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SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
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STANFORD STUDENT SPACE INITIATIVE: UNIVERSITIES AND SPACE DEVELOPMENT

Abstract

Space, once the exclusive domain of governments, is opening to the rest of the world. Smaller electronics, cheaper launches, and iterative designs are creating a generation of space enthusiasts who believe that space can be developed cheaper, better, and faster. The Student Space Initiative (SSI), the largest project-based group at Stanford, was founded in 2013 with the mission of giving these future leaders of the space industry the hands-on experience and broader insight they need to realize the next era of space development.

We've flown a zero gravity experiment with NASA, built multiple CubeSats, hosted over 100 speakers at talks and conferences, been featured in media like Popular Science, and helped our members intern and work at top aerospace companies. Over the next year, our teams plan to send the first university-built rocket to space, launch two satellites, send a high altitude balloon across the country, and develop a space-based optical communications system.

All of this was only possible because of the unique properties of universities. Students are in learning mode, which means we're constantly keeping an open mind and exploring new fields, so it's our default operating mode to be multidisciplinary. Students are allowed to fail, encouraged to fail, because failing is the best way to learn, so students are itching to take risks and push the limits of what's possible. As students, we're used to turning our challenges into advantages: having less funding is a chance to show how much we can bootstrap with a small amount of money. Magic happens when you bring students together with diverse interests - both in the sense of different types of technical and between technical and non-technical. It's easy to get students working on technical projects - harder to connect those projects into the real world, and by doing that we're helping create a culture of engineers who plugged into the industries they're trying to reinvent.

By bringing together students with diverse interests and connecting them with resources, SSI facilitates the exploration of creative and ambitious ideas for space in a context where opportunities are abundant and the cost of failure is low. Through a combination of technical projects and a broader perspective on the space industry, SSI enables students to pursue their interests in space in whatever way they choose. We hope that this can serve as a model to other student groups.