

EXPANDING YOUR HORIZONS WORKSHOP CHOICES

OCTOBER 21, 2017



AVIATION

- **AVIATION CAREERS.** Learn about careers in the aviation industry including pilot, weather observer, and aviation maintenance technician. See the university flight training aircraft and get some hands-on experience in a Frasca flight training device.
Lorelei Ruiz, Aviation Management and Flight, SIUC

BIOLOGICAL SCIENCES

- **DNA ANALYSIS.** What is DNA? What information does it encode? How is DNA used in understanding disease and solving crimes? Learn the answers to these questions. In the workshop we will also extract DNA from cells and analyze it.
Judy Davie, School of Medicine, SIUC
- **DENTAL HYGIENE..MORE THAN JUST TEETH.** A career in dental hygiene offers more than working in a dental office. The profession is continuing to expand into research, public health, education, management, and much more. In this workshop, you will be introduced to some daily functions of dental hygienists along with “hands on” experience.
Jennifer Sherry, School of Allied Health, SIUC
- **MICROBES: THE GOOD, THE BAD AND THE UGLY.** Microorganisms, including bacteria; are essential to life on earth. Bacteria are composed of a single cell, yet they are very complex. In our bodies, bacteria outnumber our own cells and help us by making vitamins, and by protecting us from other “bad” disease-causing microbes. Many bacteria can cause diseases in humans and animals; therefore, getting to know the bacteria is important for not only appreciating the good things they do for us, but also for developing therapies against bacteria that cause disease. In the Microbiology workshop, we will learn how to “feed” and grow bacteria. We will also microscopically examine bacteria that are genetically engineered to “glow in the dark”.
Vjollca Konjufca, Microbiology, SIUC

CHEMISTRY

- **THE CHEMISTRY OF COLOR-DYES AND PIGMENTS.** Have you ever wondered why plants are green and the sky is blue? Or know why the leaves change colors from green to vibrant shades of orange and red in the fall? What is the ink in your pen or the color on your shirt made of? Join us for a discussion about the chemistry of natural and synthetic dyes as well as demos featuring a mysterious color changing chemistry experiment and a t-shirt making workshop!
Chelsea Bridgmohan, Chemistry Club, Department of Chemistry, SIUC
- **SIMPLE, HIGH-TECH DEVICES THROUGH LOW COST.** We will demonstrate synthesis of devices using simple, readily available, and low-cost materials. We will also have colorful chemistry demonstrations that utilize common ingredients available in the kitchen. These experiments will provide knowledge on many natural phenomena occurring in nature around you.
Punit Kohli, Department of Chemistry, SIUC

COMPUTER SCIENCE

- **ROBOTICS AND ARTIFICIAL INTELLIGENCE WORKSHOP.** What is artificial intelligence? What is robotics? Are robots intelligent enough these days? This workshop questions what it means to think, what it means to be intelligent, and the difference between natural and artificial intelligence and their relationship with robotics.
Banafsheh Rekabdar, Department of Computer Science, SIUC

ECONOMICS

- **DATA SCIENCE.** Science uses data, and using data to make conclusions, predictions, and decisions is a science in itself. In this workshop young scientists will use R software in the SIUC Economics computer lab to view and analyze data on the toy industry, then make predictions about the industry's future.
Scott Gilbert, Department of Economics, SIUC

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ENGINEERING AND TECHNOLOGY

- **LASERS AND PHOTONICS.** Lasers, polarization of light, and fiber optic cables will be explained and shown in the laboratory. Participants will also view a small laser show.
Mohammad R. Sayeh, Department of Electrical and Computer Engineering, SIUC
- **ANDROID PROGRAMMING WITH APP INVENTOR.** Students will be introduced to concepts for developing applications that run on the Android platform. Students will gain hands-on experience creating mobile applications with App Inventor, an open source visual development tool.
Tom Imboden, Department of Electrical and Computer Engineering, SIUC
- **SLENDER TOWER CHALLENGE.** Teams will build towers out of paper and tape and compete to create the tallest tower that has the smallest footprint.
Delynn Copeland, Society of Women Engineers, SIUC

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

MEDICINE

- **A GOOD HORSE IS NEVER A BAD COLOR.** We know horses can be colors like gray, brown, white and black. And many of us know horses can be spotted, golden or red. But can you get blue, rose, champagne, spotted and striped horses? And what color is a Knabstrupper? A Grulla? A Rabicano? We'll talk about the different colors of horses and some of the genetics behind the unusual colors.
Sandy Shea, Family and Community Medicine, SIUC

PHYSICAL FITNESS

- **YOGA FOR SELF LOVE.** Why is being a woman so powerful? Learn how to shine in your own power you possess. Learn how to create and channel your feminine energy into your career, school, art, etc.
Kennedy Rawlings, Recreational Sports and Services, SIUC

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PSYCHOLOGY

- **KIDS ARE CUTE! BUT HOW DO WE MEASURE THEIR BEHAVIORS?** How do our genes affect our behaviors? What is the difference between MZ and DZ twins? How do we decipher children's behaviors? Discover more about different types of twins, and learn how to code infants' and preschoolers' behaviors during testing and interactions.

Lisabeth DiLalla, Ph.D., Emma Diaz, Matt Jamnick

Departments of Family & Community Medicine and Psychology, SIUC.

- **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, PhD; Jennica Young, MA Psychology, 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.

Elizabeth Patricia Tristano, Zoology, SIUC