

Ohio Environmental Education Fund Statewide Partnerships in SFY 2016

Environmental Education Council of Ohio, \$94,775

In 1995, Ohio EPA's Office of Environmental Education initiated a long-term partnership with EECO to build statewide capacity for environmental education in ways that could not be accomplished within the confines of a short-term general grant. Through this 21 year partnership, OEEF and EECO are able to provide professional development opportunities for teachers and non-formal environmental educators, as well as quality curriculum resources aligned with the Ohio Department of Education's Learning Standards and Model Curriculum.

Environmental Career Ambassadors

For K-12 education, the partnership continues to focus on the STEM disciplines (science, technology, engineering and mathematics). In 2013 Ohio EPA and EECO joined forces with The Ohio State University School of Environment and Natural Resources to launch a new statewide network of volunteer **career ambassadors in environmental science and engineering**.

More than 400 professionals in 68 Ohio counties have volunteered, indicating their willingness to:

- *Make classroom presentations
- *Participate in school Career Days
- *Host field trips
- *Offer internships
- *Offer job shadowing opportunities
- *Mentor young professionals, and
- *Recruit additional career ambassadors

This year EECO members, Ohio EPA staff members and volunteer career ambassadors spoke with **8,544 middle school, high school and college students at 32 career fairs and career exploration days**. The partners also gave **55 classroom presentations about careers to another 1,376 students**. **Six high school and college students had the opportunity to shadow Ohio EPA employees to observe them at work.**

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In addition, the partners worked with the Ohio Department of Natural Resources Division of Forestry, Project Learning Tree and Ohio Department of Education to develop a new career pathway for arborists and urban foresters, that has received the “Ohio In-Demand Job” designation and been posted on the Ohio Department of Education and Ohio Means Jobs websites, to show students and parents potential salaries and high school and college coursework needed. This joins previously created pathways for environmental scientists, geoenvironmental scientists, water plant operators/utilities directors, and petroleum engineers.



Careers roundtable for college students at the Water Management Association of Ohio 2015 annual conference



Career Ambassadors from Alloway environmental laboratories.

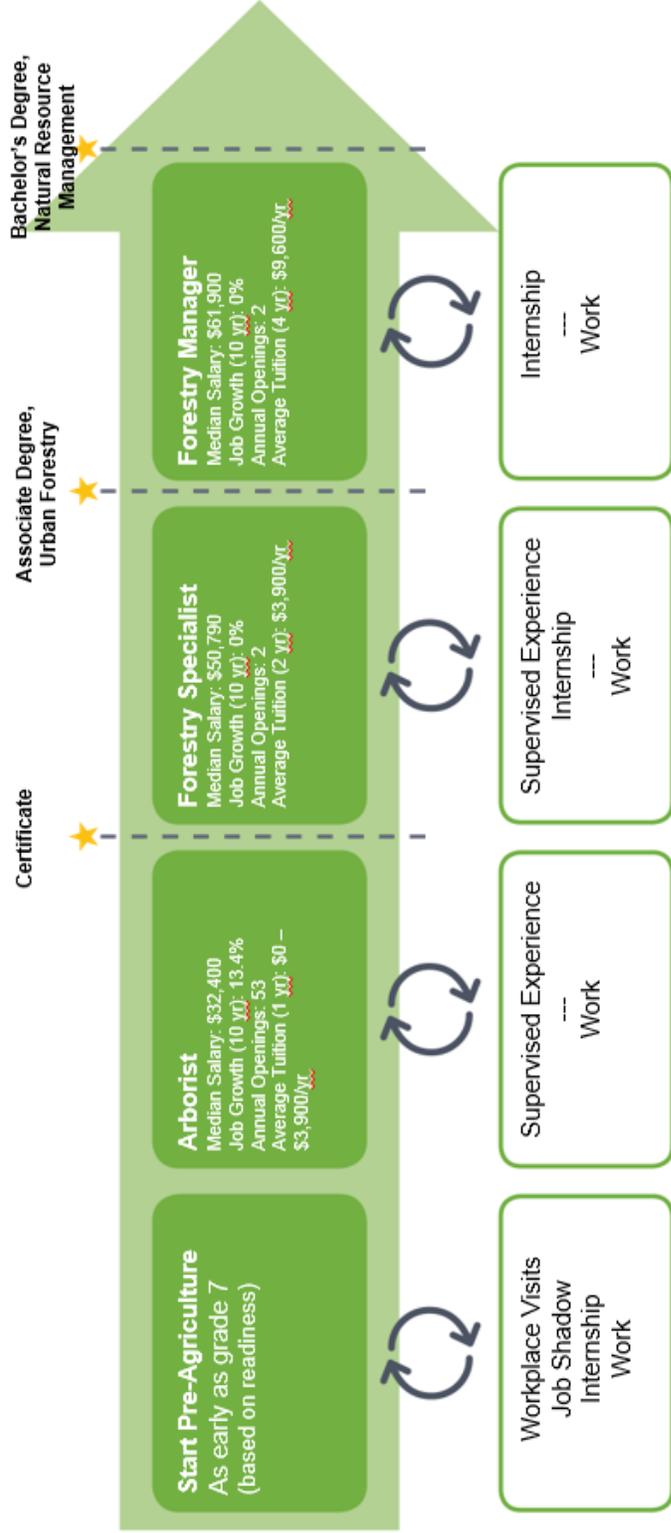


Ohio EPA hazardous waste inspector Dan DiMeo discusses his career with students at Licking County's combined career fair for all high school sophomores, at Denison University.

<https://education.ohio.gov/Topics/Career-Tech/Career-Connections/Career-Pathways>



Agriculture and Environmental Systems Career Pathway



Provided by middle schools, high schools, employers, Ohio Tech Centers, and colleges.

Preparing students for multiple options after high school:

gainful employment and/or postsecondary study.



Data reflects 2014 Ohio labor statistics and public institutions of higher education for 2013-2014. For specific tuition costs, visit ohiohighered.org.





Agriculture and Environmental Systems Career Pathway

Secondary Pathway: **Natural Resource Management**

Postsecondary Program: **Urban Forestry**

An Example of Courses with Secondary and Postsecondary Credits

Grade	English I	Algebra I	Science	Social Studies	Fine Arts	Ag, Food, & Natural Resources	
7 8	English I	Algebra I	Science	Social Studies	Fine Arts	Ag, Food, & Natural Resources	
9 10	English II	Geometry	Biology	World History	Health (.5) PE (.5)	Environmental Science	Natural Resources
11	English III	Algebra II	Chemistry	U.S. History	Forestry & Woodland Ecosystems	World Languages	
12	English IV	Trigonometry/Calculus	Physics	U.S. Government	Urban Forestry	Environmental Systems Management	
Postsecondary							
Year 1 1st Semester	English Composition	College Algebra	Computer Systems	Intro to Horticulture	Horticultural Botany	Humanities Elective	
Year 1 2nd Semester	Chemistry	Algebra II	Arboriculture	Plant Identification & Selection I	Landscape Construction	Tree Care Co-Op I	
Year 2 1st Semester	Communication	Intro to Business	Soil & Horticulture Management	Plant Identification & Selection II	Occupational Regulations & Safety	Irrigation Design & Maintenance	
Year 2 2nd Semester	Professional Selling Techniques	Environmental Earth Science	Urban Forestry	Principles of Pest Management	Social Sciences Elective	Tree Care Co-Op II	

High School Career-Technical Education Program Courses

High School Courses for Postsecondary Credit (Including Apprenticeship Hours) and the Corresponding Postsecondary Courses

Required Courses

Recommended Electives

Visit education.ohio.gov/CareerConnections for reference information. Course titles and sequences will vary between schools.

5/2016



Students learn about environmental careers from the US Army Corps of Engineers, U.S. Coast Guard and Metropolitan Sewer District of Greater Cincinnati, aboard BB Riverboats, at Riverworks Discovery's "Who Works the River?" career fair for Cincinnati area high school students.



Students learn about careers in drinking water treatment and safely managing nuclear waste, at the City of Dayton Water Department's High School Water Career Conference and the "Science Alliance" Career Exploration Day at the Fluor-BWXT Gaseous Diffusion facility near Portsmouth.



Other Workshops, Programs and School Presentations

In addition to the career activities outlined above, the partners offered **34 regional professional development workshops to 912 educators**, offering teachers certification in nationally recognized curricula such as *Healthy Water, Healthy People*, www.healthywater.org, The Leopold Education Project, <http://www.aldoleopold.org/Programs/lep.shtml>, Project Learning Tree, www.plt.org; Project WET (Water Education for Teachers), www.projectwet.org, Project WILD, Project WILD Aquatic, Flying WILD, and WILD School Sites, all at www.projectwild.org; and Wow! The Wonders of Wetlands, http://www.wetland.org/education_wow.htm. School presentations included demonstrations of water quality monitoring techniques, the EnviroScape® drinking and wastewater treatment model and Ohio Wildlife History model. EECO and OEE presenters also frequently demonstrate other hands-on models such as the EnviroScape® watershed model, storm drain models, soil tunnels and the EnVision 3100© ground water flow model at schools and teacher conferences.

Conferences

EECO's April 2016 **annual conference** at Mohican State Park featured workshops on curricula aligned to Ohio's New Learning Standards and field trips to area locations to see excellent environmental education in action. The conference showcased concurrent sessions on cutting edge topics and programs for environmental and STEM education. Friday night featured a panel discussion of the Environmental Career Ambassadors Network, Representatives from the Ohio EPA, Ohio Department of Education and MAD Scientist Associates discussed the successful initiative, its benefits to students and teachers and how the program fits with Ohio's New Learning Standards. On Saturday, Herpetologist Greg Lipps shared his experiences researching giant salamanders during his keynote address. Exhibits and presentations also highlighted Project WET (Water Education for Teachers), environmental careers and several projects funded by the Ohio Environmental Education Fund.



Regional Conferences

The partnership also provides financial support for three regional conferences for teachers and non-formal educators: the “**Winter Snow, Out We Go**” conference in northeast Ohio in February; the “**Black Swamp Educators’ Extravaganza**” in northwest Ohio in June, sponsored by a number of soil and water conservation districts; and the “**101 Alternatives to the Chalkboard**” conference in southwest Ohio in October.



Local Programs

To most effectively reach a wider audience and avoid duplication of effort, the partners work closely with local environmental educator collaboratives such as the Earth Day Coalition in Cleveland, Greater Cincinnati Environmental Educators (GCEE), Terrific Resources for Environmental Education (TREE) in central Ohio and the Tri-County Environmental Educators in the Youngstown area. These collaboratives offered **regional resource fairs** for teachers, afterschool care providers and home schoolers. The partners also exhibited or presented at **14 special events and conferences with 9,795 participants**, including the Cincinnati Paddlefest, Children’s Water Festivals in Dayton and Columbus, the Ohio Wildlife Diversity Conference and local Earth Day events. Local collaborators include soil and water conservation districts, solid waste management districts, county extension offices, health departments, zoos, nature centers, botanical gardens, and recycling and litter prevention offices. Adult education opportunities also included **seven OEEF grant writing workshops** offered around the state last year, reaching a total of **184 participants**. EECO’s assistance in hosting and publicizing these workshops has been instrumental in helping the OEEF increase the number of grants awarded in under-served counties.

