Reaching for the Stars
Inspiring with High Altitude Science

Luther Richardson
Columbus High School

Georgia Space Grant Consortium
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Inspiring with High Altitude Science

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Columbus, GA
Co-curricular K-12 Science organization

ROBOTICS

FIRST Robotics
“6 weeks to build a 150 pound robot”

Zero Robotics
Student programmed robots competing on ISS

INVENTION

Develop a patentable invention with $10,000

Pete Conrad

Business plan competition for technology ideas

SCIENCE

Wallops sub-orbital rocket experiments

JSC Vomit Comet experiments

Glenn DIME Drop-Tower experiments

DREAMS
DREAMS
Doing Research at Extreme Altitudes by Motivated Students

High altitude science platform built by the Columbus Space Program
DREAMS
Original Concept of Operation

Doing Research at Extreme Altitudes by Motivated Students

Balloon Operations: Taking student experiments to the edge of space

Space Payloads: Student Experiments

Columbus High School Space Program

Student groups from Muscogee County Schools
DREAMS
Reaching for the Stars, version 1.0

Doing Research at Extreme Altitudes by Motivated Students

Balloon Operations: Taking student experiments to the edge of space

Space Payloads: Student Experiments

Columbus Space Program

Student groups from Georgia
DREAMS
Reaching for the Stars, version 2.0

Doing Research at Extreme Altitudes by Motivated Students

Balloon Operations: Taking student experiments to the edge of space

Space Payloads: Student Experiments

Columbus Space Program

Teachers from Georgia

Student groups from Georgia

Community Groups

100 Black Men of Atlanta, Inc.
EDUCATION - ENRICHMENT - DEVELOPMENT
<table>
<thead>
<tr>
<th><strong>Flight Proposal</strong></th>
<th>Written proposed mission including objectives, and flight requirements – emailed to advisors for approval</th>
<th>3 months to launch</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design Review</strong></td>
<td>Advisors meet to see a presentation on how the balloon team plans to meet the objectives of the approved proposed flight including the test plans</td>
<td>2 months to launch</td>
</tr>
<tr>
<td><strong>Mission Readiness Review</strong></td>
<td>Advisors meet to review the hardware and mission plans in terms of if they will meet the objectives/requirements based on results of tests</td>
<td>2 weeks to launch</td>
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<tr>
<td><strong>Countdown GO/No-GO (Flight Readiness Review)</strong></td>
<td>All open issues raised at MRR addressed. Checklists approved, and countdown begins.</td>
<td>1 week to launch</td>
</tr>
<tr>
<td><strong>One-week Countdown (no hardware changes)</strong></td>
<td>Assignments of duties, radio freq plan, monitor weather, practice</td>
<td>Flight Week</td>
</tr>
</tbody>
</table>
Board of Directors
Carey Huff
J.H. Klingelhoesser
Keith Warren

CHS Space Program
Luther Richardson

Balloon Systems Lead

Ground Tracking
Direction Finding
Weather & Predictions
APRS
HAM-TV

Payload Systems Lead

Cables & Adapters
Antennas
Command & Telemetry
Structure & Rigging

Software
Sensors
Middle School Liaison

Hardware
• **DREAMS-12**: June 5, 2011
• **DREAMS-11**: April 19, 2011
• **DREAMS-10**: April 2, 2011
• **DREAMS-9**: April 24, 2010
• **DREAMS-8**: March 30, 2010
• **DREAMS-7**: June 20, 2009
• **DREAMS-6**: May 25, 2009
• **DREAMS-5**: May 31, 2008
• **DREAMS-4**: May 10, 2008