

RESEARCH WEEK 2013

Celebrating



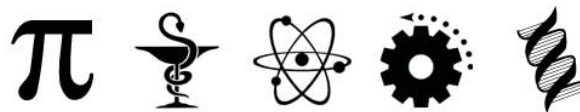
SCIENCE

TECHNOLOGY

ENGINEERING

MATHEMATICS

Success



Biology :: Chemistry, Geology, and Physics :: Mathematics and Computer Science :: Pharmacy and Health Professions :: Technology
<http://nia.ecsu.edu/ur/1213/rw13/>

February 11 - 15, 2013

ELIZABETH CITY STATE UNIVERSITY

Research Week 2013 - Schedule of Events



Dr. Harry S. Bass, Dean
School of Mathematics, Science and Technology

The School of Mathematics, Science and Technology (MST) welcomes all guests and participants in this year's Annual Research Week 2013. This year's theme is "Celebrating STEM Success". Research Week enables the Elizabeth City State University family, the citizens of the Elizabeth City, and surrounding counties to participate in informative presentations by student

researchers and their mentors as well as workshops and seminars featuring government officials and private industry representatives. Included in this week of events will be outstanding demonstrations from departments within the School of Mathematics, Science and Technology and from professional scientific organizations. We invite you to visit as many presentations, lectures, and demonstrations as possible during this week.

I would like to acknowledge all those individuals involved in the coordination of Research Week 2013 as it is not an easy task. I extend special thanks to all presenters and guests for taking time out of their busy schedules to participate in this week of events as well as the Research Week Committee, faculty, staff, and the Office of Academic Affairs.



Dr. Ali Khan
Provost and Vice Chancellor for Academic Affairs

Welcome to all. I am glad to see so many faculty and student participants in this Research Week program. This is a tradition that sets this School apart. I want to thank the members of the School of Mathematics, Science and Technology who contributed to this program. I especially want to recognize and thank the faculty who engaged in research activities with

our students. You are to be commended. Also, I know this is a school-wide activity and many are involved. I thank all of you.

Scientific Research and other scholarly activities are the intellectual foundation of all great universities. Research offers an excellent opportunity for professional development in many fields of interest at ECSU. We are cultivating a research culture that supports and nurtures the scholarly activity of our graduate and undergraduate students as well as our faculty. The extension of research opportunities to an ever-increasing group of undergraduate students adds a dimension of experience to the undergraduate education that simply cannot be duplicated in the classroom. Our students learn the joy as well as the rigors of new discovery, and acquire skills of inquiry, evaluation, and communication that provide a foundation for the next phases of their careers and lives.

This is a student – faculty celebration of research. All presentations are done by the students from the School of Mathematics, Science and Technology, although many of the presentations have faculty co-authors. One purpose of the celebration is to allow our students to showcase their intellectual and scholarly achievements to the ECSU community. ECSU encourages students to discover unknown phenomena, develop theories, reinterpret existing knowledge, and apply established results to new situations through basic and fundamental research work. We are so glad to see such a large amount of faculty and student interest. They have spent a great deal of time and energy hypothesizing and developing their projects and now have the opportunity to present their work for the entire student body.

Dr. Ali Khan
Vice Chancellor for Academic Affairs
(252) 335-3291 aakhan@mail.ecsu.edu

Dr. Harry Bass
Dean, School of Mathematics,
Science and Technology
(252) 335-3189 hsbass@mail.ecsu.edu

Dr. Linda Bailey Hayden
Director, Center of Excellence in Remote
Sensing Education and Research
(252) 335-3696 haydenl@mindspring.com

Monday, February 11 :: Student Opportunities

- | **Department and Program Displays**
9:00 am Jenkins Science Center, Pharmacy Complex
- | **Student Research Presentations**
10:00 am Jenkins Science Center, Room 138
Presiding: Dean Harry Bass
Welcome - Chancellor Willie Gilchrist and Provost Ali Khan

The Northern Ecosystems Research for Undergraduates
Ryan Lawrence - ECSU

ECSU REU in Ocean, Marine and Polar Sciences
Andrew Brumfield - ECSU
- | *Refreshment Break, Jenkins Science Lobby 11:00 - 12:30 pm*
- | **Internship Roundtable I**
1:00 pm Jenkins Science Center, Room 138
Presiding: Dr. Gary Harmon
The Importance of Internships
Michael Jefferson, ECSU Graduate Student

CReSIS Internships
Darryl Monteau, CReSIS KU Education Coordinator

Summer 2012 Internship Reports
Andre' Price - NOAA Woods Hole Oceanographic Institute
Glenn Koch - Pennsylvania State University
Ya'Shonti Bridgers - Indiana University
- | **Internship Roundtable II**
3:00 pm Pharmacy Complex, Room 103
Presiding: Dr. Ephraim Gwebu
Summer 2012 Internship Reports
E-MHIRT Program Representatives
Brittany Rice, Yasmeen Williams, Akeem McAllistor

Pathways to Science: Pathways to the STEM Fields
Patrina Bly, ECSU Graduate Student

Internship Opportunities for Summer 2013
Trina Gregory, Administrative Support Associate, Biology

RESEARCH WEEK COMMITTEE

| | |
|----------------------------|----------------|
| Dr. Linda Hayden..... | Chairman |
| Dr. Darnell Johnson..... | STEM Education |
| Dr. Gary Harmon..... | Biology |
| Dr. H. Leon Pringle..... | Biology |
| Dr. Gloria Payne..... | Biology |
| Dr. Victor Adedeji..... | Chem/Geo/Phy |
| Dr. Kassim Traore..... | Pharmacy |
| Dr. Moayed Daneshyari..... | Technology |
| Mr. Orestes Gooden..... | Technology |
| Ms. Lila Gonzales..... | MST |
| Ms. Kenya Hinton..... | Math & CS |

School of Mathematics, Science and Technology

Tuesday, February 12 :: Research/STEM Education

| STEM Session I

11:00 am - 12:20 pm Jenkins Science Center, Room 138

Presiding: Dr. Edmond Koker

Justin Deloatch

Developing Research Opportunities with HubZero

Marc Robinson

HubZero in Education, Tennessee Technical University

| Refreshment Break, Jenkins Science Lobby 12:00 - 1:30 pm

| 1:00-2:00 pm McLendon Hall, Room 10

Michelle Moore, Research Compliance Seminar

| STEM Session II

3:30 - 5:00 pm Lane Hall, Room 104

Presiding: Dr. Ali Khan, Dr. Harry Bass

NSF HBCU-UP Program Panel

ECSU Principal Investigators

Dr. Eyuaem Abebe, Dr. Maurice Crawford,

Dr. Adetayo Adedeji

Wednesday, February 13 :: Black History Month

Major African-American Scientists and Inventors

| African Americans in STEM Seminar I

10:00 am Lane Hall, Room 104

Presiding: Mr. Orestes Gooden

Mathematics - Mr. Samuel Young

Computer Science - Mr. Antonio Rook

Chemistry - Dr. Jacqueline Poole

| Refreshment Break, Lane Hall 11:00 - 12:00 pm

| Graduate School Success

12:00 noon Lane Hall, Room 139

Presiding: Dr. Josiah Sampson, Dr. Kenneth Jones

Dr. Steve Hale, Dr. Barry Rock

NASA Innovations in Climate Change Education, UNH

James Dickens - *Math for America Program, AU*

| African Americans in STEM Seminar II

1:00 pm Pharmacy Complex, Room 103

Presiding: Dr. Kassim Traore

Technology - Mr. Dwayne Morrison

Pharmacy - Dr. Arnold Banerji

Biology - Mr. Moses McDaniel

| African Americans in STEM Seminar III

2:30 pm Lane Hall Room 139

Presiding: Dr. Farrah Jackson

Crystal Harden, UNC-Chapel Hill

Informal Science Learning Environments:

A Part Of The Solution

Thursday, February 14 :: Competitions/GRSS Meeting

| Science Bowl Competition

9:30 - 10:50 am Jenkins Science Center, Room 138

Presiding: Dr. Leon Pringle, Dr. Gloria Payne

| GRSS Chapters Meeting

12:30 noon Dixon-Patterson Hall, Room 229

Registration and Refreshments

(Free IEEE Society Membership for faculty and students)

Presiding: Dr. Linda Hayden

Dr. Malcolm LeCompte - *ECSU Antarctic Bay Project*

Thomas C. Jepsen (invited guest)

Chair IEEE Eastern North Carolina Section

| Common Core STEM

4:30 - 5:30 pm Lane Hall Room 139

Presiding: Dr. Farrah Jackson

Ron Patterson, Bobby Garcia

Candace Kimball, Kristyn Davis

Winston Salem State University, Graduate Students

Engaging Parents in Common Core STEM: Low Cost Math & Science Activities



Friday, February 15 :: K-12 STEM Activities

| Undergraduate Research Poster Session

Viewing Time: 9:00-11:30 am

Judging Time: 10:00-11:00 am

Ridley Student Complex

Presiding: Dr. Moayed Daneshyari, Dr. Victor Adedeji, Ms. Sheryl Bradford

| Secondary School Outreach

9:00 am Ridley Student Complex

Presiding: Dr. Darnell Johnson

Department Displays

Demonstrations by:

- » Virginia Air and Space Center
- » NASA Langley Research Center
- » ECSU Go Green Campaign
- » Upward Bound Program
- » Center for the Remote Sensing of Ice Sheets
- » Center of Excellence in Remote Sensing Education and Research
- Port Discover
- Khan Planetarium
- Aviation Science
- Math & Computer Science

| Distinguished Lecture

12 noon Burnim Fine Arts Center

Presiding: Dr. Darnell Johnson

Dr. Gamaliel Cherry, NASA Langley Research Center

DEPARTMENTS/CHAIRPERSONS

| | | | |
|----------------------------------|--------------------|-----------------|-------------------------|
| Biology | Dr. Gloria Payne | (252) 335-3595 | gepayne@mail.ecsu.edu |
| Chemistry, Geology and Physics | Dr. Ephraim Gwebu | (252) 335-3233, | etgwebu@mail.ecsu.edu |
| Technology | Dr. Kuldeep Rawat | (252) 335-3846, | ksrawat@mail.ecsu.edu |
| Mathematics and Computer Science | Dr. Farrah Jackson | (252) 335-3544, | fmjackson@mail.ecsu.edu |
| Pharmacy and Health Professions | Dr. Kassim Traore | (252) 335-3641, | ktraore@mail.ecsu.edu |

Friday, February 15, 2013 - 9 - 11:45 am, Ridley Student Complex

Keith Marrow, Senior, Aviation Science

The Anatomy of the Impossible Turn

Budour Mohammad, Senior, Biology

A Key Resource to Free-Living Nematode Success

Juan Wilkins, Senior, Biology

Intrapulmonary Arteriovenous Anastomoses Regulate Pulmonary Vascular Pressure During Exercise

Kenya Holley, Junior, Biology

Bacteria Associated with The Phelps Lake Free-living Nematode Neotobrilus

Brittnei Hall, Senior, Biology Pre-Med

Mutation Studies of EMS Treated Cleome sp. Seeds

Tanisha Searles, Senior, Biology Pre-Med

*Floral Dip transformation of Wisconsin Fast Plants (*Brassica rapa*)*

William Kahan, Junior, Biology Pre-Med

Three New Species of Nematodes found in Lake Phelps, NC

Danny Alston, Jr., Senior, Chemistry

*Chemical Composition of Bergamot (*Citrus bergamia*) Oil and its Brine Shrimp Lethality*

Brittany Rice, Senior, Chemistry

Effects of Essential Oils from Schinus Leaves on Brine Shrimp Lethality

Arkeen Simmons, Senior, Chemistry

The Cytotoxicity of Commiphora myrrha on MCF-7 Cells

Yasmeen Williams, Senior, Chemistry

Simple, Green and Room Temperature Synthesis of Ascorbic Acid-Capped Zinc Selenide Nanoparticles

Akeadra Bell, Junior, Chemistry

Developing an Antimicrobial Assay on South African Medicinal Extracts and Commercial Essential Oils

Mia Hall, Sophomore, Chemistry

A 4-Step Synthesis of Bromoacetophenone Derivatives as Precursors to Advanced Sulfated (B-O-4) Lignins

Ryan Lawrence, Senior, Chemistry

Automatic Chamber Measurements of Methane and Carbon Dioxide Fluxes and the Isotopologues of CH₄ in a sub-Arctic Mir

Glenn Koch, Senior, Computer Science

A Study of the Viability of Hadoop Usage on the Umfort Cluster for the Processing and Storage of CReSIS Polar Data

Autumn Luke, Junior, Computer Science

The Use of Math Sprint in a Tutorial Program for Seventh Grade Students to Improve End of Grade Test Scores.

Andrew Brumfield, Senior, Engineering Technology

Analyzing Long-Term Drought Effects on Lane Surface Temperature and Vegetation Using Aqua-1 Satellite Data

James Lee, Jr., Junior, Engineering Technology

Development of Wide band Dual Polarized Microstrip Antennas for Microwave Remote Sensing

Dwayne Brooks, Senior, Math and Computer Science

The Application of Fast Fourier Transforms on Frequency-Modulated Continuous-Wave Radars

Ka'Ren Byrd, Senior, Mathematics Education

Numerical Convergence Study on Simulated Spaceborne Microwave Radiometer Measurements of Earth

Malcolm McConner, Senior, Mathematics Education

How does Precipitation and Temperature Contribute into the Decreasing of Glacier Mass Balance

Stephanie Worsley, Junior, Mathematics Education

Investigating the Optical Properties of Vacuum Sputtered Vanadium Oxide for Smart Window Application

Gabriell Thorne, Junior, Pharmaceutical Science

Investigational Agent 2-(4 Aminio-3 Methylphenyl)-5 Benzothiazole (5F 203) Induces Lysosomal Cell Death and Activates Cathepsin B in Breast Cancer Cells Irrespective of Estrogen Receptor Status

Terence Baker, Junior, Physics

Characteristics of Reactively Sputtered Titanium Oxide Thin Films on Glass Substrate

**ECSU Graduate Student Presentations****Poster****Sarece Armwood, Biology**

Effects of Antimalarial Sulfadoxine on Chicken Embryonic Development

Jeremiah Lancaster, Biology

Using Multiple Displacement Amplification as a Pre-Polymerase Chain Reaction/Denaturing Gradient Gel Electrophoresis Step in the Identification of Nematode/Bacterial Associations in Oregon Inlet, NC

Vongvilay McLees, Biology

A Survey of Entomopathogenic Nematodes in Northeastern North Carolina and Southeastern Virginia

Deirdre Vaughan, Biology

The Effects of Rhenium Acetylsalicylic Compounds on Astrocytoma (HTBIZ), Rat Astrocytes, Alveolar Cell Carcinoma, Leukemia, Lymphocytes, and Prostate Cancer (PC-3)

Oral Presentations**Michael Jefferson, Applied Mathematics/Remote Sensing**

The Importance of Internships

Justin Deloatch, Applied Mathematics/Remote Sensing

Developing Research Opportunities with HubZero

Patrina Bly, Applied Mathematics/Remote Sensing

Pathways to Science: Pathways to the STEM Fields

CReSIS - NSF FY 2005-108CM1, Dr. Linda Hayden, Associate Director

LSAMPS - #GA10652-128694, Dr. Ali Kahn, Program Coordinator

ECSU Noyce Scholars Program - NSF #1035454, Dr. Farrah Jackson, Principal Investigator

Upward Bound Program CFDA NUMBER: 84.047A U.S. Department of Education

HBCU UPs - NSF Award # 1137571, Dr. Ali Khan, Principal Investigator

Watershed Watch - NSF STEM Project Grant # H98230-06-1-0173, Dr. Barry Rock, Principal Investigator