



V. Abolins

Geraldine Kelpin receives Steinberg-Squires award from MSRC Associate Director for Research D. W. Pritchard.

## MSRC ASSOCIATES DINNER HELD

MSRC Associates, MSRC personnel, and University officials gathered at the Center for the fourth annual Associates Dinner on 4 December 1981. The event coincided with a visit to the Center by a delegation of Chinese researchers, and was marked by speeches and award presentations.

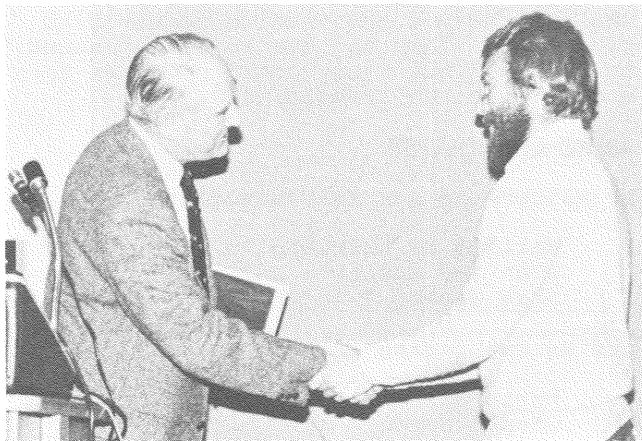
Among the speakers were Vice President for University Affairs James Black and visiting scientist Ji-yu Chen, Director of the East China Normal University's Institute of Estuarine and Coastal Research. Prof. Chen described the development of the Yangtze (Chang Jiang) River estuary over the last 2,000 years. He was accompanied on his visit to the Center by colleagues Prof. Lu Cheng, Vice Dean of the Normal University's Geography Department, and Prof. Cai-xing Yun, Chief of the Normal University's Remote Sensing Research Committee.

During the evening, the Steinberg-Squires award (created to honor the best graduate thesis produced in an academic year) was presented to Geraldine M. Kelpin for her M.S. thesis entitled "Depuration and its implications for Long Island's hard clam industry". Ms. Kelpin received a certificate and a \$200 check, and her name was engraved on a plaque displayed permanently at the Center.

Criteria for selection of the award winner included originality and importance of the research, clarity of writing, and the degree of independence shown by the student

in pursuing research. The award was established through a donation made to the Stony Brook Foundation by Donald F. Squires, New York Sea Grant Institute Director, and his wife, Marian Steinberg.

Another highlight was the presentation of the MSRC Associates Distinguished Teaching Award to Prof. William T. Peterson. Prof. Peterson, who was selected for the award by the graduate students of the Center, joined the MSRC in 1980 and teaches its core course in biological oceanography. His research interests lie in the field of coastal zooplankton ecology.



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William Swan (left), MSRC's first Associate, presents Distinguished Teaching Award to Professor William Peterson.

## NORTH SHORE "WAVE WATCHERS" AID MSRC

MSRC scientists are closer to understanding coastal erosion on Long Island's north shore, thanks to some residents of north shore communities. The 15 volunteers spent three months observing and recording wave conditions from Port Jefferson to Orient Point, and have provided the first direct measurements of the wave action that erodes coastal bluffs. Recently, researchers formulated conclusions based on the findings of these volunteers.

"This is a unique set of observations for Long Island," said Prof. Henry Bokuniewicz, who coordinated the study with staff member Jay Tanski. Previous calculations of wave movement were predictions made from wind velocity data through the use of equations. The volunteer "wave watchers", recruited and trained in January 1981 by Bokuniewicz and Tanski, were the first to actually observe north shore waves and measure their height, angle, and period

(the time it takes for a wave to pass a stationary point).

The volunteers' results enabled Bokuniewicz and Tanski to determine how waves affect the coast. They were able to prove the assumption that more sand is transported during a single day of large waves than over a period of many days of smaller waves. As much as 75% of the total sand moved by waves in a month, they concluded, is moved in a single day when there are strong northwest winds. Using the data collected by the wave watchers, Bokuniewicz and Tanski also found that waves push sand along the north shore in an easterly direction; however, there is a zone between Riverhead and Mattituck where the sand probably is deposited offshore.

The scientists will try to incorporate these conclusions into their north shore "sediment budget"--an analysis of sediment and soil samples to determine what type of material is being eroded and where the products of that erosion go. Bokuniewicz praised the efforts of the wave watchers, who have helped the erosion research to progress. "They all are to be commended," he said. "This study could not have been done without their help."

#### MSRC ASSOCIATES

We welcome as new MSRC Associates

William H. Lieblein  
John and Madeline Mullane  
Shaw Walker Foundation

and as continuing Associates

Marie Barrett  
Gerald Cohen  
Long Island Marine Contractors  
Thomas Roberts  
David Sayre  
Ronald and Jeri Schoof  
Sanford Soll  
Anne Williams

#### PUBLICATIONS

BOWMAN, M. 1981. Review of: *Circulation models of lakes and inland seas*, by T. J. Simons. EOS 62(40).

DUEDALL, I. W. et al. 1981. Stabilized power plant scrubber sludge and fly ash in the marine environment. Pp. 315-346 in *Ocean Dumping of Industrial Wastes*. B. H. Ketchum, D. R. Kester, and P. K. Park (eds.), Plenum, NY.

RHOADS, D., R. LUTZ, E. REVELAS, and R. CERRATO. 1981. Growth of bivalves at deep-sea hydrothermal vents along the Galapagos Rift. *Science* 214:911-912.

SHIGISADA, N. and A. OKUBO. 1981. Analysis of the self-shading effect on algal vertical distribution in natural waters. *J. Math. Biol.* 12:311-326.

#### PEOPLE AND MEETINGS

The Estuarine Research Federation elected Prof. J. R. SCHUBEL to a two-year term as vice president. The Federation is the largest association of coastal and estuarine oceanographers in the world. Prof. Schubel's book *The Living Chesapeake*, published in 1981 by the Johns Hopkins University Press, is now in its third printing.

Hydrogen production by the marine cyanobacterium *Trichodesmium* was the subject of Prof. MARY SCRANTON's December field trip to St. Croix.

The Environmental Protection Agency volunteered the services of its helicopter to MSRC staff members DAVE HIRSCHBERG, JAY TANSKI, and C. LEE ARNOLD for their collection of sediment samples from the Hudson River. They also took temperature and salinity measurements as part of a study being conducted by Prof. HENRY BOKUNIEWICZ. EPA's Riley Hennet arranged the use of the helicopter.

Student DOMINICK NINIVAGGI participated in a cruise on the University of Alaska's R/V ALPHA HELIX; he collected euphausiid (krill) samples for his research on the feeding of euphausiids in the southeastern Bering Sea. Ninivaggi also attended the annual meeting of Processes and Resources of the Bering Sea Shelf (PROBES). PROBES is a multi-institutional, multi-disciplinary study of the Bering Sea.

A donation made by Lawrence Aviation Industries, Inc. to the Three Village Soccer League was arranged through MSRC Prof. ED CARPENTER. The donation resulted from publicity about the avid participation of Carpenter, and others at the Center, in local little league soccer.

Prof. MALCOLM BOWMAN attended the Middle Atlantic Bight Workshop at the University of Rhode Island, where he presented a paper on coastal cyclogenesis and cross frontal mixing at the Joint Oceanographic Assembly in Halifax.

Prof. IVER DUEDALL headed the third International Ocean Disposal Symposium, held in Woods Hole, MA. He also attended a meeting of the International Council for the Exploration of the Sea, as an "invited expert" on marine environmental quality. In addition, Duedall traveled to the International Atomic Energy Agency in Vienna, to assist in the preparation of a draft on assessment methodologies for the marine disposal of low-level radioactive wastes.

The Center acquired a new vessel, a 25-foot Pirateer that has not yet been named. It will be used as a diving boat near structures, used for seaweed cultivation, that were placed in Smithtown Bay by personnel of the Center's marine biomass project.

## RESEARCHERS STUDY "COMPUTER-SIMULATED" CLAMS — SUE RISOLI

Scientists watch intently as hard clams (*Mercenaria mercenaria*) begin to spawn in the shallow waters of Great South Bay. As the clam larvae are spread by currents to an area where they will burrow into the Bay bottom, or "set", the researchers continue to monitor the process. This study is not being conducted at the Bay, though--nor in the laboratory. And the clams are not real ones.

The spawning and resultant spreading of clam larvae will be simulated through the use of a computer model of Great South Bay, devised by MSRC researchers. With knowledge of productive areas of the Bay bottom--sites that have a large amount of young, small clams--they are attempting to determine the location of the adults that produced these small clams. Once this is done, the clam yield of Great South Bay might be increased if adult clams were placed in such a way as to ensure that larvae would drift to productive setting areas.

The problem, says Prof. Harry Carter, is that he and the other scientists involved in the project are working "backwards". To ask the computer to simulate spawning and predict where the larvae would end up is easy. In this case, however, the research begins with the end result of spawning--productive setting sites--already known. These sites have been identified by MSRC Prof. Robert Malouf. Now researchers must predict where the larvae came from that set on those particular sites. After the prediction is made, the spawning location is programmed into the computer. Using information on the currents of the Bay, and on its length, depth, and width, the computer simulates how and where the larvae spread and how long it takes to get there. If the computer-simulated setting location matches the known productive setting sites, the guess is correct. If not, the process must be repeated again until the observed and the computer-simulated setting locations match. This will be done for each of the 12 sites identified.

Once the correct predictions have been achieved, the project may be used to increase the clam yield of Great South Bay. There are areas on the Bay floor that have many clams, but are not considered "productive" because they contain mostly larger, older clams. These clams have a lower market value than the small clams preferred for the half-shell trade. "In addition," says Carter, "quite likely there are areas of the Bay on which there are no clams but which are suitable from the standpoint of substratum, salinity, and predator conditions." When scientists are able to tell beforehand how larvae will spread, and where they will set, they can aid spawner transplant programs being

conducted. (Spawner transplanting involves removing ready-to-spawn clams from northern waters and placing them into the Bay's warmer waters, where they spawn quickly). If scientists have exact knowledge of how larvae drift and where they end up, spawners could be placed so that the larvae would drift to a bed and replenish its supply of small clams--or furnish clams for a bed that is known to be a suitable site but as yet has no clams.

Prof. Malouf has identified the productive sites of the Bay bottom with the aid of a survey done three years ago by Greg Greene. Greene is an employee of WAPORA (an environmental consulting firm), and is a former MSRC student. Profs. Carter and Malouf are being joined on the project, which is funded by the New York Sea Grant Institute, by MSRC Prof. Robert Wilson and MSRC post-doctoral researcher Kuo-Chuin Wong.

## MONTAUK MARINE BASIN SCHOLARSHIP PRESENTED

Through a donation made by the Montauk Marine Basin, the second annual Montauk Marine Basin Scholarship was awarded to MSRC student Stephen Shawn McCafferty. McCafferty was selected by Marine Basin President Carl Darenberg, Jr. and a committee of MSRC faculty as the recipient of a \$1,000 award to foster research on a problem affecting Long Island's coastal waters. His proposal was chosen because of its potential for yielding scientific and societal benefits to Long Island.

McCafferty's research is designed to differentiate among non-interbreeding populations of yellowtail flounder through a biochemical method called electrophoresis. Yellowtail flounder is an important late winter/early spring fishery for Long Island's commercial trawl industry.



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Montauk Marine Basin President Carl Darenberg, Jr. (right) with Marine Basin Scholarship winner Stephen Shawn McCafferty.

## AWARDS

Prof. Malcolm Bowman received funding from the National Science Foundation for his study of shelf dynamics and plankton pro-

duction in greater Cook Strait, New Zealand.

The Marine Biomass project received \$390,000 in funding for the year 1 December 1981-30 November 1982 from the New York State Energy Research and Development Authority and the Gas Research Institute.

## RECENT MSRC GRADUATES

Two students completed requirements in December for the Ph.D. degree:

FRANK ROETHEL, The interactions of power-plant coal waste with the marine environment (Prof. Iver Duedall).

KUO-CHUIN WONG, Volume exchange at sub-tidal frequencies and their relationship to meteorological forcing in Great South Bay, New York (Prof. Robert Wilson).

Nine students completed requirements in December for the M.S. degree:

MARK ALEXANDER, Management implications of sequential hermaphroditism in black sea bass (Prof. P. M. J. Woodhead).

STEPHEN COLLINS, Measurement of denitrifi-

cation in undisturbed salt marsh sediments (Prof. Edward Carpenter).

PAUL FLAGG, Effects of culture methods and environmental factors on the growth and survival of hatchery-produced seed clams (*Mercenaria mercenaria*) (Prof. Robert Malouf).

FERNANDO E. GANDARILLAS, Benthic assemblages of the lower New York Bay (Prof. B. H. Brinkhuis).

EMERSON HASBROUCK, JR., Fishing fleets of the Mid-Atlantic (Prof. J. L. McHugh).

HAL ROSE, Variations in phytoplankton biomass and primary productivity on the inner continental shelf (Prof. W. T. Peterson).

DAVID SAROKIN, Ultrastructure and taxonomy of the genus *Nannochloris* (Prof. Edward Carpenter).

J. J. TANSKI, Episodic bluff erosion on the north shore of Long Island, New York (Prof. Henry Bokuniewicz).

JOSE ZERTUCHE-GONZALEZ, Identification of biological fluorescent interference in rhodamine dye studies (Prof. D. W. Pritchard).



In December 1981, Frank Roethel (left) and Kuo-Chuin Wong (right) became the first students to complete degree requirements for the MSRC's Ph.D. in coastal oceanography.



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