

# SPOTLIGHT ON MATHEMATICS, SCIENCE, AND TECHNOLOGY

## Presentations for Elementary & Secondary Students

The Millersville University College of Science and Technology is pleased to sponsor "Spotlight on Mathematics, Science, and Technology", an ongoing program designed to **stimulate interest** in mathematics, science, and technology among elementary and secondary school students.

The program, which began during the 1990 spring semester, features **presentations** by University **professors** covering a variety of topics in applied engineering, safety & technology, biology, chemistry, computer science, earth sciences, geography, mathematics, nursing, and physics.

Presentations by our faculty may include scientific **demonstrations**, information on careers, or descriptions of our faculty members' **research** interests. These presentations can enrich your own science classes, and encourage young scholars to consider careers in science.

If you are interested in having one of our faculty speak to your students, please contact the faculty member directly in order to make arrangements for a presentation.



### Topic Areas To Choose From:

- Applied Engineering, Safety & Technology
- Biology
- Mathematics
- Computer Sciences
- Chemistry
- Nursing
- Earth Sciences
- Geography
- Physics



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# SPOTLIGHT ON MATHEMATICS, SCIENCE, AND TECHNOLOGY

## Topic Areas To Choose From:

### Applied Engineering, Safety & Technology

#### Dr. Mark Atwater

- *Materials Science* (7-12)
- *Modern Manufacturing* (7-12)

#### Dr. Sharon Brusic

- *Hydroponics* (7-12)

#### Dr. Mehdi Khalighi

- *Health & Safety* (7-12)

#### Dr. Len S. Litowitz

- *Mechanisms* (6-12)
- *Alternative Energy* (3-12)
- *Building Energy Conservation* (9-12)
- *Basic Electricity* (3-6)
- *Control Logic* (6-8)
- *Trusses & Structures* (3-6)

#### Dr. Scott A. Warner

- *Design Thinking* (6-12)
- *Creativity* (6-12)

#### Dr. John Wright

- *Robotics Demonstrations* (9-12)

#### Dr. Joe McCade

- *VEX Robot* (9-12)
- *Fluid Power* (9-12)

### Biology

#### Ms. Elaine Chrissos

- *What is a Respiratory Therapist?* (7-12)
- *Controlling Asthma* (7-12)

#### Dr. Dominique Didier

- *Sharks!* (1-12)
- *The Science of Taxonomy and Systematics* (1-12)
- *Weird and Wonderful Marine Creatures* (1-12)

#### Dr. Aaron Haines

- *Wildlife* (1-12)
- *Conservation* (1-12)

#### Dr. John Hoover

- *Biology of the Brain* (6-12)

#### Dr. Joel Piperberg

- *Color Vision* (1-12)
- *Steroid Control of Gene Expression* (7-12)

#### Dr. Ryan Wagner

- *Plant-Insect Interactions* (4-8)
- *Plant Physiology/Biochemistry* (9-12)
- *Chemical Ecology* (9-12)

#### Dr. John Wallace

- *Entomology* (10-12)
- *Aquatic Ecology* (10-12)
- *Invasion Ecology* (10-12)
- *Forensic Entomology* (10-12)

#### Dr. Isaac Ligocki

- *The Social Lives of Animals* (1-12)
- *The Fantastic Fish of Lancaster County* (1-12)
- *Behavioral Responses to Human-induced Environmental Changes* (7-12)

### Chemistry

#### Dr. Steven Kennedy

- *Flavors & Smells* (10-12)
- *Medicinal Chemistry* (10-12)
- *Toxicology* (10-12)

#### Dr. Lyman Rickard

- *Chemistry Magic Show* (3-12)
- *Paper Chromatography* (4-8)
- *Properties of Common Chemicals in the Home* (5-8)
- *Oxidation-Reduction Reactions* (9-12)

#### Dr. Kathryn Allen

- *Acid Base Chemistry* (3-5)
- *Polymer Gummy Worm & Volcanic Candy* (6-8)
- *Biodegradable Plastics* (10-12)

### Computer Science

#### Dr. Blaise Liffick

- *Ethics in Computer Science* (7-12)
- *Assistive Technology for Disabled* (7-12)
- *Careers in Computer Science* (7-12)
- *Impact of Technology on Society* (7-12)
- *Human-Computer Interaction* (7-12)
- *Accessibility* (7-12)

#### Dr. Stephanie Schwartz

- *AI/Machine Learning* (7-12)

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## Topic Areas To Choose From:

### Mathematics

#### Dr. Robert Buchanan

- *Cryptography* (7-12)
- *Financial Mathematics* (7-12)

### Physics

#### Dr. Natalia Dushkina

- *Optical Illusions* (7-12)
- *Crusin' On The Wings of Physics* (7-12)
- *Color Formation* (10-12)

#### Dr. Mehmet Goksu

- *Physics Demonstrations* (1-12)
- *Science of Liquid Nitrogen Ice Cream* (1-12)
- *Basics of Photovoltaic System* (1-12)
- *Principal of Wind Turbines* (6-12)
- *Energy Efficiency* (6-12)
- *How to be a Smart Electric Consumer* (6-12)

#### Dr. Sean P. Hendrick

- *Supernova and their Remnants* (6-12)
- *The Solar System* (1-12)
- *Stars & Stellar Evolution* (6-12)
- *A Universe of Galaxies* (6-12)
- *Human Spaceflight* (1-12)
- *The Search for Extra-solar Planets* (1-12)

### Earth Sciences

#### Dr. Richard Clark

- *Air Chemistry* (7-12)
- *Meteorology* (7-12)
- *Astronomy* (7-12)
- *Space Weather* (7-12)

#### Dr. Alex DeCaria

- *Lightning* (1-12)
- *Thunderstorms and Tornadoes* (1-12)
- *Hurricanes* (1-12)
- *Careers in Atmospheric Science* (9-12)

#### Dr. Lynn Marquez

- *Fossils & Geologic Time* (1-12)
- *Plate Tectonics* (1-12)
- *Volcanoes* (7-12)

#### Dr. Robert Vaillancourt

- *Oceanography* (7-12)

#### Dr. Ajoy Kumar

- *Satellites* (1-12)
- *Oceanography* (1-12)

#### Dr. Sam Earman

- *Groundwater* (1-12)
- *Streams* (1-12)

#### Dr. Talor Walsh

- *Mountain Belts/Appalachian Mountains* (1-12)
- *Natural Resources* (7-12)

### Geography

- *Maps & Mapmaking*
- *Geographic Information Systems & Science*
- *Medical Geography*
- *Environmental Resources & Conservation*
- *Climate Change*

All topics can accommodate a K-12 audience. For inquiries please email:  
[geography@millersville.edu](mailto:geography@millersville.edu)

### Nursing

#### Dr. Dawn Lambert

- *Mental Health* (7-12)
- *Health Literacy* (9-12)
- *Healthcare Decision Making* (9-12)
- *Body Systems* (K-12)

