

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**INFORMATION EXCHANGE FOR MARINE EDUCATORS**

**DECEMBER 2010**

This update is funded by the National Marine Sanctuary Foundation in partnership with NOAA's Ocean Exploration and Research Program, with additional support from NOAA's Office of Education and the National Marine Protected Areas Center, to share information pertinent to the marine educator community. It is intended to encourage exchange of information and programs. We hope that it will also promote collaboration among the different educators addressing similar issues in their programs.

Please share this email with your colleagues and constituents. If you request materials or respond to a request for information, please mention that you learned about it from NOAA's Information Exchange.

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Collected archives of the information presented in past newsletters are available at <http://mpa.gov/resources/education/#exchange>. Contact the editor directly at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov), or by phone at (865) 932-5074, to discuss further enhancements or to contribute information for future issues.

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## **Notable References**

### **Biodiversity Finance Book**

The downloadable publication, The Little Biodiversity Finance Book, highlights many ways for policy makers to generate funding to support biodiversity and ecosystem services. The authors advise readers to embrace Proactive Investment in Natural Capital, or "Think PINC." Along with background on biodiversity, the book offers options for generating financing, delivering the financing to the people who need it (resource managers, fishers, local communities), and governing the financing via institutional arrangements.

[http://globalcanopy.org/themedialfile/PDFs/LBFB\\_lowres/lbfb\\_en.pdf](http://globalcanopy.org/themedialfile/PDFs/LBFB_lowres/lbfb_en.pdf)

### **Ocean Literacy Principles Brochure**

An Ocean Literacy brochure offers a definition of ocean literacy, seven essential principles and associated key concepts of ocean literacy, and a matrix mapping the principles and concepts to the National Science Education Standards Science Content Standards. Materials include a downloadable version of the full brochure or principles and concepts only, along with a spreadsheet for the overview matrix that shows how the seven essential principles and associated concepts relate to the standards.

[http://oceanliteracy.wp.coexploration.org/?page\\_id=164](http://oceanliteracy.wp.coexploration.org/?page_id=164)

## **WEBSITE OF THE MONTH**

### **CLEAN Network**

The Climate Literacy and Energy Awareness Network (CLEAN), a part of the National Science Digital Library, provides a reviewed collection of resources coupled with the tools to enable an online community to share and discuss teaching about climate and energy science. The linked activities have been vetted and aligned to the Climate Literacy Principles, AAAS Benchmarks, National Science Education Standards, and other standards. The project also facilitates the effective use of the teaching resources with teachers, students, and citizens and will offer teleconferences, virtual workshops, social networking tools, and more.

<http://cleanet.org/index.html>

## **MESSAGE FROM THE BRIDGE**

### **The Bridge SMILEs**

Many of the Bridge Data Analysis Teaching Activities (DATAs) can now be found on the new SMILE online resource center. SMILE is the Science and Math Informal Learning Educators pathway of the National Science Digital Library (NSDL), and their website is dedicated to bringing science, technology, engineering, and math activities and resources to informal educators. As a project partner, the Bridge's DATA series are being accessioned into the SMILE collection. To date, these include Conductivity, Hold the Anchovies, Sea State, Coastal Erosion: Where's the Beach?, and several more.

<http://www.marine-ed.org/bridge/>

<http://www.howtosmile.org>

## **GRANTS AND OPPORTUNITIES**

### **America's Historical and Cultural Organizations Grant Competition**

The Division of Public Programs, U.S. National Endowment for the Humanities (NEH) funds humanities projects that are intended for broad public audiences at museums, libraries, historic sites, and other historical and cultural organizations. The grants can be used to support interpretive exhibitions, digital projects, and more. NEH especially encourages projects that offer multiple formats and make creative use of new technology to deliver humanities content. The deadline for application is January 12, 2011.

[http://www.neh.gov/grants/guidelines/AHCO\\_PlanningGuidelines.html](http://www.neh.gov/grants/guidelines/AHCO_PlanningGuidelines.html)

### **AmeriCorps State and National Grants**

The Corporation for National and Community Service is looking for organizations to submit applications for how to use AmeriCorps members to address pressing social problems. The deadline for application is January 25, 2011.

[http://www.americorps.gov/for\\_organizations/funding/nofa\\_detail.asp?tbl\\_nofa\\_id=83](http://www.americorps.gov/for_organizations/funding/nofa_detail.asp?tbl_nofa_id=83)

### **Apprentice Ecologist Initiative**

The Apprentice Ecologist Initiative engages youth, parents, and teachers from around the world in environmental stewardship and conservation projects. The goals of the initiative are to elevate young people (especially at-risk and low-income kids and teens) into leadership roles by engaging them in environmental stewardship projects, empower volunteers to rebuild the environmental and social well-being of our communities, and improve local living conditions for both citizens and wildlife. The deadline for entry is December 31, 2010.

[http://www.wildernessproject.org/volunteer\\_apprentice\\_ecologist.php](http://www.wildernessproject.org/volunteer_apprentice_ecologist.php)

### **CaMPAM-GCFI-UNEP-CEP Small Grant Program**

The CaMPAM-GCFI-UNEP-CEP Small Grant Program promotes responsible and sustainable marine resources management practices, including economic alternatives for fishers and effective marine managed areas in the Caribbean. The focus for this year's grant is building capacity in the Insular Caribbean countries associated with the Caribbean Challenge. The deadline for submission is December 15, 2010. The announcement is available in English and Spanish.

<http://campam.gcfi.org/campam.php>

### **Chill Out - Campus Solutions to Global Warming**

The National Wildlife Federation's Campus Ecology team is sponsoring Chill Out: Campus Solutions to Global Warming, a competition recognizing colleges and universities for their efforts to solve global warming. They seek campus-based projects in clean energy, energy efficiency, habitat restoration, waste reduction, and more. The deadline for entry is December 19, 2010.

<http://www.nwf.org/campusecology/chillout/entry.cfm>

### **Coastal Art and Poetry Contest - California**

The Coastal Art & Poetry Contest is open to all K-12 California students, and is a chance for students to explore coastal themes and present them creatively. By encouraging youth to reflect on the beauty and spirit of California's beaches and ocean, the hope is to inspire a greater sense of stewardship for these natural places. The deadline for entry is January 31, 2011.

<http://www.coastal.ca.gov/publiced/poster/poster.html>

### **DuPont Challenge**

The DuPont Challenge<sup>®</sup> Science Essay Competition aims to inspire young people to excel in scientific writing. Students in grades 7-12 research and write an essay about a scientific discovery, theory, event, or technological application that has captured their interest. In addition to the contest, through December 24, 2010, DuPont will award science classrooms with prizes related to STEM education and science literacy; teachers must register to be eligible. The deadline for submission is January 31, 2011.

<http://thechallenge.dupont.com/>

### **Eisner Prize for Excellence in Intergenerational Work**

The Eisner Prize is designed to recognize excellence by an individual or a non-profit organization in uniting and utilizing multiple generations, especially seniors and youth, to bring about positive and lasting changes in their community. The deadline for application is January 31, 2011.

<http://www.eisnerfoundation.org/eisnerprize/>

### **Every Day Grants**

The National Environmental Education Foundation (NEEF), with support from Toyota Motor Sales USA, Inc., seeks to strengthen Friends Groups who partner with local parks and green spaces to support, promote, and help maintain public lands. Every Day Grants are designed to help these groups through funding for organizational capacity building. The deadline for submission is January 30, 2011.

[http://www.neefusa.org/grants/every\\_day\\_grants\\_2011.htm](http://www.neefusa.org/grants/every_day_grants_2011.htm)

### **Fund for Teachers Professional Development Grants**

The Fund for Teachers Grant awards preK-12 teachers with funds to support professional development activities. The deadline for application is January 29, 2011.

<http://www.fundforteachers.org/about.html>

### **Gates Millennium Scholars Program Scholarships**

The Gates Millennium Scholars scholarship provides talented students with a good-through-graduation scholarship to use at any college or university of their choice, along with personal and professional development through leadership programs with academic support. The scholarships help outstanding minority students with significant financial need to reach their highest potential. The deadline for application is January 10, 2011.

<http://www.gmsp.org/>

### **Grants for Education in Microbial Science**

The Center for Microbial Oceanography: Research and Education at the University of Hawaii awards grants to foster education in microbial science. The deadline for application is January 10, 2011.

<http://cmore.soest.hawaii.edu/education/teachers/gems.htm>

### **Kathryn Fuller Science for Nature Fellowships**

World Wildlife Fund supports the Kathryn Fuller Science for Nature Fellowships for doctoral and postdoctoral research on marine protected areas (MPAs), that show promise to enhance scientific understanding of their ecological and social impacts and that will strengthen science-based conservation and policy. The priority marine regions are the Bering Sea; Gulf of California; Mesoamerican Reef; Galápagos; Coastal East Africa; and the Coral Triangle. The deadline for submission is January 31, 2011.

<http://www.worldwildlife.org/science/fellowships/fuller/item1296.html>

### **Kids' Science Challenge**

The Pulse of the Planet Kids' Science Challenge asks kids in grades 3-6 to propose an original question, problem, or experiment that relates to three fields of scientific inquiry or engineering; this year's topics are Super Stuff for Sports, Magical Microbes, and Sensational Sounds. They contest offers a free activity kit for the first 1000 entries. The website includes educational resources and activities related to the three scientific fields. The deadline for entry is February 28, 2011.

<http://kidsciencechallenge.com/#/home>

### **Knowles Science Teaching Foundation Teaching Fellows**

The Knowles Science Teaching Foundation is seeking applicants for Teaching Fellows, individuals who have at least a bachelors degree in a physical science, biological science, engineering, or mathematics and now want to teach science or mathematics in

U.S. high schools. Teaching fellowships support individuals professionally and financially for up to five years through a teacher preparation program to eligibility for tenure. The deadline for application is January 12, 2011.

<http://www.kstf.org/fellowships/teaching.html>

### **LEGO Children's Fund Grants**

LEGO Children's Fund Grants offers quarterly grants for programs that address early childhood education, technology and communication projects, and more. Applications are accepted on an ongoing basis.

<http://www.legochildrensfund.org/Guidelines.html>

### **National Grassroots Grant Program**

The Ben & Jerry's Foundation offers competitive grants to not-for-profit, grassroots community organizations working to bring about progressive social change by addressing the underlying conditions of societal and environmental problems. The Employee Advisory Committee meets nine times a year to review proposals; there is no deadline for application.

<http://www.benandjerrysfoundation.org/the-national-grassroots-grant-program.html>

### **NEA Foundation Green Grants**

The NEA Foundation offers its Learning & Leadership and Student Achievement grants program to individuals and teams of educators for projects that integrate green-related topics and experiences into the classroom. The deadline for application is February 1, 2011.

<http://www.neafoundation.org/pages/educators/grant-programs/nea-foundation-green-grants/>

### **New Teacher Survival Central Sweepstakes**

Discovery Education's New Teacher Survival Central Sweepstakes offers an international adventure trip for K-12 educators. The deadline for entry is December 17, 2010.

<http://www.discoveryeducation.com/survival/index.cfm>

### **Ocean Leadership Award - California**

The USC Wrigley Institute, QuikScience, and COSEE-West offer the Ocean Leadership Award, recognizing educators who make outstanding contributions to K-12 ocean science education. Nominations are accepted in different categories to help further marine science educational goals. The deadline for nominations is February 11, 2011.

<http://www.usc.edu/org/cosee-west/quikscience/OceanLeadershipAwards.html>

### **Pennies for the Planet**

World Wildlife Fund sponsors the Pennies for the Planet campaign. Kids learn about three priority regions around the world, conservation, and connecting environmental education with environmental action. The current challenge focuses on river rest stops, butterfly habitat, and Gulf coast birds. The website includes links to free posters, education activities, and additional educator's materials. Incentives, awards, and special offers are based upon the size of the participating group and amount raised.

<http://www.togethergreen.org/p4p/>

### **Petey Giroux Dragonfly Grants - Georgia**

The Environmental Education Alliance of Georgia offers mini-grants to members for Environmental Education / Performing and Visual Arts Projects in honor of environmental educator, Petey Giroux, who used the power of the performing and visual arts to support her teaching. The deadline for application is January 18, 2011.

<http://eealliance.org/core/item/page.aspx?s=85545.0.0.7182>

### **Protect Our Reef Plate Grants Program - Florida**

Mote Marine Lab's Protect Our Reef Plate Grants Programs fund projects concerning the Florida reefs in research, conservation, and education and outreach. Eligible organizations shall be based in Florida and engaged in reef research, education, or conservation and must be a public agency, educational institution, or non-profit. The deadline for application is January 14, 2011.

<http://www.mote.org/clientuploads/1reefplate/2010%20POR%20announce.pdf>

### **School & Library Resource Grant**

Sylvan Dell Publishing offers picture books that integrate science, math, and geography, as well as interactive eBook technology. The School & Library Resource Grant provides schools and libraries with one year of access to Sylvan Dell eBooks, each with auto-flip, auto-read, and selectable English and Spanish text and audio. The deadline for application is December 31, 2010.

<http://www.sylvandellpublishing.com/ResourceGrant.htm>

### **Shell Science Lab Challenge**

NSTA and Shell offer NSTA's Shell Science Lab Challenge, a competition for middle and high school teachers that awards laboratory resources and other prizes to school districts nationwide. Entries will be judged on the basis of several criteria, including uniqueness, creativity, and a replicable approach. The deadline for submission is February 2, 2011.

<http://www.nsta.org/shellsciencelab/>

### **Toyota International Teacher Program**

The Toyota International Teacher Program offers fully-funded, international professional development opportunities for U.S. educators. The program aims to advance environmental stewardship and global connectedness in U.S. schools and communities through creative, interdisciplinary, and solution-based teaching methods. The South Africa program will take place July 24–August 10, 2011; the deadline for application is January 23, 2011.

<http://www.iie.org/en/Programs/Toyota-International-Teacher-Program>

### **Toyota Tapestry Grants for Science Teachers Program**

Toyota Tapestry Grants are administered by NSTA and are available to middle and high school science teachers who teach at least two science classes a day and to elementary classroom teachers who teach at least some science in the classroom. The grants recognize outstanding educators who are making a difference by demonstrating excellence and creativity in science teaching. Categories include environmental science, integrating literacy and science, and physical science. The deadline for entry is February 23, 2011.

<http://www.nsta.org/pd/tapestry/>

### **Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics**

The Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics program seeks to improve the quality of science, technology, engineering, and mathematics education for all undergraduate students. This solicitation especially encourages projects that have the potential to transform undergraduate STEM education by bringing about widespread adoption of classroom practices that embody understanding of how students learn most effectively. The deadline for submission is January 14, 2011

[http://www.nsf.gov/publications/pub\\_summ.jsp?WT.z\\_pims\\_id=5741&ods\\_key=nsf10544](http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=5741&ods_key=nsf10544)

### **Ultimate Cool School Science Day Assembly**

Enter daily for a chance to win an Ultimate Cool School Science Day Assembly. The deadline for entry is February 24, 2011.

[http://siemensscienceday.discoveryeducation.com/enter\\_sweepstakes.cfm](http://siemensscienceday.discoveryeducation.com/enter_sweepstakes.cfm)

### **Water Champion Awards**

Water Champion awards recognize superior levels of relevance, educational effort, support, and innovation in the promotion of water quality via involvement in World Water Monitoring Day. The deadline for application is January 15, 2011.

<http://www.worldwatermonitoringday.org/Participate/Awards.html>

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Earth Explore Field Programs in EE**

Earth Explore offers teachers opportunities for cost-free science, adventure, and learning travel. Educators learn new skills and knowledge for the classroom, and can earn graduate level academic credit necessary for professional advancement. Program locations include Alaska, Hawaii, and more.

<http://www.earthexplore.com/layersteachers.html>

### **Earthwatch Educator Fellowships**

Fellowships are available to sponsor participation in International and U.S. Earthwatch Conservation Expeditions. The Earthwatch Institute and its partners offer a number of Educator Fellowships every year to elementary, middle, and high school educators and administrators. Applications are accepted on a rolling basis, but those received after February 7, 2011 are subject to fewer projects and more limited funding.

<http://www.earthwatch.org/aboutus/education/edopp>

### **Louisville Seamount JOIDES Resolution Videoconferencing Opportunity**

The next expedition (Expedition 330) of the *JOIDES Resolution* will start December 13, 2010 from Auckland, New Zealand and will explore the movement of the Louisville and Hawaiian hotspots to look at plate motion in the Pacific. It will sample ancient lava flows to provide insights into the evolution processes of the Louisville volcanoes between 80 and 50 million years ago. Sign up for a live ship-to-shore video interaction with Expedition 330 scientists and Education Officers; requests will be handled on a first come, first served basis.

<http://joidesresolution.org/>

<https://spreadsheets.google.com/viewform?formkey=dFA4T1BzaEdENXJvMnIDREVDUGRBZHc6MA>

### **Youth Employment**

The U.S. Fish and Wildlife Service and the National Wildlife Refuge System offer internships and volunteer opportunities to high school and college-aged students looking for hands-on environmental career experience. From work in biology and conservation to journalism and new media production, students are placed in stimulating work environments designed to facilitate personal and professional growth. This website features young people telling their own stories about working in the northeast region. <http://www.fws.gov/northeast/youth/>

## **CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT**

### **AAAS Annual Meeting**

The theme of the 2011 annual meeting of the American Association for the Advancement of Science, February 17-February 21, 2011 in Washington, D.C., *Science Without Borders*, integrates the practice of science that uses multidisciplinary approaches to problem solving, crosses conventional borders, and takes into consideration the diversity of investigators and students. Symposium tracks include Climate Change, Education, Sustainability, and more. <http://www.aaas.org/meetings/>

### **Animals in Curriculum-based Ecosystem Studies Workshop – California Online**

The Signals of Spring - ACES (Animals in Curriculum-based Ecosystem Studies) workshop teaches science within the context of the ocean, using satellite data to develop inquiry skills. This free online workshop for California teachers (grades 7+) will help teachers learn how to incorporate ocean sciences with core science subjects, utilizing remote sensing and animal tracking data while investigating conservation stories. The online training course is done at your own pace; participants complete approximately 8 hours of work during the open period from January 10-February 13, 2011. Participants will receive ACES curriculum guide and accompanying posters and receive support throughout the school year to implement the curriculum in their classroom. <http://www.signalsofspring.net/aces/about.cfm>

### **Climate Change Teacher Training - California**

The San Luis Obispo County Air Pollution Control District and partners are hosting this free workshop, February 15, 2011 in San Luis Obispo, California, recruiting school teachers to implement a science-based climate change curriculum in their 2011 lesson plans. Participants will receive a stipend, educational materials, and more. Space is limited and registration is required. Contact Gary Arcemont at [garcemont@co.slo.ca.us](mailto:garcemont@co.slo.ca.us)

### **DataStreme Ocean - Online**

DataStreme Ocean is a free precollege teacher enhancement program of the American Meteorological Society/NOAA Cooperative Program for Earth System Education. The program explores the ocean in the Earth system with special emphasis on the flow and transformations of water and energy into and out of the ocean; the internal properties and workings of the ocean; interactions between the ocean and the other components of

the Earth system (hydrosphere, atmosphere, lithosphere, and biosphere); and the human/societal impacts on and response to those interactions. An upcoming course will start January 2011; contact your nearest DS-Ocean LIT (Local Implementation Team) Leader.

<http://www.ametsoc.org/amsedu/DS-Ocean/Join.html>

### **EETAP Spring Courses - Online**

The University of Wisconsin-Stevens Point and the Environmental Education and Training Partnership (EETAP) offer the following online summer courses:

- Fundamentals of Environmental Education, January 31-April 22, 2011
  - Making EE Relevant for Culturally Diverse Audiences, January 31-April 22, 2011
  - Applied EE Program Evaluation, January 31-April 29, 2011
  - Needs Assessment in Environmental Education and Interpretation, January 27-March 11, 2011 – Note that this is a new course,
- Scholarships may be available. The deadline for registration is January 13, 2011.

<http://www.uwsp.edu/natres/eetap/index.aspx>

### **Learning Ocean Science through Ocean Exploration – Alabama and Georgia**

NOAA's Ocean Exploration Program and partners will offer Learning Ocean Science through Ocean Exploration professional development workshops for science teachers. Participants will receive the curriculum with CD-ROM's, certificates of participation, and more. Contact the noted educator for registration and more information.

- February 26, 2011 with Georgia Aquarium in Atlanta, Georgia, a follow-up workshop. The deadline for registration is February 11, 2011. Contact Kim Morris-Zarneke at [kzarneke@georgiaaquarium.org](mailto:kzarneke@georgiaaquarium.org)
- February 26, 2011 with Dauphin Island Sea Lab on Dauphin Island, Alabama, a follow-up workshop. The deadline for registration is February 11, 2011. Contact Sara Johnson at [sejohnson@disl.org](mailto:sejohnson@disl.org)

<http://oceanexplorer.noaa.gov/edu/development/development.html>

### **LiMPETS Introduction to Rocky Intertidal Monitoring - California**

Learn to participate in this in-depth science education program for students during the LiMPETS Introduction to Rocky Intertidal Monitoring workshop, January 29, 2011 in San Mateo County, California. Participants will receive the new LiMPETS Curriculum, learn to correctly identify algae and invertebrates, and practice the monitoring methods used in the field.

[http://limpetsmonitoring.org/resources\\_workshops.php](http://limpetsmonitoring.org/resources_workshops.php)

### **NAAEE Conference – Call for Presentations**

The Call for Presentations for NAAEE's Annual Conference 2011, *Branching to the Future, Rooted in Time*, to be held October 12-15, 2011 in Raleigh-Durham, North Carolina, is now open. The deadline for presentations is February 1, 2011.

<http://www.naaee.org/conference/call-for-presentations>

### **Ocean for Life Student Recruitment to Kick-off Soon**

Ocean for Life: One World, One Ocean increases cultural understanding through ocean science by providing high quality, immersive ocean field studies and follow-on education programs for students. Ocean for Life brings together high school students of diverse backgrounds and cultures to discover marine science, conservation, and how the ocean connects us all. NOAA's national marine sanctuaries provide the setting for this opportunity to enhance cross-cultural relationships, while creating a stewardship ethic for

the ocean and the universal human experience. Watch for applications for the 2011 Ocean for Life Field Study, to be posted and circulated in mid-December 2010.

<http://sanctuaries.noaa.gov/education/ofl/welcome.html>

### **Ocean Sounds Workshop - Massachusetts**

This teachers' professional development workshop, December 13, 2010 in Woods Hole, Massachusetts, will focus on research on ocean sounds of marine mammals and squid.

<http://www.whoi.edu/page.do?pid=25995>

Contact Kathy Patterson at [kpatterson@whoi.edu](mailto:kpatterson@whoi.edu) or Kate Madin at [kmadin@whoi.edu](mailto:kmadin@whoi.edu)

### **Seminar Fellowship – Gulf of Mexico Region**

Metcalf Institute, Louisiana State University, and Louisiana Universities Marine Consortium (LUMCON) offer fellowships to informal science educators and journalists for a science seminar, Impacts of the Deepwater Horizon Oil Disaster, April 6-8, 2011 in Cocodrie, Louisiana. Participants will gain hands-on knowledge of oceanographic techniques in labs and on board LUMCON's *R/V Acadiana* and will discuss the latest research on the Deepwater Horizon oil disaster with leading experts. Informal science educators and professional journalists from the Gulf of Mexico region are encouraged to apply. The deadline for application is January 31, 2011.

<http://www.metcalfinstitute.org/programs/icosr.htm>

### **Why Do We Explore? – South Carolina**

Hosted by the South Carolina Aquarium, NOAA's Office of Ocean Exploration and Research offers this new, free, professional development workshop for educators of Grades 5-12, December 11, 2010 in Charleston, South Carolina. The NOAA Ship *Okeanos Explorer* is America's first Federal ship dedicated to ocean exploration. Join NOAA education staff as they introduce Why Do We Explore?, the first in a series of three professional development programs in the Okeanos Explorer Collection. The Okeanos Explorer Education Materials Collection was developed to encourage educators and students to become personally involved with the voyages and discoveries of the *Okeanos Explorer*. Participants will learn how to use standards-based lessons and other online resources that guide classroom inquiries into key topics of Ocean Exploration, Energy, Climate Change, Human Health, and Ocean Health. A stipend, educational materials, and more are available for participants. Registration is required and space is still available.

Contact Jaime Thom at [jthom@scaquarium.org](mailto:jthom@scaquarium.org)

## **EDUCATIONAL RESOURCES**

### **BiG RAPA**

Scientists from the Center for Microbial Oceanography: Research and Education and the Universidad de Concepción, Chile have organized an expedition the southeast Pacific Ocean. The BiG RAPA (Biogeochemical Gradients: Role in Arranging Planktonic Assemblages) expedition departed from Chile on the research ship *Melville* and will travel almost due west, ending at Rapa Nui (Easter Island). Check out the tracking website with journal entries, a media gallery, and more.

[http://cmore.soest.hawaii.edu/cruises/big\\_rapa/index.htm](http://cmore.soest.hawaii.edu/cruises/big_rapa/index.htm)

### **Compare the Poles**

This interactive from Teachers Domain explores the differences between the North and South Poles - physical features, weather, plants, wildlife, and human impact of the Arctic and the Antarctic. Free registration is required.

<http://www.teachersdomain.org/resource/ipy07.sci.life.eco.comparepoles/>

### **COSEE Coastal Trends Education Modules**

The goal of Coastal Trends, part of the Centers For Ocean Sciences Education Excellence (COSEE) network, is to increase literacy in ocean science with a focus on understanding dynamic coastal trends through partnerships among scientists, educators, students, and the general public. Education modules include dead zones, fish and physics, from land to the sea, marine bacteria, observing the ocean, and seagrass. A new module is under development on Pacific islands national parks. Check these out.

<http://www1.coseecoastaltrends.net/modules/>

### **Dive and Discover in the Gulf of Mexico**

Join Dive and Discover's online expedition as the deep-sea submersibles Alvin and Sentry explore the bottom of the Gulf of Mexico with scientists from Pennsylvania State University, Temple University, Haverford College, and Woods Hole Oceanographic Institution. The website will offer daily posts from Alvin's support ship, R/V *Atlantis*, that report on research at sea, life aboard ship, and news of what the scientists find each day. Students can also delve deeper into topics related to life in the ocean and email questions to researchers on board. The expedition starts December 6, 2010. The website offers classroom activities, hot topics, and more.

<http://www.divediscover.whoi.edu/>

### **Ecology Lab**

Annenberg Media's Habitable Planet series offers an ecology lab with an ecology simulator, a glossary of relevant ecosystem terms, videos, an online textbook, and more.

<http://www.learner.org/courses/envsci/interactives/ecology/>

### **EE Week 2011 Resources**

Recognizing the importance of protecting the health of our ocean and understanding our dependence upon it regardless of its proximity, EE Week's 2011 theme is *Ocean Connections*. As part of this year's theme, EE Week will provide special resources, lesson plans, and opportunities for educator professional development and student learning about the Gulf oil spill. Register to receive monthly e-mail newsletters with classroom activities, funding resources, and professional development opportunities, including an upcoming educator webinar about teaching about the Gulf Oil Spill.

[http://eeweek.org/ocean\\_connections](http://eeweek.org/ocean_connections)

### **Essential Energy Information**

This website from the National Academies features essential energy information. The site presents facts about America's current energy system in four main topics: energy uses, sources, costs, and efficiency. The website offers an energy quiz, a glossary, and an extensive source library.

<http://www.needtoknow.nas.edu/>

### **Explore the Blue**

The Take Me Fishing Campaign and Discovery Education have partnered to offer Explore the Blue, a comprehensive program providing free resources to engage

students in a dialogue about boating, fishing, and other outdoor recreational activities, as well as teach them the value of clean and healthy waterways. The website offers standards-aligned lesson plans for K-5 across all subject areas including math, science, language arts, social studies, and more; videos and multimedia tools; and much more.

<http://exploretheblue.discoveryeducation.com/>

### **Explore Underwater Victoria**

Australia's Explore Underwater Victoria website is an initiative of the Victorian National Parks Association with support from Reef Watch and Museum Victoria. The website is designed to be an online porthole of Victorian underwater photographs, videos, resource links, and more. The goal is to raise awareness, understanding, and appreciation of Victoria's natural marine environment. Check out the downloadable teaching guides, education kits, and other resources on this website.

<http://www.exploreunderwatervictoria.org.au/teaching-guides/>

### **Exploring Mote Marine Laboratory Oceanography Data in the Classroom**

This guide instructs educators on the classroom use of transect station data from the Mote Marine Laboratory Phytoplankton Ecology Program, consisting of hydrographic conditions and chlorophyll fluorescence. Topics include harmful algal bloom dynamics and prediction methods; temperature-depth relationships; relationships between temperature, salinity, and density; and the use of Conductivity-Temperature-Depth (CTD) instrument casts. Students will be able to use the data to make hypotheses about factors that may induce algal blooms; make and test predictions about factors leading to algal blooms, use the data to make visualizations of temporal changes; and interpret transect and vertical profile data.

<http://serc.carleton.edu/usingdata/datasheets/MoteMarineLab.html>

### **generationOn**

generationOn focuses on igniting the power of all kids (preK-12) to make their mark by creating meaningful change in the world. The core of the program includes service-learning and volunteer action. The linked Learning to Give website offers links to lesson plans for all grade levels on different topics, including the environment.

<http://www.generationon.org/>

### **Geospatial Technology Education Resource Compendium**

The Educator Resource List from the Geospatial Information and Technology Association is a compilation of resources for educators to learn and explore geospatial technology. Descriptions and links are available for: Educational Programs from Geospatial Vendors; Lessons and Tutorials; Careers in Geospatial Information Technology; and more.

[http://gita.org/about-gita/committees/GITA\\_Educator\\_Resource\\_List.pdf](http://gita.org/about-gita/committees/GITA_Educator_Resource_List.pdf)

### **Hurricanes: Science and Society**

The University of Rhode Island Graduate School of Oceanography offers Hurricanes: Science and Society. The website provides information on the science of hurricanes, methods of observing hurricanes, modeling and forecasting of hurricanes, how hurricanes impact society, and how people and communities can prepare for and mitigate the impacts of hurricanes. In addition to in-depth science content, the website includes case studies, a historical storm interactive, and more. Check back often for additional lessons and other resources.

<http://www.hurricanescience.org/>

### **Jellyfish ROCK**

You Tube videos of the Jellyfish ROCK outreach event that the Global Jellyfish Group hosted in Santa Barbara include 5 minute science presentations, winners from an art contest, and more. All of the children's artwork will be up on the blooms page soon.

<http://www.youtube.com/watch?v=Wp8FXCywA2U>

<http://www.jellywatch.org/blooms/contest>

### **Kiwi Conservation Club**

The Kiwi Conservation Club helps teach children about New Zealand's plants, animals, conservation, and respect for nature. The website offers news, games, quizzes, and more. After clicking Wildlife and Wild Places, visitors can investigate Wild Places, Wildlife, Plant Life, and Threats and Impacts. Wild Places links to different habitats, while Plant Life offers information about coastal, wetland, alpine, and forest plants.

<http://www.kcc.org.nz/>

### **LandHelp**

The Landhelp website helps private land-holding professionals, students, and other learn how to better manage their lands. Active management keeps land productive and healthy for present and future owners, and for increasing economic, environmental, and aesthetic land benefits. Each topic offers links to information and resources.

<http://www.landhelp.info/Framify.php?Page=Home.php>

### **Lesson Plans**

The Arizona Game and Fish Department has developed a number of free standards-based lessons for all grade levels which can be downloaded or accessed online. They can be viewed by grade or browsed alphabetically. Check out Fashion-A-Fish, Mapping Your School Site, The Trouble with Crayfish, and much more.

[http://www.azgfd.gov/ie/ee/focus\\_lessons.shtml](http://www.azgfd.gov/ie/ee/focus_lessons.shtml)

### **Lessons from the Deep Education Materials Collection**

NOAA's Office of Ocean Exploration and Research offers the downloadable Lessons from the Deep: Exploring the Gulf of Mexico's Deep-Sea Ecosystems Education Materials Collection, with an Educators' Guide and 16 associated lesson plans.

Additional lessons and activity guides will be added to the collection as more information is produced from ongoing exploration and research activities in the Gulf of Mexico.

Lessons include topics related to physical science, life science, and Earth science, and offer opportunities for cross-curricular activities involving social studies, language arts, mathematics, and fine arts.

<http://oceanexplorer.noaa.gov/edu/guide/welcome.html>

### **Map Projections**

This website features examples of eighteen common map projections, including a description that explains the properties and uses of the projection, disadvantages, and more. There are also summary tables of projection properties, general uses, and geographic areas most suitable for mapping with a given projection.

<http://egsc.usgs.gov/isb/pubs/MapProjections/projections.html>

### **Marine Parks Primary Schools Education Kit**

The aim of this project from New South Wales, Australia is to educate primary school children about the marine environment and marine protected areas. The downloadable

kit offers a structured and directed primary level teaching resource with four separate modules covering marine parks and conservation, estuaries, rocky shores, and Aboriginal cultural heritage. The kit was designed to be flexible in its application to allow for use not only by schools located on the coastline but also by remote inland areas whose students may not have opportunities to visit coastal areas. Each module includes fact sheets, identification guides, risk assessments, and activity plans.

[http://www.mpa.nsw.gov.au/index\\_kit.html](http://www.mpa.nsw.gov.au/index_kit.html)

### **OCEAN-OIL**

Funded by the National Science Foundation, the National Council for Science and the Environment and partners have created the Online Clearinghouse for Education & Networking: Oil Interdisciplinary Learning (OCEAN-OIL), an open-access, peer-reviewed electronic education resource about the Deepwater Horizon disaster. OCEAN-OIL offers hyper-linked encyclopedia-style articles related to the Gulf of Mexico oil disaster; a glossary of terms related to oil spill causes, impacts, clean-up, and prevention; acronyms; image galleries; news sources; education; and much more. The OCEAN-OIL website is integrated into the Encyclopedia of Earth as a subcategory under the Energy topic. The collection is constantly being updated, and contributions are welcomed.

<http://www.eoearth.org/topics/view/50359/>

### **Research Guides**

Boston University Libraries offers this online research guide on more than 40 subjects, including ecology, marine biology, and sustainability. Each guide features links that document key journals in each field, citation indices, websites, and more.

<http://www.bu.edu/library/guides/>

### **Science 360**

The Science 360 Knowledge Network uses multimedia to highlight science, engineering, technology and math. The website draws on work by the National Science Foundation and other institutions around the world. The website gathers the latest science videos provided by scientists, colleges and universities, science, and engineering centers.

Topics include Earth & environment, K-12 & education, and more.

<http://www.science360.gov/files/>

### **SEA K-12 Lesson Plans**

SEA Semester's K-12 lesson plans cover topics in marine biology, coastal ecology, chemical and physical oceanography, seafloor geology, and nautical science. Each plan includes target grades, introduction and background, advice on how to best integrate the activities into classroom curriculum, and more.

<http://www.sea.edu/academics/k12.aspx>

### **STEM Newsletter**

Teachers' Domain and NOVA are partnering on a monthly STEM Newsletter. Each newsletter will feature a selection of resources specifically tailored for classroom use, highlighting STEM media resources from NOVA and Teachers' Domain.

<http://www.pbs.org/wgbh/nova/newsletters.html>

### **Teaching with Great Lakes Data**

COSEE Great Lakes hosts Teaching with Great Lakes Data, a website which makes it easy to incorporate real scientific data into the classroom. Choose among Great Lakes data sets, teaching methods and tools, or lessons and activities. The resources may be

incorporated into your curriculum and are multidisciplinary. Topics include climate and weather, water quality, and fish habitat. Free registration is required.

<http://www.greatlakeslessons.com/>

### **Understanding Ocean Acidification**

The Sanctuary Education Team, a working group of the Channel Islands National Marine Sanctuary Advisory Council and partners, offers an Understanding Ocean Acidification website with videos and downloads of workshop presentations, hands on activities, and more. Check out the lesson plans and links to additional resources.

<http://cisantuary.org/acidocean/>

### **The Use of a Piece of Land**

This role-playing activity engages students in land use planning, helping to reinforce the positive and negative aspects of land use laws and local zoning ordinances. Using photographs or color slides and a legal description (deed) of a choice piece of relatively undeveloped real estate in their area, students work in groups to select a proposed use for the parcel, research pertinent ordinances or planning reports, and develop a case as to why the land should be put to that use. Each group presents their case for structured discussion by all class members. Example photos and some suggestions for proposed uses are included. While on the website, check out other activities and resources for Earth Science Teachers.

<http://www.maine.gov/doc/nrimc/mgs/education/lessons/act02.htm>

### **Using NASA's Global Climate Change Website**

NASA offers Tips 'n' Tricks for Teachers, a downloadable resource with six tips to help teachers use the NASA Global Climate Change website in the classroom.

[http://climate.nasa.gov/TipsandTricks/TipsNTricksTipsheet\\_11-20-10.pdf](http://climate.nasa.gov/TipsandTricks/TipsNTricksTipsheet_11-20-10.pdf)

### **Women Exploring the Oceans**

This website introduces the careers of several women in oceanography. Each woman has followed a different path and offers unique insights about her profession. Careers range from research scientists and professors to technical and support crew.

<http://www.womenoceanographers.org/>

## **INITIATIVES, JOURNALS, and MORE**

### **Environmental News on Facebook**

P1 Marine Foundation is a registered charity dedicated to promoting the conservation, protection and restoration of marine and coastal environments through public awareness and education. They have opened a facebook portal for environmental and oceanic news, discussions, and more.

<http://www.facebook.com/pages/P1-Marine-Foundation/161281850573326>

### **Find Events on Nature Rocks**

The Nature Rocks website offers the ability to find activities and nature near you; users can also add events to the website.

<http://www.naturerocks.org/find-activities.aspx>

**NPSArcheology Twitter Feed**

The NPS Archeology twitter feed highlights projects, accomplishments, and news items related to archeology in national parks, other Federal archeology projects, and general interest archeology news.

<http://twitter.com/NPSArcheology>

**Only One Ocean**

The CD, Only One Ocean, offers new songs from the Banana Slug String Band, designed to inspire young people and their families to learn about and care for the ocean. The album focuses on the content found in Ocean Literacy: The Essential Principles of Ocean Sciences K-12. Pre-release copies are available now, for your holiday shopping pleasure.

<http://www.bananaslugstringband.com/>