IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Hands-on Space Education and Outreach (8)

Author: Ms. Marcia Fiamengo
United States

Mr. Cody Sheehy
United States
Mr. J.D. Gibbs
United States
Dr. Eric King
United States
Dr. Samira Kiani
University of Pittsburgh, United States

COLLABORATIVE FILMMAKING AS A STEAM-BASED LEARNING INITIATIVE FOR SPACE EDUCATION

Abstract

The increase in international space exploration projects in both academia and industry has produced a need for students well-versed in collaborative efforts and cross cultural communication. Concern about recruitment and retention of students in the STEM workforce has also spurred researchers, educators, and stakeholders in the private sector to develop and implement interventions aimed at engaging students in STEM learning. These resources and products aim to influence students' career trajectories and achieve a strong and diverse STEM workforce.

Tangibility of space exploration is the most difficult aspect of related educational efforts. Film has served to bridge the gap between those who have travelled to space and those who have not. Utilizing a novel application, we will pair the engagement of creative filmmaking with recent developments in online video exploration technologies, in a process referred to as "film stacking," to support students' engagement in space-related STEM content. This pairing broadens the impact of STEM learning by adding the arts, and creates a meaningful STEAM partnership.

The application platform, Filmstacker^{TM}, addresses all three categories of the Education and Human Resources (EHR) investment: learning and learning environments; broadening participation in STEM, and STEM workforce development. Operating in-browser on mobile, tablet, and desktop systems, the application is keyed to a fifth-grade level of comprehension and curriculum. This platform scales well with increasing knowledge and complexity. The system enables videos to be explored in a way that matches an innate human desire to learn through story. The process engages student creativity, providing them with the opportunity to build their own video stories through a collaborative social filmmaking process.

Session attendees will exercise critical thinking skills while building short "filmstacks" in a project cohort. Using native clips, their own video, and other sources, each user will formulate a space relevant story while using the application. The produced filmstacks illustrate user-defined purpose to communicate knowledge, convince with opinion, or explore experiences.