

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
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FROM THE WRIGHT BROTHERS TO MARS AND BEYOND: BOOSTING STEM EDUCATION IN  
MINORITY AND UNDERPRIVILEGED YOUTH

**Abstract**

Even before the Wright Brothers took to the skies for their first flight in 1903, manned flight has captured human imagination, leading countless children to dream of being pilots. Currently, however, the world is in the midst of a transformation from manned to unmanned aircraft. This void can be filled by encouraging children to pursue the exploration of outer space by participating in activities that ignite an interest in STEM, or the four areas of science, technology, engineering and mathematics.

The presenter has volunteered for two organization—Legacy of Flight Academy and Red Tails of Tomorrow—that both seek to introduce minority and underprivileged youth to the joys of flight. Over the course of a day, students from the age of ten to eighteen participate in a wide variety of leadership and STEM activities. The highlight of the day, though, is a short flight where students fly the plane themselves under the supervision of a pilot.

Given the explosion of the space industry and other exciting developments, including the U.S. Space Force's establishment, it is time to expand the focus of organizations like Red Tails of Tomorrow beyond manned aircraft into spacecraft and other aspects of outer space. This presentation will highlight a range of activities suitable for youth to incite a passion for space based on the Red Tails of Tomorrow's upcoming 2020 event. These activities will not require the kinds of substantial resources or equipment that museums and other larger institutions might have access to. Rather, they will be relatively short, low-cost activities that spark interest in space. Social media will be used after the event to provide continued positive reinforcement, motivation, and access to resources to pursue careers in space to those needing an additional boost.