

GRANT RECEIVED FOR MODELING PROJECT

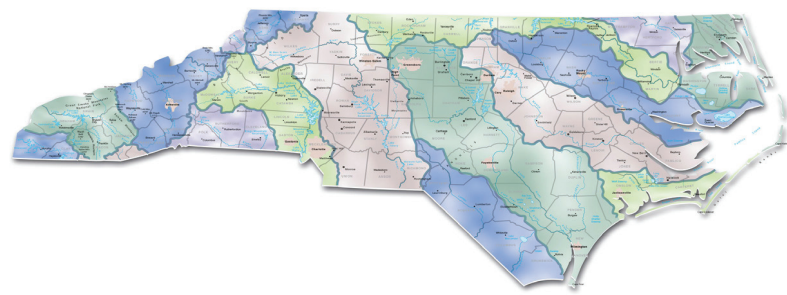
The AMP working group on modeling collaborated with AppState faculty to apply for a grant through the NC Ready for Success project and received \$13,000 to explore the vertical alignment of modeling across academic levels. This team of middle and high school teachers is joined by community college and university faculty to identify key topics related to modeling. They are also preparing a framework that can be used to examine the modeling content of a task and how to align tasks in the classroom to develop students' abilities to model over time. The project will also develop professional development materials for facilitating conversations on modeling and a collection of career and college ready resources. Results of this collaboration will be shared at the NC Ready for Success STEM Summit on September 19 at Central Piedmont Community College in Charlotte; here is the link:

<http://www.ncreadyforsuccess.com/how-were-helping/alignment-initiatives/summits/>

PROGRAMS FOR K-12 STUDENTS

The MSEC is always pleased to arrange math or science programs for visiting students. Especially popular with visiting school groups have been science presentations by Curriculum and Instruction faculty members Jeff Goodman, Leslie Bradbury and Rachel Wilson. Most of these programs take place during the academic year, but programs for summer visitors are also possible.

Family Math Nights and Family Science Nights in elementary and middle schools involve students and their parents exploring together interesting facets of mathematics and science. Bill and Birgitta McGalliard conduct the Family Math Nights; Judy Sink and Lou Moore conduct the Family Science Nights. Also popular are presentations for grades 3-9 classes on rocks, minerals, North Carolina geology, the Blackbeard shipwreck, geo-archaeology project or other geology topics by geologist Jack Callahan. The MSEC is pleased to offer these programs at no cost to the schools. Contact Ms. Vickey Isaacs at isaacsve@appstate.edu for further information on these or other programs.



NOTES FROM THE DIRECTOR

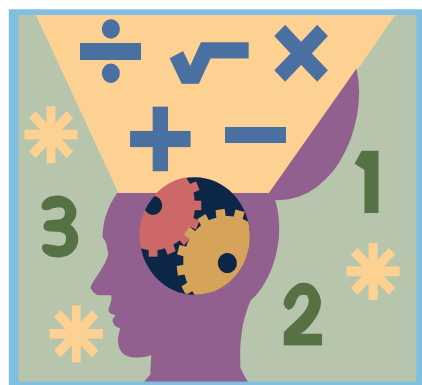
The major professional development emphasis this summer will be on addressing the Common Core State Standards in Mathematics through several institutes in the Mathematics Education Leadership Training (MELT) Program. MELT will have more than the usual number of institutes and for the first time will deal with all grade levels, K-12. Details of this summer's offerings are at <http://melt.appstate.edu>. The MSEC is pleased to continue its long collaboration with this outstanding program.

Remember that we have a well-stocked math and science resource room to which you are always welcome. Please continue to let us know of anything that we can do to help teachers with math and science programs. Our resources are always here for your use and we solicit input on what professional development opportunities in mathematics and science would be beneficial to schools in our northwestern region.

Phil Johnson

Contributors to the Spring 2014 newsletter:

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Mathematics and Science Education Center

APPALACHIAN STATE UNIVERSITY

MSEC Newsletter

Spring 2014

MELT Professional Development Summer Institutes

Through the Mathematics Education Leadership Training Program (MELT), twelve weeklong professional development institutes for K-12 mathematics teachers will be offered on the ASU campus this summer. The weeks of the institutes are June 16-20, June 23-27, July 7-11, and July 14-18. The institutes are offered in cooperation with Appalachian State University's Department of Mathematical Sciences and the Mathematics and Science Education Center. All of the institutes are focused on the Common Core State Standards for Mathematics. The fee for each institute is \$300. While space permits, for an additional fee, housing is available for MELT participants. Additionally, participants will earn either 3 CEUs or 2 graduate credits for each Summer Institute. (If an institute is taken for graduate credit, the usual graduate fees will also apply.) Registration for all institutes is now open. A registration form and descriptions of the institutes can be found on the MELT website (<http://melt.appstate.edu>). A listing of the twelve Institutes to be offered is under Dates to Remember; for more details, please visit the MELT website.

If you have questions about 2014 MELT institutes, please contact Dr. Mike Bossé, Director of MELT, at 828-262-2862 or bossemj@appstate.edu.

NEW STEM WEBSITE

Thanks to the efforts of Marta Toran, currently a lecturer in the Department of Biology, there is a new website geared to sharing ASU STEM (Science, Technology, Engineering, and Mathematics) education and outreach. Visit the site at <http://stem.appstate.edu>. The main goals of the STEM website are to:

- Centralize information regarding all outreach efforts taking place across the University in the fields of Science, Technology, Engineering and Mathematics so that it is more readily accessible.
- Facilitate collaboration between the College of Education and the STEM departments in order to better serve K-12 teachers and students through existing and future outreach programs aligned with educational standards.

UPCOMING 2014 DATES TO REMEMBER

March 28-April 13: North Carolina Science Festival

April 5: Mountain Science Expo at NC Arboretum, Asheville

April 9: STEM Expo Day

June 16-20: MELT Week 1 (Teaching and Learning High School and Middle Grades Mathematics through Technology; Probability and Statistics through Common Core Math 1-3)

June 23-27: MELT Week 2 (Algebra through Common Core Math 1-3; Common Core Math 3)

July 7-11: MELT Week 3 (Geometry through Common Core Math 1-3; Common Core Math 1; Grades K-5 Algebra and Functions in the Common Core; Grades 6-8 Algebra and Functions in the Common Core)

July 14-18: MELT Week 4 (Common Core Math 2; Building Mathematical Thinkers through Assessment and Inquiry for Grades 9-12; Grades K-5 Geometry in the Common Core; Grades 6-8 Geometry in the Common Core)

July 5-August 2: Summer Ventures in Science and Mathematics at ASU

October 29: NCCTM Fall Leadership Seminar, Greensboro

October 30-31: NCCTM State Mathematics Conference, Greensboro

November 6-7: NCSTA Professional Development Institute, Winston Salem

Visit us online at: www.msec.appstate.edu

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MSEC Staff: Phillip Johnson, Director; Betty Long, Assistant Director; Lori Tyler, Summer Ventures in Science and Mathematics Director; Vickey Isaacs, Administrative Assistant



KEEP UP WITH MSEC ACTIVITIES

Print copies of the newsletter are distributed to math and science and some other departments on campus and are available at the MSEC for visitors and participants in center programs. You can always read both current and earlier newsletters at www.msec.appstate.edu. If you are a K-12 teacher, we invite you to add your name to one or more of our elementary, middle or high school list serves by sending your e-mail address and which list serve(s) you wish to join to Mrs. Vickey Isaacs at isaacsve@appstate.edu. Once you are on a listserv, please remember to let us know of any address changes. In addition to information in the newsletter and information sent to listserv members, the MSEC website always has the most up-to-date information on center activities.

NORTH CAROLINA SCIENCE FESTIVAL



March 28-April 13, 2014
A one-day ASU STEM (Science, Technology, Engineering and Mathematics) Expo will be held on campus on Wednesday, April 9 as

part of the fourth annual North Carolina Science Festival. The Expo event will be in the Holmes Convocation Center from 9:00am-2:00pm with other stand-alone events in Plemmons Student Union and other places on campus. The STEM Expo is on a weekday so that schools can come to campus for a field trip and have their students experience some awesome science activities. Approximately 1700 students participated in last year's Expo activities. This year's MSEC Expo booth will have an added attraction of science activities led by Judy Sink and Lou Moore, science educators who for many years have been doing the popular Center-sponsored family science nights. For more information about STEM Expo and other activities taking place at Appalachian State University during the festival, visit <http://ncsciencefestival.appstate.edu>.

SPRING SCIENCE SEMINARS

The last seminar of the 2013-2014 series is part of this year's North Carolina Science Festival. All seminars are open to everyone, are free, and offer license renewal credits (0.2 per seminar) to teachers. Seminars are held in room 124A in the new Reich College of Education Building from 6:00-8:00 p.m. with refreshments at 6:00. The last seminar in this year's series, Incremental Changes and Paradigm Shifts in Scientific Knowledge that Improve Our Understanding of the Natural World, will be:

April 10—Jeff Goodman (Curriculum and Instruction), "Technology and Understanding How New Tools Shape Scientific Thinking"



We will soon begin working on next year's science seminar series which will be focused on the theme of Science and Sustainability. Check our website for the seminars which will start in September of 2014.

NORTHWEST REGIONAL SCIENCE FAIR

The Mathematics and Science Education Center was pleased to host this year's North Carolina Region 7 Science Fair on December 17, 2013. Student science projects from grades 3-12 were on display in the new College of Education Building on the ASU campus. A total of 71 elementary level projects, 118 middle school level projects and 30 high school level projects participated in the competition. In addition to the regional science fair, there were 71 papers presented by students in the afternoon Student Academy of Science competition. Under the able direction of Avery County High School science teacher Coleman Bailey, a large number of school personnel worked to assure the success of the fair. Judges consisted of teachers, upper-level university science students, professors, and scientists and engineers from industry. Between sessions, Jeff Goodman of Curriculum and Instruction entertained students, parents and others with an awe-inspiring science show. Appreciation is expressed to the large number of volunteers who helped make this year's event such a success. Congratulations to the students whose research projects were selected to attend the state level North Carolina Science and Engineering Fair at Meredith College in Raleigh on March 28-29, 2014. The list of North Carolina Fair winners chosen from the ten regional science and engineering fair winners are posted at <http://www.ncsciencefair.org>.

NCCTM MATH CONTEST

The Department of Mathematical Sciences and the MSEC hosted the 2014 Appalachian State University Math Contest for Level 1 and Comprehensive Level on April 1, 2014. Approximately 120 students completed the Level 1 test and 50 students completed the Comprehensive test. Numbers of students participating were down this year and we need your feedback about how to promote the contest to encourage more area students to participate in this opportunity. The contest has been renamed to reflect the NC Common Core curriculum and tests are now offered for Level 1 and Level 2 in addition to Comprehensive Level. Contact Lori Tyler (tylerle@appstate.edu) for more information or plan to participate in the 2015 contest. For more information, visit: <http://mathsci.appstate.edu/news-events/math-contest>.

MATH CAMP TO END

After sixteen highly successful years, the annual Appalachian State University Math Camp will cease to exist. The Math Camp was for rising sixth through twelfth graders "for those who love it, hate it, or can't seem to get a handle on it" and garnered praise from students and parents alike. Dr. Anita Kitchens ably directed the camp for its entire lifetime and always had a highly capable corps of teachers and ASU future teachers to work with students during a week each summer. Math Camp had a positive impact on students' confidence and will be missed for the contributions it made in helping students further their understanding of mathematical thinking. The MSEC is pleased to have been a long-time joint sponsor with the Department of Mathematical Sciences of this exceptional program.



SUMMER VENTURES IN SCIENCE AND MATHEMATICS

We will be celebrating our 30th year of Summer Ventures July 5-August 2, 2014 at Appalachian State University. We will offer five research and demonstration classes for 60 NC rising juniors and seniors this summer. Applications for 2015 are due January 31, 2015 and Lori Tyler, Director, is available for school visits and recruiting beginning in October. Please contact Lori (tylerle@appstate.edu) for further information for your advanced 10th and 11th grade students who are eligible for this highly competitive and cost-free program.

MOUNTAIN SCIENCE EXPO

Six western region 2013 Summer Ventures in Science and Mathematics students presented their research at the Mountain Science Expo on April 5 at the NC Arboretum in Asheville. Summer Ventures students complete a research project during their program and this was a fantastic opportunity for them to present their work. Students participating attended Summer Ventures at Appalachian State University, UNC-Charlotte, and North Carolina Central University.

AMP PROJECT CONCLUDES THIS SUMMER

In its third and final year, the Appalachian Mathematics Partnership has brought teachers together for professional development related to the statistics content of middle and high school course work. Teachers explored the thinking of statistical problem solving and modeling and reflected on their own practices in the classroom. This year, teachers also collaborated in working groups. Some working groups presented at the NCCTM State Conference, and others collaborated in discussing challenges, such as motivating students or responding to the needs of AIG learners in the classroom. The AMP project will conclude its work in early summer, although the momentum of the project will be preserved through its online presence and its collaborations through the Public School Partnership and other structures. In June, sessions on Math 1, 2, and 3 along with eighth grade mathematics will be available for teachers of grades 8-12 in AMP partnering districts. Please visit the site page <http://amp.mathsci.appstate.edu> for more information.

NCCTM NEWS



NCCTM FALL LEADERSHIP SEMINAR AND ANNUAL STATE MATHEMATICS CONFERENCE

The North Carolina Council of Teachers of Mathematics Fall Leadership Seminar will be at the Joseph S. Koury Convention Center in Greensboro, North Carolina on Wednesday, October 29, 2014.

The North Carolina Council of Teachers of Mathematics (NCCTM) 44th Annual State Mathematics Conference will be held at the Joseph S. Koury Convention Center in Greensboro, North Carolina on Thursday and Friday, October 30 and 31, 2014. The program is under development at this time. The deadline for proposals is May 15, 2014. If you would like to speak at the conference, submit a proposal by accessing the online form from: www.tinyurl.com/NCCTM2014.

Watch the NCCTM web site, <http://ncctm.org>, for more information on the Leadership Seminar and Annual State Mathematics Conference.

Put the dates on your calendar! We hope to see you at the Leadership Seminar and State Mathematics Conference in October!

NCCTM WESTERN REGION MATH FAIR

The NCCTM Western Region Math Fair was held on March 22, 2014 at Appalachian State University for students in Grades K-12. The math fair was coordinated by Sumer Inman from North Buncombe High School and Ben Owens from Tri-County Early College. Forty-five ASU pre-service teachers and other volunteers assisted them.

There were 107 projects presented by 126 students from 29 schools. The hard work of the students who participated was evident in the outstanding projects. The students who received First, Second, Third, or Honorable Mention were invited to participate in the NCCTM State Math Fair to be held on May 2, 2014 at the North Carolina School of Science and Mathematics in Durham