability in order to fully participate in this event should contact Clark College's Disability Support Services (DSS) Office at 360-992-2314 or 360-991-0901 (VP) or visit room PUB 013.

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# **Global dreams converge at Clark**



Ruixuan Bai and Meghan Jackson are Clark College's nominees to the 2017 All-Washington Academic Team.

One student plans to spend her career overseas; the other traveled across an ocean to study here. But on March 23, the stories of Meghan Jackson and Ruixuan Bai will converge when they represent Clark College at the 22nd annual All-Washington Academic Team ceremony honoring 63 students from Washington state for their academic excellence and community service.

The All-Washington Academic Team is a program of Phi Theta Kappa, the international honor society for two-year colleges. Top students from each of Washington state's 34 community and technical colleges will be honored at the annual ceremony, which will be held at South Puget Sound Community College in Olympia; each will receive a medal and scholarship, and will become eligible for additional transfer scholarships from in-state colleges and universities.

### **About Ruixuan Bai**



Ruixuan Bai

When Ruixuan Bai first traveled from China to Clark College to study as an international student, it was her first time riding in an airplane. Bai, now 21, began her educational journey at Clark in the college's Intensive English Language Program three years ago. She has since become an active member of the Clark community. She has served as both a Transitional Studies Peer Mentor and an International Peer Mentor at the college, as well as vice president of the Associated Students of Clark College, president of the Chinese Culture Club, and president of the college's chapter of Phi Theta Kappa. Additionally, she volunteers at Peace Health Center and at Share House.

A first-generation college student, Bai chose to study in America on the advice of her parents, who urged her to broaden her horizons and learn from other cultures. She chose Clark in part for reasons of affordability and in part because of its prestigious nursing program.

"At first it was hard," she said. "I didn't know that much language. I wasn't used to the food—I wound up in the emergency room because my stomach hurt so much. But I really like the people here. They are very kind and very patient with my English. And I can eat the food now!"

Bai developed her goal of working in medicine after the death of her beloved aunt from uterine cancer. Currently, Bai is double-majoring in biology and business. She holds a 3.85 grade point average and plans to graduate from Clark in fall 2017, after which she hopes to continue her education in the United States.

“I want to have a better future, but I’m still deciding what that will look like,” she said. “I like the life here, but I miss my country and my family. I haven’t celebrated Chinese New Year since I came here.”

### **About Meghan Jackson**



Meghan Jackson

Meghan Jackson came to Clark College through Running Start, a Washington state program that allows high school students to earn college credit. The Washougal High School student said she was looking for an advanced learning environment, as well as the opportunity to explore interests before entering a four-year institution.

“College was always a given for me, but I never really knew what I wanted to study,” said Jackson, 17. “Part of why I wanted to do Running Start was so I could try different



classes and find out what interested me most.”

The strategy worked: Inspired by her women’s studies and political science courses at Clark, Jackson decided to pursue a career in international diplomacy. She has maintained a 4.0 grade point average at Clark and expects to graduate in spring 2017. In addition to her studies, Jackson plays high school soccer and serves as president of Washougal High’s American Sign Language Club.

Thanks to Running Start, Jackson may be able to enter university with sophomore or junior standing, thereby helping relieve the financial burden of college tuition for her parents. She says earning scholarships like the one provided to All-Washington Academic Team members not only helps further ease that financial burden, but also helps confirm her decision to begin college at an early age.

“I work really hard, I study a lot,” Jackson said. “To be able to say I’m a part of this, it’s special to me.”

*Photos: Clark College/Jenny Shadley*

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## **Learn as you lunch**



Biology professor Steven Clark

Clark College is inviting the public to come back to school for a series of free seminars that explore the lighter side of Science, Technology, Engineering and Math (STEM). New this academic year, the Clark College STEM Seminar Series launches on Friday, October 16, at noon in Anna Pechanec Hall room 201 with “Rockin’ Out with Rock Rabbits.”

This seminar covers research done by biology professor Steven Clark on pika, tiny rabbit-like creatures who normally live in high elevations. Prof. Clark will discuss what he’s discovered about an unusual population of these creatures living in the Columbia River Gorge whose survival may hold keys to understanding how our environment can adapt to global climate change. Expect Prof. Clark, who recently received an Exceptional Faculty Award, to share photos and insights in an exciting, high-energy presentation geared toward anyone with an interest in science—no Ph.D. required!

Other fall quarter events in this series include:

- **The Science Behind Sci-Fi** with Prof. Joe Pitkin, Oct. 30
- **Handicapping Horse Races** with instructor Robert Weston, Nov. 13
- **Breaking the Cycle of Abuse** with Prof. Mika Maruyama, Dec. 4

All events are held on Fridays from noon to 1 p.m. in APH room 201. All are free and open to the public. Light snacks will be

available and guests are welcome to bring their own lunches with them.

“Clark College has long been a center for STEM learning in this region,” said Clark College STEM Coordinator Erin Harwood, who helped organize the seminar series. “We already do lots of outreach to encourage interest in STEM among our community’s young people through our annual Science Olympiad and other events. This is a way to show adults as well that learning about STEM can be lots of fun. We’re hoping people start looking forward to these seminars as a great way to spend their Friday lunch break learning something new.”

Clark College is located at 1933 Fort Vancouver Way, Vancouver. Driving directions and parking maps are available at [www.clark.edu/maps](http://www.clark.edu/maps). Anyone needing accommodation due to a disability in order to fully participate in this event should contact Clark College’s Disability Support Services Office at (360) 992-2314 or (360) 991-0901 (VP), or visit Penguin Union Building room 013, as soon as possible.

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## **Exceptional Faculty Award spotlight: The naturalist**



Biology professor Steven Clark in his office.

Steven Clark's office is full of animals. There's the "Cats Against the Bomb" calendar; the poster of the grizzly bear; the woodblock print of a turtle; the vintage Audubon Society birdwatching chart; photos of bees, rodents, spiders, his dogs. The effect is something like walking into a natural history museum that's been shoved into a filing cabinet.

"This room is reflective of my interests," says Clark, glancing over at an illustration of wildflowers above his desk. And, indeed, a conversation with Clark is likely to take you through the intricacies of parasitic wasps, the difficulties involved in attaching radio monitors to pond turtles, and a startlingly accurate imitation of a pika—a small, rabbit-like creature whose populations in the Columbia Gorge Clark has been helping to monitor for years.

It's hard not to look around this room and assume that Clark was destined to be a biology professor. But Clark, who received his Master of Special Education for the Hearing

Impaired from Lewis & Clark College in 1986, began his career teaching almost everything *but* biology at the Washington School for the Deaf.

“I was attracted to the idea of teaching an underserved population,” he says. Eventually, however, Clark found himself drawn to the sciences, and in 2000 he left the School for the Deaf to pursue a master’s degree in Environmental Sciences and Resources at Portland State University. For four years, he worked as a field biologist for the Washington Department of Fish and Wildlife while also teaching mathematics and biology at Clark as an adjunct instructor.

For Clark, teaching at a community college still fulfills that urge to help underserved populations. “There are great teachers at all colleges, I know that, but I think the mission of the community college—to teach the rank and file of our community—I like that,” he says. “My mother never got to go to college. But I used to think that if my mom *had* gone to college, she would have gone to a community college.”



Professor Clark at a STEM demonstration in 2015.

Clark, who received tenure in 2014, currently teaches the biology sequence for life sciences majors, a three-quarter series that has earned a reputation as a daunting academic challenge.

“It’s funny, because I think of myself as a warm person, but I

know my class is often perceived as ... rigorous," Clark says, smiling and pausing as he searches for the right word. "I think some students get nervous at first when I explain the work load. But the reason I talk about it from the very beginning is that I want them to understand what they're getting into. I invite students from the past year to talk about what worked in getting them to be successful. I'll tell students to show me their notes so I can see where they're missing something. And you know, I think by the middle of winter quarter, their [study] habits have gotten better and they're starting to have fun."

Clark's theory is backed up by the many students who nominated him for a 2014-2015 Exceptional Faculty Award. "Biology may very well be the study of life, but without an enthusiastic instructor it can seem completely lifeless," reads one nomination. "Steven Clark has somehow managed to maintain a strict and efficient authority over his classroom, while also making it incredibly fun and intriguing. I can honestly say that I have never seen those two concepts, authority and fun, incorporated into a class so well together. ... He truly cares for his students, that is abundantly apparent."

For Clark, his classes' rigor is one of the ways he shows that he cares. "I like my students to know that they did all their hard stuff at community college, where the focus is on teaching and the tuition is lower and there's more room to recover from mistakes," he says. "The best thing for me is when former students email me and say, 'I'm at Washington State University right now, and me and the other Clark students are in the top tier.'"

Learn about other recipients of the 2014-2015 Exceptional Faculty Awards.

*Photos: Clark College/Jenny Shadley*

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# Small World Could Bring Big Rewards



When antibiotics were first introduced in the 1930s, they seemed almost magical in their ability to save people from previously fatal infections. But recently, the medical community has warned that bacteria are evolving to resist the current drugs available, creating an urgent need for new antibiotics. Now Clark College has joined with Yale University to become part of a program searching for new antibiotics—and getting students interested in science, technology, engineering and mathematics (STEM) at the same time.

Called the Small World Initiative, the project is funded and organized by the Yale Center for Scientific Teaching. Clark is

offering the Small World Antibiotics Research classes (BIO 105 & BIO 106) in the winter quarter of 2019, and another session of BIO 105 in the spring quarter.

“Clark College was one of only four community colleges in the country to be picked to start this pilot program,” says Dr. Ryan Kustus, a Clark biology instructor who teaches the Small World class. “That makes Clark not just different from other community colleges, but different from other four-year colleges, other universities. This is a very different learning experience that a lot of students in this country just don’t get.”



Biology instructor Dr. Ryan Kustus, *standing*, helps students in the Small World Initiative class.

In Small World, students learn microbiology by doing hands-on research—in this case, collecting soil samples to test them for potential new antibiotics. Approximately 75 percent of the antibiotics currently in use are derived from microorganisms living in the soil. After students gather their soil samples, they bring them back to the classroom, where they learn to grow the organisms living within those samples in various media in petri dishes until they have enough to test. Students



then purify those organisms in order to test them against four sample bacteria that are commonly used to test antibiotic-effectiveness by pharmaceutical companies, in the hopes of finding organisms that can kill them.

“It’s really student-driven,” Kustus explains. “I give them supplies; I tell them what may work, what might not work; and then they experiment. It really is a truly hands-on, authentic research experience.”

Any promising microorganisms are sent to Yale for DNA testing to see if they already are known to medical science; if they aren’t, these microorganisms could become the source of medicine’s next broad-spectrum antibiotic. During the class’s inaugural run at Clark during the 2014 spring quarter, two students found an organism that killed all four pathogens, and while it turned out that the microorganism had already been discovered and studied by other scientists, the possibility of discovering something that could one day save people’s lives helps keep students motivated and enthusiastic.

“I told everyone I could about that class,” says pre-nursing student Dawn Smith, who enrolled in Small World after seeing a poster advertising it near Registration. “It would be so awesome to be involved in something like finding a new antibiotic. Just the idea of that is incredible.”

It's also crucial, given that more and more infections have grown resistant to currently used antibiotics.

According to the Centers for Disease Control, each year at least 2 million people in the U.S.



become infected with antibiotic-resistant bacteria; at least 23,000 of them die due to those infections. Yet pharmaceutical companies have been reluctant to research and develop new antibiotics because the drugs are rarely profitable—patients only take them in emergencies, and only for a week or two at a time.

“We simply do not have enough drugs to treat our current infections,” says Kustusch. “We’re going back to the 1800s, when you treated infection by amputation—which is a terrible vision for our future. Someone has to do the initial legwork to find these drugs. We’ll never be the people doing the clinical testing and human trials and all that, but no one else is doing this basic legwork.”

“In this class, money was stripped out of the equation,” says Smith. “All we had was the big question mark hanging over our heads—our curiosity. We didn’t have to worry about profit.”

Kustusch says that combination of hands-on learning and potential real-life rewards makes Small World the perfect way to get more students interested in science. BIO 105 has no prerequisites, meaning non-science majors can take it to complete their science requirements for their degree. If a student is interested in the second Small World course, BIO 106, but has not completed the prerequisite of BIO 105, they

may contact microbiology professor Dr. Roberto Anitori for a waiver (ranitori@clark.edu).

“I had a couple students who had taken a couple classes in biology, and they said this solidified that they really want to go down this path,” says Kustusch. “But the majority of the students in this class weren’t interested in science—or thought they weren’t. Now I have two students talking to me about, ‘How do I pursue a B.S. in biology?’ I think that was the goal of this class: For the people who really like science, let’s keep them interested. And for the people who never thought of this as a potential option, they’re now excited and thinking, ‘Maybe I can do something in a STEM field.’ And that’s fantastic.”

*Photos: Clark College/Jenny Shadley*

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# **Icy                      Adventures                      in Microbiology**



Photo courtesy of Dr. Roberto Anitori

From one-celled organisms to imaginary elephants, we have much to learn from the non-human life forms around us. That is the theme of this year's season of Clark College's Faculty Speaker Series, "Microbes, Pets, and Puppets: What Animals Can Teach Us."

The series begins on October 30 at 4 p.m., when biology professor Dr. Roberto Anitori presents "Microbial Heroics in Antarctica" in the Ellis Dunn Community Room (Gaiser Hall room 213) on Clark College's main campus.

This presentation is a fascinating exploration of some rarely seen "extremophiles," microbes that have adapted to survive in places where most living things could not—in this case, the remote and lightless ice caves in an Antarctic volcano. Part travelogue, part scientific presentation, Dr. Anitori invites guests to voyage with him on his 2010 research expedition to

Mt. Erebus, the second-highest volcano in Antarctica. Through photos and stories, he will share his experiences training to survive in sub-zero temperatures, as well as his initial findings about the microbes living inside Mt. Erebus's caves—which could have implications for life in even more difficult-to-research regions, like the deep sea, areas far below the earth's crust, or even other planets.

“We think these ice caves are models for environments without light,” says Dr. Anitori. “Most life on earth depends on sunlight.”

Instead, these microbes survive on nutrients within the very rock itself—for example, digesting manganese and iron the way other organisms digest biological material. This discovery could, in turn, provide valuable insights into a little-understood aspect of Earth's ecology.

“Most people, when they think about microbes, they think about things that make you sick—or make yogurt or beer,” says Dr. Anitori. “But 95 percent of the microbes on this planet don't have anything to do with those things.”

This presentation is free and open to the public. Individuals who need accommodation due to a disability in order to fully participate in this event may contact Clark's Disability Support Services Office at 360-992-2314 or 360-991-0901 (video phone) or email [dss@clark.edu](mailto:dss@clark.edu) within one week of the event.

Future Faculty Speaker Series presentations include “Why Do We Need a Pet? Effects of animals on children's socio-emotional development” and “Bilingual Puppetry: a Project-Based Learning Exploration.”

**About Dr. Roberto Anitori**



Dr. Roberto Anitori

Dr. Roberto Anitori has spent many years studying extremophiles and other microbes. After earning both his bachelor's and doctoral degrees in Molecular Biology and Microbiology from the University of New South Wales in Sydney, Australia, he worked in research labs at Macquarie University in Sydney and at Oregon Health and Science University. In addition to his work in Antarctica, he has researched extremophiles in other volcanoes, deep-sea vents, underground water tables, deserts, and radioactive hot springs; he wrote the first published description of microbial life in the radioactive Paralana hot spring of Australia. He has been invited to lecture by organizations including the Australian Society for Microbiology, the Geological Society of Australia, and NASA. In 2011, he received the Antarctica Service Medal from the National Science Foundation. Dr. Anitori began teaching microbiology at Clark in 2008 and received a tenure-track faculty appointment in 2013. He is the editor of the book *Extremophiles: Microbiology and Biotechnology* (2012, Horizon Press).

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# Green Penguins with Wet Feathers



Environmental Biology students take a break before planting a Chinese Pistache in Scarpelli Circle to smile with Instructional and Classroom Support Technician Tim Carper, who organizes the annual tree planting at Clark.

As Kermit the Frog once sang, it's not easy being green. Admittedly, Kermit probably wasn't talking about shoveling dirt in a cold, quintessentially Pacific Northwest drizzle. But members of the Clark College and greater Vancouver community banded together on November 6 to do just that during the college's annual tree planting. These plantings help maintain the main campus's arboretum, as well as its status as a Tree Campus USA.

The group that gathered under rainy skies to plant trees

included students from Clark's Environmental Biology class; members of the Clark College Environmental Club; participants in the Washington Conservation Corps; members of the college's Tree Advisory Committee; and representatives from Vancouver's Urban Forestry. Staff from Clark College Facilities Services also assisted in the project.



Volunteers clear Scarpelli Circle of non-native plants and prepare it for having a new tree planted in its center.

The group planted four trees. Two of them—an American Yellowwood and a Chinese Pistache—were donated by Urban Forestry and are new species to the arboretum. The group also planted a Knobcone Pine; this tree was actually an offshoot from an older tree on campus that died and was removed. “So technically, it is a new tree to campus as well, because the parent tree had died and been removed from the inventory,” said Instructional and Classroom Support Technician Tim Carper, who has organized the tree planting and Tree Campus USA activities at Clark for the past four years.

Carper noted that the Yellowwood and Pistache weren't just new species to the campus—they were entirely new genera. “We are very close to having trees representing every genus that will reasonably grow in our climate and is available to us,” he said. “That has been kind of the guideline for adding to the



arboretum.”

The fourth tree, a Snake-Bark Maple with colorful leaves and bark, was appropriately enough planted near Frost Arts Center.

*Photos: Clark College/Hannah Erickson*