SCIENCE AND TECHNOLOGY INITIATIVES
IN ENVIRONMENTAL SCIENCES
& ENGINEERING

DECEMBER 1998
Dear Supporters of Prairie View A&M University:

It is indeed a pleasure to present this brief summary of the research, education and training activities in environment related subjects at Prairie View A&M University. The University has invested heavily in educational, research and service infrastructure in a variety of scientific, technical and related fields. This investment yielded outstanding results, in terms of original research, community activities, and well-prepared graduates in all disciplines who have contributed tremendously to the workforce of the State of Texas and the nation. These accomplishments are an important part of and the underpinnings of a broader effort to maintain and enhance the economic stability of Waller County, the State of Texas and the nation.

The areas of research discussed in this booklet form the nucleus for relevant environmental related activities and will strongly influence the theme of our future endeavors. There is significant interdisciplinary faculty and student support in addition to specialized laboratories. The results from this research are already being utilized by our sponsors and other agencies.

Prairie View A&M University has been very successful in forming critical partnerships with several academic, industrial and government organizations. We are interested in exploring further partnerships that can significantly strengthen our focus areas and enhance our capability for the future so that we may continue to provide the highest quality graduates as well as highest quality results from original research. We invite you to work with us so that both our organizations may prosper.

Sincerely,

A. Anil Kumar
ENVIRONMENTAL RESEARCH AT PVAMU - ONGOING

CENTER
p TEXGED - Texas Gulf Coast Environmental

PROJECTS

p "Bioremediation of Contaminated Sediments", Rice University Funded by Hazardous Substans
p The Role of Competitive Adsorption on Partitioning and Colloid Stability
p Industrial ecology program (NSF/Lucent)
p Effect of water stress on spectral reflectance of Image analysis of Gulf Coast sea surface temp
p Ecological studies of Crayfish in the River Nile, Environmental Database (Under Construction)
p The Use of Oxide Thin Films in the Recovery, Wastes Containing Hazardous Metal Ions
p Optimization of Oil Biodegradation by Mixed Innovative Microbial Delivery System, and Oil-
p Effect of Toxic Minerals on Fungal DNA in Re Contaminated Food and Food Crops
p Integration of Biological, Cultural, and Chen Improve Environmental Quality
p Accretion of Sediments in an Old River Cove Wetland-Pond Ecosystem Approach for Physi Small Watersheds Impacted by Agriculture
p Dynamic Soil Processes Associated with Fluct the Texas Gulf Coast Prairie
p Effects of Environmental Pollutants on the Met Bioremediation of Sediments and Technology I
p Development of a Computer Model to Evalua Nutrients Cycling
The Texas Gulf Coast Environmental Data Center (TEXGED), funded by the National Aeronautic and Space Administration (NASA) and headed by Dr. Safwat Shakir, is an academic center for knowledge and technology of Remote Sensing. This center is the result of the partnership and collaboration from NASA, Universities, and TRW Space & Technology.

TEXGED is a center for collecting data from space through the TRW HyperSpectral Imaging System. The center established a database management system which provides researchers and decision makers with information they need in planning and assessing the environmental problems facing the southern region along the Gulf Coast of Mexico and the United States of America. TEXGED also provides services to local and state agencies regarding the environmental data analysis.

One of the main research themes of TEXGED is to explore the capability of Hyperspectral Imager to detect stress in agricultural crops. This study was conducted jointly with Purdue University. In addition, Hyperspectral images were collected from Waller/Harris Counties, Texas, and the geometrical quality of the images was analyzed. Information on ground truth is being collected based on reports and maps on soil survey and land use of the area. In addition to ground survey, analysis of relevant data will be conducted at Prairie View A&M University Laboratories.

TEXGED in cooperation with TRW Space & Technology and NASA held its first Remote Sensing and Hyperspectral Imaging Workshop at Prairie View A&M University between May 21-22, 1996. University faculty, TEXGED team, and students from Hempstead High School participated in the Workshop. The theme of this training was in Hyperspectral Imaging, Internet Archive Access and Usage, downloading Remotely Sensed Image and Analysis.
SUPPORTING ACTIVITIES AT PVAMU - RESEARCH

RESEARCH CENTERS - ONGOING

- CARR Center for Applied Radiation Research
- CM^3 Center for Microdesign, Microelectronics
- NRTS NASA Southwest Regional Network for Teacher and Researcher Training
- NISE Novel Intelligent Systems Explorers Center

RESEARCH CENTERS - PROPOSE

- CEYE2I Community Empowerment Through Economic Development and Innovation
- CODC Community Outreach Development Center
- CIT Center for Intelligent Transportation
- CSET Center for Environmental Sciences, Technology, and Policy
- LRRL Long Range Research Laboratory

PROPOSALS PENDING/IN PREPARATION

- Effect of Soil Chemistry Parameters on the Labile Organic Matter Pool
  Proposal submitted to EPA, R. Kommalapati, 9/1
- Two proposals in preparation to EPA’s STAR Program
- Restoration of biological activities in soil during land use changes
- Texas Environmental Management and Planning Center in all aspects of environmental management, risk assessment, analysis and environmental impact problems facing the southern region of the United States
RESEARCH PUBLICATIONS - A SE

- “Bioenhancement of soil microorganisms in Anaerobic,” J. Environmental Science and Health
- “Remediation of Contaminated Sediments” FASME ASIA 1997 Congress held in Singapore
- “Remediation of Contaminated Soils,” R. Rad
Week Conference, Houston, TX, January 29, 1

GRADUATE PROJECTS/THESIS

- Environmental Impact of Hazardous Mater Residential Areas by Khaison Wyandon, Decem
- Effect of Bioslurry Treatment on Contaminated 1997
- Transportation Analysis of Radioactive Materials
- Shipment of Radioactive Materials and Low-level by Jose Melendez, December 1998
- The use of Oxide Thin Films in the Recovery, I Wastes Containing Hazardous Metal Ions, by Tc
- The Removal of Chromium from Hazardous Waste by Andrea D. M. Ashley, August 1996
SUPPORTING ACTIVITIES AT PVAMU - EDUCATION

SUPPORTING ENVIRONMENTAL CI

AGRO 5613 - Environmental Microbiology
AGRO 5663 - Introduction to Environmental Science
AGRO 5713 - Introduction to Biostatistics
AGRO 5723 - Land and Waste Management
AGRO 5743 - Principles of Land Reclamation and
AGRO 5753 - Environmental Quality Control and
AGRO 5763 - Environmental Resource Analysis ar
AGRO 5783 - Application of Biostatistics
AGRO 5793 - Problems and Issues in Environmen
CHEG 5033 - Environmental Processes
CHEG 5043 - Remediation Technologies
CVEG 4024 - Environmental Engineering
CVEG 5143 - Hazardous Waste Management
CVEG 5153 - Biological Wastewater Treatment
CVEG 5163 - Air Pollution Engineering
GNEG 5043 - Safety Engineering and Ergonomics
MCEG 4163 - Industrial Pollution Control
ENVIRONMENTAL DEGREE PROG

A proposal for a Master of Science in Environmental Science is under consideration for approval.

PLANNED SHORT COURSES FOR SUMMER 1999
(with option for continuing education credits)

The College also sponsors, through its research centers, several short courses based on the expertise existing among the center’s staff and their collaborators. These courses are first in a series of such continuing education courses that will be offered by the Centers. These courses may be taken either for continuing education units (CEUs) or just for enhancing one’s own knowledge in one’s field.

• Geographical Information Systems (GIS), sponsored by TEXGED
• Image Analysis Work Shop Employing IDL, sponsored by TEXGED
PARTNERSHIPS AND ALLIANCES

**ACADEMIC**
Alabama A&M  
Clark Atlanta  
Florida A&M  
Georgia Tech  
Jackson State  
North Carolina A&T  
Purdue  
Tennessee State  
Texas A&M - College Station  
Texas A&M - Kingsville  
Tuskegee  
University of Alabama  
University of California  
University of Dayton

**INDUSTRY**
Lucent Technologies  
Boeing  
General Electric  
General Motors  
GTE  
Hewlett-Packard  
Lockheed Martin  
Motorola  
SAIC  
TRW

**GOVERNMENT**
Air Force  
Army  
CIA  
DOD  
DOE  
EPA  
NASA  
NIH  
NSF  
State of Texas

**ALLIANCES**
HBCU/MI Consortium NASA NERTS  
HBCU/MI Research Alliance (HMIRA)  
Science & Engineering Alliance  
South Central Computational Sciences at Minority Institutions Consortium  
The Leadership Alliance

**SMALL BUSINESSES**
GHG Corporation  
Metters Industries  
RF Weston
The PVAMU NRTS was established to substantially increase the use of the Internet and its resources by faculty and students. The establishment of the NRTS was made possible with a grant from NASA funded through the Minority University - Space Interdisciplinary Network (MU-SPIN). The main object of the program is to transfer computer network technology and promote its use in support of collaborative interdisciplinary, scientific research among faculty and students, and other scientists.

The major components of the program are: Provide HBCU/OMU (Historically Black Colleges and Universities/Other Minority Universities) institutions with the expertise necessary to establish local and wide area network connectivity and other services in support of campus based networks. Provide User Support Services to enhance the campuses capability to manage and use the network and its resources effectively. Provide activities that will accelerate the development of MU-SPIN faculty and student expertise in network technology and its application to support information exchange between NASA and the MU-SPIN community. Provide a mechanism for integrating HBCUs and OMUs into scientific and technical programs sponsored and/or supported by NASA. Establish a MU-SPIN Users Working Group as a vehicle for exchanging scientific and technical information between NASA and the MU-SPIN community.

The MU-SPIN Program offers many valuable needed services to the university community. These services include hands-on training to faculty and students in scientific network applications and in accessing resources available over the Internet, a worldwide network of networks; hands-on training to technical staff in local area and campus network installation, management and user support; and technical sessions as well as annual conferences.
Questions/ Further Information?  
Please contact: 

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