

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

Lift Off - Secondary Space Education (2)

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WHEN EDUCATION AND RESEARCH MATCH. YISS - YOUTH ISS SCIENCE: A SPACE
PROGRAM TO JOIN UNIVERSITIES AND SCHOOLS

Abstract

The education and research opportunities linked to the International Space Station (ISS) are among the initiatives that the Italian Space Agency (ASI) implements to support the objectives and priorities of Europe as a knowledge-based society, to respond to the educational needs emerging from the evolving space sector and the new priorities and challenges of society. ASI educational programs aim to use space as an innovative teaching context to increase youth awareness of the leadership role played by Italy in space, inspiring and motivating the new generations to improve their scientific literacy and technical skills. The aim is to attract the best talents in the STEM professions, supporting and encouraging those who want to pursue a career in the space sector. Given the constant reduction in enrolment in scientific areas of study, the number of matriculations in scientific faculties, the Italian Space Agency pays particular attention to support the enrolment of students in technical and scientific areas. ASI has activated policies for the diffusion of space and scientific culture through educational projects that connect schools, universities and industries to strengthen scientific vocations, develop STEM skills, deepen the knowledge of science methodologies and research activities in space. The "YiSS - Youth ISS Science" project is based on competitions launched by ASI for secondary schools that, coordinated by Universities and with the support of industries, are invited to propose experiments to be carried out on ISS. The objective of the initiative is to exploit the imaginative and inspirational potential of space to bring together academia and high school, involving universities researchers and school students/teachers in the process of designing and presenting proposals for scientific experiments to be performed in microgravity on board the ISS. The paper describes the YiSS project and the educational activities that were accomplished

in the frame of Mutitrop and Xenogriss experiments, financed by ASI to fly on board the ISS in 2017 and 2019. It illustrates the active role of students, who, in synergy with university departments and industry, carried out a continuous exercise of integration of operational and cognitive skills, theoretical knowledge and practical application. The objective is to present an innovative approach that aims to combine research activities in space and education, offering valuable hands-on training opportunities for students, and to illustrate the effectiveness, critical issue and lesson learned of an initiative that aspires to strengthen scientific vocations, develop STEM skills, deepen knowledge of methodologies and research activities in space.