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Winter 1997-1998 Newsletter

Issue Number 17

"Everything is Connected to Everything Else"

by Dave Gosselin, NESEN Director

Since August 1997, I have been team teaching a course that is one of four hands-on science courses at UNL developed as part of a grant from the Howard Hughes Medical Institute. Although this course is officially designated as Geology 299e, *Hands-on Geology*, it has evolved into *Earth Systems Science for Pre-service Elementary and Middle School Teachers*. I have learned many things from this experience, one of the most important of which is related to the importance of *systems* to our daily lives. We experience many different systems every day on a variety of scales ranging from the interaction of the sun with the earth, which drives the weather and the water cycle, to the interaction of water molecules with cells in the human body. Another important system in which we are all intimately involved is the educational system and its many subsystems, preschool, elementary, middle-school, secondary, and post-secondary (undergraduate and graduate). As is the case in the earth system, educational subsystems are interactive. What affects one system will affect another, maybe not today or tomorrow, but in the long term. The common thread that ties all the systems together, whether it be the earth or education, is the exchange of energy and mass. In the case of the educational system, the energy and mass exchanged is students moving from one grade to the next, or from teacher preparation programs into the pre-college classroom. One system feeds on the other. Systems are dynamic, and the only thing that is constant is change. The type of change is a function of the feedback mechanisms between the individual parts. Feedback can be either positive or negative. I hope that as members of NESEN working together into the next century, we will all keep in mind that *everything is connected to everything else*, and that we all provide feedback, which will positively impact many parts of the system.

New Look for NESEN Web Site

The NESEN web site, <http://nesen.unl.edu/nesen.html>, has been modified to improve access to earth science information. Please e-mail dmohlman@unlinfo.unl.edu or mmesarch@unlinfo.unl.edu if you have comments or suggestions for further improvement.

New NESEN E-Mail Address

Need information about NESEN? Want to see if NESEN has a particular earth science resource that you could use in your classroom? Send these questions, and any others you may have, to our new, and easy to remember, e-mail address at info@nesen.unl.edu. We will be happy to help you.

Web Membership List Updated

The NESEN membership list on the NESEN web site has been updated. The list is current as of February 1, 1998. Thanks to all those members who returned their membership update forms (66%). For those that did not, your membership information may no longer be accurate.

The POSSE (Promoters of Science and Science Education) Is Coming!

As reported in the Fall 1997 NESEN Newsletter, we have been developing regional groups of NESEN members based upon the boundaries of the educational service units (ESUs). We have affectionately dubbed our pod representatives as the POSSE (Promoters of Science and Science Education). We are pleased to announce that the following teachers have agreed to act as a representative for their respective ESU:

- John Niemoth, ESU 1
- Mary Jane Bell, ESU 2
- Polla Hartley, ESU 7
- Greg Pavlik, ESU 8
- Virgil King, ESU 10
- George Probasco, ESU 11
- Junice Dagen, ESU 12
- Carolyn Schlager, ESU 13
- Andy Christensen, ESU 14
- James Fitzgibbon, ESU 15
- Ron Billings, ESU 17.

We have asked our representatives to initially help us with three items:

1. to personally inform the local ESU about NESEN
2. to ask that a link be established from the local ESU home page to the NESEN home page
3. to initiate the development of a local support network for science teachers within the local ESU.

To help them in these endeavors, NESEN has supplied each representative with a packet of information.

Please note that these people may be contacting you soon by mail, e-mail, or phone, to identify themselves as your local NESEN representative. They will also be soliciting your input concerning NESEN's current activities, ideas about new activities and/or resources to meet their earth science educational needs, and interest in having local NESEN workshops.

If you are interested in representing an ESU that currently does not have a representative (3, 4, 5, 6, 9, 16, 18, 19), please contact Duane Mohlman, 402-472-7528, dmohlman@unlinfo.unl.edu.

Register Now for Summer Workshop Series

NESEN has scheduled its fifth annual summer workshop series. For more information see the NESEN web site, <http://nesen.unl.edu/nesen.html>, or contact Dave Gosselin, 402-472-8918, gosselin@unlinfo.unl.edu. The 1998 summer workshops are:

- July 7-8, 1998 -- **Nebraska's Dynamic Water System** – Dave Gosselin, Ed Harvey
- July 9-10, 1998 -- **What's In That Soil?** – Mark Kuzila, Francis Belohlavy, Steve Hartung
- July 14-15, 1998 -- **Chili Today, Hot Tamale: Let's Look at Nebraska's Weather** - Steve Meyer, Mark Mesarch
- July 17-18, 1998 -- **Virtual Nebraska -- Putting Remotely Sensed Data to Work in the Classroom** – Rick Perk, Brian Tolk

STEDIIly into Winter

The Students and Teachers Exchanging Data, Information and Ideas (STEDII) Weather Project will conduct its Winter Focused Measurement Period (FMP) from February 9 - 23. Two new schools have joined our project: Papillion Junior High School (contact: Sandra Kendall) and McCook Junior High School (contact: Jim Fitzgibbon). We now have 51 schools participating. A new group of pre-service undergraduate students in Geology 299e at UNL have been paired with participating schools to serve as resources for teachers and students. At the same time, they have the opportunity to begin networking with experienced teachers about what works and doesn't work in the classroom. The winter FMP educational focus is on topographical and geographical influences on weather. The Spring FMP is April 20 - May 4, 1998. The video magazine on Lincoln cable channel 21, and other educational channels across the state, featured the fall STEDII weather project and ran from February 2 through 8, 1998.

NESEN Gathering Feedback about Potential New STEDII Components

During the current academic year, possibly during the third and final FMP (April 20 - May 4, 1998), NESEN may begin a water conservation component and/or a pollen count component in STEDII. At this time, we are asking teachers for feedback about these two new potential components:

The **water conservation component** could involve students calculating their water use during a given time span (possibly just by reading a simple water meter). Students could then discuss ways to conserve water. Periodic water meter readings would be made to determine the success of the conservation methods. The data would be entered into a computer at UNL via the Internet to be shared and compared with other schools' results. Please send any thoughts you may have about the water conservation component to Mark Mesarch, 402-472-5904, or e-mail mmesarch@unlinfo.unl.edu.

The **pollen count component** would involve students taking pollen counts and, like the water conservation projection, entering their counts into a computer at UNL via the Internet to be shared and compared with other schools' results. Students could then discuss why pollen counts differ during the year and across the state. Additionally, students could map the data on a statewide basis. Please send any thoughts you may have about the pollen count component to Duane Mohlman, 402-472-7528, or dmohlman@unlinfo.unl.edu.

National Drought Mitigation Center (NDMC) Linked to NESEN; DROUGHT HAPPENS

Development of educational material focused on drought has begun with the partnership of the National Drought Mitigation Center (NDMC) and NESEN. Key threads from the National Science Education Standards have been selected with respect to drought definitions and information. These can be seen on the new web site of <http://enso.unl.edu/ndmc/center/K12/K12.htm>. A framework is being developed for intermediate level audiences that looks at definitions of drought and works toward understanding the impact upon humans and nature. The high school level material will begin with the impacts and work towards the definitions. Some preliminary activities are being placed on the web at <http://nesen.unl.edu/activities/water.htm>.

New Publication from the Conservation and Survey Division

EC-13 Geology of Niobrara State Park, Knox County, Nebraska, and Adjacent Areas-- With a Brief History of the Park, Gavins Point Dam, and Lewis and Clark Lake: Flowerday, C. A. and Diffendal, R. F., Jr., Editors (1997) - \$5.00. To order, or for more information, contact CSD Maps and Publication Sales at 402-472-7523, or FAX 402-472-2410.

Did You Know that....

One of NESEN's lead organizations, the Conservation and Survey Division (CSD), located on the City Campus of the University of Nebraska-Lincoln, is the United States Geological Survey's (USGS) Earth Science Information Center (ESIC) for the state of Nebraska? The USGS runs more than 75 ESICs which all sell a wide variety of USGS earth science products and data. For more information about ESIC, contact CSD's Maps and Publications

Sales Office; Phone 402-472-7523, Fax 402-472-2410, or click the ESIC button on the CSD home page, <http://csd.unl.edu/csd.html>.

The *Miracle Planet* Series Now Available

Our thanks to Marian Langan, education coordinator for the University of Nebraska State Museum, for contributing to the NESEN Lending Library a copy of the six-hour PBS series, *The Miracle Planet*. The six one-hour tapes include: *The Third Planet*, *The Heat Within*, *Life From the Sea*, *Patterns in the Air*, *Riddles of Sand and Ice*, and *The Home Planet*.

Any NESEN member wishing to borrow any of these tapes should contact NESEN, 402-472-0773, or info@nesen.unl.edu. You can borrow the tapes for up to two weeks. The only cost involved is return postage.

School of Natural Resource Sciences

Besides the Conservation and Survey Division (CSD), the other lead organization of NESEN is the newly formed School of Natural Resource Sciences (SNRS). The SNRS has brought together faculty and staff from units within the University of Nebraska-Lincoln's (UNL) Institute of Agriculture and Natural Resources, the College of Arts and Sciences, and some faculty from other UNL colleges. The vision of the new school is to:

"serve the academic and scientific community, as well as the public, government agencies, resource managers and landowners. It is envisioned that the school will become a regionally and nationally prominent leader in academic, research, resource and environmental sciences."

Dr. Blaine Blad, head of the former Department of Agricultural Meteorology, will serve a two-year appointment as director. Dr. Robert Diffendal, research geologist with CSD, is the assistant director of SNRS. Both are members and supporters of NESEN. Dr. Blad has graciously appropriated funds to hire a new, and much-needed, part-time secretary for NESEN. This position will be filled as soon as possible. To contact the SNRS, call 402-472-9873, Fax 402-472-4915, or write School of Natural Resource Sciences, University of Nebraska-Lincoln, 303 Biochemistry Hall, Lincoln, Nebraska, 68583-0758.

Other Earth Science Announcements

Groundwater University Taking Applications – condensed from a news release from the Groundwater Foundation

June 10-13, 1998 – Jefferey Lodge – Brady, Nebraska

The Groundwater Foundation is accepting applications for Groundwater University (GU) 1998, a summer residential program for junior and high school students interested in groundwater and the environment. Students going into 7th-12th grades in the 1998-99 school year are eligible to apply. About 25 students will be accepted based on their knowledge, interest and experience in groundwater studies. The program provides students with an opportunity to learn about a variety of groundwater and natural resources topics while also exploring careers in related environmental fields. The program is open to students across the United States.

GU to Feature "Best" the Sand Hills Has to Offer: The Nebraska Sand Hills is the "Groundwater Capital of the World" and features: the largest part of the High Plains/Ogallala aquifer; an opportunity to view groundwater springs; groundwater and surface water connections such as groundwater-fed streams and surface water replenishments of groundwater supplies; and endangered species habitat.

GU Faculty will include: Hydrologists; irrigation specialists; well drillers; chemists; municipal wellfield supervisors; and wildlife biologists.

Activities Will Include: Water quality testing; community wellhead protection role-playing; exploring connections between water and endangered/threatened species; fossil collecting; canoeing/swimming/hiking; and a graduation ceremony.

GU Fees and Deadlines: The cost for the program is \$95 on or before February 1, 1998 and \$120 afterwards. Scholarships may be available. The fee includes meals, lodging, transportation to sites and recreation. Fees do not include transportation to Nebraska. Final deadline for enrollment is March 27, 1998. Students accepted into the program will be notified by April 4.

For More Information Contact: The Groundwater Foundation at 1-800-858-4844, or in Lincoln call 434-2740.

Groundwater Guardian Starts Fifth Year; *How About Your Community?* – news release from the Groundwater Foundation

Groundwater Guardian is beginning its fifth year. Enter your community in the Groundwater Guardian program today and protect your groundwater for your children and grandchildren. Groundwater Guardian is a program of the Groundwater Foundation that recognizes, supports and connects communities taking pro-active steps towards local groundwater protection. For more information on how to enter your community, call the Groundwater Foundation at 1-800-858-4844 or e-mail info@groundwater.org. Entry forms are due February 13, 1998.

Lincoln Gem and Mineral Club Show Celebrates 40th Anniversary -- information courtesy of the Lincoln Gem and Mineral Club and Roger Pabian

The Lincoln Gem and Mineral Club proudly presents its 40th anniversary Gem and Mineral Show in conjunction with the Nebraska State Show – March 21-22, 1998. Come and join the ruby anniversary celebration!

Attention Teachers: This show offers free admission to science groups in earth sciences that come as a class group with teacher and parental supervision. Free admission covers the teacher(s), pupils, and one adult chaperone for each five or six pupils.

Location: Pershing Municipal Auditorium, 226 Centennial Mall, Lincoln, Nebraska

Show Hours: Saturday, 9:00 am - 6:00 pm; Sunday, 10:00 am - 5:00 pm

Admission: Adults, \$3.00 (\$2.00 with coupon); Children under 12, \$1.00; Children under 12 free with adult

Activities: Exhibits, Dealers, Demonstrations, Programs, Minerals, Crystals, Gemstones, Finished Jewelry, Metalworkers, Carving, Rock Painting, Prizes, Jewelry Makers Supplies and Equipment, Gem Cutting Equipment, Kids' Activities, Gem Dig, Fossil Hunt, and numerous others.

For More Information Contact: Roger Pabian, CSD Research Geologist, 402-472-7564, rpabian@unlinfo.unl.edu.

Unless indicated, newsletter was written by Duane Mohlman, Dave Gosselin and Mark Mesarch; and edited by Charles Flowerday, Conservation and Survey Division, University of Nebraska-Lincoln. Information for our Spring 1998 issue of the NESEN Newsletter can be sent to Duane Mohlman; see newsletter masthead for address, or e-mail to dmohlman@unlinfo.unl.edu.

NESEN's lead organizations are the 1) Conservation and Survey Division, 113 Nebraska Hall, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0517; Phone 402-472-3471; Fax 402-472-2410; web site <http://csd.unl.edu/csd.html>; and the 2) School of Natural Resource Sciences, 303 Biochemistry Hall, University of Nebraska-Lincoln, Lincoln, Nebraska, 68583-0758; Phone 402-472-9873; Fax 402-472-4915.