

A black and white photograph of three astronauts in full space suits standing on the lunar surface. They are positioned in a line, facing right. The ground is covered in craters and shadows, and the background shows the dark sky with stars and a portion of the Earth's horizon on the left. The astronauts are wearing helmets and carrying equipment.

SPACE CENTER HOUSTON'S
12TH ANNUAL
SPACE EXPLORATION
EDUCATORS CONFERENCE

FEBRUARY 2ND - 4TH 2006

COME EXPERIENCE THE FUTURE AND JOIN AN EXTRAORDINARY
GROUP OF TEACHERS, SCIENTISTS AND ASTRONAUTS

CONFERENCE HIGHLIGHTS

No up or down, no floors or ceilings, so every side is right side up....space is a different and exciting place! Come experience space at the 12th Annual Space Exploration Educators Conference. You will go home recharged and ready to ignite the minds of your students!

Top scientists, engineers and educators from across the United States, Canada, and Japan

Exciting materials to inspire your students and enhance your classroom

Hear from astronauts and engineers currently working on space exploration

Mingle and network with fellow educators as well as NASA engineers and scientists at a reception

Enjoy a party on Friday night, where you will be served a banquet dinner and drinks, then party the night away with the astronaut band Max-Q.

SCHEDULE OF EVENTS

Thursday, February 2, 2006

- 10:00 Early Bird Check-in Begins
- 12:00—4:30 Extended Length Sessions
- 6:30—9:30 Welcome Reception, Experience Space Center Houston

Friday, February 3, 2006

- 7:00—7:30 Check-in & Continental Breakfast
- 7:30—7:45 Opening Addresses/Welcome
- 7:45—10:00 Keynote Address—To Be Announced
- 10:30—11:45 Breakout Sessions
- 12:00—1:00 Lunch
- 1:15—5:30 Breakout Sessions
- 7:15—12:00 Banquet/Dinner, Party to the Sounds of Max-Q

Saturday, February 4, 2006

- 7:30—8:00 Continental Breakfast
- 8:00—9:00 Keynote Address—To Be Announced
- 9:15—12:00 Breakout Sessions
- 12:00—1:00 Lunch
- 1:15—4:00 Breakout Sessions
- 4:15—5:00 Keynote Address—To Be Announced
- 5:00—5:30 Door Prizes/Departing Remarks

Please check www.spacecenter.org/seec.html for updates on speakers.

Due to the demands on astronauts, some speakers may be change at the last minute.

REGISTRATION INFORMATION

There are several methods for registering! You can register online at www.spacecenter.org/seec.html. You may also fax or phone in your registration information (and payment) with a credit card; or mail the registration form (p. 21-22) along with your check or money order to Space Center Houston. Registration will not be accepted without payment. Registration for SEEC is only \$229.

SPONSORS AND PARTNERS



CANCELLATIONS

Due to the popularity of SEEC, cancellations and no-shows will be charged the full registration fee. No refunds will be granted. However, registration may be transferred to a fellow colleague.

TRAVEL NOTES

Space Center Houston is located midway between downtown Houston and Galveston. Take I-45 and Exit NASA Parkway. The Center is approximately three miles east of I-45. If flying, try to use Hobby Airport. A listing of conference hotels is provided below.

When making your reservation, you may want to mention you are a participant of a Space Center Houston event. Many hotels offer discounts. If you are in need of shuttle services from the airport, please make inquiries at your hotel.

The Center is usually cool, so bring a sweater. We also recommend comfortable attire since you will be actively participating in breakout sessions. Business attire is requested for the Friday evening banquet, but not required.

CONFERENCE HOTELS

SEEC buses will provide transportation to and from the hotels listed below. Space Center Houston is not responsible for making attendees' hotel arrangements. Bus schedules will be posted in the hotel lobbies during the conference.

Hampton Inn & Suites	506 W. Bay Area Blvd, Webster (281) 332-7952
Extended Stay	720 W. Bay Area Blvd, Webster (281) 338-7711
La Quinta Inn & Suites	520 W. Bay Area Blvd, Webster (281) 554-5290
Hilton—NASA	3000 NASA Parkway, Houston (281) 333-9300
Brentwood Inn	1300 NASA Parkway, Houston (281) 333-2500
Hampton Inn & Suites	3000 NASA Parkway, Seabrook (281) 532-9200
La Quinta Inn & Suites	3636 NASA Parkway, Seabrook (281) 326-7300

CONFERENCE PRODUCTS

The reception and banquet are included for registered attendees, however, if you would like to bring a guest you will need to purchase additional tickets. The tickets are available for \$25 for the reception and \$28 for the banquet. These tickets are on sale via the internet, registration form, or during the conference.

Space Center Houston will also have available curriculum products and conference apparel during the conference. More information, including order forms, will be available at www.spacecenter.org/seec.html one month prior to the conference. Be sure to check back to order your shirt!

RECEIVING MATERIALS FROM THE ERC

There are two ways to receive materials from the Educator Resource Center. First, you can attend one of the three ERC sessions being offered. This will give you the opportunity to select products for your classroom. You can also visit the ERC help table located near the Shuttle Mock-up in the plaza. The staff would be more than happy to help you with any questions you have.

SELECTING YOUR SESSIONS

Selecting your individual breakout sessions is easy! Just read through the selections for each time slot. Next go online and make your session selections at www.spacecenter.org/seec.html. Sessions that are full will not appear. You can also use the session registration form in the back of this booklet. Choose three sessions you would like to attend during the time slot and mark them on the session selection form, in order of your preference. Then, return the form to Space Center Houston. It's that easy! Just be sure to move quickly as some sessions fill up fast.

SPECIAL AND REOCCURRING SESSIONS

There are a number of tours and special sessions that occur multiple times throughout the conference. Please consult the session selection sheet for exact times. Tours have a limited capacity, please reserve early.

Advanced Space Propulsion Laboratory (Tour)

Come see rocket scientists at work! Johnson Space Center is developing a new engine for future exploration at the ASPL. Learn about the technology that may send the first human to Mars!

Aircraft Operations (Tour) (Double Session)

A plane that creates free-fall, high altitude research aircraft, T-38's and the Super Guppy...Johnson Space Center's Aircraft Operations has it all! Hear how aeronautics is a part of the future of space exploration.

Educator Resource Center (Presentation)

Visit this presentation to learn how to collect a multitude of exciting hands-on activities. No cost NASA resources, posters, lithographs, videos and much more are available to you.

Food Lab (Tour)

Yummy...Astronaut Food! Have you ever wondered how space food is prepared and packaged? Visit the food laboratory at Johnson Space Center and see first hand. Learn how nutritionists, dieticians, and engineers prepare food for flight.

ISS Construction Simulation (Dive Session)

Train like astronauts in this exciting session! You will participate in underwater training exercises using SCUBA gear in a local swimming pool. No previous experience necessary for beginners sessions, but you must be in good health and ready to get wet! Repeat session attendees or those with dive experience only in the Saturday session. Bring a swimsuit and towel. Participants must also attend one of the mandatory meetings prior to this session.

Mission Control (Tour)

Once the shuttle has launched, Houston Mission Control takes over. Visit this secured location that monitors shuttle flights and space station flights 24 hours a day. Based on flight schedules, you may visit both Historic Mission Control and the new Flight Control Rooms. *Note: portions of this tour may be canceled due to flight restrictions.*

Neutral Buoyancy Lab (Tour)

Take a trip to the largest pool in the world where astronauts practice for their spacewalks—the NBL. This facility is the underwater training facility and your chance to see state-of-the-art training—the next best thing to space!

Robotics Lab (Tour)

Space can be a dangerous place and there are corners that humans just can't reach. Come peak inside the robotics lab at Johnson Space Center and see what engineers have developed to aide the astronauts in construction and maintenance.

Vehicle Mock-up Training Facility (Tour)

View full-scale ISS and Shuttle mock-ups at the Johnson Space Center. This tour is must if you have never been to this conference so you can see for yourself just where the action takes place!

Astronauts and Space Exploration

Grades K-12

Astronaut, NASA Johnson Space Center

Find out what its like to be an astronaut—from selection, to training, to mission assignment. A NASA astronaut will share their training and mission experience. *Please note that astronaut appearances are subject to change on short notice due to their many responsibilities.*

Fly Me to the Moon...Again

Grades 3-7

Kati Searcy, Fulton County Schools

The next “giant leap for mankind” will be a human presence on the Moon by 2030. Review our history of lunar exploration and NASA’s new Vision for Space Exploration. Build inexpensive lunar models and a lunar colony. All participants will receive a CD.

Living With A Star: From Sunscreen to Space Weather

Grades 6-8

Lynne Hehr, John Hehr, Cindy Cardwell, University of Arkansas

Shields Up! While you explore the Sun-Earth connection. Solve a mystery, explore the EM spectrum, analyze data, test sun blockers, assess risk to humankind, and play the Space Weather game! This session promises to be informative, fun, fast-paced and hands-on! Loads of Sun-Earth connection materials and resources provided.

Newton’s Laws: Gaining an In-Depth Understanding (Double Session)

Grades 9-12

Bjarni Tryggvason, Astronaut, Canadian Space Agency

Newton’s Laws stand as the foundation for a wide range of work in science and engineering. Come explore Newton’s Laws at a high level. Grades 9 and higher only for this in-depth, double session.

Planet Party: Unit on the Solar System

Grades 3-5

Marlyss Jeffcoat and Roma Aggarwal, Fort Bend ISD

Join us for a “Planet Party”! You will receive an entire unit designed on a daily outline format for teaching your 3rd-5th graders all about the Solar System. Hands-on activities and extensions will be presented.

Project X-35

Grades 3-10

Cherri Brinley and Karen Craig, St. Edward Catholic School

Calling all Rocketeers! The scholars are back to present Project-X35, a series of 9 preliminary, hands-on, make and take activities using principles of rocketry to reinforce the laws of physics. Don’t miss out on the fun—come fly with us!

Rocks from Space a.k.a. Lunar and Meteorite Certification

Grades K-12

Angelo Casaburri, Aerospace Education Specialist, Johnson Space Center

Experience the geological approach to understanding the moon. Learn the history of the moon and the clues it provides scientists as they investigate the formation of the earth and moon. Explore meteorites and how scientists use them to tell the story of the solar system from the formation of planets to catastrophic impacts on Earth. Become certified to borrow the lunar and meteorite samples. Educator Guides included.

To Infinity and Beyond: The Journey of a Model Rocket

Grades 4-12

Brian Krauklis and Jon Maxwell, Katy ISD

Come have a blast as we build and launch an Estes model rocket. Learn how to use model rocketry as a way to teach Newton’s 3 Laws of Motion and demonstrate how NASA gets astronauts and their equipment into orbit. Model rocket kits are provided along with the fun.

Adapt or Die!

Grades 5-8

Crystal Trujillo and Marsha Turner, STARBASE—Atlantis—Hawaii

We want you! Have you got the right stuff? Pack your bags and head to student astronaut training for our most important mission since the first walk on the moon. See if you have what it takes to spend months, or even years, in a spacecraft that will have to support life with no help from earth. You will receive an overview of our 8-day Advanced Academy, which can be used in whole or in parts to suit your needs. You will participate in hands-on activities and receive ready-to-implement lessons. Be ready for anything—your lives could depend on it!

Exploring the 10th Planet and Beyond: Thinking Outside the Spacecraft

Grades 4-8

Lynne Hehr, University of Arkansas and Caroline Beller, Oklahoma State University

We are no longer 9! Discover what this means and bring the mysteries of planetary exploration into your classroom through an inquiry-based, fast-paced, and hands-on session dealing with planet surfaces and the spacecraft needed to land on them! Loads of materials and resources provided.

Geobat Flying Wing

Grades 6-12

Dr. Debi Huffman, Fernbank Science Center and Jack Jones, Geobat F.S. Aviation

Design and build models of the Geobat Flying Wing. Never before has anyone presented a viable aircraft design that is perfectly circular. Limited only by your own imagination, explore different designs, and perhaps yours will be the precursor to the planetary version.

Going Up: Exploration from Earth to Space

Grades 3-6

Valerie Graves, NASA IV&V and Evonne De Nome, Berkeley County Schools

This presentation will be a hands-on workshop with activities that focus on mathematics, science, technology, and language arts using the book, "Going Up", by Tom Logsdon, as a framework. Each participant will receive the children's trade book about a roundtrip to the moon and a complete, ready to use, standards-based unit.

Informal Education Discussion

Informal Educators

Daniel Bateman and Joel Walker, Kansas Cosmosphere

Bring your ideas and issues to a group that can help to find a solution. Share publicity materials from your institution with the group to show off best practices or programs. Discuss with others in your field the unique challenges of informal education and how you have succeeded.

Mission to Mars: Effects of Prolonged Microgravity on the Human Body

Grades K-12

Dr. Richard Scheuring, Wylie Laboratories and Life Science Systems

A mission to Mars could take as long as two years. What are the effects on the human body during this long-duration flight? Come learn about current research being conducted to counter the negative effects of space travel and see just what it will take for humans to survive on the Red Planet.

To the Moon, Mars and Beyond

Grades K-5

Dee Mock, Region 4 ESC and Christine Graham, Bryan ISD

Get ready for hands-on, real world science that you can use immediately to prepare your students for the state assessments. Your students will be amazed as they learn about the Earth, the Earth's moon, the solar system, and space exploration through hands-on activities, inquiry based science experiments, music and literacy centers. This session will incorporate national standards (and TEKS) as it introduces space across the curriculum. Expect make-and take activities and handouts.

A Basic Understanding of Earth's Gravity Through Experiments

Grades 6-8

Theresa Betori, St. Patrick of Heatherdowns School

Enjoy a collection of gravity and inertia experiments written at a middle school level. These experiments use simple materials to explain concepts through the use of scientific method and hands-on activities.

Bringing Parents on Board with your Space Exploration Curriculum

Grades 4-10

Kareen Borders and Cindy Knisely, Key Peninsula Middle School

Bring your parents on board your space exploration curriculum with parent "Space Café" evenings. Parents will feel comfortable and supportive of space exploration as they gain knowledge, have fun, and explore their own questions. Participants will leave with hand-outs and the experience of engaging in several of the parent evening activities.

Cool Current Comet Curriculum

Grades 4-8

Dianne Martin, Mobile Co. Public School and Sandy Armstrong, Troy University

Keeping our students informed about comets can be a challenge with new data coming in every day from current NASA missions. This session will be informative and practical, with teachers receiving lessons, hands-on activities, and spacecraft model kits. Each participant will receive a presentation to help explain comets to students. You will obtain hard copies of many hand-outs and an informational CD.

Cosmic Questions. Classroom Answers

Grades 8-12

Brenda Wolpa, Canyon Del Oro High School

Astrobiology poses a series of profound and exciting questions. Is there life elsewhere in the universe? If there is life, what kind? How can we find it? How did life originate on Earth? Astrobiology stimulates students' interest in science using integrated, inquiry-based and investigative activities designed for them to participate in the science of astrobiology. In this workshop teachers will do several hands-on activities and leave with classroom ready materials.

Exploring Space on a Shoestring Budget

Grades K-5

Bambi Spurgeon, Huntington ISD and Kathy Caton, Zavalla ISD

For the teacher who has no materials and little money but wants to go above and beyond to provide an "out-of-this-world" learning experience for their students. Ideas included can be used on a daily, weekly, or year long basis. Shuttle on in for a blast of ready to use space activities to enrich your curriculum across the board.

GPS: A Tool for Attitude Control in the ISS

Grades 4-12

Jay Staker, Iowa State University

Use the Garmin eTREX and Brunton Compass to explore GPS basics for navigation and orienteering. GPS is a valuable tool used by the aircraft and spacecraft for attitude control and navigation. Handheld GPS receivers are used in conjunction with a series of hands-on GPS lessons to help users understand the use of GPS for precise navigation and orienteering.

Its Hard to Dance in a Spacesuit

Grades K-12

Phil West, NASA Johnson Space Center

The ISS is not only a working laboratory in space, it's a high altitude construction zone. The workers at this jobsite need clothes that let them build, while protecting them from the extreme environment. We'll look at spacesuits and tools astronauts are using in orbit today. Oh...and don't put away your dancing shoes, we'll explore space fashion of the future as well.

FRIDAY, 10:30—11:45

Life Support: Without Us It Isn't "Manned" Spaceflight

Grades 5-8

Marybeth Edeen, AST Environmental Control, NASA Johnson Space Center

Demonstrate what life support is, why recycling of water and air is necessary for long duration space flight, how to build a life support system, and how to communicate tasks to remote crews. Written lesson plans of the activities will be provided and participants will perform the activities as a class of students would.

Mars or Bust! Do you Have the Lung Power to Reach the Red Planet?

Grades 6-12

William Luke, Central Texas College

For every action there is an equal and opposite reaction...and now you can demonstrate this! Using a clinometer and pencil rocket you can use Newton's three Laws of Motion to reach Mars. Attendees will receive all slides, black line masters, and materials on CD.

Rockets: Portals to Exploration

Grades 3-5

Jennifer Makins and Mary Dawson, Good Shepard Episcopal School

This session showcases a multi-discipline elementary level rocketry curriculum centered around the Vision for Space Exploration. Research, problem solving, and team building skills fostered by the unit are necessary for all students. This is an exciting and engaging unit that will have your students on the edge of their seats through all phases of the project.

Science Principles in Space

Grades 9-12

Bjarni Tryggvason, Astronaut, Canadian Space Agency

The ISS environment is a near ideal "free fall" where all parts of the laboratory, including the experiments on board are in the same state of free fall. This tends to reduce relative motion and hence reduces convections, sedimentation and buoyancy to levels that are much lower than in Earth bound experiments. But things are rarely so simple! This session will explore how the space environment can be used to gain a better understanding of some basic and seemingly simple science principles.

Space Education in Japan

Grades K-12

Japan Aerospace Exploration Agency (JAXA)

The Japan Aerospace Exploration Agency and experienced Japanese educators will present unique teaching methods they have developed for their classes. In this session, you will learn the unique teaching methods and see them demonstrated. You will also be able to establish new networks with Japanese educators to discuss educational topics including future possibilities of collaboration. This session is appropriate for all educators interested in fostering international relations.

Young Astronauts and Shark Sightings on Mars

Grades 3-6

Diane Billings and Elizabeth Grubbs, HJM Elementary

Experience the thrill of travel to Mars with your Young Astronauts. Hands-on activities will include soil sampling, measurement of craters, hydroponics, and testing of rock samples. Gain knowledge in building a Young Astronaut Club. Participants will be given exciting materials which can be implemented into their classroom or campus enrichment program.

FRIDAY, 1:15-2:30

Astronomy in the Classroom

Grades K-12

Tara Oakes, Houston Museum of Natural Science

Would you like to find an easy way to teach your students about the solar system with exciting visual aids that also help you work in those pesky technology requirements? This session will focus on software that is easy to obtain (even FREE) that can aid you in the explanation of the orbits of planets, phases of the moon, and even the constellations of the zodiac.

Astrotots (Bilingual)

Grades K-5

Kristie Staas, Houston ISD and Amanda Peterson, Pflugerville ISD

Astrotots involves intermediate students with primary students. Our presentation will show participants how to organize and execute an Astrotot activity at their schools. Participants will leave the session with a CD filled with activities and sample organizational tools. All participants will have the opportunity to try out the activities and take with them samples of them.

Celebrate Mars...and More

Grades 2-6

Penny Leon Glackman and Jean Sambor, Merion Elementary School

Past, present, and future exploration has its eyes on the Red Planet. Find out ways to include Mars study in the curriculum and to celebrate space exploration missions with your students. Discover new hands-on activities: flight and space-related paper models such as the simple one-straw kit, 2001 Mars Odyssey Aero-Box, Mars Rover or the more complex Cassini. Leave this session with great ideas and easy-to-use templates, information about user-friendly websites for educators and students, and a beautiful poster for your classroom.

Is There Life in Your Science Class?

Grades 5-7

Lisa Machado and Melinda Stoffer, Bethel Park School District

Overview of NASA's astrobiology unit "Life on Earth and Elsewhere". Hands-on activities to simulate student classroom work in small groups. Participants will define life, examine growing organisms in order to modify working definition of life, examine planetary habitability cards, and design a mission to search for life in the universe.

Moon Madness

Grades 4-12

Leesa Hubbard, Wilson County Schools

Experience ways to teach students about our nearest neighbor in space, the Moon! Topics covered will include: Earth/Moon distance, phases of the moon, why phases occur, lunar and solar eclipses, and the challenge to return to the moon. Activities in this workshop emphasize hands-on involvement and you will leave with free instructional materials.

Moonbase Challenge

Grades 3-8

Cheryl Neal and Sherry Marshall, OMNIPLEX Science Museum

Team up with fellow educators to meet the challenge of creating a profitable moonbase in the exciting Moonbase Challenge simulation game! Learn what it takes to survive on the Moon and operate a successful mining or lunar materials business. Watch out for unhappy miners on strike or solar flares disrupting communications! Will your team's Moonbase inhabitants survive to meet the budget deadlines and make a profit? Additional classroom activities, experiments, and resources to support the Moonbase Challenge game will be provided.

NASA Sci-Files: The Case of the Physical Fitness Challenge

Grades 3-5

Lisa Neasbitt and Monica Trevathan, NASA Human Health and Performance

Participants will gain insight to current nutrition and physical activity research conducted at NASA by scientists and researchers. The structure and function of the human body systems on Earth, the effects of microgravity and implications for long-duration spaceflight will be considered. The session will include direct instruction as well as interactive portions where teachers will sample activities to take back to the classroom. Handouts and classroom activities related to these topics will be provided.

FRIDAY, 1:15-2:30

Rhythms of Gravity

Grades 5-9

Carol Hodanbosi and Diane McElwain, NASA Glenn Research Center

This workshop will discuss gravity and the effects of gravity on objects. Participants will perform a hands-on activity that illustrates, through the use of sound energy, that objects in free fall accelerate. Handouts for the activity and presentation will be given, along with supplies to create the activity.

Robots and More

Grades K-2

Sr. Alma Messing, St. Ailbe School and Marcy Novak, Pleasant Lane School

Make and experiment with a robot. Numerous and varied activities to be used in the curriculum to “hook” students on space and provide fun repetition of content.

Rocket Design with a NASA Rocket Scientist

Grades K-12

Kevin Mellett and Tony Griffith, NASA Johnson Space Center

Learn about rocket design from the ones who do it! Begin with a brief history of rockets, looking at different types of rockets and how they work. Then it is time to talk about design. What is an engineer thinking about when making design choices? Finally, look at the future of rocketry...what is on the horizon for rockets?

Seeing Across the EM Spectrum

Grades 5-12

Chelen Johnson, Breck School

Just like a multicultural world where we strive to understand all cultures, all wavelengths of life live together. Light comes in many flavors, ranging from gigantic radio waves to extremely short gamma rays. To understand what’s going on with star formation and galactic evolution, we must use large telescopes to examine all parts of the electromagnetic spectrum. In this hands-on session, activities will be provided to help your students understand multi-wavelength astronomy.

Tiny Bubbles: The SCUBA Connection

Grades 6-8 (4-5 GT)

Christy Garvin, Vaughan Elementary

In our quest to complete the ISS, create a colony on the moon, and explore Mars, astronauts will spend countless hours engaging in extra vehicular activity (EVA) or spacewalks. While on earth, astronauts train for these EVA’s in a huge pool where neutral buoyancy can be established to simulate the effect of microgravity. This session will provide connections between spacewalks and SCUBA diving as participants engage in hands-on experiments dealing with pressure and volume as related to Boyle’s Law.

FRIDAY, 2:45-4:00

Astronaut Training Days

Grades K-2, 6

Sandra Weaver and Mike McNeil, Hardin ISD

3, 2, 1...Blast off! In this session students will teach others about the process involved in becoming an astronaut. Sixth grade students will show younger students, through hands-on activities, how astronauts go through training for space. These activities encourage students to become teachers and instill hands-on approaches.

Discovering Flight: First Star to the Right and Straight on ‘til Morning

Grades K-5

Lauren Tanner and Judith Catlett, Barnett Elementary

This class will cover the history of flight from kites to shuttles. The focus will be on hands-on, elementary construction of models of flight. You will receive instructions for all of the models and will build one or two of them. An instruction booklet will be yours to keep.

Exploration Cell Science

Grades 9-12

Dr. Neil Pellis, NASA Johnson Space Center

Cells are amazing little things! During this session we will explore cells inside and out. See how cells are different in the microgravity environment of space. Learn about current cell research from an expert in the field. How is this research impacting space exploration and how is it benefiting life here on Earth?

Life in a Hostile Environment

Grades 3-9

Camas Space Education Team

Get your students moving, active and learning about the environment of space with four hands-on activities used to introduce basic information about living in space to students embarking on a Space Station simulation. Attendees will participate in the same activities students do to learn Newton's Laws, about vacuum and pressure, and the protective gear that astronauts wear and use to protect themselves in a hostile environment.

Meet a NASA Flight Director

Grades K-12

Joel Montalbano, Flight Director, NASA Johnson Space Center

Have you ever wondered what a day in the life of a flight director is like? Be a part of the excitement with an actual flight director. Discover the inner workings of Mission Control and go through a typical day.

Moon Base Probability

Grades 6-12

Dennis Stocker, NASA Glenn Research Center

Kathy Welch-Martin, Tippecanoe School Corp.

Explore the Moon from an imaginary outpost in the classroom game "Moon Base Probability." Discover how constraints can influence the design and construction of your virtual lunar habitat. Understand the importance of probability in risk assessment and design. Who will win this new space race?

Ripples in Space: A Sound Investigation

Grades 3-5

Lollie Garay, Redd School and Karen Stocco, South Houston High School

The year is 2078. The latest transport to Titan is in its second year of travel. All is going well until an "Oidobot" detects a strange sound. What is causing the sound, and is the ship in danger? Come join this hands-on session to find out!

Shuttle to Station and Beyond

Grades 4-8

Julie Ferriss, Edgewood Elem. and Dr. Bradley Blue, Minneapolis Public Schools

Looking for exciting, innovative, creative ways to introduce the mysteries and wonders of space exploration and space travel to your students? Shuttle to the Station and Beyond is for you and your students! Learn how to guide your students to design and build a 1/4 scale model of the orbiter along with an ISS module and Mission Control. Using new methods and pedagogy for teaching research, guide your students as they discover facts and details about a specific space shuttle mission so they can write a script for a simulated shuttle mission.

Space and Beyond: Combining Writing and Space Science

Grades 3-5

Traci Perry, T.W. Off Elementary and Kaye Fulton, Retired Teacher

You place a writing prompt on the overhead and your students groan. Have you ever experienced this sensation before? Well come on a hands-on, make-and-take journey with us and we'll show you how to incorporate space science and writing that will have your students begging for more.

FRIDAY, 2:45-4:00

The Right Ratio of Rest (NASA Connect)

Grades 6-8

Monica Trevathan and Lisa Neasbitt, NASA Human Health and Performance

Participants will gain an insight to current research on sleep and circadian rhythm, on Earth and during spaceflight. During long duration space travel, and stays on the Moon or Mars, the amount of time between sunrise and sunset will be different than here on Earth. The type and color of light received will be different as well. Participants will learn from NASA subject matter experts in the areas of space medicine and sleep. This session will include direct instruction as well as interactive portions.

Unlimited Images from Mars for under \$50

Grades 5-8

Michael Smith, Clark County School District

Become a probe orbiting Mars, a moon or another planet in the universe suspected of having water on its surface. Your mission is to take a series of pictures, download them on to your computer, and analyze the data to determine changes in the soil caused by erosion.

What to Wear When You're Out There

Grades 4-12

Heather Paul, NASA Johnson Space Center

Except for the people on "Survivor", everyone wears clothes, especially when they live and work in space! Come see the latest spacesuit ideas coming off the NASA runway, and learn how your students can become fashion designers to the stars.

Where in Space Do We REALLY Live?

Grades 5-9

Kathy Mullane Higgins, Hudson Middle School

How would you find your way home from outer space? Where exactly is the Earth, or your city, in the realms of the Universe? What is your Universe address? These are all questions that will need to be answered in the future as begin to explore our solar system and the universe. This is a wonderful introduction to any space related unit or activity. This mini-unit gives you all the background information, awesome websites, lesson plans and all the handouts necessary to take this unit home and teach it to your students next week.

FRIDAY, 4:15-5:30

Astronauts and Space Exploration

Grades K-12

Astronaut, NASA Johnson Space Center

Find out what its like to be an astronaut—from selection, to training, to mission assignment. A NASA astronaut will share their training and mission experience. *Please note that astronaut appearances are subject to change on short notice due to their many responsibilities.*

Celebrate Space: Easy & Inexpensive Ideas for Holiday Fun During the School Year

Grades K-6

Renee Snell Merritt, Wicksburg HS and Diane Watson, Webb Elementary

Participants will learn motivational ways to incorporate space exploration into their classrooms during the school year. Ideas will include Christmas ornaments, Valentine's Easter and Fall decorations related to important space concepts. Extensions packet of instructions will give given.

Cheering Science Students: Fact or Fiction?

Grades 5-8

Crystal Trujillo and Lincoln Higa, STARBASE—Atlantis—Hawaii

Students jumping up and down cheering during one of your science lessons—fact or fiction? This can be fact when you use these two hands-on activities to clearly illustrate Newton's Three Laws of Motion and how they relate to the launching and landing of space vehicles.

FAB 5: Fantastic Activities By 5 NEAT Teachers

Grades K-6

*Holly Mentillo, Sharon McDonald, Betty Bigney, Rachel Power, and Diane Sartore,
NASA's Network of Educator Astronaut Teachers*

This presentation will cover multiple hands-on activities. These Math, Science, Technology, and Language Arts activities will use low or no cost materials, have minimum prep time and maximum excitement. Packets with all materials will be provided.

Future of Flight Design

Grades 5-9

*Amy Krajnak, Debi Huffman, Peggy Eddy, and John Walsh
NASA Airspace Systems Education Cohort*

These seasoned educators join forces to engage you in standards-based, hands-on, and web-based activities for middle school students. Participants will solve a future flight challenge and explore activities with a hovercraft, helicopter, and glider. A CD will be provided with all the lesson plans, handouts, and resource information.

Into the Blackness: Gamma Rays and the Birth Cries of Black Holes

Grades 7-10

Pamela Whiffen, NASA Educator Ambassador

As we develop new eyes powerful enough to look back in time towards the early universe, new wonders fire out sense of awe. Using space-based telescopes such as the GLAST (gamma ray large area space telescope) we are beginning to understand our place in the universe and are able to marvel at the structure and immense energies of black holes. Participants will receive a CD filled with NASA materials on multi-wavelength astronomy.

Kinesthetic Astronomy: The Sky Time Lesson

Grades 9-12

Brad McLain, Space Science Institute

Teach astronomy the kinesthetic way with the Sky Time Lesson! Reconnect your students with the astronomical meaning of the day, year and seasons, while covering scale, and distance in the solar system and the galaxy, the apparent motions of the sun and other stars, and the seasonal appearance of the constellations of the zodiac.

Launching Language Arts in the Classroom

Grades 6-9

*Kristy Curtin, Guthrie High School, Kathy Curtin, Civil Air Patrol &
Kelly Wardlaw, New Horizons Fellow*

Participants will learn how to merge language arts and space exploration together in a variety of fun activities. This workshop will focus on mythology, poetry, and creative writing with lesson plans and handouts included.

Mars Boot Camp

Grades 3-6

Marcy Novak, Pleasant Lane School and Sr. Alma Messing, St. Alby Preschool

Create an inquiry-based, intense training unit in your classroom for a mission to Mars. Discover how students work in crews to analyze real data, test their ideas with computer simulation, search for evidence of life in Martian analogous soil, and many other activities. A multi-resource unit of practical classroom investigations will be shared.

Spacey Sports and Other Space Lessons

Grades 4-10

Jessica Stockel and Cederick Scott, Houston ISD

The presentation will provide the participants with four hands-on classroom activities designed to allow students to model how space travel alters one's vestibular system.

FRIDAY, 4:15-5:30

Star Light, Star Bright, Just Where Are the Stars I See Tonight?

Grades 3-12

Linda Krouse and Karen Massey

Noble Planetarium, Fort Worth Museum of Science and History

Come be a star in a choice of colors. Find out just where you fit in our universe. Learn how we consistently find that star we're looking for.

SATURDAY, 9:15-10:30

Adventures of Amelia the Pigeon

Grades K-4

Cynthia Keeling, NASA & Rudo Kashiri, Oklahoma State University/NASA

This presentation is based on the book "The Adventures of Amelia the Pigeon". Teachers will discover how to use online exploration, hands-on activities and sequential storytelling to make remote sensing understandable to students. Teachers will receive a free book, as well as many activities that can be used in the classroom.

Aliens Among Us: From One Extreme to Another

Grades K-8

Bambi Spurgeon & Angela Duncan, Huntington ISD

An elementary look into microbiology as exploration of extreme environments can come right into your classroom. Lesson plans and activities for immediate use will be presented. Get students involved in their own extreme environments found right under their noses! Determine what an alien is and how it can affect our daily lives.

Fish Astronaut Selection

Grades 5-12

Kathleen Woodring, Network of Educator Astronaut Teachers

Naveen Cunha, NASA Headquarters

What DOES it take to be an astronaut? What if it's a FISH? Why do we need to send fish to space? Replicate two simple and exciting experiments performed on STS-96 and STS-107 in your own classroom. Build the apparatus needed to conduct the experiment. Lesson plans, projects, internet, video and book resources given away.

Marsbound: Will Your Team Succeed in Designing a Probe to Land on Mars?

Grades 4-12

David Maneth, Jardine Diversified Leadership Technology Middle School Magnet

Sarah Ketchum, NCTM

Can your team design a probe to Mars? Mass, power, cost and the scientific return gained from this craft are all factors teams have to consider as they begin piecing their craft together. Try your luck, it's just rocket science.

Moon Journals: A Synthesis of Science, Art and Writing

Grades 3-9

Camas Space Education Team

Writing! Art! Science! Meld these three together and you have a powerful project—Moon Journals. Students follow the cycle of the moon for 28 days, recording their observations and thoughts each day...first like a scientist and then as a poet. These observations are enhanced with science content and art to create a high quality showcase project. Come and explore with us through participatory activities. Hand-outs provided on CD.

NASA's Engineering Design Challenge: Living off the Land

Grades 5-8

Julie Clift & Twila Schneider, NASA Marshall Space Flight Center

Have you ever wondered what happens to astronaut urine? Learn about NASA's water filtration process onboard the International Space Station and participate in a unique hands-on, inquiry based challenge! You will design, build, test, and measure the performance of a filtration device using inexpensive materials. Attendees will receive hand-outs, activities, and information to take back to the classroom!

Pluto and Beyond

Grades 2-5

Kelly Wardlaw, New Horizons Fellow, Kathy Curtin, Civil Air Patrol & Kristy Curtin, Guthrie High School

Through graphics and hands-on projects, the participants will experience the exciting New Horizons Mission to Pluto—Charon and the Kuiper Belt Objects. Mission information and a summary of the numerous educational activities provided. Each participant will receive a CD with the activities utilized in this presentation and other educational resources related to the New Horizons Mission and Solar System Exploration. Don't miss this invigorating look at the future of space exploration and take home several innovative activities to incorporate into your curriculum.

Robotics is Elementary!

Grades 4-6

Matt Bartley, Oak Hills Terrace Elem & Jennifer R Munoz, Villarreal Elem

Robotics in elementary? You bet! Many STEM-G concepts can be explored using simple robots. Using a little creativity, there can be a lot of applications in science, technology, engineering, and mathematics. Best of all, with sets from Lego, K'nex, and other companies, teaching basic programming skills is a breeze. This is a great session for robotics beginners!

Space Economics: The Way of the Future

Grades 9-12

Gloria Cisneros Lenoir, Austin Independent School District

This presentation is about how much countries have spent and are spending in the space programs. This is the time that private firms are jumping into the space industry to create goods and services. What are examples of technology transfers which currently exist? What are some potential examples in the works? Why should we be aware of this awesome and gigantic industry which is growing as we speak? What should we do about it?

Space Education in Japan

Grades K-12

Japan Aerospace Exploration Agency (JAXA)

The Japan Aerospace Exploration Agency and experienced Japanese educators will present unique teaching methods they have developed for their classes. In this session, you will learn the unique teaching methods and see them demonstrated. You will also be able to establish new networks with Japanese educators to discuss educational topics including future possibilities of collaboration. This session is appropriate for all educators interested in fostering international relations.

How to Build a Solar System with Planets and Orbits to Scale

Grades 3-6

Richard DeLombard, NASA Glenn Research Center

Build components for your own scale solar system to take back and use at your school. This model will combine both the planet size AND the orbital distances between planets. Get some ideas on how to present the solar system size to your students.

Spin Me Dizzy

Grades 6-12

Angela M Krause, Menomonie High School & Daniel J Loewen, Fresno Co. Office of Education

Balance disorders affect more than 2 million Americans annually. Space-based research has provided doctors with a better understanding of why balance problems occur and how to treat them. Participants in this workshop will simulate experiments conducted in space, such as the spinning chair experiment, to gain a better understanding of the neuro-vestibular system. In addition, participants will receive resources and teaching strategies for various grade levels.

A Day in Space: Linking Content, NASA and Students

Grades K-4

Julie Muffler, Challenger Learning Center

From lift off to landing, an astronaut's day is filled with inquiry, discovery, data collection, and problem solving. Learn how your students can participate in this space simulation that can you set up right in your classroom. Patterned after Challenger Center's "Touching the Future" workshop, the session has been updated and developed with today's students and the national content standards at its core. Come join the crew!

CSI Alien Encounter

Grades 6-12

Margaret Baguio, Texas Space Grant Consortium

Rebecca Moreland, Joyce Hill, & Angaleta Crenshaw, Highland Middle School

It appears to be a murdered alien, oozing fluids, and mysterious finger prints...enter the gritty world of CSI Alien Encounter. Armed with high-powered forensic techniques and razor sharp wits, delve deep into the mysteries of outer space. Don't just watch the action. Live it! Return with ready-to-implement labs, techniques, and exciting scenarios to implement inquiry based learning in your classroom!

Houston, We Have a Problem

Grades 5-9

Allan Miller, Kenai Peninsula Borough Schools &

Daniel Wray, Warsaw Community Schools

This session will feature a trans-continental design challenge accomplished by connecting middle school students in Alaska and Indiana. Based on the teamwork that saved Apollo 13, students assumed the roles of space flight crews and mission controllers to design and test solutions to a simulated problem on the ISS. The presentation will include the opportunity to perform the simulation, background information of its design, as well as specific details from the activity this year. Participants will each receive a CD containing all presentation information and a wrap-up discussion will focus on issues related to use in your classroom such as the technology involved and alternatives.

Incredible Edible Space Exploration

Grades K-6

Diane Watson, Webb Elementary & Renee Snell Merritt, Wicksburg High School

Teachers will receive a packet of lesson plans to teach important space exploration concepts with related reading articles. Come and eat your way into space and back while teaching space exploration concepts in a fun, hands-on way for students.

It's a Blast!

Grades K-12

Kathy Curtin, Civil Air Patrol, Kelly Wardlaw, New Horizons Fellow, &

Kristy Curtin, Guthrie High School

Introducing innovative ideas to ignite imagination! Participants will learn out of this world space games for the classroom. Develop ideas for building your learning community through an imaginative space carnival. Participants will play games, receive hand-outs on activities, construct a make-and-take craft, and brainstorm ideas for other events.

Light and Color

Grades 3-12

David Temple & Brooke Smith, Jefferson ISD

This workshop covers a wide range of topics dealing with light. From elementary to AP Chemistry there are labs and activities useful for just about any level of science. This workshop will investigate the nature of light and dispel some common misconceptions dealing with light.

Living and Working in Space: No Shoes, No Shower, No Gravity...No Problem

Grades 4-12

Brian Ewenson, Arizona Aerospace Foundation &

Brian Jackson, Ralph McCall Middle School

In the time it takes to orbit the Earth once, we will show you how to take your class on the ultimate field trip. Come along for the rough ride to orbit, view the beauty of space and return to Earth safely. A cross-curricular trip that can be used for a Space Day, space unit in its entirety, or individual components.

My NASA Data: Using Satellite Data in Your Classes

Grades 7-10

Laurissa Werhun, Toronto D.S.B. & Chuck Cohen, C.H.A.T

Want to incorporate real NASA data into your science classrooms? Utilize the MY NASA DATA website to download real NASA satellite data for your students to analyze. Lesson plans will be discussed and distributed and the website will be demonstrated.

Not Quite Zero: Space Effects You Learn From HUGE Spacecrafts

Grades K-12

Dr. Jack Bacon, NASA Johnson Space Center

Drag reduction in a vacuum! Phantom torques! Phantom spikes! Phantom reboost! All of these dramatic effects have been surprising revelations to the flight control teams of the ISS program, that took some sleuthing to resolve. What is causing them? Many second order effects are being observed, causing new approaches to be designed. Come take an inside look at flying the largest structure ever in space!

Planet Polyhedra

Grades 3-6

Holly Ray & Shields Templeton, Murfreesboro Schools

Participants will use geometrics concepts to construct polyhedra, which can range in size from a tennis ball to a beach ball, and vary in shape. Once constructed, the polyhedra can be used to represent planets, time capsules, asteroids, stars, etc. Create 2-3 polyhedra in the session, receive other patterns to take back and share with students. Extension activities include bubble-ology, which tie the geometric concepts to methods used by NASA engineers for storage containers in space!

Reading, Writing and Rings

Grades K-4

Cindy Cardwell & Lynne Hehr, University of Arkansas

Participants will take a tour of Saturn, its rings and its many moons while discovering “out of this world” activities to integrate science and language arts skills. Using the NASA educator guide, “Reading, Writing and Rings,” this session will highlight hands-on science and engineering activities which correlate with student reading, writing and research skills. Lots of materials and make-and-take samples will be provided.

Space Shuttle and ISS Trivia Game, Updates and Educational Opportunities

Grades 3-9

Carla Rosenberg, NASA Headquarters

Test your Shuttle and Station savvy with this remote-control challenge, while painlessly learning the basics about the Shuttle and International Space Station. Find out about the latest news, findings, and improvements from Return to Flight and future missions. Discover upcoming educational opportunities.

Stars and Constellations 101

Grades 7-9

Brandon Gillette & Julie Miller, Olathe Public Schools

Have you ever had a hard time finding constellations in the night sky? Have you ever wondered why we don't see the same stars night after night throughout the year? Do you enjoy dancing? Come learn activities that can immediately be taken into the classroom to teach the students about stars and the constellations they inhabit. A fun way to enhance your overall astronomy curriculum!

SATURDAY, 1:15 –2:30

Activities to Explore Space Technology

Grades 5-10

Dennis P Stocker, NASA Glenn Research Center & Kathy Welch-Martin, Tippecanoe School Group

Explore the technologies that enable human space exploration, such as life support, through a variety of learning center activities. Receive detailed lesson plans on how to construct the centers and implement the activities in your classroom. Discover how your students can develop an understanding of how space travel will change as we prepare for extended duration missions to the Moon and Mars.

Amateur Radio: A Tool In Space Exploration

Grades 2-12

Karen Washburn, Sheldon Elementary & Fred Gephart, Education Mentor (ARISS)

Your students can communicate with the International Space Station! Learn the process and procedures for communicating with the astronauts on the ISS using the “Ham” Radio. You do NOT need to be a ham radio operator. There are many operators willing to assist in the project. Also, learn about new technology in the microwave region. Radio operators are now bouncing signals off the moon and other planets for communication, tracking, and radio telescope operations.

Around and Around They Go

Grades 9-12

Thomas C Campbell, T.C. Bird Planetarium & Dr. Hank Bouchelle, Starwalk Planetarium

A hands-on workshop to model the geometry and viewing parameters of the visible planets in our solar system. Participants will calculate orbits, orbital speeds, and orbital locations for inner and outer planets and determine planet visibility for several given dates.

Elementary Rocket Science

Grades K-4

Cindy Cardwell & Lynne Hehr, University of Arkansas

Rocket your way through this fast-paced, hands-on session using the NASA guide “3, 2, 1...Liftoff!” and Estes Air Rockets. Explore interdisciplinary activities in science, math and language arts for primary students. Participants will receive posters, teacher guides and more!

Exactly How Does NASA Do Space Exploration Research Here on Earth?

Grades 6-12

Dr. Carol Hodanbosi & Dr. Diane McElwain, NASA Glenn Research Center

This presentation begins with a historical perspective of the development of the understanding of gravity from Aristotle to Einstein; it explains the technologies that NASA uses to perform reduced gravity, or low gravity research, without being in space. Following the presentation, the audience will participate in an interactive game, using hand-held remote devices. The questions will be related to both the presentation material and to NASA’s space exploration initiative. The Jeopardy formatted game is fun to play and can be used in the classroom to motivate students.

New Horizons and Pluto

Grades K-4

Pam Osecky, Monogalia School Systems & Cynthia Keeling, NASA IV&V Facility

The National Academy of Sciences has ranked the exploration of the Kuiper Belt, including Pluto, of the highest priority for solar system exploration. Join us and learn about the exciting exploration of the New Horizon Mission. Hands-on activities and free materials will be provided.

Phases, Eclipses and all that Moon Jazz

Grades K-6

Justin Bartel, Kansas Cosmosphere and Space Center

Ever wondered why there is a man in the moon on Monday at sunset and no moon at all the next night at the same time? Ever tried to explain what causes solar eclipses? Learn about moon misconceptions and how to demonstrate what is really going on.

Role of Private Industry in Space Exploration and the Classroom

Grades 5-12

Neil Milburn, Plano ISD & Armadillo Aerospace

This session will examine the role of entrepreneurial private industry in the future of space exploration through a brief history of rockets and rocketry. Be introduced to the new Goddards and Von Brauns. How can we use entrepreneurs of the 21st Century to spark the imagination of our youth, and inspire them to become future generations of scientists, engineers, mathematicians and astronauts.

The Return of Stardust

Grades K-12

Adair Teller, Joan Blackman, & Paula Garrett, SPACECHICKS

The STARDUST Sample Return Capsule (SRC) has just returned from a 3 billion mile roundtrip encounter with a comet. It has collected both interstellar and cometary material and will have delivered it to eagerly awaiting scientists for study. Can they answer the question as to “do we come from stardust”? It is the first sample return mission since the Moon missions. What are we learning? What are the scientists finding? How can you take the information back to your students? You will receive updates that are “hot of the press”.

Tiger Team Simulation: When Things Go Wrong

Grades 5-8

Reed Steele & Julie Muffler, Challenger Learning Center

Step up to the plate as a member of the “Tiger Team” to solve unexpected problems that arise during a space mission. Using knowledge gained through hands-on investigations of properties of matter and transfer of energy, the “Tiger Team” seeks to find the solution to the heat shield problem that had faced the crew of STS-114. Participants will devise solutions, test, modify, and retest as needed. This session provides an overview of how simulations engage students in the application of skills, concepts, and content taught in the science and language arts. A CD of ready to use lesson plans will be distributed.

Toys + Science + Engineering² = Out of this World Learning

Grades 4-12

Jennifer Becerra & Joan Sanders, NASA Johnson Space Center

Learn the science behind the toys that flew on the International Space Station. Your students will become the investigators while they observe, record, and predict how toys behave without Earth’s gravity. Toys in the classroom can help students learn basic physics concepts. Learn how to replicate some of these toys in your classroom.

Walk Through the Solar System with the Messenger Mission

Grades K-8

Allan Miller, Sterling Elementary School

Launched in August 2004, the Messenger satellite is currently headed for a 2011 rendezvous with one of the least understood planets in our solar system—Mercury. Come hear an overview of this exciting NASA Discovery Mission. A comprehensive K-12 curriculum has been created to support the scientific aspects of this mission and we’ll be exploring a unit called Voyages—an accurate one to six billion scale model of our solar system with many related lessons. Participants will have foots-on experience with the model and will also receive a copy of the entire curriculum and related mission goodies.

A Hands-on Exploration of Fluid Dynamics

Grades 3-12

Loren Lykins & Charla Jordan, Carlisle ISD

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.

Celebrate Space!

Grades 1-5

Barbara Diehl & Dawn Burbach, Harlingen ISD

Learn how to plan and implement a Space Day celebration on a single campus or with a cluster of schools. Each participant will receive a disk with detailed plans and parent notes as well as an opportunity to complete sample Space Day projects that are similar to projects done by students.

Designing and Launching a School-Based Space Camp

Grades 4-9

Malcolm McKinsey, Pleasant Valley School District &

Paula Lansford, Wilson County School District

Two NASA-trained educators will guide you through the steps to create, organize and launch a school-based Space Camp. Learn how to use facilities, engage school staff, attract parents, and sign up student Campers. Learn what to teach and how to immerse students in an enriching, dynamic learning program.

Human Physiology in Space

Grades 9-12

Brad McLain, Space Science Institute

What happens to the human body during space travel? What happens when we return to Earth? Will we ever really be able to leave our home and live on other worlds or travel in spaceships for extended periods? This session discusses these questions, covering fundamentals of human physiology and looking at how they change in a microgravity environment, including the cardiovascular system, the muscular-skeletal system, and the vestibular system, with hands-on, classroom appropriate activities for each topic.

Kindernauts

Grades K-3

Dan 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 ISS. Handouts provided.

Making Aerospace Real for Students

Grades K-12

Beth White & Kathy Baucum, Civil Air Patrol

CAP AE Program Managers will show you how to make aerospace real for your students by using aerospace themes to excite and motivate students to excel in core curriculum subjects such as math, science, language arts and geography. Build space vehicles, learn about the ISS and participate in other fun-filled, hands-on educational activities using inexpensive, household items.

Mars and War of the Worlds: Bringing Science into Language Arts

Grades 6-12

Debbie Evans, Chouteau High School & Lollie Garay, Redd School

War of the Worlds has opened a door for us to show students the connections between space exploration and other curriculum. Classroom educators will take you on a journey to Mars with a presentation of changing views of Mars and its life, build a Mars habitat, spacecraft, and take part in storytelling. Lots of handouts, posters, and CD's.

SATURDAY, 2:45-4:00

Measuring the Sun: Daytime Astronomy for your Class

Grades 6-8

Mike McGlone, NASA Johnson Space Center

Looking for ways to bring astronomy into your classroom? How about daytime astronomy activities for your students? From the basics of waves and optics to building and using simple observation tools, this workshop will give you several standards-based activities to bring astronomy into your classroom.

NASA Connect: Good Stress—Building Better Muscle and Bone

Grades 6-8

Monica Trevathan & Lisa Neasbitt, NASA Human Health and Performance

Participants will gain an insight to current research on muscles and bones during spaceflight from NASA experts, using multimedia educational programming from the award winning series NASA Connect. During prolonged exposure to weightlessness, the human body will undergo a decrease in muscle size and strength, and bone mineral density. You will hear about countermeasures to these adverse effects, including exercise and good nutrition before, during, and after spaceflight. Handouts, classroom activities, and NASA Connect shows will be provided.

Take Technology to New Heights

Grades 3-6

Anita McPartland, Lancaster ISD

Explore “elementary” propulsion and rockets in an inquiry-based environment. Experience rocketry through integration of technology, math, science, and language arts. Engage students in hands-on activities utilizing inquiry to understand basic propulsion and rocket design. Enhance the learning process with Internet resources, cognitive maps, Microsoft Office templates, and hands-on manipulatives. This session provides an opportunity for participants to create simple rockets, conduct tests, record, and report results. Return to your classroom with ready to use activities.

Using Learning Stations to Teach Space Science

Grades 3-6

Nancy Gealow & Gay Bowman, Spring ISD

Roll up your sleeves and experience these hands-on activities which entice students into the joys of learning space science. These interactive learning centers are based upon “Space Station Science” and other trade books.

Walk the Planets

Grades 4-8

Michelle Szybowicz, Antioch High School

Why have we not placed manned flights on the different planets? Learn about the distance of the planets from the sun as we walk each planet. Learn interesting facts and understand just how vast our own solar system is.

CLOSING KEYNOTE , DOOR PRIZES & CERTIFICATES

Closing Keynote

The closing keynote address will begin at 4:15 on Saturday. Immediately following will be closing comments by Conference Staff and door prizes! You must be present to win...and prizes include Southwest Airline Tickets!

Certificates

Professional Development certificates will be available immediately following the closing keynote and door prizes. However, we would like to hear from you first. Simply fill out the evaluation form found in your conference packet, then head to the Zero-G Diner to exchange the evaluation for your certificate.

CONFERENCE REGISTRATION & SESSION SELECTION

Express registration is now available online! Please visit the conference website at www.spacecenter.org/sec.html to register for the conference and sessions!

Please indicate your status:

Pre-registered 1st Time Attendee Repeat Attendee Presenter

Referred by: _____

Name: _____

School: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Home Phone: _____ Work Phone: _____

Fax: _____ Email: _____

Please indicate what grade level(s) best describe your expertise: _____

IF YOU HAVE NOT PRE-REGISTERED WITH PAYMENT,
PLEASE FILL OUT THE PAYMENT INFORMATION BELOW.

Please check the items you wish to purchase:

<input type="checkbox"/> Conference Registration	\$229	Qty. _____	
<input type="checkbox"/> Dive Session, Thursday	\$20	Qty. _____	
<input type="checkbox"/> Dive Session, Friday	\$20	Qty. _____	
<input type="checkbox"/> Dive Session, Saturday	\$20	Qty. _____	
<input type="checkbox"/> Reception Ticket, for guest	\$25	Qty. _____	
<input type="checkbox"/> Banquet Ticket, for guest	\$28	Qty. _____	Total: _____

Payment Method: Check Credit Card

Please make checks payable to Space Center Houston. Check #: _____

Visa MasterCard Discover American Express Diner's Club
Card #: _____ Exp. Date: _____

Name on card: _____

Signature: _____

Number your first, second, and third choice for each block of sessions. If you do not indicate alternate sessions and your first choice is full, we will assign you a session. All efforts will be made to place you in one of your three preferences. You may also register for sessions online.

Be sure to mark 3 choices for each time frame!

Thursday, 12:00-1:00 PM

Educator Resource Center

Thursday, 12:00-2:00 PM

Astronauts and Space Exploration
 Fly Me to the Moon
 Living with a Star
 Newton's Laws
 Planet Party
 Project X-35
 Rocks from Space
 To Infinity & Beyond

Thursday, 1:15-4:00 PM

ISS Construction Simulation (Beginner) (Additional charge applies)

Thursday, 1:30-2:30 PM

Educator Resource Center

Thursday, 3:00-4:00 PM

Educator Resource Center

Thursday, 2:30-4:30

Adapt or Die
 Exploring the 10th Planet
 Geobot Flying Wing
 Going Up
 Informal Ed Discussion
 Mission to Mars
 To the Moon, Mars & Beyond

Friday, 10:30-11:45 AM

A Basic Understanding
 ASPL Tour
 Bring Parents on Board
 Cool Current Comet Curriculum
 Cosmic Questions
 Exploring Space
 Food Lab Tour
 GPS
 It's Hard to Dance
 Life Support
 Mars or Bust!
 Mission Control Tour
 NBL Tour
 Robotics Lab Tour
 Rockets
 Science Principles
 Space Education in Japan
 Vehicle Mock-up Tour
 Young Astronauts

Friday, 1:15-2:30 PM

ASPL Tour
 Aircraft Operations Tour (Double Session)
 Astronomy in the Classroom
 Astrotots
 Celebrate Mars
 Food Lab Tour
 Is There Life
 ISS Construction Simulation (Beginner) (Additional Charges Apply)
 Mission Control Tour
 Moon Madness
 Moonbase Challenge
 NASA Sci-Files
 NBL Tour
 Rhythms of Gravity
 Robots and More
 Robotics Lab Tour
 Rocket Design
 Seeing Across the EM Spectrum
 Tiny Bubbles
 Vehicle Mock-up Tour

Friday 2:45-4:00 PM

ASPL Tour
 Astronaut Training Days
 Discovering Flight
 Exploration Cell Science
 Food Lab Tour

CONFERENCE REGISTRATION & SESSION SELECTION

Friday, 2:45-4:00 PM (Cont)

- Life in a Hostile Environment
- Meet a NASA Flight Director
- Mission Control Tour
- Moon Base Probability
- NBL Tour
- Ripples in Space
- Robotics Lab Tour
- Shuttle to Station and Beyond
- Space and Beyond
- The Right Ratio of Rest
- Unlimited Images
- Vehicle Mock-up Tour
- What to Wear
- Where in Space

Friday 4:15-5:30 PM

- ASPL Tour
- Astronauts and Space Exploration
- Celebrate Space
- Cheering Science Students
- FAB 5
- Food Lab Tour
- Future of Flight Design
- Into the Blackness
- Kinesthetic Astronomy
- Launching Language Arts
- Mars Boot Camp
- Mission Control Tour
- NBL Tour
- Robotics Tour
- Spacey Sports
- Star Light, Star Bright
- Vehicle Mock-up Tour



Saturday, 9:15-10:30 AM

- Adventures of Amelia the Pigeon
- Aircraft Operations Tour (Double Session)
- Aliens Among Us
- Fish Astronaut Selection
- How to Build a Solar System
- Marsbound
- Mission Control Tour
- Moon Journals
- NASA's Engineering Design Challenge
- NBL Tour
- Pluto and Beyond
- Robotics is Elementary
- Space Economics
- Space Education in Japan

- Spin Me Dizzy
- Vehicle Mock-up Tour

Saturday, 10:45-12:00 PM

- A Day in Space
- CSI Alien Encounter
- Houston, We Have a Problem
- Incredible Edible Space Exploration
- It's a Blast
- Light and Color
- Living and Working in Space
- Mission Control Tour
- My NASA Data
- NBL Tour
- Not Quite Zero
- Planet Polyhedra
- Reading, Writing & Rings
- Space Shuttle & ISS Trivia Game
- Stars & Constellations
- Vehicle Mock-up Tour

Saturday, 1:15-2:30 PM

- Activities to Explore
- Aircraft Operations Tour (Double Session)
- Amateur Radio
- Around & Around They Go
- Elementary Rocket Science
- Exactly How Does NASA...
- ISS Construction Simulation (Advanced) (Additional charge applies)
- Mission Control Tour
- NBL Tour
- New Horizons & Pluto
- Phases, Eclipses & all that Moon Jazz
- Role of Private Industry
- The Return of Stardust
- Tiger Team Simulation
- Toys+Science+Engineering
- Vehicle Mock-up Tour
- Walk Through the Solar System

Saturday 2:45-4:00 PM

- A Hands-on Exploration
- Celebrate Space!
- Designing & Launching
- Human Physiology
- Kindernauts
- Marking Aerospace Real
- Mars and War of the Worlds
- Measuring the Sun
- Mission Control Tour
- NASA Connect
- NBL Tour
- Take Technology to New Heights
- Using Learning Stations
- Vehicle Mock-up Tour
- Walk the Planets

Questions

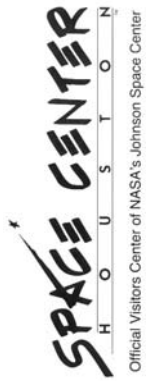
If you have any questions, please do not hesitate to contact the SEEC staff by calling (281) 283-7773 or emailing istewart@spacecenter.org.

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