Leveraging the Enterprise: Strengthening Our Value to Society.

Leveraging in EDUCATION:

The Howard University experience in creating the Atmospheric Science Program (HUPAS), an example.

Belay B. Demoz, Howard University
Department of Physics and Astronomy

2014 AMS Washington Forum:

“... The greatest national good is achieved when all parts of the Enterprise function to serve business, industry and the public. “
Background: NOAA Cooperative Science Centers

**Education Partnership Program (EPP)**

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<th>CREST/NESDIS</th>
<th>ECSC/NOS</th>
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<td>The City University of New York (CUNY) is the lead institution of a eight-member consortium including Bowie State University, Hampton University, Lehman College, Bronx Community College, New York City Tech College; the University of Puerto Rico at Mayaguez, the University of Maryland Baltimore County, and Columbia University.</td>
<td>Florida A&amp;M University (FAMU) is the lead institution of a nine-member consortium including Bethune-Cookman University (BCU) Creighton University (CU), Delaware State University (DSU), Jackson State University (JSU), Morgan State University (MSU), University of Miami (UM), University of Nebraska at Lincoln (UNL), and Texas A &amp; M University-Corpus Christi (TAMUCC).</td>
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<th>LMRCSC/Fisheries</th>
<th>NCAS at HU</th>
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| University of Maryland Eastern Shore (UMES) is the lead institution of a seven-member consortium including Delaware State University (DSU), Hampton University (HU), Oregon State University (OSU), Savannah State University (SSU), University of Maryland Center for Environmental Science Institute of Marine and Environmental Technology (IMET), and the University of Miami Rosenstiel School of Marine and Atmospheric Science (RSMAS). | Howard University (HU) is the lead institution of a six-member consortium including
- Jackson State University (JSU)
- University of Maryland College Park
- University of Puerto Rico at Mayaguez (UPRM)
- University of Texas at El Paso (UTEP)
- State University of New York at Albany (SUNYA)

NCAS partners primarily National Weather Service but also with NESDIS, OAR, and several NOAA Cooperative Institutes. |
HU- Beltsville Research Campus: A model for leveraging

**Research Capacity**

**HU Departments**
- HUPAS, Phys, Chem Engineering (EE, SCS, ME)

**STEM Student Impact**
- Beltsville 300+
- Major MSPHD producer
- HUPAS: 1-of-2 in HBCU

**Partnership**
- UMBC, Penn, UMD, NWS, LaRC NGA, GSFC, JPL, NOAA, MDE

**GOAL:**
Establish a World Class "Co-laboratory" at Howard University

**Partnerships**
- NASA: BCCSO: GSFC, LaRC, PSU, SUNYA,
- GRUAN
  - NASA: WAVES: Lidar Sat. Cal/Val; JPL, GSFC, NESDIS, AER
- MDE: AQ Monitoring Capacity, State Partnership; NOAA, NASA, EPA, State/Natl Regularly Impact
- NOAA (NCAS): Leveraged URC -- Developed capacity ATM measurements and testing at Beltsville – Largely responsible for HUPAS impacts ’00-’08 -- 2 FTE’s -- NOAA partnerships
- NASA: GRP I URC HUPAS; 3 FTEs 34 Ph.D.s 37 MS (Phys, Chem, Eng) NASA Collab

**Emerging Technologies and Applications**
*Build and expand knowledge base in Lidar, Networks, GRUAN, Passive Sensors, etc*

**Funding 10 YRS**
- Beltsville ~$1.4M/YR

**Year**
- 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15
Addressing the “national good”

The GCOS Reference Upper Air Network

- PhD Production and Training

- Completed and made public the extension of the WRF for weather forecasts and climate prediction

- WRF Ready for Climate Service

- 9yrs of international research campaign aboard NOAA’s vessel Ronald H. Brown

- 50+ Students, Extensive collaborations

- Critical and unique data set

Addressing the “national good” through leveraging

- 230 NCAS graduates across all institutions
- Most are in core NOAA mission areas: 81% of the advanced degree alumni majored in meteorology, marine sciences, atmospheric sciences, or environmental sciences

Contributing to national STEM workforce (example)
- Federal: NOAA (18); NGIA (2); NASA (1); 5(other)
- Contractors: NOAA (8)
- etc.

ISSUES to think about:

Institutionalizing a partnership structure in Funding?

Who “owns” the responsibility for such partnerships?

Federal appropriations? Is partnership a “Common good”
Questions?
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