

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

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SUSTAINING INNOVATION: A NEW FRAMEWORK FROM A CASE STUDY ON HYPERSONICS

Abstract

The goal of this paper is to provide a strategy to develop a sustainable, robust, and diverse workforce during a period of crisis management, using the United States hypersonics industry as a case study. Historically, in workforces which experience a boom-bust cycle, government funding is inconsistent because these areas lack policy infrastructure that support their development. In the case of emerging domains (such as hypersonics), the relevant educational programs may not exist in academia, which then limits the pool of potential workforce members for industry. Furthermore, the current practice is especially limited in its effectiveness because it does not take a holistic approach. Rather, it is best characterized as each stakeholder agency individually acting on its own perspective rather than integrating the needs of other agencies. In our approach, we performed a strategic policy analysis and examined the perspectives of academia, industry, and government actors, as well as across disciplines within those groups. The result of this analysis is a more thorough understanding of the challenges facing workforce development efforts. This enabled the identification of policy interventions which not only address the needs of each stakeholder group, but also how those needs interact between stakeholders. Although the United States hypersonics industry was used as a case study, the findings are generalized to apply to characteristically similar technologies, such as nuclear thermal propulsion, and human landing systems. This approach is best suited in cases where sufficient educational programs and policy infrastructure does not exist, and where industry groups lack a robust and diverse enough workforce to support its needs.