

# Using Space Exploration and NASA Activities in the Classroom

## Two-Part Workshop (*Attend one or both*)

Use students' curiosity about space exploration to introduce STEM concepts that can lead to inquiry learning, project-based learning and cross-curricular lessons for all grade levels.

### **Part 1 – They Drink What?!**

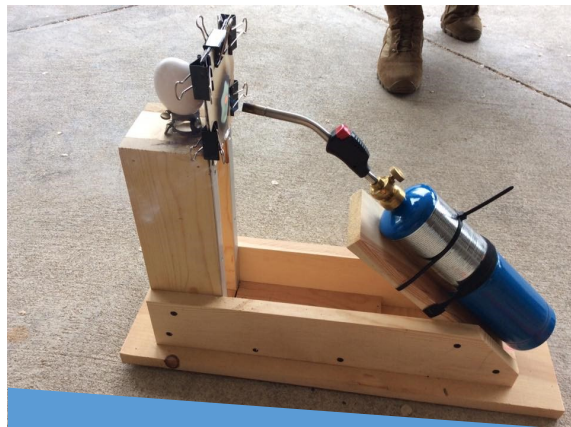
Smoky Hill Education Service Center

605 E. Crawford, St., **Salina** – Tuesday, Oct. 22 (9 a.m. – 3:30 p.m.)

2707 Vine St. Suite 17, **Hays** – Thursday, Oct. 24 (9 a.m. – 3:30 p.m.)

Charter – \$75, Associate – \$90, Non-Member – \$105

Water recycling on the International Space Station provides an introduction to a water filtration and purification engineering activity. Further lessons consider applications in daily lives and investigate water issues in underdeveloped countries. These lessons can be used in high school science classes but are also easily modified for all grade levels and provide connections to social sciences, environmental science and language arts to make a great cross-curricular project. The extreme heat of re-entry on spacecraft will also be used to introduce a heat ablation activity. Using knowledge of conductors and insulators, participants design and construct an ablative heat shield given the choice of a variety of different materials. We will test the designs by cooking (or, rather, trying to *prevent* cooking) a raw egg. Workshop participants receive lessons they can implement easily in almost any classroom setting by using simple, inexpensive grocery-store items.



### **Part 2 – Rockets!!**

Smoky Hill Education Service Center

605 E. Crawford, St., **Salina** – Tuesday, Nov. 12 (9 a.m. – 3:30 p.m.)

2707 Vine St. Suite 17, **Hays** – Thursday, Nov. 14 (9 a.m. – 3:30 p.m.)

Charter – \$110, Associate – \$125, Non-Member – \$140

Explore the world of rocketry! Learn the history of rockets, the role they've played in history, the scientific principles used to launch and control rockets and the current state of rocket technology. We will give guidance to adapt the material for all grade levels and provide connections to the social sciences. Participants will construct several types of rockets, including a simple model rocket. Participants will also receive a model rocket, a launch pad and a controller included in the workshop cost! (Suggested retail price: approximately \$45). The workshop will culminate with a rocket launch, weather permitting. **Please register by Oct. 29 for Salina and Oct. 31 for Hays to ensure we have materials available.** (Registration is still possible after these dates, but we cannot guarantee the rocketry materials still being available).



### Pam Kraus

**Pam Kraus** is the CTE Coordinator and STEM Consultant at SHESC. She has 20 years of experience in the classroom as a high school chemistry teacher. She has presented to educators from around the world at Space Exploration Educators Conference at Space Center Houston and to science educators from Kansas at the annual Kansas Association of Teachers of Science conference. She has trained with Teachers in Space, US Naval Academy SET Sail STEM Academy, Honeywell Educators' Space Academy, AMTA Chemistry Modeling, ChemEd and ASM Materials Science Camp.



- Register online at [register.smokyhill.org/register](http://register.smokyhill.org/register) or contact April Klaus at 825-9185 or [register@smokyhill.org](mailto:register@smokyhill.org)
- Contact Pam Kraus at [pkraus@smokyhill.org](mailto:pkraus@smokyhill.org) with questions.
- Graduate credit through Baker University available for participants attending both parts.