



MONTHLY NEWSLETTER

May 2018 | Issue No. 4

The AMSTI-USA Monthly Newsletter is published on the first business day of each month. All issues are archived on the AMSTI-USA Wiki page [HERE](#). For questions or comments, please email Mike Degen at mdegen@southalabama.edu.

From the Director



Over 600 people gathered at AMSTI-USA's site for the STEM Challenge in April.

STEM Challenge Showcases Mobile's Bright, Young Minds



Rachel Broadhead | Director

On Saturday, April 21, AMSTI-USA hosted over 600 students, volunteers, parents and faculty from 12 schools in Mobile county at the AMSTI-USA site in Mobile to participate in an elementary STEM Challenge. Several groups partnered with us for the event including: Dauphin Island Sea Lab who brought their under-water robotic rovers and Touch Lab, MCPSS Environmental Studies center who held sessions in the Star Lab, and Hospitality and Tourism Management students from USA who provided concessions.

The events of the day asked students to demonstrate engineering behaviors while solving STEM-related problems, such as:

Protecting Eggs from Impact

Using only food items, students built a structure to keep a raw egg from breaking when dropped from 25' in the air off of the forklift. Several teams' structures safely carried their egg to the ground and winners were determined by identifying teams that used the fewest number of items and spent the least amount of money on their structure.

Exciting, yet safe, Barbie Bungee

With file-sized rubber bands, teams' Barbie dolls were dropped from a specific height in hopes of getting as close to the ground as possible without hitting it. Students used test platforms that were a fraction of the height of the competition jump to gather data needed to build a bungee for a much taller drop. Each

team entry was filmed in slow motion in order to accurately measure the drop distance. Entries from three teams were so close frames had to be isolated from the replays to determine winners.

Maximum Cargo Penny Boats

Teams each given 5 sheets of aluminum foil for testing their boat designs before building a final competition entry. The challenge was to design a boat that would hold the most pennies without sinking using only one of the given foil squares. During competition students added one penny at a time to their boats!

Pre-competition Robotics Explorations

Students learned to drive and code a variety of elementary robots. Students worked their way through obstacle courses, sample competition mats, and even used the bots for bowling! These activities were designed to build interest and awareness of elementary level robotics opportunities as

we build towards a regional elementary robotics competition.

Our deepest thanks to Mobile County for a remarkable day! Both Mobile County and AMSTI leadership have long wanted to hold an elementary-level science and engineering competition in Region 10. By joining forces and merging dreams, together we were able to deliver on an engaging day for a wide range of stakeholders.

If you're wondering how you can participate, watch our newsletter for more details. We are currently working with more partners to make the next event region wide with the goal of having teams from all 5 southeastern counties compete next year. Professional Learning sessions will be offered to support teachers and principals seeking to build and equip student teams for competition. With professors from the University of South Alabama's STEM programs helping design competition challenges for next year, we are sure the excitement will surpass our first event!

Missing Item Emails



Susan Andress | Business Manager

At the local and state levels, AMSTI is always looking for ways to make our inventory management system more efficient and effective. Having an accurate inventory means we can be more fiscally responsible and plan ahead for upcoming refurbishment cycles allowing us to meet the material needs of our teachers.

In February 2017, the State Department of Education activated an automated email notification system in our database. As we refurbish kits, we scan which permanent/non-consumable items were not returned. The database looks at each line item and its cost. Anything over \$5.00 (or 5 \$1.00-items), the system sends a merged email with the kit and item information.

We understand that mistakes happen and things get broken during instruction. If something is left out or misplaced, simply mail or deliver the item to our warehouse, give it to a specialist, or return it in your next quarter's kit with a note or copy of the email. (This is another reason to inventory your kit upon receipt to let us know beforehand if something is missing.) If you still cannot locate it, forward the email to sandress@southalabama.edu and let me know that it is missing or broken.

Our intention is not for these emails to deter you from using your kit. We find that usually an item was just overlooked while packing. Please make a note of broken or missing items on your packing slip and we can adjust our inventory so no email is sent.

Additional Notes & F.A.Q.

- The email template says the kit is from "last cycle". However, due to our large service area and refurbishing staff of 4, it might be from further back.
- Please forward the email when replying. The system does not send me a copy and this will help me resolve any issues.
- Emails are sent only for "permanent/non-consumable" items (e.g. student guides, hand lenses, funnels) with a barcode starting with a 1. We expect some items in your kit to be used up (e.g. straws, soil, seeds). These items are classified as "consumables" and have barcodes starting with a 2. The system does not send emails for these items.
- You will receive separate emails for each missing item valued over \$5.00.

Important Dates

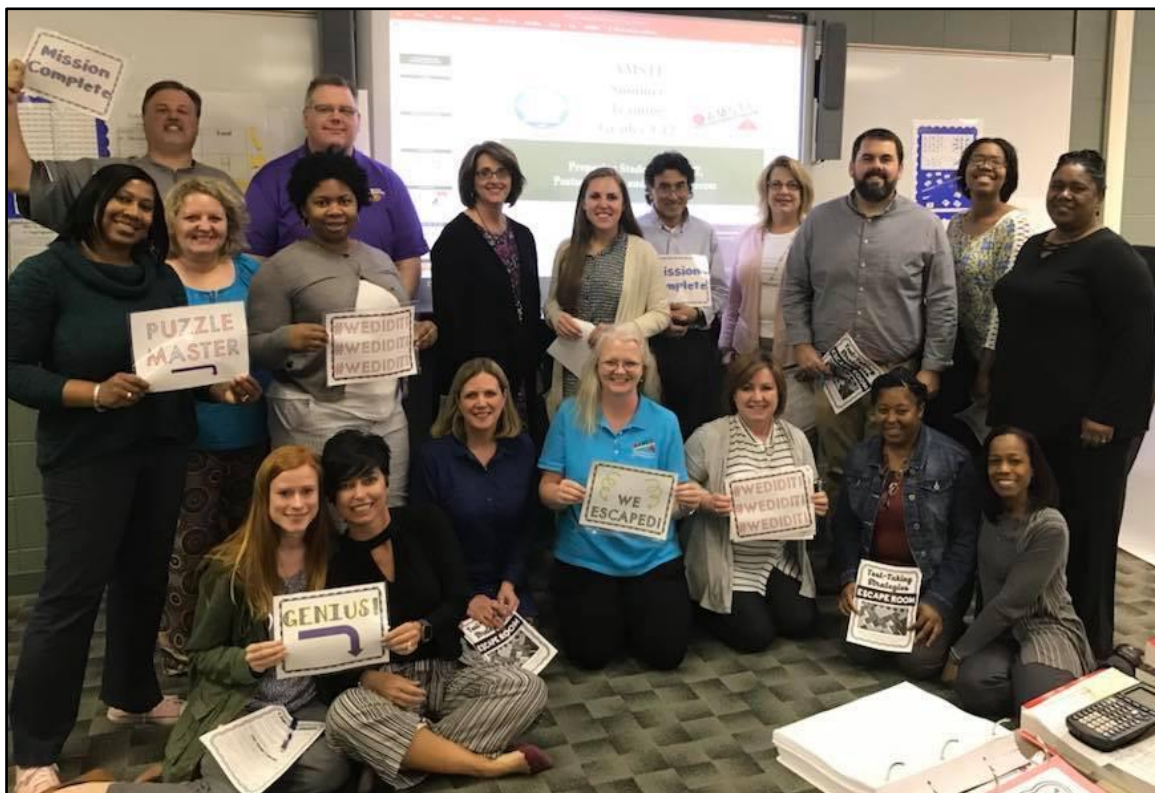
May 1	Deadline for determining session schedules/closures.
May 25	<p>Cycle 4 Online Compressed Training Enrollment is closed. Be sure to have investigations and coursework completed.</p> <p>*NOTE online compressed training is only available to those who have completed Year 1 and Year 2 Summer Institutes. Registration for online training is open year-round HERE.</p> <p>Summer Institute Registration Closes.</p>
June 11 - 22	Summer Institute 2018 at Daphne High School and Baker High School. More information may be found HERE .

Math Highlights

Contents

Preparing for a New Chapter in AMSTI Math

By Elizabeth Hammonds



Secondary school math specialists from across the state of AL gathered in Florence, AL to prepare for upcoming trainings and to review the new AMSTI Math pilot ahead of Summer Institute.

Preparing for a New Chapter in AMSTI Math

By Elizabeth Hammonds

Secondary specialists from across the state met in Florence, Alabama to make final preparations for the upcoming Train the Trainer sessions and the revamped Summer Institute Math pilot.

The middle school training focuses on high quality tasks and purposeful questions, as well as looking at student work to inform the next instructional decisions. The high school training focuses on getting students prepared and ready for post-secondary schooling by implementing higher-order tasks, analyzing student work for understanding and misconceptions, as well as determining next instructional steps.

The 2019 Summer Institute will open Math sessions to all AMSTI schools; so, start preparing now!

Science Highlights

Contents

Middle School Science Opportunities for Teachers
Push and Pull Kits in Action

By Rose Mary Henderson
By Christine Sealy

Middle School Science Opportunities for Teachers

By Rose Mary Henderson

I know most of you are already thinking about STEM camps and things to do this summer so I wanted to pass along a great opportunity for you to be able to prepare. Steve Spangler has a new STEM Lab Deluxe plan that will take all of the planning and most of the prep time out of your hands.

The STEM Lab Deluxe is the perfect collaborative learning experience as the children wonder, discover and explore together.

Here is the link for more information:
<https://www.stevespanglerscience.com/club/stem-lab-deluxe>

STEM Lab Deluxe is a really good way of giving your students the opportunity to engage in science on a whole new level. If you choose to join the science club, you'll receive a box filled with the science tools and resources needed to conduct more than a dozen experiments and take-it-further challenges that combine the perfect mix of critical thinking, tinkering and fun each month.

The step-by-step instructions guide the learner through the scientific method while providing open-

ended activities to promote further learning.

The adult helper's top-secret document contains the science explanation behind all of the experiments and answers to all of the science questions. Best of all, you'll receive helpful tips and suggestions for ways to work with your child to create an unforgettable learning experience.

Check out the great opportunity for the beginning of next year!

Push and Pull Kits in Action



Photo taken with permission by Christine Sealy

In Ms. Stromer's Kindergarten class at J.U. Blacksher, students enjoyed learning from the Push and Pull Science kit. After learning what engineers do, the students engaged in their own engineering assignments, testing and discovering that ramps sometimes need barriers to help stop cars or trucks.



Fossils of the Black Belt – A Hands-On Field Workshop

Where: University of West Alabama in Livingston and vicinity.

Cost: \$28, preregister early

When: Tuesday, October 16, 2018, 8:30 a.m. to 4:30 p.m.

Who Should Attend: In-service and pre-service science teachers who will be teaching earth science or other science courses with earth-science components, life science, biology, and environmental science.

Contact: Dr. David C. Kopaska-Merkel, Phone: 205/247-3695 (office) or 205/246-9346 (cell).
Email: dkm@gsa.state.al.us

Registration Form

Name _____ Position _____ School _____

Address _____
Street/P.O. Box _____ City _____ State _____ Zip _____

Home phone _____ School Phone _____ Email _____

Return registration with payment to Alabama Geological Society, P.O. Box 866184 Tuscaloosa, AL 35486.

Make checks payable to *Alabama Geological Society*.

Workshop Summary

A one-day workshop in paleontology (the study of fossils) for K–12 science teachers (in-service and pre-service). The workshop will help integrate real earth science into curricula. Participants will be better able to recommend meaningful science fair projects in earth science and to assist students with them. Objectives:

- ☐ Participants will learn about fossils and geology, so they will be more comfortable teaching these subjects.
- ☐ Teachers will learn how to recognize evidence of interactions among ancient species.
- ☐ Teachers will receive *Lost Worlds in Alabama Rocks*, a major resource for teaching about the geology of Alabama, and three *Discovering Alabama* DVDs. This course supports Alabama Course of Study/Science Processes and Applications in all grades, high school Geology and Earth & Space Science electives, and life-science concepts at all grade levels.

Alabama is one of the best places in the world to collect fossils. Paleontologists come from all over to collect here.

Workshop participants will visit a large outcrop near Livingston, solve a geological puzzle ("Fossil species interactions") using clues from the fossils found there, and collect fossils, which can include snails, bivalves, shark teeth, or even pterosaurs (flying reptiles). In the afternoon, participants will identify and label fossils that they collected that morning, making kits they will take back to their schools.

Workshop Leaders

Dr. David C. Kopaska-Merkel has studied trilobites and other fossils and has led workshops and field trips for teachers, children, and others.

Dr. Andrew K. Rindsberg teaches courses on geology and environmental science at The University of West Alabama and has written numerous reports on Alabama geology and paleontology.

James Lamb is the leading authority on Alabama vertebrate paleontology. He has worked for four different museums, led many field trips, and authored 30 scientific publications.



Julia S. Tutwiler
College of Education
and College of NSM



ALABAMA TEACHERS CONSERVATION WORKSHOP

July 9-12, 2018
Auburn, Alabama



Connect kids to nature
with Project Learning
Tree's environmental
education curriculum.

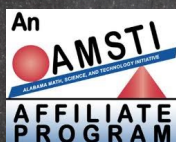
- Learn environmental and economic roles of Alabama's forests
- Experience hands-on environmental training
- Discover correlations to courses of study
- Explore STEM strategies for teaching
- Receive FREE valuable classroom resources
- Network with natural resource and education professionals
- Earn 40 CEUs

Information/registration:

www.plt.org/Alabama

334-481-2137

tcw@alaforestry.org



*Not a teacher but want to
sponsor one? Sponsorships
available at*

www.alaforestry.org/donations