


Fall 1989

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NSU Oceanographic Center

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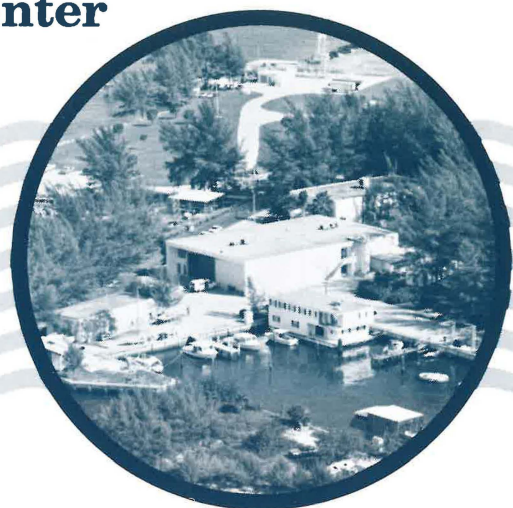
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Currents



Fall 1989 Volume III Number 4

NEW POSTDOC SETTLES IN

Dr. Lu Peng, a postdoctoral fellow in physical oceanography, is beginning to get his sea legs. He arrived in this country on October 18 and started his tenure at the Center soon thereafter. He will be working with Center director **Dr. Julian McCreary** on a numerical model of western boundary circulation of the Atlantic Ocean, especially in the equatorial region. The three-year project is sponsored by the National Science Foundation. Peng also will be working on some theoretical problems with **Dr. Pijush Kundu**.

Peng is from Qingdao, an eastern seacoast city located in Shantung Province, China, midway between Shanghai and Beijing. He received his Ph.D. in physical oceanography from the Institute of Oceanology, Chinese Academy of Sciences.

When asked how he found us, Peng responded, "I was very interested in Dr. McCreary's papers, especially one published in 1981 called 'A Linear Stratified Ocean Model of the Coastal Undercurrent' [*Philosophical Transactions of the Royal Society of London*]. At that time I had hoped to be a student of his, not through his papers, but in person, face to face. Now I have an opportunity to work with him."

Getting to this stage has not been easy, according to Peng. "When my thesis was almost finished, I wrote to Dr. McCreary and told him of my work, which was maybe an extension of his 1981 work. I explained to him my willingness to work with him after I received my Ph.D. Dr. McCreary wrote back, regarding me as a very strong candidate for a fellowship. First he



Lu Peng, getting used to the houseboat.

had to make a proposal to NSF, and he didn't know whether he would have funding."

Actually, after many months of waiting and more letters back and forth between Peng and Dr. McCreary, it was not until July of 1989 that Dr. McCreary learned that he would indeed be funded for the proposed work, and that salary money for a postdoctoral fellow would be forthcoming. "Of course I was very happy to hear about that," Peng adds, in something of an understatement.

All of Peng's work here will be theoretical, but in China he did some observational studies. He even went to sea -- he had to. "Everyone in our group had to go to sea," he explains.

Peng's Ph.D. thesis is entitled *A Mechanism Formation of the South China Sea Warm Current*. The study traces the odd activities of a newly found current. "In winter," Peng explains, "the current goes against the wind, so it may not be a direct result of wind stress. There are three possible contributing factors to the formation of the current: (1) A strong longshore gradient of heat flux is present in winter; (2) the instability and banded structure of the current may be interpreted as the linear effect of the incident and reflected baroclinic Rossby waves, which make up some medium-scale moving eddies invariably occupying this region, and the current flows between two countercurrents as the enveloping curve of these eddies; (3) the nonlinear interaction, i.e., Reynolds stress $\overline{u'v'}$, of the incident and reflected Rossby waves can drive a second-order mean Eulerian flow along-shore."

Peng arrived in the U.S. by way of London. He stopped there to pick up his wife, Haung Wen, who has been studying for her Ph.D. in biology at the University of London. Peng hopes that "maybe she will be able to continue her studies here, or perhaps work in a biology lab."

Peng's first impression of South Florida was, predictably: "HOT. But

Continued on page 2

PROFILES



Ruth Lazarus, busy with lab business.

FROM A ROOM WITH A VIEW

Ruth Lazarus, the Center's resident Administrative Officer, occupies the portside (or is it starboard?) office downstairs on our houseboat. She works in a traffic pattern that accommodates the entire gamut of visitors to the Center, from delivery people to main campus officials, from staff in search of petty cash to repairmen in search of a phone, or from students paying for Canon copies to tourists looking for A1A. She sees it all. Every day.

Ruth's title is a catch-all for a do-all job. In general, she oversees the financial status of the Center's many and varied departmental accounts, as well as the contract and grant accounts. Specifically, she is responsible for payroll time sheets, purchase orders, check requests, petty cash, and, most importantly, the accounts themselves. For instance, she keeps track of line item balances and makes sure that our internal records agree with Accounting's (or vice versa). When problems arise or questions need answers, Ruth serves as liaison between Center staff and

Accounting, the Office of Sponsored Programs, Payroll, Personnel, Purchasing, Physical Plant -- whatever.

When not busy with line items, Ruth orders supplies; tracks telephone, postage, and copier charges; and is keeper of the Center's keys. And when Wall Street gets jumpy, Ruth serves as our unofficial pension fund consultant.

In January, Ruth will celebrate her tenth year at the Center. Prior to joining us, she worked for five years at Nova's main campus in the Office of Financial Affairs, where she experienced accounting procedures from the other side of the coin.

Of the "open door policy" that prevails on the houseboat, Ruth says that she tries to respond to everyone's immediate needs [and they are all immediate], which may vary from "how much money do I have left in travel?" to "did my prepay P.O. come in yet?" [And if not, why not?]

Ruth's day is not always so chaotic. There is, for example, the daily lunchtime walk along the park beach. "The park," says Ruth, "gives me uncluttered horizons -- the view is beautiful."

When asked to describe her unusual office setting and the unique character of the laboratory life that surrounds her, Ruth responds, "Life on

the houseboat is fun. Every day is exciting, and there are always new challenges. There is a sense of family here, a feeling of belonging -- I'm not just another cog. It is a wonderful work environment, and the people I work with are the best part of the job. I see people every day who are very dedicated -- each researcher is very much involved in his or her work. I am part of everyone's grants, whatever they are working on. Some of this is vicarious -- I can identify with the achievements of the scientists. And there is always informal learning going on here, such as during seminars by visiting scientists. New funding is celebrated, losses are shared -- I take part in everyone's life."

As much as she enjoys life on the houseboat, Ruth feels that the Center has a significant need that must be met soon: "We need a new building -- we're bursting at the seams," she points out, citing the need for more office space, lab space, shop space, student space -- just plain elbow room.

Meanwhile, Ruth's open door swings with the tides, and whatever business is to be transacted passes this way first.

Continued from page 1.

it's not crowded. I do not like tall buildings. I like Hollywood and Dania, because there are small houses and you can see very far. It's very quiet. And the tropical plants are very beautiful -- I've never lived in the tropics before."

Peng's home town is on the ocean, so at least that aspect of our environment is familiar to him. At this writing the humidity has just "broken" and it is cool once again, after so many months of air conditioned existence. It isn't crowded here yet, but then it isn't December yet. As for the tall buildings that Peng dislikes, plans are afoot to plant a 65-story office building in downtown Fort Lauderdale, where one used to be able to "see very far." Times will change for Peng too, but for the moment he is enjoying his new home and the opportunities that have come his way.

STAFF MEMBER JUGGLES HATS

Kathy Maxson, an eight-year veteran of the Oceanographic Center, finally has settled into just one office, located in the William S. Richardson Library. There was a time in the recent past when she occupied three areas, one for each of her duties: departmental secretary, draftsman for faculty research projects, and our only librarian. [Actually, Kathy still uses a section of the computer workroom for drafting, but we won't count it as an "office."]

As departmental secretary, Kathy commands a word processor to churn out proposals and manuscripts for the Director. She also answers the insistent telephone chimes for one-half of each workday. As anyone who has ever drawn this duty can attest, the variety of calls and their sometimes bizarre nature can truly make or break your day.

As draftsman, Kathy drafts figures for scientific papers and proposals for the research faculty. These figures of course need total accuracy, for they will serve as camera-ready illustrations for publication in scientific journals. And we all know how crucial an impressive proposal is to our professional survival.

And now to the Richardson Library, where Kathy receives compensation for one-quarter of her time but devotes far more effort than that to her chores. They include daily cataloging of books and journals, handling checkouts and [somehow fewer] checkins, ordering, preparing journals for the bindery, shelving, and dealing with interlibrary loans.

An increasing student enrollment has put some extra pressures on the library in recent years. "Last year alone, I spent \$4000 on just biology-related books," she laments. In all, our library has about 2200 books, 62 active journals, and 30 inactive journals. We are very proud of our library, especially since we have had to play catch-up for the past several years. We started out strictly as a physical oceanographic laboratory, but when we expanded to other disciplines in 1978, we had to order an incredible number of basic books and journals in ma-



Kathy Maxson, enjoying life among the shelves.

rine biology, geology, and chemistry, as well as keep up our other acquisitions. We survived the surge and now can concentrate on keep-up rather than catch-up.

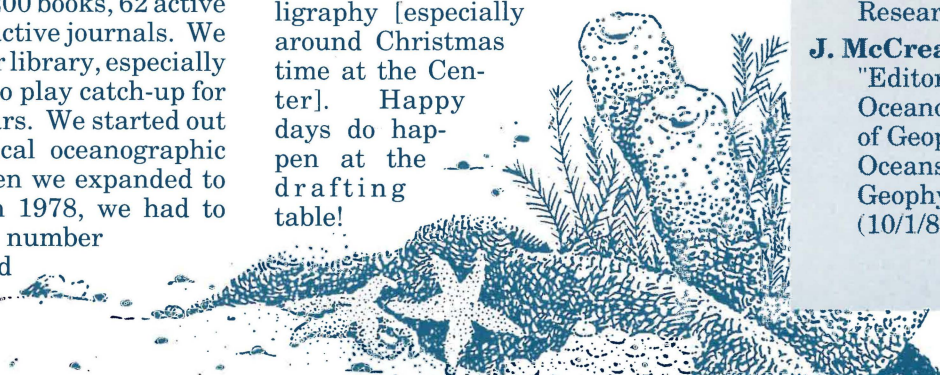
A recent acquisition for the library is the Cambridge Abstracts in CD format. These CDs allow easy access to scientific abstracts in the aquatic sciences and promise to be a boon to our research faculty.

Kathy was very pleasantly surprised one day this summer when a renowned visitor from Scripps Institution of Oceanography, **Dr. Warren White**, told her that he was quite impressed with the number and quality of our library's holdings. That was one of the good days in this job.

When asked about her favorite portion on this extensive menu, Kathy unhesitatingly chose the art work. She was not referring to the part where she connects lines and dots. She meant the choice cuts that call for some creativity, such as cover art for flyers, posters, or contract reports. On some rare occasions she has had the opportunity to show off her talents at calligraphy [especially around Christmas time at the Center]. Happy days do happen at the drafting table!

NEW GRANT AWARDS KEEP CENTER AFLOAT

- C. Burney:** "Sea Turtle Conservation Program," Broward County (4/1/89-12/1/89).
- R. Dodge:** "Assessment of Climate through Coral Growth Band Analysis," U.S. Geological Survey (8/1/89-7/31/91).
- R. Dodge:** "Material and Service for the Maintenance and Development of the Flume System," Naval Surface Warfare Center (8/1/89-4/1/90).
- R. Dodge:** "Compositions in Scleractinian Coral Skeletons," National Science Foundation (8/15/89-1/31/92).
- R. Dodge, J. McCreary, and G. Kleppel:** "Mangrove Mitigation Project," Port Everglades Authority (6/1/89-5/31/91).
- G. Kleppel:** "Carotenoid Pigments in Microzooplankton: Characterization and Relation to Biomass," National Science Foundation (6/1/89-11/30/91).
- P. Kundu:** "Investigation of Internal Wave and Mean Shear," National Science Foundation (2/1/89-5/31/90).
- J. McCreary:** "Dynamics of Equatorial and Coastal Oceanographic Circulation," National Science Foundation (8/1/89-1/31/93).
- J. McCreary and P. Kundu:** "Dynamics of Ocean Circulation: Coastal Instabilities and Mid-latitude Subduction," Office of Naval Research (1/1/89-6/30/92).
- J. McCreary and J. Witte:** "Editor of Physical Oceanography for the Journal of Geophysical Research/Oceans," American Geophysical Union (10/1/89-9/30/93).



Research Vessel Update

In the last issue of *Currents* (Summer 1989), a description of our new research "hull" was provided, along with a long wish list of essentials for our refurbishment project. We still have a list, but it is mercifully shorter. We do need your help so that our faculty and students can get their feet wet once again. Our current needs, along with recent donors:

SPECIFICATIONS

Type: Boston Whaler (Guardian 22)
Dimensions: 22'3"x7'5"
Weight: 2350 lbs
Max capacity: 2655 lbs
People capacity: 11
HP: 240 (max); 100 (min)
Fuel capacity: 77 gal (underdeck tank)

MINIMUM NEEDS

2 outboard engines
power trim and tilt
fuel line filters
stainless steel props
hydraulic steering (donated by **Hynautic**)
gunwhale boards or equivalent
bowrail fixtures
compass (donated, **anon.**)
radio and loran
Lowrance LMS-200 depth recorder (donated by **Lowrance Electronics**)
mooring bits, cleats, etc.
Bimini top or tee top
anchors, road & chain (donated, **anon.**)
Teleflex controls & cables, mooring lines, anchor lines, fenders, batteries (donated by **Charles A. Perry Corp.**)
bilge pump
hull repairs
rubber bumper around bulwark
gas tank cap & filling arrangements
splash board for engine back splash (aluminum)
bottom paint (donated by **Interlux, Inc.**)
hull paint (donated by **Sterling Lacerquer**)
running lights
seats & cushions, attachable coolers
life preservers, flares, safety devices
dive tank racks
electric davits for storage
insurance costs for year 1

PEOPLE ON THE MOVE



On September 21, **Dr. Julian McCreary**, Director, and **Jan Witte** traveled to Old Dominion University in Norfolk, Virginia, to confer with **Dr. David Atkinson**, who is Chief Editor of JGR OCEANS (*Journal of Geophysical Research*). Dr. McCreary and Ms. Witte started serving as Editor and Editor's Assistant, respectively, for theoretical physical oceanography on October 1. They traveled with the aid of Hurricane Hugo.

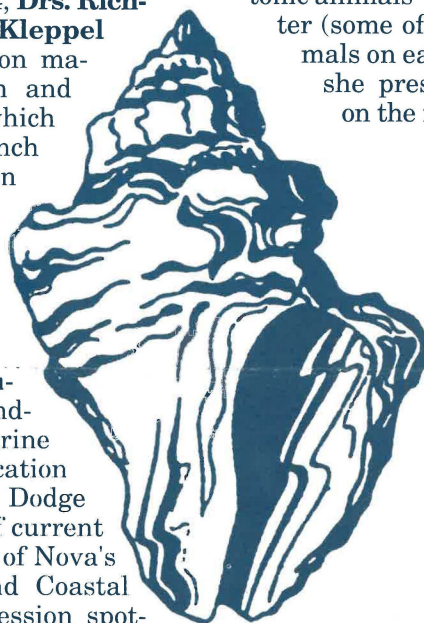
During the last week of October, **Dr. McCreary** traveled to the University of New Orleans, where he attended two workshops. At the CoPO (Coastal Physical Oceanography) numerical modeling workshop, he presented a paper entitled "Wind-driven Coastal Circulation." He remained at the University to attend a COPS (Coastal Ocean Prediction Study) workshop.

During October 22-24, **Drs. Richard Dodge** and **Gary Kleppel** attended a conference on marine academic research and education programs, which was held at Harbor Branch Oceanographic Institution in Fort Pierce, Florida. Sponsored by the Florida Sea Grant College Program, the conference was entitled "Investing in Florida Ocean and Coastal Science Futures." The state's expanding role in national marine research and higher education was emphasized. Dr. Dodge presented a summary of current efforts and future goals of Nova's Institute of Marine and Coastal Studies, as part of a session spotlighting marine degree-granting institutions in Florida. Dr. Kleppel served as convener for one of the sessions.

Dr. Georges Blaha attended the annual American Geophysical Union (AGU) Fall Meeting in San Francisco, December 4-8.

The annual AGU Ocean Sciences meeting will be held in New Orleans during the second week of February. **Dr. Pijush Kundu** will present a paper entitled "Observed Interaction between Low and High Frequency Motions off the Coasts of Peru and California," co-authored by **Dr. R.C. Beardsley**, of Woods Hole Oceanographic Inst., and **Dr. Adriana Huyer**, of Oregon State. **Dr. Gary Kleppel** also will present a paper, entitled "Food, Diet, and Egg Production of Copepods." Ph.D. student **Denis Frazel** and M.S. student **Carol Reese** plan to attend as well.

From November 13 to 19, **Dr. Evelyn Sherr**, from the University of Georgia Marine Science Institute at Sapelo Island, visited the Center. She worked with **Dr. Gary Kleppel** to isolate the pigments and evaluate the trophic dynamic role of planktonic animals 5-20 μm in diameter (some of the smallest animals on earth). On the 17th she presented a seminar on the microbial foodweb.



UNDERCURRENTS

INSTITUTE OF MARINE AND COASTAL STUDIES

MARINE CONSERVATION TARGETED

M.S. student **Glenda Kelley** has been doing what she likes best - diving over the reefs of Broward County and mucking about in the adjacent silty sediment. She has been assisting **Drs. R.E. Dodge** and **Charles Messing** with the biological monitoring of the county's beach renourishment project off Lloyd Beach State Park.

As of this writing, the project is in its second stage - that of getting an up-close look at the coral reefs in the vicinity of the extensive dredging that was completed in July (see *Currents*, Summer 1989). The first monitoring stage was completed in February-March 1989, just prior to the dredging operation; the final monitoring stage will occur next spring, approximately one year after the commencement of dredging. Four specific areas are being monitored for possible damage: the reef off Lloyd Beach, the reef off Dania, the offshore "borrow area" off Hollywood where the dredging actually took place, and a deep control area off Fort Lauderdale where no dredging occurred.

The divers have been collecting sediment samples and examining them for total weight, percent silt/clay, grain size distribution, percent organic content, and percent carbonate. Glenda's job at the moment is to sieve the samples through a 1/2 mm screen and look for any animals that may have been collected. The animals have been dyed with rose bengal stain to make them stand out, and then preserved in formalin. After the sieving process they are ultimately transferred to alcohol. The animals then are sent off to various authorities in the field (e.g., Smithsonian Institution, Mote Marine Lab, University of Miami, Harbor Branch Oceanographic Inst., University of Maine) for positive identification.



Glenda Kelley, at work sieving samples.

Glenda states that during the monitoring phase the group have found several new animal species, including one new coral species in the genus *Sphenotrochus*. Among the other species discovered is a new amphipod (crustacean).

After completing her M.S. degree, Glenda would like to "get back into research and do something useful. I think that monitoring the beach renourishment process is definitely useful," she adds with an energetic smile.

Glenda is particularly interested in the use of fish traps on and around reef areas, including artificial reefs. She has come to the conclusion that "properly regulated, traps may be a viable component of our fishery. Adjusting mesh size is one way to reduce bycatch of nontarget species and fish that are less than the minimum size established by law." Having chosen the non-thesis option en route to her degree, she will settle for taking additional courses in lieu of writing a research thesis. She insists that she is

doing so for fun as well as for that piece of paper.

Being not just passively adamant about environmental concerns, Glenda and her husband are active in the Florida Conservation Association (FCA), which recently lobbied successfully to get new salt water fishing licensing laws passed by the legislature. Glenda also is active as a volunteer guide for nature tours at Fort Lauderdale's historical Bonnet House, and she does additional volunteer work for the Discovery Center. During the current fall semester, Glenda somehow has found time to teach vertebrate zoology at Nova College as part of the university's fledgling undergraduate program in oceanography.

Having taught high school biology for several years and produced two sons who are now in college (one about to enter medical school and the other engrossed in criminal justice), Glenda is ready for some serious science. She did imply, however, that being a professional student wouldn't be bad duty.

WINTER TERM SCHEDULE

M.S. specialties are Marine Biology and Coastal Zone Management. Many courses may be of interest to teachers for recertification or to others for audit. Tuition is \$225/credit hour (50% less for audit). Classes begin on January 2, 1990, and continue to March 23. Each class meets once a week from 6:30 to 9:30 PM. For further information and application procedures, call Cathy Mattison, Dr. Dodge, or Dr. Burney at (305) 920-1909.

DESCRIPTIVE MARINE PHYSICS (OC-5601), begins **Tues. Jan. 2**: Basic physical properties of seawater, temperature and salinity structure of the oceans, major current patterns and the influence of waves, tides and winds. A CORE course for both specialties. Instructor: **Dr. William Venezia** (U.S. Naval Surface Warfare Center; Center Adjunct).

DYNAMIC BIOLOGICAL OCEANOGRAPHY (OC-6195), begins **Wed. Jan. 3**: Modern concepts in the study of life in the sea. Scales and coupling of biotic and physical variability, using modern continuous sampling techniques; handling of

sampler data. Guest lectures and roundtable discussions of relationships between physical and biological processes in a variety of oceanographic systems (e.g., California Current and Gulf Stream). Background in statistics and calculus helpful. Instructor: **Dr. Gary Kleppel** (Center Faculty).

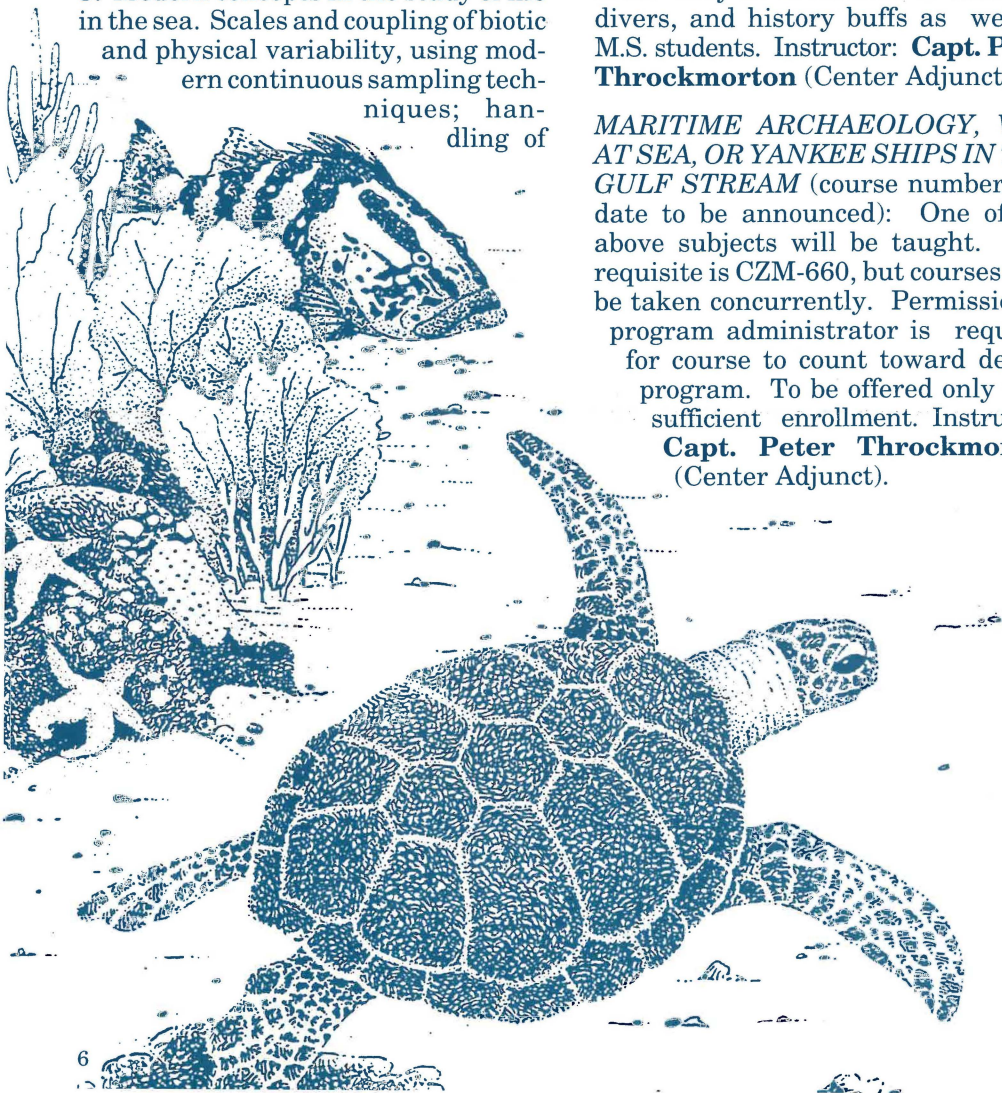
MARINE INVERTEBRATES (OC-6080), begins **Thurs. Jan. 4**: The important groups of planktonic and benthic invertebrates, with emphasis on abundance, role in food webs, feeding, growth, productivity, reproduction, and ecological interactions. Field trips and collection and identification of local fauna required. Instructor: **Dr. Charles Messing** (Center Staff).

MARINE ARCHAEOLOGY (CZM-660), begins **Thurs. Jan. 4**: Basic archaeological principles applied to the marine realm. Several field trips to local shipwreck sites planned to orient students to actual archaeological practices. May be of interest to teachers, divers, and history buffs as well as M.S. students. Instructor: **Capt. Peter Throckmorton** (Center Adjunct).

MARITIME ARCHAEOLOGY, WAR AT SEA, OR YANKEE SHIPS IN THE GULF STREAM (course number and date to be announced): One of the above subjects will be taught. Prerequisite is CZM-660, but courses may be taken concurrently. Permission of program administrator is required for course to count toward degree program. To be offered only with sufficient enrollment. Instructor: **Capt. Peter Throckmorton** (Center Adjunct).

New Students: 1989

- Juan J. Agar**,
University of Washington
- Tom Allen**,
Auburn University
- Andrew Barienbrock**,
Ohio State University
- Latsy Best**,
Florida Atlantic University
- Michele Bullock**,
University of Miami
- Carol A. Burkart**,
Fairleigh Dickinson
- Natileene Cassel**,
Mississippi State University
- Mark Chalkley**,
Florida State University
- Leigh M. Fulghum**,
N. Carolina State University
- Rowena Garcia**,
University San Carlos
(Philippines)
- Laura Goepfert**,
University Southern Maine
- Lawrence Goldsmith**,
Fordham University
- Joutje Koapaha**,
Sam Ratulangi University
(Indonesia)
- Denice L. Lipnos**,
Bowling Green University
- Teresa McCoy**,
Florida Atlantic University
- William Margolis**,
Randolph Macon College
- Linda Moscato**,
Long Island University
- Pat Quinn**,
Memphis State University
- Guilherme Rupp**,
Federal University
of Santa Catalina (Brazil)
- Dennis W. Stetter**,
McGill University
- Gayle Stone**,
Skidmore College
- David Stout**,
Ohio Wesleyan University
- Dean Teeple**,
Iowa State University
- James Thompson**,
University of Maryland
- Werner Tiemann, Jr.**,
Boston University
- Dale L. Vicha**,
Purdue University





Cathy Mattison, Coastal Studies secretary and chief party planner.



Students Ali Al-Kuyumi, Werner Tiemann, Guilherme Rupp, John Braker, and Glen Pederson.



M.S. student John Farina and Ph.D. student Zuojun Wu.

New Students Feted

On September 22, the Institute for Marine and Coastal Studies hosted the annual party for new students. As always, it was a raving success.

The party had a distinctly Mexican flavor, complete with tacos, chips, dips, refritos, and an interesting Spanish punch. The decor featured bright bows, slinky sombreros, and fake cacti. A host of returning students, faculty, and staff helped to make the rookies feel at home.



Dr. Julian McCreary, Director, and new student Gayle Stone.



Students David Hill-Turner and John Braker.



"Old" student Isabel Puente.

Oceanographic Center
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Currents, Fall 1989

NOVA
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25th ANNIVERSARY

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Nova University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, educational specialist, and doctoral degrees. Nova University admits students of any race, color, and national or ethnic origin.