Virginia Earth System Science Scholars (VESSS)

Rudo Kashiri

Education Programs Manager

Virginia Space Grant Consortium
VESSSS Overview

• Geology 195: Earth System Science
• Offered through Thomas Nelson Community College
• Four dual enrollment college credits underwritten by Virginia Space Grant Consortium
  ✓ Three credits – Online course
  ✓ One credit – Residential Summer Academy
Who can participate?

- High school juniors and seniors
- U.S. citizens (Summer Academy)
- Virginia residents
- Have internet access
VESSS

• Real world investigations of the Earth and its highly dynamic systems using latest NASA research and data.
• Teaches broad range of STEM concepts
• Fosters the STEM workforce pipeline and STEM related career options
An engaging, NASA-developed online course with Earth System Science theme.

- **7 modules with topics including:**
  - Introduction to Earth Systems
  - Earth in the Solar System
  - Earth and Surface Interior
  - Weather and Water Energy Cycles
  - Climate Variability and Change
  - Ecosystems and Carbon Cycle

- **Comprehensive final project:** Climate Variability
Online Course

Five master teachers funded by Hampton University Center for Atmospheric Research and Education through NASA MUREP Funding.
Master Teachers

- Paid as consultants
- Facilitate online coursework
- Direct interaction with students
- Provide evaluation, feedback, assessment of student work
- Input of student evaluation data into Moodle
Summer Academy

Residential Summer Academy at NASA Langley Research Center.

- Two, One-week sessions at NASA for Summer 2016
- 81 students invited
- 73 students attended
  - ✓ June 25- July 1, 2016
  - ✓ July 16- July 22, 2016
Mission Background

Students designed missions based on Decadal Surveys and the NASA Studies

- **Atmosphere**: Global Pollution in the Pacific
- **Biosphere**: Study the Worst 900 Year Drought in the Mediterranean
- **Hydrosphere**: Causes of Sea Level Change
- **Lithosphere**: Volcanic Eruption
The Best in the Industry

- Scientists
- Engineers
- Astronauts
- Master Teachers
- Undergraduate Interns
Tours

- Contamination Control and Planetary Protection
- The Chemistry and Physics Atmospheric Boundary Layer Experiment (CAPABLE)
- NASA Langley Hangar
Academy Highlights

- Engineering design Challenge
- Mentors
- Virginia Living museum
Mission Team Presentations

- Presentation of the mission design concept
- Review panel question and answer—NASA and Industry representatives
VESSS Experience

- Develop soft skills
- Exposure to a broad array of professionals and careers
- Gain experience working in large project teams
- Professional network
Closing Ceremony

Scholars present their mission to parents, mentors and sponsors
Follow-Up Commitment

- Maintain contact with mentors and fellow scholars
- Help recruit new students to the program
- Maintain contact with VSGC concerning their choice of college, choice of major, and post-graduation plans.