Space beyond STEM

Building a truly inclusive space industry

Remco Timmermans, 30 Sep 2023

International Space University
Space Communications Alliance
IAF Space Education and Outreach Committee
Spaceside OU
ARE YOU LIVING YOUR DREAM?
Social Media Specialist for Space

What my friends think I do
Hanging around rocket launches every week

What my parents think I do
Jet setting around the world

What society thinks I do
Are you an astronaut?

What my customers think I do
Geeking out with space characters

What I think I do
Telling cool stories online about new space technology

What I really do
Working behind my computer in my office all day
The stories of space
Storytelling 101: “The hero’s journey”
Why did the story of the space race work?

- Identifiable heroes: Our scientists, engineers and astronauts: “us”
- Identifiable antagonists: The Soviets or the Americans: “them”
- Identifiable mentors: Wernher von Braun, Sergey Korolev: “Q”
- Identifiable problem: “Space Race” with one winner
- Identifiable crises: Rockets that exploded: “oh no”
- Identifiable solutions: Bigger and better rockets
- Identifiable resolution: “Our” hero was first in space/on the Moon
- Identifiable celebration: “Our” heroes parading the world

Hero: someone we can identify with, a role model
Literature Review (2021)

- Geographical imbalance in space job opportunities
- Gender imbalance in the space sector
- Imbalance in representation of minority groups
- Most initiatives to increase inclusion of women are in NA/Europe
- Recent commercial human spaceflight examples are counterproductive
- Role models are a powerful way to increase diversity
Survey Results (2021)

• New missions are creating new global interest in space
• Space is still largely perceived as a closed industry
• People are mostly unaware of opportunities of ‘new space’
• Most impactful outreach methods are mentorships and internships
• De-emphasis on STEM element of the industry is needed
• Role models are critically important
“The communication of opportunities in the space sector is still far from updated and inclusive around the world and around different communities in today’s society”
What causes the gender gap in STEM?

- Lack of role models is making it difficult to picture themselves in STEM roles
- Lack of encouragement from peers, teachers and parents is holding women and girls back
- Girls have a limited exposure to the creativity and contributions that STEM fields make for a better world

- There is still bias in the hiring process with male candidates selected more often, regardless of their qualifications
- Portraying STEM as ‘male roles’ undermines confidence, interest and willingness to pursue STEM
Not just space technology...

“Nichelle Nichols and Star Trek did more for diversity in the space sector than all space agencies combined”
The biggest buzzword in space outreach:
What is wrong with modern space marketing and outreach?
Mercury 7 Astronauts in 1959

The heroes of the space race:
The Right Stuff
The heroes of space in 2021: The Right Stuff?
Space needs new role models
Is space just STEM?
Space is much more than STEM

There is a place in space for EVERYONE!
The new rolemodels of new space

- Gender – male, female, non-binary, other...
- Geography – country, language
- Generation – young and old professionals, including side entrants
- Education – STEM and non-STEM, vocational, undergrad, grad
About STEM and STEAM

• STEM stands for Science, Technology, Engineering, and Math
• STEAM adds ‘Arts’, which in US English means almost everything else
• ‘Arts’ in most other parts of the world means ‘Art’, in the creative definition

• Stop using the terms STEM and STEAM
Are you passionate about space and looking for a non-technical role in the sector? We help you find a non tech space job in law, marketing, design, business development, HR, finance and other niche space jobs!
Space needs YOU

The space sector of 2023 needs people from ALL educational backgrounds

De-emphasise STEM
Role Models:

“If you can’t see it, you can’t be it”
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