

Advice From Educators

FirstEnergy Welcomes New Educational Advisory Councils

We are pleased to welcome new panels of teachers to our Ohio, Pennsylvania and New Jersey Advisory Councils. They will serve two-year terms helping evaluate the educational materials FirstEnergy provides for schools and youth groups throughout our communities. These

educators bring a wealth of experience and commitment to the task of selecting accurate materials that appeal to students in the intended grade level. We are grateful to all of these fine educators for their dedication.

Ohio

- **Akron:** Mary Anne Beiting, Ed.D., Archbishop Hoban High School; Felicia Campbell, Riedinger Middle School; Marilyn Croskey, Springfield Local School District; Debbie Deidrick, King Elementary School; and Dr. Tanya Robinson, Akron Public Schools – Title 1
- **Broadview Heights:** John Schinker, Brecksville-Broadview Heights City Schools
- **Cortland:** Joanne Ogurchak, Cortland Elementary School
- **Holland:** Dr. Michael O’Shea, Springfield Local Schools
- **Lakewood:** Allison Martzolf, Harding Middle School
- **North Olmsted:** Denise A. Ressler, Birch Primary School
- **Richfield:** Kimberly J. Borzyn, Revere High School
- **Stow:** Adam Harder, Stow-Munroe Falls High School (photo unavailable)
- **Youngstown:** Mary R. Wynn, Volney Middle School

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Mary Anne Beiting, Ed.D. Felicia Campbell Marilyn Croskey Debbie Deidrick Dr. Tanya Robinson John Schinker



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Electric Operating Companies:

- Ohio Edison
- The Illuminating Company
- Toledo Edison
- Metropolitan Edison
- Pennsylvania Electric
- Penn Power
- Jersey Central Power & Light

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Pennsylvania

- **Edinboro:** Stephen M. Macfarlane, James W. Parker Middle School
- **Erie:** Gail Blaszczyk, Saint James School; and Anna-Marie Page, Pfeiffer-Burleigh Elementary School (photos unavailable)
- **Fairview:** Shirley Ann Winschel, Walnut Creek Middle School
- **Hermitage:** Mary Catherine Puleo, Notre Dame School
- **Warren:** Jeremy D. Criswell, Beaty Warren Middle School (photo unavailable)
- **Waterford:** Lisa J. Radock, Fort LeBoeuf Middle School (photo unavailable)



Stephen M. Macfarlane



Shirley Ann Winschel



Mary Catherine Puleo

New Jersey

- **Chatham:** Erik M. Yates, Lafayette Avenue School
- **Cranbury:** Emily Vorp, Cranbury School
- **Freehold:** June P. Kelley, Joseph J. Catena School (photo unavailable)
- **Jackson:** Michael Cacciuttolo, Ocean County Vocational Technical School (photo unavailable)
- **Leonardo:** Melissa Schlank, Bayshore Middle School (photo unavailable)
- **Little Silver:** Peter Grandinetti, Red Bank Regional High School
- **Morristown:** Jill Magidson, Morristown High School
- **Wall:** Maryanne Rodriguez, Communications High School



Erik M. Yates



Emily Vorp



Peter Grandinetti

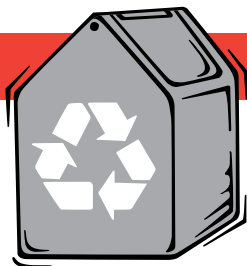


Jill Magidson



Maryanne Rodriguez

The Cutting Edge



County Fair Goes Green

Organizers of this summer's fair in Clark County, Washington, kept the environment in mind as they planned the 10-day event. They placed 50 recycling bins across the fairgrounds, purchased recycled-paper towels and installed compact fluorescent light bulbs in the exhibit halls. Used cooking oil was collected for bio-fuel, animal waste went to landscaping companies, and some food booths used biodegradable forks and plates. Plans for composting the fair's food waste were not completed in time for the event. "It's our goal for next year," said Tom Musser, director of the fair.

The Columbian, August 8, 2008

Solar Power Scales Up

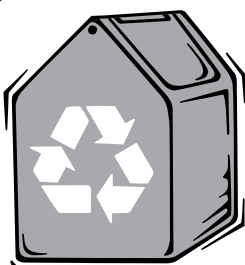
Plans are in place for two large-scale solar power plants in California. Together the two new plants, both of which will use photovoltaic cells to generate electricity, will cover 12.5 square miles with solar panels. In the middle of a sunny day – a time when demand tends to be high – they will generate about 800 megawatts of power, about the same as a large coal-burning facility or a small nuclear plant. Currently the largest photovoltaic plant in the U.S. produces 14 megawatts. Spain has a 23-megawatt solar plant, and Germany is building a 40-megawatt one.

The New York Times, August 15, 2008

NASA Installs Shock Absorbers

The next generation of moon rockets will have shock absorbers to protect against vibrations that could be severe enough to prevent astronauts from reading cockpit displays and could even cause damage to spacecraft components or injury to astronauts. A spring-and-damper ring will be inserted between the first and second stages of the Ares 1 rockets, and sixteen actuators that act like shock absorbers will be added to the bottom of the rockets. NASA expects to make the first Ares moon mission in 2020.

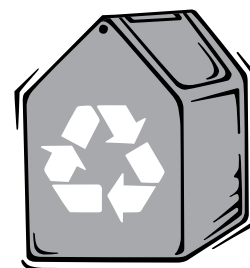
USA Today, August 20, 2008



Flying Giant Kites

Scientists are using kites to harness high-altitude wind, which is hundreds of times stronger than the ground-level wind that turns traditional turbines. In addition, many locations where there is little ground-level wind have strong winds at higher altitudes that are accessible to kites but too high for windmills. A kite generates power by pulling on a string attached to a generator on the ground. When the kite reaches its maximum height, it is reeled down and repeats the process. Using computer models, researchers have shown that flying the kites in figure-eight patterns increases the airflow and maximizes power generation. One experimental kite in the Netherlands generated enough power for ten homes, and scientists expect to be able to scale up simply by adding more kites.

The Observer, August 3, 2008



Tracing the Geometry of Harmony

The connection between music and mathematics is the focus of work by music professors Clifton Callender at Florida State University, Ian Quinn at Yale University and Dmitri Tymoczko at Princeton University, who have found a way of analyzing music through geometry. They represent sequences of notes using points in complex geometrical spaces. Their model represents all possible combinations of musical pitches and generates some three-dimensional shapes that have yet to be described by mathematicians.


"My fellow researchers and I have found it thrilling to discover unexplored areas of mathematics in the course of solving musical problems," said Callender.

FSU News, April 2008





Visit our Web site at
www.firstenergycorp.com/education

Educational Resources Available


 Little Shop of Physics is Colorado State University's **hands-on physics** outreach program for all grade levels. Visit the website at <http://littleshop.physics.colostate.edu> and click on "Online Experiments."





 The Scrub Club is a website from NSF International, a non-profit public health company (not the National Science Foundation), where kids can learn about **germs and hygiene**. Find it at www.scrubclub.org.


 Physicist Frank Potter has created a website with **links to science resources** sorted by topic and grade level. Find it at <http://sciencegems.com>.


 The Museum of Science in Boston offers **free podcasts** at its website, www.mos.org. Click on "Events & Activities" and then on "Podcasts." The August 15, 2008 podcast includes an interview about a breakthrough in storing solar energy.


 The Federal Communications Commission provides **information and games** for kids on its Kids' Zone web pages. Visit www.fcc.gov and scroll down to find Kids' Zone on the left side of the page.


 The Girls, Math & Science Partnership has a **website for girls** age 11-17 at www.braincake.org. The site aims to "help girls be confident, solve problems and think independently."

 For a **free reproduction master of a metric pyramid** to cut out and glue, visit the National Institute of Standards and Technology website, www.nist.gov. Scroll to the bottom of the middle column and click on "Kids," then click on "Metric Measures" on the right side of the screen. Finally click on "Metric Pyramid."

 The National Audubon Society offers free tips and resources for helping students **learn about nature**. Go to www.audubon.org and point your cursor to "Education" in the menu bar. Choose "Educators' Lounge" from the drop-down menu.

 **Physics4kids.com**, a website created by Andrew Rader Studios, provides introductions to a wide range of physics topics for students of all ages.

 For **free printable maps** to use in the classroom, visit www.yourchildlearns.com and click on "Maps to print – one page to huge." The site, from Owl and Mouse Educational Software, also offers online map puzzles and games.

 Students can **learn about bats** from experts at the Organization for Bat Conservation by visiting www.batconservation.org. Click on "kids' stuff" in the menu bar.



"I have not failed, I've just found 10,000 ways that won't work."

- Thomas Edison