

SUSTAINABILITY HERO

April 2022



Vicki Palaganas

Biology and Environmental Science Teacher; Penns Grove High School
Penns Grove-Carneys Point Regional School District (Salem County)

Vicki Palaganas, a teacher and green team leader at [Penns Grove High School](#), is on a mission to empower her students to be agents of change through environmental service-learning projects. After a few early successes, the momentum of the sustainability program at Penns Grove High School is building thanks to Vicki's determination and the support of the leadership at the [Penns Grove-Carneys Point Regional School District](#) and the [Borough of Penns Grove](#).

When she is not teaching, Vicki is busy finding solutions and the right experts to help move the green initiatives forward. For example, this week she was enlisting the help of a local expert to implement a summer cooling system for the greenhouse, fine-tuning the breeding techniques for the tilapia in the aquaponics system and securing funding for an electric bike/electric scooter program.

In 2020, Vicki initiated the Penns Grove-Carneys Point Regional School District Green Team that includes Penns Grove High School Principal Lory O'Brien; the District Director of Curriculum Dr. Michael Ostroff; the District Supervisor of Science, Technology, Engineering, and Mathematics (STEM) Dr. Charles Powell and more. The group is working on the first application for Penns Grove High School to attain *Sustainable Jersey for Schools* certification in 2022. If successful, this would make Penns Grove High School the only currently-certified school in Salem County.

In 2020, Vicki was recognized as a New Jersey Department of Education Exemplary Teacher of the Year and named the Penns Grove Teacher of the Year. In 2021, Vicki mentored a team from the high school that placed second in the [New Jersey Student Climate Challenge](#), securing a \$1,000 grant for the school's climate initiatives and recognition from the New Jersey Governor and First Lady.

Vicki said, "I want to give our students everything they need for the best possible future. I think sustainability is the answer; it is how we get there. This is what drives me to do this work." The school's sustainability projects-- the butterfly habitat, the hydroponic and aquaponic systems--provide opportunities for the students. She explained, "I see the students unplug from traditional urbanization when they are in the greenhouse. They begin a connection to the world of nature learning and stewardship. This provides a foundation for pursuing a lifetime of environmental activism and sustainable and healthy living." The school's sustainability program is part of a renaissance for school in an urban borough that is identified by the New Jersey Department of Environmental Protection as an [overburdened community](#).



The sustainability projects are a collaboration with many partners offering expertise, services and time. This is important to Vicki. She said, "I want to keep the public involved in the public schools. We are demonstrating that solutions are possible when we work together. That has been our experience. We don't want to perpetuate a myth that no strategy exists to make a change when challenges arise because this will make our youth feel powerless."

Experiencing adversity in her own childhood, Vicki feels a connection to her students. Vicki teaches special education and regular education classes. She said that having a connection to nature helped her through tough times. She is sharing this with her

students. Vicki said, “I would consider my greatest contribution in education to be ongoing as it involves being able to connect with my students and see a personal transformation in them. Many of my students face similar childhood circumstances as I did. We have a bond of trust, established early on, and with that foundation, I see great things happen.”

Penns Grove High School Courtyard Pollinator Habitat: As a new teacher to Penns Grove High School in 2016, Vicki inquired about the school courtyard that was not being used. The school district wanted to use the courtyard as an environmental school-yard habitat, but had not found a way to make it happen. In April 2018, Vicki applied and was awarded a \$5,000 grant offered by Channel Six News, Wawa and the Cherry Hill Law Center. With the funding, the school built a 15’ by 35’ butterfly sanctuary and habitat for pollinators in the courtyard. This project served as the catalyst to energize the school community and opened the door to the other projects.



Of the approximately 300 monarch caterpillars raised in captivity by students and staff, 250 transformed into monarch butterflies. The students and staff started 100 organic milkweed seedlings and planted them in the pollinator garden to host the monarch eggs and caterpillars. In collaboration with [Monarch Watch](#), they tagged and hand-fed hundreds of butterflies. They tested 150 monarchs in the science lab for [OE infection](#), a debilitating disease, and sent the data to [University of Georgia University Odum School of Ecology](#). An event was held to release the butterflies into the butterfly house and courtyard. The first butterfly release, in 2020, was captured on [video](#).

Vicki said, “I knew that the students in my special education classes would thrive if given the opportunity to engage in service-learning projects. The butterfly sanctuary, or as I like to say the butterfly mansion, made this a reality.” The students in the biology and environmental science classes regularly use the butterfly sanctuary in the courtyard. To support the work, the principal and superintendent train the teachers and encourage them to bring their students outdoors to conduct lessons to bring nature into learning. Vicki said, “In addition to reducing our students’ stress, the courtyard provides me a joyful place where I can decompress and be refreshed in order to be my best for our students. When kids come into my class and they are having a bad day, the garden gives them an option to work with their hands outdoors. They can reset in a positive way that reduces possible bad behavior.”

Penns Grove High School Hydroponics Grow Wall: Led by the [Future Farmers of America \(FFA\)](#) teacher, Joel Rudderow, Penns Grove High School introduced a hydroponics system that is located in the agricultural science classroom. The high school botany students assembled and installed the system. Hydroponics is the science of cultivating plants in a nutrient-rich solution instead of soil, where the water does the work of delivering nutrients to the plant’s roots. Indoor, climate-controlled hydroponic systems make food production and education possible at any time of the year in any weather condition. Since its installation, the hydroponics grow wall has been used to grow Bibb lettuce, kale, Swiss chard and sweet basil. This project is especially important because the Borough of Penns Grove does not have a lot of places to buy healthy foods. Rudderow explained, “With hydroponics, students learn that they can produce their own food without the use of pesticides. The system can fit in a house or apartment which would allow a family to become more self-sufficient in food production. By using locally-produced, or self-produced food, families can also significantly reduce their carbon footprint. This is combined with a reduced use of resources, such as water.”



Penns Grove High School Aquaponics School Garden: Penns Grove High School received a \$10,000 [Sustainable Jersey for Schools grant](#) funded by the New Jersey Education Association to create an aquaponics school garden. The system was installed in the preexisting greenhouse. After three months, tilapia has been added and vegetables and herbs are growing. Assembling the system was a challenge. Vicki enlisted the help of Gary Nelson, a horticulture teacher at Delsea Regional High School District in Franklin Township who has one of the leading aquaponic and hydroponic programs on the East Coast.

"Following the vision of Vicki Palaganas with the support of the Board of Education and the district administration, Penns Grove-Carneys Point Regional Schools has developed the first environmental center in Salem County," said Dr. Zenaida Cobian, superintendent of Penns Grove-Carneys Point Regional School District. "The aquaponics lab incorporates another level of knowledge for our students on the production of plants in their school. This allows students to apply what they have learned to recreate a similar environment in their homes. They will be cognizant of the importance of protecting our natural resources, improving our climate and developing their technical skills for their future careers. The aquaponics lab embraces another aspect of science, math, and technology across the curriculum."



The school also has an outdoor soil-based garden. Last summer, students participated in a program to tend the garden; they came to school on Monday through Thursday from 9:00 am to noon to work in the garden and care for the 70+ tomato plants.

Second Place Winners-New Jersey Student Climate Challenge: Vicki worked with a student team, Bailey Ricks and Stefano Fiducioso, to participate in the [2020/2021 New Jersey Student Climate Challenge](#). Under Vicki's guidance, the team brainstormed and researched the climate action projects that meant the most to them and their community. The team named themselves the Penns Grove High School Locavores and created a video to spotlight the relationship of food to climate change. In 2021, six student teams were honored with an award for their climate action projects. Penns Grove High School Locavores got second place and received a \$1,000 grant to be used for future climate action projects. Penns Grove Borough Mayor LaDaena D. Thomas made an appearance in the video. She is a graduate of Penns Grove High School. The student team winners and their teacher mentors were recognized at a virtual awards ceremony hosted by the Drumthwacket Foundation with the New Jersey Governor and First Lady. To watch the winning submission, visit: [Penns Grove High School Locavores](#).



Recycling of Non-Mandated Materials: Led by physics teacher Shannon Tyson, Penns Grove High School is implementing recycling activities that target materials not covered by current recycling laws. The high school recycles plastic bags and films, used alkaline batteries, printer cartridges and sneakers. The school is working with the [MORE Foundation Group](#) to collect gently used sneakers for rubber recycling. Donating shoes keeps them out of the landfills and the proceeds from the shoes fund MORE's ongoing reforestation projects. As the shoes are collected in the free collection box provided by the MORE Foundation Group, the high school physics students weigh and keep track of the donations using a spreadsheet. The school also participates in the [NexTrex](#) program by collecting plastic film. The students measure the weight of each collection bag using force meters and practice unit conversions from Newtons to pounds. In less than a month, over 56 pounds of plastic film was collected. The recycling program helps New Jersey move closer toward its goals of recycling 50% of the municipal solid waste stream and 60% of the total solid waste stream.



Education and Experience: Vicki received a BA in Biology and a Certification in Secondary Education from Rutgers, The State University of New Jersey-Camden. For fifteen years, Vicki served as the Director of Education for Glad Tidings Assembly of God in Mount Ephraim. She was responsible for overseeing the education department and was the director of youth summer and winter programs. Vicki said, "I gained a tremendous amount of experience as an education director. I learned to be a team player with the goal of enriching the lives of families through education." Vicki has served as a substitute teacher and worked in various schools before taking the teaching position at Penns Grove High School in 2016.

More About Vicki: Vicki lives with her husband Ryan and their four sons (Ryan-age 25; John-age 17; Caleb-age 15; and Gabriel-age 13) in Washington Township, New Jersey. She is very proud of her children and, as a stay-at-home mother for many years, she shared her love of science and sustainability with them. Her oldest son Ryan has just accepted a full scholarship to the John Hopkins Biochemistry and Molecular Biology Ph.D. program. Vicki is an active member of the Glad Tidings Assembly of God and likes to cook and spend time with her family.