

## ANIMAL SCIENCE

- **WHAT IS MAKING MY PET SICK?** Learn how to investigate why your pet is sick by making your own microscope slides, checking the results, and viewing x-rays.  
*Kay Creese, Striegel Animal Hospital*

## ARCHITECTURE

- **WHO IS AFRAID OF SHADE AND SHADOW?** Light is the **fun**-damental element of space. Students will make a 3-D component from a flat piece of paper and learn how to amplify, defuse and articulate the quality of form. Then, as part of one large team, you and all other participants will assemble these components like a jigsaw puzzle. The result will be one large model that will help you to examine how light, shade and shadow affects space.  
*Maria del C. Vera, School of Architecture, SIUC*

## BIOLOGICAL SCIENCES

- **COMPUTATIONAL BIOLOGY IN OUR LIFE.** Female scientists and future female scientific scholars of different backgrounds will take part in this bioinformatics workshop. Professionally, they will showcase their knowledge in this new emerging field, bioinformatics, i.e. utilizing post-genome era data for biological experimental research. Personally, they are representatives of how females chose or are choosing sciences as their profession or future professions  
*Mengxia Zhu, Computer Science, SIUC*

## 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.*

## CHEMISTRY

- **LET'S HAVE FUN WITH CHEMISTRY.** From natural fibers to plastics, polymers are everywhere. Check them out and make your own.  
*Michiko Eberle, Department of Chemistry, John A. Logan College.*
- **BRIGHTER WORLD OF TINY CLUSTERS.** Learn about extremely brilliant fluorescent nanoparticles. Discover how to make them and find out how they are being used for the treatment of cancer and other diseases.  
*Punit Kohli, Department of Chemistry, SIUC.*
- **INDOOR AIR QUALITY, OZONE, & AIR FRESHENERS.** Indoor air quality is negatively affected by the presence of certain contaminants. Sometimes these contaminants can combine to form an additional class of health hazards. In this workshop, students will learn about the effects of ozone, air fresheners, and particulates on health, react ozone with common air fresheners to form particulates, and visualize the particulates in a miniature smog chamber.  
*Kara Huff-Hartz, Department of Chemistry & Biochemistry, SIUC.*
- **ALWAYS WANTED TO BE A CSI???? NOW IS YOUR CHANCE!** Use forensic science to collect and analyze data to help solve a crime the way the real CSI's do. Get a chance to use modern forensic science techniques such as fingerprinting, thin layer chromatography and much more!  
*Robbie Montgomery, Department of Chemistry & Biochemistry, SIUC*

## ENGINEERING AND TECHNOLOGY

- **INTRODUCTION TO ROBOTS.** Program a robot to perform a simple assembly operation. Use a machine vision system (camera) to identify and separate shapes using a robot. Earn how robots are used to make cars, perform surgery, explore space and play musical instruments.  
*Julie Dunston, Department of Technology, SIUC.*

- **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.*
- **INTERNET ACTIVITIES IN MATH, SCIENCE, AND ENGINEERING.** Hands-on workshop to try out the educational and entertaining websites available on the Internet.  
*Virginia Appuhn, Math Teacher, Technology Facilitator, Carbondale Community High School.*
- **MAKING YOUR INVENTION SUCCESSFUL-USE ENGINEERING, SCIENCE, LAW AND GOOD WRITING.**  
An inventor may earn good money from an invention as long as she has a patent for it. The patent needs to describe all ways that the invention will be used so that others won't be able to cash in on the inventor's work. Come examine one recent tasty invention and help figure out how to patent it.  
*Elaine Edelman, Information Management Systems, SIUC*

### **FORESTRY**

- **WET PLANET: EXPLORING OUR WATER RESOURCES.** We will be doing some hands-on activities involving water pollution detection and measurements, along with discussing interesting water phenomena from around the globe.  
*Billy Beck, Department of Forestry, SIUC.*

### **GEOLOGY**

- **EARTHQUAKES IN ILLINOIS.** Southern Illinois has a long earthquake history. Three of the largest earthquakes ever to occur in the U.S. happened during the winter of 1811-1812 just south of Cairo, Illinois. Visit the seismic observatory to learn what researchers are doing to better understand the earthquake threat.  
*Harvey Henson, Department of Geology, SIUC.*

### **MATHEMATICS**

- **INTRO TO GRAPHING CALCULATORS.** Mathematics is so much more than basic computation and calculation of the correct answer. Using a graphing calculator (provided), we will work on problems that help you visualize what your ANSWER represents. No prior knowledge of graphing calculators is required. Each activity will be fully explained as we progress.  
*Brenda Berg, Carbondale Community High School, Math Teacher*

### **MEDICINE**

- **MEDICINE: TOOLS OF THE TRADE.** Discover what doctors are really looking and listening for during a physical examination. Practice using some of the instruments that physicians use in their offices.  
*Sharon Smaga, Family and Community Medicine/Carbondale-SMS, SIUC*

### **PHYSICS**

- **LIGHT ME UP! THE POWER OF ELECTROMAGNETIC FORCES.** From the very composition of all matter and living world around us to fascinating natural phenomena such as lightning and rainbows and the operation of electronic devices, electromagnetic forces constantly manifest themselves in our everyday life. Come to set these forces in action in our hands-on experiments to unveil their extraordinary nature  
*Mercedes Calbi, Department of Physics, SIUC.*

### **PHYSICAL FITNESS**

**PERSONAL TRAINING: THE EXERCISE SCIENTIST.** Learn the basics of fitness and exercise. Heart Rate zones will be calculated and explored, Body Mass Index will be calculated and defined, and current statistics in health and obesity will be discussed. Explore the field of exercise science through physiology, biomechanics, and anatomy.  
*Jacob Clough, Recreational Center, SIUC.*