

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

Author: Dr. Olga Bannova
University of Houston, United States, obannova@uh.edu

Dr. Vera Mayorova
Bauman Moscow State Technical University, Russian Federation, victoria.mayorova@gmail.com
Ms. Galina Myasishcheva
N.E. Bauman Moscow State Technical University, Russia, Russian Federation, myasishcheva@bmstu.ru

ENHANCING POST-GRADUATE EDUCATION: FROM STUDENTSHIP TO MENTORSHIP USING
PROJECT-BASED APPROACH

Abstract

This paper discusses post-graduate education strategy developed and applied through more than two decades of running the international student summer program organized and supported by the Bauman Moscow State Technical University and partner universities from the US, France, Switzerland, Italy, China and other countries. The main purpose of the program is development of a student team project for space exploration under guidance of team leaders who were program participants before, and mentors from the space industry. The uniqueness of the program is two-fold: for participating students it offers experience to work in international teams on an intense and comprehensive space project in a short two-week program; for graduated BMTSU students it presents opportunities to learn team management, project development and task distribution skills that they can apply in their professional life.

A project's theme is different every summer and graduated students participating as team leaders have to learn how to organize the research, distribute the tasks and lead data analysis and design development. During two weeks of intense work on all aspects of the project, team leaders are given responsibilities not only to assign research and engineering tasks within their teams but also to mentor and work on team building relationships to ensure effectiveness and productivity of each teammate.

The longevity of the program allows us to trace development of participating students, into project team leaders and mentors, then into successful space industry professionals and decision makers. The paper presents results of such succession between generations of program participants, lessons learned and evolution of projects and the program itself. The synergy of the program organizers' experience and desire of alumni to learn and share made it possible to conduct the program in the summer of 2020 in spite of challenges of the COVID-19 pandemic. The participants worked together across continents and time zones every day for 10 days straight to accomplish all tasks and finish the project on time, and presented the results to the jury that consisted of industry specialists, professionals, scientists, cosmonauts and astronauts from different countries and continents.