



RESEARCH EXPERIENCE FOR UNDERGRADUATES  
IN OCEAN, MARINE, AND POLAR SCIENCE

ELIZABETH CITY STATE UNIVERSITY  
MAY 29 - JULY 20, 2012

The REU/URE OMPS program objective is to promote the professional development of minority undergraduate students through their participation in ocean, marine and polar science research. The program consists of undergraduate students from minority serving institutions; each student was assigned to a specific research team, where they worked closely with a faculty mentor. In addition, seminars, lunch meetings, and social functions were organized to facilitate undergraduate interaction. The project was conducted for eight weeks during summer 2012, with online mentoring and follow-up during the academic year 2012-2013.

### Upcoming Events

#### 2012 IGARSS, Munich, Germany

22 July, 2012, <http://www.igarss12.org>

#### Science Cloud Summer School Course

30 July, 2012, <http://www.vscse.org/summerschool/2012/scss.html>

#### NASA NICE Summer Workshop

6 August, 2012, <http://nia.ecsu.edu/nice/2012/120806nice/>

#### Satellites & Education Conference

7 August, 2012, <http://www.sated.org/>

#### National Technical Association Conference

19 September, 2012, <http://www.ntaonline.org/conference2012.html>

#### NASA NICE Webinar

17 September, 2012, <http://nia.ecsu.edu/nice/2012/120927web/>

#### Celebration of Women in Math

16 October, 2012, <http://nia.ecsu.edu/cwm.html>

#### 9th AARSE Conference

29 October, 2012, <http://www.aarse2012.org/index.html>

#### Supercomputing Conference 2012

10 November, 2012, <http://sc12.supercomputing.org>

#### International Conference on Appropriate Technology

21 November, 2012, <http://www.appropriatetech.net/>

#### AGU Fall Meeting

6 December, 2012, <http://www.agu.org/meetings/>

### 2012 Participating Institutions

Rice University	Mississippi Valley State University	Spelman College
Gettysburg College	University of Ghana	St. Augustine's College
Norfolk State University		University of California LA
Jacksonville State University		Elizabeth City State University
University of Alaska Fairbanks		Winston Salem State University
	Haskell Indian Nations University	

<http://nia.ecsu.edu/ureomps2011/>

(252) 335-3696



RESEARCH EXPERIENCE  
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POLAR SCIENCE 2012

JULY 10-18, 2012



## CLOSING PROGRAM EVENTS



Center of Excellence in Remote Sensing Education and Research  
Elizabeth City State University | 1704 Weeksville Road | Elizabeth City, NC 27909

ONR - URE/OMS N00008-1-0832 NSU/REU ANT-0944255 CReSIS - NSF FY 2005-108CM1 HBCU-UP - 1137571

# REU Closing Events Program

REU Closing Events Program Room 229 Dixon Hall  
Dr. Darnell Johnson, Moderator

## Applying Common Core Standards at the K-12 Academic Levels Using LEGO Robotics

Dezerae Little (St. Aug), Derrick Jones (MVSU), Mentor - Dr. Darnell Johnson

## Cobb's Point-Culpeper Rebellion Archaeology Project

Donquel Davis (WSSU), Kevin Brodie II (NSU), Mentor - Dr. Malcolm LeCompte

## Spectroscopic Image Signature Classification of Land Cover Types using Multi-Spectral Data within a Neural Network

Bernard Aldrich Jr. (JSU), Charniece Huff (Spelman), Mentor- Mr. Je'aima Powell

## Analyzing Long-Term Drought Effects Using Aqua-1 Satellite Data

Autumn Luke (ECSU), Andrew Brumfield (ECSU), Mentor: Mr. Eric Baptiste

## Using CReSIS Radar Data to Determine Ice Thickness and Surface Elevation at Pine Island Glacier

Michael Koch (ECSU), Nyema Barmore (ECSU), Mentor: Mr. Peter Burkette

## Utilizing Various Data Sets from the CReSIS Data Archives to Visualize Echogram Information at Specific Locations in Google Earth

Maya Smith (WSSU), Shaquia Johnson (MVSU), Mentor: Mr. Jeff Wood



### Judy Qiu

Assistant Professor of Computer Science and Informatics

### Abstract

The shift to parallel computing, including multi-core computer architectures, cloud distributed computing, and general purpose GPU programming - leads to fundamental changes in the design of software and systems. As a result, learning parallel, distributed, and cloud techniques in order to allow software to take advantage of the

shift toward parallelism is of important significance. To this end, FutureGrid, an experimental test bed for cloud, grids, and high performance computing, provides a resource for anyone to find, share, and discuss modular teaching materials and computational platform supports.

This talk presents a series of case studies for experiences in parallel and distributed education using the FutureGrid test bed. Building on previous experiences from courses, workshops, and summer schools associated with FutureGrid, we present a viable solution to developing a curriculum by leveraging collaboration with organizations. Our approach to developing a successful guide stems from the idea of anyone interested in learning parallel and distributing computing can do so with minimum assistance from a domain expert, and it addresses the educational goals and objectives to help meet many challenges, which lie ahead in the discipline. We validate our approach to developing a community driven curriculum by providing use cases and their experiences with the teaching modules.

## Tuesday July 10, 2012

- 11 am CReSIS-v Lane Hall Measurements of Outlet Glacier Behavior by Leigh Stearns
- 5 pm IU/ECSU Strategy Session (by invitation only)

## Wednesday July 11, 2012

- 9:30 am Dixon-Patterson Hall (Breakfast)
- FutureGrid Education: Using Case Studies to Develop Curriculum for Communicating Parallel and Distributed Computing Concepts*
- Dr. Judy Qiu, Assistant Professor of Computer Science and Informatics – Indiana University, Bloomington

### Research Reports

- CReSIS Data Team - Maya Smith, Shaquia Johnson
- Pine Island Bay Coastal Ice Team - Michael Koch, Nyema Barmore

## Thursday July 12, 2012

- 8 am Boating and Announcements

## Friday July 13, 2012

- 12 Noon, Dixon-Patterson Hall (Lunch)
- IEEE-GRSS Student Chapter Meeting
- Welcome of Guest from the NSF HBCU-UP Participants
- Undergraduate Research Opportunities @ ECSU Dr. Linda Hayden
- Research Report: *SeaSpace Project* - Autumn Luke, Andrew Brumfield

## Monday July 16, 2012 - Team Webpage Review

- 9 am Dixon-Patterson Hall (Breakfast)

## Tuesday July 17, 2012

- 7 am Lane Hall – Great Dismal Swamp - Merchants Millpond Field Research

## Wednesday July 18, 2012

- 2 pm Lane Hall - **Research Reports**
- Mathematics Team - Dezerae Little, Derrick Jones
- Archeology Team - Donquel Davis, Kevin Brodie II
- Redesign Lab Team - Chartese Jones
- Remote Sensing Team - Bernard Aldrich Jr., Charniece Huff

## Friday July 20, 2012

- Final Written Reports are due, Payday, Depart for airport

