

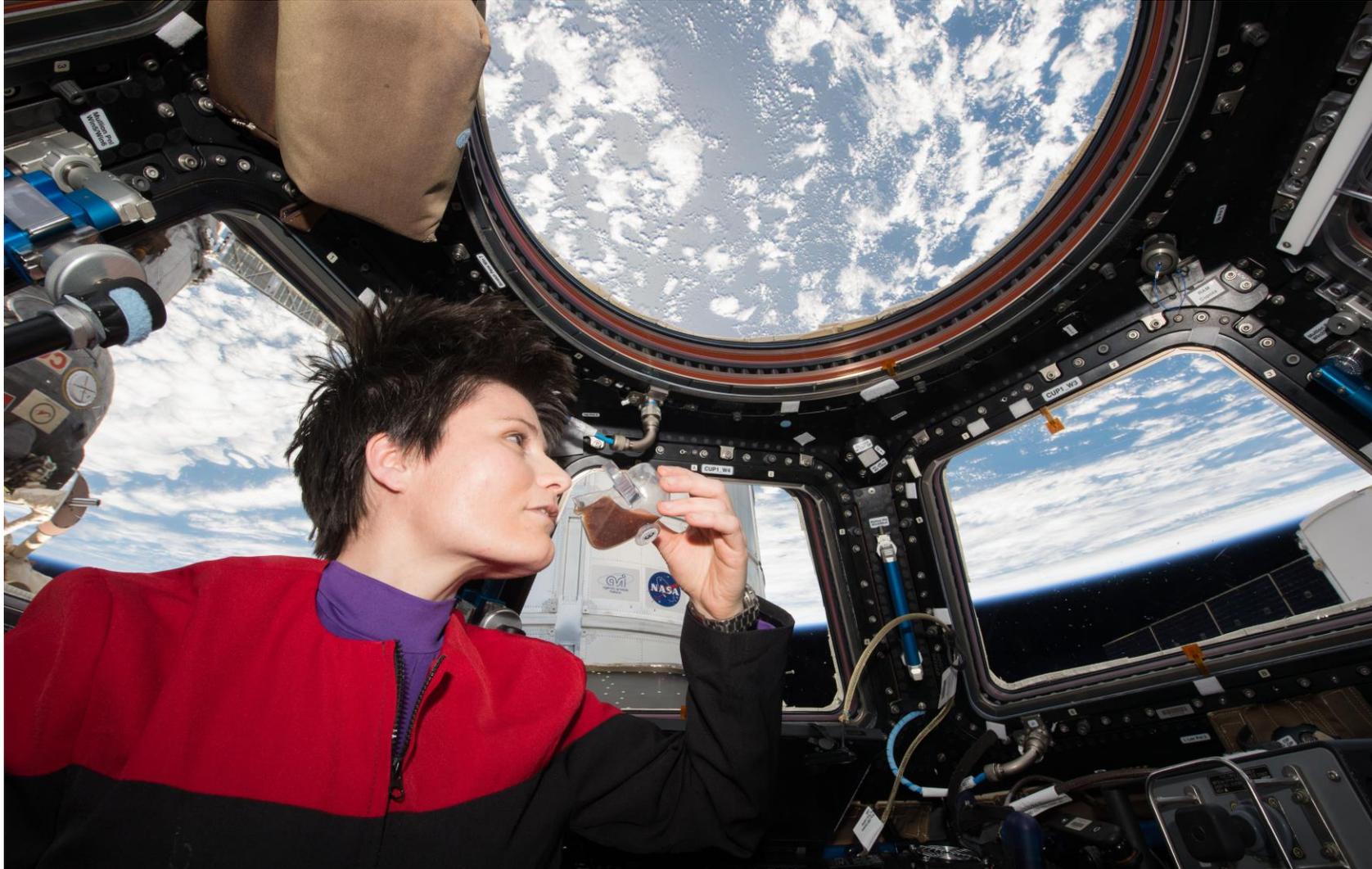
TWINKLE, TWINKLE, LITTLE STAR –
ARTS AND HUMANITIES TAKE US FAR:

HOW STEAM EDUCATION CAN CULTIVATE
GENDER EQUITY IN SPACE EDUCATION

Adrienne Provenzano, Presenter

United Nations Expert Meeting on Space for Women

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What is STEAM Education?

Science

Technology

Engineering

Arts (and Humanities)

Mathematics





- WHY STEAM Education?

Engaging

Collaborative

Creative and Critical Thinking

Participatory

Multidisciplinary

Multiple Learning Styles and Education Strategies

Role Models

Advancing Equity

The Arts and Humanities and the International Space Station Innovative Examples of STEAM Education

Adrienne Provenzano, adrienneprovenzano@yahoo.com
Independent STEAM Educator, Consultant, Composer, Musician

The ISS is a powerful platform for formal and informal STEM education.

The Arts and Humanities transform projects into STEAM education. Engaging and dynamic!

Have the Arts and Humanities been utilized in connection with the ISS?

YES!



(Kate Rubins wears spacesuit named Courage, painted by pediatric cancer patients)

Raising awareness of the ISS
Teaching STEM concepts
Engaging the public in hands-on activities
Creating opportunities for education research
NASA, Roscosmos, CSA, ESA, and JAXA

Children's Literature:
Story Time From Space,
building literacy from
low-Earth orbit.



On Music Monday in 2013, Commander Chris Hadfield sang along with children across Canada.



"So sing your song, I'm listening,
Out where stars are glistening,
I can hear your voices bouncing off the Moon.
If you could see our nation
From the International Space Station,
You'd know why I want to get back soon .



History, Design, and Geography: 2014 Olympic Torch Relay, from the ISS to Sochi, Russia.



Music: Commander Koichi Wakata plays an ancient sho instrument.

Design:
Samantha Cristoforetti tests an out-of-this-world cup of espresso.



International Space Station Suite:
my original orchestral work-in-progress to celebrate the ISS and provide opportunities for STEAM education outreach and education research. Funding partners and other collaborative partners are being sought for this unique project.



Textile Arts: More than 2000 quilt squares were contributed from around the world and joined in 28 quilts in response to Karen Nyberg's challenge.



Photography: Paolo Nespoli and the Spac3 app logo, an interactive arts project for Expedition 52/53.

Poetry:
Ucyu Renshi – space poem chains –are stored in the Kibo (hope) module.

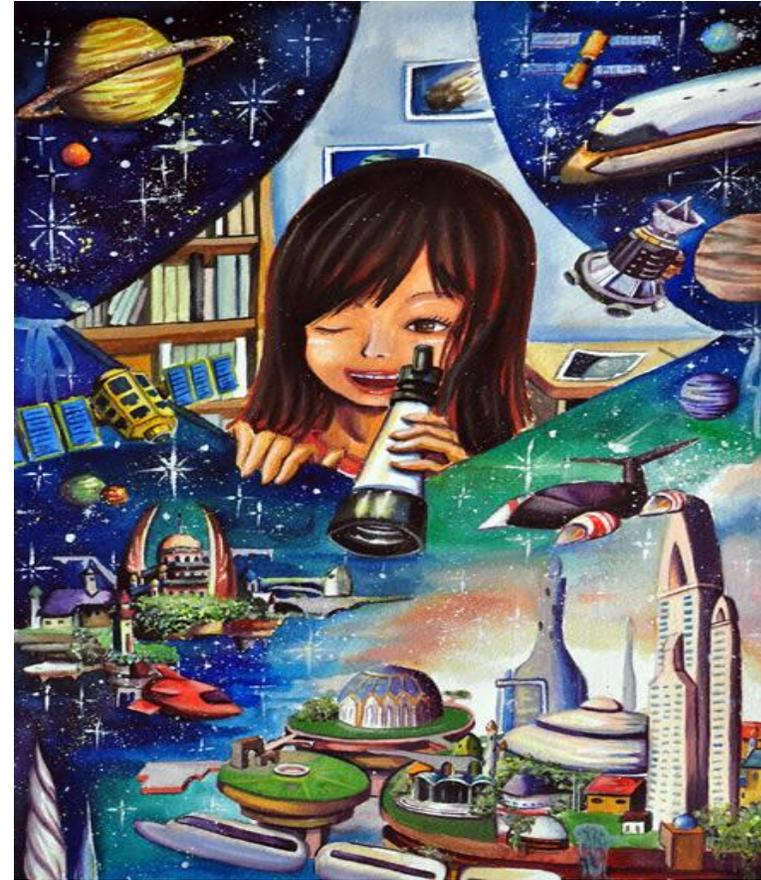


Video Arts: Humans in Space Art Challenge, 145 students, 16 countries.

UNISPACE+50
Space For Women Project

Arts and Humanities are ESSENTIAL
for...

Engagement
Awareness
Effectiveness
Communication
Connection
Empowerment
Expression
Leveraging Learning
Gender Equity



Humans in Space, Youth Art Competition, 2012
Future Space In My Eye
Huen Wai Ko

HER-STORY: THE VALUE OF ROLE MODELS



IF SHE CAN SEE IT...
SHE CAN BE IT!

Geena Davis Institute on Gender in
Media (seejane.org)

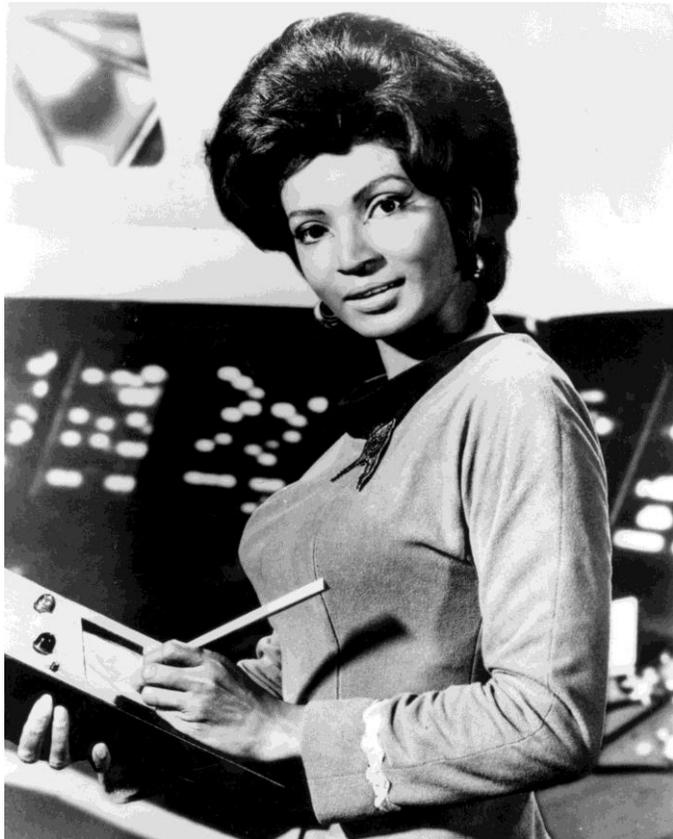


Educational Resources...

Modern Figures Toolkit(nasa.gov)







- National Girls Collaborative Project (ngcproject.org and fabfems.org)
- SciGirls (pbskids.org)
- Solar System Ambassadors (solarsystem.nasa.gov)
- NASA Education Express (nasa.gov)
- Girl Scouts(girlscouts.org)
- American Association of University Women (aauw.org)



SCI GIRLS 7

- 1) Girls benefit from collaboration, especially when they can participate and communicate fairly.
- 2) Girls are motivated by projects they find personally relevant and meaningful.
- 3) Girls enjoy hands-on, open-ended projects and investigations.
- 4) Girls are motivated when they can approach projects in their own way, applying their creativity, unique talents, and preferred learning styles.
- 5) Girls' confidence and performance improves in response to specific, positive feedback on things they can control – such as effort, strategies, and behaviors.
- 6) Girls gain confidence and trust in their own reasoning when encouraged to think critically.
- 7) Girls benefit from relationships with role models and mentors.

(for more information, scigirlsconnect.org)



- The Future Is In Our Hands
- Felicina Chau
- Humans in Space Youth Arts Competition

Thank you for the opportunity and privilege
to be part of the Space for Women Project!



(photo by Bill Hubbard)

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