

Mathematics & Science Education Center

2007 - 2008 DATES TO REMEMBER

October 11-12: NCCTM State Mathematics Conference in Greensboro

November 15-16: NCSTA Annual Professional Development Institute in Greensboro

October 25, November 8 & 29, December 6, January 31, February 14 & 28:
Science Seminars on ASU campus

February 23: Western Region Math Conference

March 27-30: NSTA National Conference in Boston

April 9-12: NCTM Annual Meeting and Exposition in Salt Lake City

April 12: Western Region Math Fair



- Visit our website at www.msec.appstate.edu -

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Appalachian
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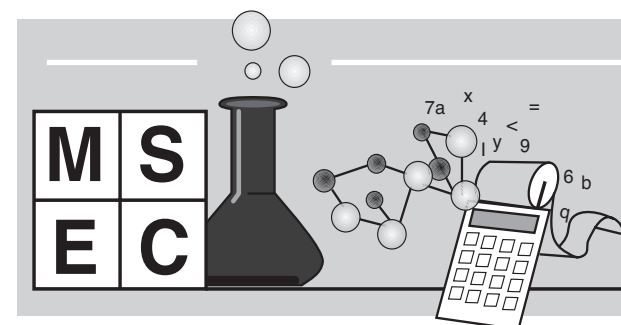
Mathematics and Science Education Center

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FALL 2007

APPALCHIAN STATE UNIVERSITY
**MATHEMATICS & SCIENCE
EDUCATION CENTER**

GEOSCIENCE RESOURCES FOR TEACHERS

The Department of Geology at Appalachian State University is home to many resources for educators, their classes, and the general public, all overseen by Dr. Andy Heckert. Resources include:

--The F.K. and M.J. McKinney
Geology Teaching Museum

--The Fred Webb, Jr., Outdoor Geoscience Laboratory

--The Answersphere in the museum

--Several hallway displays

--The "Digisphere" and G.E.M.S.

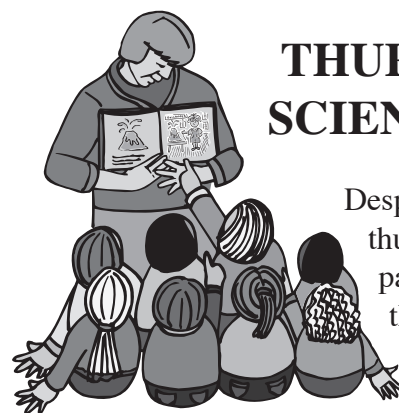
The McKinney Geology Teaching Museum is located on the first floor of Rankin Science South (on the ground floor under the observatory), and is open every weekday from 8:00am until 5:00pm. Visit the webpage at <http://www.mckinneymuseum.appstate.edu/>. As the principal outreach arm of the Department of Geology, the McKinney Geology Teaching Museum strives to present earth science exhibits to a wide array of audiences beyond that of undergraduate geology students. McKinney museum displays present geological topics in a variety of formats (specimen-based, graphical, and electronic) providing not just an overview of rocks and minerals, but also communicating the relevance of geology to everyday life in modern society.

The Fred Webb, Jr., Outdoor Geoscience Laboratory is located in the courtyard behind Rankin Science West and South and just outside the back door of Edwin Duncan Hall. This "work in progress" already houses 13 oversized geological specimens, and makes a great outdoor education opportunity. Each of these specimens was hand picked by an Appalachian geology professor to help mimic the experience of observing geology in the field, and they represent the geological diversity, natural history, and cultural significance of geology in North Carolina

in particular and the Appalachian region generally. Do you have the pieces of an old rock and mineral kit(s) without a key? Have you heard about faulting in the Boone area and want to know more? During the semester, upper-level geology majors are available in the museum to answer questions as part of the "Answersphere" program. These majors; primary responsibility is to assist fellow undergraduates in introductory geology classes, but they are also available to provide information to teachers and other members of the public. Check the museum web page for Answersphere hours, which are also additional museum hours—a great time to visit the museum before bringing your class in the next week! There are also several display cases on the geology of North Carolina in adjoining hall space and paleontology and other resources near the department office on the ground floor of Rankin Science West.

Finally, there are two new exhibits this fall: the "Digisphere" and G.E.M.S. The Digisphere consists of computer-generated three-dimensional visualizations of other graphics demonstrating geological phenomena in the museum. G.E.M.S. (Geology, Economics, Mining, and Sustainability) include dynamic and interactive exhibits in the busy hallway space outside the Department of Geology's introductory labs on the ground floor of Rankin Science West. These exhibits document the essential relationship of geology to modern civilization by focusing on the unique role geology plays in North Carolina society.

Dr. Heckert's teaching schedule will prevent his providing tours personally on afternoons on Monday-Thursday this fall, but mornings are open and workday afternoons may be available depending on the schedules of museum student workers. Dr. Heckert may be reached at heckertab@appstate.edu, by phone at 828/262-7609 or by fax at 828/262-6503.



THURSDAY NIGHT SCIENCE SEMINARS

Despite rain and fog, an enthusiastic group of twelve participants were present for the launching of the seventh consecutive year of Thursday night science seminars on October 25,

2007. Dr. Howie Neufeld of Biology led an interesting and informative discussion of global climate change. This year's seminars will focus on the environment and sustainable development. The program is of general interest, and teachers and everyone else in the community are cordially invited to attend any or all of the sessions. Teachers may earn up to 1.4 license renewal credits. The seminars are free with free parking after 5:00 PM. Each seminar meets from 6:00-8:00 PM with refreshments available at 5:30 PM. All sessions will be in Walker Hall, Room 105/108. The complete schedule with topics and ASU professors who are leading the discussions follows:

Oct. 25: Global Climate Change
(Howie Neufeld, Biology)

Nov. 8: Origins of Fossil Fuels (Neil Johnson, Geology)

Nov. 20: Energy Efficiency and Sustainable Building Design (Lee Ball, Technology)

Dec. 6: Sustainable Development
(Chuck Smith, Director of Sustainable Development)

Jan. 31: Alternative Energy Sources
(Brian Raichle, Technology)

Feb. 14: Waterways Pollution
(Michael Windelspecht, Biology)

Feb. 28: Environmental Consequences of Fossil Fuel Combustion (Sammye Sigmann, Chemistry)

STUDENT PROGRAMS

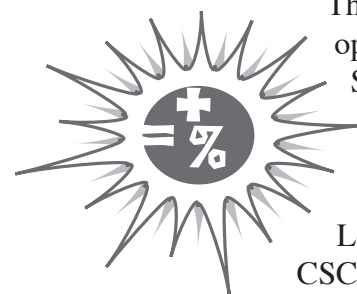
In addition to its main function of providing professional development programs for teachers, the MSEC offers a variety of math and science programs for K-12 students, primarily at the elementary and middle grades levels.

Family math nights, with Dr. Bill McGalliard and his wife Birgitta, and family science nights, with Ms. Judy Sink and Ms. Gail Bastarache, involve students and parents working together investigating interesting facets of mathematics and science. Dr. Jack Callahan does presentations for grades 3-9 classes on rocks, minerals, North Carolina geology, the Blackbeard shipwreck geoarcheology project, or a geology topic of your choice. Newly added this year is a program on reptiles by Dr. Wayne Van Devender (sometimes known on campus as the snake man); he will bring his reptiles to your classroom for his presentation. The programs are free of charge to the schools and are popular, so get your requests in early. The family math nights schedule will probably be full for spring semester by the time this newsletter is published, but the others still have some times available.



Four groups of students in GEAR UP, a federally-funded program to increase academic ability and college preparation of middle and high school students from low-income schools, are scheduled to visit campus during November and December. The MSEC has arranged a variety of science activities for the visiting classes from Avery and Burke counties. Similar activities can be arranged for other classes interested in visiting campus and having a science or mathematics program as part of the visit.

WEEKEND WORKSHOPS



There will be two professional development opportunities at the Catawba Science Center in the spring. An elementary school workshop in marine science on February 8-9, 2008 with Mr. Jeff Goodman and Dr. Leslie Bradbury will capitalize on the CSC's new aquaria. A middle school astronomy workshop on May 2-3, 2008 with Dr. Jon Saken will use the planetarium at the CSC in addition to outdoor viewing. These weekend workshops are sponsored jointly by the MSEC and the CSC. The workshops, starting Friday evening and continuing all day Saturday, each carry one license renewal credit. There is a moderate registration fee which includes some food and admission to the museum. For further information,

contact Ms. Erin Graves at (828) 322-8169 or programs@catawbascience.org.

In the spring, Dr. Anita Kitchens and Dr. Bob Wenta will offer a two-day workshop, "Becoming a More Powerful Teacher of K-8 Mathematics." The workshop focuses on both the affective and cognitive aspects of teaching, and has been highly evaluated when it has been offered in the past. The workshop will be on a weekend starting Friday evening and continuing all day on Saturday. The workshop will be free and will carry one license renewal credit. Watch our website and flyers for dates.



WESTERN REGION MATH CONFERENCE AND FAIR

The 2008 NCCTM Western Region Mathematics Conference will be held on Saturday, February 23 at Jacobs Fork Middle School in Catawba County. There will be sessions for in-service, pre-service, and ILT teachers. As more information becomes available, it will be posted on the NCCTM website (www.ncctm.org). Please plan to attend. If you would like to give a presentation, contact Dr. Debbie Crocker at crockerda@appstate.edu.

The NCCTM Western Region Math Fair will be held on Saturday, April 12, 2008 at the Plemmons Student Union on the ASU campus. Projects may be entered in the following categories: K-2, 3-5, 6-8, and 9-12. Projects must be pre-registered by March 10, 2008 to be accepted for competition, and there is a limit of nine projects per category per school. If you need a registration form, go to the NCCTM website (www.ncctm.org) or contact Dr. Betty Long (longbb@appstate.edu or 828-262-2372), Ms. Cindy Robinson (crobinson@caa.k12.nc.us or 828-266-3169), or Ms. Theresa Compton (comptont@Watauga.k12.nc.us).



Notes from the Director



The Mathematics and Science Education Center has been a busy place with the summer programs recently finished and fall programs now underway. Our center, along with several others in the state, participated in the North Carolina Mathematics and Science Education Network Statewide Institute for Teaching Excellence (SITE) Program in a number of areas. Two new high school programs were added to the SITE program, one in biology and one in geometry, and our center offered both. Additionally, we continue to offer SITE: Advanced Functions and Modeling which is a perennial summer offering. All three of these high school programs are planned for summer 2008; more information concerning them will be in the spring newsletter. All of the math programs will be offered as a part of the Mathematics Education Leadership Training (MELT) Program. At the middle school level, we participated with the North Carolina Department of Public Instruction to offer a science workshop. The NCDPI 6-8 Science Workshop was offered at four centers in the state: Appalachian, Charlotte, Chapel Hill, and East Carolina. Another middle school offering was the Middle Math Summer Institute, a program designed to support middle school mathematics teachers in meeting grades 6-8 North Carolina Standard Course of Study competencies in their classrooms. Different from other years, there was only one offering at the elementary school level this summer, a K-3 science workshop emphasizing inquiry-based teaching and learning. Next summer, we plan to offer both SITE: 3-5 Science and SITE: 6-8 Science; more information on these programs will be in the spring newsletter.

The Flinn Scientific Foundation arranges for about a half dozen summer chemistry workshops for high school chemistry teachers spread across the country each summer, and Appalachian State University was fortunate in being chosen to host one of these in 2007. Our chemistry department worked hard to get the program on our campus, and the many teachers who participated in the program were grateful for the opportunity to work in such an exceptionally beneficial workshop. The MSEC granted the license renewal credits for the workshop, and we were pleased to be a part of such a successful venture.

Our center continues to enjoy a close relationship with the Northwest Regional Education Service Alliance. We are currently cooperating with Northwest RESA in a \$1.2 million Mathematics and Science Partnership (MSP) Grant that is funding a professional development program in several of the school systems in the Northwest RESA region for teachers of K-5 mathematics. MSP grants are federal funds from the No Child Left Behind Act; the funds are administered by the North Carolina Department of Public Instruction. Additionally, we are partnering with Cleveland, McDowell and Rutherford counties on an MSP grant of slightly over a half million dollars to fund professional development for grades 7-8 science teachers in those counties.

You are always welcome to browse and borrow from our math and science resource rooms or dig for fossil samples in the fossiliferous grit pile behind the Broyhill Inn and Conference Center. Let us know what programs you would like to see the center offer. To keep up with what is happening at the MSEC, consider adding your name to our listserv or mailing list by contacting Ms. Vickey Isaacs at isaacsve@appstate.edu.