MN Space Grant Programs for Workforce Development and Recruitment of Students from Underserved Groups and Student Flight Programs in Minnesota

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Context – Minnesota Population

- 5.4 million population – 60% in Twin Cities Metro
  - African-American – 5.7%
  - Native American – 1.3%
  - Hispanic – 5%
- 32.2% of 25+ have bachelor’s degree or higher (29% overall nationally)
- Median income 12th in nation
- High poverty rates among people of color (27%)
Context – Aerospace Industry

• $12.2 billion/year
• $6.5 billion yearly payroll

Geographic Distribution of Aerospace Employment
Aerospace Firms with a Strong Minnesota Presence

• Cirrus Aircraft
• Honeywell
• BAE
• United Technologies
• 3M
• ATK
• Delta Airlines
• Mayo Clinic
Minnesota Space Grant Consortium – Affiliates

- University of Minnesota – Twin Cities (lead institution)
- University of Minnesota – Duluth (part of U of MN system)
- Bemidji State Univ. – part of MN State Colleges and Univ. (MNSCU)
- Southwest Minnesota State University – MNSCU
- Fond du Lac Tribal and Community College – MNSCU
- Bethel University – Private
- Augsburg College – Private
- Carleton College – Private
- University of St Thomas – Private
- Concordia College, Moorhead – Private
- University of St Catherine – Private (an all-women institution)
- Macalester College – Private
- Leech Lake Tribal College
- Minnesota Department of Transportation (state govt. affiliate)
Minnesota Space Grant Consortium -- Partners

• St Cloud State University – MNSCU
• University of Minnesota – Morris (part of U of MN system)
• Inver Hills Community College – MNSCU
• Century (Community) College – MNSCU
• Central Lakes Community College, Brainerd – MNSCU
• Minnesota West Community College, Worthington – MNSCU
• Itasca Community College – MNSCU
• Gustavus Adolphus College – Private
• AirSpace Minnesota – Non Profit
• FourthWing – Small Business
• Asterlabs – Small Business
• Science Museum of Minnesota – state govt. informal education
• Headwaters Science Center, Bemidji
• Minneapolis, St. Paul, and other school districts – public schools
Some MN Space Grant Consortium Projects

- Senior Aerospace Design Projects
- High-Power Rocketry for Native American students
- High-Altitude Ballooning for Higher Ed. Research and Teacher Training
- Payloads for Suborbital Rocket Flights (out of Wallops)
- Space Suit Design Using e-textiles and Wearable Technology
- Undergraduate Research in Physics and Geology and other departments
- Astronomy Curriculum Development
- Ph.D. research in cosmology
- HASP Balloon Flights; X-ray detector test bed
- Analysis of Satellite and Atmospheric Remote Sensing Data
- Education and Public Outreach for Mars Curiosity Rover
- Aerospace Career Education (ACE) for Teachers
- Ballooning Initiative with Middle Schools
- (BRAND NEW!) Quadcopter Competition for Community Colleges
## 2013 Data on Student Awards – MN Space Grant Consortium

<table>
<thead>
<tr>
<th>FY2013 Student Award Summary</th>
<th>Number of Students</th>
<th>Number of Awards to Female Students</th>
<th>Number of Awards to Male Students</th>
<th>Number of Awards to Underrepresented Minority Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellowship/Scholarship</td>
<td>62</td>
<td>32</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>Higher Education</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Research Infrastructure</td>
<td>36</td>
<td>17</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Awards</strong></td>
<td><strong>105</strong></td>
<td><strong>51</strong></td>
<td><strong>54</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>

**Summary Data (Calculates Automatically)**

<table>
<thead>
<tr>
<th>Total Number of Awards</th>
<th>Total Number of Awards to Female Students</th>
<th>Percentage of Awards to Female Students</th>
<th>Total Number of Awards to Male Students</th>
<th>Percentage of Awards to Male Students</th>
<th>Percentage of Awards to Underrepresented Minority Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>48.6%</td>
<td></td>
<td>51.4%</td>
<td></td>
<td>30.5%</td>
</tr>
</tbody>
</table>

- Exceeded Female Goal (40%) and Minority Goal (20%)
- Challenge – Engage More Minority Students in Higher Ed. and Research