NOAA Office of Education

Science and Education Symposium

Student Presentations

July 30 - August 1, 2013

“Demonstrating NOAA’s Commitment to Education Through Partnerships”
Dear NOAA Scholars, Families, and Friends:

Welcome to a week of exciting sessions and information sharing. We will begin the Science and Education Symposium with Remarks by Office of Education and NOAA senior leadership, followed by presentations by the 2012 Educational Partnership Program (EPP) Undergraduate scholars, 2012 Ernest F. Hollings Undergraduate scholars, and 2013 EPP Undergraduate scholars. Approximately 135 student scholars will present a summary of their 9-week summer internship which began in May 2013 for most scholars.

The undergraduate scholars selected scientific projects that were designed by NOAA scientists during the fall 2012. The scholars have spent the last 9 weeks with NOAA scientists across the country completing tasks associated with these projects. This week, the 10th week, the scholars will share a summary of their results with the NOAA scientific community here in Silver Spring, the Office of Education program staff, their mentors, families, and friends. NOAA scientists will judge each oral and poster presentation and the program staff will provide the scholars with the judge’s comments and feedback.

Scholar presentations are grouped in concurrent sessions according to NOAA’s long-term mission goals and its enterprise-wide capabilities. This information is summarized in the section entitled, “Student Presentations Agenda-at-a-Glance”. If you would like to view a particular student presentation, please see the section entitled, “Full Agenda.”

Thank you for your support and enjoy the week.

Office of Education
Student Scholarship Programs Staff
About NOAA

Through its long-standing mission of science, service, and stewardship, the National Oceanic and Atmospheric Administration (NOAA) generates tremendous value for the Nation—and the world—by advancing our understanding of and ability to anticipate changes in the Earth’s environment, by improving society’s ability to make scientifically informed decisions, and by conserving and managing ocean and coastal resources.

NOAA’s Mission: *Science, Service, and Stewardship*
*To understand and predict changes in climate, weather, oceans, and coasts, to share that knowledge and information with others, and to conserve and manage coastal and marine ecosystems and resources.*

NOAA’s mission is central to many of today’s greatest challenges. Climate change, severe weather, natural and human-induced disasters, declining biodiversity, ocean acidification, threatened or degraded ocean and coastal resources. These challenges convey a common message: human health, prosperity, and well-being depend upon the health and resilience of coupled natural and social ecosystems. Managing this interdependence requires timely and usable information to make decisions and the science that underpins our knowledge of these systems. NOAA’s mission of science, service, and stewardship is directed to a vision of the future where societies and their ecosystems are healthy and resilient in the face of sudden or prolonged change.

Resilient ecosystems, communities, and economies can maintain and improve their health and vitality over time by anticipating, absorbing, and diffusing change. This vision of resilience will guide NOAA and its partners in a collective effort to reduce the vulnerability of communities and ecological systems in the short-term, while helping society avoid or adapt to long-term environmental, social, and economic changes. To this end, NOAA will focus on four long-term outcomes within its primary mission domains.

NOAA’s Long-term Goals:

**Climate Adaptation and Mitigation**
*An informed society anticipating and responding to climate and its impacts*

**Weather-Ready Nation**
*Society is prepared for and responds to weather-related events*

**Healthy Oceans**
*Marine fisheries, habitats, and biodiversity are sustained within healthy and productive ecosystems*

**Resilient Coastal Communities and Economies**
*Coastal and Great Lakes communities are environmentally and economically sustainable*

NOAA cannot achieve these goals on its own, but neither can society achieve them without NOAA.
NOAA’s strategy would be incomplete without detailing the enterprise-wide capabilities that will be required to achieve the environmental, social, and economic outcomes targeted by NOAA’s strategic goals. **NOAA’s enterprise-wide capabilities** consist of three groups:

- The foundational **science and technology functions** that generate research and development, models, and environmental observations;
- The distinct functions for **engaging** partners and customers; and
- The underlying **administration and management** functions that support all of NOAA’s work.

These cross-cutting functions define NOAA’s distinctive capabilities as an organization.

**About the Office of Education**

The **Office of Education (OEd)** is a staff office within the Office of the Under Secretary of Commerce for Oceans and Atmosphere (the NOAA Administrator) in downtown Washington, DC, and Silver Spring, Maryland. OEd provides advice and counsel to the Under Secretary on matters pertaining to education. OEd, in conjunction with the NOAA Education Council, coordinates education activities across NOAA and oversees the implementation of the NOAA’s Education Plan and Policy. These efforts help to ensure that NOAA’s education programs and activities are based on NOAA science and support the agency's cross-cutting priority of promoting environmental literacy. OEd also works with external partners to promote environmental literacy efforts that directly benefit the NOAA mission. The Office of Education administers three scholarship programs:

1. **EPP Graduate Sciences Program**
2. **EPP Undergraduate Scholarship Program**
3. **Ernest F. Hollings Scholarship Program**

**EPP Graduate Sciences Program (discontinued in 2013)**

The Graduate Sciences Program (GSP) is aimed primarily at increasing opportunities and available programs for students in NOAA-mission critical fields to pursue research and educational training in atmospheric, environmental, remote sensing technology, and oceanic sciences at Minority Serving Institutions (MSI) when possible. GSP offers at least two years for Master’s students or four years for Doctoral students in NOAA-mission related hands-on research and training opportunities. On average five graduate students are competitively selected each year for student trainee positions in NOAA offices and facilities.
The goal of GSP is to provide college graduate students who possess at least a Bachelor’s degree in mathematics, science, remote sensing technology, economics, law, social science, and engineering, career work experience, entry-level employment, and hands-on research at NOAA. Participants must have and maintain a minimum 3.0 grade point average cumulatively and per academic term. Prior to acceptance into the program, students must be U.S. citizens, enrolled full-time in an accredited graduate school and obtain a letter of certification by a school official. This program provides for formal periods of work, study, research, and structured classroom training in NOAA-mission critical sciences including but not limited to: meteorology, hydrology, cartography, oceanography, ecology, environmental science, remote sensing technology, geography, environmental planning, marine science, fisheries biology, computer science, and environmental law.

**EPP Undergraduate Scholarship Program**

The goal of the Undergraduate Scholarship Program (USP) is to increase the number of students who undertake course work and graduate with degrees in targeted academic fields integral to NOAA's mission. This program targets students who have completed their sophomore year in science, technology, engineering, or mathematics (STEM) fields; attending Minority Serving Institutions (MSIs), and have recently declared, or about to declare a major in a discipline, including, but not limited to, oceanic, environmental, and atmospheric sciences, mathematics, engineering, remote sensing technology, marine policy, physical and social sciences including, geography, physics, hydrology, meteorology, or oceanography that support NOAA’s programs and mission.

The Undergraduate Scholarship Program participants must be U.S. citizens and must have, and maintain, a minimum 3.0 grade point average both cumulatively and per academic term. Students attending MSIs (Hispanic Serving Institutions, Historically Black Colleges and Universities, Tribal Colleges and Universities, Alaskan-Native Serving Institutions, and Native Hawaiian Serving Institutions) receive competitive two year appointments to the program.

This two year program pays for: travel of approximately 10 students to approved NOAA offices and facilities where they become familiar with and participate in current research and development activities; financial assistance for tuition and fee costs of $8,000 each academic year for two years and $15,750 in scholarship payments over two summer internships; and, housing subsidy over two summers. Under the program, undergraduate students are provided opportunities for hands-on training and participation at NOAA research facilities. The program requires that students spend the first summer beginning the last week of May at NOAA facilities in the Washington, DC metropolitan area. The students will be housed in a complex in close proximity to the NOAA office complex in downtown Silver Spring, Maryland. The program requires that each student present an
oral or poster summary of their summer research project at NOAA Headquarters in Silver Spring, Maryland, at the end of each summer internship.

**Ernest F. Hollings Scholarship Program**

The Ernest F. Hollings (Hollings) scholarship program is designed to: (1) increase undergraduate training in oceanic and atmospheric science, research, technology, and education and foster multidisciplinary training opportunities; (2) increase public understanding and support for stewardship of the ocean and atmosphere and improve environmental literacy; (3) recruit and prepare students for public service careers with NOAA and other natural resource and science agencies at the Federal, state and local levels of government; and, (4) recruit and prepare students for careers as teachers and educators in oceanic and atmospheric science and to improve scientific and environmental education in the United States.

The Hollings Scholarship Program provides successful undergraduate applicants with awards that include academic assistance (up to a maximum of $8,000 per year) for full-time study during the 9-month academic year; a 10-week, full-time internship position ($650/week) during the summer at a NOAA facility; and, if reappointed, academic assistance (up to a maximum of $8,000) for full-time study during a second 9-month academic year. The internship between the first and second years of the award provides the Scholars with “hands-on” practical educational training experience in NOAA-related scientific, research, technology, policy, management, and education activities. The program requires that each student present an oral or poster summary of their summer project at NOAA Headquarters in Silver Spring, Maryland, at the end of the summer internship. Awards will also include travel expenses to attend a mandatory Hollings Scholarship Program orientation, conferences where students present a paper or poster, and a housing subsidy for scholars who do not reside at home during the summer internship.
2012 Ernest F. Hollings and EPP Undergraduate Scholars

2012 Educational Partnership Program Undergraduate Scholars
(Front Row: Amber McRae, Briana Jones, Ana Torres, Vernicia Winford, Shareena Cannonier, and Brittany Carmon)
Top Row: Sasan Dilbehhahani, Yannick Williams, Camille Gaynus, Jessica Lozada, and Alexandria Lacy)
2013 Educational Partnership Program Undergraduate Scholars
(Front Row: Kevin Brodie, II, Chanté Vines, Ahsin Shabbir, Tiffany Barber, Pedro Matos-Llavona)
Top Row: Laurence Walsh, Jamila Tull, Derrick Jones, Symone Gyles, Kevin McCarty, Kelly Nunez)

2012 Graduate Sciences Program Scholars
(Charlene Hurst and Aisha Haynes)
Science and Education Symposium

Student Presentations Agenda-at-a-Glance

Monday, 29 July 2013

9:00 a.m. – 3:00 p.m. PRESENTATION LOGISTICS - NOAA Science Center
  • Upload Presentations
  • Set-up Posters (9:00 a.m. to 10:30 p.m.)
  • Complete Scholarship Experience Evaluation

Tuesday, 30 July 2013

8:00 a.m. – 8:05 a.m. WELCOME PROGRAM - NOAA Science Center
8:05 a.m. – 8:15 a.m. REMARKS
8:15 a.m. – 8:20 a.m. Q & A

SUMMER PROJECT PRESENTATIONS
Concurrent Sessions:
8:30 a.m. – 12:00 p.m. 1A. NOAA Auditorium – Healthy Oceans
9:00 a.m. – 12:00 p.m. 1B. SSMC2, Room 2358 – Weather-Ready Nation
9:00 a.m. – 12:00 p.m. 1C. SSMC3, Room 4527 – Climate Adaption and Mitigation
9:00 a.m. – 12:00 p.m. 1D. SSMC4, 1W611 – Resilient Coastal Communities & Economies

SUMMER PROJECT PRESENTATIONS
Concurrent Sessions:
1:15 p.m. – 4:00 p.m. 2A. NOAA Auditorium - Healthy Oceans
1:15 p.m. – 4:15 p.m. 2B. SSMC2, Room 2358 - Weather-Ready Nation
1:15 p.m. – 3:45 p.m. 2C. SSMC3, Room 4527 – Climate Adaption and Mitigation
1:15 p.m. – 2:45 p.m. 2D. SSMC4, 1W611 – Resilient Coastal Communities & Economies

Wednesday, 31 July 2013

7:30 a.m. – 8:15 a.m. POSTER VIEWING - NOAA Science Center
SUMMER PROJECT PRESENTATIONS
Session:
8:15 a.m. – 12:00 p.m.  3A. NOAA Auditorium – Healthy Oceans
1:15 p.m. – 4:00 p.m.  POSTER JUDGING SESSION – NOAA Science Center

Thursday, 1 August 2013

8:00 a.m. – 8:30 a.m.  FINAL WEEK EVALUATIONS - NOAA Science Center
  • Turn in NOAA Badges
  • Complete Final Week Evaluations
  • Complete Scholarship Experience Evaluation

SUMMER PROJECT PRESENTATIONS
Session:
8:30 a.m. – 12:15 p.m.  4A. NOAA Auditorium – Healthy Oceans
1:00 p.m. – 1:30 p.m.  • Turn in NOAA Badges
  • Complete Final Week Evaluations
  • Complete Scholarship Experience Evaluation
1:30 pm. – 3:00 p.m.  AWARDS CEREMONY & CONCLUDING REMARKS – NOAA Auditorium

Friday, 2 August 2013 – Scholars Depart Silver Spring, MD
SUMMER PROJECT PRESENTATIONS
Session 1A. NOAA AUDITORIUM, Healthy Oceans

Ocean Acidification Projects (8:30 a.m.-11:15 a.m.)

8:30 a.m.  Christopher Riley, University of Maryland College Park, College Park, MD
NMFS  
*Thermal Effects on Developmental Rates, Size, and Survival of Pre-Feeding Life-Stages of Winter Flounder*

8:45 a.m.  Christine Michael, Eckerd College, Saint Petersburg, FL
NMFS  
*Elevated CO2 and Temperature Effects on Size, Shape, and Inferred Feeding Capability in Larval Winter Flounder*

9:00 a.m.  Sarah Merolla, University of Rhode Island, Kingston, RI
NMFS  
*Effects of Elevated CO2 on Developmental Progression of Larval Summer Flounder*

9:15 a.m.  Alexander Jensen, University of Maine, Orono, ME
NMFS  
*Metadata and Meta-Analysis of Ocean Acidification Experiments on the Early Life-Stages of Marine Fishes*

9:30 a.m.  Patricia Briner, University of Maryland College Park, College Park, MD
NMFS  
*Developing and Evaluating Outreach Methods for Ocean Acidification*

9:45 a.m.  Jaclyn Fisher, University of South Carolina-Columbia, Columbia, SC
NMFS  
*Effects of Elevated CO2 on Surfclam Larval Development*

10:00 a.m. BREAK
10:15 a.m.  Jonathan Lambert, Louisiana State University and Agricultural and Mechanical College, Baton Rouge, LA  
NMFS  
Effects of Ocean Acidification on Hatching Success and Development of a Marine Copepod and Euphausiid

10:30 a.m.  Scott Saunders, University of Georgia, Athens, GA  
NMFS  
Effects of Ocean Acidification on a Puget Sound Zooplankton Community

10:45 a.m.  Tanika Ladd, Western Washington University, Bellingham, WA  
NMFS  
Modeling the Dynamics of Zooplankton Ph Exposure in Puget Sound

11:00 a.m.  Chloe Holzinger, Eckerd College, Saint Petersburg, FL  
OAR  
Pteropod Response to Acidification: Metabolism, Calcification, and Dissolution

11:15 a.m.  Paige Pruisner, University of Colorado at Boulder, Boulder, CO  
NMFS  
Effects of Ocean Acidification on King Crab Feeding and Respiration

11:30 a.m.  Eryca Benson, University of Washington, Seattle, WA  
NOS  
Analysis of Contaminants in Marine Mammals of Maryland and the Chesapeake Bay

11:45 a.m.  Tiffany Barber, California State University, Monterey Bay, Seaside, CA  
NMFS  
Comprehensive Review and Analysis of Mammal-Eating Killer Whales (Orcinus orca) Predation Events: An Update to the Jefferson et al. 1991 Review

12:00 p.m.  LUNCH – NOAA SCIENCE CENTER

Tuesday, 30 July 2013

SUMMER PROJECT PRESENTATIONS  
Session 1B.  SSMC2, Room 2358, Weather-Ready Nation

9:00 a.m.  Austin Alford, University of Oklahoma Norman Campus, Norman, OK  
NWS  
Improving NWS Tornado Warnings
9:15 a.m. Kevin Biernat, Central Michigan University, Mount Pleasant, MI  
NWS  
A Tornado Climatology by Synoptic and Mesoscale Parameter and Storm Type for the Northern Alabama/Southern Middle Tennessee Region

9:30 a.m. Kyle Cosentino, Eckerd College, Saint Petersburg, FL  
NWS  
Characterizing Solar Wind Shocks to Improve Space Weather Forecasting

9:45 a.m. Felicia Guarriello, Millersville University of Pennsylvania, Millersville, PA  
OAR  
Forecasting Severe Weather with the Climate Forecast System

10:00 a.m. Kimberly Kenny, Oregon State University, Corvallis, OR  
NESDIS  
An Assessment of Improving Cloud Masking Using a Bayesian Cloud Detection Scheme on SST (Sea Surface Temperature) Retrievals Near Coral Reefs

10:15 a.m. Donald Lippi, Ohio University Main Campus, Athens, OH  
NWS  
An Improved Understanding of the North American Mesoscale (NAM) Model Dry Bias at the Southern End of Cold Fronts

10:30 a.m. BREAK

10:45 a.m. Nicolas Lopez, Florida State University, Tallahassee, FL  
OAR  
Analyzing Determining Factors in TC (Tropical Cyclone) Wind Field Errors

11:00 a.m. David Loveless, State University of New York College at Oneonta, Oneonta, NY  
NWS  
Lightning as a Potential Indicator of Severe Weather in the Mid-Atlantic Region

11:15 a.m. Amber McRae, Howard University, Washington, DC  
NOS  
NOAA's Next Generation Sea Level and Ocean Current Measurement Systems

11:30 a.m. Zackery Morris, The University of Alabama, Tuscaloosa, AL  
NESDIS  
SUNJAMMER: A Demonstration of Solar Propulsion and Sub L1 Orbit

11:45 a.m. Dana Mueller, University of Oklahoma Norman Campus, Norman, OK  
NWS  
Improvements to Aviation Weather Services in Hawaii

12:00 p.m. LUNCH – NOAA SCIENCE CENTER
Tuesday, 30 July 2013

SUMMER PROJECT PRESENTATIONS
Session 1C. SSMC3, Room 4527 – Climate Adaptation and Mitigation

9:00 a.m. Dillon Amaya, Texas A&M University, College Station, TX
OAR
Impacts of Canonical and Modoki El Niño on Tropical Atlantic Climate

9:15 a.m. Starr Brainard, The American University, Washington, DC
NOS
So Much Data, So Little Time: Inter-Annual Ocean Circulation Trends in the Gulf of Alaska

9:30 a.m. Vanessa Constant, Cornell University, Ithaca, NY
NOS
Degrees of Change: Decreasing Ocean Temperature Off the Washington Coast and Complexities of Data Analysis

9:45 a.m. Sasan Dilbehbahani, Alabama Agricultural and Mechanical University, Normal, AL
NESDIS
A Web-Based Near Real-Time Monitoring System for Ocean Surface Winds

10:00 a.m. Megan Dumas, Stonehill College, Easton, MA
OAR
Volatile Organic Compound Measurements in the Southeastern United States

10:15 a.m. Michelle Frazer, Cedarville University, Cedarville, OH
OAR
What Can Pliocene Tell Us About Global Warming?

10:30 a.m. BREAK

10:45 a.m. Mali'o Kodis, Brown University, Providence, RI
OAR
Seep Searching: Detection of Abundant Gas Seeps on the U.S. Atlantic Margin Using Multibeam Sonar Data

11:00 a.m. Alexanderia Lacy, Mississippi Valley State University, Itta Bena, MS
NESDIS
Validation of Visible Infrared Image Radiometer Suite Detections of Gas Flares
11:15 a.m. Keith Maki, University of Wisconsin-Madison, Madison, WI
OAR
Affordable Ozone Chemistry: Improving Efficiency of a High-Resolution Coupled Chemistry-Climate Model

11:30 a.m. Pedro Matos Llavona, University of Puerto Rico Mayaguez Campus, Mayaguez, PR
NWS
Frequency Analysis for Precipitation Frequency Estimates in Puerto Rico

11:45 a.m. Conor McNicholas, University of Oklahoma Norman Campus, Norman, OK
OAR
Characterizing Boundary Layer Turbulence with a High Spectral Resolution Lidar

12:00 p.m. LUNCH – NOAA SCIENCE CENTER

Tuesday, 30 July 2013

SUMMER PROJECT PRESENTATIONS
Session 1D. SSMC4, Room 1W611, Resilient Coastal Communities and Economies

9:00 a.m. Parker Barfield, University of South Carolina-Columbia, Columbia, SC
NOS
A Visual Approach to Understanding Human Interaction with the South Carolina Lowcountry During the Early 20th and 21st Centuries

9:15 a.m. Kevin Brodie, II, Norfolk State University, Norfolk, VA
NOS
Puerto Rico Airborne Gravity Data Modeling

9:30 a.m. Michael Esteban, University of South Florida, Tampa, FL
NOS
Modeling the Stormwater Runoff Reduction Capabilities of Retrofitted Low Impact Development Practices (Lids) in a South Carolina Urban Watershed

9:45 a.m. Rachel Housego, University of North Carolina at Chapel Hill, Chapel Hill, NC
NOS
Interpreting Trends in Water Quality Data From Snapshot Day in the Monterey Bay National Marine Sanctuary
10:00 a.m.  Chandler Keenan, Florida State University, Tallahassee, FL  
NOS  
*Lethal and Sublethal Effects of Two Organic Contaminants Individually and in Mixture to Grass Shrimp*

10:15 a.m.  BREAK

10:30 a.m.  Theodore Koboski, University of Maine, Orono, ME  
NMFS  
*Socio-Cultural and Economic Barriers to Small Vessel/Indigenous Participation in the American Samoa Longline Fishery*

10:45 a.m.  Justine Lundsted, Coastal Carolina University, Conway, SC  
NOS  
*Your Good Humor May Depend on Mother Nature: Developing a Booklet on Ecosystem Services and Indicators of Human Well-Being*

11:00 a.m.  Ariana Meltvedt (Snow), Oregon State University, Corvallis, OR  
NOS  
*Increasing Literacy in Marine Science: A Summer Education Program and Research Experience for Hawaii High School Students*

11:15 a.m.  Souvanny Miller, University of Oregon, Eugene, OR  
NOS  
*Incorporating Native Peoples in National Marine Sanctuary Management: Past, Present, Future*

11:30 a.m.  Katherine O'Reilly, University of Miami, Coral Gables, FL  
NOS  
*Journey into Exploration – Getting Back to the Roots of Science and Ocean Literacy Through Inquiry-based Learning*

11:45 a.m.  Jill Goatcher, Occidental College, Los Angeles, CA  
USEC/OLA  
*From the Ocean Floor to the Floor of the Senate: Communicating NOAA Fisheries Science to Congress*

12:00 p.m.  LUNCH – NOAA SCIENCE CENTER

**Tuesday, 30 July 2013**

**SUMMER PROJECT PRESENTATIONS**

Session 2A.  NOAA AUDITORIUM, Healthy Oceans
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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Institution</th>
<th>Location</th>
<th>Presentation Title</th>
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</thead>
<tbody>
<tr>
<td>1:15 p.m.</td>
<td>Michael Canton</td>
<td>University of Rhode Island</td>
<td>Kingston, RI</td>
<td>Does Dam Removal Facilitate Diadromous Fish Recovery and Restoration of Ecosystem Services?</td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Emily Carlson</td>
<td>Gonzaga University</td>
<td>Spokane, WA</td>
<td>The Effects of Restoration Efforts on Estuarine-Dependent Species</td>
</tr>
<tr>
<td>1:45 p.m.</td>
<td>Brittany Carmon</td>
<td>Hampton University</td>
<td>Hampton, VA</td>
<td>Analysis of Gear Interactions with Protected Species in the Gulf of Mexico and Southeast Atlantic</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>Chantel Chang</td>
<td>University of Hawaii at Manoa</td>
<td>Honolulu, HI</td>
<td>Abundance and Distribution of Macrobenthic Organisms at Mesophotic Coral Reef Ecosystems in the Northwestern Hawaiian Islands</td>
</tr>
<tr>
<td>2:15 p.m.</td>
<td>Erika Euker</td>
<td>College of William and Mary</td>
<td>Williamsburg, VA</td>
<td>Development of an Interpretative/Activity Guide for the Hawaiian Islands Humpback Whale National Marine Sanctuary</td>
</tr>
<tr>
<td>2:30 p.m.</td>
<td>Amber Forrestal</td>
<td>University of Hawaii at Hilo</td>
<td>Hilo, HI</td>
<td>Bioimpedance and Condition of Reef Fish Across a Landscape Gradient</td>
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<tr>
<td>2:45 p.m.</td>
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<td></td>
<td>BREAK</td>
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<tr>
<td>3:00 p.m.</td>
<td>Camille Gaynus</td>
<td>Hampton University</td>
<td>Hampton, VA</td>
<td>The Effects of Sedimentation on Coral Reefs</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>Andrew George</td>
<td>College of Charleston</td>
<td>Charleston, SC</td>
<td>Sea Lice and Their Wild Fish Hosts in Two Bays of the Gulf of Maine</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Alexandra Giametti</td>
<td>Eckerd College</td>
<td>Saint Petersburg, FL</td>
<td>An Exploratory Study of the Interior and Exterior Microhabitats of the Ko'ie'ie Fishpond Wall</td>
</tr>
</tbody>
</table>
3:45 p.m. Julianne Gurnee, Oregon State University, Corvallis, OR
NMFS
Analysis of Acoustic Data to Estimate Sperm Whale (Physeter macrocephalus)
Abundance in the Western Atlantic

4:00 p.m. Vernicia Winford, Xavier University of Louisiana, New Orleans, LA
NMFS
Genetic Stock Composition of Leatherback Strandings on the US East Coast

Tuesday, 30 July 2013

SUMMER PROJECT PRESENTATIONS
Session 2B. SSMC2, Room 2358, Weather-Ready Nation

1:15 p.m. Mitchell Ramsey, Ashland University, Ashland, OH
NESDIS
Evaluating Satellite Precipitation Observations Using Lightning Information

1:30 p.m. Jacquelyn Ringhausen, Saint Louis University, Saint Louis, MO
NWS
Getting to Know Dual-Pol: A Case Study Comparison of C-Band and S-Band Dual
Polarization Radars in Northern Alabama

1:45 p.m. Tyler Sebree, The Ohio State University Main Campus, Columbus, OH
NWS
Southern California Rip Current Study

2:00 p.m. Ahsin Shabbir, City University of New York City College, New York, NY
NOS
Water Level Measurement Error Due to Temperature Dependence of the National
Water Level Observation Network Aquatrak System

2:15 p.m. Charles Shobe, College of William and Mary, Williamsburg, VA
OAR
Understanding Soil Moisture Patterns in the Russian River Basin, California

2:30 p.m. Jessica Smith, Florida State University, Tallahassee, FL
NWS
Remembering High-Impact Weather Events: The 1913 Colorado Snowstorm and the
1965 Colorado Floods

2:45 p.m. BREAK
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<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>3:00 p.m.</td>
<td>McKenna Stanford, University of South Alabama, Mobile, AL</td>
<td>NWS</td>
<td>Mobile, AL</td>
<td>Utility of 0-3 km Bulk Shear Vectors as a Predictor for Quasi-Linear Convective System (QLCS) Tornadoes</td>
</tr>
<tr>
<td>3:15 p.m.</td>
<td>Ana Torres, University of Puerto Rico Mayaguez Campus, Mayaguez, PR</td>
<td>NWS</td>
<td>Mayaguez, PR</td>
<td>Global Ensemble Forecast System Performance for Hurricanes Hugo, Georges, and Floyd</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Andrew Wade, University of Oklahoma Norman Campus, Norman, OK</td>
<td>NWS</td>
<td>Norman, OK</td>
<td>Squall Line Versus Supercell Tornadoes</td>
</tr>
<tr>
<td>3:45 p.m.</td>
<td>Yannick Williams, Morgan State University, Baltimore, MD</td>
<td>NWS</td>
<td>Baltimore, MD</td>
<td>Automatic Detection of Space Weather Events</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>Caleb Wilson, Kansas State University, Manhattan, KS</td>
<td>NWS</td>
<td>Manhattan, KS</td>
<td>Evaluation of National Weather Service Warning Communication Projects</td>
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**Tuesday, 30 July 2013**

**SUMMER PROJECT PRESENTATIONS**

**Session 2C. SSMC3, Room 4527 – Climate Adaptation and Mitigation**

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<tr>
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<tbody>
<tr>
<td>1:15 p.m.</td>
<td>Hadi Morrow, Appalachian State University, Boone, NC</td>
<td>OAR</td>
<td>Boone, NC</td>
<td>Propagated Nephelometer Uncertainty Resulting from Imprecise Humidity Sensors</td>
</tr>
<tr>
<td>1:30 p.m.</td>
<td>Kelly Nunez, University of Puerto Rico Mayaguez Campus, Mayaguez, PR</td>
<td>NWS</td>
<td>Mayaguez, PR</td>
<td>Evaluating El Niño Southern Oscillation Simulations in the Climate Forecast System</td>
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<tr>
<td>1:45 p.m.</td>
<td>Colin Raymond, Cornell University, Ithaca, NY</td>
<td>OAR</td>
<td>Ithaca, NY</td>
<td>How Will Extreme Precipitation Change in a Warmer Climate?</td>
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<td>Time</td>
<td>Name</td>
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<td>2:00 p.m.</td>
<td>Vishal Shah, Rutgers the State University of New Jersey New Brunswick Campus, New Brunswick, NY</td>
<td>NESDIS</td>
<td>High Throughput Computing Applied to Environmental Satellite Product Generation</td>
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<tr>
<td>2:15 p.m.</td>
<td>Mark Specht, Northwestern University, Evanston, IL</td>
<td>OAR</td>
<td>Can Volcanic Emissions be Discerned in Mauna Loa's Aerosol Record?</td>
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<td>2:30 p.m.</td>
<td><strong>BREAK</strong></td>
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<td>2:45 p.m.</td>
<td>Natalie Thomas, University of North Carolina at Chapel Hill, Chapel Hill, NC</td>
<td>NESDIS</td>
<td>Electromagnetic Monitoring of Inter-Annual Variations in the Ocean Flow</td>
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<tr>
<td>3:00 p.m.</td>
<td>Austin Way, Ohio University Main Campus, Athens, OH</td>
<td>OAR</td>
<td>Weather Driven Electricity Generation Optimization</td>
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<tr>
<td>3:15 p.m.</td>
<td>Sondra Winders, Gettysburg College, Gettysburg, PA</td>
<td>NOS</td>
<td>Influence of Temperature on PAH-Induced Changes in Cellular Stress Enzymes in the Eastern Oyster, Crassostrea virginica</td>
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<tr>
<td>3:30 p.m.</td>
<td>Reed Wommack, Dartmouth College, Hanover, NH</td>
<td>OAR</td>
<td>Effect of Power Plant Nox Emissions Controls on Nighttime Chemistry</td>
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**Tuesday, 30 July 2013**

**SUMMER PROJECT PRESENTATIONS**  
**Session 2D. SSMC4, Room 1W611, Resilient Coastal Communities and Economies**

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<tbody>
<tr>
<td>1:15 p.m.</td>
<td>Kevin Pelstring, University of California-Davis, Davis, CA</td>
<td>NOS</td>
<td>Greenhouse Gas Inventory &amp; Action Plan for Olympic Coast National Marine Sanctuary</td>
<td></td>
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<tr>
<td>1:30 p.m.</td>
<td>Chris Pickens, Oberlin College, Oberlin, OH</td>
<td>NOS</td>
<td>Whatcha Know About Phtyoplankton: Establishing a Baseline in Kachemak Bay, AK</td>
<td></td>
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</table>
1:45 p.m. Matthew Sharr, Penn State Wilkes-Barre, Lehman, PA
NOS
Coastal Lidar Vertical Uncertainty Analysis in Hurricane Sandy Impact Region

2:00 p.m. Lisa Silverman, University of Maryland College Park, College Park, MD
NOS
The Relationship Between Chlorophyll a and Nutrient Concentration in National Estuarine Research Reserve System Estuaries as an Indicator of Phytoplankton Blooms

2:15 p.m. Amanda Tine, Massachusetts Maritime Academy, Buzzards Bay, MA
NMFS
Northeast U.S. Catch Share Quota Market Analysis

2:30 p.m. Ileana Wald, University of South Florida, Tampa, FL
NOS
Denitrification of Surface Runoff and Tile Drain Effluent through Use of Anoxic Wood-Chip Bioreactors in California’s Salinas Valley

Wednesday, 31 July 2013

SUMMER PROJECT PRESENTATIONS
Session 3A. NOAA AUDITORIUM, Healthy Oceans

8:15 a.m. Symone Gyles, Hampton University, Hampton, VA
NMFS
Analysis of Killer Whale (Orcinus orca) and Pacific White-Sided Dolphin (Lagenorhynchus obliquidens) Occurrence and Distribution Patterns Near Monterey Bay, California Using Multiple Data Sets

8:30 a.m. Mia Iwane, University of Miami, Coral Gables, FL
NMFS
Manipulation of an Electrical System for the Repulsion of Sharks and Reduction of Shark Bycatch

8:45 a.m. Tyler Jackson, Lake Superior State University, Sault Sainte Marie, MI
NOS
Metabolic Responses to N-depletion in Thalassiosira pseudonana and Metabotyping of Antarctic Diatoms

9:00 a.m. Briana Jones, University of Maryland-Eastern Shore, Princess Anne, MD
NOS
Indicators of Stress in Blue Crab; Linking Land Use Pattern to Ecosystem Health in the Chesapeake Bay
9:15 a.m.  Eilea Knotts, University of Rhode Island, Kingston, RI  
NMFS  
*Analysis of Benthic Cover for Two Islands in The Mariana Chain: Pagan and Maug Islands*

9:30 a.m.  Alyson Kuba, University of Miami, Coral Gables, FL  
NOS  
*Potentially Sensitive Biological Features - A Comparison Between Mid and Outer Continental Shelf Banks in the Northwestern Gulf of Mexico*

9:45 a.m.  Rachel Leftwich, Chatham University, Pittsburgh, PA  
NMFS  
*How Viable are Cysts of the Harmful Alga Alexandrium catenella from a "seed bed" in Puget Sound?*

10:00 a.m.  BREAK

10:15 a.m.  Rebecca Leitt, Monmouth University, West Long Branch, NJ  
NMFS  
*Killer Whale Analysis in the Bering Sea*

10:30 a.m.  Kaitlyn Lowder, Western Washington University, Bellingham, WA  
NMFS  
*Visualizing Behaviors of Migrating Atlantic Salmon Smolts in the Penobscot Estuary*

10:45 a.m.  Jessica Lozada, Tennessee State University, Nashville, TN  
NOS  
*Bioactive Compound Isolation, Purification and Molecular Structural Characterization from the Marine Micro-Organism Trichodesmium thiebautii*

11:00 a.m.  Brijonnay Madrigal, University of Hawaii at Manoa, Honolulu, HI  
NMFS  

11:15 a.m.  Kevin McCarty, Barry University, Miami Shores, FL  
NMFS  
*Restoring and Sustaining Habitat for Fisheries, Marine Life, and Coastal Communities by Evaluating Data that are Essential for Selecting Habitat Focus Areas*

11:30 a.m.  Kathryn Meyer, The American University, Washington, DC  
NOS  
*Application of Nuclear Magnetic Resonance Spectroscopy-based Metabolomics for Environmental Assessment Using Zebra Mussels*
11:45 a.m. Claire Miller, Eckerd College, Saint Petersburg, FL
NMFS
Age and Growth of Scamp (Mycteroperca phenax) from the US South Atlantic

12:00 p.m. LUNCH – NOAA SCIENCE CENTER

Wednesday, 31 July 2013, 1:15-4:00 p.m.

SUMMER PROJECT POSTER SESSION
NOAA Science Center

HEALTHY OCEANS
#1) James Canepa, Pomona College, Claremont, CA
NMFS
A Fox in the Gull-House: The Mysterious Case of the Vanishing Egg Volume

#2) Shareena Cannonier, Lincoln University, Lincoln University, PA
NMFS
The Effect of Activated Carbon on Seawater Carbon Chemistry and Copepod Larvae

#3) Sarah Deland, Western Washington University, Bellingham, WA
NMFS
Sea Turtle Population Study

#4) Drew Delorenzo, University of South Carolina-Columbia, Columbia, SC
NMFS
Reassessment of Atlantic Sharpnose Shark (Rhizoprionodon terraenovae) Diet and Trophic Level

#5) Holly Fowle, Temple University, Philadelphia, PA
NOS
Black Coral (Leiopathes spp.) Aggregations in the Deep Gulf of Mexico

#6) Meghan Jones, University of Miami, Coral Gables, FL
NESDIS
Exploring our Extended Continental Shelf in the Central Pacific

#7) Zachary Means, Eckerd College, Saint Petersburg, FL
NMFS
Determining Optimal Methods for Back-Calculating Length-At-Age of Net-Pen Raised Atlantic Salmon in the Gulf of Maine
#8) Gretchen Stokes, North Carolina State University, Raleigh, NC
NMFS
*A Comparative Histological Analysis of Merluccius productus, Sebastes pinniger, and Sebastes crameri Maturity and Reader Variability from Samples Collected Along the U.S. Pacific Coast*

#9) Callie Veelenturf, University of Rhode Island, Kingston, RI
NOS
*Human Use and Potential Impacts to the Green Sea Turtle (Chelonia mydas) in Key In-Water Habitat of Southeast Florida*

RESILIENT COASTAL COMMUNITIES AND ECONOMIES
#10) Nicole Calsbeek, University of Hawaii at Hilo, Hilo, HI
NESDIS
*Building a New Southern California Coastal Relief Model*

#11) Alma Beciragic, Queens College, Charlotte, NC
NOS
*Applied Remote Sensing for Coastal Systems: Shoreline Uncertainty Visualizations*

CLIMATE ADAPTATION AND MITIGATION
#12) Natasha Flores, Eckerd College, Saint Petersburg, FL
OAR
*Earthquake Studies at Mauna Loa Volcano, Hawaii*

#13) Stanley Ko, City University of New York City College, New York, NY
NOS
*Trends and Variability Between pH, Nutrients and Chlorophyll a in Kachemak Bay, Alaska*

#14) Zachary Sefcovic, Valparaiso University, Valparaiso, IN
NWS
*A Climatology of Tropical Cyclone Impacts Across the NWS Newport/Morehead City County Warning Area*

WEATHER-READY NATION
#15) Manda Chasteen, University of Illinois, Urbana, IL
NWS
*Comparative Dynamic and Thermodynamic Characteristics of Nontornadic New England Thunderstorm Environments*

#16) Sarah Ditchek, Yale University, New Haven, CT
OAR
*Eyewall Mesovortices in Hurricane Fabian (2003) Using the Hurricane Weather Research and Forecasting (HWRF) Ensemble Data Assimilation System (HEDAS)*
#17) Kevin Lupo, Plymouth State College, Plymouth, NH
NWS
An Investigation into the Societal Impacts of High Wind Events in Southeast Alaska

#18) Dakota Smith, Penn State University Park, University Park, PA
NESDIS
Seasonal Variations of Water, Energy, and Carbon Fluxes Across a Moisture Gradient in West Africa

#19) Elizabeth Smith, California University of Pennsylvania, California, PA
NWS
Investigating the Role of Two Inch Soil Temperatures in Snowfall

#20) Kristen Stewart, Florida State University, Tallahassee, FL
NWS
The Impact of Varying Atmospheric Parameters on Modeled Orographic Snowfall

#21) Paul Svenson, Penn State University Park, University Park, PA
OAR
Defining Criteria to Identify Midwestern Low-Level Jet Events Using Information Gathered at Wind Turbine Hub Height

SCIENCE AND TECHNOLOGY ENTERPRISE
#22) Brenton Wallin, University of Rhode Island, Kingston, RI
NWS
Comparing Gliders to Buoys as a Tool for Tsunami Prevention

#23) Derrick Jones, Mississippi Valley State University, Itta Bena, MS
NESDIS
Interactive Multisensor Snow and Ice Mapping System (IMS) Version Three Snow Depth Cross Validation

Thursday, 1 August 2013

SUMMER PROJECT PRESENTATIONS
Session 4A. NOAA AUDITORIUM, Healthy Oceans

8:30 a.m. Halie O'Farrell, University of Miami, Coral Gables, FL
NMFS
A Novel Biotic Integrity Index for the Penobscot Estuary System
<table>
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<th>Time</th>
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<tbody>
<tr>
<td>8:45 a.m.</td>
<td>Rachel Pausch, University of Miami, Coral Gables, FL</td>
<td>NMFS</td>
<td>Using Hydroacoustics to Study Fish Distribution in the Penobscot Estuary Mixing Zone</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>Craig Raffenberg, University of South Carolina-Columbia, Columbia, SC</td>
<td>NOS</td>
<td>Shoreline Stabilization in an Era of Sea-Level Rise</td>
</tr>
<tr>
<td>9:15 a.m.</td>
<td>Mariana Alvarez Restrepo, Maine Maritime Academy, Castine, ME</td>
<td>NMFS</td>
<td>Patterns of Hawaiian Monk Seal Pup Sizes at Weaning on the Main Hawaiian Islands</td>
</tr>
<tr>
<td>9:30 a.m.</td>
<td>Rebecca Rogers, University of Hawaii at Hilo, Hilo, HI</td>
<td>NMFS</td>
<td>Automated, Remote, &amp; Near Real-Time Sampling and Detection of Harmful Algae Using the Environmental Sample Processor</td>
</tr>
<tr>
<td>9:45 a.m.</td>
<td>Rebecca Rosemond, University of North Carolina at Chapel Hill, Chapel Hill, NC</td>
<td>NOS</td>
<td>Reef Fish Science at the Speed Of Sound! Using Sonar to Determine Fish Length</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Break</td>
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<tr>
<td>10:15 a.m.</td>
<td>Rachel Scholes, Northwestern University, Evanston, IL</td>
<td>NMFS</td>
<td>Determining Baseline Levels of Endocrine Disrupting Contaminants in Marine Resources From Puget Sound, WA</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>Sarah Seabrook, University of South Florida, Tampa, FL</td>
<td>NOS</td>
<td>An Assessment of Future Climate Change Impacts on Coral and Fish Communities in American Samoa</td>
</tr>
<tr>
<td>10:45 a.m.</td>
<td>Benjamin Sevey, University of Rhode Island, Kingston, RI</td>
<td>NOS</td>
<td>Fostering a Sense of Wonder: Promoting Experiential Learning Through Outdoor Discoveries on the Coast of Maine</td>
</tr>
<tr>
<td>11:00 a.m.</td>
<td>Jamila Tull, Florida Agricultural and Mechanical University, Tallahassee, FL</td>
<td>NOS</td>
<td>A Case Study of Haplosporidum nelsuni and Perkinsus marinus in the Chesapeake Bay: A Highlight of the NOAA Mussel Watch Program</td>
</tr>
</tbody>
</table>
11:15 a.m.  Chante' Vines, Morgan State University, Baltimore, MD
NOS
Assessment of Contaminant Concentrations in Dreissenid Mussels within NOAA Great Lakes Mussel Watch Sites in Relation to Population and Land-Use

11:30 a.m.  Laurence Walsh, University of Hawaii at Hilo, Hilo, HI
NOS
Evaluation of an Open-Source Tidal Datums Calculator in Support of Sea Level Change Sentinel Sites

11:45 a.m.  Grace Young, Massachusetts Institute of Technology, Cambridge, MA
NMFS
Development of a Modular, Autonomous Stereo-Camera System for Monitoring Fish Assemblages

12:00 p.m.  LUNCH – NOAA SCIENCE CENTER

1:00 p.m.  Turn in NOAA Badges
Complete Final Week Evaluations
Complete Scholarship Experience Evaluation

1:30 p.m.  CONCLUDING REMARKS & AWARDS CEREMONY – NOAA Auditorium
The Office of Education would like to thank the following 2013 NOAA mentors for their dedication, time, and commitment to provide guidance and a meaningful internship experience to the EPP and Hollings undergraduate scholars:

<table>
<thead>
<tr>
<th>Mentor Name</th>
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<td>Sim Aberson</td>
<td>Peter Dutton</td>
<td>Kimani Kimbrough</td>
<td>Josh Rigler</td>
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<td>Dennis Apeti</td>
<td>Barry Eakins</td>
<td>John Kocik</td>
<td>Malia Rivera</td>
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<td>John Barnes</td>
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<td>Randall Kosaki</td>
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<td>Dan Bearden</td>
<td>Lisa Emanuelson</td>
<td>Arun Kumar</td>
<td>Scott Rudlosky</td>
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<td>Nina Bednarsek</td>
<td>Peter Etnoyer</td>
<td>Jacqueline Laverdure</td>
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<td>Catherine Berchok</td>
<td>Richard Feely</td>
<td>Kevin Laws</td>
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<td>Dana Bethea</td>
<td>Zachary Finch</td>
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<td>Harold Brooks</td>
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<td>Mridula Srinivasan</td>
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<td>Kris Holdereid</td>
<td>Christopher Parrish</td>
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<td>Atziri Ibanez</td>
<td>Alysha Reinard</td>
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<td>Carl Dierking</td>
<td>Sierra Jones</td>
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<td>Suzanne Kahn Eder</td>
<td>Casey Rice</td>
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<td>Adam Dunbar</td>
<td>Peter Key</td>
<td>Benjamin Richards</td>
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The Office of Education, Student Scholarship Programs staff is located at:

1315 East West Highway  
SSMC3, Room 10600  
Silver Spring, MD 20910  
(301) 713-9437 phone  
(301) 713-9465 fax

Marlene Kaplan       Deputy Director of NOAA Education and Director of EPP
Victoria Dancy       Student Scholarship Programs, Team Lead
Sandra Sarvis        Undergraduate Student Scholarship Programs
Sabrina Tucker       Undergraduate Student Scholarship Programs
Janet Brown          Undergraduate Student Scholarship Programs
Elvis Efamba         IT Specialist

Participants in the 2013 Science and Education Symposium are recipients of the Educational Partnership Program Undergraduate Scholarship and the Ernest F. Hollings Undergraduate Scholarship Programs.