HBCUs Research Conference Agenda and Abstracts

Proceedings of a conference held at and sponsored by
Ohio Aerospace Institute
Cleveland, Ohio
April 8-9, 1998

National Aeronautics and
Space Administration

Lewis Research Center

April 1998
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NASA Lewis Research Center's commitment to excellence continues to grow in terms of investment and support for Historically Black Colleges and Universities (HBCUs). Over the last 5 years, Lewis' total research and development grant awards to 19 HBCUs exceeded its performance goal by a substantial margin.

Lewis' HBCUs Research Program is designed to utilize the ability of HBCUs to conduct fundamental science and develop physical infrastructure related to NASA's disciplines. To reach our goals, we must build partnerships with other Government agencies, industry, and academia. Our research partnerships with the Nation's HBCUs are an integral part of our strategy.

The HBCUs Research Conference is a critical element in ensuring the success of Lewis' research programs. In addition, it provides a forum for showcasing the research capabilities of the participating HBCUs.

It is with great pleasure that I welcome the participants and congratulate everyone associated with the Fifth NASA HBCUs Research Conference.

Donald J. Campbell
Director
This Research Conference is the fifth one at which researchers and students from Historically Black Colleges and Universities (HBCUs) present progress reports on Lewis-sponsored research. Lewis management and researchers are proud of the results obtained to date and encouraged by the competence and contributions of the Principal Investigators (PIs) and student researchers.

I welcome all presenters and congratulate you for the comprehensive quality of topics covered by your research programs. Also, I congratulate and thank the Lewis Technical Monitors for their excellent support. The phrase "Lewis means teamwork" is directly applicable to the partnerships between Lewis and HBCUs.

Julian M. Earls
Deputy Director for Operations
FIFTH HBCUs RESEARCH CONFERENCE
April 8-9, 1998

AGENDA

Presiding: Dr. Sunil Dutta
SDB Program Manager

Wednesday, April 8, 1998

8:00 - 8:30 a.m. Registration
8:30 - 9:00 a.m. Introduction and Welcome

Dr. Julian M. Earls
Deputy Director for Operations
NASA Lewis Research Center

Dr. Michael J. Salkind
President
Ohio Aerospace Institute

9:00 -10:00 a.m. Oral Presentations
Three (3) Concurrent/Parallel Sessions

10:00 -10:30 a.m. Break
10:30 -12:00 Noon Oral Presentations
12:00 -1:00 p.m. Lunch (On Your Own)
1:00 - 3:00 p.m. Oral Presentations
3:00 - 3:30 p.m. Break
3:30 - 5:00 p.m. Oral Presentations

Thursday, April 9, 1998

8:00 - 8:30 Introduction and Welcome

Dr. Julian M. Earls
Deputy Director for Operations
NASA Lewis Research Center

Dr. Michael J. Salkind
President
Ohio Aerospace Institute

Mr. Donald J. Campbell
Director
NASA Lewis Research Center
Mr. Richard S. Christiansen  
Acting Associate Administrator for Aeronautics and Space Transportation Technology  
NASA Headquarters

8:30 - 12:00 Noon  
NASA Headquarters Small Disadvantaged Business Forum  
(Continuation of HBCUs Research Conference)

12:00 - 1:00 p.m  
Lunch (On Your Own)

1:00 - 3:00 p.m  
Poster Sessions

3:00 - 4:00 p.m.  
Individual Principal Investigator/Technical Monitor Meeting

4:00 - 5:00 p.m  
Remove Posters
## HBCU Research Conference
### List of Poster Papers
#### April 8-9, 1998

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<td>Clark Atlanta University</td>
<td>&quot;Turbulent Premixed Methane-Air Combustion: Emissions, Characteristics and Modeling&quot;</td>
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<td>&quot;X-ray Diffraction Studies of the Structure and Thermochemistry of Alkaline-Earth Oxide-Coated thermionic Cathodes&quot;</td>
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P21 Howard University  "Artificial Neural Network, Fuzzy Logic and Expert Systems Approaches to Hybrid Electric Vehicle Control System"


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P24 NC A&T State University  "Numerical Simulations of Wing-Body Junction Flows"

P25 NC A&T State University  "Mechanical Behavior and Analytical Modeling of Melt-Infiltrated SiC/SiC Woven Composite"

P26 NC A&T State University  "Coupled Brillouin and Shape Memory Alloy Systems for Active Vibration Control"

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P35 Tennessee State University  "Non-Destructive Determination of Time-Dependent Thermal Conductivity of Melting Two-Phase Medium"

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