

*National Youth Leadership Forum:
Explore STEM Alumni*

2025 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

Use air pressure experiments to learn about the lungs and use 3D design to learn about designing prototypes

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

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

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

Simulation: Test and Troubleshoot

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

Maker Centers: Iterate on Your Prototype and Make Adjustments

(continued on reverse)

DAY FIVE: Success—Preparing for the Future

MyActionPath: Career Assessment

Simulation: Finalize and Prepare

Finalize your prototype and Maker Documentary and prepare for the closing presentation

Immersion Experience: Villanova's Red Thumbs Martian Garden

Hear from Edward Guinan, PhD and Scott Engle, PhD, and tour a greenhouse and telescope observatory. With no vegetation on Mars, humans will need a sustainable source of food if they hope to survive. These two scientists are discovering which plants might be best suited to grow on the red planet

Looking Forward: Closing Address and Certificate Presentation

DAY SIX: Farewell and Departure

Final Group Meetings

Simulation: Presentations

Present your prototype and your Maker Documentary

Departures