International Astronautical Congress (IAC) 2011

ISS National Laboratory Education Project

"Enhancing & Innovating the ISS as an Educational Venue"

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ISS National Lab Education Vision Statement

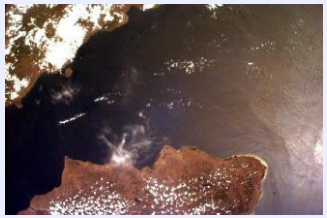
- **Develop the ISS National Laboratory Education Project (ISS NLE) as a national resource for Science, Technology, Engineering and Mathematics (STEM) education, utilizing the unique educational venue of the International Space Station per the NASA Congressional Authorization Act of 2005.**
  - **The ISS NLE will serve as an educational resource which enables educational activities onboard the ISS and in the classroom.**
  - **The ISS NLE will be accessible to educators and students from kindergarten to post-doctoral studies, at primary and secondary schools, colleges and universities.**
  - **Additionally, the ISS NLE will provide ISS-related STEM education opportunities and resources for learners of all ages via informal educational institutions and venues**

- **Though U.S. Congressional direction emphasized the involvement of U.S. students, many ISS-based educational activities have international student and educator participation**
  - **Over 31 million students around the world have participated in several ISS-related education activities**

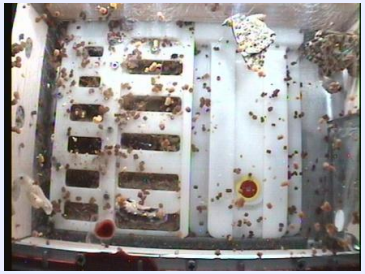
ISS National Lab Education Objectives

- **Objective 1: Encourage the acquisition of STEM knowledge through credible educational experiences utilizing the unique resources and venue of the ISS Program.**
- **Objective 2: Attract Americans from all age groups, ethnics, racial and economic backgrounds to enter into and sustain their STEM education, to advance their literacy in STEM subject matter, or facilitate their future STEM employment.**
- **Objective 3: Development of partnerships with agencies and organizations outside of NASA (to include other U.S. Federal agencies, non-profit organizations, academic institutions, commercial entities, professional organizations as well as ISS International Partner space agencies and affiliated entities) for the development and execution of activities under the ISS NLE portfolio.**
- **Objective 4: Make the ISS National Lab Education a "nationally recognizable brand" through the promotion of the above activities.**

Current ISS NLE Legacy Activities with the ISS Program

Program	
Amateur Radio on ISS (ARISS): Enables school contacts via onboard amateur radio • Involves students from 39 countries • Over 600 communications sessions with the ISS crew	 
Earth Knowledge Acquired by Middle School Students (EarthKAM): Enables student-controlled earth observations using cameras onboard ISS • Involves students from 16 countries	 

Current ISS NLE Partnership Activities with the ISS Program

Program	
InSPIRE: A Grand Challenge competition where high school students design software to control the on orbit SPHERES hardware • Partnership with NASA and MIT	
Commercial Generic Bio-processing Apparatus (CGBA) Science Inserts (CSI): Experiment kits that fly plants, spiders, and caterpillars/butterflies enabling students to conduct ground based control group/flight following experiments via Orion's Quest educational non-profit organization • Nearly 400,000 have students participated in the Monarch butterflies life & plant growth experiments • Partnership with CGBA/Bioserve/NASA	 

Future Innovative ISS NLE Activities with the ISS Program

Program	
ISS*Live!*: (Deploys 10/1/2011): A rich, educational, interactive experience that streams real-time data explaining how the ISS works and what the crew is doing! All delivered in a STEM context using the internet and mobile applications and tablets.	
YouTube Spacelab: (Deploys 10/4/2011): A world-wide student experiment design competition utilizing the global resources of Google, YouTube, Space Adventures and BioServe • Active promotion by NASA Education as well as the educational organizations of CSA, ESA and JAXA