

November 27, 2018

Dear Mathematics Teacher:

For over 50 years, the Mathematics Department at Southern Illinois University has hosted an annual High School Mathematics Field Day competition. This year's Math Field Day will be on Tuesday, **March 19, 2019**. We would like to invite your school to participate along with other high schools from neighboring communities in Missouri and Kentucky that lie within approximately 100 miles of Carbondale, Illinois, excluding St. Louis, Missouri.

The exam will be multiple choice and computer graded. Awards will be given for the winning team in each grade level and division. Trophies will be presented to the winning school in each division. To be fair to the small public schools, private schools with a very selective academically-based enrollment will be invited to compete in the large-school division. This is in keeping with recommendations by the ICTM. Each school will be able to enter up to 32 students with no more than 8 from any one of grades 9, 10, 11 and 12. We will give out freshmen, sophomore, junior and senior awards and schools will compete in three divisions, determined by school size.

Once again on-line registration will be utilized. By Friday, December 14th, you must complete the attendance sheet on a google form using this link <https://goo.gl/forms/62mzizgKuug84Atl1%20>.

In January you will be able to register your students online. After you have informed us that you would like to participate (by completing the attendance sheet), we will give you the registration website and a pin number. You will register under your school code number (more detailed information will come later by e-mail). The website will be secure and is set up for you to change names of students if necessary.

We are very excited to offer the first annual "SIU MFD Workshops". Free pizza and a variety of fun-filled workshops will be offered to students between 11:30 and 2. Students will be able to participate in hands-on activities in a range of areas of their choice in chemistry, physics, geology, mathematics, microbiology, engineering, even linguistics and psychology! Many of the workshops will be using departmental labs to teach students by letting them participate in experiments. See the attached – SIU MFD Sample Workshops. The goal is to introduce students to many great opportunities they can have right here at SIU.

If you plan (at least tentatively) to participate in MFD this year, please fill out the attendance sheet using the google form link above. If you have any questions about the contest, please feel free to call Ron or Kathy at (618) 453-5302 or e-mail mathfd@siu.edu.

Sincerely,

 

Ron Nagrodski
Co-Chairs, Math Field Day

Kathy Pericak-Spector

SAMPLE SIU MFD WORKSHOPS

GEOLOGY

- **MARS EXPLORATION: IS THERE LIFE ON MARS?** During the next two decades, NASA will conduct several missions to address whether life ever arose on Mars. It's possible that life on another planet might be very different. The challenge is to be able to differentiate life from non-life no matter where one finds it, no matter what its varying chemistry, structure, and other characteristics might be. In this workshop we will learn about the ingredients necessary for life, if they have been found on Mars, and what type of life one may find on Mars in the future.
Liliana Lefticariu, Department of Geology, SIUC
- **VOLCANOES IN A DIGITAL SANDBOX.** What are different types of volcanoes and how do volcanoes affect our world? Participants will be learning answers to these questions and will also be modeling a volcano in the digital sandbox.
Caleb Harms, STEM, Department of Geology, SIUC

MATHEMATICS

- **REIMAGING THE PAPER CRANE GAME!** Learn how getting crafty with paper can touch someone's heart or even land you among the stars! See how origami can be used to make compact collapsible solar panels and heart stints while getting a chance to get hands on and try to fold paper all the way to the moon! Experience how mathematics and geometry come together to bring the second dimension into the third by folding your own flowers, animals, and 3D geometric shapes.
William Holt, Math Club; Roshini Gallage, Chathurangi Pathiravasan, AMS Grad Student Chapter, SIUC

PHYSICS

- **MOMENTUM!** Participants in this workshop will experience what it's like to be a physics student. They will be introduced to the theory of conservation of linear and angular momentum and will be able to verify this theory by participating in hands-on experiments based on real labs done by our college students.
Sarah Hagen, Society of Physics Students, SIUC

ZOOLOGY

- **AQUATIC ECOLOGY: A DAY IN THE LIFE OF A FISH.** Water is an important resource for, not only humans, but also every other plant and animal on earth, and the lakes and rivers surrounding us here in Southern Illinois are buzzing with activity. In this workshop, we'll discover the creatures who make water their home, from microscopic organisms to insects to fish and learn about how water quality affects all of these animals. We'll use microscopes and other laboratory equipment to observe these creatures and to determine some characteristics of the water they live in.
Claire Snyder, Zoology, SIUC