

SEEEO

Space Exploration Educators Conference

OUR DESTINATION BEYOND

FEATURING



SATURDAY SESSION BOOKLET 2018

SPACE
CENTER
HOUSTON

SEEC 2018 GENERAL AGENDA

Wednesday, Jan. 31

2 – 5 p.m. Early bird check-in
Tour the Destination Moon exhibit

Thursday, Feb. 1

7:15 a.m. Check-in begins at Space Center Houston
7:30 a.m. SEEC 101 (A must for all new attendees to SEEC) in the Mission Briefing Center
8:15 a.m. Welcome address and keynote speaker in Space Center - TBA
9:45 – 11:15 a.m. First session (90 min)
11:15 a.m. – 12:15 p.m. Lunch 1 buffet in Astronaut Gallery / NASA and vendor booths in Events Building/Les Johnson book signing at SpaceTrader
11:30 a.m. – 12:15 p.m. * Space Exploration Educator Crews Harmony and Quest overview (45 min)
12:15 – 1:15 p.m. Lunch 2 buffet in Astronaut Gallery / NASA and vendor booths in Events Building
12:30 – 1:15 p.m. * Space Exploration Educator Crew Tranquility overview (45 min)
1:30 – 3 p.m. Second session (90 min)
3:30 – 5 p.m. Third session (90 min)
5:30 – 6:30 p.m. Afternoon Keynote - TBA
6:15 p.m. Dismiss (bus runs begin to hotels)

Friday, Feb. 2

7:30 a.m. Doors open for conference
8 – 9 a.m. Keynote – TBA
9:30-11: a.m. First session (90 min)
11 a.m. – 12 p.m. Lunch 1 buffet in Astronaut Gallery / NASA and vendor booths in Events Building
11:15 a.m. – 12 p.m. * Space Exploration Educator Crews Destiny and Starliner overview (45 min)
12 – 1 p.m. Lunch 2 buffet in Astronaut Gallery / NASA and vendor booths in Events Building
12:15 – 1 p.m. Space Exploration Educator Crew Unity overview (45 min)
1:15 – 2:45 p.m. Second session (90 min)
3:15 – 4:45 p.m. Third session (90 min)
4:45 p.m. Dismiss (bus run begins)
7 – 11 p.m. Banquet, includes dinner and dancing to a live band

Saturday, Feb. 3

7:30 a.m. Doors open for conference
8:00 – 9:30 a.m. First session (90 min)
10 – 11:30 p.m. Second session (90 min)
11:30 a.m. – 12:30 p.m. Lunch 1 buffet in Astronaut Gallery
12:30 – 1:30 p.m. Lunch 2 buffet in Astronaut Gallery
1:45 – 3:15 p.m. Third session (90 min)
3:30 – 4:30 p.m. Featured Speaker in Space Center Theater – Gene Kranz
4:30 p.m. Dismiss, pick up certificates in Zero-G Diner
5:00 p.m. Conference Help Desk closes
7 p.m. Space Center Houston closes

Times and events subject to change

*** See Crew page for information on presentation and regions**



Session Selection

All attendees need to select sessions no later than one week prior to SEEC.

Sessions may be selected from the listings in the conference booklet. NASA tours as well as the hands-on sessions are included in the listings for selection. Please note that the tours fill up quickly. Also, **closed toe shoes are required on all tours!** Session cards will be issued and must be presented to gain access to all sessions. Sign up for sessions at: <http://www.spacecenterprogs.org/seec/seecLogin.aspx>

If a session is full, check with the Conference Help Desk when you arrive to see if there are openings. You can also check session "swap" board located next to the Conference Help Desk for the session ticket.

If you have any questions, please contact us at SEEC@spacecenter.org.

Tips for session success:

- Bring your own device (laptop or tablet) – Many sessions use technology for the session.
- Get to your session on time.
- If your session is at the Gilruth or requires you to take a bus to get to it, make sure you arrive at the bus loading area 10 minutes prior to the session start time.
- Bring a light jacket. Many of our rooms get a little chilly.

Tour Information

Important! Please read carefully.

Your visit to NASA Johnson Space Center is a special event. You will enter working facilities subject to strict safety and security policies. Please follow the direction of your host escort at all times.

It is essential that all members of the group stay together and not venture away from their NASA escort. Wandering into restricted areas constitutes a security violation and could result in the termination of your visit.

Your visit will require walking and standing for extended periods and may involve climbing several flights of stairs. Guests should wear comfortable, flat, fully enclosed shoes (**no high heels, sandals, flip-flops, slides, mules, Crocs, etc.**) during their visit. We also recommend that guests wear slacks (instead of shorts or skirts) as an additional safety precaution.

Cameras are welcome in all facilities unless instructed otherwise. However, flash photography or photography of individuals is not permitted.

Attention all non-U.S. citizens

If you are not a U.S. citizen, you must fill out a NASA JSC Security Form in order to attend the NASA tours. Please go to the [SEEC website](#) for more information and to download the form.



Session Descriptions Saturday, Feb. 3, 2018

Saturday 8 – 9:30 a.m.

21st Century Space Edutainment: "S.T.E.A.M.E.D" in Experiential Learning with Exponential Technologies ***Double session***

Susan Jewel: Mars Academy USA, LLC

Kshtij Mall: Mars Academy USA, LLC

Emmy Jewell: Mars Academy USA

Nicholas Jewell: Mars Academy USA

Join exciting "S.T.E.A.M.E.D" edutainment activities and Analog Astronautics "Train like a Martian" simulation programs and engage in fun, interactive "experiential learning with exponential technologies," such as 3D Printing, Space Health and Wellness and more.

Participants can experience fully immersive Mars simulation missions as a VR/AR Digital Astronaut or as an "in-person" Analog Astronaut in a crew team and conduct Extra-Vehicular-Activities (EVAs) such as Medical EVAs and Geological EVAs.

Grade level: 9-12

Subjects: All

Astronomy Activities for the Classroom

Dave Schlichting: Eaglecrest High School

Teach size and scale to students with activities and models of the solar system. Participate in a kinesthetic activity that simulates moon phases. Learn to build a scale model of the solar system. Build a 3-D model of the Big Dipper. Use Vernier probes to simulate the transits of exoplanets.

Grade level: K-12

Subjects: Science, Math

Bag of Bones: Effects of Spaceflight on the Human Body

Seth Johnson: Stennis Space Center Office of Education

Marci Rogers: Stennis Space Center

Rebekah Blair: Stennis Space Center

Astronauts perform experiments in space, but in many ways, astronauts ARE the experiment. NASA studies the effects of spaceflight on the human body to prepare for future, long-duration spaceflight. This hands-on activity integrates math and critical thinking skills while studying the effects of low gravity on bone mass.

Grade level: 3-12

Subjects: Science, Math, PE

Civil Air Patrol Flights over Houston *Double session*

Susan Mallett: Civil Air Patrol National HQ

Debbie Dahl: Civil Air Patrol

Civil Air Patrol TX Wing Pilots and Flight Team.

Come fly with Civil Air Patrol on a flight over Houston in a prop airplane. Any K-12 educators who are U.S. Citizens can take this flight. Bring your camera and enjoy the flight! You must contact ae@capnhq.gov to register membership with CAP after you register with SEEC for this double session.

Grade level: K-12

Subjects: Science, Math, Technology

NOTE: This is a double session. You will need to sign up for it for the next time slot also.

Colonizing Our Solar System

Joanne Dever: Education Service Center, Region 12; TRC

Science Collaborative; and SC Lee JH, Copperas Cove ISD

Mason Miller: Educator

City planning—on a solar system scale! Students examine characteristics of possible colony locations throughout our solar system, form mission statements, plan colonial demographics and physical design and present their planned colonies. Cross-curricular, including art, writing, public speaking, mathematics, science and government—the sky is no longer the limit!

Grade level: K-12

Subjects: Science, Math, Language Arts, Fine Arts, Social Studies

Differentiated makerSPACE

Shari Thompson: McGregor ISD

Lisa Cisneros: Education Service Center Region 12

Participants will discover the final frontier by exploring the limitless options in STEM fields while promoting inquiry through real-world applications. Investigate planets and design a "bot" to perform a task. Discover how natural differentiation occurs as you create a block diagram to justify and communicate your choice.

Grade level: 6-12

Subjects: All



Saturday 8 – 9:30 a.m. Cont.

Have You Lost Your Marbles?

Jennifer Cheesman: Peoria Unified School District, Peoria, Arizona

Maria Nickel: Educator

Participants will explore the many ways that osmosis, diffusion and surface tension play a role in life both here on Planet Earth and on the International Space Station. Attendees will use jelly marbles to explore the concepts and see how water acts in microgravity.

Grade level: 6-12

Subjects: Science, Math, Technology

If You Plant it...It Will Grow!

Dee Mock: Educator

Christine Graham: McKinney ISD

How will astronauts grow plants on Mars? They've got to get "down and dirt-y!" In this session, participants will learn how scientists are experimenting with various techniques to grow plants in space aboard the International Space Station to prepare astronauts for long duration space travel and life of Mars. They will learn how to create an amazing learning experience for their students as they become planetary geologists and botanists exploring the components of soil, building a greenhouse and planting seeds! Come join this session and use your "Geo-Botany Powers" to grow plants in space! Participants will walk away with Mars simulate samples, a simple greenhouse and radish seeds to create their own Martian garden.

Grade level: 3-8

Subjects: Science, Math, Technology, Language Arts

Launching Literacy into Outer Space *Double session*

Janice Belcher: STEM Lab Teacher Dowell Elementary

Wendy Astin: 5th Grade Advance Content ELA

Dowell Elementary School

Launch your young writers into outer space with integrated language arts, science and technology and art standards. Get your students excited about writing, using technology and art as your vehicle to blast your students' writing into orbit.

Grade level: K-5

Subjects: Science, Technology, Language Arts, Fine Arts

Noctis Landing or Bust! A Martian Coding & Engineering Challenge

Larry Zurcher: Lake Oswego School District

On your way to colonize Mars, your lander's GPS system goes down. You land safely, but you need to get to the colonization site. Use coding and engineering skills to solve problems using Sphero robots and everyday materials. Work the problem in this engineering challenge you can use with your students.

Grade level: 3-8

Subjects: Science, Math, Technology

Overhead Water Rocket Launcher Build

Jeff Herold: Arizona Science Center

Michael Toth: Oakland Ballistics

Not only are water rocket launchers fun to use, but you can build your own with the help of a small team. If your confidence level is in need of a boost, this session is for you! Every rocket launch begins with the launch system. Now, it's time to build your own!

Grade level: 6-12

Subjects: Science, Math

Rockets: Does Size Matter

Colleen Gilchrest, Salado Intermediate School

Engineer your own personalized foam rocket. A friendly competition allows you to determine how the design and size affect flight time, accuracy and distance. Win prizes! Enrichment ideas and lesson extensions included.

Introduction to VR technology. NASA resources will be supplied. Cross curriculum activities will be modeled.

Grade level: K-2

Subjects: Science, Math, Technology, Language Arts, Social Studies, History

STEM Education: SEEC to the Community

Adlena Jacobs: Educator

To infinity and beyond! The Space Educator Expedition Crew took a year with SEEC and decided to make the community their number one priority. Hear ideas and strategies that can give your community the attraction it needs to bring STEM to everyone: STEM activities, explorations, discoveries and partnerships to help the community thrive with STEM.

Grade level: 6-12

Subjects: Science, Math, Technology

Saturday 8 – 9:30 a.m. Cont.

STEM Students Investigate Heat Transfer on the International Space Station

Danny Kim: Quest Institute for Quality Education

Jenko Hwang: Quest Institute for Quality Education

Quest for Space employs the drag and drop programming of LEGO® MINDSTORMS® to automate a science experiment on the International Space Station. Alongside programmers, teams include engineers and scientists building experiments on ground kit hardware. Programs are then uploaded to the Windows 10/LEGO EV3 flight platform onboard the ISS.

Grade level: 3-12

Subjects: Science, Math, Technology, Language Arts

Using Zero-G Miniflights to Prepare Students for ISS Downlink Activity

Dave Dooling: New Mexico Museum of Space History

To prepare for a NASA Downlink with ISS, Alamogordo middle and high school students will develop simple experiments for brief low-g flights aboard a small airplane. The program builds from “The Awful Truth about Zero-G” (SEEC 2017), which teaches the basics of free-fall.

Grade level: 6-8

Subjects: Science, Technology

Voyager: Where No One Has Gone Before

Christopher Mick: Space St. Crox (STEAM 501c3)

The 40th Anniversary of the most amazing unmanned space mission provides an opportunity to celebrate and study the Voyager missions, planet flybys, their design, daring, technological innovation and hope to communicate as Voyager 1 transmits observations back to Earth from more than 20 billion kilometers from Earth.

Grade level: 3-5

Subjects: Science, Technology, Language Arts, Fine Arts, History

What Goes Up - Must Come Down

Nancy Sills: SEEC Crew 2017, Creekside School

How will astronauts land on the Moon or Mars? Come and see how NASA launches and lands spacecraft. Experience the thrill of trying to do the same. Spend time creating and testing a vehicle that will eject a pod that will land on the surface successfully.

Grade level: 6-8

Subject: Science

Tours

Saturn V and Rocket Park Tour

Travel by tram and take a look at our Mercury-Redstone and Little Joe II rockets. Explore the mighty Saturn V rocket that took astronauts to the moon at our own Rocket Park.

Explore the History of Manned Space Flight

Your journey into space begins with a guided tour of Space Center Houston’s Starship Gallery and Space Shuttle Mock-Up. Trace the progression of America’s Manned Space Flight with the actual Mercury “Faith 7” capsule flown by Gordon Cooper, the Gemini V Spacecraft piloted by Pete Conrad and Gordon Cooper, a Lunar Rover Training Vehicle, the Apollo 17 Command Module and the giant Skylab Trainer. Then, explore the Space Shuttle mock-up to find out if you have the right stuff!

Saturday 10 – 11:30 a.m.

Aviation STEM: A Look into the NEW Lone Star Flight Museum

Kenneth Morris: Lone Star Flight Museum

Veronica Leija: Lone Star Flight Museum

Exclusive educator tour of the new Lone Star Flight Museum at Ellington Airport! Come fly simulators while learning how science, technology, engineering and mathematics has evolved and affected travel and humanity. Experience the Aviation Learning Center, only the 2nd like it in the world! All classes are aligned with TEKS and are designed to provide interactive and engaging comprehensive S.T.E.M. learning.

Grade level: K-12

Subjects: Science, Math, Technology, Language Arts, Social Studies

Bringing Galaxies Down to Earth: Hands-On Activities from NASA

Sarah Eyermann: CRESST/UMCP & NASA Goddard Sarah

Mitchell: CRESST/UMCP & NASA Goddard

What’s our place in space? Get the facts about our home, the Milky Way galaxy and other galaxies in the universe! Try out hands-on activities and take home NASA galaxy resources that you can use with students in grades 6 and up—in the classroom or in out-of-school time.

Grade level: 6-12

Subject: Science



Saturday 10 – 11:30 a.m. Cont.

Civil Air Patrol Flights over Houston Double session cont.

Susan Mallett: Civil Air Patrol National HQ

Debbie Dahl: Civil Air Patrol

Civil Air Patrol TX Wing Pilots and Flight Team.

Come fly with Civil Air Patrol on a flight over Houston in a prop airplane. Any K-12 educators who are U.S. Citizens can take this flight. Bring your camera and enjoy the flight! You must contact ae@capnhq.gov to register membership with CAP after you register with SEEC for this double session.

Grade level: K-12

Subjects: Science, Math, Technology

NOTE: This is a double session. You will need to sign up for it for the next time slot also.

Family Space Night Presented by Your Students

Stephanie Hanover: Allen Academy

Family space night—the power of students teaching students about the wonders of space! Discover over 20 out-of-this-world booths and activities that make learning all about space a blast! Designed to allow 8th graders and up to teach younger students K-8th grade.

Grade level: 6-8

Subjects: Science, Technology

Integrated Engineering and Planetary Science Activities for Out-of-School Time Programs

Lori Rubino-Hare: Northern Arizona University Center for Science Teaching and Learning

Joelle Clark: Northern Arizona University Center for Science Teaching and Learning

Team up for a space exploration engineering challenge! Experience the intersection of planetary science and engineering design with NASA-funded, PLANETS Engineering Everywhere free curriculum and related science extension activities. Challenges are research-based and build confidence, enthusiasm and engagement in middle school learners. Educator support materials will also be shared.

Grade level: 3-8

Subject: Science

Launching Literacy into Outer Space Double session cont.

Janice Belcher: STEM Lab Teacher Dowell Elementary

Wendy Astin: 5th Grade Advance Content ELA Dowell Elementary School

Launch your young writers into outer space with integrated language arts, science and technology and art standards. Get your students excited about writing, using technology and art as your vehicle to blast your students' writing into orbit.

Grade level: K-5

Subjects: Science, Technology, Language Arts, Fine Arts

Mars: Manifest Destiny

Dr. Norman "Storm" Robinson III: Illinois Mathematics and Science Academy

Patrick Young: Illinois Mathematics and Science Academy
Participants explore activities that challenge students to plan a permanent, sustainable colony on Mars. By exploring gravity, orbital mechanics, environmental conditions and spaceflight hardware currently in development, you will use design principles to propose spaceflight hardware and apply project management techniques to develop mission architecture.

Grade level: 6-8

Subjects: Science

Microgravity's Impact on the Human Eye, Digestive System and Flames

Dr. Craig Wilson PH.D, Director USDA Future Scientists Program & Senior Research Associate Center for Mathematics and Science Education (CMSE) College of Science, Texas A&M University

This is an energetic session with simple hands-on, minds-on activities to engage all of your students' senses to allow them to make sense of the human eye, cellular respiration, digestive system, states of matter and flames—all related to space or lack thereof.

Grade level: K-12

Subjects: Science, Math, Language Arts

Mystery Landscapes to Apps: Creating 3D Maps in the Classroom

Kacera Yoes: NASA OSGC MTPE Mentor; Yukon Middle School

Josh Encinas: NASA OSGC MTPE Class of 2015 Ambassador; Cushing High School Science Educator

Bring the art of topography and topographical maps to life in your classroom through hands-on STEM-based activities! Activities will include mapping mystery landscapes and mashed potato landscapes captured in digital 3D form using an iPad App!

Grade level: 6-12

Subjects: Science, Math, Technology

Saturday 10 – 11:30 a.m. Cont.

NASA Network of States Presents: Staying Safe in Space – Impact Testing for Spacesuits

Mike McGlone: JSC Education - NASA STEM Pathways

Activities - Consortium for Education

Crystal Del Rossa: JSC Education - NASA STEM Pathways

Activities- Consortium for Education

JSC Education - NASA STEM Pathways Activities- Consortium for Education

How does NASA keep astronauts safe? During this session, you will learn about NASA Network of States and experience a hands-on, TEKS aligned lesson on testing spacesuits for potential micrometeoroid impacts. Key topics will include potential and kinetic energy, force and motion, the space environment and engineering design.

Grade level: 6-12

Subjects: Science, Math

Orion Splashdown: Quest for the Engineering Design Process

Katrina Roddenberry, Becky Busby, Stacie Pottenger, Jessica Strauss, Valeria Rodriguez and Mary Vaughn: Space Educator Expedition Crew

Join the SEEC Quest Crew in exploring the Engineering Design Process and using it to solve an Orion spacecraft design challenge. Participants will design and create a watertight spacecraft that will protect the team's astronaut from water infiltration. Requirements will include meeting set parameters and constraints. This lesson teaches students to think like engineers using easily obtainable materials.

Grade level: 3-8

Subjects: Science, Math, Technology

SimEVA

Michael Wilkinson: Fieldston Lower School

Ben Honey: NASA, MCC JSC

Leah Honey: NASA, JSC

Join this simulated spaceflight mission and experience first-hand the roles of ground and flight crews. Practice and develop your teamwork, problem solving and communication skills. This workshop will be joined and supported by real flight controllers from JSC MCC.

Grade level: K-12

Subjects: Science, Math, Technology

Space Sensors, CubeSats and Collecting Data in the Classroom

Nathan Tubbs: PS/IS 30 Brooklyn, NY & SEEC Crew

Ben Neswender: Because Learning, Director of Learning
As STEM becomes a focus in many schools, Arduino-based coding has become valuable, yet many educators do not know where to begin. Come learn how to incorporate Arduino and "Space Sensors" into your lessons to collect and display data. Practical, hands-on experience will be offered, and door prizes will be presented.

Grade level: K-12

Subjects: Science, Technology

Space University

Dave Brown: Space Center Houston

Kaci Heins: Space Center Houston

Space Center University is a five-day engineering design program offered to middle, high and college students. We promote teamwork, problem solving and communication that focuses on simulated missions to the moon and Mars. Learn how students design and build rockets, heat shields, cryogenic chambers, robots and more! Try some of our activities and plan your visit to Space U!

Grade level: 6-12

Subjects: Science, Math, Technology

STEM: The Final Frontier

Jeanine Wolf: Education Service Center Region 12

Lisa Cisneros: Education Service Center Region 12

Fly away into the Final Frontier on a STEM adventure through our solar system! Learn how Math, Science, Technology, Reading, Writing and History all travel seamlessly together in a true STEM learning experience. Do you want to explore best practices and integration? This session is for YOU!

Grade level: K-12

Subjects: Science, Math, Technology, Language Arts, Fine Arts, History



Saturday 10 – 11:30 a.m. Cont.

Using the High Definition Earth Viewing to Teach Literacy

Michelle Mohrweis: Amphitheater Middle School

Want to incorporate more science into your classroom, but don't have enough time? Use the ISS to teach literacy! Learn how to use NASA's HDEV (High Definition Earth Viewing) experiment to encourage more reading and writing in your classroom. There will be handouts, activity examples and an ISS-Above giveaway.

Grade level: K-8

Subjects: Science, Technology, Language Arts

Tours

Saturn V and Rocket Park Tour

Travel by tram and take a look at our Mercury-Redstone and Little Joe II rockets. Explore the mighty Saturn V rocket that took astronauts to the moon at our own Rocket Park.

Explore the History of Manned Space Flight

Your journey into space begins with a guided tour of Space Center Houston's Starship Gallery and Space Shuttle Mock-Up. Trace the progression of America's Manned Space Flight with the actual Mercury "Faith 7" capsule flown by Gordon Cooper, the Gemini V Spacecraft piloted by Pete Conrad and Gordon Cooper, a Lunar Rover Training Vehicle, the Apollo 17 Command Module and the giant Skylab Trainer. Then, explore the Space Shuttle mock-up to find out if you have the right stuff!

Saturday 1:45 – 3:15 p.m.

Aviation STEM: A look into the NEW Lone Star Flight Museum

Kenneth Morris: Lone Star Flight Museum

Veronica Leija: Lone Star Flight Museum

Exclusive educator tour of the new Lone Star Flight Museum at Ellington Airport! Come fly simulators while learning how science, technology, engineering and mathematics has evolved and affected travel and humanity. Experience the Aviation Learning Center, only the 2nd like it in the world! All classes are aligned with TEKS and are designed to provide interactive and engaging comprehensive S.T.E.M. learning.

Grade level: K-12

Subjects: Science, Math, Technology, Language Arts, Social Studies

A View of Our Earth From Above

Dorinda Risenhoover, NASA Oklahoma Space Grant Consortium

Miranda Hannon, NASA OSGC MTPE Class of 2017-2018

Soar above the Earth and view our world from a distance through this hands-on STEM-based remote-sensing workshop! Activities will include creating 3D topo maps, viewing the Earth using aerial and satellite imagery and more. All participants will receive aerial and satellite images for their classroom!

Grade level: 3-8

Subjects: Science Technology

Good Heavens the Time!

Sharon Rigsby: Beaumont ISD

Lisa Stewart: Beaumont ISD

Nine activities/models that keep the curiosity alive. We'll make easy, inexpensive models to help students understand the movements of heavenly objects and what they have to do with time. Included in the session are observation programs that encourage the whole family to look up! Download the free Aurasma App for one of the activities.

Grade level: K-8

Subjects: Science

Gravity: The Law, the Theories, the Demonstrations!

Lauren Lykins: Carlisle High School

Charla Nicholas: Carlisle High School

From Newton's Law of Gravity to Einstein's Theory of Gravity, this session will discuss and model the effects of gravity on planetary motion. This session will also discuss and demonstrate microgravity through a series of demonstrations and activities.

Grade level: K-12

Subjects: Science, Math, Technology

Improving Performance of Gliders through Engineering

Cindy Hasselbring: Aircraft Owners and Pilots Association

This presentation will help participants experience the engineering design process by modifying balsa wood gliders. Participants will be given flying challenges, make modifications to their gliders and test them. Additionally, participants will learn about free, comprehensive high school aviation STEM curriculum in three career pathways: pilot, aerospace engineering and drones.

Grade level: 9-12

Subjects: Science, Math, Technology



Saturday 1:45 – 3:15 p.m. Cont.

Inexpensive Space Experiments for Your Classroom

Stan Taylor: Scientist in schools

Ray Bielecki: Astronuts

For educators on a limited budget, you will be engaged in STEM hands-on activities involving phases of the moon, planets to scale in our solar system, the size of our Milky Way Galaxy, balsawood space planes and northern polar constellations. You get to take home your creations, plus there will be a door prize or two.

Grade level: 6-8

Subjects: Math, Science, Technology, Language Arts

Mission to Mars: Using "The Martian" as a Launchpad to Hands-On Study

Elisabeth (Betty Jo) Moore: Year in Space Crew Member (Starliner)

Learn how to use *The Martian* to inspire learning in science through hands-on study. See what one teacher did to get her students excited about learning about science, engineering, technology and math in order to understand what is necessary to survive on Mars. Students worked through problems presented in the novel, including the planting of potatoes in Mars soil.

Grade level: 6-8

Subjects: Science, Math, Technology, Language Arts

Robotics 2.0: Beyond End Effectors and Robot Hands

Holly Mentillo: Ocean Breeze Elementary

Betty Bigney: Blue Creek Elementary

Want something new? Want to move beyond end effectors and robotic hands? Come control battery-operated mechanical arms and learn how you can get them for free! Try out Ozobots, programming with color or Blockly. Make and take a Bristlebot. No experience necessary, everyone will have success!

Grade level: 3-5

Subjects: Science, Technology

Wind as fluid and Truss structure (JAXA)

Yuji Kanda: Mtsato Technological High School

Masako Nozaki: Higashiasakawa Elementary School

Discover how students in Japan are taught about the behavior of wind as fluid and the mechanism of the truss structure from two teachers in Japan.

Grade level: K-12

Subjects: Science, Fine Arts

XTRONAUT

Pamala Knab: Texas Space Grant Consortium and NASA Network of States

Margeret Baguio: Texas Space Grant Consortium & UT Center for Space Research

Come have fun with us, exploring the wonderful places to go to in our Solar System, thanks to Dante Lauretta, PI for OSIRIS-REX. He created Xtronaut to mimic the designing and implementation of real missions to space. Filled with strategy and decision-making, possibilities abound for intrigue and subterfuge.

Grade level: 6-12

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- Astronomy Activities for the Classroom
- Bag of Bones: Effects of Spaceflight on the Human Body
- Civil Air Patrol Flights Over Houston *Double session*
- Colonizing Our Solar System
- Differentiated makerSPACE
- Have You Lost Your Marbles?
- If You Plant it...It Will Grow!
- Launching Literacy into Outer Space *Double session*
- Noctis Landing or Bust! A Martian Coding & Engineering Challenge
- Overhead Water Rocket Launcher Build
- Rockets: Does Size Matter
- STEM Education: SEEC to The Community
- STEM Students Investigate Heat Transfer on the International Space Station
- Using Zero-G Miniflights To Prepare Students for ISS Downlink Activity
- Voyager: Where No One Has Gone Before
- What Goes Up – Must Come Down

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- Explore the History of Manned Space Flight

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- Bringing Galaxies Down to Earth: Hands-On Activities from NASA
- Civil Air Patrol Flights over Houston *Double session cont.*
- Family Space Night Presented by Your Students
- Integrated Engineering and Planetary Science Activities for Out-of-School Time Programs
- Microgravity's Impact on The Human Eye, Digestive System and Flames
- Mystery Landscapes to Apps: Creating 3D Maps in the Classroom
- NASA Network of States Presents: Staying Safe in Space – Impact Testing for Spacesuits
- Orion Splashdown: Quest for the Engineering Design Process
- SimEVA

- Space Sensors, CubeSats and Collecting Data in the Classroom
- Space University
- STEM: The Final Frontier
- Using the High Definition Earth Viewing to Teach Literacy

Tours

- Saturn V and Rocket Park Tour
- Explore the History of Manned Space Flight

11:30 a.m. – 1:30 p.m.

- 11:30 – 12:30 Lunch 1
- 12:30 – 1:30 Lunch 2

1:45 – 3:15 p.m.

- Aviation STEM: A Look into the New Lone Star Flight Museum
- A View of Our Earth From Above
- Good Heavens the Time!
- Gravity: The Law, the Theories, the Demonstrations!
- Improving Performance of Gliders through Engineering
- Inexpensive Space Experiments for Your Classroom
- Mission to Mars: Using *The Martian* as a Launchpad to Hands-On Study
- Robotics 2.0: Beyond End Effectors and Robot Hands
- Wind as fluid and Truss Structure (JAXA)
- XTRONAUT

Tours

- Saturn V and Rocket Park Tour
- Explore the History of Manned Space Flight

3:45 – 4:45 p.m.

- Keynote – TBA