

Educating for Success



Start with a cadre of bright, enthusiastic high school students. Add the motivation and coaching expertise from a former Sea Grant scholar. The result? The winning team of New York's Ocean Sciences Bowl 2003. For the second year in a row, Andy Matthews' team from Mt. Sinai High School took the top prize and gained a chance for the national title. This annual February event sponsored by CORE (Consortium for Oceanographic Research and Education) nationally and co-sponsored locally by Stony Brook University's Marine Sciences Research Center, brought together 20 teams statewide to challenge their

understanding of marine science. For students and teachers to come from as far away as Churchville-Chili High School near Rochester (placing an admirable third), the draw is the high interest and value placed on the study of coastal sciences.

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COASTAL SCIENCE

Educating for Success

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Educating the next generation of coastal scientists is a primary goal of New York Sea Grant. In this education issue of *Coastlines*, we'll draw a vignette of a number of students and their mentors whom NYSG has supported in their studies.

A biology teacher at Mount Sinai High School on Long Island, coach **Andy Matthews** currently teaches two sections of marine science. He says that educating young minds is the most important work he's done since graduation from Stony Brook's Marine Sciences Research Center where he was a NYSG Scholar from 1991 to 1996. Working under **Dr. Steven Morgan**, Matthews studied

how crabs leave LI's south shore inlets as tiny larvae and return to bays and estuaries as juveniles. During his time as a scholar, Andy learned how to design authentic scientific research, collaborated with many scientists, and presented his original research. Says Matthews, "The financial support I received from Sea Grant was instrumental to my education. It also allowed me to live close to school giving me more time to conduct research and enabled me to travel to conferences and present my research data. The highlight of

my fellowship was two summers at sea on a NOAA research vessel." Matthews also received a Thesis Completion Award to complete his masters thesis on the transport of crab larvae in New York Bight.



"With Sea Grant's help, researchers now know more than ever about New York's coastal resources," says Matthews. "They continue to study different aspects of the marine world, collecting valuable data that then can be used by coastal managers to make sound decisions about New York's coastal resources." Matthews' own decision to educate the next generation about marine resources was a sound one with valuable results.

—**Barbara A. Branca**

In Her Own Words

“I attended the 1995 Great Lakes Student Summit (cosponsored by NYSG) in Buffalo, NY as a high school student. The Student Summit was my introduction to the environmental challenges and concerns in our local area.”

— *Megan Gollwitzer*

Former Great Lakes Student Summit participant

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On the cover

Top left to right: Jack Wittpenn, Rob Letscher and Andrew Matthews, former Sea Grant Scholar and currently Mt. Sinai High School teacher with his winning team at this year's Ocean Sciences Bowl held in Stony Brook. Bottom left to right Lara Herschovitch, Kevin Jwo and Gina Singwith.

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Erie County Envirothon Coordinator Megan Gollwitzer (right) presented Orchard Park High School students with a plaque designating them champions of the first locally-held Erie County Envirothon.

Photo courtesy of Ellen Illardo, Water Quality Technician, Erie County Soil and Water Conservation District

Teachers ESCAPE...



New York Sea Grant isn't trying to encourage teachers to escape from their classes, but is encouraging them to escape from their classroom routines with exciting, hands-on activities from *ESCAPE—Exotic Species Compendium of Activities to Protect the Ecosystem*. The award-winning compendium was produced by teachers involved in a National Sea Grant Program funded project that brought educators from New York, Illinois-Indiana, Michigan, Ohio and Minnesota together to develop and classroom-test activities that focused on aquatic exotics.

The Illinois-Indiana Sea Grant program, led by **Robin Goettel**, compiled the 36 classroom-ready activities into a clever binder that includes a CD, maps, videotape and a container of zebra mussel shells. Each of the activities is clearly explained and offers suggestions and adaptations to fit the materials to various grade levels. The compendium and associated workshops are designed to make educators aware of the environmental impact of exotic aquatics and how they can encourage their students to help stop the spread of these invasive species.



New York Sea Grant educator **Helen Domske** has already coordinated several *ESCAPE* workshops for pre-service teachers and those who have years of experience in the classroom. In a December 2002 workshop that was cosponsored by Erie II BOCES (Board of Cooperative Educational Services) newer teachers were paired with more experienced educators to help them design better ways to effectively utilize the information in their classrooms.

According to the evaluations, each of the 27 educators involved indicated that they gained a great deal of new information from the workshop and that they would utilize the materials and activities from *ESCAPE* in their classrooms. "I truly enjoyed this workshop and I will be able to adapt many of the activities to my curriculum" said **Misty Kerl** of Lake Shore Middle School. While **Linda Eddy** of Dunkirk Middle School indicated that the workshop was "very interesting and informative both professionally and for personal enrichment and awareness, but I was somewhat alarmed by the devastating impact of exotic species."

Lynn La-Mattina, a fourth grade teacher in Dunkirk, said that the "*ESCAPE* Compendium is a wonderful resource for hands-on activities that are effectively matched to the various grade levels." La-Mattina added that "living and teaching on the shores of Lake Erie is a privilege and we need to educate students about protecting this valuable environment." This is exactly the response that NYSG was hoping for to get teachers interested and excited so they can share that enthusiasm and new-found knowledge with their students.

How We

At home I have a wooden three-legged stool. I'm sure you all know what they look like. I like looking at mine because the three legs gracefully support the seat, giving the seat a firm sense of stability. Sea Grant is something like that three-legged stool, because it, too, has three legs; they are **research**, **outreach** and **education**. These three legs of our program ground us and make us a complete and balanced program.

The two previous issues of *Coastlines* focused on research and extension. This issue focuses on education, especially in the area of formal education. Our NYSG programs foster education in three broad areas. First, we are training the next generation of coastal scientists and business leaders primarily through our Sea Grant Scholars program that supports graduate students in universities across our state. Secondly, we train educators both in formal K-12 settings as well as those working in informal settings such as nature centers, so that they can bring the latest science-based coastal information to their students.

At the 2002 National Marine Education Association meeting, Sea Grant staff from across the country set eight goals for Sea Grant's Education Program nationally. What we do in New York is reflected in these goals.

- ▶ Develop and implement marine science professional development programs for teachers
- ▶ Design and facilitate hands-on educational programs for people of all ages to excite them about our watery planet
- ▶ Provide marine and aquatic-related research and educational opportunities for graduate students
- ▶ Develop high-quality marine and aquatic curricula based on "sound science" for use in educational settings

The teachers and others who utilize the *ESCAPE* compendium can have their students listen to rap and folk music, use board games and maps, create wanted posters, work on puzzles, conduct experiments or even create exotic species bracelets to help them learn about exotic aquatics. These innovative teaching tools will provide opportunities for students to learn about the biology, introduction and ecosystem impacts of exotic species.

To view sample activities, go to www.iisgcp.org/edu/escape/index.html. The *ESCAPE* Compendium can be ordered for \$63 (includes shipping) through NYSG's Buffalo office (SGBuffal@cornell.edu). A laminated color version of the two game boards costs an additional \$10; the complete set can be ordered for \$70.

—Helen Domske

NYSG Coastal Educator

Educate

Finally, we reach out to citizens across the state with information about the coast so that they can make informed decisions about the future of their communities. (Read more about NYSG's successful outreach education programs in the Fall '02 issues of *Coastlines*.)

Many individuals foster the three areas of NYSG's educational program across the state from Buffalo to Montauk, whether associated with our efforts in outreach—extension and communications—or in research. All Sea Grant staff has the common goal of engaging students, educators, and the public in the pressing coastal issues of our day, and making our Sea Grant-funded, sound scientific research accessible and understandable to our citizens. This issue of *Coastlines*—starting with the examples on the front cover—gives a sampling of the lives and careers that have been shaped, impacted, and inspired by some of New York Sea Grant's educational programs.

— Robert J. Kent
NYSG Marine District
Program Coordinator

- ▶ Foster the inclusion of groups traditionally underrepresented and underserved in marine and aquatic sciences
- ▶ Encourage education and training in the effective use of new coastal technologies
- ▶ Serve in a leadership role in fostering collaboration and partnerships with NOAA, as well as other agencies and organizations with an interest in marine education
- ▶ Develop methods to evaluate the effectiveness of Sea Grant's educational programs



Learning can be fun. The expressions on the faces of these teachers show that they enjoy cooperative learning. These teachers attended an ESCAPE workshop cosponsored by Erie II BOCES.

Photos pages 4 & 5 courtesy of Helen Domske

In Her Own Words

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Attending the Great Lakes Student Summit proved to be an experience that significantly impacted my future. I was immediately impressed by the knowledge and commitment of the Summit organizers and workshop presenters, and was encouraged by their challenge to learn more and become an active part of making a difference for our environment. The idea of working to protect the environment no longer seemed like a distant possibility relevant only to the rainforest or ocean environment. I realized that it was a distinct and immediate challenge right in our own Great Lakes region.

After graduating from Amherst HS in 1996, I attended the University at Buffalo and pursued as many opportunities involving the environment as I could. I interned or volunteered for the US Fish and Wildlife Service, New York State Parks, the Buffalo Zoo, the Western New York Earth Day Exhibition, and the Erie County Environmental Management Council. I graduated from UB in 2000 with a B.S. in Environmental Studies and a B.A. in English.

Currently, I work as a Program Assistant for the Erie County Soil and Water Conservation District where a primary responsibility is environmental education. The District's main educational program is the Envirothon, an outdoor, hands-on natural sciences competition for high school students where student teams complete challenges in the areas of forestry, soils, aquatics, wildlife, and current environmental issues. It is also my responsibility to sit on the 2004 Great Lakes Student Steering Committee. (See photo on page 3)

My own interest in the environment grew because someone else had taken the time and effort to communicate to me the importance of today's environmental concerns. I am grateful for the sense of environmental stewardship that the Student Summit ignited in me. It is an honor to now be working with some of the same people who inspired me in 1995; I hope that I can be as effective as they were in inspiring others to care about our environment.

(Ed note: NYSG's Coastal Educator **Helen Domske** has been a Great Lakes Student Summit organizer, workshop presenter and mentor since its inception.)

—Megan Gollwitzer