



Keynote Speaker

JOSEPH M. ACABA

**NASA ASTRONAUT**

**PERSONAL DATA:** Born in 1967 in Inglewood, California, and raised in Anaheim, California, where his parents, Ralph and Elsie, still reside. Enjoys outdoor activities, such as camping, hiking, biking, kayaking and scuba diving.

**EDUCATION:** Esperanza High School, Anaheim, California, 1985; Bachelor of Science in Geology, University of California - Santa Barbara, 1990; Master of Science in Geology, University of Arizona, 1992

**ORGANIZATIONS:** International Technology Education Association, Florida Association of Science Teachers, Association of Space Explorers

**EXPERIENCE:** United States Marine Corps, Reserves. Worked as a hydro-geologist in Los Angeles, California, primarily on Superfund sites, and was involved in the assessment and remediation of groundwater contaminants. Spent two years in the United States Peace Corps as an Environmental Education Awareness Promoter in the Dominican Republic. Manager of the Caribbean Marine Research Center at Lee Stocking Island in the Exumas, Bahamas. Taught one year of high school science at Melbourne High School, Florida, and four years of middle school math and science at Dunnellon Middle School, Florida.

**NASA EXPERIENCE:** Selected as a mission specialist by NASA in May 2004. In February 2006, he completed astronaut candidate training that included scientific and technical briefings, intensive instruction in shuttle and International Space Station systems, physiological training, T-38 flight training and water and wilderness survival training. Upon completion of his training, Acaba was assigned to the Hardware Integration Team in the Space Station Branch, working technical issues with European Space Agency (ESA) hardware. He was also a member of the Space Shuttle Branch, supporting shuttle launch and landing preparations at the Kennedy Space Center, Florida.

**SPACEFLIGHT EXPERIENCE:** STS-119 Discovery (March 15 to March 28, 2009) was the 125th shuttle flight, the 36th flight of Discovery and the 28th shuttle flight to the International Space Station. The primary objective of this flight was to deliver the final pair of power-generating solar array wings and truss element to the International Space Station. Acaba accumulated 12 hours and 57 minutes of extravehicular activity (EVA) in two spacewalks. STS-119 returned to land at the Kennedy Space Center, having traveled 202 orbits and 5.3 million statute miles in 12 days, 19 hours and 29 minutes. Expedition 31/32 launched at 9:01 a.m. Baikonur time on May 15, 2012, from the Baikonur Cosmodrome in Kazakhstan. Gennady Padalka and Sergei Revin of the Russian Federal Space Agency and Acaba landed their Soyuz TMA-04M spacecraft in Kazakhstan at 8:52 a.m. Kazakhstan time on September 17, 2012. Acaba spent 123 days aboard the station as a Flight Engineer of the Expedition 31 and 32 crews. Acaba supported the arrival of the first commercial resupply spacecraft, SpaceX's Dragon, in late May; an undocking, re-docking and final undocking demonstration of the Russian International Space Station Progress 47 cargo ship; the first single-day launch-to-docking demonstration of Progress 48 and the arrival and departure of the third Japanese cargo ship, HTV3. Acaba served as intra-vehicular crew member for two U.S.-based spacewalks, helping to restore a critical power unit and exchange a faulty camera on the station's robotic arm. Acaba also participated in numerous scientific research experiments and performed regular maintenance and operational tasks aboard the orbiting complex.

Acaba has logged a total of 138 days in space during two missions.



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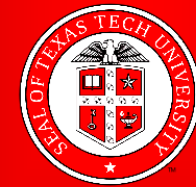
**Dr. Tigga Kingston** is an Associate Professor in the Department of Biological Sciences Texas Tech University and a central figure for the conservation of bats in Southeast Asia; she is the founder and director of the Southeast Asian Bat Conservation Research Unit established with support from the National Science Foundation, USA, and has been the co-organizer of the 1<sup>st</sup> and 2<sup>nd</sup> Southeast Asian Bat Conferences held in Thailand and Indonesia. She earned a PhD degree at Boston University where she studied bat assemblages in Peninsular Malaysia, and has published more than 40 papers in peer-reviewed journals and books. She serves on the advisory boards of Bat Conservation International and Lubee Bat Conservancy, and served for three years on the board of the North American Society for Bat Research. She is a member of the IUCN Chiroptera Specialist Group and is an author of 87 SE Asian Bat Red-list Accounts.

In 2008 she was the Principal Investigator on a TTU Education Research Initiative entitled "The Malaysian Bat Education Adventure (MBEA): A Research-based Learning Environment for Teaching Biological Concepts". The MBEA ([www.ttu-mbea.org](http://www.ttu-mbea.org)) The MBEA makes real-time STEM research accessible to elementary students in order to effect an increase in students' science skills, knowledge and attitude. Over 700 2-5th grade students from TX, MA & WI joined the PI in 2009, 2010 on the MBEA, working through a Biodiversity Module focused on her research on bat diversity in a Malaysian rainforest, with learning goals centered on students' ability to: 1) describe how scientists measure species diversity; 2) recognize that species vary in abundance within an assemblage; 3) describe intraspecific variation using simple physical measurements; 4) enter raw data into tables; and 5) collate these data and construct and interpret frequency histograms and scatter plots. The module includes over 20 instructional videos, activities, background information and lesson plans. Central to the MBEA is the 4-week "live" component, during which students track the real-time research in Malaysia. Through satellite access to the project website students are sent the daily capture data which they collate and use to construct graphs and histograms tracking daily capture rates of individual species, species abundance distributions, and the distributions of forearm length and body. Video-conferences and conference calls are arranged throughout the fieldwork for the students to interact directly with the research team.

Texas Tech University  
College of Education

4th  
Annual  
(MS)2  
Conference

Understanding by Design  
Middle School Math and Science  
scholarship degree program



International Cultural Center

Hall of Nations

Texas Tech University Campus

June 24, 2013

## Agenda

- 8:30-9:00 **Breakfast & Registration**
- 9:00-9:15 **Welcome by Dean Ridley**
- 9:15-11:15 **Keynote Speaker**  
Tigga Kingston, PhD  
Associate Professor  
Biological Sciences  
Texas Tech University
- 11:15-12:30 **Lunch—Fajita Buffet**
- 12:30-2:00 **2nd Keynote Speaker**  
Joseph M. Acaba  
United States NASA Astronaut
- 2:00-2:30 **Research Posters**
- 2:30-2:45 **Break-Snacks**
- 2:45-3:45 **Breakout Session**  
Dr. J. Cheon
- 3:45-4:15 **Awards, Wrap-Up and Evaluations**

## Breakout Session

The Scratch logo is displayed in a stylized, bubbly font with a gradient from orange to yellow and a white outline. It is centered within a grey rectangular box that has a decorative border.

### Scratch: Learning by Programming

Dr. J. Cheon      ICC/Hall of Nations

*Scratch* is a programming language that makes it easy to create individual's own interactive stories, animations, games, music, and art. As your students develop and share *Scratch* projects, they reason systematically and think creatively. This session will discuss how we can use *Scratch* for Math and Science education.

### Laptop Required

(MS)2 2013 Graduates

LaEtta Scifres Akbar-Ali  
Elaine Canham  
Maria Centeno  
Teha Cooks  
Chantay P. Doctor  
Katie Duncan  
Leah Hudak Feist  
Donna Fox  
Elissa Wells Gere  
Amy Hansen  
Trina Hardin  
Lori Britton Harkins  
Cari Quillen King  
Denver McMurry  
Cheri McNeely  
Joshua Nielsen  
Jose Olivencia  
Karry Avila Parks  
Heather Plaisance  
Melissa Pruitt  
George W. Rodriguez  
Heather Ross  
Jessica Salazar  
Lynn Seman  
Jennifer Smith  
Ryan Timmons  
Keely Tippet  
Morgan Henderson-Waters  
Diane Wells  
Catherine Wright