

The Evolution of the Student Summer Exchange Program

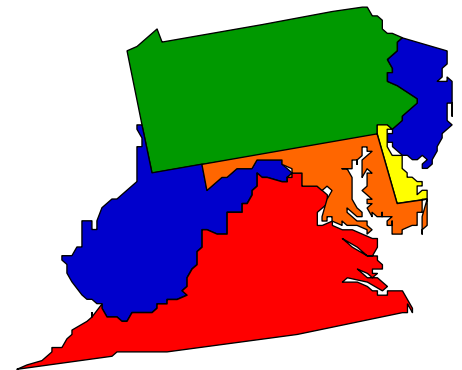
A Candid History of a MDSGC Program and How It Has Evolved



Mid-Atlantic Regional
Meeting

2014 September 25

Dr. Terry Teays, Assistant
Director



Origins

- 2008, Minority Serving Institution Partnership Development Program Proposal
- MDSGC Thinking Process In Developing the Proposal
- Goals
- Process
- Research Seminar
- Outcomes

What Were They Thinking?!

- HBCU already major partners, so how do we “develop” such a partnership???
- Focus on aerospace engineering
- Each campus has unique expertise, laboratories, and existing programs
- Provide a wider range of NASA-related experience for students
- Increased Collaboration among the three campuses

Key Ingredients

- Coordinator at each campus + the Assistant Director for overall coordination
- Project descriptions
- Student applications, including faculty recommendations
- Stipend and housing provided

Summer 2009 Intern Assignments

From	Project	To
UMES	Adding Intelligence & Autonomy to a Small Planetary Rover	UMCP
MSU	Quantitative Analysis of Fuel Consumption due to Commercial Flight Delays and Rerouting Processes	UMCP
UMES	Development & Testing of Balloon Payloads for Blind Students	UMCP
UMES	Using Matlab Simulink to Simulate the Performance of a Direct Conversion Receiver	MSU
UMCP	Development of Systems Engineering Program at Morgan State University	MSU
UMCP	Using a Low-Fidelity Flight Simulator to Gauge Eye Reaction in Differing Weather Conditions	MSU
MSU	Experimental Prototype of a Remote Controlled Platform to Monitor Water Quality Data	UMES
UMCP	Issues, Challenges & Applications of Kite Aerial Photography	UMES
MSU	Issues, Challenges & Applications of Kite Aerial Photography	UMES

Research Seminar - GSFC



Outcomes

- Students strongly supported that they learned new skills and had a good experience
- Learning about other school's capabilities
- Mentors liked it
- Good student performance
- Mostly good presentations
- Collaboration among campuses

Summer Exchange Program

- In house proposal
- Reduced funding level
- Two students from each campus
- Housing and other expenses
- In house research seminar

Calculations & Equations

microstrip

To find the width of the microstrip line,

$$\frac{W}{d} = \frac{2}{\pi} \left(B - 1 - \ln(2B - 1) \right)$$

$$+ \frac{\epsilon_r - 1}{2\epsilon_r} \left[\ln(B - 1) + 0.39 - \frac{0.61}{\epsilon_r} \right]$$

$$\frac{W}{d} > 2$$

Where

... For dimensions

$$\epsilon_e = \frac{\epsilon_r + 1}{2} \left(1 + \frac{1}{10} \left(\frac{W}{d} \right) \right)$$

Effective permittivity can be found, relative permittivity

Aerial Imaging and Remote Sensing for Precision Agriculture and Environmental Stewardship (AIRSPACES)

Presented by:
UMES Advisors:

USDA collaborator:
NASA collaborators:

Lafasha Hanson
Chris Hartman
Abhijit Nagchaudhuri
Craig Daughtry
Ted Mies
Geoff Bland





