Destination SPACE

(Satellite Program for Aerospace-Centered Education) and STEM

Satellite Week Space Camp STEM Programs: 3-Phase SmallSat Remote Sensing Deep-Space CubeSat Project

> L. DeWayne Cecil, Ph.D. Founder, Destination SPACE Lauren Ballard, AU Austin Gleydura, ERAU © 2019 by Destination SPACE. Published by The Aerospace Corporation with permission

Introduction

Why Destination SPACE

Climatologists and Educators, Aerospace Experience The Collider - Climate Science and Applications



Why Western North Carolina

NOAA Climate and Weather Center The Collider - Climate Solutions Asheville Museum of Science



Why NASA Langley Research Center Service Region

NASA CubeSat Launch Innovative STEM programs Destination SPACE Connections



Satellite Week Space Camp 2017

Familiarize students with:

- Atmospheric science such as weather and climate
- Weather stations, small satellite technology
- Quality of data
- Teamwork building
- Creating technical reports and presentations





SmallSat Program

Student Led Projects:

 Teams learned about chose a research topic that they wanted to explore with their ThinSat

Systems Engineering Approach:

- Students start engineering project and research
- Teams implement project design
- Project management experience shared amongst team
- Currently informal Open to input, and Sponsorship

Miles Space

What we did over the summer and what we learned from real world experience

- Project Management
 - Cabling and Fastener Details
 - Nut and Bolt Calculations
 - Safety Data Package Verifications
 - Propulsion and Material Compatibilities within the following
 - ConstantQ Thruster
 - Piping and type of fuel used
- Travelled to Tampa, FL to Team Miles Headquarters to aid in STEM sensor integration



Satellite Week Space Camp 2018

Mentored students about:

- Weather and climate data
- QA/QC
- Data analytics
- Led activities in topics such as small circuit robotics, weather balloon assembly, data interpretation, and presentation building

Where Destination SPACE has Taken Us

Lauren



- →My Interest in STEM
- ◆Trip to Kennedy Space Center 2013
- ◆Space Camp in Huntsville, Alabama 2014
- ◆Robotics Club (TSA) Eighth Grade
- →Attended Martin L. Nesbitt Jr. Discovery Academy
 - STEM High School and Graduated Spring 2018 in
 - Inaugural Class
- ◆PLTW Classes, Honors Aerospace Engineering 2016, Science Classes
- →Auburn University as an Undergraduate in Aerospace Engineering Fall 2018







Austin Gleydura

STEM Interests:

- Arduino/coding
- Climatography
- 3D Modeling
- RAD Sat

Education:

A DA TICAL UNIVERSIT



- →Graduate from AB-Tech Associates of Science 2018
- →Graduate from Martin L. Nesbitt Jr. Discovery Academy inaugural class 2018
- →Embry-Riddle Aeronautical University | aerospace engineering astronautics track



...And Here... Deep Space!

Collaborators:

• L. DeWayne Cecil, Ph.D, Destination SPACE (DS), Robert Twiggs, Twiggs Space Lab (TSL), Bjarke Gotfredsen, XinaBox, Matt Craft, TSL, Judi Sandrock, XinaBox, Alec Courtright, DS, Annette Hollingshead, DS, Kathy Dooley, DS, and Students:

Lauren Ballard, Austin Gleydura

Miles Space: https://miles-space.com

Destination SPACE: https://destinationspa











Miles Space

