

A Is For Aquatic: New York Sea Grant Scholars, Fellows and Students on the Move

Sea Grant Scholar Maxime Bridoux beams in front of his award-winning poster.

Photo courtesy of Maxime Bridoux

At the State Capital

With a bachelor's degree in biochemistry from the University of Lille in his native France, **Maxime Bridoux** set out to pursue a lifelong interest in aquatic sciences. As a graduate student with a strong focus in limnological sciences at the University of Geneva, Switzerland, field trips took him to the Adriatic Sea in Italy and the Danube River in Romania. He also did his master's research internship in the limnological laboratory of **Dr. Michael Twiss** at Clarkson University (see page 4) on the limitation and toxicity of trace metals in phytoplankton. This led Maxime to pursue a doctorate at the University at Albany's Department of Environmental Health and Toxicology. There he is a New York Sea Grant Scholar working with **Dr. Katherine Alben**

on the use of carotenoids as biomarkers of the food web. Dr. Alben has been addressing the problem of type E botulism in New York's Great Lakes.

Says Maxime, "Carotenoids are chemo-taxonomic pigments of phytoplankton and they are bioaccumulated by aquatic organisms (and animals in general) only from their diet. We determine the carotenoid composition of tissues from benthic invertebrates and fish to deduce their food-web relationships.

From this information, it is of interest to identify trophic pathways for outbreaks of type E botulism in fish and fish-eating birds of the Great

Lakes." His poster detailing these pathways won first place for the Department of Environmental Health and Toxicology in this spring's poster contest held annually in Albany.

Along the Hudson

Sanpisa Sritrairat is very excited about her new position as NYSG's Hudson River National Estuary Research Reserve (HRNERR) Fellow. Originally from southern Thailand, Sanpisa has

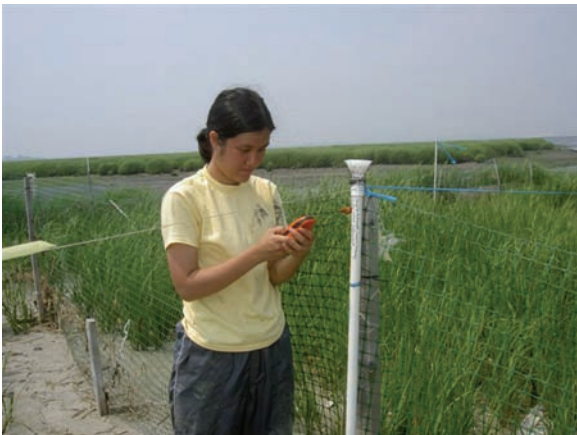


Adam Chesin, this year's REU student, studies sediment samples from the bay. Photo by Sarah Holsinger



Sanpisa Sritrairat and Miriam Jones, another student of Dr. Dorothy Petee of Columbia, prepare to take water samples.

Photo by S. Cecelia Baum



(Left) HRNERR Fellow Sanpisa Sritrairat locates her position along Piermont Marsh using GPS after setting an atmospheric trap (the white funnel atop a PVC pipe) to capture pollen. Traps along a N-S transect of the Hudson basin will provide data for understanding ecological changes and the spread of invasive species such as *Phragmites*.

Photo by S. Cecelia Baum



Photo by Sarah Kolbe

been intrigued by wetlands since her youth. As an undergraduate at Rensselaer Polytechnic Institute (RPI) in Troy, NY, she received a Howard Hughes scholarship to do molecular biology research on symbionts of the aquatic fern, *Azolla*. She worked in the freshwater lab at RPI directed by **Dr. Sandra Nierzwicki-Bauer** (a former NYSG Scholar and zebra mussel researcher) and studied biogeochemical cycles and methane production in wetlands on the Chesapeake Bay and Patuxent River in Maryland with **Dr. Patrick Megonigal** at the Smithsonian Environmental Research Center. As a college senior, she analyzed carbon transport in the Delaware River Basin and Hudson River sediment transport supervised by **Dr. Richard Bopp** (who authored NYSG-funded Hudson River contaminant report).

Sanpisa received her Bachelor's in Environmental Science, Biology, and Hydrogeology from RPI in 2004. "The Hudson River has served as a big classroom and laboratory for the courses I took at RPI," she says. "As a graduate student at Lamont Doherty Earth Observatory of Columbia University and with this NYSG/ HRNERR fellowship, I have a chance to continue my interest in the river."

Sanpisa will examine ecosystem changes from anthropogenic and climatic factors with Columbia paleobotanist **Dr. Dorothy Peteet** using pollens and macrofossils. Hudson River marshes are a great "natural trap" for microfossils. Examining the fossil record will improve understanding of vegetation and climate changes over the past thousands of years and teach us about the "undisturbed" ecology of the Hudson and how human activity and land use changes have affected it. From this research, Sanpisa also hopes to learn more about how exotic and invasive species spread along the Hudson. The project will also contribute to other research fields such as contaminants transport, contaminant dredging, sediment transport, water quality, and toxicology.

On the "Doc" of the Bay

Adam Chasin, this year's NYSG-funded REU student (Research Experience for Undergraduates) at Stony Brook University, finds himself knee deep in Great South Bay this summer. For his REU project, Adam worked with **Dr. J. Kirk Cochran** and **Dr. David J. Hirschberg** from the Marine Sciences Research Center on the application of radionuclides as geochemical tracers in sediments of Great South Bay. "The radionuclides serve as good indicators as to whether the sediment is accumulating or dispersing on the ocean floor," says Adam. His project tries to account for the varying concentrations of these radionuclides in the sediment and find a correlation between a specific type and concentration with individual species. "The relationship between the species and the radionuclide samples shows whether the sediment levels are getting higher or lower due to species interactions," says Adam.

In the fall, Adam will return to the University of Binghamton as a senior with an eye on a BS in biology come graduation. Afterwards, he has ambitions of attending medical school and becoming a doctor.

— **Barbara A. Branca**



Grad student Phil LoCicero (l.), REU student Sarah Holsinger and Dr. Robert Cerrato go core sampling on Great South Bay.
Photo by Kim Rogers

Two Years Running

This summer, **Sarah Holsinger**, (above) who will be a senior in geological sciences at Northwestern University, worked primarily with **Steve Goodbred** on interpreting seismic data and using core sampling to establish the sediment history of Great South Bay. In 2004, she was the NYSG-funded REU student under **MSRC's Roger Flood** learning about the geologic evolution of Great South Bay using seismic sub-bottom profile data. After graduation, Sarah plans to study marine geology in graduate school.