

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Enabling the Future - Developing the Space Workforce (5)

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WOLFPACK ORBITAL LAUNCH FUNDING AND COMPETITION (WOLF-C)

Abstract

The Wolfpack CubeSat Development Team is initiating a nationwide CubeSat flight opportunity specifically for secondary students. Small satellites, and in particular CubeSats, have revolutionized access to space and the New Space economy by lowering technical and financial barriers for universities and small businesses. Despite this disruptive trend, there remain two key impediments that prevent further use of this technology in the STEM pipeline. High costs and lack of understanding/training prevent SmallSat technologies from being effectively used en masse at the secondary education level. Manufacturing and launch costs prevent nearly all middle and high school students who are capable of carrying out such projects from doing so. While some initiatives exist to lower costs, most if not all are dominated by government-run research facilities and institutions of higher education. Second, the lack of educator knowledge and a centralized source of SmallSat education for instructors prevents CubeSat technologies from being utilized fully with secondary students. This paper details the creation and implementation of a competitive grant system specifically targeted towards secondary education to lower cost and knowledge barriers. First, this grant system will work with public and private sector sponsors and partners to provide access to testing, components, and launch vehicles at little to no cost to students who have worthy projects. The grant system will be based on results from a tiered series of competitions. Teams will first submit a response to a proposal (RFP), and then teams with the highest ranked proposals will then be invited to a "pitchfest" in front of experts to further rank the proposals. This vetting allows students to demonstrate not only technical merit in their proposals, but also exercises their 21st Century Skills through public speaking, teamwork, and entrepreneurship. WOLF-C provides an opportunity to students whose financial circumstances do not allow them to participate in such a BLUE-SKY Learning activity. A secondary benefit of this opportunity is that participating educators will become facilitators for future teams. WOLF-C recognizes the human capital development of educators is just as vital as developing students with respect to maintaining a vibrant and diverse STEM pipeline. Given the rapidly evolving state of the STEM-related fields, it is imperative that these barriers are lowered, and that students have opportunities such as WOLF-C to gain valuable technical and life experiences.