Introducing Ohio Students to Careers in Environmental Science and Engineering

Carolyn Watkins, RS
Chief, Office of Environmental Education
Carolyn.Watkins@epa.state.oh.us
Why?

Ohio students, teachers and guidance counselors have little grasp of the wide range of environmental careers available, or the specialized training and skills required (what they think)
(What else is out there)
Why Now?

• Governor Kasich’s emphasis on preparing students for careers in STEM fields
• Enrollment decline in some undergraduate environmental programs at Ohio colleges and universities
• Wave of retirements depleting ranks of professionals in fields like environmental health
• Ohio employers indicating qualified applicants harder to find for technical fields
What if we had a statewide network of environmental scientists and engineers willing to talk with students about their careers?
Environmental Career Ambassadors

Project Partners:

EECO
Environmental Education Council of Ohio

EEF
Ohio Environmental Education Fund

School of Environment & Natural Resources
Ohio EPA
Target audiences

• Middle and high school grades
• Students considering four-year baccalaureate degrees
• Students considering two-year technical programs
• Students attending career/technical education centers
• Gifted and International Baccalaureate students
How does it work?

• Environmental professionals volunteer as Career Ambassadors, at whatever level of commitment they can do

• Teachers and career centers search free database by county to identify ambassadors who might be available for presentations and programs
Options to choose from:

• Make occasional classroom presentations
• Participate in school Career Day events
• Host school field trips
More options...

- Offer internships and shadowing opportunities
- Mentor young professionals
- Recruit other Career Ambassadors
OSU Environmental Professionals Network (EPN)

- www.epn.osu.edu
- Second Tuesday breakfasts
- Career ambassador pages are being added in July, 2013
Reservation #1: Who’s Got Time?

- We expect to recruit more than 500 ambassadors statewide, to share the load
- You can decline any request
- Strong support from employers
Who’s On Board?

• **Companies**: AEP, Agrium, Emerald, Heritage, Kurtz Brothers, Lyondell-Basell, Quasar Energy, Waste Management

• **Trade Associations**: Environmental Service Industries, Ohio Chemistry Technology Council, Ohio Parks & Recreation Assoc.

• 8 **Colleges and Universities**

• **State & Federal Agencies**: ODE, ODNR, OEPA, USEPA, Wayne National Forest, Cuyahoga Valley National Park

• **Local Agencies**: park districts, municipal environmental divisions, recycling offices, soil and water conservation districts, solid waste management districts

• **School districts & Educational Service Centers**
Reservation #2: I don’t know how to talk to kids!

• **Toolkits** to help make presentations more engaging, hands-on, and age-appropriate

• Pre-visit **classroom activities** aligned with Ohio science standards by grade level
Sample Toolkit: Drinking and Wastewater Treatment

• Classroom activities from *Healthy Water, Healthy People* and US EPA

• EnviroScape© Drinking and Waste Water Treatment Plant model and Ground Water Flow models available for loan in most counties
Other models

- EnviroScape© hazmat spill cleanup
- EnviroScape© watershed model
- EnviroScape© MSW Landfill
- Edible Landfill
Toolkit Lending Library: DVDs on Environmental Occupations

- Environmental Inspector
- Water & Wastewater Treatment Plant Manager
- Geologist
- Meteorologist
- Park Ranger
- Biological Scientist

- Solid Waste Manager
- Air Quality Manager
- Hazardous Waste Manager
- Recycling Plant Manager
- Urban & Regional Planner
- Forester & Conservation Scientist
Environmental Inspector DVD

www.careerpathwaysonline.com
Helpline: Regional Coordinators

- Part-time coordinators linking local business professionals and environmental programs with schools and career/tech centers
- House career exhibits, toolkits, models and videos for ambassadors to borrow (also in many local SWCDs)
Connecting the Dots: Ongoing Career Initiatives Statewide

• Career Days at many schools
• Company-sponsored programs
• Competitions
• Career/technical education centers
Career Fairs: “Who Works the River” in Cincinnati

US Army Corps of Engineers
Great Lakes & Ohio River Division

RiverWorks Discovery

Ohio EPA
Corporate Career Programs

- SP&L Explorers program, online renewable energy curriculum, hands-on experimentation kits, mentoring program, internships and scholarships
National Engineers Week

• Middle School teams’ future cities judged on energy & environmental criteria
Ohio Envirolthon Competition

- High school teams tested on forestry, soils, water quality, wildlife, current policy issues
Career Shadowing Programs

Wayne National Forest, Little Cities of the Forest, Hocking College School of Natural Resources

High school students shadowing environmental professionals monitoring water quality, building trails, removing invasive species, studying vernal pools & pollinators
Career Shadowing Programs

Cleveland Public Schools, Cleveland State University, Earth Day Coalition

- High school students shadowing environmental professionals gathering data on phytoremediation and urban heat islands.
- Students leading anti-idling campaign on school grounds
$49,628 to Collins Career Center (Southeast Ohio)

Students in agri-science, natural resources, carpentry, business & marketing jointly manage a forest plot and sawmill to document economic benefits and job opportunities from sustainable timber harvesting, reforestation, and habitat restoration
Connecting the Dots: Grants

- $14,898 to Miami Valley Career Technology Center
- Students produce biodiesel fuel from soybeans; perform maintenance and diagnostics on diesel school buses, farm and construction equipment using biodiesel; and monitor carbon emissions and fuel consumption compared to other fuels
Connecting the Dots: Grants

- $18,705 to Penta Career Center (Northwest Ohio)
- Equipment for students in grades 11-12 to explore solar, wind, hydro, biomass, geothermal, & fuel cell technologies
- Week-long STEM summer day camp on Green Energy careers for students in grades 7-9
College Scholarships

Environmental Science and Engineering Scholarship program to help 2\textsuperscript{nd} and 4\textsuperscript{th} year college students finish their degree programs
Next Steps

• Beginning **July 2013**: OSU Environmental Professionals Network members can sign on as volunteer career ambassadors

• **June-December 2013**: Recruiting ambassadors, optional trainings

• Some ambassadors may be contacted by schools with requests during **2013-2014 school year**.

• **January – June 2014**: Rollout to educators

• **2014-2015 school year**: lots of Career Ambassadors at Work!
Put me in, Coach!

- Join the EPN at [www.epn.osu.edu](http://www.epn.osu.edu)
We Want You!