

Research Poster Presentations

Dr. Malcolm LeCompte (mentor), Jenelle Forde, Bilan Howard, Mario Oliver
Coastal Upwellings Along the Northern Beaches of the North Carolina Outer Banks by Remote Sensing

Mr. Ervin Howard (mentor), Dana Brown
Collection and Analysis of Atmospheric and Soil Data from ECSU Campus Sites Using Globe Protocols

Dr. Jud Kenworthy (mentor), Dr. Patrick Biber (mentor), Napoleon Paxton
Geo-referencing Aerial Photography for Calibration of Light –Attenuation Models of Seagrass Habitats

Dr. Sonia Gallegos (mentor), Danielle Graves, Erica Pinkney
Derivation and Analysis of Imagery from SeaWiFS Data of the Gulf of Mexico Using Algorithms that Partition the Variability into Spatial EOFs

Dr. Aleta Hohn (mentor), Dr. Jon Hare (mentor), Karitsa Williams
Extraction of SST and Wind Data Related to Stranding of Harbor Porpoise During the Winter of 1999

Mr. Jeff Wood (mentor), Shayla Brooks
Center of Excellence in Remote Sensing Education and Research (CERSER) Website Enhancement

Mrs. Elizabeth B. Noble, Department of Geological, Environmental, and Marine Sciences
Submerged Aquatic Vegetation Mapping and Monitoring Project

Center of Excellence in Remote Sensing Education and Research (CERSER) Goal/Purpose

It is the intent of this project to develop an innovative and relevant research collaboration focused on coastal, ocean, and ice sheet research.

The CERSER Lab consists of the following:

- TeraScan HRPT system
 - System is composed of the following components:
 - Polar Orbiting Tracking 1.5m Antenna
 - Global Positioning System (GPS) Antenna/Receiver
 - Telemetry Receiver
 - Workstation
 - TeraScan Software Suite
- Laboratory consisting of 15 Workstations containing Linux, Windows 2000, and Windows XP
- Remote Storage Areas of Satellite Data
- Servers including a local Web Server, File Server, and an Online Course Server
- LH Viking Research Vessel
 - Sea Pro Model 210 boat with: UHF Radio, Raytheon 300 GPS and 365 Depth Finder



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OFFICE OF NAVAL RESEARCH UNDERGRADUATE RESEARCH EXPERIENCE IN OCEAN AND MARINE SCIENCE

NOAA EDUCATIONAL PARTNERSHIP PROGRAM

MAY 31 - JULY 21, 2006

CReSIS
Center for Remote Sensing of Ice Sheets



CERSER Distinguished Lecturer

Dr. Robert P. McCoy

Team Leader, Space Science
Ocean Battlespace Sensing Department, Office Of Naval Research

Dr. McCoy is the team leader for the Space Science Team within the Office of Naval Research (ONR) Ocean Battlespace Sensing Department. Dr. McCoy manages an interdisciplinary team of scientists funding science and technology, in three research areas: space environment research; precision time, time interval (PTTI) and astrometry; and tactical space demonstrations. His program includes basic and applied research funding in academia, government laboratories and industry. The space science element of the program funds basic research in solar physics, ionospheric and thermospheric physics with emphasis on remote sensing, specification and forecast of the upper atmosphere and ionosphere. Goals of the program include development of improved techniques for remote sensing, improved understanding of ionospheric, and development of a new type of ionospheric model based on assimilation of space-based data with basic physics models. Dr. McCoy is the program manager for the Tactical Space Innovative Naval Prototype program which funds the development and spaceflight of microsatellites to demonstrate new warfighting capabilities in space for the Navy.

Dr. McCoy began federal service in 1981 as a captain, U. S. Army Ordnance Officer, assigned to the Naval Research Laboratory as a Science Liaison Officer. In 1985 he became a civil servant research physicist with the Navy and led a team of scientists and engineers to build sounding rockets and satellite instruments to study the Earth's upper atmosphere and ionosphere. He was principal investigator (PI) on several NASA sponsored sounding rocket investigations of the upper atmosphere and cometary atmospheres.

Dr. McCoy received his A.B. in Physics from Cornell University in 1974, his M. S. in Physics from Texas A&M in 1976 and his Ph.D. in Astro-Geophysics from the University of Colorado in 1981. Dr. McCoy is the author on more than 60 publications in scientific and technical journals.

In 1998 Dr. McCoy received the NRL 75th Anniversary Innovator Award and has received the Alan Berman Publication Award in 1994, 2001. NRL Group Achievement Award 1983 and the NASA Group Achievement Award in 2004.



New Low-Cost Microsatellite Initiatives at ONR

Abstract

Traditionally access to space has been slow and costly which means that it typically takes years to launch a satellite and costs typically approach \$100M. The Office of Naval Research, in conjunction with other government agencies has started a series of new initiatives to build and launch microsatellites quickly and for a fraction of the usual cost. This program involves totally rethinking the problem of access to space and opens a wide range of possibilities for sensors and computers in space. For example, low-cost airborne instruments are being packaged in hermitically sealed containers and flown and lap-top computers are being used to control experiments, take and process data. This new approach should open a wide range of remote sensing and other space applications and make it widely affordable and accessible for universities. ONR in conjunction with several U.S. federal agencies and the National Space Program Office of Taiwan recently launched the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC). COSMIC is a constellation of 6 microsatellites to measure ionospheric electron densities and tropospheric neutral densities using GPS occultation, UV photometry and radio tomography.

<http://nia.ecsu.edu/ureoms2006/>
(252) 335-3992

URE OMS 2006 Closing Events Program

Tuesday July 18, 2006 116 Lester Hall – Time 12:30 – 2:30PM
CREStS Entrepreneurship Seminar Report - Monica Ratliff
Student Research Team Webpage Review

Wednesday July 19, 2006 229 Dixon Hall - Time 1:30-4:00PM
Minorities in Ocean and Marine Science: Phone Conference with Dr. Frank Hall, Geological Oceanographer and Dr. Thomas Windham, NSF-Ryan Tubbs

Research Team Reports

Mapping the ECSU Campus Using Multi-Sensor Remote Sensing Methods
Mona Ratliff, Amber Smith, Michael Tucker, and Ryan Tubbs
Mentors: Dr. William Marquitz and Dr. Barrett Rock

Holistic Ice Sheet Modeling: A First Order Approach and Study
Keila Vance, Shrae Ashley Mentors: Dr. M. LeCompte, Dr. Terry Hughes

Estimating Antarctic Firn Average Emissivity Trends at the Ski Hi Automatic Weather Station
Kaiem Frink, Lee Smalls Jr. Mentor: Dr. Malcolm LeCompte

Thursday July 20, 2004 229 Dixon Hall - Time 2-5:00PM

Registration

Eastern NC Chapter IEEE-Geoscience and Remote Sensing Society

Welcome and Introductions

Dr. Linda Hayden, Eastern NC GRSS Chapter President

Minutes from Previous Meeting

Keisha Wilkins, Eastern NC GRSS Chapter Secretary

Minorities in Ocean and Marine Science: Ernest Just and Dawn Wright
Ly Teasha Bass, Shrae Ashley

Research Team Report

Automating the TeraScan Image Process for Creation of NOAA AVHRR Data Products

Karitsa Williams, Ly Teasha Bass, Mentor: Mrs. Keisha Williams

CERSER Distinguished Lecture

Introduction of Speaker, Dr. Malcolm LeCompte, ECSU

Dr. Robert McCoy

Team Leader, Space Science Ocean Battlespace Sensing Department
Office Of Naval Research, *New Low-cost Microsatellite Initiatives at ONR*

IEEE Eastern North Carolina Executive Committee Update

Dr. William Porter, Eastern NC GRSS Chapter Vice President

Upcoming Events

IEEE-International Geoscience and Remote Sensing Society (IGARSS)
2006 in Denver, July 31 – August 04, 2006 <http://www.igarss06.org>

NTA Conference in Chicago July 26-30, 2006 <http://www.ntaonline.org>

Symposium on NC Coastal Change: "You and the Future" Sept. 6-8, 2006
<http://GIBS.capecfs.com>

Minorities in Research Conference in Baltimore Sept. 14-16, 2006
<http://www.ccmag.com>

Remarks

Mr. Charles Luther, Past President of IEEE-GRSS

Reception and Research Poster Session