Invitational Event for Hawaii Department of Education
Hilo / Waiakea Complex Area Schools and Partners

Journey through the Universe

S.T.E.M. Conference

Building a Human Presence in Space

Engaging Students in Science, Technology, Engineering and Math Learning Experiences within and Beyond the Classroom

Saturday, March 9, 2013 'Imiloa Astronomy

Featuring

DR. JEFF GOLDSTEIN

CENTER DIRECTOR: NCESSE
NATIONAL CENTER FOR EARTH AND SPACE SCIENCE EDUCATION

Jeff Goldstein is a nationally recognized science educator and planetary scientist who has dedicated his career to the public understanding of science and the joys of learning. As Center Director for the National Center for Earth and Space Science Education (NCESSE), Dr. Goldstein oversees the creation and delivery of programs that engage entire communities, train 3,000 teachers annually, and emphasize family learning. He led the inter-organization team that permanently installed the Voyage model Solar System on the National Mall in Washington, DC, in front of the Smithsonian. The Voyage National Program is permanently installing low cost replicas in 100 communities world-wide. Dr. Goldstein also oversees the Student Spaceflight Experiments Program (SSEP) providing real research opportunities for pre-college students on the Space Shuttle and International Space Station. Dr. Goldstein was the Keynote Speaker for the NSTA National Conference in San Francisco, CA, March 2011 and for our 2012 S.T.E.M. Conference in Hilo, HI.

Dr. Goldstein was at the National Air and Space Museum for 8 years, departing in 1996 as acting Chair of the Lab for Astrophysics. He was on the senior staff at Challenger Center 1996-2005. In 2005 he created the National Center for Earth and Space Science Education. Visit Jeff at blogontheuniverse.org

http://www.gemini.edu/journey

Featured Breakout Speakers:

Brian Day

NASA Lunar Science Institute

Contact: brian.h.day@nasa.gov

Brian Day is a NASA contractor at Ames Research Center and currently serves as the Education/Public Outreach Lead for NASA's Lunar Atmosphere and Dust Environment Explorer (LADEE) mission to the Moon, scheduled for launch in 2013. Brian has played key roles in various NASA Mars Analog Field Studies, providing technical support in the field for webcasts and robotic rover tests in extreme environments here on Earth. Brian has worked as an instructor in San Jose State University's Internet Business Specialist program, and has taught astronomy through the Metropolitan Education District in San Jose and as part of Project Astro. He is very active in the amateur astronomy community and served as the chairman of the Foothill College Observatory for 16 years. Brian and his wife Pam are avid solar eclipse chasers, having traveled around the world to such exotic places as the wilds of Africa, heights of the Andes to the Great Wall of China and beer gardens of Germany.

Olivier Guyon

Subaru Telescope

Contact: guyon@naoj.org

Olivier Guyon is an astronomer at the Subaru Telescope. He started looking at stars from the age of 10, and he is now both an avid amateur astronomer and a professional astronomer. Olivier graduated from University of Paris 6 in 2002 (Ph.D. research topic: wide field interferometry), and now works with other scientists to directly observe exoplanets. Olivier has been developing new techniques for imaging exoplanets (planets around other stars) from telescopes on Earth and also future telescopes in space. With these new techniques, astronomers will soon be able to observe planets like ours and start to find out if there is life elsewhere in the Universe. In 2007, Olivier received a Presidential Early Career for Scientists and Engineers award from President Bush at the White House. Olivier was awarded the MacArthur fellowship (nicknamed the "Genius grant") for his innovative work in astronomical optics in 2012. In his spare time, he builds telescopes which he then uses to observe from the clear skies of Mauna Kea and Mauna Loa.

State S.T.E.M Resource Teachers

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Program

8:30 - 8:45 Welcome: State and Complex Area Leadership

8:45 - 10:00 Keynote Address: *Let Our Children DO Science – STEM Education for the 21st Century*
Dr. Jeff Goldstein, National Center for Space Science Education

10:00 -10:15 Break

10:15 –11:30 Breakout Sessions

School & Community Leaders with Dr. Jeff Goldstein:
Journey through the Universe 2.0 Continued: Creating 2ist Century Learning Opportunities

Teachers: Select and attend sessions from scheduled sessions:

- Olivier Guyon: "How Can Studying The Sun Help Us Understand Other Stars"
- S.T.E.M for Primary Students Gr. K-2: Did You Know There Was a Fourth Little Pig?
- S.T.E.M for Elementary students Gr. 3-5: Form, Function, and Survival

----------Special Session Participants Only ----------

10:15 – 2:45 **Special Session:** Brian Day – Lunar and Meteoritic Specimen Training

* Lunch will be provided for participants who have pre-registered for the afternoon Special Session.

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Teacher Breakout Sessions: STEM Teaching and Learning

☐ **How Can Studying the Sun Help Us Understand Other Stars**
Presenter: Olivier Guyon
The Sun is a star and like our Sun, other stars have planets orbiting them. Explore some of the elements necessary for life to exist on other planets. Create a pinhole camera and observe the number, size, shape and position of sunspots.

What is STEM and How Do I Do It?
Join State STEM Resource Teachers in these hands-on workshops to learn about the Engineering Design Process (EDP) that is integral to the implementation of a "STEM" (Science, Technology, Engineering, and Math) lesson for your grade level. Presenters will provide documents to assist teachers with the transition from HCPS III to the new Next Generation Science Standards (NGSS) and will engage participants in a classroom-ready lesson that demonstrates the alignment of STEM, NGSS, and the Common Core Standards through the EDP.

☐ **STEM for Primary Students Gr. K – 2: Did You Know There Was a Fourth Little Pig?**
The theme of the Three Little Pigs is found in other stories from around the world, and provides the springboard for a developmentally appropriate lesson that engages our youngest students in STEM learning. Participants will use readily-available materials as they apply STEM process skills to solve a literature-based engineering design challenge.

☐ **STEM for Elementary Students Gr. 3 – 5: Form, Function, and Survival**
In this session, participants will engage in an engineering design challenge that will help them address the standards related to structure and function in organisms. In addition, they will see how biological attributes and principles can be applied to man-made inventions and the rapidly changing world of technology. The demonstration lesson illustrates how the engineering design process helps develop student engagement, build understanding, and increase awareness of STEM career options.

☐ **Lunar and Meteoritic Specimen Training**
Presenter: Brian H. Day, NASA Lunar Science Institute
This program is designed to be used in a classroom environment for K - 12th grades. This program consists of six samples of Lunar or Meteorite material encapsulated in a six-inch diameter clear lucite disk. The disk is accompanied by written and graphic descriptions of each sample in the disk; a Powerpoint presentation on CD; a teacher workbook; and additional printed material.
Science teachers may qualify for the use of a disk in their classroom by attending this workshop sponsored by NASA's Space Science Education Specialists.

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Please complete and return this form by February 20, 2012

to DOE Resource Teacher Denise Scott:
FAX: 933-0368, PHONE: 808-933-0934
Email: Denise_Scott@notes.k12.hi.us
450 Waianuenue Ave. Rm. C7, Hilo, HI 96720.

MARCH 9, 2013: STEM CONFERENCE REGISTRATION

No Registration Fee Required

Name:		Phone:	
Organization/ School:		Phone:	
Address:		Zip Code:	
Email:			

Please Place a Checkmark Next to Each Session that You Plan to Attend	
	10:15 – 11:30 Leadership Session: *Journey through the Universe 2.0 Continued*
	Concurrent Teacher Breakout Sessions
	10:15 – 11:30 Olivier Guyon: How can studying the Sun Help Us Understand Other Stars
	10:15 – 11:30 State STEM RT's: STEM for Primary Students Gr. K-2: Did You Know There Was A Fourth Little Pig?
	10:15 – 11:30 State STEM RT's: STEM for Elementary Students GT. 3-5: Form, Function, and Survival
	Special Session: Teachers and Sponsors
	10:15 – 2:45 Brian Day**: *Lunar and Meteoritic Specimen Training*** *(Includes bento lunch)*

☐ *Check here if ADA accommodation is needed*