

SAVE THE DATE

Oct. 15, 2019-Jan. 15, 2020: SVSM and NCSSM Applications

Jan. 11, 2020: Region 7 Science Fair and Student Academy of Science, Appalachian

March 18, 2020: NCCTM Math Contest, Appalachian

March 21, 2020: NCCTM Western Region Math Fair, Appalachian

April 1-4, 2020: NCTM Annual Meeting & Exposition Centennial Celebration, Chicago, IL

April 1-30, 2020: North Carolina Science Festival

April 2-5, 2020: NSTA National Conference on Science Education, St. Louis, MO

April 23, 2020: NCCTM State Math Contest (Comprehensive), Durham, NC

April 24, 2020: NCCTM State Math Fair, Durham, NC

Oct. 21-24, 2020: NCTM Annual Meeting & Exposition, St. Louis, MO

Oct. 2020, Exact Date TBA: STEAM Expo, Appalachian

TBA, 2020: NCCTM State Math Contest Levels 1, 2, and 3, Asheville, Greensboro, Fayetteville, NC

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MATH AND SCIENCE PROGRAMS FOR TEACHERS AND STUDENTS

MSEC is always pleased to work with school systems to offer programs that meet your specific needs, either on campus or in the schools. Please visit us at msec.appstate.edu.

Contact Leah McManus (mcmanusld@appstate.edu) for further information about these programs.

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Contributors to the Newsletter: Coleman Bailey, Mike Bossé, Tonya Coffey, Betty Long, Leah McManus, John Sevier, Tracey Tardiff, Lori Tyler

Visit us at www.msec.appstate.edu.

NORTHWEST REGIONAL SCIENCE FAIR AND STUDENT ACADEMY OF SCIENCE

The Reich College of Education is again hosting the Region 7 Science Fair. The Fair will be on Saturday, January 11, 2020, in the College of Education Building at Appalachian. Also, the North Carolina Student Academy of Science (NCSAS) competition will take place in the afternoon in the same building. The counties in Region 7 are Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, McDowell, Mitchell, Watauga, Wilkes and Yancey. Coleman Bailey (colemanbailey@averyschools.net) is chairing the 2019-2020 Northwest Regional Science Fair and Lori Tyler (tylerle@appstate.edu) is coordinating the NCSAS competition. Registration fees and other details will be posted on the MSEC website, www.msec.appstate.edu, when they become available. If you are interested in judging, send a note to johnsnpe@appstate.edu.



APP STATE STEAM EXPO

The annual North Carolina Science Festival will take place during the month of April in 2020; however, STEAM Expo will no longer be part of the Festival. After consulting with various groups on campus, Dr. Tonya Coffey and Tracey Tardiff, the co-coordinators of the App State STEAM Expo, have decided to move the Expo to October 2020. STEAM Expo Day with its large number of awesome science and mathematics activities gets more popular each year and draws crowds of excited participants. Tracey Tardiff (tardiffa@appstate.edu) will be in charge of STEAM Expo Day registrations. More information will be on our website in the early spring. Additional information will also be available at <https://ncsciencefestival.appstate.edu/> as it becomes available.

MATHEMATICS EDUCATION LEADERSHIP TRAINING (MELT) PROGRAM

MELT continues to grow. Under the guidance of its director, Michael Bossé, the 2019 MELT Program offered fifteen week-long Summer Institutes providing professional development to K-12 teachers. This provided 435 CEUs and 12 graduate credits to 150 participating teachers.

To best meet the needs of teachers and to address state and national political and educational movements, MELT Summer Institutes change both offerings and curricula every year. New MELT Institutes in Math 4, Desmos, Statistics, Discrete Math, Assessment, and Vertical Alignment are coming for the summer of 2020. In summer 2020, we will be celebrating MELT's 20th Anniversary. We are planning some special events for participants.

The MELT program continues to add to its promotional outreach. This year, we will be partnering with DPI and RESAs in order to extend our reach to even more teachers. The MELT email list stands at almost 40,000 teachers and administrators across the state of North Carolina alone and school district administrators in five surrounding states. This has greatly affected the visibility of MELT.

The Mathematics and Science Education Center looks forward to continuing its long collaboration with and support of MELT to help make the program the best that it can be.

Mathematics and Science Education Center

APPALACHIAN STATE UNIVERSITY®



35 YEARS AND COUNTING

This year, Appalachian State University's Mathematics and Science Education Center (MSEC) celebrates its thirty-fifth year of service to the state. In 1983, the State Legislature approved monetary support for the Mathematics and Science Education Network (NC-MSEN) in North Carolina with a central office in Chapel Hill and nine MSEN centers at strategically placed state universities and one center at the North Carolina School of Science and Mathematics. The primary goal of the centers would be to improve the quantity and quality of mathematics and science teachers in the state with special emphasis on middle schools. Over the past 35 years, Appalachian's MSEC has only had three directors: Dr. William McGalliard, Dr. Steven Dyche, and Dr. Phillip Johnson.

The centralized coordinating office for the NC-MSEN was dissolved in 2010 following a state budget crisis. Following the dissolution of the NC-MSEN, there was a gradual attrition of centers in the state with four of the original centers still remaining joined by the Science House at NCSU. In addition to Appalachian, the other STEM centers still existing are at UNC Charlotte, ECU, and UNC Wilmington. These five centers participate in an unofficial network, discussing issues of common interest and occasionally writing joint grant proposals. The Appalachian MSEC became a part of the Reich College of Education in 2009 after having been in Academic Affairs reporting to the Office of the Provost from its beginning.

Many of you will be familiar with at least some of the MSEC/NC-MSEN sponsored events that have taken place over the years such as, to name a few, Family Math, Family Science, Teach-Stat, Women in Science (middle school), the Middle School Math Project, Math and Science at Camp Broadstone, Using The Catawba Science Center Exhibits as a Science Source, Glaxo Math and Science for Middle and Upper Elementary Grades, Integrating Language Arts with Math and Science, Integrating Social Studies and Science Instruction, Science Eye Hands-On Science with Diane Vaszily, Integrating Special Education with High School Biology, Determining Water Flow and Aquatic Insects as Indicators of Water Quality (grades 8-12), Science Seminars for Teachers, and the Statewide Institute for Teaching Excellence (SITE). There have also, at times, been partner activities with other campuses, two notable ones being From the Mountains to the Oceans (grades 4-8) with UNC Wilmington and Girls on Track with NCSU. Family Math, Family Science, and the science seminars are continuing programs that receive much interest and involve large numbers of participants.

For a more detailed account of the first 25 years of the NC-MSEN, see the twenty-fifth anniversary booklet on our website.

msec.appstate.edu

Fall 2019

DIRECTOR'S FINAL REMARKS

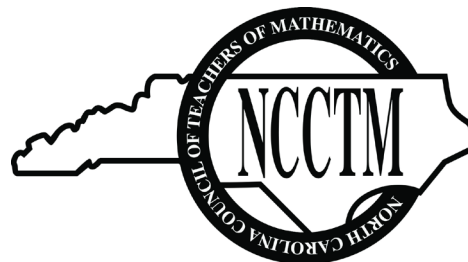


Little did I dream, when I graduated from Appalachian and started my life-long career teaching mathematics, that I would come full circle and end my career at my beloved alma mater. After a few years teaching high school, and faculty appointments, I returned to Appalachian as Director of the Mathematics and Science Education Center in 2004. My long and fulfilling career ended with retirement at the end of 2019. I sincerely appreciate the support the Center has had from Academic Affairs and the Reich College of Education.

The MSEC has been remarkably stable in personnel with only two full-time directors during its 35 years of existence. Special thanks go to Betty Long, who has been assistant director during my entire time here. Special thanks also go to Steve for nurturing the Center in its early years and building it into one of the best in the state. Summer Ventures in Science and Mathematics has had only two directors since its beginning, Bonnie Gordon and Lori Tyler, both of whom have done an excellent job with the program. There have been just three administrative assistants during my time here, Judy Bumgarner, Vickey Isaacs, and Leah McManus, all of whom have done a tremendous job in keeping things running smoothly. I am grateful for the work that all these folks have done for the Center.

Phil Johnson

NORTH CAROLINA COUNCIL OF TEACHERS OF MATHEMATICS NEWS



2019 STATE MATH CONFERENCE

The 49th Annual State Mathematics Conference was held on November 7-8, 2019, at the Koury Convention Center in Greensboro. The theme for the conference was “Developing Mathematical Mindsets for All.” Over 300 sessions and workshops on a wide variety of topics for teachers and other school personnel at all levels were offered. The keynote speakers were Robert Berry, Valerie Faulkner, Grace Kelemanik, Amy Lucenta, Jose Vilson and Ben Orlin. There were lots of exhibitors, an awards celebration, opportunities to network, and much more. This is a wonderful opportunity for teachers and administrators to recharge, network, and continue learning. Visit the NCCTM web site at ncctm.org for more information.

2019 FALL LEADERSHIP SEMINAR

The 2019 Fall Leadership Seminar was held at the Koury Convention Center on Wednesday, November 6. The theme was “Developing Mathematical Mindsets for All,” and the keynote speakers were Zac Champagne, Valerie Faulkner, Grace Kelemanik, Amy Lucenta and Ben Orlin. Visit the NCCTM web site at ncctm.org for more information.

MATH FAIRS

The North Carolina Council of Teachers of Mathematics (NCCTM) sponsors three regional math fairs, and the winners from the three regional fairs are invited to participate in the State Math Fair. Pictures and a list of the winners in the 2019 State Math Fair can be found at ncctm.org. Pictures and a list of the winners in the 2019 Western Region Math Fair can be found at <https://mathsci.appstate.edu/western-region-math-fair>. The 2020 Western Region Math Fair will be held on Saturday, March 21, 2020, at Plemmons Student Union on the campus of Appalachian State University in Boone, and the NCCTM State Math Fair will be on Friday, April 24, 2020, at the North Carolina School of Science and Mathematics in Durham. For more information on the math fairs, go to the NCCTM website, ncctm.org or contact Dr. Betty Long (longbb@appstate.edu). Information on the 2020 fairs and registration forms are posted on the NCCTM website. If you are interested in serving as a judge in the Western Region Math Fair or the State Math Fair, contact Dr. Betty Long at longbb@appstate.edu.

MATH CONTEST

The Department of Mathematical Sciences at Appalachian, in cooperation with the MSEC, will host a regional NCCTM Math Contest for Level 1 and Comprehensive divisions on Thursday, March 18, 2020. Qualifiers for Level 1 will advance to the Regional Finals at UNC-Asheville, and the Comprehensive winners will advance to the State Finals at the North Carolina School of Science and Mathematics. Online registration and additional information can be found on the Department of Mathematical Sciences' website, www.mathsci.appstate.edu/news-events/mathcontest.

COMPUTER SCIENCE OPPORTUNITY FOR TEACHERS

A National Science Foundation grant has been received by Dr. Rahman Tashakkori, chair of the Department of Computer Science, that will provide high school teachers an opportunity to receive training at Appalachian next summer so they can teach AP CS Principles courses at their schools. The project, CS4ALL, is anticipated to begin in mid-June and be a four-week residential, fully-funded program. Teachers will work in the summer institute to establish the course and then teach it during the year. A stipend and housing will be provided for all teachers in the program. Some basic information may be found at cs.appstate.edu/cs4all and more details will be available soon. You may contact Dr. Tashakkori at tashakkorir@appstate.edu.

SUMMER VENTURES IN SCIENCE AND MATHEMATICS (SVSM)

SVSM was held at Appalachian, East Carolina University, UNC-Charlotte and UNC-Wilmington this summer with 225 students attending. Fifty-three students completed the program at Appalachian State University, representing 37 schools from 20 NC counties.

Research classes included:

- Aquatic Ecology
- Biomedical Science
- Exploratory Data Analysis
- Human Physiology in Exercise Science

Students also attended demonstration classes including Computer Filesystems, Critical Thinking, Forensic Science and Physics Phenomena. Faculty, graduate/undergraduate students and teachers from Appalachian and regional high schools as well as SVSM alums taught and/or worked in the residence life program. Read more about the Aquatic Ecology research class at <https://today.appstate.edu/2019/09/10/summer-ventures>.

SVSM is a cost-free, four-week academic program for high achieving, rising high school juniors and seniors interested in STEM. Students apply through CFNC.org for SVSM as well as the NCSSM residential and online programs. Applications are available October 15, 2019 - January 15, 2020.

To schedule an information session at your school, contact Lori Tyler (tylerle@appstate.edu) or view/attend informational webinars. Visit ncssm.edu/admissions/discover.

Learn more at ncssm.edu/summerventures.

SUMMER 2019 SCIENCE INSTITUTES/WORKSHOPS

External funding sources enabled the MSEC to have a robust offering of science workshops in the summer. Our appreciation and congratulations go to Marta Toran of the Department of Geology and Environmental Sciences (GES) for obtaining grants that largely paid for two earth science workshops for elementary and middle school teachers. The EPA-funded Water on the Move workshop provided third, eighth and high school science educators with strategies and materials for teaching water science topics and using real hydrological data in their classrooms. The second edition of the Rockin' NC workshop was once again sponsored by Vulcan Materials and provided classroom kits and stipends for fourth grade teachers to gain more in-depth understanding of rocks and minerals. Due to high demand, the GES department repeated the Rockin' NC Fall workshop in Winston-Salem, in collaboration with Vulcan Materials and Kaleideum North.

In addition to the workshops offered through the (GES), we were fortunate to be selected as a regional center for two workshops by the North Carolina Department of Public Instruction (NCDPI) and one by the North Carolina Science and Engineering Fair (NCSEF). The math and science division of NCDPI presented a workshop in mathematics and another in science. All workshops granted license renewal credits and provided instructional materials for teachers' classroom use, and several gave stipends.

Summary of our educator workshops:

- June 24, “Guiding Student STEM Research,” NCSEF, 19 participants, \$50 stipend
- July 16-17, “Implementing the K-8 Mathematics Standards,” NCDPI, 62 participants
- July 23, “Water on the Move,” Marta Toran (GES), 20 participants, \$50 stipend
- August 1, “Rockin' North Carolina,” Marta Toran (GES), 22 participants, \$50 stipend
- August 6-7, “K-12 Summer Science Institute: School Improvement through Local Curriculum Development,” NCDPI, 27 participants