

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Space Education Outreach and Workforce Development for Emerging Communities (10-E11.2)

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NEPAL'S SPACE WORKFORCE DEVELOPMENT: EDUCATION, INNOVATION AND GLOBAL  
COLLABORATION

**Abstract**

Space exploration technologies are rapidly evolving. It's high time for non-space-faring countries like Nepal to participate in this evolving space industry. Nepal embarked on a space journey by launching NepaliSat-1, a CubeSat, in 2019 in collaboration with Kyutech, Japan. This achievement inspired many space enthusiasts, and young students around nation to learn about space and its possibility of contributing to sustainable development. Nepal is actively working to educate younger generation about space and developing a space workforce to contribute to the national and global space sector. To facilitate this, Antarikhya Pratisthan Nepal (APN) initiated a four phased, T-shaped space education training program. In this program, students from primary to university level undergo basic to specific skill training related to space systems. The development of an education satellite cube, Sastocube, initiated a space workforce training program for 40 students in Khotang district. With necessary design updates, Sastocube was later modified to ECube. With ECube in the years 2022-2023, APN team provided Satellite Bootcamp training to a total of 700 students from eight schools located in Kathmandu, Pokhara, Lalitpur, Kavrepalanchok, Lamjung, Chitwan, Makwanpur and Dharan. These nationwide space programs helped to create a team of space researchers. They initiated Nepal's first international collaboration space project Danfe with Thailand. Continuing with learning from experts and technology transfer from international space programs, in January 2022, satellite research fellows from APN started a project Munal. In this project, a group of nine high school students were mentored to in-house develop Nepal's First High School CubeSat. With dedication, and hard work in creating a space workforce, in September 2022 Nepal was awarded a Payload Hosting Initiative (PHI-I) by the United Nations Office for Outer Space Affairs (UNOOSA). National level training programs and international space projects contributed to developing a group of space system experts here in Nepal. This group is now working on APN's next satellite project, Slippers2Sat. They will eventually train the next group of 10 young students from primary level, and marginalized communities. APN is focusing on educating young minds from every corner of Nepal and working on to develop a space workforce which in upcoming days will help Nepal to establish space policies and invest in national Space programs. This paper describes how recent activities in introducing space education,

international collaboration, capacity building through technology transfer, and initiation of Nepal's space projects have contributed to developing a space workforce for global space community.