

STEM MATTERS

Mathematics and Science Education Center

APPALACHIAN STATE UNIVERSITY



DOING STEM IN PERSON...AND SOMETIMES STILL ONLINE

This fall has seen a return to in-person activities in professional development and presentations, and we couldn't be happier. The MSEC has given tours to more than 120 students, provided materials to visiting teachers, hosted the first Science Seminar of the academic year, and seen our partners getting back into action. University students are back on local school campuses, summer camps are being planned, professional development has been ongoing, and the campus is bustling with activity. Looking ahead to the spring semester, we are hopeful for an in-person STEAM Expo on April 28 and a variety of other activities.

Photos: Top - Environmental Sciences students help out at Parkway School's outdoor education areas. Bottom Left - Dr. Tonya Coffey shares a Science Seminar on the physics of Smashing Pumpkins with rubber bands. Bottom Right - Materials from The Lending Library stacked up for teacher check out. Photos submitted. See page 6 for more photos.

WHAT'S NEW?

2

Director Notes

4

Expanding the
Community

5

FOCUS on an Advisory
Board member

7

Save the Date!



FROM THE DIRECTOR

TRACIE MCLEMORE SALINAS

Keep looking up. That's the secret of life.

-- Snoopy (Peanuts character)

It seems each day brings its own challenges lately, whether changing schedules and events, shifts from fact to face to virtual interactions, or the initial peeks at upcoming winter weather. It can be easy to be so focused on these challenges that we overlook the good things that are happening around us.

In the MSEC, this means that our community is expanding with the addition of STEM Ambassadors and Affiliate Faculty. Our collaborations are increasing with groups both on campus and off. Face to face sessions and presentations are returning. Rich conversations have been happening in our book club.

Pumpkins were exploding in our first Science Seminar of the academic year. Even the TEA Fellows returned to campus, continuing a program that for many years has brought teachers from around the world to Boone and partnership schools for a six-week professional development experience.

Looking ahead we are optimistic that the STEAM Expo will return in face to face form in April and that we will have a NC Science Festival with a full roster of events. We have new partnerships unfolding. And with the RCOE initiating its

strategic planning in the spring semester, the MSEC will begin its own long-awaited process to coincide with and be informed by the RCOE strategic plan.

I am looking forward to putting into action what we have learned in recent months and to envisioning what the MSEC should do and be. We have opportunities to be forward thinking and to predict what needs teachers and learners will have as we continue in a hybrid world. I hope you will also join us in this work!

KEY TO INTERACTIVE NEWSLETTER

Throughout this newsletter, if you see the following icons, click on the indicated link for more content.



More written content online. Click the link to read more on this topic.



Video or audio available. Click the link to view or hear additional media.



Click this link for opportunities to volunteer or sign up for events, or connect with someone.

PUBLIC SCHOOL PARTNERSHIP NEWS & OPPORTUNITIES

The Public School Partnership provides a connection across school partners and the varied resources at the university. One opportunity of note is the Principal Fellows Program, a two-year program to prepare outstanding educators to serve as school administrators. The program provides tuition and salary replacement to support candidates in participating. For information, [click here for your designated point person](#).



[Click here](#) to learn more about the Public School Partnership, including its current membership and opportunities to constituent educational partners.



[Click here](#) to view the most recent newsletter of the Public School Partnership, including a form to volunteer for the Program Advisory Team.

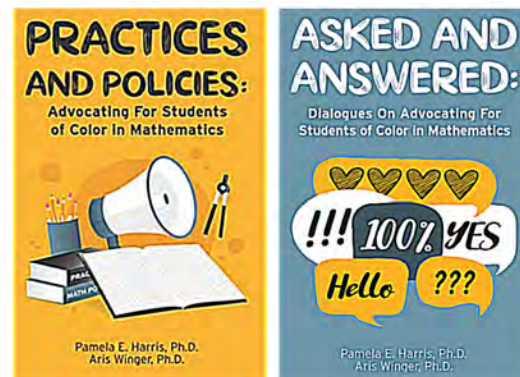
Public School Partnership

APPALACHIAN STATE UNIVERSITY

ASKED & ANSWERED: BOOK CLUB

DISCUSSIONS IN & STRATEGIES FOR ADVOCATING FOR STUDENTS OF COLOR

The MSEC is hosting its second virtual book club this semester focusing on the text *Asked and Answered: Dialogues on Advocating for Students of Color in Mathematics* by Dr. Pamela Harris and Dr. Aris Winger. The discussion group includes elementary, middle school, and high school teachers, university faculty, school administrators, curriculum coordinators, and instructors. The group meets weekly for thought-provoking and productive exchanges on topics related to equity and social justice in the classroom, particularly in the mathematics classroom.



In October the book club hosted a panel discussion with educational leaders from across North Carolina. The panel included:

- **Dr. Dani Parker Moore** - assistant professor of Multicultural Education and director of the Schools, Education, and Society Minor at Wake Forest University. Dr. Parker Moore also serves as the Executive Director of the Wake Forest University Children's Defense Fund Freedom School, a free six-week, literacy-based summer program for rising third through eighth-grade students
- **Dr. Will Sheppard** - assistant director of University Housing and adjunct professor at Appalachian State University. Dr. Sheppard is also the co-founder of the Black Male Excellence Initiative at Appalachian State University.
- **Ms. Susanna Cerrato** - 3rd grade teacher at Ira B. Jones Elementary School. Ms. Cerrato is also the 2021 Burroughs Wellcome Fund Western Regional Teacher of the Year and a founding member of the Jones Social Justice Team and facilitates Jones' Equity Steering Committee, overseeing the creative and implementation of equity coaching and decision making for her school community.
- **Dr. Jamie Lathan** - Interim Vice Chancellor for Distance Education & Extended Programs at the North Carolina School of Science and Mathematics. In this role, Dr. Lathan has worked with and supported various STEM camps for students of color for a number of years.
- **Dr. Amber Smith** - Instructor of Mathematics at the North Carolina School of Science and Mathematics. Dr. Smith's scholarly interests are African American success in mathematics and Critical Race Theory in education, and she has served as an instructor for several summer programs at NCSSM.

In its last meeting, the group was joined by authors Harris and Winger for a rich final conversation and question and answer period. The authors, who also host a podcast titled *Mathematically Uncensored*, pose questions that empower readers to critique their own teaching practices and explore new approaches in the classroom. The authors have also published a follow up book on putting strategies into action titled *Practices and Policies: Advocating for Students of Color in Mathematics*.



To learn more about the *Mathematically Uncensored* podcast, [visit this link.](#)

EXPANDING THE MSEC COMMUNITY

STEM Ambassadors Provide New Connections Across the Region

Direct, consistent connections to teachers are a vital component to enhancing the MSEC's ability to respond to teacher needs in professional development and to provide relevant, engaging opportunities. Recently, the MSEC has begun developing a network of STEM Ambassadors, teachers in STEM fields across schools in the Public School Partnership. With guidance from Betty Long, this group is providing vital feedback to improve communication and program offerings.

Members of the STEM Ambassadors group so far include:

Fred Brown East Burke High School	April Kauffman Northview Middle School	Karen Perry East Wilkes High School	Megan Snyder Burke County Schools
Patricia Fettinger North Wilkes High School	Meredith Madison Watauga High School	Allison Phelps Academy at Middle Fork	Carmen Wilson Ashe County High School
Holly Goforth Freedom High School	Woody Madison Caldwell Applied Sci. Ac.	Kelly Ruff Hickory High School	
Amanda Huffman Maiden Middle School	Clay Nelson Patton High School	Dedra Sain Draughn High School	
Jennifer Hurst Avery County High School	Alana Patterson Watauga High School	Tonya Scott Burke County Schools	



AFFILIATE FACULTY INCREASE CAPACITY FOR OUTREACH, SCHOLARSHIP

Providing increased opportunities for collaboration, the MSEC has named its first cohort of Affiliate Faculty, individuals whose work in teaching, scholarship, and service exemplify the mission of the MSEC. Affiliate Faculty will receive a variety of support from the center and will contribute to programming and other center activities. Affiliate Faculty serve a period of three years with an option to renew and represent a variety of STEM fields. Additional details about Affiliate Faculty is forthcoming on the MSEC website.

Academic Affairs: Mark Ginn

Dept. of Biology: Khadija Fouad, Shea Tuberty

Dept. of Chemistry & Fermentation Sciences: Sammye Sigmann

Dept. of Computer Information Systems: Jason Xiong

Dept. of Curriculum & Instruction: Leslie Bradbury, Chrystal Dean, Jeff Goodman, Lisa Poling, Damiana Gibbons Pyles, Cacey Wells, Ashley Whitehead, Rachel Wilson

Dept. of Geological and Environmental Sciences: Marta Toran

Dept. of Mathematical Sciences: Debbie Crocker, Sarah Greenwald, Eric Marland, Katie Mawhinney, Quinn Morris, Kristen Roland, Joel Sanqui, Erica Slate Young

Dept. of Physics and Astronomy: Thomas Brown, Daniel Caton, Tonya Coffey, Brooke Hester, Carla Ramsdell



FOCUS on an Advisory Board member:

Michael Bossé, Department of Mathematical Sciences

After ten years as the Distinguished Professor of Mathematics Education and Director of the MELT program, Michael Bossé is stepping into a role that will be new for him - that of faculty member. At previous universities, Bossé has long held various roles in program leadership, inservice teacher professional development, researcher, and more. In this FOCUS on an Advisory Board member, Bossé reflects on his ten years with the MELT program, teacher leadership, and what makes Appalachian special.



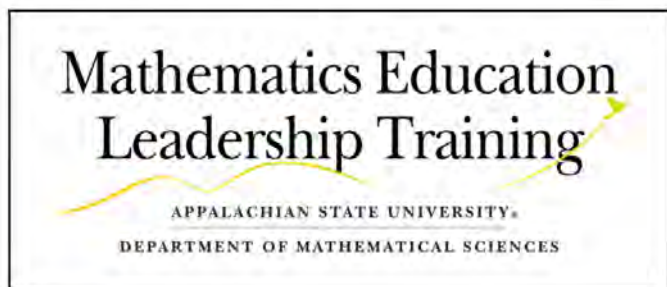
When Bossé and his wife, Rocky - both originally from Millinocket, Maine - arrived in Boone in 2012, they had moved fourteen times, and Appalachian State University was his fifth university of employment. Although familiar with Boone as a frequent vacation destination, they found that moving to Boone "felt like moving home." They quickly became active in the community, the Department of Mathematical Sciences, and their church.

Bossé took on the work of directing the MELT (Mathematics Education Leadership Training) program, a long-standing professional development program that features summer workshops for teachers in mathematics. Having worked in professional development for decades prior, Bossé recognized the unique features of the MELT program, including its location in Boone, the community that has developed around the MELT program, and the dedication that teachers have to it. "What I find amazing is the number of teachers who come year after year and some to multiple institutes each summer. They are not just coming for CEUs [renewal credits for licensure], but they love coming to MELT. MELT has grown to serve over 250 teachers per summer. We are definitely doing something right."

When asked why he believes the MELT program is such a draw for teachers, he points to the sense of family that permeates the university and how that is reflected in the MELT program.

"We have a university that's over 20,000 students, but we have developed an environment here where each student is recognized. It feels more like a family. There is a relationships piece that happens here that doesn't occur at many other universities." That sense of collaboration is reflected in regional schools as well. Bossé notes the sense of togetherness he sees in schools and the high level of teaching talent that is attracted and retained regionally.

Bossé will continue to focus on teaching and continue in his professional scholarship, developing and maintaining research teams, mentoring student research, and providing professional development to regional teachers. Recreationally, Bossé will also continue writing Christian fiction and nonfiction and playing trumpet whenever he can.



For more information about the MELT program [visit this link](#).

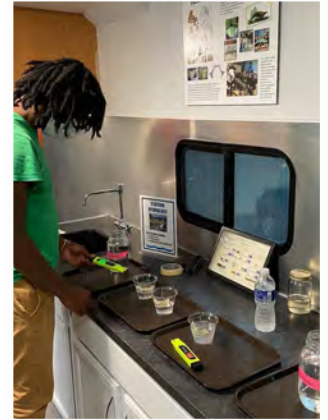


For more information about the Department of Mathematical Sciences, [visit this link](#).

GEOLOGICAL & ENVIRONMENTAL SCIENCES OUTREACH ACTIVITIES

After the mandatory pandemic hiatus, the Department of Geological and Environmental Sciences is once again offering face to face outreach programs to regional schools and continuing to support teachers through material loans and giveaways. The programs are catered to the size of the group and a topic of choice, and they start with the youngest geoscientists (preschool "GeoTots") through elementary, middle and high schools. The department will also continue offering remote classroom speakers and teacher training, as well as mini kits for students doing virtual school.

Have some rocks or fossils you need identified? Bring them to the Answersphere to get them identified! This free geology tutoring service is



open every Sunday through Thursday 5:30-8:30pm in the Geology Teaching Museum in Rankin Science Hall (AppState campus). We are also always happy to help with grant writing, or to collaborate on your project idea. -- *Marta Toran*

Photos, above right - The Geobago Mobile Lab visited Eckerd Connects Academy. Left - Geology major Alex Zacher hosts a Geo Tots event in the Children's Playhouse. Photos submitted.

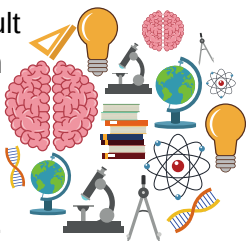


For more information on GES Outreach Programming, [click here.](#)





WHAT IS THE LENDING LIBRARY?

The MSEC has a collection of more than 2000 items available for check-out by teachers, faculty, and university students. Materials include math manipulatives, laboratory materials, robotics, books, and more.

A listing of the inventory can be found on the MSEC webpage, and requests can be made by contacting the MSEC or by coming in to peruse the collection. The MSEC can also arrange a guided tour of the facility for groups of university students and can consult with faculty for ideas on how to use the center and what materials are available. See Leah McManus for info.



Follow our social media accounts be the first to hear about free PD, grant collaborations, Geobago mobile lab visits, free classroom giveaways, etc.

 @appalachiangeology
 @app_earth_sci
 @appalachian_earth_sci
 Or contact Marta Toran
 toranml@appstate.edu

Science/STEM
teachers:

- Need rocks for your classroom?
- Fossils?
- Lesson plans aligned with NCSES?
- Virtual lessons for your class on rocks, minerals or water science?

<http://earth.appstate.edu/outreach>



SAVE THE DATE

Many of the following events will be impacted in delivery method or dates by COVID-19. Click an event to see online information and watch for updates.

Various: Dates for webinars for Summer Ventures program. [Click here!](#)

November 30: Deadline for [SciMatch \(click!\)](#), a program for middle school teachers to invite scientists into their classrooms.

April 2: NCCTM Western Region Math Fair at Appalachian

April 22: NCCTM State Math Fair at NCSSM

April 28: STEAM Expo at Appalachian



PO Box 32091
151 College Street
College of Education
Suite 506
Boone, NC 28608

828-262-3185
msec.appstate.edu

MSEC Director: Tracie McLemore Salinas
salinastm@appstate.edu
Admin. Support Specialist: Leah McManus
mcmansuld@appstate.edu
Assistant Director: Betty Long
longbb@appstate.edu
Summer Ventures Director: Lori Tyler
tylerle@appstate.edu

EVENT INFORMATION

NC S&E FAIR AND NC SAS

The 2022 Region 7 date will be set soon for what will be a virtual competition. As a great opportunity to engage with rich content, the MSEC supports and encourages teachers to support students in developing projects for both the NC Science and Engineering Fair and the NC Student Academy of Science. Lori Tyler is available to answer questions about these events or about student projects. See below for links.



For more information, visit the [NCSEF website](#).



For more information, visit the [NCSAS website](#).



To contact Lori, email tylerle@appstate.edu.

NCCTM AND NCSTA

Like many events, the NCCTM and NCSTA state conferences have changed event formats.

NCCTM presented its virtual Fall Leadership Conference November 8-10. The State Conference will be scheduled as a virtual event for February. Additional details are forthcoming.

The NCSTA Professional Development Institute will be held online on February 15, 16, 17, and 19 featuring three strands for content, Digital Literacy, Blended and Virtual Science Classes, and Environmental STEM Lessons.



For more on the NCCTM Leadership Conference, [visit this link](#).



For more on the NCSTA Virtual Professional Development Institute, [visit this link](#).



Were you forwarded this newsletter but would like to stay in touch? Email Leah at mcmansuld@appstate.edu to receive our newsletter.