



ISS National Lab Education Project

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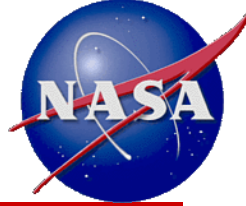
ISS National Lab

Enabling Legislation



- **Education has always been an important component of the NASA mission**
 - NASA's educational mission charge is contained in the agency's enabling legislation, the Space Act of 1958
 - **The NASA Authorization Act of 2005 provided direction to NASA to increase utilization of the ISS by other US Government agencies and the private sector through partnerships, cost sharing agreements or other arrangements that would supplement funding of the ISS**
 - US Segment of the ISS designated as a National Laboratory
 - **The 21st Competitiveness Act directed NASA to incorporate Science, Technology, Engineering and Mathematics (STEM) related activities as part of the ISS National Laboratory mission**
 - New activities through partnerships which complement ongoing activities
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ISS National Lab Project Goals

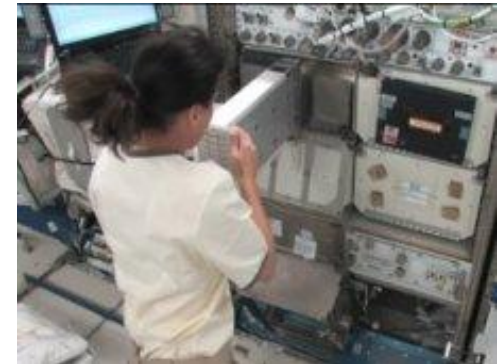


- **Get educators, student and life long learners involved in the ISS mission**
 - K-12
 - University level
 - **Provide credible educational experiences**
 - K-12 activities should map back to national science standards
 - **Align with the NASA Office of Education desired outcomes**
 - Inspire
 - Engage
 - Educate
 - Employ
 - **Emphasize hand-on experience aka “experiential education”**
 - Unique to the ISS mission and human spaceflight
 - **Maximize student involvement in a project activity**
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Partner Driven ISS Educational Activities



- **Nanoracks/CubeLab: Self-contained cubesat form factor laboratory modules enabling student as well as professional grade experiments**



- **Synchronized Position Hold Engage and Reorient Experimental Satellite (SPHERES) internal satellites flying inside the ISS under the control of student developed software**



Partner Driven ISS Educational Activities



- **Commercial Generic Bioprocessing Apparatus (CGBA) Student Investigations (CSI) allow students to conduct ground based control group experiments using classroom based apparatus nearly identical to the onboard equipment**
 - Over 180,000 students participated in the Monarch butterflies life cycle experiment in 2009-2010



- **The Kids In Micro-g student microgravity design competition was inspired by the Buzz Lightyear on ISS outreach program**
 - Buzz Lightyear Mission Logs special feature videos on the re-release of Toy Story 1 and Toy Story 2 showcased life onboard the ISS



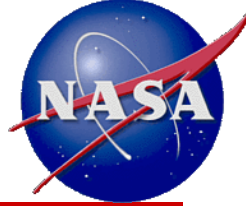
Ground Based ISS Educational Activities



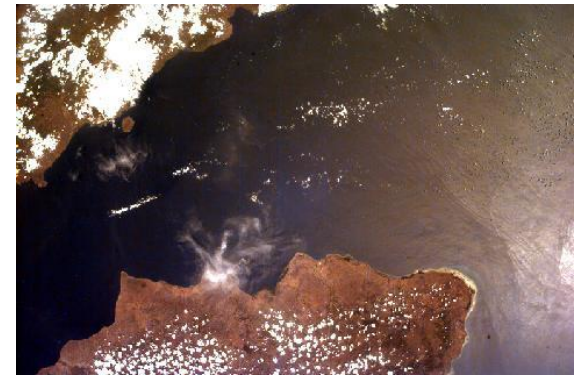
- **The High Schools United With NASA to Create Hardware (HUNCH) program enable middle school and high school students to build ISS flight and training hardware**
 - **HUNCH involves 20 High Schools in 8 states**
 - **The United States Military Academy Cadets will be providing project management support for HUNCH hardware developed at schools located in New York state**



Earth Observation



- **Earth Knowledge Acquired by Middle School Students (EarthKAM) has involved student from 16 countries in student controlled earth observations using cameras onboard ISS**



Looking for Partnerships and Bridging Opportunities



- **The ISS National Lab Education Project strives to enable participation in the ISS mission by educators and students at the K through University levels, as well as life long learners**
 - **The Project will continue to develop a portfolio of STEM educations activities pertinent to the ISS Program and aligned with the NASA Office of Education goals of inspiring, engaging educating and employing the next generation STEM workforce**
 - **The Project is looking for partnering opportunities and activities which can bridge other flight platforms with ISS**
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