seec

Space Exploration Educators Conference

February 5-7, 2015

SPACE CENTER HOUSTON

Saturday February 7, 2015

Schedule Of Events

Wednesday, February 4, 2015

3:00pm-6:00pm	Early Bird Check-in

Thursday, February 5, 2015

7:15am	Check-in Begins
7:30am	SEEC 101 (A 'MUST' for all new attendees to SEEC) Blast-Off Theater
8:00am	Welcome Address and Key Note—NASA Astronaut (TBA)
10:00am-11:30am	First Session
11:30am-12:30pm	Lunch Buffet in Astronaut Gallery
12:45pm-2:15pm	Second Session
2:45pm-4:15pm	Third Session
4:45pm	Dismiss (Bus Run Begins) *See help desk for bus schedule*
5:00pm	Those staying for Epicurean will go to Northrop Grumman for Pre Epicurean entertainment
6:30pm-9:30pm	"A Taste of Space" Epicurean Event (Bus will run hotel loops)

Friday, February 6, 2015

7:15am	Check-in
8:00am-9:15am	Key Note - Future of Spaceflight Panel
10:00am-11:30am	First Session
11:30am-12:30pm	Lunch
	Astronaut Jerry Ross book Signing (Space Traders)
12:45pm-2:15pm	Second Session
2:45pm-4:15pm	Third Session
4:45pm	Dismiss (Bus Run Begins) *See help desk for bus schedule*
7:15pm-11:45pm	Banquet
	Band– Groove Night which get you in the dancing mood!

Saturday, February 7, 2015

7:15am	Doors Open
8:00am-9:30am	First Session
10:00am-11:30am	Second Session
11:30am-12:30pm	Lunch
12:45pm-2:15pm	Third Session
2:30pm-3:30pm	Key Note - Jeffery Tambor
3:30pm-3:45pm	Door Prizes/ Farewell
3:45pm	Dismiss/Certificates in O-G Dinner
4:30pm	Conference Help Desk Closes
7:00pm	Space Center Houston Closes

Sessions will take place at Space Center Houston and JSC Gilruth

Conference Sessions

Session Selection

Selecting your individual breakout sessions is easy! Just read through this conference booklet to see the selections for each time slot. Then, go online and make your session selections at http://www.spacecenterprogs.org/seec/seecLogin.aspx

Sessions that are full will not appear. It's that easy! **Just be sure to move quickly as some sessions fill up fast.** Breakout sessions include NASA tours as well as the hands-on sessions. Tours fill up especially fast, so please plan accordingly. **(All tours require closed-toe shoes)**
If a session is full, don't worry. Check with the Conference Help Table when you arrive to see if there are openings or watch the "swap" board for the session ticket.

If you have any questions, please contact us by e-mail at **SEEC@spacecenter.org**.

Space Center Houston Special Guided 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.

Grades: K-12
Subject: History

Explore The History of Manned Space Flight

Jeri Brown, NASA Alumni 1964-1998
Your journey into space begins with a 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!
Grades: K-12
Subject: History, Social Studies

747/Shuttle Tour

Climb aboard Space Center Houston's Newest attraction before it is open to the public.
NASA officially transferred ownership of the iconic Shuttle Carrier Aircraft (SCA-905) to Space Center Houston, and we are building a new $12 million complex that will feature the full-scale Space Shuttle model and 747 Carrier in classic piggyback configuration. You get a first glimpse inside at it is being readied for the public.
Grades Level: k-12
Subject: History

Conference Sessions

Saturday February 7, 2015 8:00am-9:30am

Biosphere in a Bottle

Laurie Burrell and Devon Busby, Wilson K-8, Amphitheater SD, Tucson, AZ

What is a Biosphere? Learn how to build 3 sustainable Biospheres with everyday materials: (1) Self-contained sustainable micro-biosphere to carry with you and collect data until it germinates, (2) Design and build a seed pod biosphere prototype, (3) Biosphere Tower that contains aqua, terra and atmospheric levels with organisms.

Grade Level: K-12th

Subjects: Science, Technology, Engineering, Math and Social Studies

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Grades: K-12th

Subject: History, Social Studies

GPM Rain Gauge Design Challenge

Jamie Sunkel and Bryan Debates, Space Foundation

Rain, Snow, and other forms of precipitation affects every part of life on Earth and studying our planet's rain and snowfall makes the world a better place. GPM is an international satellite mission that will use advanced instruments will improve upon previous measuring capabilities. This lesson will highlight Earth's water cycle, the important of fresh water, and how NASA studies water in Earth's system. The design challenge will take simple materials to build a rain gauge that can hold and measure precipitation.

Grade Level: 6-8th

Subjects: Science, Technology

Hurricane Tracking and Science on a Sphere®

Elias Molen, Space Foundation

Accurate hurricane tracking is very important to limit damage and injuries from powerful tropical storms. This lesson will be taught by a Global Precipitation Measurement (GPM) master teacher demonstrating how satellites such as the GPM constellation can help us predict where hurricanes and typhoons will go. Additionally, teachers will create a hurricane tracking map which can then be displayed on technology such as Science on a Sphere. Using Science, Technology, Engineering, and Math (STEM), we can come to a greater understanding of how and where severe storms travel.

Grade Level: 6th-12th

Subjects: Science, Tech, and Math, Social Studies, and History

Kindernauts

Daniel Malerbo, Carnegie Science Center

Find out how to excite and involve your youngest students in manned and robotic space exploration. Discover the right hands-on activities that will introduce them to the solar system and concepts of gravity and microgravity. Discover how to introduce your young learners to robotic spacecraft, the Space Shuttle, and the International Space Station. Handouts and door prizes provided!

Grade Level: K-2nd

Subjects: Science, Tech, Math, Physical Education & Health, Language Arts, and History

Next Generation Science Standards for Earth and Space

Jess Rowell, Accelerate Learning, Inc.

Get to know NGSS Earth and Space elementary and secondary and how easy it is to incorporate engineering and hands-on investigations in your classroom! These are aligned tasks, easy-to-use materials, and will bring space education to all.

Grade Level: 3rd-8th

Subjects: Science, Math, Tech, Language Arts, and Engineering

Conference Sessions

Saturday February 7, 2015 8:00am-9:30am

Powerful 3D Print Projects

Dee Mock, Houston ISD, Mini Simon, Houston ISD, Jason Dedrick, Houston ISD & Deborah Linscomb, STEAMTrax

Let's inspire future engineers by integrating 3D printing technology with science, math, language arts, social studies, and art! In this session participants will engage in relevant learning scenarios that encourage problem solving, collaboration, communication and critical thinking. We will learn to think like a NASA engineer as we design, create, test and redesign using 3D printing technology. Learn how we have integrated 3D printing technology in our STEM schools with afterschool programs and STEM Family Nights.

Grade Level: 3rd-8th

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

Project Based Learning and Cloud Applications

Richard Healey

Space Studio Banbury is the first school in the UK to use space and space based technologies as the context for curriculum delivery. We would like to take this opportunity to share with colleagues, project outline, lessons learnt and future developments. We will demonstrate how we have used cloud based applications, in our case Google, to deliver effective teaching and learning.

Grade Lever: 9-12th

Subjects: Science, Technology

Roving Mars

Leigh Crites, Morris Elementary, and Nicole McKnelly, St. John Paul II Catholic High School

Have you ever wondered what it would be like to explore Mars? How would you get there, what would you study, and how would you live? This session will utilize hands-on activates to give you the background needed to investigate these questions in your middle school classroom. Lesson plans included.

Grade Level: 6-8th

Subjects: Science, Tech, and Math

Saturn V and Rocket Park Tour

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Grades: K-12th

Subject: History

Take a Flight—Out of the Classroom; Into the Sky!

Susan Mallett and Debbie Dahl, Civil Air Patrol

K-12 teachers join "ground school" and free flight over Houston! This DOUBLE SESSION will include tour activities and free materials/STEM Kits shipped to you. Cameras encouraged! U.S. citizenship needed. Cost: $17.50. Find out how to pre-pay and get an ID# needed for flight by contacting ae@capnhq.gov.

Grade Level: K-12th

Subjects: Science, Tech, Math, Physical Education & Health, and Language Arts

The World of Mirrors and the World of Gravity

Hideo Shibata and Kae Ichihashi, Kokubunji Dai-San Junior High School and Hateruma Kindergarten

Two teachers from Japan will demonstrate how we can use every day objects to stimulate our sense of creativity using light and mirrors and better understand the effects of gravity on the earth.

Grade Level: K-12th

Subjects: Science

Conference Sessions

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Grades Level: k-12
Subject: History

Saturday February 7, 2015 10:00am-11:30am

Living and Working Onboard the ISS

Brian Ewenson and Daniel Bateman, Spaceport Sheboygan
We are no longer just flying in space; now we are living and working in space onboard the International Space Station. A permanent human presence in space since 2000 will eventually lead us living on the Moon and Mars. Come along with astronauts from 16 countries and see what it is like to live and work onboard the ISS.
Grade Level: K-12th
Subjects: Science, Tech, Language Arts, Math, Physical Education & Health, Social Studies, History

Creating STEM Thinkers and Problem Solvers through iPads and Technology

Dorinda Risenhoover and Justin Perkins, NASA Oklahoma Space Grant Consortium
Are you using iPads in the classroom to excite students in the field of STEM? Overwhelmed with trying to figure out which apps will engage the students as active learners and investigators, instead of just entertaining them? No worries! Over the course of 90 minutes, we will explore over 20 apps and websites immersed in classroom activities that will bring your STEM teaching to the next level!
Grade Level: 3rd-8th
Subjects: Science, Math, Tech, Language Arts, Social Studies, and History

Explore The History of Manned Space Flight

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Grades: K-12
Subject: History, Social Studies

Field Trip to the Moon!

Jennifer Hudgins and Lynn Dotson, NASA Educator Resource Center at Kennedy Space Center
The Field Trip to the Moon program uses an inquiry-based learning approach that fosters team-building and introduces students to careers in science and engineering. You will come face-to-face with the challenges and excitement of launching from Earth's surface and journeying through space to land on the Moon. You will also discover what makes our planet unique and habitable. Cool NASA door prizes will also be given away!
Grade Level: 6th-12th
Subjects: Science, Tech, Math, Language Arts, Physical Education and Health, Social Studies, and History

Conference Sessions

Saturday February 7, 2015 10:00am-11:30am

Fluid Dynamics

Loren Lykins and Charla Jordan, Carlisle High School
Fluid Dynamics! Good demos, great labs, and spectacular paper airplanes… This is a hands-on presentation, so get ready to have some fun. Instructions for demos and lab activities will be included along with web-sites for NASA extension activities.
Grade Level: 9th-12th
Subjects: Science

From Fire to Ice: An Exploration from Mercury to Pluto

Amy Bartlett, NASA Messenger Educator Fellow, and Jason Katz Crystal Lake Middle School
How are distant worlds with extreme temperatures explored by NASA? Use the art of photometry to investigate icy worlds beyond Earth. Design & build a spacecraft platform that can protect a payload from scorching temperatures near the sun. Participants will explore two lessons they can immediately implement in their own classrooms!
Grade Level: 3rd-8th
Subjects: Science, Tech, Math

Have a Blast(off)! Model Rocketry for the STEM Classroom

David Gossman, Brooks Academy
Have a blast (off)! Your students will apply physics, math and engineering design principles by building and testing model rockets. You will learn project ideas, book and website sources, principles of rocketry and how to build paper tube, soda bottle, and chemical (kit) rockets and launchers.
Grade Level: 6th-8th
Subjects: Science, Tech, Math

Marsbound: Mission Designer Wanted

George P. Fatolitis, Clearwater Fundamental Middle School
Teachers will use a board game in a mission planning simulation that mirrors a Mission to Mars. They will create a mission that has to balance the return of science data with mission limitation's such as power, Mass and Budget. Risk Factors play a role and will add to the excitement in this interactive mission planning activity.
Grade Level: 3rd -8th
Subjects: Science, Math, Technology

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Grades: K-12th
Subject: History

Yes, You CAN Do Engineering in Your Elementary Classroom!

Logan Pearce, Kealing Middle School
Elementary teachers! Don't forget about the "E" in STEM! Engineering doesn't have to be scary, and it doesn't have to be just for high school kids. In this presentation, you will learn WHY you should teach engineering, WHAT engineering is all about, and HOW you can do it in your classroom!
Grade Level: K-5th
Subjects: Science, Math, and Tech

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Grades Level: K-12th
Subject: History

Conference Sessions

Saturday February 7, 2015 12:45pm-2:15pm

An Eagle's Eye View of the Earth from Above!

Dorinda Risenhoover and Kayla Sammons, NASA Oklahoma Space Grant Consortium

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

Grade Level:3rd-8th

Subjects: Science, Technology, Social Studies

Can You See The Light?

Kathy Hayman and Amber Young, Barbers Hill ISD

Wondering how to interest your students in the electromagnetic spectrum and understanding distance in space? Learn easy steps to make an inexpensive spectroscope and solar system distance model with your students. Use these models to teach concepts about light waves, distance in space, star composition, and the red-shift.

Grade Level: 6th-8th

Subjects: Science, Technology, and Math

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Grades: K-12th

Subject: History, Social Studies

Hot or Not? Measuring Temperature from a Distance

Elias Molen, Space Foundation

How do satellites "see" invisible water in our atmosphere from hundreds or even thousands of miles away? In this workshop, participants will experience the scientific principles behind infrared wavelengths and the technology used to "see" this invisible part of the electromagnetic spectrum. There will be an opportunity to discover how a color scale can be created by measuring infrared energy as well as interaction with an infrared camera. Taught by a Global Precipitation Measurement (GPM) master teacher, this topic is both relevant to current space missions and practical in teaching to today's STEM standards.

Grade Level: 6th-12th

Subjects: Science and Tech

Mars on Earth

Michael Wilkinson, Fieldston Lower School

Engage in the process of designing and carrying out a mission to Mars on Earth. Based on a simulation developed for the classroom, participants will seek out signs of habitability, implementing techniques used by the Mars orbiters, landers, and rovers... and one day humans.

Grade Level: 3rd-12th

Subjects: Science, Math, Tech, Physical Education & Health, Language Arts, Social Studies, and History

Conference Sessions

Saturday February 7, 2015 12:45pm-2:15pm

Mars Rover Model Celebration: Student Designed Projects for Space Exploration

Edgar A. Bering, III and Andrew J. Kapral, University of Houston Physics Dept.

Put the Curiosity rover in your classroom! We will describe the Mars Rover Model Celebration curriculum. Participants will learn two activities. We will use a flashlight and mirrors to explore the problems of Mars surface telemetry. We will explore how to simulate Mars surface studies in the classroom. These are from a 6 week standards-aligned curriculum that we will describe.
Grade Level: 3rd-8th
Subjects: Science, Tech, Language Arts, Math

Miniature Pneumatically Controlled Canadarm

Stan Taylor, Scientist in School

Conduct a hands-on workshop for up to 30 educators on how to build my pneumatically controlled Canadarm. Educators will take home their assembled Canadarn and with a brief handout, teach heir students how to make one.
Grade Level: 6-8
Subjects: Science, Technology, Math

Modeling the Search for Exoplanets with Kepler

David Schlichting, Eaglecrest High School
The search for exoplanets is one of the hottest topics in astrophysics. This session provides educators an overview of exoplanet research, and instructions for a lab that simulates the Kepler space telescope using a mechanized orrery and vernier light probes. This activity supports lessons on the EM spectrum and graphical analysis. It is a wonderful hands-on lesson that engages students with real science applications.
Grade Level: 9th-12th
Subjects: Science and Math

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Grades: K-12
Subject: History

The Value of Partnerships with Business and Educational Partnerships for STEM in the Classroom
Nancy Battet, Lester B. Pearson School Board
The Lester B. Pearson School Board Pearson Partnership Program, which is overseen by Nancy Battet, supports the belief that students benefit greatly when their teachers and schools link with community and business partners to bring real life learning to the classroom. In this innovative, technology-driven world, it is essential that students can better understand the importance of all of the subjects they are studying and how this knowledge will be applied in the real world. Nancy will explain how these partners from the world of science, technology, engineering, and math can enhance classroom learning by being part of special events and providing educational tools for the classroom.
Grade Level: N/A
Subjects: Science, Tech, Language Arts, Math

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