

# Peak Area Leadership in Science

Professional Development Opportunities  
for Secondary Science Teachers

## Three Ways to RSVP:

- [www.sciencehubs.org](http://www.sciencehubs.org)
- email: [RSVP@sciencehubs.org](mailto:RSVP@sciencehubs.org)
- call Tammy Johnnie at  
(719) 337-1552

## “Chemistry of Textiles” and “Chemistry of Fuels”

Saturday, 25 January 2020 8:00 am – 4:00 pm

**USAFA Chemistry Department**

Presented by:



**Dr. Gary Balaich, Dr. Ron Furstenau, and Dr. Abby Jennings**

Participants meet on the south steps of the Cadet Field House for check in at 8 - departure promptly at 8:15; with escort to Chemistry Conference Room (2N189). No late arrivals or early departures allowed.



### Presentations:

“Chemistry of Textiles” - Dr Abby Jennings will talk about how major types of fabrics for textiles are made and dyed. This talk will include a discussion behind the chemistry of fiber synthesis and dye synthesis and selection.

“Chemistry of Fuels”; Dr Gary Balaich will discuss the chemistry behind fuels, including the differences between gasoline, diesel, and aviation fuels, as well as octane number.

### Laboratory Experiments

“Synthesis and Analysis of Fuels”: In this series of labs, participants will synthesize biodiesel and biodiesel petroleum diesel blends. Different techniques will then be used to analyze the fuels, including viscosity measurements, Fourier Transform Infrared Spectroscopy (FTIR), gas chromatography/mass spectrometry (GCMS), and calorimetry.

“Synthesis, Analysis, and Dyeing of Textiles”: In this series of labs, participants will synthesize several polymers, analyze the polymers/textiles using a variety of methods, and dye some fabrics.

**You must RSVP in advance for this workshop. You must present a valid photo ID at the USAFA North Gate for entrance. Meet at the south steps of the Cadet Field House near 8:00 for check-in. We will leave the parking lot promptly at 8:15.**

**Come and update your science content... use state-of-the-art scientific equipment... network with other science teachers... win a door prize... earn professional development hours... have fun !**



**Bring your science notebook! We will provide a notebook for each new participant.**

**Bring your own lunch (Some breakfast items, snacks and beverages will be provided.)**



This workshop is made possible by  
GENEROUS funding from:

**FOUNDATION  
MIKKELSON**

**& The Mikkelson Education Fund**

*Providing Support for Teachers*

*to Improve Technical Knowledge and Skills*

Additional Funding by



USAFA K-12 STEM  
Outreach Program

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in Science**

Check out our website at  
**[www.sciencehubs.org](http://www.sciencehubs.org)**

Photo at top provided by Rose DiCenso.

In compliance with Colorado School of Mines regulations, children of participants may not attend Hub meetings or activities.  
**PLEASE** - If you sign up for this PALS hub meeting and have to cancel, contact TAMMY asap.