

SIU MFD WORKSHOPS
TUESDAY, MARCH 19, 2019

Workshop A

Session A-1 Mathematics – First Mid-Bank Arena Lounge - 12:35-1:05

Title: Fun with Math. Participate in fun games using Mathematics and Geometry to solve the puzzles. Be amazed while printing an object with a 3-D printer. SIU Admissions and Engineering will be available to answer SIU questions.

Mathematics Professors, Jennifer Horton, Morris Library, Admissions, Engineering, SIUC

Session A-2 Engineering – EGRE 215 – 1:15-1:45

Title: Light Math. This workshop focuses on how mathematics helps researchers to understand light phenomena. Laser light will be used in the demonstration of a hologram and an optical fiber.

Mohammad Sayeh, Engineering, SIUC

Workshop B

Session B-1 Psychology – EGRA 322 - 12:35-1:05

Title: The Science of Prejudice. Prejudice permeates all facets of our culture and society. This reality is not surprising, given that humans possess an evolutionary predisposition to favor people who are like them over others. Further, our minds process information in ways that create and reinforce stereotypes, and preferences for our groups over others are cognitively and motivationally intertwined with our identity and self-esteem. These biases often operate undetected and outside of awareness to reinforce systematic disparities. Join us to explore the psychology of prejudice and unearth the hidden biases that exist in all people.

Kathleen Schmidt, Psychology, SIUC

Session B-2 Mathematics – First Mid-Bank Arena Lounge – 1:15-1:45

Title: Fun with Math. Participate in fun games using Mathematics and Geometry to solve the puzzles. Be amazed while printing an object with a 3-D printer. SIU Admissions and Engineering will be available to answer SIU questions.

Mathematics Professors, Jennifer Horton, Morris Library; Admissions, Engineering, SIUC

Workshop C

Session C-1 Medicine – Small Business Development Center 174 – 12:35-1:05

Title: The Art and Science of Histotechnology. Ever wonder how tissues are prepared for microscopic analysis? What is needed to change a biological specimen from an animal or human into a microscope slide that can reveal clues to chemical exposure, trauma, disease or death? Learn how tissue specimens are processed, sectioned and stained to unlock the secrets of cellular structure.

Maureen Doran, Histological Technologist, Saffron Scientific Histology Services, LLC

Session C-2 Psychology – Life Science II 95 – 1:15-1:45

Title: The Basics of Neuroscience. The brain is complex and fascinating! Neuroscience is the study of the brain and its impact on behavior and how people think. Neuroscience affects all human functions and contributes to a better understanding of different conditions such as traumatic brain injury or Alzheimer's disease. A short presentation about neurons, synapses, and regions of the brain and their functions will be a part of this workshop. The workshop will also include an interactive tour of the Operant Learning lab and the Restorative Neuroscience lab. Both labs are neuroscience based and focus on examining treatments for traumatic brain injury. Students will be able to experience different parts of the laboratories by working at different interactive stations.

Jennica Young, Brain and Cognitive Sciences Program, SIUC

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Workshop D

Session D-1 Psychology – Life Science II 95 - 12:35-1:05

Title: The Basics of Neuroscience. The brain is complex and fascinating! Neuroscience is the study of the brain and its impact on behavior and how people think. Neuroscience affects all human functions and contributes to a better understanding of different conditions such as traumatic brain injury or Alzheimer's disease. A short presentation about neurons, synapses, and regions of the brain and their functions will be a part of this workshop. The workshop will also include an interactive tour of the Operant Learning lab and the Restorative Neuroscience lab. Both labs are neuroscience based and focus on examining treatments for traumatic brain injury. Students will be able to experience different parts of the laboratories by working at different interactive stations.

Jennica Young, Brain and Cognitive Sciences Program, SIUC

Session D-2 Plant Biology – Life Science II 449 - 1:15-1:45

Title: Botanical Bioinformatics Workshop. In this workshop, you will explore datasets of plant gene expression in different tissues of a small flowering plant (*Arabidopsis thaliana*). By converting these genes into numbers, we can compare expression across tissues using linear regression and hierarchical clustering. This lets us answer the question "Leaf, stem, root, sepal or stamen, which plant tissue is most like a flower petal?" and get a comprehensive, quantitative answer from the genes themselves.

Matt Geisler, Plant Biology, SIUC

Workshop E

Session E-1 Engineering – EGRA 310 – 12:35-1:05

Title: Egg Drop Challenge. Using a variety of materials, teams will work together to create a method to protect their egg from a high drop.

Marissa Campobasso, President, Society of Women Engineers, SIUC

Session E-2 Mathematics – EGRA 422 – 1:15-1:45

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, AMS Grad Student Chapter, SIUC

Workshop F

Session F-1 Mathematics – EGRA 422 – 12:35-1:05

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, AMS Grad Student Chapter, SIUC

Session F-2 Engineering – EGRA 310 – 1:15-1:45

Title: Egg Drop Challenge. Using a variety of materials, teams will work together to create a method to protect their egg from a high drop.

Marissa Campobasso, President, Society of Women Engineers, SIUC

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Workshop G

Session G-1 STEM Education – EGRD 131 – 12:35-1:05

Title: 3-D Design and Printing. Have you seen 3D printing mentioned in the news or on some of your favorite TV shows and films? Do you have a vague idea of what 3D printing is, but want to learn more? This workshop will teach you what 3D printing is, give you information on basic 3D design, and show you ways your ideas can become reality. STEM fields are embracing 3D design and printing, including mathematics. Complex shapes and formulas can become visual tools to help with research and education. This workshop will show you tools to get you started with 3D design and examples of designs created and printed by SIU faculty and students.

Lingguo Bu, Jennifer Horton, Stefanie Ellis, STEM Education Research, SIUC

Session G-2 Geology – Park 113 – 1:15-1:45

Title: The Eagle has landed: Remembering the Apollo 11 moon mission, 50 years later.

Astronaut Neil Armstrong took humanity's first steps on the moon on July 20, 1969. The Apollo 11, was the first successful manned mission to land on the moon. Since then numerous space missions have been undertaken to study Earth's natural satellite. Learn about past, present and future missions to the moon as well as U.S. plans for use of the moon as a staging point for human flight to Mars and beyond.

Liliana Lefticariu, Department of Geology, SIUC

Workshop H

Session H-1 1:15-1:45

Title: Atomic Force Microscopy

Nathalie Becerra, Department of Chemistry, SIUC

Location: Integrated Microscopy and Graphics Expertise
750 Communications Drive

Session H-2 Physics – Neckers Atrium – 12:35-1:05

Title: Electron and Atomic Force

Dipanjan Mazumdar, Department of Physics, SIUC

Workshop I

Session I-1A Physics – Neckers Atrium – 12:35-1:05

Title: Physics

Dipanjan Mazumdar, Department of Physics, SIUC

Session I-1B Mathematics – 12:35-1:05

Title: Math Puzzles

Dinush, Mathematics, SIUC

Session I-2 Electron and Atomic Force Microscopy – 12:35-1:05

Title: Samples on SEM.

Milinda Wasala, Department of Chemistry, SIUC

Location: Integrated Microscopy and Graphics Expertise
750 Communications Drive

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Workshop J

Session I-1 Automotive Technology –12:55-1:40

Title: Automotive

Mike Behrmann, Automotive Technology, SIUC

Location: Airport Road

Workshop K

Session I-1 Aviation –12:55-1:40

Title: Aviation

Lorielei Ruiz, Aviation, SIUC

Location: Airport Road