

*National Youth Leadership Forum:
Explore STEM Alumni*

2019 Sample Schedule*

DAY ONE: Arrival of Scholars and Program Welcome

Registration and Check-in

Program Orientation

Keynote Address

DAY TWO: Many Worlds – Virtual and Planetary

Simulation: Define and Understand Your Challenge

MEDICINE STRAND: Use 3D modeling to learn about the lungs

ENGINEERING STRAND: Use 3D design to learn about oxygen chambers

Immersion Experience: Welcome to the Cave

Be immersed in 3D Virtual Reality Worlds, including the landscape of Mars, at the Villanova Immersive Studies Cave

Maker Centers: Start Designing Your Prototypes and Creating Your Maker Documentary

DAY THREE: Creating Structure – Engineering and Prototyping

Simulation: Ideate and Start Prototyping

MEDICINE STRAND: Participate in a sheep lung dissection and elaborate on your breathing apparatus prototype design

ENGINEERING STRAND: Experiment with various materials and elaborate on your oxygen chamber prototype design

(continued on reverse)

**This sample schedule is provided as an example of the overall quality and scope of the experience offered. The 2019 specific schedule, locations, and details may be modified.*

Immersion Experience: Take on Structural Engineering

Get a handle on building materials by making and breaking concrete cylinders at Villanova's Structural Engineering Teaching & Research Laboratory

Maker Centers: Build Your Prototype

DAY FOUR: Advancement – Testing, Troubleshooting, and Robotics

Simulation: Test and Troubleshoot

MEDICINE STRAND: Put your breathing apparatus to the test and see if it will withstand Mars

ENGINEERING STRAND: Put your oxygen chamber to the test and see if it can hold up on Mars

Immersion Experience: A Look Inside Robotic Surgery

Participate in a site visit experience with Dr. David Lee, a pioneer in robotic surgery at Penn Presbyterian Medical Center, during which he will moderate a recorded robotic surgery that he performed earlier in the day and discuss the importance of this new field.

Maker Centers: Iterate on Your Prototype and Make Adjustments

DAY FIVE: Success – Preparing for the Future

ACT TESSERA Personal Skills Assessment

Simulation: Presentations

MEDICINE & ENGINEERING STRANDS: Present your prototype and your Maker Documentary

Looking Forward: Closing Address and Certificate Presentation

DAY SIX: Farewell and Departure

Final Group Meetings

Departures