

FEATURE

REAPing the Benefits of Generosity

Established in 2017 as part of the Landis Green Innovation Fund, Wildwood's Research Exploration and Advancement Program (REAP) has opened a world of opportunity for Wildwood educators, allowing them to spend a summer diving deep into their areas of scholarship and interests—all with the goal of bringing their findings back to Wildwood's classrooms.

Thousands of miles and half-a-dozen countries later, here are a few of their stories...

2019 REAP RECIPIENT
ALEX CUSSEN

Democratizing Teaching and Learning

I read somewhere that summer can be the time to gain experiences so that one can take winter to reflect on those trips. Well, I'm pausing over winter to think back on a sunny summer 2019.

You said 2019, Alex? Yes, that would be pre-COVID pandemic and before the murder of George Floyd. That would be about 5 years ago. Got it.

Research played a huge role in planning my trip. At that time, our 8th grade Into the Wild program needed a reboot. We wanted to give the program more meaning, while asking students to think more outwardly toward the world around them.

In putting together my REAP proposal, I knew I needed resources to address pivotal needs:

How to implement design thinking into our project? What international schools and organizations fostered democratic values through project-based learning? What roles do schools play in a democratic society?

I put together a list of schools, museums, organizations, and people that I thought would help me answer these questions, which led me to both Sweden and Denmark as part of my research.

My trip to rural Sweden started with a visit to the centuries-old town of Kalmar, where I visited a preschool with Reggio Emilia educator Harold Gotson. As we looked at books preschoolers had made on local birds and trees, Harold discussed how schools are a place to support a democracy. After all, if one sees all students as citizens, they are learning to honor and navigate differences from an early age.

Over the next couple days, Harold and his wife Eva ventured with me on walks across the bridge from Kalmar on the island Olmar. As I spoke about the purpose of my trip, Harold generously listened and pushed me to name the current programs at Wildwood that were supporting our U.N. Global Citizenship work—along with trying to name what might not be. What became clear on these walks, where 500 year old windmills stood within a handful of brand new Swedish wind turbines, was what Harold told me: democracies are meant to respect other points of view—something Wildwood students try on daily as they step into the perspectives of others.

"The challenge of the teacher is to give tools for students to help build a micro-democracy for their students," Harold said. "This space encourages negotiations—including accepting conflicts and preserving the ability to change one's mind." Harold went on to point out that framing these conversations about widening and changing one's mind included protagonists both human and non-human.

The idea of giving value to conflicts and disagreements seemed fresh and new, yet I remember the middle school debate unit that asks students to build arguments for both sides of a First and Fourth Amendment issue. We went back to the streams of democracy at Wildwood, mentioning how public speaking and debate have existed for thousands of years.

Harold's words made me rethink the existing Wildwood protocols, from fishbowls to Harkness

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SWEDEN

DENMARK

Middle School Humanities Teacher Alex Cussen explores the Swedish countryside with educator Harold Gotson.

discussions, and to think about my own role as a teacher and how I can foster these approaches to learning.

This shifting mindset was only reinforced during my time in Copenhagen, where an administrator showed me an example of how they implement democratic practices into classrooms in Denmark. There, in a debate room, black wooden blocks could be moved by students to form desks or chairs, and the shape of the debate space was drawn on the floor with a circle. The circle served as a space to listen to both sides—and encouraged students to change their minds as they heard arguments.

These ideas—that a teacher can see themselves as a leader of a class, or micro-society, who engages with students about how to set up the chairs or tables, what protocol to use (for example, fishbowl or Harkness), or how to vote in smaller stakes situations, were all useful pointers that I've taken back with me to Wildwood.

2022 REAP RECIPIENT
CHRISTINE WHEATON

A Summer Among the T.R.E.E.S.

In July 2022, I attended the Belize Next Generation Science Standards (NGSS) Educator Training Course through Ecology Project International. This weeklong program was designed for formal and informal educators and focused on environmental science. Ecology Project International is the same resource my graduate school (Miami University's Project Dragonfly Advanced Inquiry Program) used for summer courses, which is why I was familiar with it. I was interested in the program to help develop curriculum for the new upper school environmental science course.

During the program in Belize, the first stop was Toucan Ridge Ecology and Education Society (T.R.E.E.S.), which is along the Hummingbird Highway and southwest of Belize's capital city of Belmopan. At T.R.E.E.S, we got to help out with ongoing research projects. One of my favorite hands-on activities was mist-netting bats; we collected bats in the evening and recorded their weight and limb length, determined their species, and then released them. Since I got rabies shots before I went, I was able to help untangle them from the mist-nets. Another highlight of my time at T.R.E.E.S was going on a plant hike with Irma, a Belizean woman who worked there and was passionate about local uses for various plants. I've always been intrigued by ethnobotany and have incorporated that into my environmental science class.

The second half of the trip, we stayed near Gale's Point, which gave us access to work with Kevin, a man who leads turtle conservation programming and also took us out to look for manatees, and Luz, a marine biologist who helped facilitate our snorkeling trip to the barrier reef and taught us about mangroves. We also learned about the West African cultural legacy in Gale's Point and were able to participate with activities in the village.

Throughout my time in the program, I was able to work with the instructors and my cohort to create lessons and discuss ways to engage our students. That's served me well throughout my environmental science and biology classes as I have continued to use what I learned through the REAP program to engage my students and get them to think deeply about the world around them.

Upper School Science Teacher Christine Wheaton examines a mist-netting bat while in Belize.



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2023 REAP RECIPIENT
PAULA GABRIEL

Finding My Rhythm in Cuba and Brazil

My travels to Cuba and Brazil in the summer of 2023, made possible by the creation of the REAP grant, gave me the opportunity to grow in ways both expected and unexpected. I experienced an immersion into the music and culture of Cuba and Brazil and I was fortunate to be connected to and study directly from master musicians from several traditions of Afro-Cuban and Afro-Brazilian music. Along the way, I was bolstered by my belief in our objectives as a school: To promote intercultural understanding and connection as a means of developing global and cultural literacy and to foster diversity, inclusion, and belonging while representing Wildwood School and our Global Citizenship values.

Our Afro-Cuban Roots: Havana

I had the unique opportunity to study with some of the great masters in Havana, and in the Bahía region on the east coast of Brazil. My teacher and musical guide in Havana was Ernesto Gatell, a renowned and beloved singer of the classic style of the Rumbero, a storyteller, improviser, and communicator of culture. Ernesto seemed to know everyone in Havana and many artists came to pay their respects, to visit and to meet his students, and to invite us to events that are usually reserved only for local participants. For example, we were invited to a religious Tambor ceremony in which the sacred Bata drums were played. The Regla de Ocha-Ifá religion in Cuba comes from the survivals of the African Yoruba religion and Indigenous and Spanish Catholic influences. The Bata drums are the musical focal point of the ceremony and we were invited to the initiation ceremony for a priest, an event that is usually closed to the public.

In Havana, every day, I took classes with masters and elders in the tradition of several complex forms of Rumba including the Rumba Cumbia and Rumba Columbia. We studied Bata drumming, Orisha songs, classic danson, and salsa. We were treated in subsequent days to other unique opportunities, including a performance and private lessons with members of the Septeto Nacional Ignacio Piñeiro during which I participated as a student,

Capoeira dancers offer a demonstration in Bahía, Brazil.



Everything we do in music at Wildwood is undergirded by our appreciation for and commitment to celebrating all of the influences that have combined to form what we know as contemporary, creative music.

translator, and videographer. I also met, through my Wildwood colleague Alex Cussen, the journalist Liz Oliva Fernández who has since visited Wildwood and spoken with students 6-12 about her experiences growing up in Cuba. In general, my take-away from my music studies in Havana was that music creates a strong sense of belonging for everyone involved. And in Cuba, everyone is educated in the traditions of Son Cubano, Danson, and Rumba in Cuban music.

Brazilian art of Capoeira: a combination of music dance, and martial arts that is both ancestral and modern.

Unique opportunities continued to align when I was invited to study with two of the most renowned Capoeira masters in Bahia. Capoeira is a cultural practice that combines the singing of traditional Brazilian songs, the playing of multiple instruments, and a unique style of martial arts presented in a form that appears to be a dance.

I attended classes every day that I was in Brazil in the art of Capoeira Angola which is the style closest to its African roots. It was physically exhausting because not only do you sing and play four or five different percussion instruments but you do this while moving around in active positions similar to the plank and handstand positions of yoga. My muscles were sore and I was not in my comfort zone as I tried to sing in Portuguese while standing on my hands. It was the first time in a long while that I had to do what I expect my own students to do every day. I keep this in mind daily now as I ask my students to step beyond their comfort zones with renewed empathy.

I have always been aware, as long as I can remember, that African, Afro-Cuban, Afro-Brazilian music have been in a mutually influential relationship with American music. This influence does not flow just in one direction. It is an influence that has moved back and forth and sideways in numerous iterations throughout history and continues to this day. The scope of this influence seemed endless and the more I studied, the more I found. Everything we do in music at Wildwood is undergirded by our appreciation for and commitment to celebrating all of the influences that have combined to form what we know as contemporary, creative music. My travels gave me the opportunity to pursue my passion for music, dance, and culture beyond the walls of Wildwood and back again.

2023 REAP RECIPIENT
ANN MARIE MACARA

Exploring the Beauty of Bioart

I am currently utilizing REAP funding to attend Fabricademy, Textile and Technology Academy—a 6-month online program integrating digital fabrication, textiles, and biology. This global program explores technology's role in sustainable fashion through hands-on learning and individual project development. The first semester involves weekly learning of new techniques taught by experts from around the world, while the second semester focuses on applying acquired knowledge to create a final project. The purpose of taking the Fabricademy program is to learn human-centered electronics, to implement real-world applications of biotechnology in the classroom, and expand the laboratory experience and research project opportunities for students.

My teaching philosophy is rooted in the potential of bioart to establish genuine connections between students and the natural world. My goal for the final project is to use the knowledge and skills acquired from the Fabricademy program to innovate high school science curricula through the integration of bioart.

What is bioart?

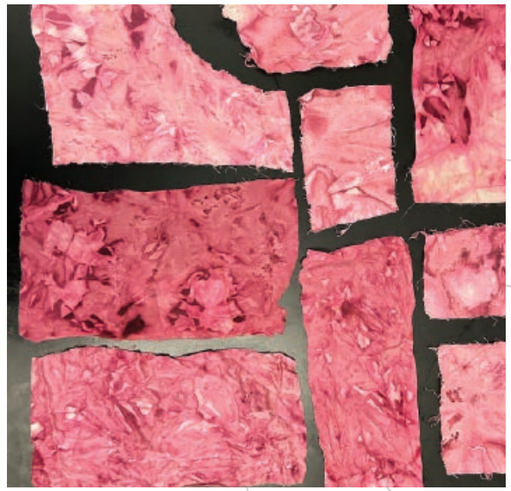
Bioart involves using biological and technological methods to manipulate organisms for artistic purposes. A notable example is microbiologist Alexander Fleming, who used naturally-pigmented bacteria to paint on agar petri dishes. One day, he discovered a blue mold contaminating a dish, prompting him to explore its antibacterial properties. Identified as Penicillium, this mold produced the antibiotic penicillin, initiating the antibiotic era and highlighting the interplay between art and science.

In Fabricademy's "Biochromes" week, I applied my recently acquired skills in using naturally-pigmented bacteria to further explore its collaborative role in bioart.

Advanced biology and biotechnology students prepare specimens for bioart.



Samples of bacteria-dyed fabric.



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I incorporated this knowledge into the classroom, guiding students in cultivating the vivid red Serratia marcescens bacteria on fabric employing various microbiology techniques. The outcome was stunningly dyed fabric, highlighting the potential of natural pigments over environmentally harmful synthetic dyes.

I had the pleasure of delving into other captivating biology-based weeks, such as the one dedicated to bioplastics. During this week, I had a wonderful time creating materials from agar and alginate (both kelp products) and experimenting with various biomaterials. A particularly exciting project involves growing microbial leather, which is currently growing in my home closet! I'm truly grateful that my partner is not only supportive but warmly embraces my biology adventures, from nurturing peculiar specimens in our closets to storing fungi in our fridge.

Additionally, I've had the chance to broaden my understanding of electronics during Fabricademy's sessions on e-textiles and electronic skinwear. I'm thrilled to be diving into the concluding challenge of this first semester, which involves creating electronic and biosensor skinwear designs. At the moment, I'm crafting a lip gloss that changes color in response to pH levels and constructing an LED skinwear circuit that adapts to facial muscle movements.

I want to express my thanks for the chance to connect and work with Wildwood colleagues during my Fabricademy journey. I've had valuable discussions and learning experiences, especially appreciating Eric Strom's assistance in enhancing my knowledge of tessellations, Megan Noel for our brainstorming sessions, as well as her guidance with the laser cutter and 3D printers, and Tim Sekula for giving me a crash course in crystallization.

I'm looking forward to sharing my final project and website with the Wildwood community, particularly in the classrooms!