

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Poster Session (P)

Author: Ms. Michelle Guterman  
United States, guterman.michelle@yahoo.com

Ms. Monica Ebert  
International Space University (ISU), United States, ebertmonica@gmail.com

DESIGNING EDUCATIONAL METHODS FOR FUTURE THINKERS: TERRAFORMING  
CURRICULUM INCLUDES STEM EDUCATIONAL FIELDS

**Abstract**

Redesigning curriculum based on terraforming studies unites concepts from STEM educational fields, climate science, future studies, ethics and philosophy. How could humans live on Mars? This single motivating question drives the curriculum through two terraforming philosophies. The two philosophies are: growing plants to develop an Earth-like atmosphere, or growing plants to develop a habitable Martian atmosphere. This inspiring topic outlines the engineering and design challenges that the next generation workforce needs to address. High school science curriculum in the United States is organized with educational standards that are presented in a disjointed fashion, leaving students feeling disconnected and disenchanting. The same educational standards are addressed, but in an engaging, thought provoking way that focuses on developing relevant life skills. This new curriculum for high school students will be described in terms of the standards it covers and the thinking methods developed. The idea of terraforming Mars isn't new, but teaching the concepts to the next generation of astronauts is necessary to prepare the next generation of scientists. The teaching curriculum focuses on the natural curiosity of the students and outlines how to create a habitable biome outside of Earth.