

# EECO

Environmental Education Council of Ohio



Winter 2021

Sustainability in Higher Education

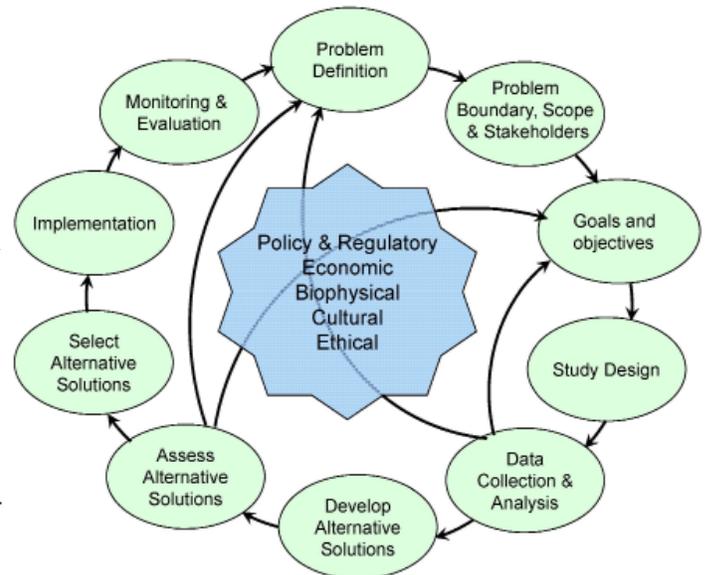
## Incorporating Sustainability in Higher Education: A Personal Perspective on Problem Solving

By Ryan Bourgart, Ohio EPA: Office of Environmental Education

Since sustainability can be incorporated into various aspects of society, protecting the environment can be in many job descriptions. Because of its interdisciplinary application, sustainability can be integrated into the education and training of future professionals. Colleges and universities are at the center of professional training, yet programs are insufficient for developing professionals skilled in sustainability (Clark et al., 2011; Johnston, 2013; Nelson, Schoennagel, & Gregory, 2008). How can we improve higher education to adequately train future professionals to work towards a sustainable future?

A potential solution is focusing on developing problem solving skills across curricula and facilitating dialogue between various professional fields and the environmental sciences. In the spring of 2018, I stood in front of three Miami University professors and presented my solution to an environmental problem (coincidentally it was how to increase recycling) using a problem-solving framework at the center of the environmental master's program, the Willeke Wheel (see diagram).

I was given a problem, the professors left the room, and I had 10-15 minutes to frantically brainstorm my solution using the framework. After giving my presentation with my mind racing, geology professor Dr. Jonathan Levy, humanities professor Dr. Luis Pradanos-Garcia, and economics professor Dr. Steven Elliott asked me to elaborate on my solution. **Continued on next page**



## Save the Date

### *Conservation Education Conference on Virtual Learning*

March 2 - 4, virtual

<https://www.fishwildlife.org/projectwild/ConEd2021>

### *Wildlife Diversity Conference*

March 5, virtual

[https://osu.zoom.us/webinar/register/WN\\_1Hl-Wzs-GQDCm4BVoZTpbda](https://osu.zoom.us/webinar/register/WN_1Hl-Wzs-GQDCm4BVoZTpbda)

### *EECO Annual Conference*

April 15 - 17, virtual

[www.eeco-online.org](http://www.eeco-online.org)

### *Growing Up WILD Online Course*

April 23 - 30, virtual

<http://bit.ly/3ajr7li>

## Continued from page 1

This experience developed two important skills in the sustainability field: problem-solving and interdisciplinary dialogue. In addition to sustainability, problem solving is an indispensable skill for many professional disciplines (Brewer, 2013). Interacting with professors across disciplines is another educational experience that can be incorporated more in college and university programs to build professional skills (Clark et al., 2011b).

Offering professional experiences interacting with companies or communities in waste management is another valuable educational tool to bridge interdisciplinary gaps. Waste Management is a suitable interdisciplinary environmental challenge because of its connection to business, economics, sociology, psychology, communication, health, medicine, and more. Therefore, building interdisciplinary skills through professional experience is indispensable to working on this environmental challenge. Having universities partner with organizations and communities working on waste management projects can provide students with opportunities to gain professional experiences.

Environmental education at the college and university level can provide more professional experiences to apply problem-solving and interdisciplinary skills towards real-world environmental challenges. Before I even began my coursework at Miami, I visited the City of Fairfield water treatment plant, toured the federal EPA research facility in Cincinnati, and spoke with CDM Smith environmental consultants. I remember these experiences more than what I learned in class, which emphasizes the importance of the experiential that is at the core of environmental education.

## Winter STEM Activities

### Project Learning Tree

Students are often fascinated with the drastic changes throughout the seasons, especially if you live in a place where it snows. No matter what kind of weather you experience during the next couple months, consider adding these STEM activities to your winter-themed lesson plans.

<https://tinyurl.com/sd0kdr3e>



## Spotlight on Sustainability in Action: Waste Management & Problem Solving

A partnership that can offer students professional experience is the (AOZWI), a collaboration between Rural Action and Ohio University's Voinovich School of Leadership and Public Affairs. AOZWI held a series of 10 community forums and surveyed approximately 3,000 households in 2012. The data from these surveys were analyzed and translated into the Athens-Hocking Zero Waste Action Plan. A priority of the plan is to improve outreach and education of Ohio Appalachian citizens, businesses, and schools. The AOZWI and its waste management plan have contributed to the doubling of recycling rates in the region. The success of the initiative can be partially attributed to using the problem-solving approach of identifying various stakeholders and meeting their needs. Students can be involved in surveying these audiences to determine what they need in a waste management initiative and thereby develop interdisciplinary communication skills. Furthermore, students can improve communication and learn more about waste management by teaching and other outreach to the target audiences. By being involved in interdisciplinary experiences in waste management such as AOZWI, students can develop professional skills that will help them in their future careers solving environmental problems.

[www.ohio.edu/voinovich-school/projects/appalachia-ohio-zero-waste-initiative](http://www.ohio.edu/voinovich-school/projects/appalachia-ohio-zero-waste-initiative)

## Conservation Education Conference on Virtual Learning March 2-4

Adapting how we work and learn together during the COVID pandemic has dramatically changed how educators reach and interact with audiences. While increased online offerings for training, special events, conferences, and other learning venues is the new norm, there are still many challenges with virtual learning for conservation education efforts. The conference on Virtual Learning will bring educators together to examine how to further embrace new technologies and approaches that, in the long run, will make education more effective in the field of conservation.

1st Keynote: Tom Kalous "Embracing the New Normal"

2nd Keynote: Andy Goodman and Celia Hoffman "Unmuted: What works, what doesn't, and how we can all do better when working together online"

<https://www.fishwildlife.org/projectwild/ConEd2021>



## Save the date for EECO 2022

The 2020, then 2021 conferences were supposed to be held at Hueston Woods State Park. Third times the charm as we are on for

**March 31 - April 3, 2022**

**Hueston Woods State Park Lodge, Oxford, Ohio**

# EECO Annual Conference Moving Forward with EE Virtual- April 15-17, 2021

### *Thursday*

- Nature Based Early Childhood Education

### *Friday*

- Virtual Fieldtrips
- Workshops
- Career Fair for students
- Open Space
- Nature Nerds Quiz & Costume Contest

### *Saturday*

- Consecutive Sessions
- Open Space
- Auction

### *Saturday Keynote*

Chris Meyers, founding Director of Project Dragonfly, will share with us "***How Environmental Education will save the world!***"

**Cost:** \$10 - 65, depending upon membership and the number of days registered for.

**Graduate Credit is available**

**More information and registration  
will be posted at**

<https://eeco.wildapricot.org/>

## Support EECO

### ...by making a donation

Would you like to help further environmental education in Ohio?

Consider contributing an amount of your choice to EECO. All donations are tax-deductible and will help increase awareness of environmental issues in Ohio. Find out more at

<https://eeco.wildapricot.org/support>

Other ways to support EECO:

- **Amazon Smile.** Select the "Environmental Education Council of Ohio" as your charity.
- **Goodshop.** Shop hundreds of popular retailers at Goodshop, purchases will benefit EECO.
- **Direct Donation:** You can easily make a direct donation through your Google account. Your full donation amount will go directly to EECO.
- **Legacy Donation:** Consider making a legacy donation to EECO's endowment fund at The Columbus Foundation.

**Believe  
in a  
Better  
Future**



THE ENVIRONMENTAL EDUCATION  
COUNCIL OF OHIO

# Sustainability at the University of Mount Union

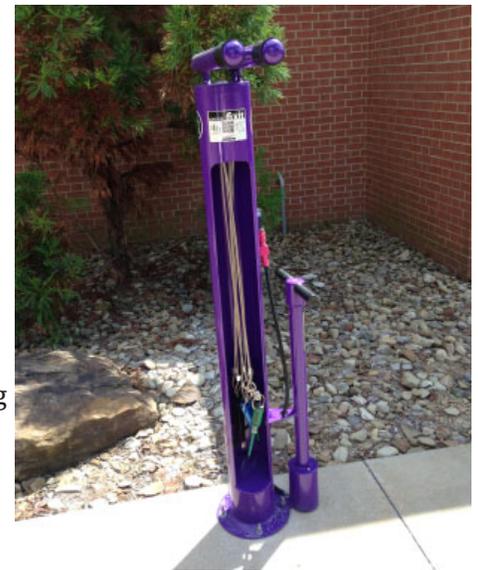
by Jamie Greiner, Sustainability & Campus Outreach Manager

The University of Mount Union adopted a Campus Sustainability & Climate Action Plan back in 2010. To facilitate this Plan a Sustainability Management Advisory Committee (SMAC) was created. The purpose of this committee is to advise the University on strategic sustainability initiatives. The University also has a group of student Sustainability Assistants, aka Green Raiders. Green Raider initiatives include, providing campus sustainability tours, planning activities and events for Sustainability Month and Earth Month, participating annually in the National "Campus Race to Zero Waste" recycling competition, organizing special collections/donations, and providing ongoing sustainability education and support to their peers. Two recent projects are the adoption of the Stark Parks Mahoning Valley Trail and establishment of a Wildflower Pollinator Habitat on campus.



Highlights from the Campus Sustainability Tour include:

- 1.) The Gartner Welcome Center is a L.E.E.D. Silver building. L.E.E.D. is a green building rating system and stands for "Leadership in Energy and Environmental Design". The green building attributes include a geothermal heat pump (which cuts heating and cooling costs by 30-70% and is twice as efficient as traditional HVAC), zero use CFC refrigerants in the HVAC system, automatic lighting controls, large use of materials with significant recycled content, higher glazing in windows, low flow fixtures, and high efficiency mechanical and electrical systems.
- 2.) Solar Panels - The Peterson Fieldhouse became the home of the largest application of a thin film laminate solar voltaic array in Ohio. A total of 230 feet of the south facing roof is covered by the 18ft. X 15.5 in. solar panels. Each panel is less than an eighth of an inch thick and is fastened to the metal roof with an adhesive. Overall, they make up a 54-kilowatt system and produce enough energy to power seven average-sized homes for one year.
- 3.) Mount Union has been recognized as a Tree Campus USA for its commitment to effective urban forest management. Tree Campus USA is a national program created by the Arbor Day Foundation to honor universities for effective campus forest management. The UMU campus not only boasts a large number of trees, but also a large variety of trees.
- 4.) To accommodate the increase in bicycling on campus a Bike Fix-it Station was installed. The Station includes an air pump for filling tires and all the tools necessary to perform basic bike repairs and maintenance, from changing a flat to adjusting brakes.
- 5.) Mount Union began the switch to LED lighting. Currently, over 900,000 sq. ft. of our total footprint of 1.4 million sq. ft. has been converted to LED's (interior and exterior).
- 6.) In 2019, the City of Alliance received a grant to purchase two Electric Car Charge stations. American-made Bosch EV800 Series units were installed on the campus and are available for use by both the UMU and Alliance communities. These units have a 240V output, which charges 5 times faster than a standard 110V outlet.
- 7.) Last, but certainly not least is The John T. Huston - Dr. John D. Brumbaugh Nature Center. The Huston-Brumbaugh Nature Center was established thanks to a gift from Dr. John D. Brumbaugh. Dr. Brumbaugh donated the 109 acres that had been his grandfather's farm to Mount Union College in 1986. It was Dr. Brumbaugh's wish that the area be used as a nature preserve for the education and enjoyment of all people and that the area be developed in such a way as to lead visitors into an exploration of the outside environment. There are over 4 miles of hiking trails, open dawn to dusk every day. There is also a Visitors Center, Bird Observatory, Outdoor Pavilion, Historic



Log Cabin and Barnyard area, a Pond, and educational gardens. Mount Union faculty and students use the Nature Center for classes, laboratory sessions, and research. Additionally, the Nature Center is open to the public and offers many free programs.

In addition to these projects, the University established a Green Revolving Fund (GRF) to cycle back savings from energy efficiency improvements to fund future sustainability projects. The focus is projects in water conservation, energy consumption, and renewable energy that have a measurable Return on Investment (ROI) of five years or less. Based on past completed projects (conversion to LED lighting, installation of motion sensors and programmable thermostats, and upgrades to laboratory fume hoods) the University is making considerable efforts towards a more sustainable campus.

A final component of the University's Sustainability Program is a Sustainability Minor that was added to the academic program offerings in 2019. This new minor is designed to provide students with an understanding of and ability to utilize sustainability as a lens for systems thinking in any discipline.

## **Believe in Ohio: Connecting Students to Career Exploration and Scholarship Opportunities!**

**By Sheila Cubick, STEM Advocate Northeast/East, Ohio Academy of Science  
Believe in Ohio & EECO Region 3 Director**

How do we connect students to the practical applications of the material they study in class? How do we guide them to become problem-solvers who look at the world as a place of possibilities? How do we teach them the people skills that prepares them for the workforce?

In Environmental Education we focus on hands-on, problem or project-based learning that places the learner directly in the forefront of the learning process. This approach gives them experience and transferrable skills for workplace and career development. Believe in Ohio is a STEM and Entrepreneurship curriculum that has the same goal. This FREE program takes the learner's experience with problems they encounter personally or in society and for which they have developed solutions using the science, technology, engineering, or math (STEM) they have learned in the classroom. By following the Roadmap Mileposts, this program helps them create a solution that will be a product or service that is feasible to commercialize.

This student-driven process of creating a STEM Commercialization Plan allows the learner to develop their idea by moving through Mileposts 1-12 of our curriculum. First, High School students will compete locally in their schools for cash awards. Next, they may advance to compete for scholarships to Ohio post-secondary technical schools, colleges, or universities in Regional (\$1,000) or State (\$10,000) competitions. In addition, teachers may qualify for a Teacher Support Grant to assist them in doing the program.

Make plans to attend the 2021 Virtual EECO Annual Conference in April and attend my session, Believe in Ohio: STEM/Entrepreneurship with an Environmental Twist, to learn more about the FREE Believe in Ohio program, its incentives for students and teachers, and the curriculum resources available in our Believe in Ohio Google Classroom. Learn how Believe in Ohio can be used to develop entrepreneurial thinking in environmental science as well as other STEM classes. Can't wait? Contact me now! Sheila Cubick, [scubick@ohiosci.org](mailto:scubick@ohiosci.org).

### **Statewide Scholarship Program to recognize students throughout Ohio for their contribution to STEM Innovation and Entrepreneurship**

To ensure that students from all parts of Ohio receive recognition, at least one (1) \$1,000 scholarship will be awarded in each of Ohio's ninety-nine (99) State House Representative districts, and thirty-three (33) Ohio State Senate districts. That is a total of 132 scholarships.

Only high school juniors and seniors (School year 2020-2021) are eligible to apply. Believe in Ohio participation is not required for THIS scholarship.

For more information, including award criteria, please go to <https://www.ohiosci.org/believe-in-ohio>.

Please act now, the application deadline is **April 15, 2021**.



## College Scholarship Opportunities

**Who is eligible?** Up to \$5,000 is available for students entering their final year in four-year and five-year programs. Up to \$2,500 is available to second year students in two year degree programs at public or private technical and community colleges in Ohio.

**Scholarship goal** Merit-based, non-renewable scholarships are offered to encourage students to complete degrees and enter careers in environmental science and engineering fields.

**Requirements** Applicants must have an overall GPA of at least 3.0 plus recommendation letters and evidence of career motivation.

**Application Deadline: April 15**

[ohiosci.org/scholarships](https://ohiosci.org/scholarships)

[epa.ohio.gov/oeef/EnvironmentalEducation.aspx](https://epa.ohio.gov/oeef/EnvironmentalEducation.aspx)

## Ohio Environmental Education Fund

Because of pandemic-related budget uncertainty, state-funded grant programs like the Ohio Environmental Education Fund had to temporarily suspend grantmaking in 2020. Ohio EPA does not yet know when the OEEF will be able to resume grantmaking, but the Agency is continuing to support the multi-year EECO-Ohio EPA partnership and environmental career ambassador initiative.

## Zevenbergen Honored as Facilitator of the Year Project WET – Ohio

By Dennis Clement, Project WET – Ohio State Coordinator



Jacki Zevenbergen, Cuyahoga Soil and Water Conservation District (SWCD) Stormwater Educator has been with the SWCD for 3½ years and Jacki doesn't take "no" for an answer, says District Administrator, Janine Rybka. She is willing to try new programs and technologies, while working in some very tough school districts in Cuyahoga County. Rybka went onto say she knew she had the right person for the job when "unabashed, Jackie came into the interview in a costume and delivered a short educational skit. Her enthusiasm and audacity wrote the day and we knew we had an excellent candidate to reach out to all the schools in Cuyahoga County."

Clement said, "I have been involved with many other teacher workshops and activities with Jacki and am always impressed by how she works with educators and always is striving to get as many resources to help them to teach about the environment." Project WET and Healthy Water, Healthy People are

just two of those resources. Even during the current pandemic, Jacki has trained at 25 plus traditional and non-traditional educators using the Project WET 2.0 Educator Guide. This alone is quite an accomplishment since Jacki had to come up with ways to teach virtually and require participants to peer teach to the other virtual attendees.

For all these above reasons and much more, Jacki was recently awarded Facilitator of the Year for Project WET – Ohio. During the awards ceremony at the Water Management Association of Ohio (WMAO) Virtual Conference, Jacki was announced as the honoree for this award by State Coordinator for Project WET, Dennis Clement. A framed certificate was mailed to Jacki recognizing her accomplishments. Jacki, Thank you for your continued dedication to Project WET – Ohio and educating educators about Ohio's environment and one of our most important natural resource, water!

Project WET – Ohio is facilitated by the Ohio EPA, Office of Environmental Education with guidance provided by the WMAO. For more details on Project WET-Ohio go to <https://epa.ohio.gov/oeef/Project-WET> or contact Dennis Clement at [dennis.clement@epa.ohio.gov](mailto:dennis.clement@epa.ohio.gov).

# Food Waste Management: Key Piece in Zero Waste Puzzle

By Ángel Arroyo-Rodríguez

Ohio EPA Div. of Materials and Waste Management

Food waste has gotten a lot of attention in the international, national, and local media in recent years as people become more conscious of the magnitude of the problem. The decomposition of food waste in landfills results in the generation of significant amounts of methane, a greenhouse gas more than 25 times as potent as carbon dioxide. Food waste also results in the loss of the water and energy inputs required to produce it. In addition, some food waste is actually wasted edible food, which could have been rescued and used to feed people living in food insecurity conditions. The majority of food waste is generated at the consumer level. Recent research by the USEPA estimated that 7.1 million tons of food waste generated from institutions in 2016, including educational institutions. Educational institutions have a concentration of consumers and can generate a lot of food waste, but they also provide for a great setting to educate their consumers, in this case students and staff, on new routines that can lead to food waste prevention and form new beliefs and attitudes around food waste prevention and recycling.

There are various ways an educational institution can manage their food waste to get closer to zero waste goals. Composting is one of the management options, as it can be practiced at various scales and with equipment that range from simple hand-built bins to sophisticated automated technologies. For example, Ohio University in Athens has been composting food waste generated at their campus dining hall since 2009. In addition to food waste, they also include other compostable materials generated on campus, such as animal manures and yard waste. The university uses an automated in-vessel composting equipment that is partially powered with solar energy. This equipment allowed them to compost 540 tons of food waste and 275 tons of woody material in 2019.

The Ohio State University took another route for managing the food waste generated at their Columbus campus hotel, The Blackwell, and at the Schottenstein Arena. At both locations, all food waste is managed using an industrial food grinder that turns the food into a slurry and sends it to a storage tank, as seen in Figure 2. Once the tank is full, it is emptied and sent to an anaerobic digester for biogas recovery. This system installed was first at The Blackwell Hotel in 2012 as a demonstration project.

Several school districts in Ohio have also implemented food waste management measures to reduce their food waste, including collecting it for composting. In central Ohio, all 14 elementaries, two sixth-grade schools and one middle school in the City of Hilliard were collecting their food waste and sending it to a composting facility by the end of 2019. Hilliard's schools estimate diverting around 100 tons of food waste since the program's inception. The experience gained by Hilliard schools helped five schools in the City of Columbus School District start collecting their food waste, helping them divert more than half their usual food waste to composting. In addition, the schools implemented "Share Tables" where students could place the food items they don't want for other students to eat.

Reducing food waste is a national priority that has brought government, non-profit organizations and corporations together to create the resource Further With Food (<https://furtherwithfood.org>) to share information on proven and innovative new approaches to reduce food waste. The website includes a section with information for educators. There are additional resources for educators online, take advantage of these when looking for ideas to add to your curriculum. And remember to save the food!

<sup>1</sup> U.S. EPA (2020). [www.epa.gov/gmi/importance-methane](http://www.epa.gov/gmi/importance-methane)

<sup>2</sup> U.S. EPA (2019). [www.epa.gov/sites/production/files/2019-09/documents/epafoodwaste\\_factsheet\\_2019-11.pdf](http://www.epa.gov/sites/production/files/2019-09/documents/epafoodwaste_factsheet_2019-11.pdf)

<sup>3</sup> [www.dispatch.com/news/20200217/composting-recycling-by-more-central-ohio-schools-cut-landfill-garbage](http://www.dispatch.com/news/20200217/composting-recycling-by-more-central-ohio-schools-cut-landfill-garbage)



*Ohio University In-Vessel (enclosed) Composting equipment*



*Grind2Energy equipment at the Blackwell Hotel, OSU*



# Bowling Green State University

## By Nicholas Hennessy, Sustainability Coordinator

The Office of Campus Sustainability at BGSU has been pursuing institutional sustainability since 2009 with goals of Emissions Reduction, Waste Reduction/Resource Conservation, and Education/Outreach. Initiatives are pursued through a fulltime manager, several student interns, and a host of student, staff and faculty volunteers. Some popular waste reduction measures and projects include:

**Recycling:** BGSU recycles all the basic items in addition to multiple tons of scrap metal, IT equipment and miscellaneous electronics, light bulbs, toner cartridges, carpet tiles, and many other items that might otherwise be land-filled. Standard recycling takes place in every building and athletic venue, and nearly every floor on campus. Campus Operations hires students to serve on the recycling pickup crew, using a hybrid box recycling truck.

**Composting:** Food waste can be significant on any campus and BGSU has a strong pre-consumer compost collection program in place in partnership with BGSU Dining and the dining centers on campus. The organics are currently taken to Hirzel Farms composting facility in Pemberville. Our long range plan is to expand this program to include post-consumer organics as well.

**Surplus Reuse:** The “re Store” on campus offers office supplies, household items, electronics, small appliances, clothing, and books to students from surplus for free at monthly events. Larger furniture items are reused on campus or donated to area non-profits or even shipped overseas for disaster relief.

**When You Move Out, Don't Throw It Out (WYMO):** This award-winning program collects donations of nearly everything from residential students as they move out of the residence halls at the end of spring semester, with close to 14 tons of items collected on average. Everything from furniture, non-perishable food, clothing, toys/games, electronics, appliances, household items, decorations, books/school supplies, and much more are collected in lobby collection boxes, organized, and donated to area non-profits and food pantries. Some items are retained for the re Store, and some are sold at a community sale to raise funds for sustainability programs. BGSU was one of the first schools to create such a program in Ohio.



**Green Game Day:** Fall home football games, during non-pandemic times finds student volunteers distributing green recycling bags to tailgaters and fans, as well as a large infrastructure of recycling containers inside the stadium, its suites, and “Tent City” next to the stadium in a partnership with BGSU Athletics. Student volunteers particularly enjoy visiting with fans and traveling around the tailgate area in golf carts.

**Reusable Bag Program:** In 2019, the Undergraduate Student Government passed a resolution to eliminate single use plastic bags on campus. While Covid has delayed the full implementation of this policy, it is being implemented over time, and started with the distribution of reusable bags to all incoming and residential students. Additionally, BGSU Dining phased out single use plastic bags in nearly every area, and Falcon Outfitters (campus bookstore) began using a paper bag in anticipation of other sustainable alternatives. Plastic bag recycling containers are also located in several locations on campus.

**Student Green Initiatives Fund:** Impactful sustainability projects can sometimes involve financial resources at the outset so a source of funding is invaluable. Almost 90% of students opt to pay a small semesterly fee for sustainability projects. A student committee meets to determine which projects (also submitted by students) should be funded. Past projects have included major LED lighting upgrades, the purchase of electric vehicles (and most recently an electric Zamboni for the Ice Arena), water bottle filling stations, and Electric Vehicle charging stations.

**Paper:** While paper use was already declining on campus as a result of free print limitations, the move to remote and virtual learning and working has reduced that amount even more significantly. Working with the Purchasing department to create a preference for recycled content paper and other sustainably sourced items is also a major initiative.

As a signatory to the Climate Leadership Network (formerly the American Colleges & Universities President's Climate Commitment), BGSU has a formal Climate Action Plan, of which waste reduction figures prominently in lowering its emissions. Striving for a higher diversion rate, using less resources in the first place, and recycling and reusing wherever we can are the mainstays of our move to lower our waste and help our community understand the need for doing so in order to leave a green and sustainable world for future generations.



*Student Mara Wilson plants a seedling as part of the new YSU Legacy Forests program.*



*YSU students Zane Sullenberger and Brian Hiner.*

Geology and Environmental Sciences; Catherine Cala, retired, YSU Director of Alumni Relations; David Ewing, YSU associate director, Grounds; Penny Pavelko, YSU alumna; Mason Borawiec, YSU student, Environmental Science; Katharine Donnachie, YSU student, Environmental Science and Geography; and Michelle Davis, YSU student, Studio Art and Environmental Science. <https://ysulegacyforests.wixsite.com/welcome>

## Youngstown State University Legacy Forest Takes Root By Youngstown State University

Youngstown State University faculty, students, and others planted 600 trees one Thursday on a one-acre plot of land less than a mile east of campus to launch the YSU Legacy Forests Program.

“Our intent is simple - plant trees to create a better environment and help solve the climate crisis,” said Colleen McLean, YSU associate professor in Physics, Astronomy, Geology, and Environmental Sciences. “We are thrilled to get this program literally in the ground and look forward to other planting events in the future.”

The program was first proposed in Fall 2019 by Lauren Schroeder, YSU Emeritus Professor, and grew to a committee of faculty and staff, as well as students in the YSU Environmental Science program. The group's goal is to plant micro forests in the Mahoning River watershed to offset carbon footprint and slow climate warming. The plan is to plant one tree for each incoming YSU freshman.

“We hope this project is a template and an inspiration for other Mahoning Valley organizations to join in effective mitigation of climate warming through reforestation,” Schroeder said. “Already the YSU International Programs has joined the Legacy Forests to plant additional trees sufficient to offset the carbon footprint of the program. We hope many more will join our initiative.”

The first micro-forest is on N. Hine Street, near the intersection with Oak Street, about a half-mile east of the YSU campus. The site, provided by the Mahoning County Land Bank, is estimated to sequester 8 tons of carbon dioxide per year.

Members of the YSU Legacy Forests committee include Steven Hanzely, committee chair and YSU Professor Emeritus, Physics; Lauren Schroeder, YSU Professor Emeritus, Biological Sciences; Colleen Mclean, YSU associate professor, Physics, Astronomy,

### Arbor Day Foundation Recognizes YSU Tree Campus Feature: Youngstown State University Legacy Forests, January 2021

<https://arbordayblog.org/tree-campus-usa/tree-campus-feature-youngstown-state-university-legacy-forests/>

# Miami University and RecycleMania

By Susan Meikle, Miami University, University News and Communications

RecycleMania began as a recycling competition between Miami and Ohio universities in 2001. It is now the nation's premier waste reduction and recycling competition among colleges and universities, managed by the National Wildlife Federation and governed by RecycleMania Inc. Miami University was one of nearly 300 schools nationwide that participated in the 2020 competition.

The eight-week tournament was cut short this year due to the COVID-19 pandemic. During the competition from February 2 - March 7, participating colleges and universities:

- Recycled, composted and donated 48.6 million pounds of waste.
- Avoided using more than 380 million single-use plastic bottles.
- Prevented the release of 70,875 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>) into the atmosphere (this is equivalent to avoiding about 65% of Miami's 2018 institutional carbon footprint of 108,724 MTCO<sub>2e</sub>).



*Volunteers from the Green Team, EcoReps, Zero Waste Oxford and IES helped with the Game Day trash and recycling audit (photo by Scott Kissell).*



*Swoop cheers as (left to right) Cecil Okotah, Dante Rossi and Renate Crawford win the "Recycle This, Not That" contest during the Game Day halftime (photo by Susan Meikle).*

Cecil Okotah, Miami's recycling coordinator and a master's student in environmental science, said that one of the main goals for Miami in this year's competition "was to raise awareness and increase participation after our prolonged break from the contest." "Results will serve as a baseline for our sustainability office as we channel efforts to areas needed to improve waste management here at Miami," he said.

In 2020, Miami participated in three competition categories:

**Per Capita Classic**, based on cumulative pounds recycled per capita of 22,640 student and staff:

- 74th of 190 schools overall, with 8.07 cumulative pounds recycled per capita.
- 16th of 36 schools based on Carnegie classification (four-year, large, primarily residential).

**Game Day Basketball**, based on diversion rate of recyclables from trash during one home basketball game:

- 20th of 29 schools with 34.35% of recyclables diverted from waste during the March 6 men's basketball game vs. Ohio University.

**Race to Zero Waste**, based on reducing waste as much as possible in one specific building:

Adam Sizemore, Miami's director of sustainability, said this was Miami's first time participating in the Race to Zero Waste category. Waste is tracked in one or several buildings on campus, aiming for the lowest generation of pounds of waste per building square foot. Miami was the only school to participate in this category with a residence hall building type. Two other schools participated with classroom/office building types. Students in four residence halls competed to reduce their waste as much as possible during the three weeks of the contest. The student organization Zero Waste Oxford held a clothing swap for residents to raise awareness of the competition.

- Collectively, the four residential halls donated over 350 pounds of clothing.
- Overall, the four buildings generated 2,897 pounds of recycling, food scraps and items recovered for reuse/donation, and 4,720 pounds of landfill waste, resulting in 113 pounds of waste generation per square foot.

"Participating in the national RecycleMania competition afforded us the opportunity to engage the entire campus population and raise awareness around best practices of waste management and zero waste efforts," Sizemore said.

In celebration of its 20th anniversary, the competition is changing its name to Campus Race to Zero Waste.

The new name better reflects and reinforces the purpose of the program – to help colleges and universities find pathways toward zero waste on campus, according to the organizers.

# Seeking Environmental Professionals: Career Chats

Where will the next generation of environmental professionals come from? Could you play a role in inspiring this career choice among today's students? Consider being an environmental career ambassador who is willing to chat with a student or classroom via a video call about your career. A classroom video presentation would be approximately 30 minutes and would include Q&A time. A small group or individual student career chat would be fifteen to twenty minutes in length.

## We are seeking Ohio professionals in:

- Air quality;
- Environmental health and policy;
- Energy, materials and sustainability;
- Land use and conservation;
- Water resources and water quality; and
- Wildlife and ecosystems.

If you are interested or would like more information please contact Brenda Metcalf with the Environmental Education Council of Ohio at [director@eecco-online.org](mailto:director@eecco-online.org)



# Ohio Envirothon Competition for HS Students

## Environmental, Academic Competition - Virtual for 2021



As you know, the COVID-19 virus continues to impact school systems and communities statewide, each dealing with their own unique situations and challenges. For this reason, Ohio has decided to go virtual for the 2021 Envirothon contest. Part of the value of the Envirothon program is based in the hands-on outdoor learning aspect of the competition, so while the decision to go virtual has not been the ideal option, it was made in the best interest of the health and safety of participants, volunteers, and agency partners.

The Envirothon encourages cooperative decision making, team building, and problem solving, while teaching students about the diversity and management of natural resources, environmental careers, and environmental challenges. Participation in the Envirothon propels many of them into career paths based in natural resources and the environment. That is why it is important to keep Ohio's Envirothon teams engaged.

Teams will compete in regional competitions by completing an online, multiple-choice test, which will consist of 100 questions, covering the five resource areas of: Aquatics, Forestry, Soils, Wildlife, and this year's Current Environmental Issue: Water Resource Management – Local Control and Local Solutions. Top two teams in each of the 5 regions will progress to the State competition in June. The winning team will represent Ohio in the national event.



**Who Can Compete?** Teams of 3-5 students in grades 9-12. Only teams of 5 can progress to the state contest. Multiple teams per school can register.

**Registration Deadline:** A teacher/team advisor must register teams at <https://forms.gle/x2rg2B1TBVEjZfe3A>

**Questions:** Contact your local Soil and Water Conservation District (find at <https://tinyurl.com/10ty39q5>) and/or visit [www.areaenvirothon.org](http://www.areaenvirothon.org)

# Kent State University

## By Melanie Knowles, Sustainability Manager, Facilities Planning & Operations

The richness of sustainability at Kent State stems from collaboration with students, faculty, and staff throughout our campuses, and the communities beyond. With the engagement of many committed individuals, Kent State has realized initiatives in areas such as transportation, stormwater, and green building. Two of Kent State's newest projects address food waste and renewable energy.



How to divert food waste is the most frequently asked question students raise to the Office of Sustainability. While the tendency is often to focus on composting, we take a step back to look at the US EPA's food recovery hierarchy. Projects in Dining Services to reduce food waste, and projects that work to feed people such as Kent State's Campus Kitchen Project, work at the top levels of that hierarchy. But for kitchen scraps and post-consumer food waste, we needed a way to divert that away from landfills. The Grind2Energy system falls under the category of "Industrial Uses" on the hierarchy. Food waste goes through an industrial garbage disposal, mixed with a small amount of water, creating an energy-rich slurry. The slurry is stored in a tank free of odors and pests. The tank is pumped out by Quasar and taken to one of their anaerobic digestion facilities in the region. The products of this process are natural gas used for electricity production and a biosolid soil amendment which is applied to farm fields, returning nutrients to Ohio's soil. The Grind2Energy system was installed in Kent State's new Design Innovation Hub, which includes a dining facility, in the summer of 2020. From August through November 2020, the system diverted 13.8 tons of food waste from the landfill, which generated 2,332 kWh of electricity, reduced CO2 emissions equal to 21,238 fewer miles driven, and yielded 1400 pounds of fertilizer. Feedback from the dining services staff about using the system is positive, and we are already looking for opportunities to expand the system to other dining facilities on campus.



As with food waste, Kent State has worked to address energy at multiple levels. Energy efficiency retrofits have reduced our energy consumption by 24% at our Kent campus, and 22% at our regional campuses. The Kent Campus has a combined heat and power plant which is about twice as efficient as a utility power plant, and provides electricity, steam, and chilled water through much of the Kent campus. For buildings and campuses beyond that campus grid, solar energy becomes more financially viable, especially

through a power purchase agreement. Kent State's first solar array was installed on the roof of the Field House at the Kent Campus in 2012. The half-megawatt array provides about 1/3 of the energy needed for the Field House and Dix Stadium. In 2020 Kent State added solar arrays at seven of our regional campuses, increasing our solar energy by 3.8 megawatts. While contributing to the environmental benefits of solar power, they are also projected to save the university \$1.5 million over 25 years. Additional renewable energy projects are on the drawing board.

## Guiding Students to an Environmental Career

### *Green Jobs Quiz*

Are some of your students unsure of their career paths? PLT can help with its online Green Jobs Quiz, which is an online version of Activity 1 of the guide. Students can answer a few simple questions and get recommendations for a green career path that suits their personality. You can try this quick, fun, and easy quiz at [www.plt.org/greenjobsquiz](http://www.plt.org/greenjobsquiz). To give the quiz to students, you'll assign them an access code and direct them to [www.plt.org/mygreenjob](http://www.plt.org/mygreenjob). Information is anonymous and will not be collected. They will be able to see their results, along with facts about and skills for specific career paths.

### *Green Jobs: Exploring Forest Careers Guide*

Project Learning Tree (PLT) has released this guide for learners age 12-25 that provides timely and updated information on 24 green jobs related to forestry. The guide helps students explore how soil scientists, wildlife biologists, arborists, and other forestry professionals monitor forest health and combat threats in order to balance the needs of different stakeholders and manage a forest sustainably. Available in print and electronic formats, it provides access to other online resources that support and enhance PLT's standard-aligned activities. [www.plt.org/curriculum/green-jobs-forest-careers/](http://www.plt.org/curriculum/green-jobs-forest-careers/)

# Contact EECO

Partnerships strengthen EE in Ohio, leading to a more environmentally literate population and a healthier environment. You are welcome to become a partner and friend to EECO. Please contact any of our regional directors, officers, advisors, and board members to find out more about becoming a part of EECO.

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