

Computer Science and Electrical Engineering

Engineering and Computer Science students preparing to graduate presented their projects in an expo in the STEM Collaboratorium.

Women in STEM Tea

Clark College welcomes four alumni to speak at annual Women in STEM Tea event.

Rocket Breaks Record

On April 28, the rocket “Little Penguin” traveled 11-miles, and was recovered by the club.

Clark College newly certified by Bee Campus USA

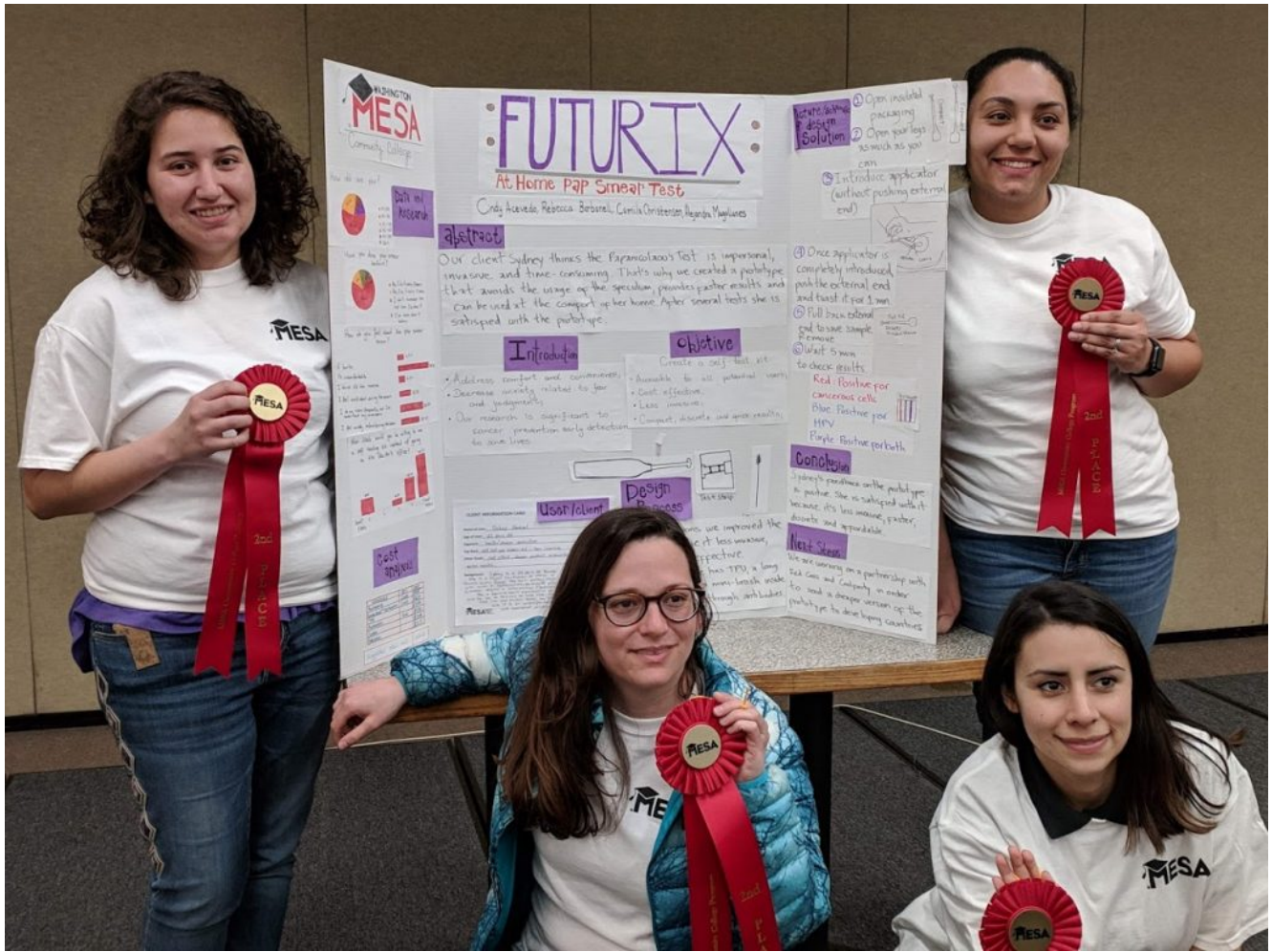
Just in time for Earth Day, Clark College was certified as an affiliate of the Bee Campus USA program on April 20, joining

165 other college campuses and 179 cities across the country united to make their landscape attractive to pollinators.

Meet Warlock Carol Hsu

Clark College Engineering Professor Carol Hsu is an immigrant, a woman of color, and a pioneer of sorts who pursued a mechanical engineering degree at a time when only 10% of engineering students were women.

MESA students engineer
possibilities



Clark student Alejandra Magallanes, *far left*, was part of a group that won second place in a competition for human-based engineering solutions at a recent MESA conference.

Clark's MESA program is still in its first year, but already it's providing new opportunities for student success.

MESA (Math, Engineering, Science Achievement) is a national program dedicated to encouraging under-represented populations to succeed in STEM fields. At Clark, this includes a dedicated space for studying and creating community, as well as opportunities for mentorship, assistance with books and fees, and conference participation.

This March, two Clark MESA students attended the MESA Student Leadership Retreat at Warm Beach Camp in Stanwood, Washington, along with students from 15 other MESA community college programs from Washington and California. Mai Lee Xiong and Alejandra Magallanes were able to participate in activities to boost their professional development and leadership skills.

They also participated in a competition for human-centered design solutions, breaking into groups to identify a problem, interview a potential user of their solution, and prepare a poster and oral presentation to explain it to others.



Mai Lee Xiong, *far left*, collaborated on a concept for a medical-translation app at a recent MESA conference.

Xiong's group focused on health care disparities that arise from language barriers between health care providers and patients whose first language is not English. They proposed the development of an app to translate medical information into different languages—one that would include medical terminology not available through tools like Google Translate. The project was a perfect fit for Xiong, who is studying biology and plans to pursue a degree natural medicine after

her bachelor's degree.

Alejandra Magallanes's group also decided to tackle an issue related to healthcare: the availability and convenience of Pap smear exams to detect cervical cancer. They proposed a device that could be used at home to collect a sample of cervical cells. It could be used by people who have difficulty attending doctors' appointments or who may avoid Pap smears because of the uncomfortable nature of the exam—and in doing so, could increase the number of people who receive preventative care. Magallanes' group won second place in the competition, which includes proposals from more than 20 teams.

As with Xiong, Magallanes's project aligned well with her interests; like Xiong, she is studying biology and plans to transfer to a university for her bachelor's degree after graduating from Clark College in 2020.

"This experience really helped show the value of having the MESA program at Clark College," said MESA director Dr. Ellen Harju. "It was wonderful to see these two students be able to work and succeed with their peers in an environment that allowed them to be their authentic selves. I'm excited to see more of our MESA students get the chance for these experiences."

Clark's MESA program is located in the STEM Building rooms 206/208 and is open Monday – Thursday 8:00 a.m. – 6:00 p.m., Friday: 9:00 a.m. – 5:00 p.m., Saturday: 10:00 a.m. – 2:00 p.m. More information about the program is available online at www.clark.edu/cc/mesa.

Photos: Clark College/Ellen Harju

Winter STEM Seminars



Efforts to create ecotourism and protect two monkey species in West Africa are the subject of Dr. Robert Schubert's STEM Seminar Series lecture.

Clark College is inviting the public to come back to school for a series of free lunchtime seminars that explore the lighter side of Science, Technology, Engineering and Math (STEM). Begun in 2015, the Clark College STEM Seminar Series launches its 2018 Winter season with yet more fun, informative presentations geared toward anyone with an interest in science—no Ph.D. required!

The winter quarter events in this series include:

- **January 19: The Aka and Bofi Foragers of the Central African Republic** with Dr. Jay Fancher, Clark College anthropology faculty. Join Dr. Fancher as he recounts tales of his doctoral field research with the Aka and Bofi foragers of the Central African Republic. Learn how studying—and sharing—their meals helps researchers better understand archaeological findings from the area.
- **February 16: Human Culture and Primate Conservation** with

Dr. Robert Schubert, Clark College anthropology faculty. When balancing modernization with protecting wild species, creating local control of conservation efforts is crucial to their success. Dr. Schubert shares stories of how local beliefs help preserve two West African primate species and of the challenges posed in developing successful ecotourism initiatives.

- **March 9: It's All About Mud!** with David Kluesner, geologist and Florida Gulf Coast University faculty. When oil and other pollutants spill into water, how can scientists predict where they'll wind up? With more than three decades of experience in the field, this geologist shares his study of pollutants in the mud of a Florida estuary—and what that mud can tell us about how to track and contain future spills.

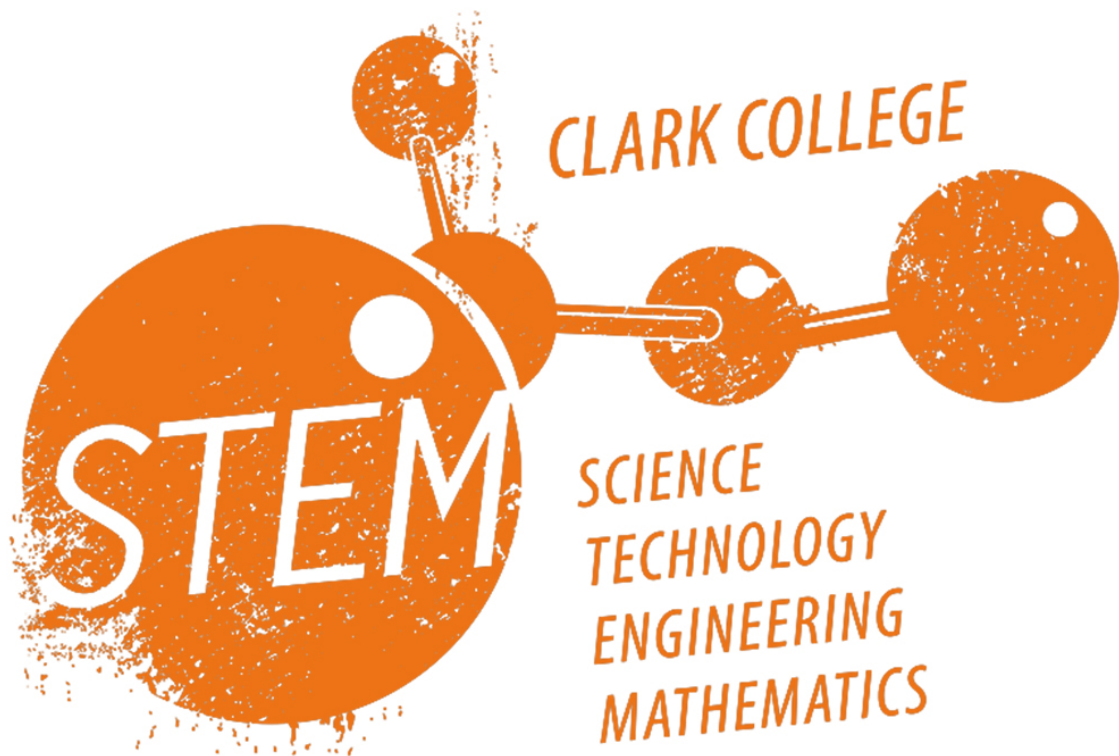
All events are held on Fridays from noon to 1 p.m. in the STEM Building room 151 on Clark's main campus. All are open to the public. Light snacks will be available and guests are welcome to bring their own lunches with them.

Clark College is located at 1933 Fort Vancouver Way, Vancouver. Driving directions and parking maps are available at 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.

This article was contributed by STEM Outreach Program Coordinator Nadia Kluesner.

Photo courtesy of Dr. Robert Schubert.

Free STEM Seminars begin Oct. 20



Clark College is inviting the public to come back to school for a series of free lunchtime seminars that explore the lighter side of Science, Technology, Engineering and Math (STEM). Begun in 2015, the Clark College STEM Seminar Series launches its 2017 Fall season with yet more fun, informative presentations geared toward anyone with an interest in science—no Ph.D. required!

The fall quarter events in this series include:

Oct. 20: Terrific Telescopes—Windows to Our Universe with Dr. Duane Ray, Clark College Economic & Community Development instructor

Join Dr. Ray as he reviews the amazing technology of today's telescopes and how they work. He will then take us on a tour around the world, showing the latest equipment now installed or being installed, including light, infrared, microwave and X-ray telescopes.

• Nov. 17: Cave Curiosities with Eddy Cartaya of the U.S. Forest Service

As a ranger in the Deschutes National Forest, Cartaya has the opportunity to investigate many caves while solving crimes. His work on glacier caves in Mt. Hood has provided valuable information about these fragile and ever-changing ecosystems.

• Dec. 1: Telling Science Fact from Fiction with staff from Clark College Libraries

Information is moving fast and furious these days, and it can be difficult at best to tell what is and isn't high-quality scientific information. Join a team of Clark librarians for some ideas about how best to tell scientific fact in the media from fiction. This promises to be a fast-paced and fun romp through scientific literacy!

All events are held on Fridays from noon to 1 p.m. in the STEM Building room 151 on Clark's main campus. All are open to the public. Light snacks will be available and guests are welcome to bring their own lunches with them.

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Young scientists unite



Students competing at the 2017 Southwest Washington Regional Science Olympiad.

Burning marshmallows, miniature hovercrafts, robotic arms, and the perennial favorite, bottle rockets, were a just a few of

the 48 activities featured at this year's Southwest Regional Science Olympiad Tournament, which took place at Clark College on Saturday, March 4.



Mid-experiment at the Science Olympiad.

More than 350 young scientists from 20 middle-school and 18 high-school teams competed in the Olympiad, coming from as far north as La Push, Washington, and as far south as Corvallis, Oregon. Winning teams from the regional competition earned spots in the Washington State Science Olympiad, which will take place at Highline College in Des Moines, Washington, on April 15.

Science Olympiad is a national nonprofit organization that encourages a love of science through educational opportunities, hands-on activities, and regional, state, and national tournaments.

STEM Coordinator Erin Harwood, who oversaw the planning and logistics for the tournament, said she was very pleased with the outcome of the event.

"We've had a four-year break from hosting any Science Olympiad event this large, and it's been a very long time since we hosted a regional event, so this was a nice change and a great way to get back to hosting again," she said. "It was really amazing how many students volunteered, and the faculty and staff—even the Dean!—got in on helping out."



Clark students volunteered to help make the Olympiad possible.

More than 130 volunteers—most of them Clark College students, employees, and alumni—helped make the event possible.

At the end of the day, the school teams, event volunteers, and others who participated in the tournament gathered in the O'Connell Sports Complex gymnasium for an awards ceremony filled with energy and enthusiasm. Students from the Quileute Tribal School, whose team had traveled the farthest to participate in the Olympiad, shared a song and words of encouragement with the other attendees before the awards were announced. Eleven teams, five from middle schools and six from high schools, will be continuing on to the state tournament. Camas schools will represent a full five of those eleven teams moving on to the state level.

The following teams will be advancing to the Washington state competition:

B DIVISION (MIDDLE SCHOOL)

- 1ST PLACE: Skyridge (Blue Team)
- 2ND PLACE: Liberty (Black Team)
- 3RD PLACE: Skyridge (Green Team)
- 4TH PLACE: Jason Lee (Red Team)
- 5TH PLACE: ExCEL

C DIVISION (HIGH SCHOOL)

- 1ST PLACE: Camas (Black Team)
- 2ND PLACE: Camas (Red Team)
- 3RD PLACE: Woodinville
- 4TH PLACE: Union (Black Team)
- 5TH PLACE: Skyline
- 6TH PLACE: Washougal (Black Team)

For more photos of the event, visit our Flickr album.

Article contributed by Nova Gump

Photos: Clark College/Nova Gump

Building a Better Future



Keeley
McConnell '16

You want to know Keeley McConnell's strategy for success, the thing that's helped her go from remedial math to high-level medical research? It's this: Stay focused on the path in front of you. One foot in front of the other. If you can make that next step, you can keep going.

Four years ago, the next step was: Get the kids in the car. Pack everything else in around them. Get the heck out of Dodge before your ex comes back.

Eighty miles later, McConnell and her three children arrived at a shelter for victims of domestic violence. She'd left her job, her home. She had no idea how she would support her family on the money she earned as a medical assistant. But one thing at a time. Find a place to live, get some stability.

It was only three months later, when McConnell had moved her family into an apartment, that she considered college. "When I was in high school, I never thought about college as an option," she says. "I'd taken one class when I was pregnant with my son, but I tested into the lowest level of math they had and I thought, 'Oh my goodness, this is going to take forever!'"

However, a friend encouraged McConnell to come with her to apply to Clark College. Just as she'd feared, McConnell tested into DVED 21, the lowest-level math course offered at the time. But one thing at a time. Keep your eyes on the path.

McConnell's other strategy has been listening to advice from friends, family, and mentors. When an instructor suggested she enroll in Clark's Math Academy program, McConnell signed up. This yearlong program pairs standard classroom time with dedicated math labs, where students get extra help understanding difficult concepts. McConnell describes it as

“the key to my success in math.”



Keeley McConnell helping a student in Clark College's STEM Tutoring Center.

By the time McConnell finished her last Math Academy class, not only was she prepared to enter college-level math courses—she'd been recommended to become a math tutor herself. The experience helped boost her confidence and gave her the tools she needed to continue pursuing her dream of becoming a physician's assistant.

That goal would require her to spend two more years at Clark to earn an associate degree, plus another two at a four-year institution to complete a bachelor's, followed by at least two years of medical school. *But.* One foot in front of the other. Stay focused on the path in front of you.

McConnell continued to thrive at Clark, finding she enjoyed the intellectual challenge of biology coursework. And once again, a mentor stepped in to change the course of her life. When biology chair Dr. Travis Kibota first approached her about applying to the BUILD EXIT0 Scholar Program, she was skeptical. Run by Portland State University in partnership with Oregon Health Sciences University, and with funding provided by the National Institutes of Health, the program helps undergraduates from diverse backgrounds become successful in health research careers.

“I was hesitant at first, because I wasn’t originally interested in going into research,” McConnell says. “But it’s been the most amazing opportunity.”

Through her participation in BUILD EXIT0, McConnell joined a cohort of students from community colleges in the region who formed a Research Learning Community. Within that RLC, she could learn about careers in research, develop skills, and connect with mentors. She also had a built-in social network to help her make the adjustment to a four-year institution after she graduated from Clark in spring 2016.

“If I had had to do all this without EXIT0, I would have been really overwhelmed,” she says. “I knew everyone at Clark—staff, faculty, students. PSU was huge. But the EXIT0 staff have been there for me—you can go in and ask them anything.”

Now a junior in her second semester at PSU, McConnell is deeply immersed in research in her chosen field of trauma medicine; she’ll even see her name on some upcoming research papers, a big boost to career advancement in the research world. “I work with the Chief of Trauma at OHSU,” she says proudly. “I wear a pager; when a call comes in, I’m there, collecting data and samples.”

McConnell says it was overwhelming when she first walked into OHSU. “I looked up and thought, ‘I’m so close. I’m literally standing in the building I want to have my future in. It’s what I’ve been waiting for my whole life.’”



Keeley McConnell, left, celebrates graduation from Clark College in 2016 with a friend.

She still faces challenges. While BUILD EXIT0 students receive a stipend that significantly eases the financial burden of being a college student, McConnell still works 30 hours a week outside of school to support herself and her three children, now ages 8, 9 and 18. And she struggles to find time to be present for her children as a mom.

“It’s probably my biggest challenge right now,” she says. “But they’re great, they’re my little drivers. I want them to have something better. They need to see that, when you want something and you work really hard at for it, you can get it.”

McConnell brought her son with her earlier this year when she was invited to the Washington State Association of College Trustees’ Transforming Lives Awards banquet, where they sat between Clark College President Bob Knight and two state senators. “I wanted him to experience that,” she says. “But once we were there, I realized how big a deal this was for me, too. With me, I get so focused on the road ahead, I don’t spend much time thinking about the big picture. It made me realize, ‘Oh, gosh, I guess I have come a long way.’ And, you know, my kids and I—we’re still moving forward.”

Are you a student interested in participating in BUILD EXIT0? The application deadline for the 2017-2018 year is February 28, and there is a free application help session on Friday, February 24, 10 a.m. – 11:50 a.m., in SHL 124.

Photos: Clark College/Jenny Shadley