

Then and Now on Long Island's Bays and Inlets

This article spotlights many New York Sea Grant scholars from the Marine Sciences Research Center at Stony Brook University who explored Long Island's estuaries, bays, and inlets.

A Multifaceted, Multinational Career



Dr. Monica Bricelj, Senior Research Officer at the National Research Council of Canada's Institute for Marine Biosciences, talks to a local fisher at an aquaculture operation in northern China near Qingdao. Bricelj is one of a handful of foreign consultants working with the governments of Hong Kong and China asked to recommend approaches and research priorities for monitoring and management of HABs and fish and shellfish biotoxins.

When **V. Monica Bricelj** came to the US as a graduate student in 1979, she had already worked as a biologist at the Atomic Energy Commission in her native Buenos Aires, Argentina where she studied the effects of thermal effluents on freshwater fish. Once at Stony Brook's MSRC "I was fortunate to have excellent guidance and strong encouragement from my supervisor, **Dr. Robert Malouf**, who then became director of New York Sea Grant." (Malouf, a noted specialist in bivalves, is currently the director of Oregon Sea Grant.) At MSRC, Bricelj undertook research to determine the effects of suspended sediments on the hard clam, *Mercenaria mercenaria*, a species subject to relatively high turbidities in Long Island's Great South Bay. Being a Sea Grant Scholar helped her obtain a Ph.D.

After graduation in 1984, Bricelj became an Assistant Professor at Southampton College, Long Island University while at the same time participating in a research project on bay scallop population genetics

at SBU's Ecology and Evolution Department. Then, as an Associate Professor at MSRC, she successfully competed for NYSG funding for projects ranging from PSP toxins in surf clams and mussels, to scallop predators in eelgrass beds and the effects of brown tide on bivalve populations. In 1996 she relocated to Halifax, Canada to become a research scientist at the Institute for Marine Biosciences (IMB) of the National Research Council (NRC) of Canada. Today Dr. Bricelj is a senior researcher at IMB. She is also Adjunct Professor at the Oceanography and Biology Departments, Dalhousie University in Halifax and at the Marine Sciences Research Center (MSRC) at Stony Brook University.

“*Over the years, student funding by Sea Grant has created a tremendous human resource in the form of a wide-ranging and very effective communication network of professionals, not only nationally, but internationally.*”

—*V. Monica Bricelj*
Former Sea Grant Scholar

At IMB/NRC Bricelj leads an interdisciplinary, national and international research program in shellfish biology/ecology and aquaculture. She has been instrumental in the design and renovation of seawater facilities for shellfish research at IMB's Aquaculture Research Station, in Sambro, Nova Scotia. As leader of an international team, she provides advice and research solutions to the shellfish industry both on the Pacific and Atlantic coasts.

"My Sea Grant scholarship gave me an appreciation for the application of fundamental science to resolve problems in fisheries, aquaculture and coastal management. This perspective has remained a *leit-motif* of my research to date. As a scholar, I began interacting with shellfish growers and fishermen in the mid-Atlantic region; now those interactions have extended throughout North America and continue to be an important part of my work."

"Giving Back" to the Bays

While Monica Bricelj has continent-hopped her expertise, **Christopher Gobler** grew up swimming, fishing and boating on Long Island bays. Deep is his life-long commitment to the quality of Long Island's waters and Gobler continues to "give back" to the bodies of water he knew since childhood.

During the 1990s, Gobler was a Sea Grant Scholar with main areas of research centered on measuring the minute quantities of contaminants and nutrients that affect LI bays and especially the conditions that lead to brown tide. His numerous journal articles written on the subject attest to that. But Gobler also deals in real issues for real people. Pick up a local newspaper today and you might find an article about Great South Bay and the use of coastal resources written by him.

Gobler is also very matter of fact about his Sea Grant support through his graduate years. "If I hadn't received the grant, I would not have been able to attend grad school," says Gobler. His formula is simple: no \$ = no grad school.

"Receiving my PhD enabled me to get my position," adds Gobler. As an Assistant Professor and the Marine Science Program Coordinator at Southampton College of Long Island University, he enjoys teaching and utilizing the research skills he acquired during his scholarship tenure.

Although his feet are often wet, Gobler is very grounded. He feels that Sea Grant is helping to prepare coastal managers of the future—quite literally. To start and raise a family has also been an important goal for him. He is married to a biologist, and together the Goblers are raising their own generation of environmentally literate citizens.

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I believe that Sea Grant's philosophy of focusing fundamental scientific research towards the resolution of coastal management problems and encouraging among scientists the linkages with public education and user groups, has been very successful in preparing individuals for a range of professional careers related to coastal management at the academic, national, and state government levels and in the private sector.

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*—V. Monica Bricelj
Former Sea Grant
Scholar*

Photo by Barbara Branca



Former scholar Christopher Gobler, now Assistant Professor and the Marine Science Program Coordinator at Southampton College of Long Island University working on brown tide experiments on Shelter Island in 1998.

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Photo courtesy of New York Sea Grant



This photograph was snapped in the summer of 1978 when Karen Chytalo and Bill Wise took a number of “benthic grabs” in Long Island Sound.

// *By funding relevant, problem-driven research on coastal issues and fielding a cadre of trained outreach specialists who are directly engaged on a sustained basis with audiences who are dealing with these issues, Sea Grant is helping to prepare coastal managers of the future.*

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—Bill Wise
Former Sea Grant-supported grad student

“Grabbing” the Past

When **Karen Chytalo** was a graduate student back in the 1970s, she was studying cores of sediments underlying Long Island Sound. She took many core samples at waste disposal sites along Long Island Sound. Her thesis, “PVCs in Dredged Materials and Benthic Organisms in Long Island Sound,” was completed under **Jerry Schubel** who was then Dean and Director of Stony Brook University’s Marine Sciences Research Center. (Schubel is currently the director of the Aquarium of the Pacific in Long Beach, California.) And today Karen is the director of the Marine Protection Program in the Marine Resources Division of the NYS Department of Environmental Conservation with statewide responsibilities toward protecting the habitat of our living aquatic resources.

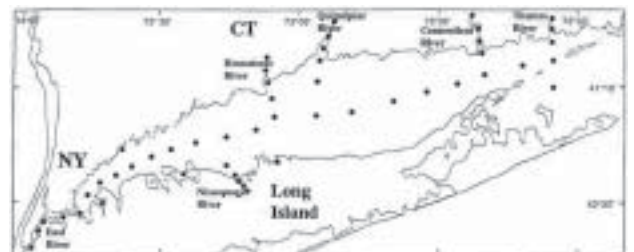
William M. Wise was also a graduate student in the mid-1970s. “I was a student who needed financial support and my advisor, **Dr. J.L. McHugh**, was fortunate enough to get it from the New York Sea Grant Program. This all pre-dates the formal designation by Sea Grant of supported graduate students as ‘Scholars,’ which came later when I was the

Assistant Director of the New York Sea Grant Institute.” Of the importance of skills acquired during his graduate student experience, Wise comments, “Communication skills (which McHugh valued highly and are part of the outreach “leg” of Sea Grant’s program) are critical to success in life, regardless of one’s position and responsibilities.” These communications skills have been used to shepherd the next generation of coastal scientists. Wise is currently the Associate Director of the Marine Sciences Research Center at Stony Brook University.

Breaking the Surface

A more recent Sea Grant Scholar, **Nathaniel Buck**, did his graduate work on the levels of metals, organic carbon, and nutrients in Long Island Sound’s surface waters. “It’s unbelievable that Nate got as much accomplished as he did in a year and a half,” says Buck’s advisor and project co-investigator Sergio Sañudo-Wilhelmy. The research team (of which Chris Gobler was a part) also evaluated the ability of nutrients and copper to control the intensity of the Sound’s phytoplankton blooms.

During 2000 and 2001, the team measured concentrations of metals in water samples from over 40 stations starting at Manhattan’s East River and working eastward along the Sound and its tributaries. Nate compiled and analyzed the data, culminating in his thesis in October 2002. Levels of trace metals were generally higher in the East River



A research team took water samples at these stations along Long Island Sound to measure concentrations of metals. Scholar Nate Buck analyzed the data – the first data set of its kind. Map courtesy of Nate Buck.

Congratulations to these 2003 NYSG Thesis Completion Award winners from Marine Sciences Research Center, Stony Brook University: Heather Crowley, Feliza Mirasol, Amy Streck and Matthew Walsh.

and western Sound and inorganic nutrients were two to three times higher further west. Says Sañudo-Wilhelmy of Buck's efforts, "This work has more questions than answers, but it's the first data set of its kind for the Sound." That year Nate was also a Thesis Completion Award winner. Now he's putting his experience to use out in the Atlantic Ocean working as a laboratory technician at the Bermuda Biological Station.

"Current" work in the inlet

Charlene Sullivan, a scholar between June 2000 and June 2002, is just completing her doctorate related to sediment transport in the vicinity of tidal inlets. She looked at the dominant mechanisms of sediment transport at Shinnecock Inlet, NY. "To this aim, we employed and further developed a computer model to simulate sediment transport at Shinnecock Inlet. Computer modeling provided us with the best means with which to carry out this project given the project's complexity and scale."

"Charlie" feels her scholarship has enhanced her understanding of coastal processes and given her the computer skills that are necessary to apply this understanding to present-day coastal issues. One highlight of her scholarship activities was a three-month visit to La Spezia, Italy where she continued this research under **Dr. Daniel C. Conley** currently of the NATO Saclantic Undersea Research Center (and formerly at MSRC).

Being a Sea Grant scholar enabled her to pursue her education full-time without any real financial worries. The financial support provided by Sea Grant is adjusted to the relatively high cost of living on Long Island, whereas other lines of support are not.

Today, she is working in her first real position as a Coastal Erosion Research Assistant at a government agency. She participates in SWASH surveys (Survey Wide-Area Shorelines) to obtain shoreline position data, and then processes and analyzes data. In this job thus far, she has analyzed data to ascertain shoreline change along portions of both North Carolina's Outer Banks and Cape Cod's outer coast. "My SG Scholar experience has provided me with all the necessary knowledge and tools to work in my field with confidence. I would not be where I am today without it. Most importantly, it has taught me what it is to be a professional."

— **Barbara A. Branca**

“*Sea Grant provides future coastal managers with real-world projects that are of interest and importance to a wide range of individuals.*”

—*Charlene Sullivan*
Former Sea Grant Scholar

Photo courtesy of Josephine Aller



Over the summer of 2002, undergraduates collected data from Jamaica Bay as part of the **R**esearch **E**xperience for **U**ndergraduates (REU) program. New York Sea Grant sponsored Michael Pagano (right), a student from SUNY Geneseo. Each summer, qualified students from a variety of universities are chosen for the REU at MSRC, Stony Brook.