



2003 – A Year of Commemoration

Beginning in January 2003, educators can take advantage of significant commemorations to provide relevance for their students in many areas of the curriculum. Excitement will mount throughout the year as anniversaries are reached and celebrated. Public awareness is already increasing and events are being scheduled across the nation.



Lewis and Clark Commemoration

January 15-19 2003 will see a signature event and activities at Monticello and the University of Virginia as the Lewis and Clark

Commemoration begins and re-enactors of the Voyage of Discovery start to traverse the trail followed in 1803-1806.

In March Meriwether Lewis will arrive on horseback at Harpers Ferry, West Virginia, bearing a letter from President Thomas Jefferson. There will be a ribbon cutting for Lewis and many exhibits, including the replica boat, and events surrounding the encampment.

In the Pittsburgh region, the summer of 2003 will see a wide variety of commemorative events, activities, exhibits and educational programs. Sites include: Senator John Heinz Pittsburgh Regional History Center, Art Institute of Pittsburgh, Carnegie Science Center, Carnegie Museum of Natural History, Phipps Garden Center/Conservatory, Pittsburgh Voyager, Western PA Herb Society, 99th Support Command, COE Locks and Dams and the Fort Pitt Museum. (See article in *Synergy* for further details) *continued on page 3*

Biodiversity: Addressing A Global Issue

The 3rd Annual Goddard Forum was held December 5-6, 2002 by Penn State University at State College, PA focusing on "Biodiversity: Addressing a Global Issue Locally". The conference presented a policy perspective on what biodiversity is, why we care, and the shape and importance of state, local, and private policies and programs.

Species and habitats continue to disappear at a rate far greater than in the past. One of the two international treaties arising out of the 1992 Rio Earth Summit addressed this problem—a loss of the world's biodiversity. The United States signed the Convention on Biodiversity, but the U.S. Senate has not ratified it, although the Convention's objectives are being implemented through federal, state and even local and private programs.

We have established state and national parks and forests and wildlife protection

laws. Loss of regional biodiversity is the central concern underlying the growing issue of urban sprawl versus preservation of natural areas in rural sites. We now have environmental laws concerning water pollution and wetlands protection. And although we now have state standards for education in Environment/Ecology, there is failure to recognize the underlying concept of biodiversity. And most biological resources have not been systemically identified so that we can consider how and where they should be protected.

The conference addressed many of these issues and identified many innovative programs already in place. Included were sessions on "Overlooked Elements – Invertebrates, Fungi, Protists, and other Microorganisms" and "Environmental Ethics". The Goddard website is: <http://www.sfr.cas.psu.edu/goddard/forum3.htm>

Alden Lecture Rescheduled

Dr. Harry Alden, Microscopist from the Smithsonian Institute, Suitland Labs, will present his microscopic analysis findings of Lewis & Clark herbarium specimens from the collection in the Academy of Natural Sciences in Philadelphia on April 14, 2003. This is a part of the CMU University Lecture Series and was rescheduled from Nov. 21, 2002. The lecture will be in the Adamson Wing of Baker Hall, CMU at 4:30pm and is free and open to the public.

The plant specimens collected by Lewis & Clark on their expedition are remarkable



Silver
Buffaloberry

in their preservation and added documentation of plants unknown before their collection. Little notice

has been made of these specimens over the past 200 years, until Dr. Alden began his analysis. Some of his findings can be found at the Pittsburgh Legacy website <http://lewisandclark.pghistory.org>

As part of the PRCST Lewis & Clark Project many activities related to plant studies are planned. Some teachers are planning outdoor gardens at the school site. Others are studying plant materials used during the expedition, including foods and plant products. The Western Pennsylvania Unit of the Herb Society of America plans to devote a portion of their garden at the Pittsburgh Garden Center to growing Lewis & Clark related plants. Phipps Garden Center/Conservatory plans a special exhibit and related workshops.

One exciting component is planning comparisons of local native plant materials of the early 1800s to those of today. If you are interested in this project contact PRCST.



February 16-22, 2003 ENGINEERS WEEK (See front page article) Future City Program has been expanded to include Pittsburgh, PA. For more information refer to www.futurecity.org

Invite an engineer into your classroom. Check the phone book for local contacts or log onto the State Contacts section of www.eweek.org to look for volunteers. Engineering marvels in all 50 states can be found at the Sightseers Guide to Engineering at www.engineeringsights.org created by the National Society of Professional Engineers.

Feb. 21 – FREE workshop sponsored by Air & Waste Management Assoc. Education Committee. The workshop is 8:30 a.m. - 1:30 p.m. at I.U. #1. Contact Jayme Graham, Section Head, 412/578-8129, fax 412/578-8144, jgrapham@achd.net.

April 11 PRCST Professional Development Day, “Weaving the Academic Strands”. Using the PA and national standards as a framework, explore the fabric of an integrated curriculum. University of Pittsburgh 8:00am-3:30pm. Fee\$35.00. Register by sending name, school, address, phone/email and a check payable to University of Pittsburgh to PRCST. Pre-registration by calling 412/648-7315. Space Limited.

April 14 Dr. Harry Alden presents his microscopic analysis of Lewis & Clark herbarium specimens at 4:30pm in the Adamson Wing of Baker Hall, CMU. Free and open to the public. (This was rescheduled from Nov. 21, 2002.) See pg. 1 article.

Mar 27-30 NSTA National Convention 2003, Philadelphia, PA Take advantage of having the NSTA National Conference in Pennsylvania – a golden opportunity!

Sea Education Association’s Research at Sea Program – for middle and high school teachers, to explore the oceanic environment while learning about the scientific research process. Live and study aboard a sailing research vessel. Teachers apply by calling 1-800/552-3633 or apply online at www.sea.edu/sea2000/admission2000/teachers.htm

Genome Month Teaching Resources on <http://www.genome.gov/education>. Presented by the National Human Genome Research Institute, National Institutes of Health, and Department of health and Human Resources.

June 16-17 Special Lewis & Clark Two-day workshop sponsored by PRCST (as part of the STS by Green Design Program). University of Pittsburgh. Also

July 15-17 Special Lewis & Clark activities, events. Selected sites including the Senator John Heinz History Center. Fees for the above TBD. Contact PRCST for information and registration. Space severely limited.

The Pennsylvania Governor’s Institutes are currently scheduled pending funding for this coming year. There will be institutes for

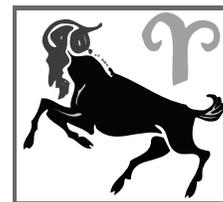
- **Physical Science** (2 weeks at Carnegie Mellon University, July 6-18),
- **Life sciences and Biotechnology** (1 week at Juniata College, July 13-18),
- **Environment and Ecology** (1 week at Seven Springs, July 27-August 1) and
- **Technology Education** (site and date to be determined).

There will be institutes in other academic areas as well.

Celebrate the seasons:

Chinese New Year

Using the Chinese Lunar Calendar, the new year begins on February 1, 2003 and ends January 21, 2004, divided into 12 months of 29 or 30 days. Extra months are added at regular intervals to adjust to the solar year. The years are arranged in major cycles of 60 years – each named after one of 12 animals.



2003 is the Year of the Ram (sheep-goat) and to hail the celebration the U.S. Postal Service is issuing a 37 cent stamp – the 11th

stamp in the award-winning series for the Lunar New Year. The Chinese new year is celebrated at the second new moon after the winter solstice. A calendar and lesson plans can be found at [m http://www.teacher-vision.com/lesson-plans/lesson-4287.html](http://www.teacher-vision.com/lesson-plans/lesson-4287.html)

Winter Solstice

The winter solstice marks the shortest day of the year when the sun appears at its lowest pointing the sky. The sun’s elevation at noon appears to be the same for several days before and after the solstice. The word solstice comes from the Latin *solstitium* - from sol (sun) and stitium (stoppage). (Information from <http://www.teacher-vision.com/lesson-plans/lesson-3627.html>)

Groundhog Day

Want an activity for primary students for Groundhog Day?



Try “Help the Groundhog Find its Shadow” at <http://www.bry-backmanor.org/actpag26.html>

Science Snippets

Did you know:

- Word has it that the first smoke abatement law was passed in England in 1273. Environmental issues bore stronger rules and regulations, it seems, than we have ever imagined. In 1306 a manufacturer was convicted for burning coal and was beheaded. And we think we have strong air pollution controls!

- Mars has four seasons, just like Earth, but each one lasts twice as long!

- The Mississippi river is one of the most diversified large river systems in the world.

Have you seen SuperCroc? (CMNH exhibit)

Crocodylia are reptiles whose histories

span 80 million years. Crocodiles apparently crossed the Atlantic at least twice in the last 20-30 years; and crossed the Bering Land Bridge or the Aleutians. There were crocs in Antarctica until about 35 million years ago. “There are all sorts of weird crocs down in South America, and their closest relatives are in the old world – Africa, Asia.” (from University of Iowa Spectator)

FLY THE VIRTUAL SKIES with NASA Engage high school students in geography, weather, statistics, aeronautics and problem solving. This can be found at “Virtual Skies,” an integrated standards-based science web that uses air traffic management as its metaphor. Many interactive problem solving scenarios in the areas of weather, aviation research, airport design, air traffic management, navigation, communication and aeronautics. Career section. Teachers’ desk. Lessons incorporating biology, trigonometry, statistics, and physics concepts.

WORKSHEET GENERATOR – from Worksheet Factory. Demo version allows 30 uses before a fee is charged. www.schoolhousetech.com

100 YEARS OF BACILLUS THURINGIENSIS – a Critical Scientific 16 Page Report. From the American Academy of Microbiology. Follows the history and science of the bacterium and its use in agriculture. Download from www.asmsa.org/acasrc/academy.htm

FREE STUFF – FROM PA LEOMAP PROJECT. Illustrates the plate tectonic development of the ocean basins and continents. Visit www.scotese.com/free_stuff.htm for instruction for making a Pangea Antenna Ball. Also free Earth System History – GIS Time Slices. Must have ArcView 3.x. Call 1-888-288-0160 or email info@scotese.com with your request.

THE FOOD SYSTEM: Building Youth Awareness Through Involvement. Grades 5-12. Concept of food system and related issues – inputs, food production and distribution consumption, and ways to maintain local food supply. \$15 from PA State University College of Agricultural Sciences, Ag Publications Distribution Center, 112 Agricultural Administration Bldg., University Park, PA 16802; 1-877-345-0691; email anml@psu.edu; www.cas.psu.edu/docs/CASDEPT/FOOD/index.html

SEEDSAVING KIT – Educate students about the seed-to plant cycle. Contains 10 airtight tins with 12 seed tin labels, marking pencil,

3 seed collection and storage bags, twine, seed desiccant, and 10 glassine envelopes with labels. \$24.95 from National Gardening Assoc.; 1100 Dorset St.; South Burlington, VT 05403; 1-800-538-7476; fax 802-864-6889; email sales@kidsgardening.com; www.kidsgardening.com

HOW PEOPLE LEARN: Brain, Mind, Experience, and School – expands on two reports from the National Research Council based on studies of the science of learning and actual practice in the classroom. \$24.95 from NSTA Science Store at 1-800-277-5300; fax 1-888-433-0526; store.nsta.org. Review at www.nsta.org/recommends

THREE MILE ISLAND: NUCLEAR DISASTER, by Michael D. Cole – A detailed description of events in PA on March 28, 1979. It covers the history of nuclear power in the U.S. and defines fission in terms that middle and secondary students can understand. \$18.95, Enslow Publishers, Inc., Berkeley Heights, N.J. 2002 ISBN 0-7660-1556-4

2003 – A Year of Commemoration, *continued from page 1*

Major events include

- exhibit of the replica keelboat at the History Center, July 15-August 30
- special programs, speakers July 15-17 at the History Center
- Corps II exhibit at Point State Point in conjunction with Fort Pitt Museum, August 21-September 10.

Wright Brothers Centennial Flight Commemoration

December 17, 2003 is the anniversary of the first flight by the Wright Brothers at Kitty Hawk, NC in 1903 when they established the fundamentals of aircraft design and engineering in place today and initiated the age of powered flight. Wilbur and Orville Wright were self-trained engineers from Ohio. They designed and

built the first power-driven, heavier than air machine in which humans made free, controlled and sustained flight. (*This information, and much more, is from a NASA designed poster “The Wright Way: The Process of Invention.”*)

“Celebrating a Century of Powered Flight” will be one session in the PRCST April 11, 2003 workshop featuring classroom activities from the poster and NASA resources available from the NASA Educator Resource Center (ERC) at the University of Pittsburgh.

Think about linking one of the following to some part of your curriculum as this Centennial approaches:

- **National Engineers Week 2003** – February 16-22, 2003. To help students prepare for a career in engineering, the event will bring back valuable programs from previous years:

- ZOOM into Engineering, a volunteer program in which engineers work with students in grades 1-6
- Introduce a Girl to Engineering Day
- National Engineers Week Future City Competition (See *Directions*)

- **Study Rocket Flight** – A valuable

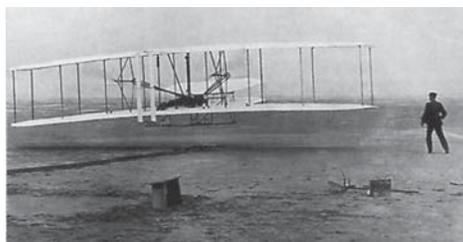
article appears in NSTA’s *Science Scope*, Nov/Dec 2002 issue, pp 32-37, developed as an enriched study of motion using meaningful inquiry.

- **Full information can be found at the NASA web site** including space shuttle launch schedules at www.pao.ksc.nasa.gov/lscpao/schedule

• **The Pennsylvania NASA Educator Resource Center (ERC)** also has a wealth of materials/resources for your use. Currently this center is being relocated to the CCIC on the 4th floor of W.W. Posvar Hall, University of Pittsburgh. For information contact Dr. Albert Nous, Director, apnous1@pitt.edu

• NASA has announced a renewed **Educator Astronaut program** beginning in 2003. Barbara Morgan, the agency’s first Educator Astronaut, has been assigned as a crewmember on a November 2003 Space Shuttle mission to the International Space Station (ISS).

• NASA featured “**Milestones in Flight**” in one issue of *NASAexplores*. See the website, <http://www.nasaexplores.com> This site also includes an archive of previously published articles and lessons.



The Wright 1903 Flyer at Kill Devil Hills, NC

Calendar of Events

Feb. 16-22 – National Engineers Week
Contact Headquarters, 1420 King St., Alexandria, VA 2314; 703/684-2852; email eweek@nspe.org (see directions)

Feb. 21 – FREE workshop sponsored by Air & Waste Management Assoc. Education Committee (see directions).

Mar. 27-30 – PSTA Annual meeting will link with the NSTA National Conference (see NSTA Conferences at right).

Mar.28 – Deadline for application to the NSF supported Earth Science Summer Institute for secondary teachers July 14-Aug.1, 2003. Call Francis Otuonye 931/372-3374 or email frotuony@tntech.edu

April 11 – PRCST Professional Development Program: “Weaving the Academic Strands.” A day-long program at the University of Pittsburgh, W.W. Posvar Hall. 8:00am-3:30pm. Contact PRCST 412/648-7315 (see directions)

April – Genome Month

April 14 – Dr. Harry Alden, Microscopist, Smithsonian Institute Suitland Labs. 4:30pm CMU Baker Hall, Adamson Wing. See pg. 1 article.



This issue of LASER is printed on recycled paper.

April 25 – “DNA Day”

June 16-17 – First Session of the STS by Green Design Summer Institute. W.W. Posvar Hall, University of Pittsburgh.

July 15-17 – Continuing STS by Green Design Summer Institute. Sites TBA.

Contact PRCST for information about the above professional development opportunities. 412/648-7315 (see directions)

NSTA CONFERENCES
<http://www.nsta.org/conventions>

2003 NATIONAL CONVENTION
March 27-30, 2003 • Philadelphia, PA

NORTHERN AREA CONVENTION
October 30-November 1, 2003
Minneapolis, MN

MIDWESTERN AREA CONVENTION
November 13-15, 2003
Kansas City, MO

WESTERN AREA CONVENTION
December 4-6, 2003
Reno, NV

Thanks for Your Support

Support for the Lewis and Clark Commemoration Project conducted by PRCST has been received from

PPG Industries Foundation
Alcoa Foundation
Michael Baker, Jr., Incorporated
G.A.I. Consultants, Inc.
Grable Foundation
Society for Analytical Chemists of Pittsburgh
Spectroscopy Society of Pittsburgh

Affiliate support has been received from

Art Institute of Pittsburgh
Army Corps of Engineers
Carnegie Museum of Natural History
Conservation Consultants
EBARA Inc.
NASA – Goddard Space Flight Center
Phipps Garden Center/Conservatory
Senator John Heinz Pittsburgh Regional History Center
University of Pittsburgh
Western PA Unit- Herb Society of America
99th Regional Command

PRCST IS AN OUTREACH PROGRAM, DEPARTMENT OF INSTRUCTION & LEARNING, SCHOOL OF EDUCATION, UNIVERSITY OF PITTSBURGH
AND AN AFFILIATE MEMBER OF THE TRIANGLE COALITION FOR SCIENCE & TECHNOLOGY EDUCATION.

PRCST

**Pittsburgh Regional Center
For Science Teachers**

Jane Konrad, Executive Director
konrad@pitt.edu

University of Pittsburgh
4F29 WWPH (formerly Forbes Quad)
Pittsburgh, PA 15260
(412) 648-7315
FAX (412) 648-7081

Nonprofit Org.
U.S. Postage
PAID
Pittsburgh, PA
Permit No. 511

Points of view or opinions expressed in LASER do not necessarily represent the official view or opinion of PRCST.