

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
New Worlds - Non-Traditional Space Education and Outreach (7)

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THE POSSUM 13: EDUCATION AND OUTREACH INITIATIVES INCREASE REPRESENTATION  
OF UNDERSERVED AND UNDERREPRESENTED COMMUNITIES IN THE FIELD OF  
ASTRONAUTICS

**Abstract**

Diversity, equity, and inclusion are vital for progress, ingenuity, and technological advances to occur. In March 2019, PoSSUM launched a new initiative entitled PoSSUM 13 to honor the legacy of the Mercury 13. The PoSSUM 13 is a talented group of thirteen female Scientist-Astronaut Candidates of diverse backgrounds, who serve as global ambassadors to increase opportunity and representation for students, particularly young women, who have a passion for space science and exploration. Our program supports the United Nation's Sustainable Development Goals for gender equality and quality education. The PoSSUM 13 International Microgravity Flight Challenge encourages students, 13-17 years of age to compete for a payload experiment aboard the annual PoSSUM microgravity campaign hosted at the National Research Council in Ottawa, Canada. Two experiments were selected in 2020 through a competitive process. The female-led student team finalists received mentoring from scientists and PoSSUM 13 ambassadors regarding microgravity science, parabolic flights, payload fabrication, and flight readiness requirements. One of our strategic goals for 2020 is to provide professional development opportunities for STEM educators through organizations such as OESIS (Online Education Strategies for Independent Schools) and Society for Science the Public Research Teachers Conference. This presentation will outline our unique efforts to recruit and support underrepresented students and will discuss novel research-based practices and role model strategies to effectively engage girls in STEM. Our goal is to promote scientific cooperation, by bridging geographic, gender, and generational divides to increase diversity and inclusion in the space sector.

The Polar Suborbital Science in the Upper Mesosphere (PoSSUM) program is a 501(C)(3) International Astronautics Research and Education Program studying our upper atmosphere and its role in our changing global climate. Representing citizen-scientists from 43 different countries, PoSSUM conducts citizen-science research in aeronomy and bioastronautics - fields to be enabled by the introduction of commercial space vehicles - in partnership with various research and education institutions.