



# NEED WELCOMES NEW BOARD MEMBERS



**Margaret Downey** is the Assistant County Administrator for Barnstable County and the Administrator for the Cape Light Compact. She worked on energy related issues for Barnstable County for more than 15 years, and is responsible for the electric power supply aggregation program and the energy efficiency program of the Cape Light Compact.



**Kate Marks** is the managing director of the National Association of State Energy Officials (NASEO). She is responsible for informing the nation's 56 state and territory energy offices of Federal activities, sharing energy program best practices, and coordinating peer exchange. She manages NASEO's Regional Coordinators initiative, and the efficient buildings, energy assurance, renewable, and electricity-related programs and committees.



**Randall Luthi** is President of the National Ocean Industries Association (NOIA), a trade association representing over 260 companies that work to develop the nation's valuable offshore energy resources. An attorney and rancher from Freedom, Wyoming, Mr. Luthi has served as a legislative assistant in the U.S. Senate, as an attorney at the U.S. Department of the Interior and the National Oceanic and Atmospheric Administration, and as the Director of the Minerals Management Service (MMS), now the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), at the Department of the Interior.

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BP

#### Kristi DesJarlais,

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#### Margaret Downey

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#### Linda Lung

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#### Randall Luthi

National Ocean Industries Association

#### Kate Marks

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#### Caryn Turrel

Program Associate

#### Cindy Welchko

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# NEED PRESENTS THE 2011 BACK TO SCHOOL NATIONAL SOLAR BAKE-OFF

Start the year off with a sweet project! You are invited to participate in NEED's first solar bake-off! Classes around the country are encouraged to use solar ovens to bake cookies throughout the month of September.

Use student-designed or pre-built solar ovens to bake cookies (for comparison purposes, we suggest using 'Ready to Bake' chocolate chip cookies). Have students take detailed observations of weather conditions, the baking process and times, and final cookie results. Submit one picture of students with their ovens and email it to [info@NEED.org](mailto:info@NEED.org) or post it on NEED's Facebook page. When you submit your photo include the following information:

- School name
- Teacher's name
- Grade level
- City, State
- A brief description of your baking experience

Then, log detailed information about your weather conditions and exact geographic location on [www.NEED.org/solarbakeoff](http://www.NEED.org/solarbakeoff).

Results of the bake-off will be compiled and available for students to analyze and make conclusions.

Happy baking!



Need directions to build your own solar oven? Visit [www.NEED.org/solarbakeoff](http://www.NEED.org/solarbakeoff) for more solar energy information, activities, and to download NEED's solar curriculum.

## THE NEED PROJECT



**National Energy  
Education Development**

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The NEED Project is a 501(c)(3) nonprofit education association providing professional development, innovative materials correlated to the National Science Education Content Standards, ongoing support, and recognition to educators nationwide.

*Energy Exchange* is published by NEED for educators and students. We welcome your questions, comments, and suggestions.

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## NEED EDUCATOR TOSSES FIRST PITCH

On July 10th, Mary Funk, a fifth and sixth grade teacher at Burrel Union Elementary School in Riverdale, CA was honored at a San Francisco Giant's game as the PG&E Solar Schools Inspirational Educator of the Year. Mary and 18 of her students took a behind-the-scenes green tour of AT&T Park in San Francisco, CA. Mary

was honored on the field in a ceremony before the game, received a trophy from PG&E President Chris Johns, threw out the ceremonial first pitch, met Giants players Cody Ross and Sergio Romo, and a video tribute was played to her and her students.

Mary was recognized for her dedication to teaching her students in innovative ways. Mary just finished her 18th year as a teacher and, admits she wasn't that interested in science before attending a PG&E



sponsored National Energy Education Development (NEED) workshop. She brought back a solar-energy kit, and the tools it provided engaged her students. With fresh inspiration, Mary and her students designed an outdoor energy learning center that has a 200-foot, solar-powered river which she was able to build with grants received from PG&E.

The experience "was totally amazing to me," Mary said.



the industry is, the number of jobs available for all types of students, and the challenges and opportunities that abound in developing natural gas in America. Charles Newcomb, a longtime NEED partner from the National Renewable Energy Laboratory provided educators with a presentation and open discussion about windpower in the U.S. and around the world. Charles' background in engineering and wind project development helped teachers understand the capabilities of wind and the many careers associated with the wind industry.

Thanks to too much Colorado rain, teachers couldn't board buses to tour Encana's natural gas drilling operations, but Encana's Bridget Ford engaged the teachers in a conversation about how we explore and develop the natural gas we use to heat our homes, generate our electricity, and run our compressed natural gas buses and cars. Although the rain and mud kept them away from the drilling site, the teachers were treated to a day at the Denver Museum of Nature and Science to explore the exhibits and enjoy solar activities in the park.

When asked about the 2011 conference, facilitator Don Pruett said, "This group of teachers was serious about learning and teaching about energy. I expect to see them all use these materials in the classroom and share them in their local community. Their students will have a deeper understanding of energy issues since these teachers have worked so hard this week." Patti White (Morningside Elementary, Salt Lake City, UT) was a first time conference attendee. Reflecting on the week she said, "I'm enjoying all the support that NEED has to offer with curriculum and resources and I'm looking forward to another year of working with my students and getting them educated about our country's energy needs." (Check out Morningside Elementary's Youth Awards Program Summary online!)

Plan now to join NEED at the 2012 National Energy Conference for Educators. The application to attend will be live at [www.NEED.org](http://www.NEED.org) by September 30, 2011.

Summer was busy, but the fall will be packed with fun! Remember to share your NEED experiences with fellow teachers and students and with us! Join us on Facebook, follow us on Twitter and watch NEED's SmugMug site for photos of our activities in the local community!

For the 2011-2012 NEED curriculum guides visit [www.NEED.org](http://www.NEED.org). Register for a workshop near you!

## NEW AND NOTEWORTHY

### MORE H<sub>2</sub> EDUCATE WORKSHOPS COMING!

Thanks to a generous grant from the U.S. Department of Energy's Hydrogen Program, NEED's H<sub>2</sub> Educate workshops continue this fall. Watch the NEED calendar for a workshop near you! Want to co-host a workshop? Email NEED at [info@NEED.org](mailto:info@NEED.org).

### CELEBRATE THE INTERNATIONAL YEAR OF CHEMISTRY! NEED PARTNERS WITH SHELL CHEMICAL AND THE AMERICAN CHEMISTRY COUNCIL

In an effort to highlight the importance of chemistry in the development of the tools and resources we use to increase energy efficiency and mitigate carbon dioxide emissions, NEED, Shell, and the American Chemistry Council partnered to launch a new online Chemistry and Energy Efficiency module for teachers. Based on the McKinsey Life Cycle Analysis of the chemistry industry and the products used to improve energy efficiency, the online lessons, backgrounders, graphics and video clips give students a look at the chemistry behind insulation, agriculture, glass, and plastics used to reduce weight, improve safety and more. One of the lessons learned from this project is that although the chemistry industry is a large consumer of energy, the products created net substantial savings in energy when put into use. As the industry becomes more energy efficient and reduces its carbon dioxide emissions, the products produced improve consumer energy efficiency too. Visit <http://chemistry.NEED.org>.

### NEED ENERGY IN YOUR CLASSROOM? WANT TO LEARN MORE ABOUT THE CHEMISTRY AND ENERGY EFFICIENCY MODULE?

Shell has renewed support for teacher training and curriculum materials in the greater Houston area and in Pennsylvania. Workshops for up to 150 educators are planned for Fall 2011. The agenda includes the science of energy, energy resources, discussions about careers in the energy industry and a peek at the hands-on lessons created as part of the Shell Chemical sponsored *Chemistry of Energy Efficiency* program. Join us at a workshop soon!

### VISIT US NSTA CONFERENCES THIS FALL!

NEED will host sessions and exhibits at the National Science Teachers Association regional conferences this fall in Hartford, CT; New Orleans, LA; and Seattle, WA.

### NEED ARRIVES IN ARKANSAS

Thanks to support of the Arkansas Energy Office, NEED is launching a K-6 program statewide this fall. The program includes the science of energy, energy sources, and school and residential energy efficiency. Teacher workshops are planned across the state. Attendees will receive NEED *Science of Energy Kits*, and families receive NEED's *Saving Energy Home Energy Efficiency Kits*! Have friends in Arkansas? Tell them to join NEED and the Arkansas Energy Office at any of the six 2011-2012 workshops.



## 2012 YOUTH AWARDS FOR ENERGY ACHIEVEMENT

Mark your calendar for the 32nd Annual Youth Awards for Energy Achievement hosted in Washington, D.C. June 22-25, 2012. Learn more about the NEED Youth Awards Program at [www.NEED.org/Youth-Awards](http://www.NEED.org/Youth-Awards).

Are you a student or have a student who is very involved in learning and teaching about energy in the classroom and community? NEED is accepting applications for the 2012 NEED Youth Leadership Award. These \$1,500 scholarships are given annually to students who are involved in NEED activities and believe in the importance of energy education. Students should be graduating seniors or college freshman or sophomores and be seeking careers in energy and/or education.

## LOOKING FOR VOLUNTEERS TO TAKE THE NEED ENERGY POLLS

Launched in 2011, the NEED Energy Pre/Post Polls are now online and great for teachers to assess students' energy knowledge. As part of a 2011-2012 evaluation, NEED seeks volunteers to commit to use the online polls with their students before and after using NEED materials in the classroom. Teachers should have students take the Pre-Poll at the appropriate grade level and return after students learn about energy to take the Post-Poll. Email [info@NEED.org](mailto:info@NEED.org) to volunteer! Participating classes will be entered to win a NEED Energy Kit (\$400 value) of their teacher's choice!

## COMED IN ILLINOIS

In a great expansion of programming in ComEd's service area, teachers in Illinois have access to 15 Illinois Energy Workshops this fall. Workshops include the science of energy, home energy efficiency, and more! Most workshops are for K-12 teachers, but there are three workshops that are specialized specifically for teachers of K-6, 8-12, or Career and Technology. Check out [www.NEED.org/ComEd](http://www.NEED.org/ComEd) to sign up for a workshop today.

## 2011 NEED FACILITATOR TRAINING IN LA QUINTA, CA

It was 114 degrees in the shade, but 50 NEED teachers, energy professionals, and partners gathered in the California desert to train, learn, share, and plan for NEED's teacher training efforts. Hosted every few years, NEED's Facilitator Training is an intense four days packed with content sessions about current NEED curriculum and sessions about energy issues and technologies as well as activities designed to improve facilitation skills and to develop new NEED training capabilities. Thanks to the hard work of NEED Facilitators Todd Rogers, Regina Donour, and Vernon Kimball, participants left the training saying it was the hardest, but most rewarding work they've ever done. NEED's success is founded on the skills and dedication of NEED workshop facilitators. Many thanks to those who participated in the training.

## PECO ENERGIZING EDUCATION PROGRAM ENTERS YEAR FOUR

The PECO Energizing Education Program launches this fall in partnership with NEED and The Franklin Institute. The program provides grants, classroom curriculum and kits, and extensive teacher training, as well as support to schools in the PECO service area in greater Philadelphia. Up to 20 schools are selected through an application process to participate in this classroom and community education program. The application deadline is September 30, 2011. Visit [www.NEED.org/peco](http://www.NEED.org/peco) to apply online.



## CONGRATULATIONS TO SAMANTHA FORBES

NEED students and teachers nationwide join the NEED Staff in congratulating Samantha Forbes (pictured above, right). Samantha has been NEED's Training Coordinator for four years, planning workshops, supporting NEED facilitators in the field, and helping make sure that teachers were always treated as professionals when attending NEED workshops. Samantha leaves NEED this fall to become a Science Lab Teacher at Our Lady of Good Counsel in Vienna, VA. She now joins the NEED Teacher Advisory Board to pilot and share NEED with her students. Congratulations Samantha!



## NEED WELCOMES CARYN TURREL

The NEED Project welcomes Caryn Turrel (pictured above, left) as a Program Associate. Over the last four years, Caryn's involvement with NEED has progressed from excited workshop attendee to enthusiastic NEED workshop facilitator. "Everything that NEED does is high-quality and I always felt extremely valued both as a teacher as well as a facilitator. I'm really looking forward to working with such a great group of people. Being part of this staff is such an honor and privilege."

If you are attending a workshop with Caryn, make sure to welcome her to the 'NEED Family.'

# teacher TALK



## KEVIN CROSBY

» Independence High School in Bakersfield, CA

*Independence High School's multiple award winning Falcon Autistic Solar Team (FAST) uses solar demonstrations to teach other classes about energy conservation and alternative forms of energy. Their solar club also seeks to provide an open forum for other students to think of ways they can protect the environment as well. This year the Falcon Autistic Solar Team was awarded the President's Environmental Youth Award from the EPA, The California Senior Level School of the Year from NEED, and have also been invited to present their FAST project at the Microsoft Innovative Education Forum in Seattle.*

### PLEASE TELL ME ABOUT FAST. HOW DID THIS COME ABOUT?

Last fall I invited Tim Horton's higher-functioning students with Autism to come to my class. I did some solar energy activities with them and let them build a solar-powered car out of a LEGO kit. All of the students were totally engaged in the learning and they could comprehend how a photovoltaic panel can be used to make electricity. While waiting for the bus to pick up the students after school, one of the students told me that "the solar activities were mind-blowing." That was my 'aha' moment. That's when the idea came to me that our students could teach these concepts to other students.

### WHY IS TEACHING ENERGY SO IMPORTANT IN YOUR CLASSROOM?

My students have a variety of developmental delays and they struggle with basic academic skills. These students are mainly visual and kinesthetic learners which allows the NEED Energy kits to be very useful in my class because of the hands-on experiments that teach science topics. Our special needs students might not have a lot of background knowledge about the concepts, but they can see the cause and effect of the experiments.

I love the NEED materials because they are hands-on and adaptable. Students can make predictions, they can see and feel the materials, and then scaffold what they've learned into other areas. The NEED kits really help our students make meaningful connections with the curriculum in a fun and engaging way.

### HOW DO YOU SHOW YOUR DISTRICT/SCHOOL THAT TEACHING ABOUT ENERGY IS IMPORTANT?

Our Falcon Autistic Solar Team has held solar demonstrations and an Energy Expo on our campus to teach other students about energy-related topics. Our solar club has also made two solar public service announcements that are being broadcast all summer long on local station KETN, we used student artwork to make an energy calendar, and the students have started writing blogs about solar energy and clean air issues.



Kevin Crosby (far right) and Tim Horton (far left) pose with their students at the Youth Awards Program for Energy Achievement.

### HOW DO YOU INTEGRATE ENERGY INTO OTHER UNITS?

Math is a subject that is prevalent throughout the NEED activities because students are measuring liquids, distances, and temperatures. I integrate history and geography into my solar lessons by having class discussions about where the best locations for a solar farm would be and what type of weather factors would affect their decisions. We also tie language arts skills in by using what we've learned to write classroom blogs.

### HOW DO YOU INVOLVE YOUR COMMUNITY WITH YOUR ACTIVITIES AND CLASSES?

The Falcon Autistic Solar Team does solar demonstrations, we've produced public service announcements about solar energy, we designed energy placemats that were used at a local restaurant, we've participated in the Great American Clean-Up litter removal program, and we've entered a recycled art contest at the Greater Bakersfield Green Expo.

## ELEMENTARY ACTIVITY

# ENERGY PIE CHARTS

## Objectives

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- Learn to read and understand a pie chart using energy related pie charts from the NEED Graphics Library.
- Use energy pie charts to reinforce math skills of interpreting and analyzing graphs.

## Time

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- 40 minutes

## Materials

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- Copies of pie charts of varied energy-related data from the NEED Graphics Library, available at [www.NEED.org/graphics](http://www.NEED.org/graphics). Enter the key words "Pie Chart" in the search box at the top of the page to see all of the available pie charts. Optional: Print four pie charts per page.
- Master of sample graph for classroom demonstration.
- Overhead projector or document reader

## Preparation

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- Copy several different pie charts from the NEED Graphics Library (online at [www.NEED.org/graphics](http://www.NEED.org/graphics)).
- Students should work with several different pie charts or graphs for practice.
- Copies of general questions to understand, interpret, and analyze information

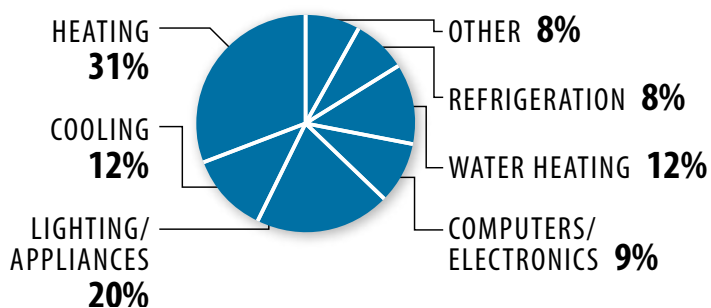
## Procedure

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Project a sample pie chart or graph and identify the following with your students:

- The title of the pie chart – tells what the graph is about
- The sectors of the pie chart – show what percentage of the whole is being represented by each category
- The sector labels of the pie chart – identifies the facts for each category

### Home Energy Usage



## Sample Questions

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1. What is the pie chart about?
2. How many sectors are in the pie chart?
3. Which use of home energy is used most?
4. Which use of home energy is used least?
5. What percentage of home energy usage is cooling?
6. What percentage of home energy use is computers/electronics?
7. List the categories in the pie chart from greatest to least.
8. What can you learn about our home energy use from this graph?

## Extension

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Provide opportunities and topics for students to take energy-related polls or collect energy-related data and create their own pie chart. Take the *NEED Pre/Post Energy Poll*, online at <http://edu.NEED.org>, and have students graph the results.

## INTERMEDIATE AND SECONDARY ACTIVITY

# USING ONLINE INTERACTIVE MAPS

## Introduction

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Teachers have been telling us that they want more interactive tools to use in their classrooms and we heard you loud and clear! We are pleased to introduce the updated version of *U.S. Energy Geography*, built as an online module, using interactive maps. Check it out online at [www.NEED.org/maps](http://www.NEED.org/maps)!

## Objectives

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- The purpose of this student-centered activity is to introduce varied online map resources as a means to understanding energy production and consumption.
- Use online maps to research and present your assigned topic.
- Research, prepare, and present your topic incorporating and including at least two of the maps.

## Materials

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- Computer(s) with internet connection – computer access may determine whether you do group or individual projects
- Projector or interactive presentation board
- Access to [www.NEED.org/maps](http://www.NEED.org/maps)
- Diverse resources, including *NEED Energy Infobooks*

## Preparation

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- Determine whether you want students to complete this individually or in groups.
- Choose topics that best meet your classroom goals. You may assign topics or allow students/groups to choose.
- Groups can be formed using *Energy Round Up* or other group-making activity.
- Gather resources – Infobook/pages for each topic plus additional resources as needed.

## Procedure

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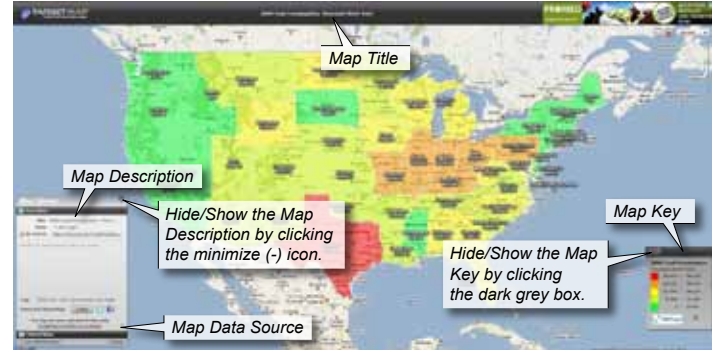
1. Use a projector or computer lab to preview the various maps with students. Some maps are still/static; some have current data and can be zoomed in and out; and some maps allow you to sort out the particular information you want highlighted.
2. Assign topics. Suggested topics include:
  - Compare and contrast production of (source) and (source).
  - Compare and contrast consumption of (source) and (source).
  - Explain the regional differences in the (production or consumption) of (source).
  - What is the correlation between the level/amount of production and consumption of (source) in (state/region)?
3. Research, keeping in mind that your presentation needs to include at least two maps
4. Organize your ideas onto 6-8 “slides” remembering to use at least two maps to explain and support your ideas

## Extension

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- The online map resources can be used to enhance and support research standards, social studies (geography or economics) standards, and language arts (including presentation skills) standards.
- Students can also use graphics from the NEED graphics library ([www.NEED.org/graphics](http://www.NEED.org/graphics)) in the presentations.

### How to Use NEED's Interactive Maps





# THE VERY BEST IMAGES FROM NEED'S GREAT AMERICAN ENERGY SCAVENGER HUNT

Students, teachers, and parents submitted hundreds of photos from around the world for NEED's Great American Energy Scavenger Hunt! Here are the winners and some of our favorites. To view all the entries, visit [www.NEED.org](http://www.NEED.org).



# CONGRATULATIONS TO THE 2011 YOUTH AWARDS WINNERS!

## PRIMARY LEVEL SCHOOL OF THE YEAR

**Satori Elementary School**  
**Galveston, TX**

**Project Title: Energy Satori**  
**Project Adviser: Nina Corley**

Our project was to learn about the sources and forms of energy, how energy has been used in the past and present, and about conservation and recycling, so that we could learn how to help make a better future and share the information we have learned. We did this by doing experiments and reading and learning about energy with NEED curriculum.

We learned about energy use in the past from senior citizens, Australian pen pals, people from the Japanese consulate, the Water Wise lady, research we have done, and the people at the National Oceanic and Atmospheric Administration turtle facility. We have done energy and water audits of our homes and school and tried to replace energy hogs with more efficient means. We have taken the information we have learned and shared it with the other students at our school, pen pals in other countries, done demonstrations at open house, and shared information with the media.



## ELEMENTARY LEVEL SCHOOL OF THE YEAR

**Thaxton Elementary School**  
**Thaxton, VA**

**Project Title: We Can Save The World-Recycle!**  
**Project Adviser: Viola Henry**

This year in our club, our main goal was to help our school and community to recycle and to increase their awareness of various conservation ideas, while allowing our students to give back to their community.

Our projects included recycling ink cartridges and cell phones with Cartridges for Kids, recycling aluminum cans, and recycling mixed paper with the City of Bedford Solid Waste Department. This money was used to pay for supplies to do our school and community projects.

All of our students participated in various conservation projects dealing with solar energy, hydrogen fuel cell cars, coal energy, ultraviolet light, energy games, wind energy, or transformation of energy.



## SPECIAL PROJECT OF THE YEAR

**Harwich Community**  
**Learning Center**  
**Harwich Port, MA**

**Project Title: Adventures in Energy**  
**Project Adviser: Sally Andreola**

The Adventure Seekers Energy Club is based in Harwich, Massachusetts. We are a group of middle school students that enjoy helping the community in ways that are energy related.

Through our many activities in the past year, our Energy Club members have learned a lot about energy science and conservation issues; and we are spreading our knowledge and enthusiasm throughout our town. We

sold compact fluorescent light bulbs in order for people to start using more efficient lights. This resulted in replacing close to 1,000 inefficient incandescent bulbs, reducing both energy use and carbon dioxide emissions. We taught over 300 younger kids in grades one, two, and three, by putting on an Energy Carnival at Harwich Elementary School that consisted of making an apple battery, Energy Bingo, and much more! In March our club visited a local power plant that burns garbage to create electrical energy. This experience has fueled our determination to begin a recycling program at our school. The Adventure Seekers Energy Club continues to educate our community about energy every day!



## JUNIOR LEVEL SCHOOLS OF THE YEAR

### Saint Margaret Catholic School

Lake Charles, LA

**Project Title: A Cleaner Today for a Greener Tomorrow**

**Project Adviser: Judy Reeves**

As the St. Margaret Science Club, we have made others more aware of the energy in the world around us and helped to preserve that energy for the future.

We started off with cleaning projects to protect the natural flow of the environment. We also participate in a recycling program around the school and community to conserve our resources and raise awareness to others about the need to conserve. We then shifted our focus to the subject of energy sources, renewable and nonrenewable. We held an Energy Fair with volunteers from companies like Entergy and Agro-Electric. We held an energy awareness week at school to educate younger students, and we



hosted our own Energy Expo to educate the school and community on how our energy is obtained.

### Park View Middle School

Cranston, RI

**Project Title: PV Cougars**

**Project Advisers: Joanne Spaziano, Nancy DeCosta, Sheila Hopkins**

Our PV Cougars have had a busy year. We did a conference for the St. Williams students on October 23rd. We did two conferences for teachers and students for the RI State Energy office, which

was also sponsored by National Grid. We made a list of energy tips for the morning announcements and put NEED news on the school website. The Energy Fair was our big event. National Grid came to present. They sent a Spanish speaking rep and that encouraged our bilingual students to also speak in their own languages to their parents, which really gave all of our NEED leaders a boost of confidence. All of our students have bonded together and they think of themselves as the NEED family. We have reached over 500 people directly and over 5,000 people through the newspapers and online news.



## SENIOR LEVEL SCHOOL OF THE YEAR

### Scituate High School

Scituate, RI

**Project Title: Scituate High School NEED Project**

**Project Adviser: Shannon Donovan**

Student leaders in the Scituate High School NEED Project continued their work this year to educate students, teachers, and members of the community about saving energy and building a sustainable society. We worked very

hard this year to help people think about their eating and entertainment habits, and the environmental impacts of the choices that they make. Our water use and groundwater protection also are related to energy as it takes much energy to bring us clean water and much energy to take care of our waste. We are very excited to report that we have begun preliminary work to convert a gasoline powered vehicle to a completely electric vehicle.



## STATE OF THE YEAR

### Kentucky

In the 2010-2011 school-year, Kentucky NEED Project programming grew exponentially, with thousands of teachers and students trained and provided with hands-on energy kits and classroom curriculum.

Kentucky teachers and students have access to teacher training across the state and to the support of regional energy education coordinators funded through a grant from the Kentucky Department of Energy Development and Independence and through the support of Kentucky

Utilities and Louisville Gas & Electric. Each summer, the new program year launches with the Kentucky Energy Tour – a week-long working field trip for teachers.

The partnership with The Kentucky Department of Energy Development and Independence has spurred the growth of high performance schools and a deep commitment to reducing energy consumption in Kentucky's schools. The Kentucky NEED School Energy Team approach has delivered strong results, with students, parents, and



administrators working together to run their school buildings more efficiently while increasing the teaching and learning about energy in the classroom.

# 2011 DISTINGUISHED SERVICE AWARDS

## SHELLY BAUMANN

**Member, NEED Teacher Advisory Board and NEED Workshop Facilitator  
Educator, Rockford Middle School, Rockford, MI**

Shelly Baumann has worked tirelessly on behalf of The NEED Project for many years, as a classroom educator sharing NEED's hands-on curriculum with her middle school students and providing inservices and mentorship to her fellow teachers in the Rockford Public Schools in Rockford, Michigan. Shelly's energizing attitude made her an extraordinary candidate as a member of NEED's Teacher Advisory Board to help shape NEED curriculum for classrooms in Michigan and across the United States. Her work in helping design curriculum and aligning NEED activities to Michigan learning objectives led to assisting with NEED teacher workshops in the state, then joining the national facilitator team and leading NEED workshops around the country.



Shelly's energy never ceases. She is friendly, engaging, and supportive whether it is seven in the morning before a one-day

teacher workshop or it is midnight preparing for the second day of the NEED Energy Conference for Educators. She is up-beat, prepared, and willing to always work hard to provide the best NEED curriculum and training for teachers who participate in NEED programming. Shelly joined the team for delivery of the National Energy Conference for Educators several years ago and now spends part of her summer each year delivering that conference to the 100+ teachers who participate each year. She served on the team that designed the very popular NEED H<sub>2</sub> Educate curriculum module and always volunteers to assist in creating the tools teachers need to bring energy into their classroom in a meaningful way.

Perhaps one of her most important accomplishments is the years of NEED student teams under her leadership that traveled the state of Michigan to lead teacher workshops on behalf of the Dart Foundation, the Michigan Oil and Gas Producers Education Foundation, and many others. Today, she serves on the team delivering the ConocoPhillips sponsored workshops nationally and spent Spring Break 2011 leading a workshop for educators in St. Louis, MO. Her level of dedication is so exemplary that she turned her very own children into NEED leaders. Kendall, Bryn, and Gabe have participated in NEED for many years, assisting with workshops, helping at the Youth Awards for Energy Achievement, and much more. NEED is grateful to Shelly, and to her fantastic husband Roger, for the time and commitment she gives to energy education each year.

Shelly, we thank you for your work, your can-do spirit, and your constant support of our mission and goals.

## KEVIN GALLIGAN

**Program Coordinator, Cape Light Compact**

In May 2011, Kevin Galligan departed the NEED Board of Directors after serving two complete terms as a valuable and active board member. As Energy Efficiency Manager for the Cape Light Compact on Cape Cod, Massachusetts, Kevin became a valuable and long-time NEED partner, bringing energy education into classrooms on Cape Cod, and encouraging schools throughout Massachusetts and the Northeast to connect energy efficiency in the school building to education in the classroom. Kevin's leadership at the Cape Light Compact brought teacher training workshops, hands-on classroom curriculum, numerous energy fairs, and a Solarize Our Schools Program to Cape Cod and Martha's Vineyard.



Kevin is a thoughtful NEED advocate – always considering new ways to help NEED achieve its goal of reaching every appropriate classroom in the nation while creating the most engaging and exciting energy curriculum and training. As a

member of the NEED Audit Committee, Kevin made sure that NEED's financial structure is sound – providing advice and consultation as NEED grew to become the organization it is today.

Arriving at the Cape Light Compact over nine years ago from working in the natural gas sector at Duke Energy, Kevin immediately engaged in teaching and learning about energy efficiency. He continues to teach an energy efficiency course at Cape Cod Community College, serves on the Orleans Wind Energy Committee, which is dedicated to helping the public understand wind energy on the Cape and to the installation of wind for generating electricity in the Town of Orleans, and serves as a guest instructor for NEED's Energy Industry Study Program hosted in partnership with the Energy Information Administration.

One of the best things about Kevin is that he surpasses expectations every time. He's funny, thoughtful, smart, and hard-working. He'll join conference calls while taking a break from the tractor on the farm or reply to emails during harvest in his family cranberry bog where he and his partner Vince practice local sustainable agriculture and share the farm's bounty with the local community.

Kevin is an educator at heart and a wise advisor to NEED. Kevin, we are grateful to you for your commitment to NEED, your dedication to students and teachers, and your boundless energy. As you depart the Board of Directors, it is our hope that you'll remain active, engaged, and a key member of the NEED family.

## BECKY GRIMM

### Program Coordinator, Ohio Energy Project

Becky Grimm spent 30 years educating science students before joining the Ohio Energy Project staff in 2006. She began developing Ohio's energy efficiency program with a grant from the Ohio EPA/Ohio Environmental Education Fund. She then expanded the program through Ohio's rural southeastern counties with an Appalachian Regional Commission grant. The past three years has kept her busy as the e3SMART Program Coordinator for all American Electric Power Ohio schools, covering 61 of Ohio's 88 counties.



Becky holds a Bachelor's degree in Geology from the College of Wooster, and a Masters in Science Education from The Ohio State University. She taught science at all levels for 30 years in Ohio public schools. During her teaching career, she earned multiple honors, including Teacher of the Year, and Career

Educator of the Year. Besides classroom responsibilities, Becky was active in science fair, coaching, Scouting, and student-led environmental work. Becky continues teaching at BWISER, Buckeye Women In Science, Engineering and Research, a camp dedicated to encouraging young women in the fields of science and engineering.

Becky began to participate in Ohio Energy Project programs in the 1980's, forming SEE, Students for Energy Education, at Hastings Middle School in the Upper Arlington School District. SEE was recognized by NEED as the National District of the Year three times for its leadership and excellence in energy education.

As Education Coordinator for the e3SMART Program, Becky's responsibilities include developing curriculum, coordinating professional development workshops and coaching teachers throughout the year that are participating in the program. During the 2010-11 school year, Becky has supported over 200 teachers that are educating over 16,500 students with the important message of energy efficiency. Becky's impact is best described by the teachers she serves.

Becky continues to empower teachers and students to be the best they can be. Her encouraging words and knowledgeable input are invaluable to both her colleagues and the teachers with whom she works. Becky is truly an asset to the Ohio Energy Project and to NEED!

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## RICHARD ZUERCHER

### Director, Nuclear Public Affairs, Dominion Immediate Past Chairman, NEED Board of Directors

In May 2011, Rick Zuercher departed the NEED Board of Directors after serving as an active board member for six years and NEED's Chairman for the last four. As Director of Nuclear Public Affairs for Dominion, Rick knows the importance of a comprehensive and balanced approach to energy education. Early in his career as a journalist, he focused on energy issues and helped the public understand the many facets of any energy issue. In



his current position at Dominion, Rick leads a team dedicated to teaching about nuclear energy at Dominion's four nuclear power stations in Virginia, Connecticut, and Wisconsin. It is no surprise that NEED and Rick's team have worked together for over twenty-years to deliver NEED workshops to local teachers. Rick works tirelessly to share NEED's success with his peers and colleagues in the energy industry and opens up doors to NEED's partners who want to learn more about nuclear power through tours of the Surry and North Anna Nuclear Information Centers.

In 2006, Rick was asked to lead a task-force to consider what NEED would look like in 2030. Working with the staff, he created the Vision 2030 plan that is NEED's roadmap for the next 19 years – working to reach every appropriate classroom in the country with NEED's curriculum and teacher training. Rick guided NEED through the hiring of a full-time Executive Director in 2007, and since then has worked closely with Mary Spruill to bring new partners, new programs, and new energy to NEED. His fellow board members credit him with the extraordinary growth NEED has experienced since 2007 and with his continued support, the goals of the Vision 2030 plan are achievable.

Never missing the opportunity to celebrate with the NEED family, Rick always participates in the NEED Youth Awards for Energy Achievement. It may be his most favorite weekend all year. Rick, alongside his wife Lucy Zuercher, support NEED in the local Richmond area schools as well, and provide NEED with two great student volunteers for the Youth Awards for Energy Achievement. Alex Zuercher has provided bagpipe performances for the Youth Awards Ceremonies while Julie Zuercher helps keep the weekend running well on the Youth Awards Staff. Considered the "Zuerchers Four" – they may be one of NEED's strongest energy sources and we hope to continue to tap into that energy for many years to come.

Rick is a true partner to the NEED staff, a leader to the NEED Board, and a mentor to NEED's Executive Director. His tried, tested, and true support of NEED has made it the success it is today. We have been fortunate to have his leadership during these pivotal years and look forward to even greater success, in years to come.

# 2011 YOUTH AWARDS FOR ENERGY ACHIEVEMENT

NEED is pleased to announce the following winners of this year's Youth Awards, who were honored for their achievements at the National Recognition Ceremonies in June in Washington, D.C.

## PRIMARY LEVEL

### SCHOOL OF THE YEAR

Satori School – Texas

### SCHOOL OF THE YEAR FINALISTS

Annehurst Elementary School – Ohio

James Madison Elementary School – Michigan

## ELEMENTARY LEVEL

### SCHOOL OF THE YEAR

Thaxton Elementary School – Virginia

### SCHOOL OF THE YEAR FINALISTS

James A. Caywood Elementary School – Kentucky

Sue H. Morrow Elementary School – Nevada

White Pine School – Tennessee

### ROOKIE SCHOOL OF THE YEAR

Sedgefield Elementary School – North Carolina

### ROOKIE SCHOOL OF THE YEAR FINALIST

Mariposa Elementary School – Florida

## JUNIOR LEVEL

### SCHOOLS OF THE YEAR

Saint Margaret Catholic School – Louisiana

Park View Middle School – Rhode Island

### SCHOOL OF THE YEAR FINALISTS

Frank C. Whiteley Elementary School – Illinois

Heritage Middle School – Ohio

### ROOKIE SCHOOL OF THE YEAR

Morningside Elementary School – Utah

## SENIOR LEVEL

### SCHOOL OF THE YEAR

Scituate High School – Rhode Island

### SCHOOL OF THE YEAR FINALISTS

Oakwood High School – Ohio

William Henry Harrison High School – Ohio

### ROOKIE SCHOOL OF THE YEAR

Randall Cooper High School – Kentucky

### ROOKIE SCHOOL OF THE YEAR FINALISTS

Boston Latin School – Massachusetts

Torrington High School – Wyoming

## SPECIAL CATEGORY

### SPECIAL PROJECT OF THE YEAR FINALIST

Westerville City Schools – Ohio

Sumner County 4-H – Tennessee

### SPECIAL PROJECT OF THE YEAR

Harwich Community Learning Center – Massachusetts

## STUDENT LEADERS OF THE YEAR

### AMANDA RAMIREZ-SEBREE

One thing that makes NEED students unique among their peers is their long-term commitment to teaching and learning about energy. Amanda Ramirez-Sebree is an excellent example of student leadership in action over many years. Amanda is a rising sophomore at Redlands High School in Redlands, California, and has been involved with the Urbita Elementary School's Earthsavers afterschool club for eight years. She worked on Urbita Elementary School's very first NEED program as a student and has been a member and a leader in the award winning Urbita NEED Club for many years, attending the Youth Awards for Energy Achievement several times and working to increase energy education in her local community at home.



Amanda's passion for teaching others about environmental education is inspiring to all of those around her. The Urbita Elementary School students look up to her, her peers look to her for her valuable insights, and we look at her as a bright young woman with a dynamic future. We have no doubt that she will continue to change the lives of all of those around her. We are proud to have Amanda as part of NEED's extraordinary group of student leaders and look forward to her involvement for many years to come.

### RACHAEL SPENCER

Each year NEED selects a Student of the Year who reminds us that NEED is all about student leadership and empowering young people to learn and teach about energy. Rachael doesn't wait for an opportunity to find her. She is a leader who creates teaching and learning opportunities and encourages other students to teach the community about energy as well.



Rachael continues to be part of NEED's Youth Awards staff, assisting with award presentations, leading students in song, and helping groups navigate Washington, D.C. Rachael is passionate about energy and passionate about sharing her work with others. As a member of one of NEED's most engaged families – she is the oldest NEED student – setting an example for her siblings Nick and Luke, while keeping NEED training facilitator Tom Spencer and NEED teacher Gina Spencer busy too.

Rachael's inspirational leadership style and ability to encourage other student leaders makes her a deserving recipient of the 2011 Student of the Year Award. Her friendly demeanor and her willingness to do any job with a smile makes her a truly enjoyable person to have on our team.

# STUDENTS ENJOYED ANOTHER GREAT YOUTH AWARDS WEEKEND!





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**IN THIS ISSUE**

**Getting Energized for Fall**

Summer conferences and workshops provide educators with the tools they need to teach energy in their classrooms in 2011-2012.

**Solar Bake-Off**

Participate in NEED's Solar Bake-Off during the month of September.

**Teacher Talk**

Also in this issue, NEED sits down with Kevin Crosby for Teacher Talk. Kevin is a teacher at Independence High School in Bakersfield, CA.

**The Best of the Great American Energy Scavenger Hunt**

With hundreds of photos submitted from all over the world, NEED shows off the best of the Scavenger Hunt.

**New Teacher Resources**

Use the introductory activities in this issue to get acquainted with two new classroom resources: NEED's Energy Graphics Library and U.S. Energy Geography Interactive Maps.



NEED's outgoing board members pose for a picture with the recipients of the NEED Energy Leadership Awards. From left to right, Richard Zuercher, Rachael Spencer, Ian Munn, Kevin Galligan, and Tom Fry.

**Youth Awards Recap**

NEED's 31st Annual Youth Awards for Energy Achievement was held in June in Washington, D.C. For winners, profiles of distinguished service award recipients, and photos, see page 10.