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October 20, 2009  
SS09.14A

## Meet the 2009 PEP Students

### Jordan Aoyama

A senior life sciences major at Juniata College, Jordan Aoyama hopes to pursue a career either working in the field on projects related to ecosystems and their marine life, or with autoimmune diseases. This summer he studied sounds of the deep with bio-acoustician Sofie Van Parijs of NOAA Fisheries Service's Protected Species Branch during the research phase of the PEP internship. "I majored in life sciences because I want to do meaningful research that will help people. I also want to understand the world and the creatures within it while helping to preserve the environment. The PEP gave me valuable lab and research experience, and exposed me to different research techniques."

His hometown is Huntingdon, Pennsylvania.

### Zak Balmuth-Loris

Studying the effects of internal waves in Panama and spending a week on a fishing boat on Georges Bank towing an underwater camera system were just a few of the research activities Zak Balmuth-Loris experienced while in Woods Hole. A junior at Syracuse University majoring in biomedical engineering, with a minor in biology and math, Balmuth-Loris used his college studies on both projects with biologist Scott Gallagher of WHOI. He says the PEP experience helped him bring together his love of science and his dedication to helping others. "I have a better understanding of the field... this (PEP) is going to help me with networking and has given me new opportunities."

His hometown is Concord, Massachusetts.

### Joe'Ella Caddle

For Joe'Ella Caddle, studying the history and ecology of Eel Pond in the center of Woods Hole with research mentor Joel Sohn of MBL fit right in with her major in environmental science at the University of Maryland Eastern Shore, where she is a senior. Caddle prefers to

be out in the field, and enjoyed the chance to collect samples and identify species in a pond surrounded by research labs and with an interesting history, which she discovered doing research at the nearby Woods Hole Historical Collection. “The skills and knowledge gained will help me to be more prepared for graduate school, and deciding on my own research project.” She plans to attend graduate school, either in biological oceanography or environmental engineering.

Her hometown is Freeport, Trinidad, West Indies.

### **Sanya Compton**

Sanya Compton says the PEP experience strengthened her goal that marine policy was what she wanted to do. Working with Porter Hoagland and colleagues in WHOI’s Marine Policy Center, she helped develop a questionnaire and reviewed data as part of a study estimating the economic effects of shoreline change due to sea-level rise in several towns along the Massachusetts coast. “I liked my project because I could see how sea-level rise will affect my home country.” A 2009 graduate of Savannah State University with a degree in marine science, she plans to get some seagoing experience this fall and winter aboard one of SEA’s vessels in the Pacific. Next up: graduate school at the University of Rhode Island, where she plans to pursue a master’s degree in marine affairs.

Her hometown/country is St. Vincent and the Grenadines.

### **Myrna Gatica**

Using satellite images to study glacier-derived dust as an iron source to the Gulf of Alaska this summer with John Crusius and Andrew Schroth of USGS was perfect for the senior geology major from City University of New York – Queens College. “I was exposed to how a research project is planned and I see how research is applied,” she said of the PEP experience. “I will have confidence in approaching this field as a career....” Gatica hopes to teach in a high school or middle school, and eventually in a university where she could also pursue research and travel. In the meantime, she would like to attend graduate school to study oceanography or seismics.

Her hometown is Woodside, New York.

### **Adrienne George**

A 2009 graduate of Delaware State University, where she majored in environmental science, Adrienne George is attending graduate school this fall at the University of South Florida majoring in biological oceanography. She compared larval organisms and colonization rates at two Pacific deep-sea hydrothermal vents in the lab of WHOI biologist Lauren Mullineaux for her summer research project, admitting she had never heard of a hydrothermal vent before coming to Woods Hole. “The lab experience has helped me decide what I need in a project to love doing it, and I learned I prefer to work in the field rather than a lab. Some of the skills I learned here will be useful in graduate school.”

Her hometown is Philadelphia, Pennsylvania.

## **Rosalinda Gonzalez**

A senior environmental science technology major at Humboldt State University, Rosalinda Gonzalez is focusing on geology and watershed management. Her summer research project with Serena Moseman and Kevin Kroeger of USGS looked at enhanced levels of the greenhouse gas nitrous oxide in coastal wetlands due to nitrogen enrichments. After she graduates Gonzalez plans to join the Peace Corps or a similar organization to help impoverished people obtain potable water, and perhaps attend graduate school in biology or environmental science and then work in the environmental field. "I plan to use the knowledge and skills gained to help me in my future research, and to use the opportunities and contacts made to help me further my education."

Her hometown is Mission Viejo, California.

## **Christina Guidoboni**

Christina Guidoboni spent part of her summer developing an image analysis system to count Atlantic goosefish (*Lophius americanus*) eggs, a measure of their reproductive health, with mentor Jay Burnett of NOAA Fisheries and fellow PEP student Samara Lawrentz. A senior marine biology major at the University of New England, Guidoboni is also pursuing a minor in aquaculture and aquarium science. "Both the course and research aspects will help me not only further my education, but have made a lasting impression of what I want to pursue professionally as well as academically." She plans to attend graduate school in marine biology, and pursue a career as a research biologist developing methods to breed tropical fish or as an aquarist, educating the public about marine science and conservation.

Her hometown is Kingston, Massachusetts.

## **Stephanie Hayes**

Graduate school is on the horizon for Stephanie Hayes, a senior marine biology major at the University of New England who is also pursuing a minor in aquaculture and aquarium science. In January 2010 Hayes will spend eight days in Belize as part of a marine ecology class, "using what we learned in class to identify animals and their habitat." She spent the research portion of her summer working in the Woods Hole Science Aquarium with aquarist Rachel Metz of NOAA Fisheries, studying the behavioral implications of the addition of housing on various crustaceans, namely spider, hermit and deep sea red crabs and the American lobster. "The research allowed me to really experience graduate-style work and challenged me to solve problems I had never encountered before."

Her hometown is Brockton, Massachusetts.

## **Reaz Khan**

A senior environmental, earth and ocean science major at the University of Massachusetts, Boston, Reaz Khan wants to work in the environmental field and likes "the idea of being an environmental steward," putting theory into good practice. His research project this summer was developing low cost and practical devices to measure surface and bottom ocean currents with oceanographer Jim Manning of NOAA Fisheries. He loves to

learn, no matter the subject, and likes to be around people who like to learn or teach what they love – “it’s contagious – once it starts it is hard to stop.” Khan views the Woods Hole PEP Program as “a microcosm of the real world.”

His hometown is Newton, Massachusetts.

### **Samara Lawrentz**

A junior environmental science major at the University of Maryland Eastern Shore, Samara Lawrentz learned to use image analysis software and imaging techniques to estimate the reproductive health of goosefish, also called monkfish. She and fellow PEP student Christina Guidoboni worked on different aspects of the study under research mentor Anne Richards of NOAA Fisheries. “I never did this before, and although I am more interested in field work, it was a really good learning experience. I can use image analysis in many applications, so who knows where it will lead.” Lawrentz isn’t sure what she wants to do after college, but plans to work for a while and then perhaps apply to graduate school once her career path is more defined.

Her hometown is Nassau, Bahamas.

### **Sam Matulich**

A senior fisheries biology major at Humboldt State University, Sam Matulich analyzed scales from 131 fish as part of his summer research project, an age and growth analysis of yellowtail flounder from a mark-recapture study, with mentor Larry Alade of NOAA Fisheries. He had never heard of Woods Hole before an advisor told him about the program, but is glad he did. “There is so much potential here for you as an individual. PEP was my first intern experience, and it gave me the opportunity to network, socialize, travel, and entertain myself. I became educated on global climate change, geography and peoples’ backgrounds.” Matulich hopes to attend graduate school and one day teach high school science.

His hometown is Santa Rosa, California.

### **Shamgan Perkins**

A senior marine biology major at Savannah State University, Shamgan Perkins hopes to pursue a career studying how the ocean affects the weather/climate and the environment on a global scale. With research mentor Scott Gallagher of WHOI, Perkins gained some experience in that area by studying seasonal trends at a research site in Panama using the marine observatory PLUTO (for Panama Liquid Jungle Underwater Tropical Observatory), analyzing data sent back to Woods Hole via satellite. The PEP experience enabled him to see firsthand how research can be conducted in different ways using new technologies. “I am more knowledgeable of the scientific process and ways to solve a problem.” Graduate school in oceanography or atmospheric science is in his future plans.

His hometown is Albany, Georgia.

## **Melissa Pinard**

A senior chemistry major at Morgan State University, Melissa Pinard worked with research mentors Dan McCorkle and Anne Cohen of WHOI on the impact of ocean acidification on larval shell formation for her summer research project. "I didn't know much about climate change or ocean acidification, and as a chemistry major had little environmental science background before the PEP program. I like working in a lab, learning how to analyze data and use new instruments. I've also gained a lot of practical experience in communication and oral presentation skills." Pinard plans to attend graduate school in analytical or environmental chemistry and use her education to help improve research facilities and the environment in her country.

Her hometown/country is the Commonwealth of Dominica.

## **Amias Polk**

A senior chemistry major at Arkansas State University in Jonesboro, Amias Polk used his chemistry background for the first time outside Arkansas this summer to study nitrogen cycling in the northeastern Amazon of French Guiana using stable isotopes with research mentors Maureen Conte and J.C. Weber of MBL. "I was excited to get out of the classroom and actually apply my skills and knowledge to my research." He became interested in the sciences while in high school, where he did many hands-on experiments, and decided on chemistry because he was interested in what was making the environment change and what the results were of those changes. Polk plans to pursue a Ph.D. in environmental chemistry one day but isn't yet sure where that degree will lead.

His hometown is Little Rock, Arkansas.

## **James Shelton**

A senior chemistry major at Arkansas State University in Jonesboro, James Shelton focused his research project on how environmental conditions affect soil respiration between and within two sites on Martha's Vineyard, working in the lab of Jim Tang of MBL. He also had the chance to do research at sites in the Harvard Forest and at Plum Island north of Boston. "This was the first time I interacted directly with a research scientist. I had never been to Woods Hole, so I learned a lot about both people and science. My favorite part of the program was getting to know the other PEP students and the diversity within the program itself." Shelton plans to attend graduate school in the future in environmental science or organic chemistry and teach on the college level.

His hometown is Pine Bluff, Arkansas.

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