

NEWSLETTER

WOODS HOLE
OCEANOGRAPHIC INSTITUTION



JULY/AUGUST 1996

A Summer to Remember!

Photo by Shelley Lauzon



Neal Lane, Director of the National Science Foundation, spoke at the A-II farewell ceremony July 23 (see remarks on page 11). Associate Director for Marine Operations Dick Pittenger is seated at right.

Photo by Tom Kleindinst



WHOI bids R/V Atlantis II farewell after a 33-year career (see article and photos pages 7-11). More than 1,000 attended the farewell celebration.

Photo by Shelley Lauzon



R/V Knorr returns home after a two-year voyage (see article and photos page 4).

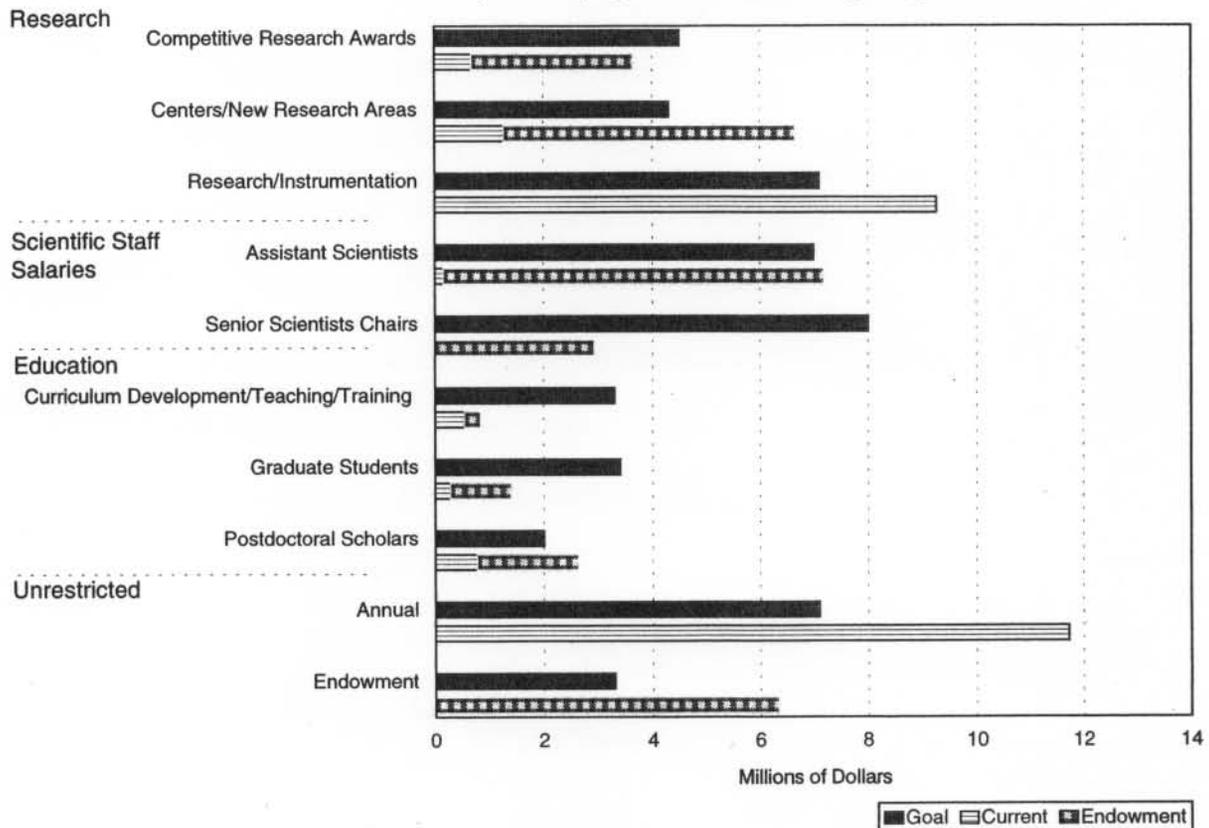
Photo by Shelley Lauzon



A record 172 attended the July 20 clam bake sponsored by the Employee Capital Campaign Committee (see article page 18). The Capital Campaign tops goal (see campaign story page 2).

Capital Campaign Tops Goal, But Priorities Remain To Be Met

Woods Hole Oceanographic Institution
Capital Campaign Commitments through August 31, 1996



The Institution's \$50 Million Capital Campaign has surpassed its goal and topped the \$52.6 million mark as of August 31. Although delighted by the Campaign's success, both WHOI Director Bob Gagosian and Director of Development Jacquie Sutor say the Campaign still has a number of priorities to meet and efforts to raise at least \$11 million in additional

funds to meet the unfunded priorities will continue.

Helping surpass the \$50 million goal was a \$5 million gift, the largest single gift of the Campaign to date, from Gratia Houghton Rinehart Montgomery of South Dartmouth, MA (see article page 3).

Officially slated to end December 31 of this year, the campaign began quietly January 1, 1990 and entered its public phase in October 1993, when nearly half the goal had been committed.

Where Has the Money Come From?

Most of the \$52 million raised to date has come from individuals and foundations. WHOI employees have contributed nearly \$3 million, and Trustees and Members of the WHOI Corporation have contributed over \$35 million in personal gifts and through family foundations.

"This level of support is much higher than typical campaign commitments from board members at universities, where 25 percent is considered above average," Jacquie Sutor notes. "Three out of the four largest gifts came from current Members."

Campaign endowment priorities funded to date include \$10 million for scientific staff salary support (three senior scientist chairs and two months salary support for all second and third year Assistant Scientists) and \$8.5 million for competitive research awards, like the Green Technology Awards. Education programs including postdoctoral scholars have received \$3 million in endowment and

Continued on page 16

The Newsletter is published monthly or bimonthly for employees, students and members of the Woods Hole Oceanographic Institution community. Ideas for stories, photos, and other items of interest to the community are welcome and should be sent to: Newsletter Editor, News Office, MS #16, Woods Hole Oceanographic Institution, Woods Hole, MA 02543. Telephone 508-289-2270 or 289-3340.

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Largest Gift in Capital Campaign Received

Long-time Institution supporter and Corporation Member Gratia "Topsy" R. Montgomery of South Dartmouth, MA, has made a commitment of \$5,000,000 to endow coastal research at the Institution. The gift is the largest single contribution WHOI has received for the current \$50 Million Capital Campaign.

The Coastal Research Center will be named in her honor the Gratia Houghton Rinehart Coastal Research Center.

"We are deeply grateful for her keen awareness of the importance of ocean science, and the need to support the scientists, engineers and students who will carry their important research into the future," Director Bob Gagosian said in accepting Mrs. Montgomery's gift. "The impact of her gift will be enormous and will be felt immediately both locally and throughout the international coastal research community. We thank her for her generous spirit and long-standing interest in the Woods Hole Oceanographic Institution.

"Increasingly, the coastal ocean and the continental margin will be influenced by the pressure of use and misuse by the growing population that lives near the coast," Bob Gagosian said. "The Gratia Houghton Rinehart Coastal Research Center at the Woods Hole Oceanographic Institution will encourage and fund basic research which will provide a solid base for wise management of near shore resources both locally and throughout the world."

The Center, an "intellectual center without walls," involves scientists, engineers and students from each of the Institution's five science departments, the Marine Policy Center, and the Coastal Research Laboratory. Funds will support research, facilities, education outreach and special projects and, for the first time, allow the administration to plan and execute major research initiatives with the assurance that long-term funding will be in place.

This major grant from Gratia Montgomery will also serve to fulfill the Institution's obligation to the Andrew W. Mellon Foundation by meeting its challenge to WHOI to endow the Center. The Foundation's 1992 gift of \$900,000 provided an endowment to be spent over a five-year period while the Institution raised a permanent endowment. Mrs. Montgomery and her family and the WHOI research community will celebrate the formal dedication of the Center in her honor on October 18, following the Fall Meetings of the Trustees and Corporation Members.

Mrs. Montgomery, who is the granddaughter of the late mystery writer, Mary Roberts Rinehart, and daughter of the late Alan G. Rinehart, former editor and producer of Paramount Pictures, is married to Gordon E. Montgomery, a retired executive of the Curtis Publishing Company. She is former Chairman of the Advisory

Board of the Volunteers of America and has been instrumental in efforts to preserve the history and ecology of local waterfront property. Mrs. Montgomery founded the Tai-Ping Foundation in the mid 1960's and is widely recognized for her long-standing interest in and support of education.



Gratia R. Montgomery

"Gratia Montgomery has always been passionate about the oceans," Bob Gagosian said. "As a young girl she read Jules Verne voraciously and was fascinated by the possibilities of aquaculture, envisioning a future where 'one might even raise corn on the bottom of the ocean that would not need salt.' She has been a life-long patron of the oceans ever since." Mrs. Montgomery was involved with the Smithsonian's Operation Tektite in the Virgin Islands, with the Floating Symposium on the Great Barrier Reef, and she traveled on the inaugural Lindblad tour of Antarctica. She has been a major supporter of the Woods Hole Oceanographic Institution for the past 30 years.

"Her life-long desire 'to pass along the love of science and nature to future generations' is exemplified in this gift and represents a commitment to oceanography which will be felt for many, many years to come," Bob Gagosian said.

Gratia Montgomery became associated with the Institution nearly 30 years ago when she met WHOI Biologist George Grice on a trip to Antarctica.

The Gratia Houghton Rinehart Coastal Research Center will be dedicated October 18 following the fall Trustee and Corporation Joint Meeting. All employees and students are invited to a "\$50 Million and Beyond" picnic lunch celebrating the Capital Campaign's success in passing the \$50 million goal and the foundation this success provides for WHOI's future. The picnic will be followed by the dedication ceremony and an Open House at the Rinehart Coastal Research Center.



Marine Operations Manager Joe Coburn welcomes home Knorr Master A. D. Colburn.



Falmouth Town Band's Brass Chorus entertained the crowd.



Lined up at the rail: scientists and ship's crew relax a bit.



Welcome Home, Knorr!

Research Vessel *Knorr* returned home August 8 after spending the last two years conducting research primarily in the Indian Ocean. The 279-foot ship spent 600 days at sea, 723 days away from Woods Hole, and a new Institution record of 93,806 miles traveled on a single voyage.

Several hundred gathered on the dock under sunny skies for the ship's noon arrival. Loud applause and cheers greeted the vessel, flying colorful signal flags representing many of the nations visited during its extended voyage, as it approached the dock with Master A.D. Colburn on the bridge. Members of the Falmouth Town Band's Brass Chorus, some of them WHOI employees, entertained the crowd and serenaded the ship as it arrived. Although it took several hours for Customs and the Immigration Service to complete their duties before anyone was allowed on or off the ship, many stayed to welcome home family members and friends. Among the crowd were several local reporters and photographers and a British television documentary crew who filmed the festivities for a three-part series on ocean exploration planned for broadcast in 1997.

Most of *Knorr's* research during the past two years focused on collecting hydrographic information, such as temperature and salinity, for the World Ocean Circulation Experiment (WOCE). Considered the most ambitious oceanographic research experiment ever undertaken and involving scientists and research vessels from many nations, WOCE's goal is to collect data from the world's oceans to put into climate models so that researchers can accurately predict climate on scales of decades and longer.

Continued on page 5



Susan Humphris (right) catches up with Meg Tivey while awaiting clearance to disembark. Humphris was Co-Chief Scientist with Dan Fornari of the last leg of Voyage #145 before arrival in Woods Hole.

Knorr Returns Home *continued from page 4*

To collect this data scientists aboard *Knorr* made more than 1,200 hydrographic stations along planned tracks across the Indian Ocean as the ship traveled between Africa and Australia and between Asia and the edge of the ice around Antarctica. Part of this work involved lowering instruments on a wire from the *Knorr* every thirty nautical miles to take a vertical profile, or snapshot, of the ocean at various depths from the surface to the deep sea floor.

Knorr departed Woods Hole August 17, 1994 on the first of 19 legs of Voyage #145. The ship traveled into the Mediterranean Sea for several cruises before passing through the Suez Canal and Arabian Sea and into the Indian Ocean in late September 1994. Port calls were made at Augusta and Catania, Sicily, and at Fremantle, Australia, in 1994. *Knorr's* 1995 schedule was devoted entirely to the WOCE Hydrographic Program as the ship traveled 43,252 miles that year. The WOCE program work began December 1, 1994 at Fremantle, Australia, and through 1995 scientists from 26 institutions and organizations representing 21 nations had taken more than 400,000 water samples in the Indian Ocean. Port calls in 1995 included stops in Sri Lanka, Singapore, Australia, and Mauritius.

The ship's WOCE work ended in late January 1996 at Mombasa, Kenya. *Knorr* then headed for Durban and Cape Town, South Africa, to conduct high resolution bathymetric studies using the ship's sophisticated SeaBeam bottom mapping system in the high latitudes of the southwest Indian Ocean. The Durban to Cape Town leg February 10 to March 28 set another WHOI record as the longest single leg of a voyage, by miles, in Institution history (see May-June 1996 *Newsletter* article).

Knorr then began its journey back toward Woods Hole working on other projects before making a port call May 10-16 at Montevideo, Uruguay. Chemical studies in the South Atlantic Ocean brought the ship from Montevideo to Bridgetown, Barbados, where the ship arrived June 20 for a week-long port call. The last leg home of Voyage #145 began June 27. Scientists from the Institution and other research organizations investigated the relations between volcanic, tectonic and hydrothermal activity on the Mid-Atlantic Ridge at a segment of the ridge influenced by the Azores Hotspot known as Lucky Strike. The Institution's remotely operated *Medea/Jason* imaging system and other sonar systems spent 45 days mapping the Lucky Strike hydrothermal vent field and other vents in the area and obtaining detailed geological data about the ridge segment. The Lucky Strike area was discovered three years ago by scientists diving in the Institution's three-person submersible *Alvin* and is one of only three hydrothermal vents known to exist in the North Atlantic Ocean.

Knorr departed Woods Hole August 15 for a month of scheduled maintenance at a Jacksonville, Florida, shipyard and returned home September 20 (see Ship Notes page 23).

Photo by Shelley Lauzon



Co-Chief Scientist Dan Fornari is interviewed by a British film crew aboard Knorr. The remotely operated vehicle JASON is partly visible at left.

Photo by Christopher Griner



Crew members Joe Mayes (left) and Chris Morgan relax shortly after arrival.

Photo by Christopher Griner



Knorr was dressed for the occasion with flags and signal flags. WHOI's coastal vessel Mytilus is at right.

New AMS Facility Director Named

John Hayes joined the WHOI staff in early August as the new Director of the National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS) facility at McLean Laboratory and as a Senior Scientist in the Geology and Geophysics Department. He was formerly Chair of the Department of Geological Sciences and Distinguished Professor of Biogeochemistry in the Departments of Chemistry and Geological Sciences at Indiana University in Bloomington, where he served on the staff since 1970.

"We are delighted to have someone of John's experience join us," Director Bob Gagosian said. "He brings incredible experience and knowledge to the AMS facility that will maintain and enhance the facility as a world leader in high precision carbon-14 dating."

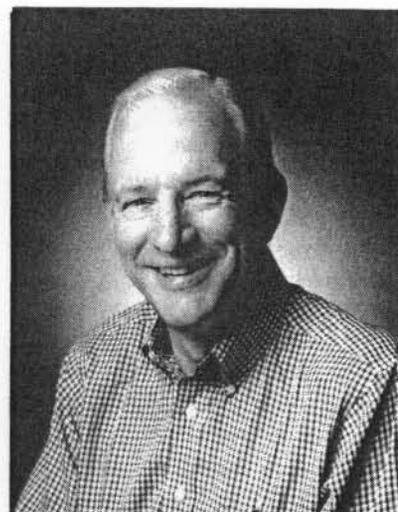
A 1962 graduate of Iowa State University, John Hayes received his doctoral degree from the Massachusetts Institute of Technology (MIT) in 1966. He was a Postdoctoral Research Associate at the Enrico Fermi Institute, University of Chicago, from October to December 1966 before serving as a trainee in the U.S. Army in early 1967. Hayes continued his military service as a research scientist

in the Chemical Evolution Branch of NASA's Ames Research Center in California, fulfilling active duty requirements as a Captain in the Medical Services Corps from March 1967 to December 1968.

Hayes spent 1969 at the University of Bristol, United Kingdom, as a NATO-NSF Postdoctoral Fellow in the Department of Organic Chemistry. In 1970 he began his long affiliation with Indiana University with appointment as Assistant Professor in the Department of Chemistry and Geological Sciences. He was promoted to Associate Professor in 1974 and to Professor in 1977. In 1990 he was named Distinguished Professor of Biogeochemistry. During his years at Indiana University Hayes was a Visiting Scientist in 1988 at Australia's Bureau of Mineral Resources in Canberra, and in 1979-1980 he was a Visiting Research Geochemist at the University of California at Los Angeles.

His research interests include the cycling of carbon in modern and ancient environments and its relation to the development of the global environment; biogeochemistry, specifically organic geochemistry and related aspects of biogeochemistry; the study of distributions of specific

Photo by Tom Kleindinst



John Hayes

stable isotopes between and within organic and inorganic compounds in sediments and in organisms; the technology of isotope ratio measurements in organic materials; organic compounds in ground water as hydrologic tracers; and organic cosmochemistry. He has written two textbooks, four book chapters and 150 papers related to his research interests.

John Hayes will share some of his plans and goals for the AMS facility in an upcoming *Newsletter*.

Welcome aboard, John!

Watkins Named WHOI's First Oceanographer Emeritus

William Watkins of the Biology Department has been named the Institution's first Oceanographer Emeritus. The newly created position of Oceanographer Emeritus is equivalent to that of Scientist Emeritus for members of the Senior Technical Staff upon retirement.

Watkins, a Senior Research Specialist, joined the WHOI staff in 1958 as a Research Assistant. In 1963 he was promoted to Research Associate, and in 1973 to Research Specialist. He was promoted to Senior Research Specialist in 1979, a position he held until his retirement this year.

Bill received his bachelor's degree in anthropology from Wheaton College in Illinois in 1947 and his Ph.D. in whale biology from the University of Tokyo in 1981. Following graduation from Wheaton College he worked on the college's staff in electrical and radio systems from 1947 to 1950. He served for a year as President of the

West African Broadcasting Association, and from 1951 to 1957 was station manager and language department chief of Radio Station ELWA in Monrovia, Liberia.

The following year he came to WHOI and began his 38-year career at the Institution pursuing his research interests in acoustic pattern recognition systems, underwater acoustic behavior of marine animals, distribution and activities of cetaceans, location and tracking systems (acoustic, radio and satellite), database organization for marine animal data, cetacean vocal identity, acoustic and sonar studies of underwater animal activity, and linguistics (African language). Bill belongs to many professional organizations and is the author or co-author of more than 130 scientific publications in technical and professional volumes and journals.

Congratulations, Bill!

WHOI Bids Farewell to R/V *Atlantis II*

Sporadic showers and overcast skies did not deter an estimated 1,000 from gathering under a tent on the Iselin Mall July 23 to celebrate Research Vessel *Atlantis II*'s 33-year career and countless contributions to ocean sciences. The 210-foot ship was retired from the Woods Hole Oceanographic Institution's research fleet and from the national academic research fleet. The ship, support vessel for the deep-diving submersible *Alvin* since 1984, departed Woods Hole shortly after 4:30 p.m. for the last time under the WHOI flag.

Many came during the two-hour Open House between noon and 2 p.m. to take one last look at the ship, recalling fond memories as they walked through the labs, galley, staterooms and up to the bridge. Many of those in attendance sailed on *A-II* as either officers and crew or as scientists.

A tent on the dock sold souvenir baseball hats and T-shirts bearing the ship's name and years of service. Business was brisk and the items quickly sold out.

Music played over the public address system was replaced shortly before 2 p.m. by the voices of the Greater Falmouth Mostly All Male Mens Chorus, who performed sea songs under the direction of Tom Goux in the tent. Master of ceremonies Dick Pittenger, Associate Director for Marine Operations, welcomed the 1,000 guests and thanked those who had helped make this event possible.

Among those recognized in the audience were Ruth Fye, widow of the late WHOI Director Paul Fye, who presided at the *A-II* christening ceremony in 1962, and Mary Sears, who as the ship's sponsor christened the ship.

Brief remarks were then given by William "Gerry" Metcalf, who was a member of the original *A-II* design team; Dave Ross, who represented scientists aboard the vessel prior to conversion for *Alvin* in 1983; Holger Jannasch, who represented *Alvin* users; Emerson Hiller, who served as the ship's first master from 1963 to 1970; and by Gary Chiljean, master since 1992. Dick Pittenger recognized the many contributions made by current and former officers and crew, by scientists, and by women aboard the *A-II*. One of the most unusual records was set by Biologist Lauren Mullineaux, who was called to the stage with her infant son Gus Grosenbaugh. Lauren was pregnant when she made an *Alvin* dive from *A-II* in December 1995, making Gus the "youngest" *Alvin* user.

WHOI Director Bob Gagosian recalled his many cruises aboard the *A-II* beginning in 1972 when he joined the WHOI staff as an assistant scientist in the Chemistry Department. Principal speaker at the farewell celebration was Dr. Neal Lane, Director of the National Science Foundation (NSF), which funded construction of the vessel. Following his remarks (see page 11), Dr. Lane presented Bob Gagosian with a plaque from NSF commending *Atlantis II*'s contributions to ocean science.

The Open House aboard ship was extended after the program to accommodate many more who wanted to see the ship one last time. Inside the tent guests enjoyed light refreshments from four countries the ship has visited in its career and chatted with people they hadn't seen in years. Photos of past and present crew and

Photo by Dave Gray



Members of the Greater Falmouth Mostly All Male Mens Chorus entertained the crowd. Bruce Woodin (seated in front) is one of the WHOI members.

Photo by Shelley Lauzon



Retirees Eddie Pierce and Kittie Elliot of Marine Operations enjoyed the afternoon.

scientists were posted on two large bulletin boards. A video of the christening and launch played nearby, and many leafed through a binder containing letters of congratulations from numerous federal and state government officials and others in the oceanographic research community.

As the crew secured the ship for sailing, the crowd gathered on the dock. Shortly after 4:30 p.m. *Atlantis II* blew its whistle and the ship slowly pulled away from the WHOI dock for the last time. Salutes from other Woods Hole vessels, applause and waves followed as the crowd lingered to watch the *A-II* sail out of view.

After leaving Woods Hole the ship headed for a Louisiana shipyard, where the stern A-frame for submersible handling was taken off (see photo page 22). The A-frame will be refitted for use on the new *Atlantis*. The *Atlantis II* was officially sold and turned over to its new owner August 8. It will be rechristened *Anteres* and is expected to continue service as a fisheries research vessel in the North Pacific and Gulf of Alaska.

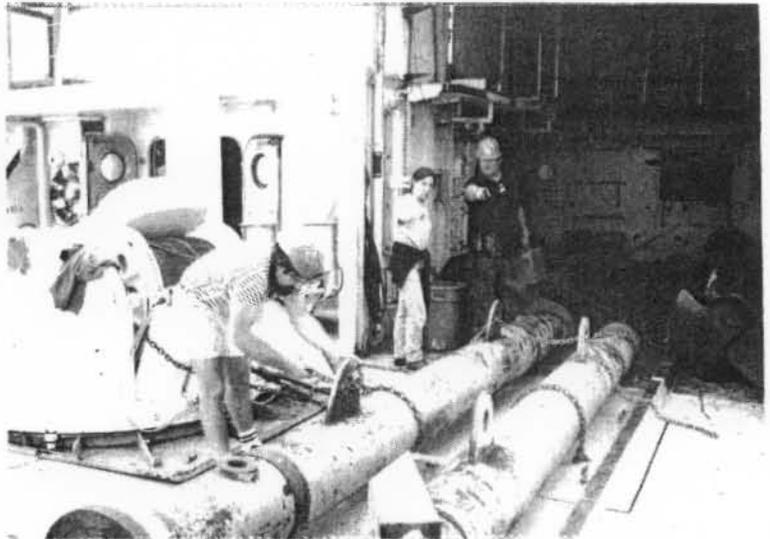
Well done and farewell, *Atlantis II*.

Photo by Dave Gray



A-II sponsor Mary Sears receives flowers from Freddie Denton, her grand nephew.

Photo by Shelley Lauzon



Crew members secure old parts from Atlantis II for delivery to the new owner. The parts had been in storage.

Photo by Shelley Lauzon



Crew member Ed Popowitz prepares for departure.

Photo by Shelley Lauzon



Bob Gagosian and Neal Lane display the plaque presented by NSF commending Atlantis II's contributions to science.

Photo by Shelley Lauzon

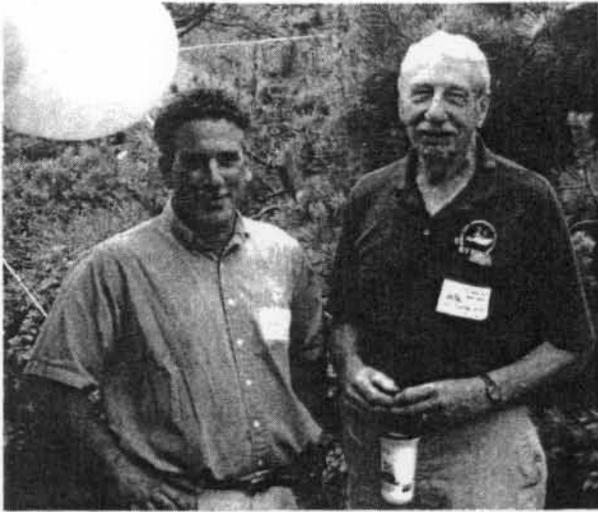


Enjoying the day were A-II Chief Scientists (left to right) Dave Ross, Bruce Warren and Fred Sayles.

Thank You!

Marine Operations (both shoreside and seaside) wish to thank all those who attended the farewell celebration and ceremony for the R/V *Atlantis II*. It was wonderful to see so many familiar faces. Special thanks to everyone who helped plan the event and who participated in the ceremony.

Photo by Shelley Lauzon



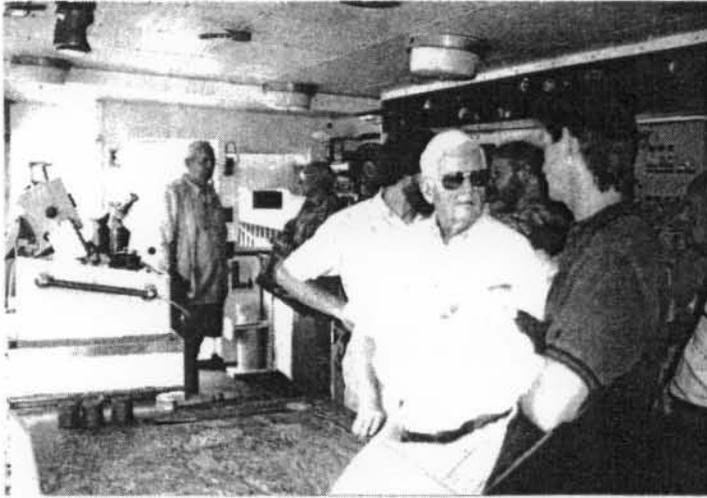
First and last Masters: Emerson Hiller (right) and Gary Chiljean.

Photo by Shelley Lauzon



Souvenir baseball hats and T-shirts were sold by (left to right) Kittie Elliot, Patty Odams and Pat McKeag of Marine Operations.

Photo by Dave Gray



Many toured the ship for a last look during an Open House. The bridge (pictured here) was a popular spot.

Photo by Shelley Lauzon



Jerry Dean (right) clowns around with Boston's Channel 7 television crew. The real cameraman is at left.

Photo by Shelley Lauzon



Holger Jannasch (left) and Dudley Foster recall many Alvin dives during a conversation in the main lab.

Photo by Shelley Lauzon



Gerry Metcalf and his wife Betty pause on the A-11 fantail. Part of the submersible handling system is behind them.

Copies of a Special Edition 24-page *Newsletter* devoted to the *Atlantis II's* career, complete with photos and a written history, are available from the News Office, 93 Water Street MS#16, Woods Hole, MA 02543 (telephone 508-289-3340). A videotape of the ceremony and ship's departure is also available for loan to members of the WHOI community by calling the News Office.



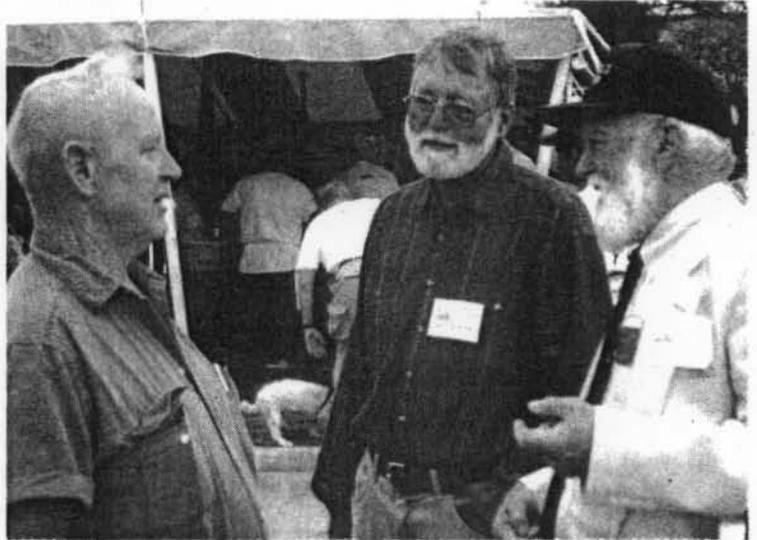
More than 1,000 attended the farewell celebration.

Photo by Dave Gray



New England Cable News interviewed A-II/Alvin user Lauren Mullineaux, holding infant son Gus Grosenbaugh. Several television stations and other reporters were on hand for the event.

Photo by Shelley Lauzon



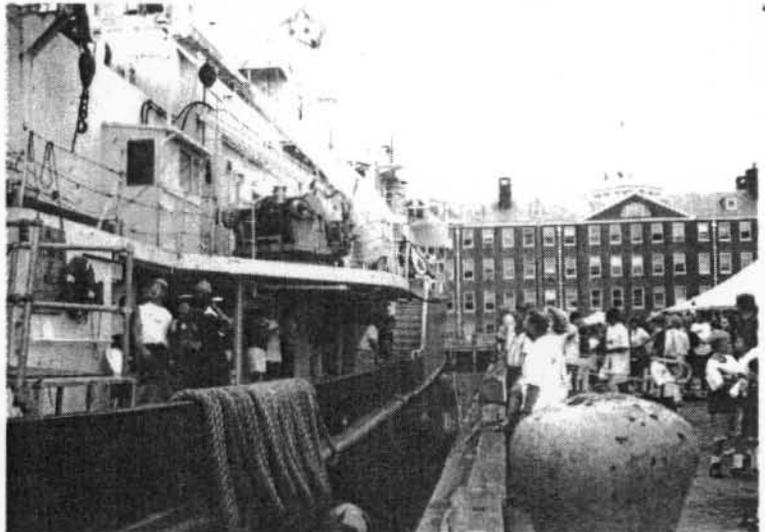
Jerry Cotter (left), Mike Palmieri (center) and Dana Densmore share a few memories.

Photo by Shelley Lauzon



Above: Master Gary Chiljean waves farewell as *Atlantis II* pulls away from the dock (photo at right).

Photo by Shelley Lauzon



Remarks by Dr. Neal Lane, Director of the National Science Foundation, at *Atlantis II* Farewell

"I am delighted to be here today to take part in this farewell celebration for the Research Vessel *Atlantis II*. While I am not delighted to say good-bye, I am pleased to have the chance to join all of you today and spend more time with an old friend. Like everyone else here, I'll call *Atlantis II*, *A-II*.

A-II and I had a memorable time once this past March. We cruised the Pacific Ocean off Catalina Island with Congressman Jerry Lewis of California and with *Alvin*, of course. And once we reached our destination, *A-II* was kind enough to allow Congressman Lewis and myself with the help of the *Alvin*, to do a little diving. Dudley Foster was our pilot. And we really had a wonderful time.

Unmistakably, this is truly a stately event, and I want to thank Bob Gagolian for inviting me. I am honored to participate. I think it fitting to say, repeating earlier comments, what a great job the captain and crew of the *A-II* have done over the years. It takes a lot of dedication and hard work to operate and maintain such a vessel. Your work does not go unnoticed. As well, I want to recognize the community of scholars that relied upon *A-II*. Their relentless efforts to discover the unknown—trying to bring light to the constant darkness of the ocean depths—has given countless others the chance to appreciate a richly interesting but relatively hidden world.

My own visit to that hidden world this past March was an event I'll treasure forever. The March dive was, quite literally, a wonderful experience that gave me the chance to view the life and the geology of the ocean floor at depths approaching a mile. In this world of perpetual darkness, punctuated only by strange luminescent aquatic animals, I was amazed by the variety of life forms I saw that do not exist anywhere else on the planet, even in Washington! And both Congressman Lewis and I happily felt very far from Washington for a while.

Over the years, progress in science and technology has enabled us to learn a great deal about these extraordinary life forms, as well as the many other natural mysteries related to the Earth's oceans. With the help of such vessels as the *Alvin*, *JOIDES Resolution*, and *A-II*, we have been able to remove part of the mystery, but not the wonder, of the deep seas.

Thirty-seven years ago, when Dr. Alan Waterman, then Director of the National Science Foundation, awarded a \$3 million grant (with supplements up to \$5 million total) to Woods Hole for the construction of a modern research vessel, the now venerable *A-II*, she was state of the art, and a major investment. She has now been surpassed technically by more modern, and more expensive, vessels.

But more important, of course, is what *A-II* has been able to accomplish through her contribution to science: her International Indian Ocean Expedition to carry out studies in the Arabian Sea, her work in the Cold War era

assisting the Navy in its initial search for the missing submarine the USS *Thresher*, and her travels to Puerto Rico to carry out studies related to ocean drilling. These were proud moments in her career and for science, as well as learning experiences for our society.

In her 468 cruises and visits to 78 countries, *A-II* has led a distinguished and exciting career, a career which symbolizes the pace of scientific discovery over 30 years—constantly progressing. We are thankful to have traveled the journey with her and to have acquired an immense amount of knowledge along the way.

It goes without saying, but let me say it anyway, that without *A-II* and the *Alvin*, we would know far less about the ocean waters than we do now. The American people would lack key information, and would seem much poorer both intellectually and economically. These vessels and other that complement them have meant so much to our society's scientific and technological advancement.

Think of the knowledge we would be missing:

- insights into the cause of global climate and environmental change gained through ocean drilling programs in both the Arctic and Atlantic Oceans,
- knowledge that volcanic eruptions in Central America have repeatedly spread volcanic ash over the Caribbean in the past, and that the majority of these eruptions were larger than any in recent history, and
- appreciation that changes in North Pacific Ocean temperatures and currents strongly affect temperatures and rainfall in North America.

Indeed, these are just a few reasons why ocean-going research vessels have become so vital to our society. They, and the research and education they make possible, will remain a key element in the U.S. science effort in the foreseeable future. I often tell people that we are entering a new 'golden age' of discovery for U.S. science and engineering - despite the budgetary uncertainties we face.

We've discovered remote solar systems and planets orbiting distant stars. We're cracking the genetic code of plants and animals. We're gaining new insights into how we humans learn and process information. We're discovering new states of matter. And of course, we continue to peel back the mysteries of Earth's oceans.

The *A-II* was born of an earlier 'golden age' for science, but she has also been instrumental in enabling us to approach this next one. It is therefore both ironic and appropriate that we offer our farewell to her on this day. She is a fitting symbol for our past successes, and she inspires us to pursue the wonderful and exciting set of new challenges that lie before us.

Finally, we must not think of this celebration as simply retiring an older ship for a better looking model, but view it as recognizing the contribution of a distinguished vessel that has greatly served the scientific community for years."

New Faces



Mary F. Andrews
Housekeeper
Education
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M. Simon



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Research Assistant III
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Crowell
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A. Solow



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D. Oppo

New Faces



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A. Solow



Xiaou Tang
Postdoctoral Investigator
AOP&E
Blake/DSL
Ext. 3226
K. Stewart



Caroline Tuit
JP Student
MC&G
Clark 200
ext. 3510
G. Ravizza



Randy Turner
Security Guard
Facilities
Smith
Ext. 3280
D. McDonald



Judith Wells
JP Student
PO
MIT 54-1417
Ext. 883-5934
J. Pedlosky/K. Helfrich



Wen Xu
JP Student
AOP&E
MIT 5-309G
Ext. 883-5459
K. Stewart

Congratulations

— to Sandipa and Hanu Singh on the birth of their son Kurran July 8 at Falmouth Hospital. Kurran weighed 7 lbs. 10 ozs. Sandi is an information systems associate in Physical Oceanography and Hanu is a Postdoctoral Investigator in AOP&E.

— to Bill and Michelle Lambert on the birth of their second daughter, Cheyenne Elizabeth. Cheyenne was born July 21 at Falmouth Hospital and weighed 7 lbs. 5 1/2 ozs. Cheyenne joins her 11-1/2 year-old sister Elizabeth. Bill is a distribution assistant in Shipping and Receiving.

— to Ann McNichol and Bill Martin on the birth of their son, Samuel Martin McNichol, September 22 at Cape Cod Hospital. Samuel weighed 6 lbs. 11 ozs. Ann is a research specialist in Geology & Geophysics and Bill is an associate scientist in Marine Chemistry & Geochemistry.

Promotions

- Jian Lin (G&G)
to Associate Scientist w/Tenure (7/02/96)
- Wade McGillis (AOP&E)
to Assistant Scientist (6/17/96)
- Stacey Medeiros (CONT)
to Mgr./Budgets & Financial Analysis (7/08/96)
- Ellen Moriarty (PROC)
to Procurement Representative I (8/05/96)
- Norman Morrison (SERV)
to Distribution Assistant (7/15/96)
- Richard Norris (PO)
to Associate Scientist (4/16/96)
- Albert Plueddemann (PO)
to Associate Scientist w/Tenure (7/02/96)
- Lewis Saffron (SERV)
to Distribution Assistant (7/15/96)
- John Salzig (PO)
to Research Assistant III (6/10/96)
- Michael Sawyer (PROC)
to Procurement Representative II (6/17/96)
- Sandra Sherlock (PROC)
to Sr. Procurement Representative (6/17/96)
- Mary Ann White (PROC)
to Procurement Representative II (7/08/96)
- Robert Wichterman (SERV)
to Distribution Assistant (7/15/96)

Human Resources News

The following is a quick update on a variety of topics from the Human Resources office.

Investments

- For investment tips, check out The Money Club at 7:00 p.m. weekdays on CNBC.

Job Postings

- For your convenience, in addition to bulletin board postings, job postings are now available on the WHOI homepage on the World Wide Web (click the Internal button, then Human Resources).

Personal Computer Loans

- The personal computer loan benefit has been enhanced to \$2,500 with a two-year payback period.

Pilgrim Health Care

- A 90-day mail order drug program was added to WHOI's Pilgrim plans effective April 1, 1996. This is in addition to the prescription drug coverage available through participating pharmacies.
- Reminder that a Cambridge Eye Doctors office has opened at Falmouth Plaza, 17 Davis Straits Road (Rt. 28, near the Bed & Bath). Their telephone number is 495-0332.
- A reminder that there are a number of special programs and discounts available to Pilgrim Health Care members. These include: Fitness Network, Eyewear Network, Care Safety Seat Program, Smoking Cessation Program, Child and Home Safety Program, and Weight Watchers Program. Information is contained in a brochure, "Special Programs and Discounts," that came with your Pilgrim Health Care materials.

Retiree Medical

- *Important Reminder:* For individuals retiring in 1997 and meeting age and service requirements, the Institution's contribution toward retiree medical premiums will reduce to 85% for the retiree and 75% for the spouse, if applicable. The Institution's contribution will continue to reduce incrementally each year to the year 2000. For those retiring in 2000 and after, the Institution will contribute 55% of the retiree's premium and \$0 toward the spouse's premium. Please contact Elaine Wilcox, ext. 2706, with any questions.

Retirement

- The Executive Committee of the Board of Trustees approved elimination of the cap on aggregate cost-of-living increases effective April 1.
- *Important Reminder:* Except under specific conditions,

IRS regulations prohibit retirees under age 65 from receiving early retirement benefits and being paid a salary (for instance, working casual). Potential consequences of violation are severe, so be sure to check with Elaine Wilcox, ext. 2706, if you have any questions.

Entertainment

- Discounts and other benefits may be available to employees for various attractions in Florida.
- Busch Gardens in Tampa Bay, Florida, has opened their all new Egyptian expansion, where guests are transported in time to Egypt of the 1920s. Be among the first to experience Montu, the world's largest inverted roller coaster.
- 1997 Magic Kingdom Club membership guides are now available. The Guide contains information about the 25th Anniversary Celebration at the Walt Disney World Resort in Florida.
- Terminator 2: 3-D, the world's first and only 3-D virtual adventure, has opened at Universal Studios Florida.

Woman's Committee Educational Scholarship Awarded

Payroll Manager Laurie Murphy is the 1996 recipient of the Women's Committee Educational Scholarship.

The scholarship is presented annually to a WHOI regular full-time or regular part-time female employee who is matriculating or taking courses in preparation for matriculation into an undergraduate degree program (Bachelor or Associate Degree, with preference for students working towards a Bachelor Degree). It is intended to supplement the WHOI Employee Education Assistance Program, either for additional book costs, travel costs, child care, excess tuition, or other non-covered expenses.

Laurie is attending Roger Williams University and plans to receive her bachelor's degree in business management next spring.

Other Staff News

Stella Callagee has joined the Education Office as Planning and Finance Administrator-Education. Stella was replaced in the Controller's Office by Stacey Yarish Medeiros, formerly the WHOI General Accounting Administrator. Stacey assumed the duties of Manager of Budgets and Financial Analysis in July.

Marcey Simon, who has served as Assistant Registrar in the Education Office for several years, assumed the duties of Registrar August 1 from Jake Peirson. Marcey will also continue her duties as Education Office Administrator. Jake Peirson will continue as Associate Dean until his retirement later this year.

In Memoriam

The Woods Hole Oceanographic Institution announces with great sorrow the deaths of Honorary Member and Honorary Trustee James Coles, retired engineer Robert Walden, and retired captain Charles Davis.

James Stacy "Spike" Coles, President Emeritus of Bowdoin College and Director Emeritus and former President of the Research Corporation, died June 13, 1996 in Falmouth after a long illness at the age of 83. Coles was a longtime supporter and former employee of the Institution, which he served for many years as a Trustee and Member of the Corporation. From 1982 to 1988 he served as President of the Institution's Associates Program, which he joined in 1954.

"Spike" Coles joined the WHOI staff in 1943 as a research group leader, and later supervisor, for the Underwater Explosives Research Laboratory, working with fellow chemist Paul Fye and others trying to improve the underwater ignition and explosive power of depth charges, depth bombs and torpedo warheads until 1946 and during the summers of 1947 and 1948. He was elected a Member of the Corporation and a Trustee in 1952, serving as a Member until 1984 and as a Trustee until 1986. He was elected an Honorary Member in 1984 and an Honorary Trustee in 1986. During his many years of service to WHOI he served on numerous Corporation committees, including the Audit, Nominating, Investment and Visiting Committees and the Employees' Retirement Trust.

A 1934 graduate of Mansfield (PA) State Teachers College with a bachelor's degree in secondary education, Coles earned undergraduate and graduate degrees from Columbia University, and served on the faculties at City College of New York and Middlebury College before joining the WHOI staff. In 1946 he was appointed to the chemistry faculty at Brown University, where he served in various positions until 1952, when he resigned to become President of Bowdoin College in Brunswick, Maine. Coles left Bowdoin College in 1967 to become chief executive of the Research Corporation, a private foundation devoted to the advancement of science and technology through support of basic scientific research by individuals and non-profit institutions. He served Research Corporation as President for 14 years until his retirement in 1982.

Robert G. Walden, who retired in 1985 as a Senior Research Specialist in Buoy Engineering, died August 15, 1996 in Falmouth at age 74. He was born in Milford, MA, and served as a petty officer in the U.S. Navy before joining the WHOI staff in 1946 as a radio operator and technician for John Churchill, then port captain. Following specialized training in radar and signal work from the Air Force and the Navy, Bob Walden was named a

Research Associate in 1954 and was promoted to Research Specialist with the title of Electronics Engineer in 1964.

While at WHOI, Walden led an engineering group whose task was to design and perfect ocean moorings and instrumentation, including telemetered data transmission. He worked with Hank Stommel, John Swallow and many other oceanographers here and around the world. Upon his retirement in 1985, Bob Walden received the Meritorious Public Service Award, the highest civilian award granted by the Office of Naval Research, for "exceptional public service in his career as an ocean engineer devoted to the development of oceanographic deep-sea moorings & buoys." He was the author or co-author of forty-five technical publications, and held a patent (with others) on an air-sea-rescue-drift buoy.

Charles A. Davis, a former captain of Research Vessel *Chain*, died August 21, 1996 in Falmouth at age 85. He grew up in Abington, MA, and graduated from Massachusetts Nautical School (now Massachusetts Maritime Academy) in 1932. He worked in the U.S. merchant marine and spent more than 25 years at sea, serving in the Navy during World War II, before joining the WHOI staff in 1959. Davis sailed on R/V *Aries* and R/V *Bear* before joining R/V *Chain* as Chief Mate in 1959. He took command of *Chain* in 1963 when Emerson Hiller was named Captain of the new *Atlantis II*. Davis served as Captain of *Chain* until 1971 and retired from WHOI in 1976.

Photo courtesy Laurie Murphy



Although the WHOI Easter Seals softball team lost 15-5 to Hyannis Saab, they raised more than \$700 from WHOI employee donations. Since the WHOI team began in 1981 it has raised more than \$13,000 for Easter Seals!

Capital Campaign *continued from page 2*

an additional \$6.5 million has been added to unrestricted funds.

During the campaign, an additional \$25 million in spendable funds have been given unrestricted and designated for research and instrumentation support and education programs. The Keck Foundation funded the start up of the now endowed Green Technology Innovation Awards. The Kresge Foundation provided two challenge grants totaling \$1 million for a fiber optic winch and cable system for the R/V *Knorr* and for the Northeast Regional Ion Microprobe Facility. The Andrew W. Mellon Foundation provided a \$900,000 challenge grant to endow coastal research activities. Most recently, the Richard K. Mellon Foundation provided the start up funds for the Senior Technical Staff Awards. Devonshire Associates provided the funds for the first 18-month postdoctoral scholar appointment.

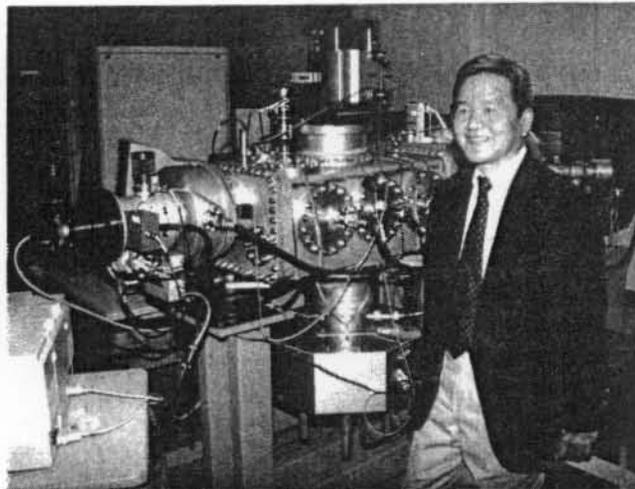
In January 1995 nineteen Assistant Scientists who were in their second or third year received funding support for salary equivalent to one month of estimated salary (fully loaded with employee benefits and overhead). Funds for that support were provided by the income from the Penzance Foundation grant and other recently established endowed funds. Of the \$3.5 million Penzance award, \$500,000 matched an award from Palisades Geophysical Institute (formed by a former employee, Joe Worzell, and several colleagues). The remaining \$3 million has been matched by individuals and other foundations on a one-to-one basis. The \$7 million endowment these gifts have created is designated to support assistant scientists with two months of salary support each year for two years. Bob Gagosian hopes to add the second month of salary support in the near future.

Contributions Have Come in Many Forms

Contributions to the Capital Campaign have come in many forms, Jacquie Suitor notes, from multi-million dollar challenge grants like the Penzance Foundation grant to outright cash gifts of varying amounts. The Institution has also received gifts of real estate, ships and equipment. Some individuals have established trusts to benefit WHOI, and others have left the Institution money in their wills.

Proceeds from the sale of two yachts, the 65-foot *Eagle Mar* and 86-foot *Betty Jeanne II*, donated to WHOI by Mr. and Mrs. Edward W. Scripps II of Charlottesville, Virginia, contributed approximately \$2 million to the Capital Campaign's unrestricted funds. *Eagle Mar*, donated in 1990 and sold in 1993, was used for several years for education and engineering research and as a test-bed for the Marine Policy Center's Electronic Chart Display and Information Systems (ECDIS) project. *Betty Jeanne II* was donated to WHOI in December 1994 and was recently sold.

Photo by Shelley Lauzon



Nobu Shimizu stands beside the new ion microprobe at the April dedication ceremonies. Campaign funds made the regional facility possible.

Funds from The Kresge Foundation, matched by a National Science Foundation grant, supported the 1991 purchase of a fiber-optic cable and survey winch used with the Deep Submergence Laboratory's remotely operated vehicle systems like MEDEA/JASON. The winch system is unique within the oceanographic community and is a key element in WHOI's unmanned deep submergence activities.

The new Northeast Regional Ion Microprobe Facility in Clark Lab, dedicated April 29 and headed by Senior Scientist Nobu Shimizu of the Geology and Geophysics Department, was made possible by campaign funds. The \$2.26 million facility received \$1.1 million from NSF, and the majority of the remaining costs had to be provided by WHOI through cost-sharing. The Kresge Foundation provided \$500,000 and the Cecil and Ida Green Foundation provided \$200,000, with additional support from the G. Unger Vetlesen Foundation and Honorary Trustee Frank Hoch and his wife Lisina, a Corporation Member.

Steve Holbrook of the Geology and Geophysics Department and Gene Terray, Cal Eck, John Irish and Rocky Geyer of the Applied Ocean Physics and Engineering Department are among many members of the scientific and technical staffs who have received direct research support from the W. M. Keck Technology Innovation Awards fund, now the Cecil and Ida Green Technology Innovation Awards. Other research awards have come from a variety of sources, including newly established endowed funds and outright gifts from individuals, corporations and foundations.

Other gifts from foundations and individuals have supported joint program students and postdoctoral fellows and scholars. Gifts from Sandy and E. Van R. "Morley" Millbury, for example, helped to create the

Continued on next page

Capital Campaign *continued from page 16*

Student Center in the attic of Clark South as a special place for the 140 students in the MIT/WHOI Joint Program. A bequest from C. Blake Townsend endowed the Alfred G. Mayor and Katherine M. Townsend Memorial Fund, to provide support for postdocs in biology. The Arthur Vining Davis Foundation Graduate Student Summer Fellowship supports incoming graduate students during their first summer transitioning into the program. The Henry L. and Grace Doherty Foundation established the first endowed 18-month post-doctoral scholar.

The G. Unger Vetlesen Foundation and the Penzance Foundation provide the funding for the annual WHOI staff awards, the Vetlesen Award for outstanding contributions by an individual and the Penzance Award for outstanding contributions by a group, presented at the Employee Recognition Celebration each fall. Both of these foundations have made multiple gifts during the Campaign for broad Institution use.

WHOI Employees Have Contributed Nearly \$3 Million

WHOI employees, former employees, retirees and spouses of retirees have contributed \$302,809 to date to the Capital Campaign. Current employees have contributed \$107,673 and former employees, retirees and their spouses have contributed \$195,136.

Employees who are also Trustees, Members of the Corporation or former Members account for an additional \$2,656,852. Of that total, current employees in this category have contributed \$1,125,701 and former

employees, retirees and retiree spouses have contributed \$1,531,151. The total of all employee, former employee and retiree commitments to the Capital Campaign is \$2,959,661 to date.

Employee gifts have been donated in a variety of ways, from payroll deduction to outright cash contributions ranging from a few dollars to many thousands of dollars. Other employee gifts have come through gifts of securities, real estate and other tangible personal property, or from life income gifts and bequests by will. Some have contributed through membership in the Paul Fye Society.

Jean Whelan of the Marine Chemistry and Geochemistry Department and her late husband Robert Whelan set up the Robert R. Whelan Endowed Memorial Fund in the form of a life income gift while Bob was alive. When he passed away, she requested that the remaining income be directed to the MC&G Department as he had wished. The Department created the Whelan Awards, up to \$1,000 each, to assist research and staff assistants in furthering their professional careers. The first awards were given in 1993 and have been given each year since.

"The gift benefited Bob and me financially as well as WHOI, so it was a positive thing for everyone," Jean Whelan says of her contribution. "There are lots of options that staff members can explore, and it doesn't have to involve large sums of money. It is amazing what you can do in seemingly small ways to help yourself as well as the Institution."

Senior Scientist Charles Hollister, Vice President of the Corporation, challenged his fellow Corporation Members late last year to match his gift of \$100,000. Much to his surprise, two of them did so in a matter of weeks.

"My gift, when added to these other gifts in response to my challenge and matched with Penzance Foundation funds, will provide support for two assistant scientists each year forever," Hollister said. "I am very pleased that I have been able to help young scientists directly in a substantial way." The Charles Davis Hollister Endowed Fund will provide income for salary and related support for members of the scientific staff with preference given to supporting assistant scientists.

Long-time employees Dave and Edith Ross are among a number of employees who have become members of the Paul M. Fye Society, created in 1993 to honor the memory of Dr. Paul Fye, who served as WHOI's fourth Director from 1958 to 1977. Individuals become members of the Fye Society when they include WHOI in their estate plans, either through bequest intentions or life income gifts, where the donor makes an irrevocable transfer of assets to WHOI and, in return, receives annual income for his/her life, or the life of his/her designee.

Employees interested in learning more about the options available to them to contribute to the Capital Campaign should contact the Development Office at Fenno, ext. 4895.

Photo by Shelley Lauzon



Honorary Trustee Frank Hoch (left) chats with former A-II crew member Paul Willis at the A-II farewell July 23. Frank and wife Lisina Hoch, a Corporation Member, pledged \$330,000 in May and challenged other Members and Trustees to raise the additional \$670,000 for a total of \$1 million in unrestricted funds. Most of the \$670,000 has been raised.

Clambake Attracts Record Crowd

The Employee Capital Campaign Committee (ECCC) prepared and served its fourth authentic New England Clam and Lobster Bake July 20 on the Iselin Mall. *Atlantis II* served as a backdrop for the record crowd of 172 who attended the soldout clambake on a sunny Saturday afternoon.

Bakemasters once again were Bruce Lancaster and Hovey Clifford, assisted by Ernie Charette and John Reilly (husband of Lesley Reilly of Development). ECCC members and volunteers set up the tables and chairs, prepared the food and took care of the many other logistics required for the clambake, the first to be held in the village. The fire was lit on schedule at 4 p.m. and the meal was served at 5 p.m.

The clambake was followed by a raffle of various WHOI related items, from WHOI logo clothing and baseball hats and the ECCC-sponsored WHOI Cookbook to antique chemistry apparatus and color prints of WHOI ships. The raffle items, many of them donated, were provided by the Exhibit Center, the Marine Chemistry and Geochemistry Department, the News Office, and local retailer Soft As A Grape. Proceeds from the clambake and raffle are donated to the Capital Campaign.

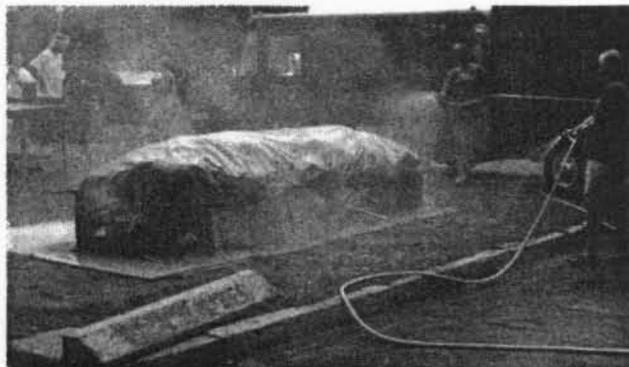
Special thanks to all the volunteers: Imogene Bump, Ernie and Jane Charette, Hovey Clifford, Diane DiMassa, Ed Dow, George Hampson, Fred and Judi Keller, Bruce and Alex Lancaster, Shelley Lauzon, Dorsey Milot, Ellen Moriarty, Charlie and Brenda Olson, Ann Palm, Lesley and John Reilly, Peggy Stengel and Will Billings, Chris Wooding, and Bonnie and Martin Woodward.

Thanks also to Family Foods, and to ECCC members Mindy Hall and Ken Prada who could not attend but who donated funds for the raffle and for several guests to attend.

This year's clambake was the fourth sponsored by the ECCC since 1994.



With all the fixings in place, the canvas is folded and tucked into place before the fire is lit underneath.



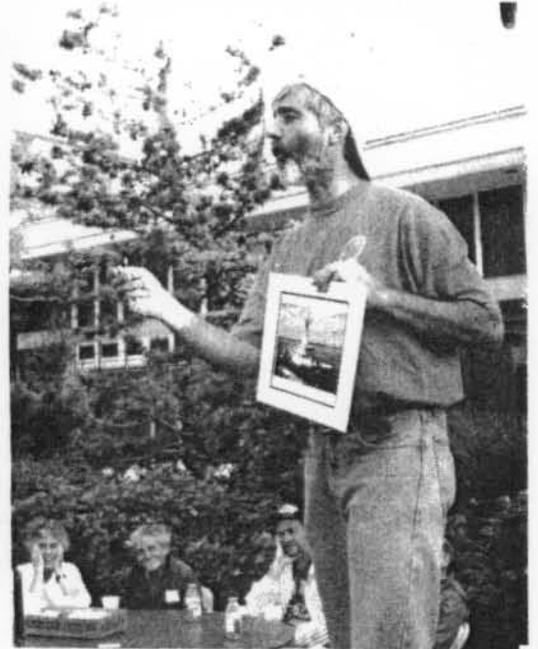
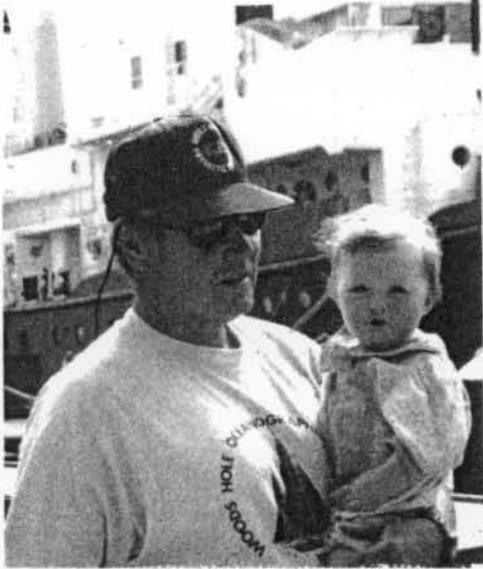
Garden hoses kept the fire under control.



A perfect day for a clambake. R/V Atlantis II is in the background.



Time to eat!



Top row left: George Hampson holds Ellen Moriarty's daughter, Hannah. Top row middle: Raffle winner Olivia Rauss (daughter of Karen and Art Rauss) models her new WHOI hat. Top row right: Guest Judi Fischer proudly shows off her WHOI T-shirt from Soft As A Grape. Middle left: Everything is cooked and its almost time to eat. Middle row right: Ernie Charette calls the winning number for a color photo of R/V Oceanus. Bottom: Robert and Louise Carney (right) and friends enjoy the afternoon.



Photos by Shelley Lauzon

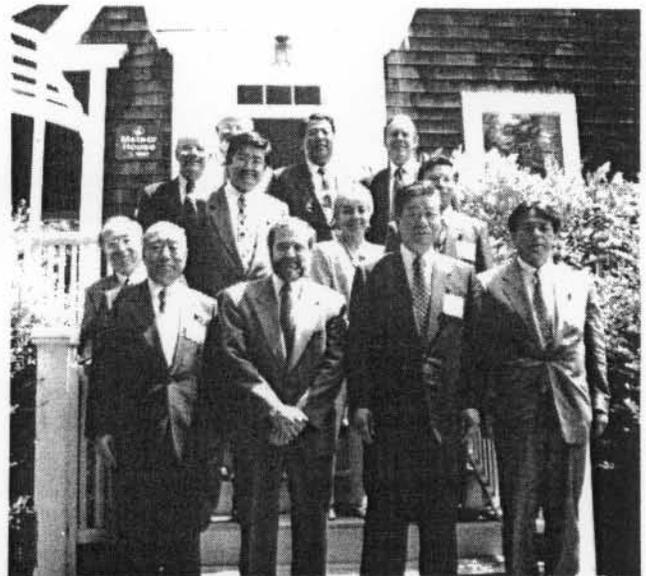
Japanese Parliament Members Visit WHOI as Japan Plans Major Investments in Science and Technology Research

A six-member delegation of Members of Japan's Parliament, equivalent to the House of Representatives of the U.S. Congress, visited Woods Hole Oceanographic Institution July 29 as part of their tour of leading U.S. science and technology organizations. WHOI was one of four U.S. research organizations, and the only non-government and oceanographic organization, that Members of Japan's Science and Technology Committee visited as they gather information to implement major funding increases and expansion of Japan's science research and development efforts.

Members of Japan's Parliamentary Standing Committee on Science and Technology who visited WHOI included Chairman Kiichi Inoue, Shozo Harada, Seiichiro Murakami, Shinya Ono, Ryuzo Sasaki, and Hidekatsu Yoshii. The committee members were accompanied by several staff members of Japan's Parliament, staff members of the Science and Technology Agency (STA), which oversees six national laboratories and institutions and seven research and development corporations, and by officials of the Embassy of Japan. The delegation spent their time at WHOI meeting with Director Robert Gagolian and other senior Institution staff to learn more about the Institution's science and engineering research activities, graduate education programs, and sea-going capabilities.

"Woods Hole Oceanographic Institution has a long history of collaboration with Japanese scientists and research organizations, including the Japan Marine Science and Technology Center (JAMSTEC) in Yokosuka," WHOI Director Robert Gagolian said. "Our collaborations with JAMSTEC have been very productive for both organizations and for the advancement of ocean science around the world. The WHOI/JAMSTEC collaboration can be used as a model for other future relationships, and we look forward to continued and

Photos by Shelley Lauzon



Parliament Members posed with WHOI Director Bob Gagolian (first row, second from left) and other WHOI staff prior to lunch at Meteor House July 29.

new work with our Japanese colleagues."

Japan passed a Science and Technology Basic Law, effective November 15, 1995, with an objective "to achieve a higher standard of science and technology to contribute to the development of the economy and society in Japan and to the welfare of the nation." Japan's Council for Science and Technology, headed by the Prime Minister, recently proposed that the nation double its funding of science and technology over what it has spent in the past five years. The plan calls for increases in Japan's research and development investment, expansion of the research and development infrastructure, including opening facilities to the international research community, promotion of international collaboration, promotion of basic science, and promotion of research and development on health and the environment. The Science and Technology Agency's major roles in research and development projects include materials, energy, health, space and the oceans.

The other organizations the Japanese science delegation visited while in the U.S. were NASA's Johnson Space Center in Houston, Texas; the National Institutes of Health in Bethesda, Maryland; and the International Thermal Nuclear Fusion Experimental Reactor in San Diego, California. The delegation had a two-hour private meeting July 25 with members of the Science Committee of the U.S. House of Representatives in Washington, DC. That meeting is intended to be the first of a series of meetings between the two committees.



Nobu Shimizu (in white shirt) explains operation of the ion microprobe facility to the Japanese delegation.

Delegation Visits Falmouth As Part of Planning for Major New Oceanographic Center in Japan

A Japanese delegation from Mutsu City, which has been designated as Japan's new national center for oceanographic research, visited Falmouth and the village of Woods Hole July 12 in an effort to learn how to plan for developing the city into a supportive research-oriented community. Mutsu City will become the new home for Japan's largest marine research organization, the Japan Marine Science and Technology Center (JAMSTEC), which has a long relationship with the Institution.

The six-member delegation was interested in learning how Falmouth has dealt with the range of community services, including schools, transportation, public library, shopping and recreational activities, that a developing city and in particular one with a major marine scientific population, requires. Falmouth was the primary U.S. focus for this delegation.

The group was headed by the Mayor of Mutsu City, Masashi Sugiyama, and included a group of interested citizens who may be involved in the city's future. Mutsu City has a population about twice that of Falmouth and is located on the northernmost arm of the island of Honshu, a rather isolated location far from other major cities. JAMSTEC, which conducts cooperative research projects with WHOI, will be relocated from Yokosuka, just south of Tokyo, to Mutsu City.

While at WHOI the delegation met with Senior Scientist Susumu Honjo and other members of the Institution's scientific and technical staff and toured facilities. They then met with Superintendent of Schools Peter Clark, Falmouth Library Director Nancy Serotkin, Chamber of Commerce Director Kelly Pratt, and with Town Administrator Peter Boyer and the Board of Selectmen. The Japanese delegation and town officials returned to Woods Hole for an evening dinner and reception hosted by WHOI Director Robert Gagosian at Meteor House.

Director, Senior Associate Director to Visit Japan

Director Bob Gagosian and Senior Associate Director and Director of Research Jim Luyten will travel to Japan in late September to renew the Memorandum of Understanding (MOU) with the Japan Marine Science and Technology Center (JAMSTEC) in Yokosuka.

The MOU between WHOI and JAMSTEC, which encourages cooperative programs and sharing of technology, is renewed upon agreement by both parties every five years. It was first signed by Director John Steele in 1987 during an R/V *Atlantis II* visit, was renewed at WHOI in 1991 by Director Craig Dorman, and will be signed again by Director Bob Gagosian at JAMSTEC.

During their visit Bob Gagosian and Jim Luyten also plan to learn more about Japan's planned increase in support and science and technology.

Unlike Japan's plans to significantly increase support for science and technology, the U.S. has been reducing its support for these efforts.

Staff Honors and Awards

Scientist Emeritus John M. Hunt of the Marine Chemistry and Geochemistry Department has been appointed a 1996 Geochemistry Fellow of the Geochemical Society and the European Association for Geochemistry "in recognition of outstanding contributions to geochemistry."

Senior Fellow Daniel Curran of the Marine Policy Center was recently invited to serve as a member of the Sensors and Instrumentation Technical Advisory Committee (SITAC). The committee is one of six technical advisory committees working in close cooperation with the Department of Commerce's Office of the Assistant Secretary for Export Administration.

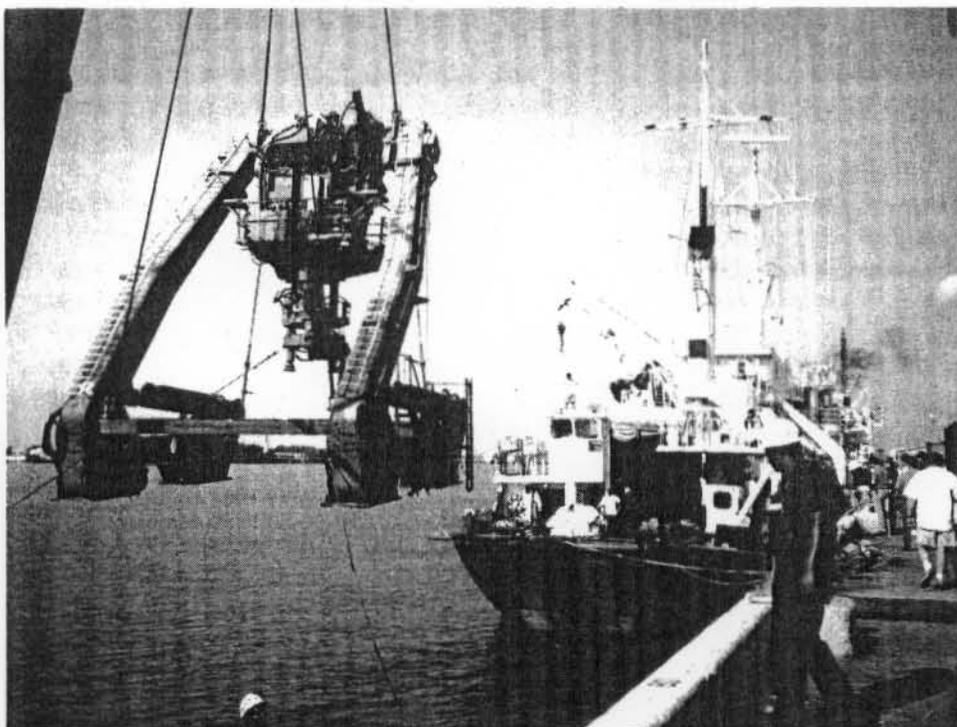
Geyer Named CRC Director

Wayne Rockwell ("Rocky") Geyer, associate scientist in the Applied Ocean Physics and Engineering Department, was named Director of the Coastal Research Center effective August 26. Rocky has been the Interim Director since January 1996, succeeding Bob Beardsley who had been Director since 1992.

Conference Seeks Participation

An in-house mini-conference on embedded intelligence in sensors, platforms, and vehicles is in the planning stages for mid-November. Organizers Ken Prada of the Applied Ocean Physics and Engineering Department and Geoff Allsup of the Physical Oceanography Department seek responses from scientific and technical staff members interested in attending and participating. Conference objectives are to establish a forum for information exchange in this area and to examine and discuss a broad range of topics relating to intelligent sensors and systems, such as past, present, and future applications for intelligent sensors, systems, platforms and vehicles; current capabilities for processors, storage technology, communication, telemetry, sensor interfaces; hardware and software standardization issues; and how to improve and balance the needs for performance, reliability, power management and consumption versatility, time to design and fabricate, and cost.

Agenda suggestions, topics, and people willing to make short presentations and participate in discussions are requested. Interested staff should contact Ken Prada in Bigelow 303 (MS #10, ext. 2711 or kprada@whoi.edu) or Geoff Allsup in Clark S 182 (MS #30, ext. 2221 or gallsup@whoi.edu).



The last step: the submersible handling system was taken off Atlantis II at a New Orleans shipyard in early August. The A-frame will be refitted for use on the new Atlantis. Following the A-frame's removal the ship was officially turned over to the new owner, who made the trip from Woods Hole to Louisiana.



The bridge area of the new Atlantis (stern is to the left) as seen in this August photograph by Gary Chiljean. Activities on the stern will be clearly visible from the bridge station at top left.

Atlantis Nears Completion

The Institution's new 274-foot Research Vessel *Atlantis* is nearing completion at Halter Marine in Moss Point, Mississippi (see recent photos below and on page 23). Builder's trials, during which the shipyard conducts its own tests on the vessel, are scheduled for the week of September 30. Acceptance trials, the official trials for the Navy, are scheduled for the week of November 12. Each trial generally lasts four to five days.

Atlantis Master Gary Chiljean, Chief Engineer Hugh Curran and several other members of the Marine Operations Department have joined WHOI's on-site Project Manager John Thompson at Halter Marine for the trials. Other ship's crew will begin arriving as work progresses. All crew members will receive training in the vessel's operation as part of the crew familiarization process, expected to take place early next year.

Phone Tip: Name Dialing

Callers can reach WHOI staff directly by using the name dialing feature. Simply dial 457-2000 (or ext. 2000 if internal), press 1 and follow the instructions (i.e., spell the last name, then the first name).

When a match is found, the call is connected to that extension number. If more than one match is found, press the pound sign ("#") to play the choices with the options to select them. Press star (*) to repeat choices, or the pound sign (#) to exit to dial another name.

Callers can also dial some common areas within the Institution. For example dialing "shop car" connects to the Carpenter's shop ext. 2211.

Staff should try dialing their own name to see how this feature works. If your extension isn't located or you find mismatches, please e-mail the correct information to lbenway or contact Linda Benway at ext. 2899.

Ship Notes

KNORR

R/V *Knorr* returned to Woods Hole August 8 to complete Leg XIX of Voyage #145, a two-year voyage (see article page 4) spent primarily in the Indian Ocean for the World Ocean Circulation Experiment (WOCE). The ship departed August 15 for a Jacksonville, Florida, shipyard for routine maintenance, and returned to Woods Hole September 20.

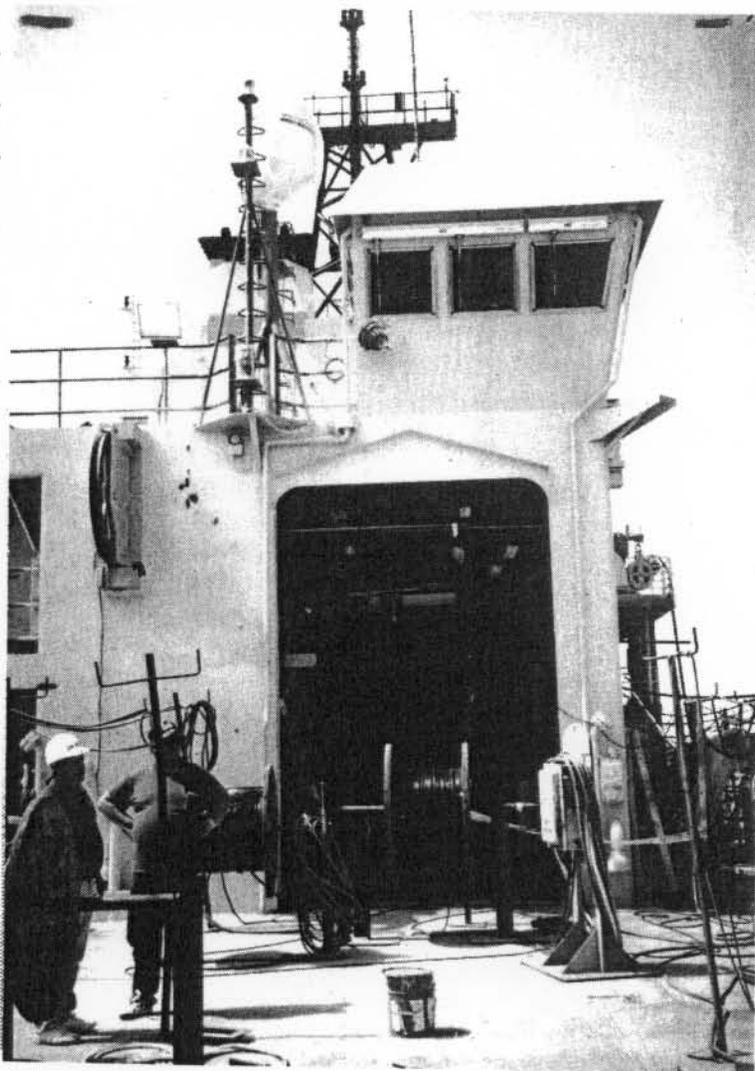
Knorr is scheduled to depart October 23 for continued WOCE studies in the North Atlantic. A port call will be made at Southampton, England, in early December.

OCEANUS

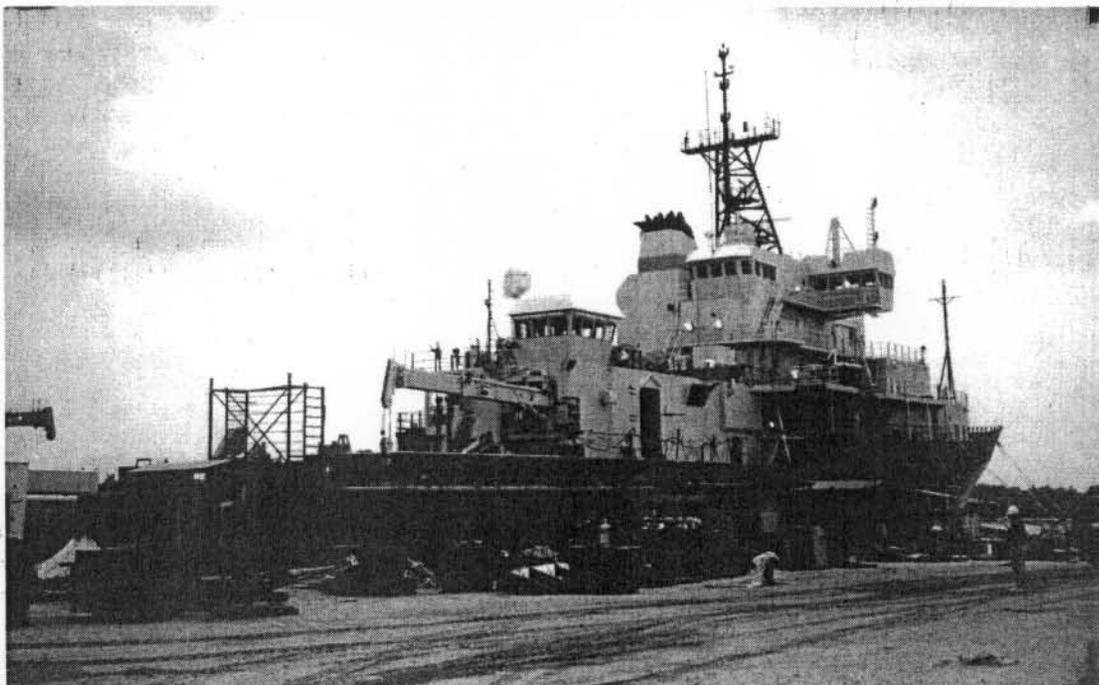
R/V *Oceanus* spent the summer months working out of Woods Hole on cruises in various disciplines ranging from two days to two weeks. One of the major programs involved deployment of a series of moorings and other instruments south of Nantucket as part of the year-long Coastal Mixing and Optics (CMO) program. The program, funded by the Office of Naval Research, is studying the mixing of ocean water on the continental shelf and the effect of that mixing on the transmission of light through the water.

Oceanus spent most of September working on the CMO program, with cruises September 4 -18 for tracer studies and September 25-October 2 for CTD and current profiler studies. *Oceanus* will depart October 6 for a nine-day cruise off the Delaware coast for the Ocean Margins Program.

Photos by Gary Chiljean

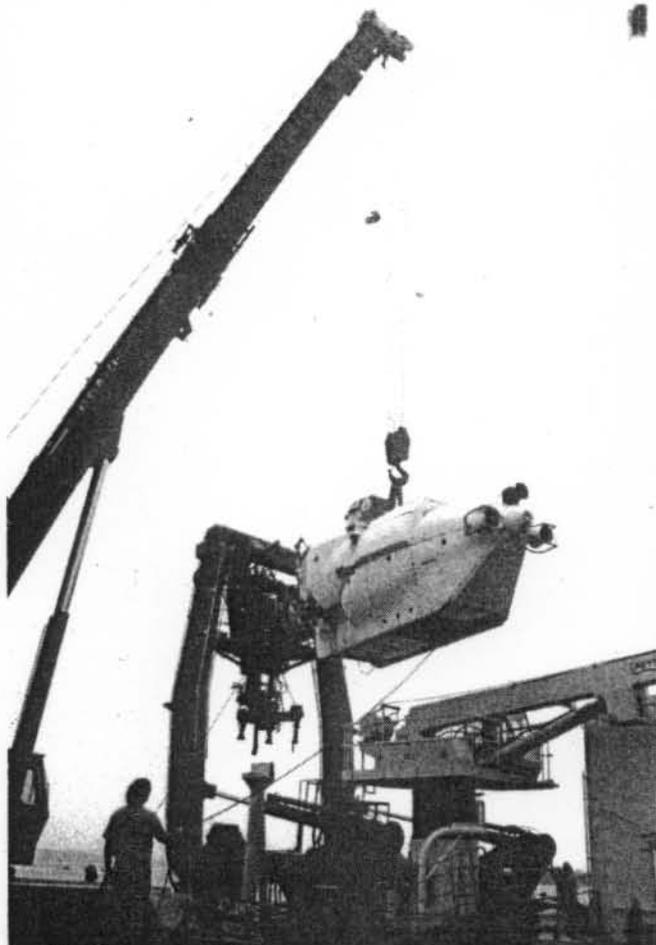


Above: the Alvin hanger on Atlantis, looking forward from the stern. The remotely operated vehicle operations area is located to the left, out of view.



Left: Atlantis sits at the Halter Marine dock for final phases of construction. Like R/V Knorr, the \$50 million Atlantis is owned by the U.S. Navy but will be operated by WHOI as part of the national academic research fleet.

Photo by Richard Bean



Alvin sets an altitude record! A crane lifted the 34-ton sub off Atlantis II on July 9.

Alvin Begins Scheduled Overhaul

DSV *Alvin* was offloaded from R/V *Atlantis II* July 9 via a large crane, placed on a flatbed truck and moved just a few yards away to the close confines of the Iselin High Bay, where it will make its home for the next nine months.

The scheduled overhaul, a process that takes place once every three years or so, means *Alvin* is taken apart piece by piece and stripped down to its titanium frame. Parts are checked, stored or replaced. The seven-foot diameter titanium personnel sphere, commonly called "the ball," is set aside in a special frame that allows work to continue inside the sphere.

At the moment, the ball is one of the few recognizable pieces of *Alvin* in the high bay, along with a few pieces of molded white syntactic foam used for buoyancy and the red sail with the WHOI logo through which pilot and passengers enter the sub. The titanium frame has been sent to New Jersey to its original manufacturer, Titanium Industries, for routine inspection. Once the frame returns to WHOI, members of the *Alvin* Operations Group will begin reassembling the sub.

According to Dudley Foster, assistant manager of the *Alvin* group, no major changes are planned on the sub during this overhaul.

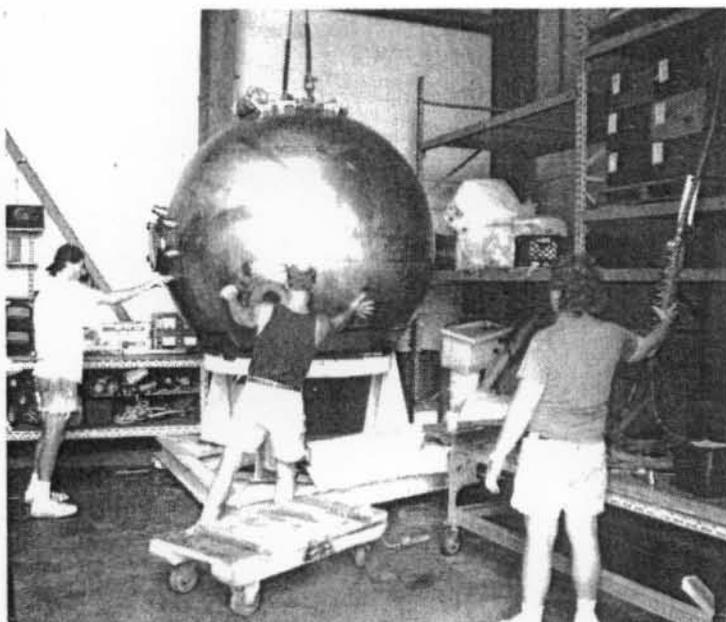
Once the overhaul is complete, *Alvin* will be transferred to the new *Atlantis* when it arrives in Woods Hole next spring.

Photo by Kathy Patterson



The Iselin high bay is *Alvin's* temporary home until next spring.

Photo by Shelley Lauzon



The personnel sphere, just removed from the sub, was put in place on a special frame in a corner of the high bay by *Alvin* staff in early August. The hatch area of the sphere is on top.