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

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

To find the width of the microstrip line,

\[
\frac{W}{d} = \frac{2}{\pi} \left( B - 1 - \ln(2B - 1) \right) + \frac{\varepsilon_r - 1}{2\varepsilon_r} \left( \ln(B - 1) + 0.39 \frac{0.61}{\varepsilon_r} \right)
\]

Where

\[
\frac{W}{d} > 2
\]
Aerial Imaging and Remote Sensing for Precision Agriculture and Environmental Stewardship (AIRSPACES)

Presented by:
UMES Advisors:
Latasha Hamson
Chris Hartman
Abhijit Nagchaudhuni
Craig Daughtry
Ted Miles
Geoff Bland

USDA collaborator:
NASA collaborators:

MORGAN STATE UNIVERSITY
UNIVERSITY OF MARYLAND
EASTERN SHORE
- Aluminum Flat Support Structure
- Plastic Tupperware Electronic housing
- CPVC Pipe Support Arms

- Portable and Durable
  - Total Operational Weight: 18 lbs
  - Approx. Assembled Dimensions (l*w*h): 4’ x 1’ x 2’
  - Max Buoyancy: 30 lbs
  - Pin & Clevis Arm attachments allow for quick disassembly

- Adaptable to Environment
  - Air-Propelled
  - Replaceable Hulls