A GEIGER COUNTER FOR STUDENT SUCCESS

Cal Poly Pomona's First Couple Establish Endowment to Support Innovative Learning Experiences

By John Replogle

In 1908, two physicists at the University of Manchester in England developed a technique for measuring the radiation emitted from the nucleus of an atom. By deciphering the invisible particles emanating from a nucleus, Hans Geiger and Ernest Marsden revolutionized the world's understanding of atomic structure. Two decades later, Geiger invented an instrument that accurately and efficiently measured radioactivity. Today, it is called a Geiger counter.

Measuring invisible rays and particles transformed scientific knowledge. As a longtime educator and university administrator, **Cal Poly Pomona President Soraya Coley** is inspired by this world-changing device. As she explains it, President Coley has spent her entire career striving to be a Geiger counter – not for atomic particles, but for talent.

"Talent is equally distributed, but opportunity is not," she says. "One of our most important meta-objectives at Cal Poly Pomona is to find and nurture the talent in each of our students. By maximizing their potential and removing institutional and other barriers, our students make creativity, discovery and innovation a reality of their educational experience while also preparing for success in their chosen fields."

Similar to a Geiger counter that recognizes unseen particles, purposeful programs can find, foster and inspire talent so students' potential can be realized. To uncover those interests and abilities, President Coley, and her husband **Lt. Col. (Ret.) Ron Coley** created the **President Soraya & Ron Coley Discovery Fellows Endowment Fund** to support Cal Poly Pomona students engaged in the innovative **Learn Through Discovery** (LTD) initiative. As part of LTD's "**Projects Hatchery**," interdisciplinary cohorts of students from diverse backgrounds work collaboratively to create innovative solutions to challenges in their communities. With the support of the Coleys' endowment, students can focus on executing their ideas and research and applying it in the field without worrying about funding to continue their project.

"The Projects Hatchery transforms the lives of our diverse student body, while promoting a positive impact on the target communities," says Mr. Coley. "Soraya and I believe so deeply in the lifechanging effect of this program that we wanted to find some way to make it accessible to even more Broncos, especially underrepresented students."

The Coleys' commitment to nurturing talent and transforming lives through educational and other opportunities was born deep in their own experience. Growing up in Goldsboro, North Carolina, President and Mr. Coley lived through the "Jim Crow" era of de jure segregation, which mandated where Blacks and other people of color lived, worked, went to school, and most importantly, limited the life options and opportunities available to them.

Their experience inspired them to work to eliminate barriers that separate people and to seek ways to help others discover and develop their talents and fully use them for the betterment of their communities, our country and globally.

"We know that the passage of federal laws during our early adult years opened a small crack in the door leading to expanded opportunities," President Coley recalls. "Thus, our mission focused on advocating for fully opening the door and encouraging and assisting others from underrepresented and economically disadvantaged backgrounds to recognize, seek and seize the opportunities that best utilize their talents."

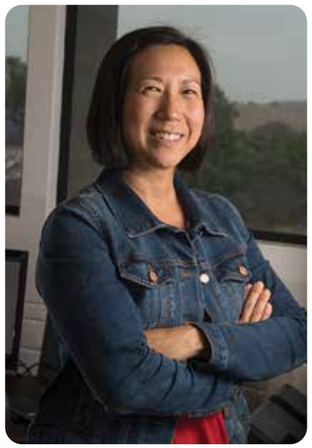
The Coleys are drawn to the Projects Hatchery based in part on its proven outcomes. Surveys of more than 9,000 Cal Poly Pomona students revealed that students who participate in projects like those featured by the Projects Hatchery are six times more likely to graduate. Likewise, the interdisciplinary nature of the program ensures that students from across the entire campus benefit.

"These are typical of the results we find throughout Cal Poly Pomona," Mr. Coley explains. "We support the Projects Hatchery because it works as a force multiplier for student success."

It has been a century since Hans Geiger and his colleagues changed the course of scientific history. Soraya and Ron Coley are hoping to continually change the course of history for students through their investment in Cal Poly Pomona's inclusive and diverse polytechnic educational experience. A commitment made during President Coley's presidential investiture, the couple established the **President Soraya & Ron Coley Discovery Fellows Endowment Fund** to help students discover and develop their talents as they proceed to graduation and to ensure that the LTD Projects Hatchery – a true Geiger counter for talent – continues to thrive. They welcome and encourage contributions from those who share their vision and commitment.

Faculty Q&A *with Professor*

Winny Dong



Winny Dong, chemicals and materials engineering professor, co-founded and leads the **Learn Through Discovery (LTD) Projects Hatchery**, which guides students in "hatching" their ideas into a real, tangible product. Students can explore and pursue innovative ideas with the help of mentors, advisors and peers. Once their idea is developed, they can receive up to $8,000 from the **President Soraya & Ron Coley Discovery Fellows Endowment Fund** to implement their community-based project, start a business or build an innovative product.

Dong, who also serves as the faculty director of the Office of Undergraduate Research, talks about the origins of the Projects Hatchery and how she's seen innovative ideas come to life.

How did your research help form LTD Projects Hatchery?

Based on our research, we know that students who participate in project-based activities are twice as likely to graduate than those who do not. Undergraduate students say that faculty advising, peer mentorship and team collaboration contribute to their determination to succeed.

About 10 years ago, I teamed up with **Olukemi Sawyerr**, the interim assistant vice president of the Office of Academic Innovation, which oversees the LTD Initiative, to start a program that helps STEAM (science, technology, engineering, arts, math) students go through the entrepreneurial process. The steps to a successful start-up – identifying a problem, coming up with a potential solution, testing the solution and sharing that information publicly – are the same as implementing any successful project.

We wanted to duplicate the success of the entrepreneurship program and make it available to more students. This was the impetus for creating the Projects Hatchery, where students can discover their passion and make an impact. The Projects Hatchery guides students from all disciplines through the steps that are key to implementing projects that have positive impacts on a community. We want to help students see that their knowledge and experiences can create positive change.

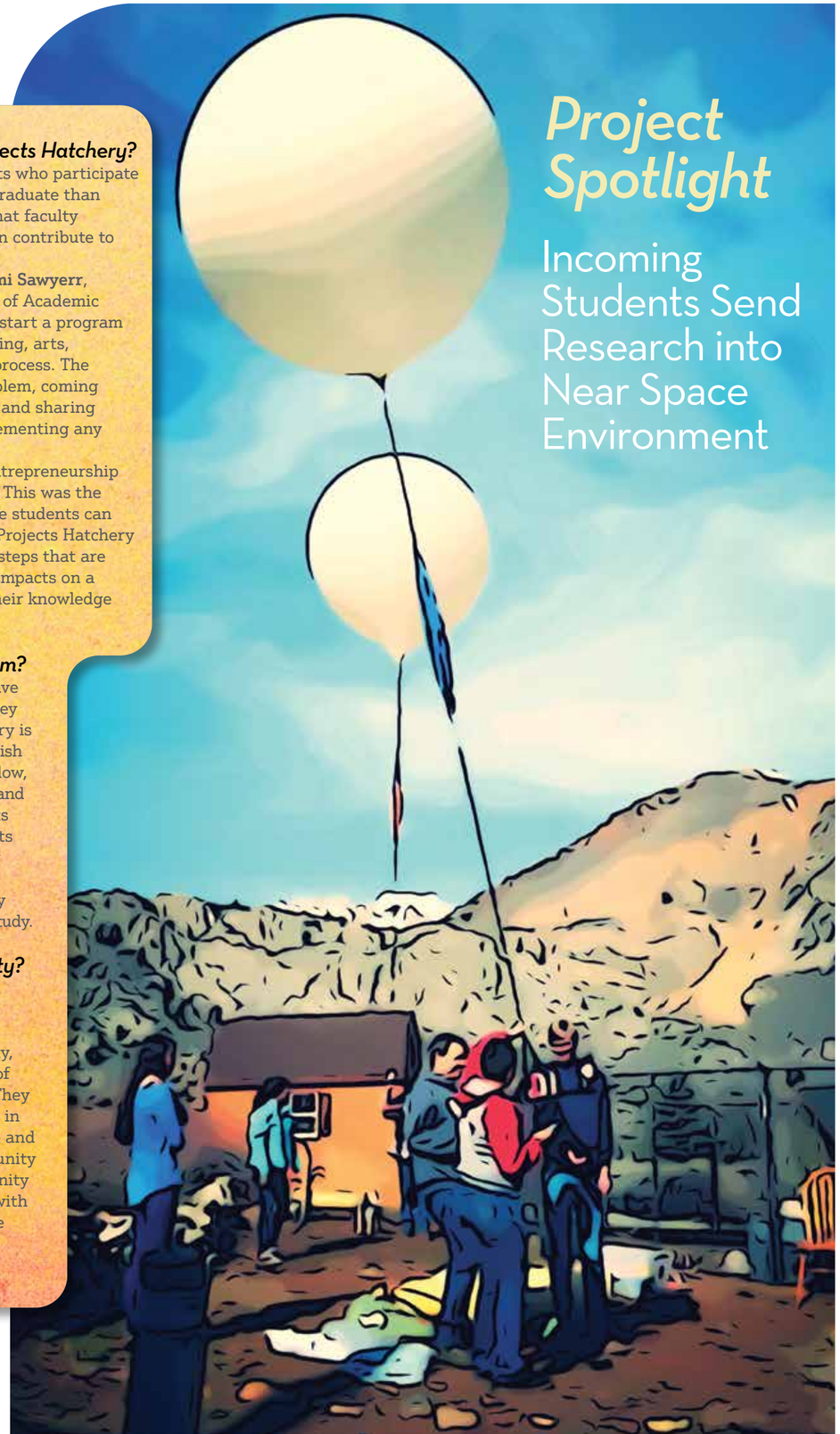
How can students benefit from the program?

Students have many innovative ideas that have the potential to benefit their communities but they often don't know where to start. Projects Hatchery is very structured, and students are more likely to finish their project by having steps and guidelines to follow, while drawing upon a network of faculty, advisors and students from different colleges and departments to collaborate with. We have many kinds of projects across colleges, and students get to explain their ideas to each other and receive diverse feedback. They can learn different approaches to solutions by collaborating with others outside of their field of study.

How has a project impacted the community?

Team Food Justice focused on improving food access and affordability in Pomona by creating a community around the **Pomona Valley Certified Farmer's Market**. To maintain vendor profitability, student volunteers picked up produce on behalf of the farmers and helped run the market booths. They created activities to increase community interest in healthier food options, including a cooking demo and free seed exchange to encourage home or community gardens. Students went straight into our community to provide sustainable solutions and networked with local organizations that were working toward the same cause.

Projects Hatchery is part of a larger initiative called **Learn Through Discovery**. Visit **www.cpp.edu/learndiscovery** or follow **@ltdhatchery** on Instagram to learn more.



Project Spotlight

Incoming Students Send Research into Near Space Environment

By Nancy Yeang

As a first-year Cal Poly Pomona student, **Zachary Gaines** was excited to lead a team in launching a high-altitude balloon to the edge of space at 100,000 feet – about 19 miles – to gather data on the radiation durability of 3D printing materials. His five-person team received support and mentorship to workshop their idea, develop an aerospace design, and work with an industry company – essential skills that will translate into the working world.

"This was the perfect program, there was nothing else like it at Cal Poly Pomona," says Gaines, now an aerospace engineering sophomore. "To have something go from nothing to a complete design is really motivational during your first year."

Gaines found this opportunity through BLADE (Balloon Launch Assessment Directive for Everyone), a program for incoming students to literally launch their idea and prepare them for more advanced experiences on campus.

BLADE was founded in 2019 by **Michael Pham**, an aerospace engineering junior, and **Jacob Harbuck**, an aerospace engineering senior, thanks to the guidance and $8,000 in seed funding from the **Projects Hatchery**. They wanted to develop an educational program to boost hands-on experiences primarily for incoming students in STEM.

BLADE, in a way, is a microcosm of the Projects Hatchery. Pham and Harbuck created a setting for STEM students to share and receive feedback on their launch proposals before presenting their projects for critiques by industry professionals. The two designs with the highest merits would launch a high-altitude balloon.

"Projects Hatchery was great because of the community environment," Pham says. "In an engineering bubble, we would all go to the same solution to a problem, and sometimes none of them work. When you have students from different backgrounds, they can provide different solutions that we would not have been able to think of."

While Pham and Harbuck are busy laying the foundation of BLADE for current students to take leadership over the program, Harbuck's experience solidified how much he enjoyed systems engineering in the aerospace industry.

"Two years ago, I had no clue what I wanted to do," Harbuck says. "But by helping to create BLADE, I realized that I wanted to be part of spacecraft projects and interplanetary travel, where we can reach Jupiter and Pluto."

Although the balloon launches have been paused because of the pandemic, BLADE still has its Projects Hatchery funding to provide for materials and launches for future students. After the $8,000 is depleted, the program would need to secure additional funding to ensure its longevity.

"What I'm really proud about is creating this program as a student for students – we all pulled through to make this happen," Pham says. "Projects Hatchery gave us a runway for BLADE to get started. It's amazing to know that someone at the university has your back."

Projects Hatchery To learn more or support the program, email **our-cpp@cpp.edu**.