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HUMAN RESOURCES PROCEDURES FOR THE ADVANCEMENT OF GENDER PARITY IN STUDENT SPACE MISSION PROJECTS

Abstract

High turnover rates and lack of experience of new members pose large human resources challenges to student space mission projects like AlbertaSat. AlbertaSat is a group at the University of Alberta that has carried out the design, build, and orbital operations of the Ex-Alta 1 satellite. Nearly all work is done by about 40 student volunteers, including technical work (such as spacecraft design or operations) and non-technical (administration or educational outreach).

In July 2017, AlbertaSat self-reflected on its human resources procedures by collecting data about the gender, education, and role in AlbertaSat of all past and present student members since the group's inception in 2010. Results showed that from 2010 to 2017 only 7% of technical leadership roles in AlbertaSat had been held by women, compared to 50% in non-technical leadership roles. Furthermore, 50% of women enrolled in Science or Engineering programs were placed on non-technical roles upon joining the team, compared to 9% of men. On average, women in Science or Engineering spent 7 months doing administrative or outreach work upon joining while men, on average, spent 1 month. This indicated female students in STEM were more likely to be placed in roles unrelated to their field of study upon joining.

AlbertaSat reacted to these results with three main actions. More members were recruited from the Faculties of Education and Business to fill the administrative and outreach roles so women in STEM would be less likely to fill them. Secondly, documentation solidified the procedure for placing new applicants onto teams in the project. Thirdly, a New Member Handbook is being written to ease the transition of new members onto technical teams, as women are less likely than men to reach for positions that they feel underqualified for.

AlbertaSat has already reaped benefits of these changes: since implementation, the proportion of members in technical leadership roles has shifted to 42% women and 58% men. A shift of women in STEM fields out of non-technical roles will improve the project's productivity by giving members tasks best aligned with their strengths. The methods have shown rapid improvement in gender parity in AlbertaSat and remedied some of the human resources challenges of executing a space mission with a group of undergraduate volunteers.