

EXPANDING YOUR HORIZONS WORKSHOP CHOICES

NOVEMBER 2, 2024



BIOLOGICAL SCIENCES

- **MICROBES AND US:** Microbes are all around us and they include viruses, bacteria and fungi. In this lab we will explore the microbes. Since they are too small to be seen with a naked eye, we will color them in the lab and observe them under the microscope. We will also collect and grow microbes from our mouths, as well as our hands before and after washing with soap. Will we see any differences? Let's do the experiment!

Vjollca Konjufca, Microbiology, SIUC

CHEMISTRY

- **A DIFFERENT VIEW OF CHEMISTRY: COLOR AND FUN!** *A fun-filled demonstration of food, colors, and flavors through the use of chemistry.*

Annie Vargas-Lizarazo, Department of Chemistry, SIUC

- **MOLECULES, MAGNETS AND MRI – OH MY!:** MRI, or magnetic resonance imaging, can detect tumors, show injuries to soft tissues, and "map" our brains during thinking. Importantly, the signals used to create the MRI images comes from stable atomic nuclei within our bodies, and not from ionizing radiation like x-rays. But then how does an MRI actually "work" to make the pictures and why does it need to make all of those funny sounds? And what do molecules and magnets have to do with it? Students will see how MRI -- and a related spectroscopy called NMR -- actually work. Students will be able to take their own NMR spectra, and MRI scans, of some common everyday items and substances to learn about their internal structures.

Boyd Goodson, School of Chemical and Biomolecular Sciences, SIUC

ENGINEERING AND TECHNOLOGY

- **EGG DROP CHALLENGE:** Using a variety of materials, teams will work together to create a method to protect their egg from a high drop.

Lauren Bray, President, Society of Women Engineers, SIUC

GEOLOGY

- **SPLISH SPLASH – LET'S TALK ABOUT WATER:** Water is everywhere around us and is the most essential element to life. There are many careers that need people with knowledge about water, and all are filled with science and excitement! Learn how water will shape humans' future on planet Earth and about different opportunities for exciting careers in water-related fields. Activities will include demonstrations of water processes that shape the world around us and help participants get some insights in assessing the clean water needs of each of us.

- *Lilliana Lefticaru, School of Earth Systems and Sustainability, SIUC*

COMPUTING

TECH DAWGS: CODING FOR KIDS

- We will be introducing some programming concepts using fun kid-friendly coding tools.

Ryan Uftring, President, Tech Dawgs, SIUC

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- **AUTOMATIC STORYTELLING: USING CODE TO TELL STORIES:** Learn how to program, but with a creative twist! Using the Python programming language and a graphics library, we will cover the basics of programming from variables to loops. Automate the drawing process by writing code that moves your pen across a digital canvas.
Ahyoni Kronwell, President, WiCys, SIUC

MEDICINE

- **THE REALITY OF DENTAL HYGIENE SKILLS IN IMPROVING OVERALL HEALTH:** In this session, participants will experience the following:
 1. Explain the duties of a dental hygienist.
 2. Evaluate dental images and indicate different materials used to restore teeth.
 3. Determine ways to assess patient's oral health conditions.
 4. Work with hands-on activities such as removing "fake" calculus buildup from extracted teeth; and learning how dental sealants are placed on teeth.*Jennifer Sherry, Dental Hygiene, SIUC*
- **UNCOVERING MICROSCOPIC MYSTERIES.** 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, BA, MS, HTL(ASCP), Saffron Scientific Histology Services, LLC

AVIATION

- **FLIGHT SIMULATORS AND A TOUR:** Introduction to aviation through hands on activities such as sims and sectional charts!
Mary O'Neill, School of Aviation, SIUC