

# ENGINEERING SOLUTIONS PASSPORT



**SEPT. 22**  
THRU **OCT. 1**

**FLAGSTAFF STAR PARTY • SCIENCE IN THE PARK  
ARCHAEOLOGY DIGS • FIELD TRIPS • ROBOTS  
SCI TALKS • NAU SCIENCE & ENGINEERING DAY**

**MORE THAN 100 ACTIVITIES – ALL FREE!**

**PRE-FESTIVAL BONUS**  
**THURSDAY,**  
**SEPT. 21**

**Flagstaff Star Party**  
6- 10 p.m., Thursday,  
Friday, Saturday,  
Sept. 21, 22 & 23  
Buffalo Park

Explore Flagstaff's famous dark skies with astronomers, telescopes and workshops. Presentations at 6 and 6:45 p.m.

**FRIDAY,**  
**SEPT. 22**

**Science of Sports**  
1 - 3 p.m.  
Flagstaff Public  
Library Downtown

Join the Arizona Science Center for a two-day "Science Camp" for ages 7 to 12. Explore how science helps athletes perform. Registration required, call 928-213-2381.

**Flagstaff Star Party**  
6 - 10 p.m.  
Buffalo Park

Explore Flagstaff's famous dark skies with astronomers, telescopes and workshops. Presentations at 6 and 6:45 p.m.

**Campus Sky Viewing**  
7:30 - 10 p.m.  
NAU Campus Observatory

Explore the night skies on a clear night through the Barry Lutz telescope.

**Early Childhood** suitable for preschool to 3rd grade 

**Afterschool Talks** suitable for grades K and up 

**Twilight Talks** suitable for high school and adults 

**Research Innovations** suitable for college students 



**FRIDAY, SEPT. 22**

**W. L. Gore & Associates**  
**Keynote Presentation:**

**ENGINEERING SOLUTIONS**

**Kyle Maynard, Mountaineer**  
**7 p.m., NAU Ardrey Auditorium**

Kyle Maynard has conquered physical limitations to achieve extraordinary goals by climbing some of the world's highest mountains with crampons tailor-made by Kahtoola and Flagstaff engineers. Be inspired by the power of technology, creativity and the human spirit. Presentation follows dance performance. Free tickets at the door for first-come, first served. Or pick up or print out tickets in advance through the NAU Central Ticket Office (nau.edu/cto; 928-523-5661).



**SATURDAY**  
**SEPT. 23**

**Joy Cone Tours:**  
**The Engineering Behind High Altitude Cooking**  
9, 9:30, 10, 10:30 and 11 a.m.  
2843 W. Shamrell Blvd.

See how ice cream cones are made, learn about the chemistry and engineering behind the high-altitude recipe and enjoy a special treat at the end of the tour! Participants must be older than 5. For every two children, at least one adult must be present. Reservations required, flag.tours@joycone.com.

**Plants and Pollinators on the Peaks**  
9 - 11 a.m., Meet at Fort Valley Shopping Plaza to carpool  
Document native plants and insects with the iNaturalist app on a guided hike through Hart Prairie. Understanding pollination systems helps scientists predict how they will respond to climate change. Bring a hat, water, sturdy shoes and smartphone. Reservations required, prc43@nau.edu.

**The Science of Stone Balancing**  
9 a.m. - 4 p.m.  
Willow Bend Environmental Education Center  
Walk through layers of time and see ancient pueblos. Junior Ranger activities are available all day.

**Science in the Park**  
10 a.m. - 2 p.m.,  
Wheeler Park

Meet Arizona's raptors and other creatures. Explore sustainable energy, forensics, robots, DNA, planets and the sun. Get your hands on the tools the scientists use!



**Science of Sports**  
1 - 3 p.m.  
Flagstaff Public Library Downtown  
Join the Arizona Science Center for a two-day "Science Camp" for ages 7 to 12. Explore how science helps athletes perform. Registration required, call 928-213-2381.

**NAU Science and Engineering Day**  
1 - 4 p.m., NAU Science and Health Building  
Dueling robots, hissing cockroaches and engineering solutions will surprise you! Free Parking behind Cline Library.

**Hope and Trauma in a Poisoned Land**  
6 - 8 p.m.  
Coconino Center for the Arts  
Join the reception for an art exhibit that explores the impact of uranium mining on Navajo lands.

**Flagstaff Star Party**  
6 - 10 p.m.  
Buffalo Park  
Explore Flagstaff's famous dark skies with astronomers, telescopes and workshops. Presentations at 6 and 6:45 p.m.

**Northern Arizona Space Training**  
Kevin Schindler  
Lowell Observatory  
William Sheehan,  
Astronomy Historian 7 p.m.  
Riordan Mansion State Historic Park  
Flagstaff played a key role in preparing to send astronauts to the moon. Learn how engineers, geologists and artists joined in the effort.

**Campus Sky Viewing**  
7:30 - 10 p.m.  
NAU Campus Observatory  
Explore the night skies on a clear night through the Barry Lutz telescope.

SUNDAY  
SEPT. 24

**Introduction to Birding**

8:30 – 10 a.m., Riordan  
Mansion State Historic Park  
Learn how to identify birds  
and explore the grounds for  
our avian residents.

**Following the  
Monarch Migration**

8:30 – 11 a.m.  
Red Rock State Park  
Oak Creek provides a flyway  
for migrating monarchs  
stopping for nectar on  
sunflowers and other plants.  
Join the Southwest Monarch  
Study for butterfly netting  
and tagging. Bring water and  
wear sturdy closed-toe shoes  
that can get wet (no sandals),  
long pants and long sleeved  
shirt, hat and sunscreen.  
Participants must complete  
a liability/photo release form  
found at <https://swmonarchs.org/liability-release.pdf>. Bring  
your Festival Passport for  
free admission. Reservations  
required, 928-282-6907.

**Lava River Cave Hike**  
9:30 a.m.

Coconino National Forest  
Step back in time more than  
500,000 years to explore  
lavacicles and splash downs  
in this ancient lava tube. This  
primitive hike totals 1.5 miles  
in the dark. Reservations  
required 928-606-6653.

**Homolovi IV Pueblo  
Guided Tour**

10 a.m., Homolovi State Park  
61 miles east of Flagstaff  
Exit 257 to Hwy 87  
Meet at Homolovi State Park  
and caravan 12 miles (1/4-mile  
is dirt) to a rare view of the  
oldest pueblo. Hike an easy  
1/3-mile walk on uneven  
ground. Reservations required,  
928-289-4106.



**Falconry: The Genesis  
of Raptor Conservation**  
10 a.m. – 1 p.m.  
Picture Canyon

Learn about falconry: the  
history, biology and our  
cultural heritage. International  
Raptor and Falconry Center  
Program includes hands-on  
equipment making and training  
demonstrations with live raptors.  
Best for ages 14 and older.  
Reservations required, [michele@raptorfalconrycenter.org](mailto:michele@raptorfalconrycenter.org)

**Hart Prairie Preserve  
Guided Nature Walk**  
10 a.m., Meet at the Fort Valley  
Plaza Shopping Center, SW  
Corner near the guardrail

Learn about birds, wildflowers,  
forest ecology and The Nature  
Conservancy's work across the  
region during this 90-minute  
walk in an alpine meadow. Bring  
sturdy shoes, sun protection,  
rain gear or jacket. No dogs,  
please.

**Forests, Fires and  
Watersheds Field Trip**  
1:30 – 3:30 p.m.  
Meet at Thorpe Park  
ball-field parking lot

Join the Flagstaff Watershed  
Protection Project team  
and learn about the threats  
our forests face and how to  
protect watersheds and the  
community. Bring hiking shoes,  
weather-appropriate clothing,  
water and your love for nature!  
Reservations required,  
928-213-2500.

**The Science of Star Wars  
Panel Discussion**  
5 p.m., USGS Building 3  
Conference Room

Faster-than-light travel  
and communication,  
megastructures, advanced  
weapons, cybersecurity  
issues, exotic planets and  
aliens, robotics and artificial  
intelligence. Are these Star  
Wars topics really in a  
galaxy far, far away?

**Exotic Ices of the  
Outer Solar System**  
7 p.m.

Riordan Mansion  
State Historic Park  
The NAU Astrophysical  
Ices Laboratory allows us  
to observe the properties  
of exotic liquids and ices  
on outer Solar System  
bodies like Titan and Pluto.  
Find out what this means  
for planetary science.

**Campus Sky Viewing**  
7:30 – 10 p.m.  
NAU Campus Observatory  
Explore the night skies on a  
clear night through the  
Barry Lutz telescope.



MONDAY  
SEPT. 25

**Guided Downtown  
Geology Tour**  
12:45 p.m.

Meet at Mountain Sports  
Explore architectural styles  
and the ancient history  
of stones used to build  
downtown's iconic buildings.  
This 45-minute walking tour  
is based on local author  
Marie Jackson's Stone  
Landmark's book.

**LOCKs Preschool **  
Astronomy

1:30 – 3 p.m., Flagstaff Family  
Food Center, 1903 N. 2nd St.  
Lowell Observatory Camps  
for Kids (LOCKs) Preschool  
introduces young minds to  
astronomy through hands-on  
activities. Parent attendance  
and participation is required.  
For ages 3-5.

**Engineering Work!**  
3:30 – 4:30 p.m., CCC  
4th St., Room B25

The Wonder Factory presents  
pulleys, wind tubes, and other  
projectiles. How do simple  
machines work? How did the  
Wright Brothers learn to fly?  
Appropriate for grades K - 12.  
Reservations recommended,  
[thewonderfactoryflagstaff@  
gmail.com](mailto:thewonderfactoryflagstaff@gmail.com).

**NASA's Cassini Mission:  
The End of an Era in  
Space Exploration **  
4 p.m., Lowell Observatory  
Mike Bland, USGS

After 13 years in orbit around  
Saturn, NASA's Cassini  
mission came to a dramatic  
end this month. Learn how  
the mission revolutionized  
our understanding of Saturn  
and its rings, and discovered  
moons with rivers and seas  
of liquid hydrocarbons, icy  
volcanoes and possibly even  
habitats for life.

**WE NEED YOUR FEEDBACK!**

Scan this code or go to our website, [www.scifest.org](http://www.scifest.org),  
to share your thoughts. Thank you!

**Monarch Butterflies**

Gail Morris



Southwest Monarch Study

5 p.m., Lowell Observatory  
After 13 years in orbit around Saturn, NASA's Cassini mission came to a dramatic end this month. Learn how the mission revolutionized our understanding of Saturn and its rings, and discovered moons with rivers and seas of liquid hydrocarbons, icy volcanoes and possibly even habitats for life.

**Lowell Observatory**

Open House

5 - 10 p.m.

Lowell Observatory

Enjoy a night under the stars!

**Teen Café: Wildlife Inside Out**

Jillian Worssam, FUSD

5:30 p.m., Bookmans, Willow Bend Environmental Education Center

Have you ever wondered how a snake moves or thought about the strength it takes for a whale to breach? Join the Teen Café for pizza and a look inside wildlife. How do feathers work? How does vertebra attach for structure and motion? Be prepared to handle, touch and experience skulls, bones, fur, teeth and so much more!

**Science Book Club**

6 - 7 p.m., Flagstaff Public Library Downtown

Join us as we discuss The Pleasure of Finding Things Out: The Best Short Works of Richard P. Feynman. For more information or to get a copy of the book, stop by the Downtown Library Information Desk or call 928-213-2331. Ages 18+.

**Fiber and Physics**

6 - 8 p.m., East Flagstaff Community Library

Delve into the physics of fiber arts through activities like knitting and crocheting. Ages 8+.

**Ancient Landscapes of Western North America**



Wayne Ranney, Geologist 6:30 p.m., Museum of Northern Arizona

Flagstaff is situated within the North American Cordillera or mountain belt that stretches from Alaska to Mexico. The Cordillera is characterized by some of the continent's highest mountains, deepest canyons and sub-sea-level valleys. Learn how this rich arrangement of landscapes evolved and formed.

**Movie Night: Chasing Coral**

6:30 pm, Sinagua Middle School Mini-auditorium

Coral reefs around the world are vanishing at an unprecedented rate. Divers, photographers and scientists set out on an ocean adventure to discover why the reefs are disappearing.

**Concussion and Recovery: Should We Be Worried**

Emi Isaki, Ph.D., NAU Communication Sciences and Disorders 6:30 p.m.



NAU Cline Library

Learn about the symptoms related to concussion and how they can affect work, school or social activities. Discover what researchers are doing to help patients recover following an injury.

**TUESDAY SEPT. 26**

**Toddler Tales**



11 - 11:30 a.m.

Flagstaff Public Library Downtown

Your toddler will delight in this special time for science-themed stories, songs, games, and more. For ages 2 & 3.

**Hope and Trauma in a Poisoned Land**

11 a.m. - 5 p.m.

Coconino Center for the Arts

This art exhibit explores the impact of uranium mining on Navajo lands and people.

**Digging Up a Dinosaur Brown Bag Lunch**

Christa Sadler, Paleontologist Noon - 1 p.m., CCC Fourth St. Campus Room B25

Touch fossils, handle tools and hear how paleontologists find, excavate, remove and prepare dinosaur remnants.

**LOCKs Preschool Astronomy**



1:30 - 3 p.m., East Flagstaff Community Library

Lowell Observatory Camps for Kids (LOCKs) Preschool introduces young minds to astronomy through hands-on activities. Parent attendance and participation is required. For ages 3-5.

**Fire Science and Nursing Afterschool Workshop**

3:30 - 4:30 p.m., CCC, Fourth Street Campus, Room B25

Practice emergency life-saving techniques and learn firefighting skills.

**Science Challenge**

3:30 - 4:30 p.m., Flagstaff Public Library Downtown

Something scientific this way comes! Work in teams to test your skills in completing our fun building challenges! Ages 8 and up.

**Crafty Corner Science Edition**



Annie Lutes, SWCA 3:30 - 4:30 p.m., East Flagstaff Community Library

Express your creativity with fun STEM crafts that get you thinking. Ages 5-13.

**Beyond the Dorms: Trails in Your Watershed**

4 - 5:30 p.m.

NAU's Reilly Hall Explore the winding Rio de Flag and trails through Sinclair Canyon less than two miles from NAU dormitories. Bring water, a hat, and weather-appropriate clothing. Reservations required, 928-213-2152.

**Saving, Improving Lives Through Engineering**



Patrick Norris and Tim Kelley W. L. Gore & Associates 4 p.m., Lowell Observatory

Find out how W. L. Gore & Associates is engineering medical products that save and enhance lives around the world.



## How a Robot Can Help You Walk

Zachary Lerner, Ph.D., NAU  
5 p.m., Lowell Observatory

In this biomechanics-focused talk, find out about wearable robots and musculoskeletal models to help children with physical disabilities walk.

## Uranium Mining: Environmental and Biological Impacts

Jani Ingram, Ph.D., NAU  
Chemistry & Biochemistry  
5:30 p.m., Coconino  
Center for the Arts

In conjunction with the art exhibition, Hope and Trauma in a Poisoned Land, find out what scientists have learned about impacts from uranium mining.

## For the Love of Rats

Elissa Calloway, Ph.D.  
and Dana Skarra, Ph.D.,  
Senestech  
6:30 p.m., Museum of  
Northern Arizona

You may not consider pests to be elephants, horses, camels, dogs or cats. Find out why the Pizza Rat of New York is the model creature for developing humane animal control technology that could one day help control wild camels in Australia, feral dogs in Russia and prairie dogs in your backyard.

## Movie Night: Hidden Figures and Panel Discussion

7 p.m., NAU Cline  
Library Auditorium

Women and minorities are no longer hidden in STEM fields. Enjoy the movie then hear from female STEM professionals who were inspired by those who smoothed the path for a rewarding career.

Panel members include NAU Evolutionary Biologist Laura Huenneke, NAU Mars Scientist Nadine Barlow, NAU Assistant Professor in Informatics and Computing Temuulen "Teki" Sankey, Kaibab National Forest Archaeologist Margaret Hangan and USGS Environmental Scientist Itiya Aneece.

# WEDNESDAY SEPT. 27

## Toddler Science Program

10 - 10:30 a.m.  
East Flagstaff  
Community Library

Bring your toddler for science-focused stories, songs and games.  
Ages 2 & 3.

## Preschool Express

10:30 - 11 a.m., Flagstaff  
Public Library Downtown

Get ready for surprises and discovery with science-themed stories, songs, games and more. Ages 4-5.

## Hope and Trauma in a Poisoned Land

11 a.m. - 5 p.m.  
Coconino Center for the Arts

This art exhibit explores the impact of uranium mining on Navajo lands and people.

## Engineer Your Own Phone Charger Afterschool Workshop

Ken Meyers, CCC  
3:30 - 4:30 p.m.  
CCC Fourth Street Campus  
(Room B25)

Come prepared to engineer your own personal alternative energy device! The first 20 participants will be given the equipment needed to build their very own solar powered cell phone charger during this hands-on workshop.

## Busy Fingers

3:30 - 4:30 p.m., Flagstaff  
Public Library Downtown

Join us for science-themed stories and crafts. Ages 3 and up.

## Beyond the Dorms: Trails in Your Watershed

4 - 5:30 p.m., NAU's Reilly Hall  
Explore the winding Rio de Flag and trails through Sinclair Canyon less than two miles from NAU dormitories. Bring water, a hat, and weather-appropriate clothing. Reservations required, 928-213-2152.

## Grand Canyon Karst: Science and Exploration Below Our Feet

Ben Tobin, NPS  
4 p.m., Lowell Observatory

Hidden in the walls of the Grand Canyon are countless caves with hidden resources. Explore their hidden wonders!

## The Science and Engineering of Brewing for the 21+ Crowd

4 p.m., Wanderlust Brewing Co., 1519 N. Main St., Ste. 102

Take a guided tour of the Wanderlust Brewery. Learn about the beer making process, including how the ingredients are combined, how the manufacturing process is controlled and how the beers get their distinctive flavors. For those 21 and over, the tap room is available to purchase examples of the fermented and aged.

## Exploring Earth's Hot Spots

Greg Vaughan, Ph.D., USGS  
5 p.m., Lowell Observatory

Tapping into Earth's natural supply of heat is one way to generate clean, sustainable energy. Find out how thermal infrared remote sensing tools are used to study geothermal systems in places like Yellowstone and Mammoth Lakes, Calif. Hear about the delicate balance of using steam to generate electricity without upsetting the water table.

## Family Evening Storytime 6 - 6:30 p.m., Flagstaff Public Library Downtown

Bring the whole family for science-themed stories, songs and activities.

## Worm Composting Workshop 6 p.m., East Flagstaff Community Library

Composting with worms is fun, odorless and produces a great soil fertilizer! Learn how to house, feed and grow worms - you could win a free worm bin!

## Engineering the Climate: Can We? Should We?

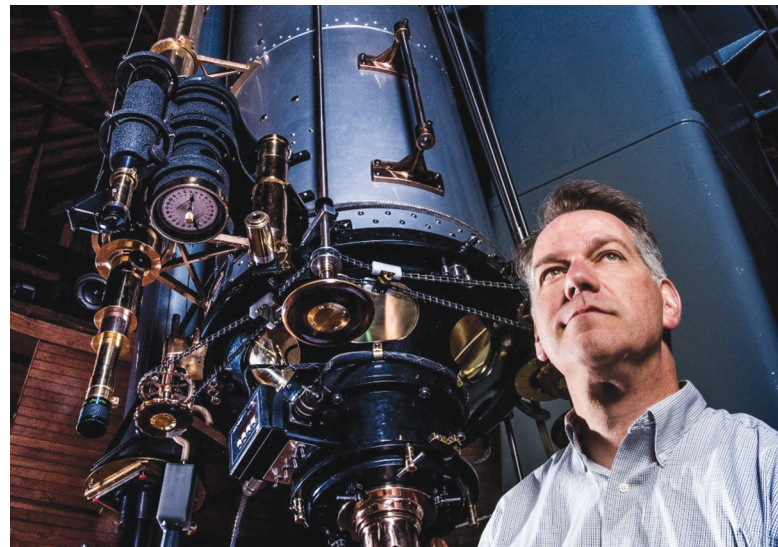
Bruce Hungate, Ph.D.  
NAU, 6:30 p.m.,  
NAU Cline Library

How do people affect the climate? Can we manage it? Should we? Explore the possibilities from energy, to ecology, to engineering.

## All About the Solar Eclipse

Gerard van Belle, Ph.D.  
Lowell Observatory  
6:30 p.m., Museum of  
Northern Arizona

Strange things happen during a rare solar eclipse. Hear an eye-witness account of last month's Great American Eclipse and what astronomers can learn during these cosmic events.



# THURSDAY SEPT. 28

## Preschool Express

10:30 – 11 a.m., Flagstaff Public Library Downtown

Get ready for surprises and discovery with science-themed stories, songs, games and more. For ages 4 & 5.

## Hope and Trauma in a Poisoned Land

11 a.m. – 5 p.m., Coconino Center for the Arts

This art exhibit explores the impact of uranium mining on Navajo lands and people.

## Engineering Solutions of Prehistoric Puebloan Cultures Brown Bag Lunch

Bryan Bates  
National Geographic  
Noon – 1 p.m., CCC Fourth Street Campus, Room B34

Hear about recent findings in local archaeoastronomy and learn how ancestral Puebloan cultures used natural observations to engineer structures.

## Building LEGO® Catapults

3 – 4:30 p.m., East Flagstaff Community Library

You bring the imagination, we'll supply the LEGOs for a fun filled afternoon of creating and building catapults and their targets. Grades K-5.

## Think Like a Scientist Afterschool Workshop

Richard Gaughan  
Science Educator  
3:30 – 4:30 p.m., CCC Fourth Street Campus Room B25

What does it take to be a scientist? First, you need a question. Second, you need to follow evidence to figure out the answer. When you do that, you're a scientist! Ages K-3.

For program updates and changes, visit us on Facebook and [scifest.org](http://scifest.org)

## Mars Rovers: Engineering Marvels, Science Workhorses

Ken Herkenhoff, Ph.D., USGS  
4 p.m., Lowell Observatory

Explore the red planet through Mars Exploration Rovers "Opportunity" and "Curiosity." Find out what scientists have learned from these hard-working vehicles.

## Cline Library MakerLab Exploratorium Kathleen Schmand, NAU 5 p.m., Lowell Observatory

Explore the resources available in the NAU MakerLab. See 3D printing in action, explore how to create circuits, make a button and check out the electronic prototyping kits and 3D scanning available. For ages 6 and up.

## Robotic Martians: Orbiters, Landers, Rovers and Half a Century of Unmanned Exploration

Christopher Edwards, Ph.D.  
NAU 6:30 p.m., NAU Cline Library

Humans have sent an armada of robotic explorers to Mars. These spacecraft have enabled countless scientific discoveries and revealed Mars to be a complex planetary body much like our Earth.

## Rainwater Harvesting Panel Presentation

6:30 p.m., Museum of Northern Arizona  
Coconino Plateau Watershed Partnership  
Presentations and discussions will include the design, installation and maintenance of engineering rainwater harvesting systems for landscaping and potable uses.

## Movie Night: Brave New Wild 6:30 p.m., Sinagua Middle School Mini-Auditorium

This story paints a picture of eclectic climbers from the '50s and '70s and explores their world of risk. Mark Moore, a climber in the film, will introduce the movie and lead the discussion.

## Women in STEM Networking Event 7 – 9 p.m., Firecreek Coffee

Great science comes from collaboration. Expand your professional circle at the Festival's first networking event for women scientists, engineers and physicians working in industry or academia. Get to know your peers in a relaxed and collegial atmosphere. Bring business cards!

# FRIDAY SEPT. 29

## Hope and Trauma in a Poisoned Land 11 a.m. – 5 p.m., Coconino Center for the Arts

This art exhibit explores the impact of uranium mining on Navajo lands and people.

## Recycling Center Tour with Willow Bend 1:30-2:30pm meet at 1800 Butler Ave.

What can and can't be recycled in Flagstaff? A behind the scenes tour of the Materials Recovery Facility (Recycling Center) suitable for all ages. Limited spots, Sign up required ([willowbedcenter.org](http://willowbedcenter.org))

## Fighting Cancer Through Gene Therapy Eli Wallace, Ph.D. Peloton Therapeutics 3 – 4 p.m., NAU's Science & Health Bldg 700 S Osborne Dr.

Find out how Peloton Therapeutics is leading the field in developing biomedical therapies to help genes fight cancerous tumors.

## Family Science Movie: Explorers 3:30 – 5 p.m., Flagstaff Public Library Downtown

Bring a pillow and get cozy for this science fiction classic. Recommended for ages 7 and up.

# SCI TALKS FRIDAY SEPT. 29

6:30 – 8:30 p.m.  
Coconino Center for the Arts

Hear four engaging 15-minute SCI Talks (Science, Communication, Innovation)

**Serendipity in Science: A Mammoth Project**  
David Gillette, Ph.D., MNA

**Unfolding the Meaning of Art: Impact on the Maker, Viewer and Community**  
Ann Collier, Ph.D., NAU

**Using Ancient DNA to Track Plague across the World and Thousands of Years**  
Jason Sahl, Ph.D., NAU


**BASIS Senior Projects: High Achievement Meets Creativity**  
Alicia Vaughan, BASIS

**Whalecome to Studying the Ocean in Arizona**   
Charlie Rolsky, ASU  
Biodesign Institute, 4 p.m.  
Lowell Observatory

Dive in to find out how plastic is threatening the ocean and why marine poop doesn't stink.



**Dissecting 101 Workshop**  
4 p.m., East Flagstaff Library  
Dissect owl pellets, frogs and sheep eyes. All materials are provided. Reservations required, 928-606-6653.

**Forecasting the Improbable: Warning for the Flash**  
Brian Klimowski, Ph.D.   
National Weather Service  
5 p.m., Lowell Observatory  
Local communities were rocked by the tragic loss of life and property from flash floods this summer. How does the National Weather Service forecast the massive flash floods in our area every year? We'll take a close look at the technology and data used to predict such events and investigate how decisions are made to issue the warnings.

**From the Grand Canyon to Dust and Drought**  
Todd Wojtowicz, USGS   
6:30 p.m., Museum of Northern Arizona  
The Southwest Biological Science Center studies water, soil and the Grand Canyon. Catch the highlights!

**CCC Science Celebration**  
5:30 – 7:30 p.m.  
CCC Lone Tree Campus  
Live praying mantises, fruit flies, ladybugs, brine shrimp and isopods are your windows into ecosystem ecology! The first 100 participants to complete all hands-on activities in engineering, biometrics, geology, biology, anatomy, chemistry, and telescope viewing of the night sky will leave with a high-quality magnifying glass.

**Campus Sky Viewing**  
7:30 – 10 p.m.  
NAU Campus Observatory  
If the sky is clear, explore the universe through the Barry Lutz telescope.

## SATURDAY SEPT. 30

**Sunset Crater Volcano National Monument Open House**  
8 a.m. – 5 p.m., Hwy 89  
12 miles north of Flagstaff  
Tour one of the youngest lava flows in Northern Arizona. Enjoy volcano demonstrations and hands-on activities. Junior Ranger activities available all day.

**Walnut Canyon National Monument Open House**  
8 a.m. – 5 p.m., I-40, Exit 204  
Walk through layers of time and see ancient pueblos. Junior Ranger activities available all day.

**Wupatki National Monument Open House**  
9 a.m. – 5 p.m., Hwy 89  
37 miles north of Flagstaff  
Get to know the civilization that farmed and traded in the high desert. Ranger programs and Junior Ranger activities available all day.

**Rock Art Hike**  
9 a.m. – noon  
Picture Canyon Natural and Cultural Preserve Trailhead  
See northern Sinagua petroglyphs and wildlife in this riparian area on a three-mile hike. Bring your hiking shoes, a hat, sunscreen and water. Reservations required, 928-213-2155 or EOKeefe@FlagstaffAZ.gov

**Fort Valley Experimental Forest Station Open House**  
9 a.m. – 1 p.m.  
Coconino National Forest  
Learn about the pioneering history of forest research.

**Volcano Hike**  
10 a.m., Sunset Crater Volcano National Monument  
Join in a two-mile guided field trip into the Volcanology Discovery Hike area. Visit eruption features including the Bonito Lava Flow and hear the story of Sunset Cinder



Cone. Bring water, a hat, sunscreen and sturdy shoes. Reservations required, 928-526-0502.

**Exploring Falconry: A Hands-on Experience**  
10 a.m. – noon  
Arizona Game & Fish Dept.  
Lake Mary Road  
This International Raptor and Falconry Center program encompasses the history of falconry. Learn about biology, governmental policy, history and our cultural heritage. Enjoy hands-on activities, demonstrations and live raptor training in action! No owls will be used. Best for 14-year-olds and older.

**Wupatki Small Tower Discovery Hike**  
10 a.m. – 1 p.m.  
Wupatki National Monument Visitor Center  
Hike with an archaeologist to 800-year-old archaeological sites near the Small Tower House. This backcountry area contains ancient farmsteads dating to the 12th and 13th centuries. Bring water, a hat, sunscreen and sturdy shoes.

**Sustainable Building Tour**  
10 a.m. – 2 p.m.  
Start at Willow Bend  
This self-guided tour features homes and buildings that showcase different approaches for incorporating water conservation, water reuse and rainwater harvesting

for landscaping and/or potable uses. Check out simple do-it-yourself approaches, as well as engineered designs. Tour packets available at Willow Bend the day of the tour.

**Hands-On Archaeology**  
10 a.m. – 3 p.m.  
Walnut Canyon National Monument Visitor Center  
Learn how archaeologists search for sites and analyze artifacts.

**National Weather Service Open House**  
10 a.m. – 4 p.m.  
Camp Navajo Army Depot  
Bellemont, I-40, Exit 185  
Learn how meteorologists forecast Arizona's exciting and challenging weather, and how climate change may impact our future. Witness a weather balloon launch at 1 and 4 p.m.

**Hope and Trauma in a Poisoned Land**  
11 a.m. – 5 p.m.  
Coconino Center for the Arts  
This art exhibit explores the impact of uranium mining on Navajo lands and people.

**Fantastic Voyage**  
Noon – 4 p.m.  
Flagstaff Medical Center  
Take an amazing journey into the inner workings of the human body with this kid-friendly health fair.

### **Big Rad Wolf Theater** 3 p.m., **Theatrikos**

Ever think the wolf has gotten a bad rap? Local students have rewritten folktales and now the wolf is the hero! Enjoy this Theatrikos Theatre Company performance influenced by Grand Canyon Wolf Recovery Project.

### **Science and Policy in Action**

**Rod Parnell, Ph.D.**  
NAU, 7 p.m.  
**Riordan Mansion State Historic Park**

Find out how environmental scientists connect with the public and politicians to promote understanding, trust and informed decisions on complicated issues.



**NAU Parking,**  
Mon. - Thurs.,

**7:30 a.m. - 10 p.m.**

See the NAU campus map at <http://www.nau.edu/maps>. Parking on the NAU campus for events is FREE for the community with a "FestofScience (P13)" parking pass available at the kiosk on Riordan Road near Cline Library (see the Visitor Parking Map at [nau.edu/Parking-Shuttle-Services/Guest-Parking](http://nau.edu/Parking-Shuttle-Services/Guest-Parking)), OR print in advance from home by creating a guest account at [nau.edu/Parking-Shuttle-Services/Guest-Parking](http://nau.edu/Parking-Shuttle-Services/Guest-Parking).

### **NAU Parking, Friday after 4:30 p.m. and Weekends**

Parking is FREE behind Cline library (P13) and other commuter and employee lots (see map above), unless otherwise posted. In addition, \$2 Knoles garage parking will be available for the Keynote Speaker Event on Sept. 22.

## SUNDAY OCT. 1

### **The Arboretum at Flagstaff Fall Open House**

9 a.m. - Noon  
4 miles south on  
**Woody Mountain Road**

Bring the entire family out for a fun, educational experience! Enjoy crafts, scavenger hunts and tours of research gardens and learning centers.

### **Birding for Raptors**

10 a.m. - 1 p.m.  
**Picture Canyon Trailhead**

Hike with the Northern Arizona Audubon Society and look for resident and migrating raptors like red-tailed hawks, northern goshawks and turkey vultures. Bring binoculars, hiking shoes, water, a hat, sunscreen and snacks. Reservations required, [michele@raptorfalconrycenter.org](mailto:michele@raptorfalconrycenter.org)

### **Scenic Science Chairlift**

Starting at 10 a.m.  
**Arizona Snowbowl**

Soar above the forest on the Agassiz Chairlift to 11,500 feet! Meet a Ranger at the top to learn about the visible volcanic field, rare alpine tundra and wildlife of the San Francisco Peaks. Call to reserve one of 50 free chairlift tickets (limit 2 per party), 928-779-1951. For directions and information, visit [www.Arizona Snowbowl.com](http://www.Arizona Snowbowl.com)

### **USGS Open House**

10 a.m. - 2 p.m.  
**2255 N Gemini Dr.**

Enjoy interactive displays and activities related to geology, geography, biology, hydrology, planetary science and mapping.

### **STEM City/NACET Open House**

10 a.m. - 2 p.m.  
**NACET 2225 N Gemini Dr.**

Celebrate STEM City's fifth Anniversary with a STEM-themed cake, learn more about STEM in Flagstaff, take a tour and meet NACET's rising entrepreneurs.

### **Pioneer Museum Open House**

11 a.m. - 3 p.m.  
**Pioneer Museum**

The 1908 County Hospital is a great place to see where history and science meet with exhibits on early medicine and activities showing the science of historic toys and household chores.

### **Nature Walk at Griffiths Springs**

Noon - 2 p.m.  
**Coconino National Forest Griffiths Springs Trailhead**

The Native Plant Society will introduce you to the nature found in one of our precious

riparian areas. Bring sturdy shoes, sun protection, water, snacks and a camera.

### **The Cline Library MakerLab** 3 - 4:30 p.m., **NAU Cline Library MakerLab**

Discover the possibilities of 3D printing and 3D design. Learn the basics and find out about services available in the MakerLab, like how to find existing designs and how to create your own using TinkerCAD. For ages 11 and up.

### **Merging Black Holes**

**Scott Barrows, Ph.D.**  
**Lowell Observatory**  
7 p.m., **Riordan Mansion State Historic Park**

The ability to measure gravitational waves has led to the first detection of a black hole merger. Hear about the technological advances that have allowed astronomers to detect inspiring pairs of black holes in nearby and distant galaxies.

### **Campus Sky Viewing**

7:30 - 10 p.m.  
**NAU Campus Observatory**

Explore the night skies on a clear night through the Barry Lutz telescope.



THE TEN BEST DAYS OF THE YEAR! [scifest.org](http://scifest.org)

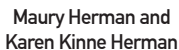
## SUPERNOVA FRIENDS



## GALACTIC FRIENDS



## STELLAR FRIENDS



## PLANETARY FRIENDS

Arizona Snowbowl • Benevity • Coconino Center for the Arts • Coconino Community College • Flagstaff Unified School District • Joy Cone • Pepsi Cola Bottling Co. of Flagstaff • Pilkington Advertising Design • SWCA Environmental Consultants

## COMETARY FRIENDS

Brandon and Mackenzie Lurie • Bryan and Barbara Bates • Byron and Jennifer Hayes • Cornerstone Environmental Consultants • Flagstaff Eye Care • Greg and Alicia Vaughan • M. Klinke • Noah and Debi Stalvey • Paul and Deborah Holbrook • The Kahl Family • The Jim St. Leger Family W. Leibfried Environmental Consultants



For program updates and changes, visit us on Facebook and [scifest.org](http://scifest.org)

