

Leveraging the Enterprise: Strengthening Our Value to Society.

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Leveraging in EDUCATION:

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

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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)

CREST/NESDIS

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.

LMRCSC/Fisheries

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).

ECSC/NOS

Florida A&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 & M University-Corpus Christi (TAMUCC).

NCAS at HU

<http://ncas.howard.edu>

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

GOAL:

Establish a World Class
"Co-laboratory" at
Howard University

Nat'l Workforce Production

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

Research Capacity

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/Nat'l 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*

Partnerships

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

GCOS Reference Upper-Air Network



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BAMS

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YEAR OF TROPICAL CONVECTION
CONVEYING HURRICANE RISK
AFRICAN PRECIPITATION DATASET

REGIONAL CLIMATE MODELS

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

• WRF Ready for Climate Service
<http://www.nws.noaa.gov/ost/climate/STIP/36CDPW/36cdpw-xliang.pdf>

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© A CLIMATE EXTENSION FOR WRF ©

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BAMS

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TORNADO WARNINGS HISTORY
SNOWFALL MICROPHYSICS
DECADAL PREDICTION

CRUISE

• 9yrs of international research campaign aboard NOAA's vessel *Ronald H. Brown*

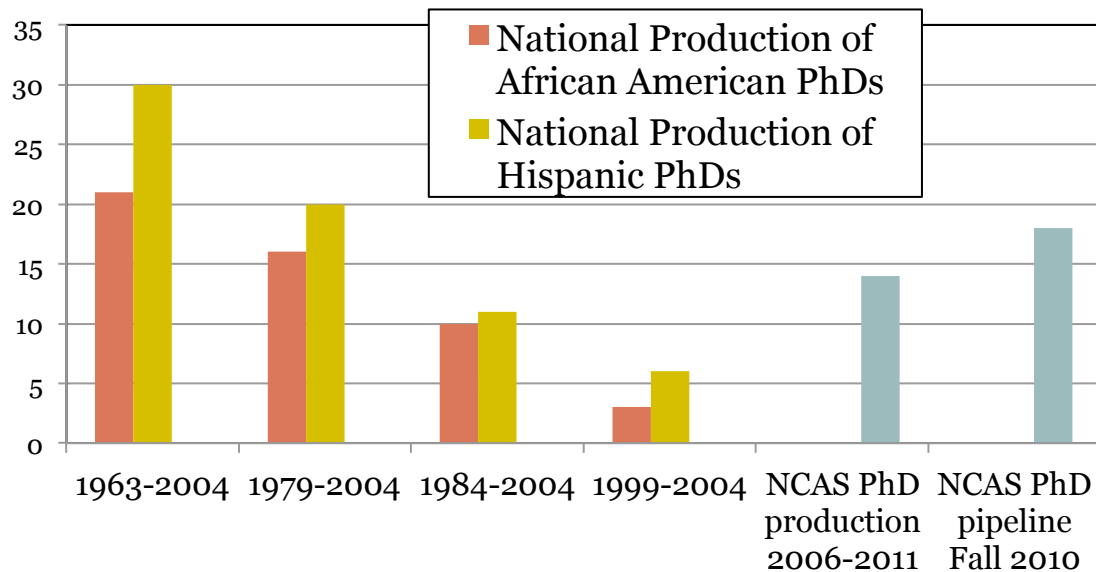
• 50+ Students, Extensive collaborations

• 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



Morris et al. The Howard University Program in Atmospheric Sciences (HUPAS): A Program Exemplifying Diversity and Opportunity Journal of Geoscience Education 60, 45-53, 2012

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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