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# NEWSLETTER

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WOODS HOLE  
OCEANOGRAPHIC INSTITUTION



MAY/JUNE 1996

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## Two New Endowed Senior Scientist Chairs Awarded by WHOI

A May 1995 challenge by a former Chairman of the Institution's Board of Trustees has led to the establishment of three new endowed senior scientist chairs at the Institution, two of which were recently presented. Biologist Peter Wiebe is the first recipient of the Adams Chair, and Physical Oceanographer Robert Beardsley is the first recipient of the Walter A. and Hope Noyes Smith Chair.

The permanently endowed rotating chairs are awarded for extraordinary accomplishments in marine scientific research and education and were officially presented at the Trustee and Corporation meetings May 17 by WHOI Director Robert Gagosian, assisted by the chair donors. The chairs are generally awarded for five years and provide partial salary support each year. Funds from the chair enable the recipient to work on projects for which traditional grant support is unlikely, and can provide some time to explore new ideas or research directions that changing technology has made available.

Charles Francis Adams, who served as Chairman of the Institution's Board of Trustees from 1973 to 1985, had challenged his colleagues at the spring 1995 Trustee and Corporation Meetings that

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## New Awards Recognize Engineering and Instrument Development

For the first time in the Woods Hole Oceanographic Institution's 66-year history, research support has been provided to members of the Institution's Senior Technical Staff in recognition of their accomplishments in engineering and instrument development and their commitment to mentorship and partnership with junior technical staff. Funds for the awards have been provided by The Richard K. Mellon Foundation.

Recipients of the first three Senior Technical Staff Awards are Albert Bradley and Kenneth Prada of the Applied Ocean Physics and Engineering Department and Jerome Dean of the Physical Oceanography Department. Nominations were solicited from the scientific and technical staffs, and the first three awards were announced in May

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Photos by Tom Kleindinst



Smith Chair recipient Bob Beardsley (second from right) with donors Walter and Hope Noyes Smith (left) and Director Bob Gagosian.



Adams Chair recipient Peter Wiebe (right) with donor Charles Adam.

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## New Senior Scientist Chairs

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he would fund the first Senior Scientist Chair in the Institution's current \$50 million Capital Campaign if they would fund two additional chairs. Adams said he supports the Institution because he believes strongly in its work and mission and its commitment to excellence. By October 1995 his challenge had been met. Nominations were then requested, and the first recipients of two of the new chairs were announced in May. Details are being completed for the third chair.

Senior Scientist Peter Wiebe of the Biology Department was presented the first Adams Chair for his research in biological oceanography. Donor Charles Francis Adams assisted Director Bob Gagosian in presenting the chair, symbolized by a named plaque, to Wiebe. Adams, whose family has been affiliated with WHOI since its founding in 1930, is the former Chairman of the Board of Raytheon Company.

Peter Wiebe's research has focused mostly on the quantitative population ecology of marine zooplankton," Director Bob Gagosian said in announcing the award. "Because of his expertise, he has assumed a leadership position in the present George's Bank program GLOBEC (Global Ocean Ecosystems Dynamics), a fundamental yet directly socially relevant multidisciplinary study of the dynamics of zooplankton and fish populations on that New England fishery."

"Peter has convinced not only his own colleagues in biological oceanography but in other disciplines that they need to work together to understand the problems of nature," Bob Gagosian said at the award presentation.

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.

Writer/Editor: Shelley M. Lauzon  
Staff Support: Kathleen Patterson

"Peter believes strongly that nature is not a single discipline. It is many disciplines intertwined, and that is how you unlock the secrets of nature. He has worked tirelessly on that effort, talking with people at NSF and ONR, organizing programs and pushing this concept in the oceanographic community."

Peter Wiebe joined the Institution staff as an assistant scientist in 1969. In 1974 he was promoted to associate scientist and in 1984 to senior scientist. He served as Chair of the Institution's Biology Department from 1988 to 1992, and has been an Adjunct Professor at Boston University since 1989. A 1962 graduate of North Arizona University, Wiebe received his Ph.D. in 1968 from the University of California at San Diego. Prior to joining the WHOI staff he served as a research assistant at Scripps Institution of Oceanography at the University of California, San Diego, from 1962 to 1968, as a post-doctoral fellow at Hopkins Marine Station of Stanford University from 1968 to 1969, and as a temporary assistant professor at Oregon State University in 1969.

"The thoughts that came to me shortly after Bob came to my office and told me I was the first recipient of the Adams chair were amazement, relief, opportunity, freedom and gratitude," Peter Wiebe told the Trustees and Corporation Members. "I was amazed because I thought he was joking. There are so many able people on the senior scientific staff. I was relieved because the immense pressure to continuously think of new ways to bring funding support to me and the people who work with me had been lessened for a while.

"I had been handed an opportunity to develop new ideas and to pursue them, or to return to old data sets that had not been adequately explored for lack of funding to study them," he said. "This opportunity comes without any strings attached, none of the strings that come with our traditional funding sources. That gives rise to freedom. No strings attached means there is freedom to pick and chose those subjects of inquiry according to my inner dictum, not according to the peer review process and the will of the funding agencies. That is real freedom."

Wiebe also said he felt a real sense of gratitude to not only those who nominated and selected him, but to Charles Adams for "his wisdom and generosity" to make this happen. "He has made an investment into senior scientists which I can assure you will make a significant difference to me personally, and that I believe will make a significant difference to this Institution in the future. The prospect of receiving a senior scientist chair offers hope to those individuals in this rank who have seen, over the last ten to fifteen years, a real long-term decline in the support for scientists that has traditionally come from backers in the federal agencies. These chairs come at a very significant time for us, and our spirits get lifted by this kind of an occasion."

"Those of us who have reached the senior scientist ranks are driven to do the work, driven because we love it, because we are still very curious about how the world works, and because we want to continue to make fundamental new knowledge available to our colleagues and to the world at large," he added. "The Adams Chair instills in me a renewed vigor, a commitment, and an enthusiasm for continuing what I consider to be my avocation."

Senior Scientist Robert Beardsley of the Physical Oceanography Department was awarded the first Walter A. and Hope Noyes Smith Chair for his research on coastal ocean processes. Walter and

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## Trustees/Corporation Members Elected at Spring Meetings

Sixteen new Trustees and Corporation Members were elected at the spring meetings of the Trustees and Corporation in Woods Hole May 16-17. Five new Honorary Trustees and six Honorary Members were also elected, and 30 Trustees and Members were re-elected.

Highlights of the meeting included presentation of two new Senior Scientist chairs, the Adams Chair to Senior Scientist Peter Wiebe of the Biology Department and the Walter A. and Hope Noyes Smith Chair to Senior Scientist Bob Beardsley of the Physical Oceanography Department (see article page 1). Recipients of the first Senior Technical Staff Awards, Al Bradley and Ken Prada of the Applied Ocean Physics and Engineering Department and Jerry Dean of the Physical Oceanography Department, were introduced at a May 16 dinner and had a chance to discuss their research with Trustees at a reception and poster session (see article page 1). All senior scientist chair holders were also invited to the dinner and introduced by Director Bob Gagosian. Joe Pedlosky and Stan Hart, holders of the Doherty and Iselin chairs, respectively, spoke at the Joint Trustee/Corporation Meeting the following day about what the chairs had enabled them to do in their research.

Among the Corporation business items reported on at the meetings by the Chairman of the Board were creation of a Business Opportunities Ad Hoc Committee to assist the Institution in developing non-traditional revenue opportunities, and the appointment of Pam Hart, Executive Assistant to the Director, as Deputy Clerk of the Corporation.

Other activities during the meeting (see photos pages 8-9) included a New Member orientation and tour, a roundtable discussion with alumni, students and postdocs on "Life After an MIT/WHOI Ph.D.," and discussion with Department Chairs on research activities. The Members and Trustees also had a breakfast roundtable discussion on "Communication in Times of Change," learned what WHOI was doing on the Internet and World Wide Web, and heard from Physical Oceanographer John Toole about his recent cruises as part of the Brazil Basin Tracer Release Experiment. Many of the more than 50 scientific and senior technical staff members involved in the Partnership Program with Members and Trustees also had the chance to catch up with what each other was doing after the meetings Friday afternoon.

In the business meetings, four new **Trustees** were

Photo by Tom Kleindinst



*Trustee and Capital Campaign Committee Chair John Bockstoce (right) discusses a poster display with Senior Associate Director and Director of Research Jim Luyten at the Trustee reception and dinner May 16.*

elected to four-year terms in the Class of 2000:

**Robert A. Day** is Chairman of the Board of Trust Company of the West in Los Angeles, CA. He is Chairman of the Board of the W.M. Keck Foundation and Chairman of the Board of Trustees of Claremont McKenna College, where he received his bachelor's degree. He resides in New York City and Edgartown, MA.

**James B. Hurlock** is a partner in the New York law firm White & Case. He is a Trustee of The Presbyterian Hospital in New York City and The Parker School of Foreign and Comparative Law and a member of the New York Yacht Club and Mystic Seaport Museum. A graduate of Princeton University, he was a Rhodes Scholar at Oxford University and received his law degree from Harvard University. He resides in Greenwich, CT.

**William J. Kealy** is a Limited Partner in the investment firm of Goldman, Sachs & Co. He is a graduate of St. John's University and resides in Duck, NC.

**Breene M. Kerr** is President of Brookside Company. He is a former Vice President of Kerr-McGee Chemical Corporation, and also served as Assistant Administrator of the National Aeronautics and Space Administration. He is a graduate of MIT and resides in Greenwich, CT.

Re-elected for four-year terms as **Trustees** in the Class of 2000 were:

**Arthur Yorke Allen** of New York City and Edgartown, MA, who is affiliated with Hovey, Youngman Associates, Inc.;

**Lewis M. Branscomb** of Concord, MA, Director of the Science Technology and Public Policy Program and Aetna Professor in Public Policy and Corporate Management at Harvard University;

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## First Senior Technical Staff Awards Presented *continued from page 1*

by Institution Director Bob Gagosian. The \$60,000 allocation to each recipient is intended for use primarily for salary support during a three-year period which began June 1, 1996.

"The Woods Hole Oceanographic Institution (WHOI) has a long-standing tradition of excellence in research and education and in access to the sea," Bob Gagosian said in announcing the awards. "One of the most unique qualities of the Institution is its extraordinary engineering and instrument development capability, which has enabled the essential links between research and the sea. Behind these links are our Technical Staff. With the current state of research support in this country, it is important that we act now to preserve and build upon our strengths."

Senior Engineer Al Bradley of the Applied Ocean Physics and Engineering Department develops in-situ ocean research instrumentation systems, including low power sensors, data handling and control, acoustic tracking, sensing, telemetry and control, and autonomous underwater research vehicles and systems. Author or co-author of more than 30 technical papers and articles, Bradley joined the Institution staff as a summer employee in 1967 between graduate programs at Cornell University

and Massachusetts Institute of Technology (MIT). Following a year-long postdoctoral appointment in the Ocean Engineering Department at MIT, he was hired by WHOI in September 1974 as a research associate, was promoted to research specialist in 1982, and in 1991 was promoted to his current position as senior engineer.

Bradley received his B.S. degree in engineering physics from Cornell University in 1966, an M.S. degree in engineering physics from Cornell in 1967, and a Ph.D. in ocean engineering from MIT in 1973. His thesis was entitled "An Instrument for Measuring Deep Ocean Pressure Fluctuation." That was the first of many instruments, from subsurface floats to temperature and current profilers to integrated communications in buoy systems, that he has developed for use by colleagues at WHOI and by other ocean scientists around the world. His skills and interests have also led to development of a number of underwater research vehicles and systems. Most recently Bradley has served as one of three principal investigators who developed the Institution's first autonomous vehicle, the Autonomous Benthic Explorer, or ABE. The vehicle conducted its first science mission in 1995.

Al describes himself as a toy maker, and a visit to his lab in Smith is testament to his love of models. He has put his award "in the bank" for the time being until he finds that "breather to try some long shots that would be difficult to fund through normal channels."

Senior Research Specialist Jerry Dean of the Physical Oceanography Department has spent his twenty-six year career at WHOI developing and refining oceanic and marine meteorological sensors and systems for moorings and buoys as well as free-drifting, acoustically-tracked vertical current meters. He has also focused his research efforts on instrumentation calibration techniques and analysis, and has worked to improve, adapt or customize instrumentation for specific scientific experiments. Ocean current measurements are now made throughout the world's oceans with the expectation of 90 percent or better data return.

A veteran of 44 research cruises, Dean is the author or co-author of six scientific publications and nine technical reports. He joined the WHOI staff as a research associate in 1970, was promoted to research specialist in 1977 and to his current position as senior research specialist in 1993. Dean attended Emory and Henry College in Emory, Virginia, from 1952 to 1954 before serving in the U.S. Marine Corps from 1954 to 1956. He resumed his education at Virginia Polytechnic Institute in Blacksburg, where he received a bachelor's degree in electrical engineering in 1959. He joined Sperry Marine Systems in Charlottesville, Virginia, in 1959 building compasses for the U.S. Navy, work which led him to WHOI in 1970.

Jerry says he wanted to come to WHOI to work in a

*Continued on next page*



Al Bradley (left) explains the workings of the Autonomous Benthic Explorer (ABE) to Trustee George Moss (partly hidden) and Chairman of the Board Frank Snyder at a reception May 16 on the Clark 5th floor.

Photo by Tom Kleindinst



*Jerry Dean (right) discusses instrument development with Trustee Mike Safe.*

supporting role in a science department, was lucky and got his wish. He enjoys putting hardware together, refining instruments and making them work under difficult conditions.

One of the projects he would like to do with his award funds is produce a CD-ROM technical report of standard designs, instruments and mooring systems he and others have developed and/or refined that will be accessible to many in the future. "They won't have to re-invent the wheel, and they will benefit from the mistakes of the past and the experiences of many before them." He would also like to do a written history of neutrally buoyant, free-drifting floats, known as Swallow floats after the late British oceanographer John Swallow who built and first used them. He also hopes to write about his 16 years of experiences working in the Institution's Buoy Group.

Principal Engineer Ken Prada of the Applied Ocean Physics and Engineering Department specializes in computer and related systems for at-sea data acquisition and analysis, the development of hardware and software for varied shipboard and shore-based applications, and development of microprocessor applications for shipboard, buoy and underwater instruments.

Author or co-author of more than 25 scientific and technical publications and reports and the holder of one patent, Prada has worked at WHOI for 30 years. He began employment as a research assistant in March 1966 and was promoted to a research associate in 1968 and to research specialist in 1973. In 1981 he was promoted to a senior research specialist and created the Applied Engineering Laboratory, which he managed until 1985. He then created the Instrument and Systems Development

Laboratory, which he still manages. In 1990 he was named a principal engineer.

Prada attended the University of Massachusetts from 1956 to 1958, the Electronics School at the Naval Training Center at Great Lakes, Illinois, in 1959, and the Missile Guidance and Tracking School at Redstone Arsenal in Alabama in 1960. He also attended the Capitol Radio Engineering Institute from 1967 to 1969. Prior to joining the WHOI staff he served as an electronics technician for the Hawk Missile System, U.S. Marine Corps, from 1960 to 1963, during which time he also worked as owner/manager of BDN Electronics in Twenty-Nine Palms, California. Following a brief period in 1963 as a service technician for Bar-Mac Inc. in Los Angeles, California, he took a position as service manager for Hudson Television in Gardens, California. In 1966 he moved to Falmouth and joined the WHOI staff.

Ken says the award will give him "an opportunity to stop, take a deep breath and THINK, without the constant pressure and interference that comes from the daily production grind." His award may also move closer to reality "a few designs that could benefit instrumentation and data collection systems that nobody has had the time or funding to support."

"It is our hope that in three years we will have been successful in raising some additional support which will enable us to continue the Institution's commitment to our Technical Staff in this and other ways," Director Gagosian said of the awards. "This is a new hallmark for WHOI."

The Richard K. Mellon Foundation funds supporting these new awards were raised as part of the Institution's on-going \$50 million Capital Campaign, which began in 1990 and officially ends in December. More than \$46 million of the goal has been raised to date.



*Ken Prada (left) with Chairman of the Board Frank Snyder and Trustee Nancy Milburn.*

## WHOI Oceanographer Receives Cody Award from Scripps Institution of Oceanography

Senior Scientist Kenneth Brink has been awarded the 1996 Robert L. and Bette P. Cody Award by the Scripps Institution of Oceanography (SIO) at the University of California, San Diego. The Cody Award is the highest honor bestowed on an oceanographer by Scripps.

Brink was recognized for his contributions to the field of physical oceanography, in particular coastal circulation. His research focuses on the response of waters over the continental shelf and their response to wind-forcing. The author or co-author of 55 scientific publications, Brink has contributed to a variety of sea-going experiments as well as to theoretical research projects, and has worked closely with oceanographers in other disciplines to promote interdisciplinary research in coastal oceanography.

"Dr. Brink is a theoretician who is well known for his field work and experiment design," Scripps Director Edward Frieman said. "He has made many significant contributions to the understanding of wind-driven coastal upwelling. We are very proud to have the opportunity to recognize his scientific contributions with the 1996 Cody Award." Brink was presented the award at a reception and dinner in San Diego May 2.

Brink's research has provided new insights and understanding on a broad array of physical oceanographic processes and phenomena in coastal and open ocean regions. "As a theoretician he has benefited major elements of the experimental oceanographic community by taking a leadership role in significant field efforts involving the national and international oceanographic community," the award citation states. "He has worked closely with other disciplines in oceanography to understand the interactions responsible for the distributions of not only physical characteristics but also biological and chemical properties. Through his scientific curiosity, intellect and personality Dr. Brink has helped bring about a deeper understanding and appreciation of ocean science and its importance to society as a whole."



*Ken Brink displays the bronze medal he received as part of the Cody Award.*

Brink was born in Buffalo, New York, in 1949 and graduated from Cornell University in 1971 with a B.S. degree in engineering physics. He then studied at Yale University, where he received a M. Phil. degree in physical oceanography in 1973 and a Ph.D. degree in physical oceanography in 1977. He served as a research assistant at Yale from 1971 to 1976, and from 1977 to 1980 was a postdoctoral research associate and later research associate at Oregon State University.

His affiliation with Woods Hole Oceanographic Institution began in 1974 as a fellow in the summer Geophysical Fluid Dynamics program. He joined the WHOI staff full-time in 1980 as an assistant scientist, was promoted to associate scientist in 1984 and to senior scientist in 1993.

Brink has been active in the international oceanographic community, serving as associate editor of the *South African Journal of Marine Science* since 1984, as associate editor of the *Journal of Physical Oceanography* since 1985, and as a

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*Ken Brink (center) with wife Nancy (standing right) escorted Sir Cecil Green (second from left) to the Cody Award dinner and presentation at Scripps in May. SIO's Walter Munk is at far left, and Judith Munk is seated at far right.*

Photos by Jennie Hinkle/SIO Photo Lab

## Cody Award

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member of the editorial board of the *Journal of Marine Research* since 1989. He served as a guest editor of the *Journal of Geophysical Research* in 1990, and since 1994 has been a member of the editorial board for the book series, *The Sea*. He received the American Meteorological Society's Editors' Award in 1985.

A leader in the development of a national program for interdisciplinary research in the coastal oceans, Ken Brink served briefly in 1985 as a program manager in coastal sciences at the U.S. Navy's Office of Naval Research before assuming roles in major national and international research programs. He was a member of the organizing committee for the Global Ocean Ecosystems Dynamics (GLOBEC) program from 1987 to 1988, and chairman of the steering committee for the Coastal Physical Oceanography program from 1988 to 1990. From 1990 to 1993 Brink served as chair of the steering committee for the Coastal Ocean Processes (CoOP) program, and has

been a member of the CoOP steering committee since 1990.

Ken Brink served as a member of the Ocean Studies Board of the National Research Council (NRC) from 1991 to 1994, during which time he served as vice chairman of the Navy Committee in 1992, as chair of the Navy Committee in 1993-1994, and as a member of the NRC's Committee on the Coastal Ocean from 1993 to 1994. He was elected a Fellow of the American Association for the Advancement of Science in 1995.

The Cody Award was established by Robert and Bette Cody of Menlo Park, California, in 1988 to recognize outstanding scientific achievement in oceanography, marine biology, and the earth sciences. The award, a bronze medal and cash prize, is presented bi-annually "to an internationally recognized individual whose originality in his/her field has resulted in productive work in any of these disciplines. The award is designed to generate public interest in these fields and inspire graduate students and young scientists by recognizing individuals whose careers have been dedicated to first-rate research." The

recipient presents a general lecture to the public and a seminar for Scripps faculty and students.

The Cody award was first presented in 1989 to Yale University Professor George Veronis, with whom Ken Brink studied, for his contributions to geophysics and applied mathematics. In 1992 Microbiologist Holger Jannasch of WHOI received the award, and in 1994 it was presented to Geologist Ken Macdonald of the University of California at Santa Barbara, a graduate of the MIT/WHOI Joint Graduate Program in Oceanography and Oceanographic Engineering.

"The community of science we live in has a value system that puts heavy emphasis on excellence and the quality of one's work," Ken said of the award. "Part of being in that community means that you always wonder if what you are doing is good enough. Receiving an award like this is very gratifying because it lets you know that maybe you are doing the right thing after all. I am very honored and grateful that Scripps has presented the Cody Award to me."

## Research Vessel *Knorr* Sets Another Record

Research Vessel *Knorr* set another record earlier this year when it traveled 10,833 nautical miles, from Durban to Cape Town, South Africa, on Leg XVI of Voyage #145. The February 10 to March 28 cruise is the longest single leg (by miles) in Institution history.

The ship conducted a bottom mapping survey on the Southwest Indian Ridge as far as 53° South under the direction of Chief Scientist John Madsen of the University of Delaware. The 52-day leg was funded by the National Science Foundation.

A new SEABEAM 2112 system, one of only five full-depth, swath bathymetric survey systems in the academic research fleet, had been installed on the ship last year with Office of Naval Research funding and tested on subsequent cruises, but this was the first cruise to use the fully operational system.

Associate Director for Marine Operations Dick Pittenger said the scientists aboard indicated that had they done the same survey with the older version of SEABEAM on *Atlantis II* it would have taken eight months. *Atlantis II* has one of the first generation SEABEAM systems and was one of the first vessels in the civilian fleet to receive the older version. The new *Atlantis* will be equipped with a third generation SEABEAM system similar to that on *Knorr*.

"It was a rough weather cruise, but the ship was able to get the data the scientists needed," Pittenger said. "We (WHOI) now have the best multibeam bathymetric mapping system in the academic research community."

Master of R/V *Knorr* was A.D. Colburn and Chief Engineer was Dave Hayden. Hayden said the ship used more than 120,000 gallons of fuel.

## Federal Per Diem Rates Available Online

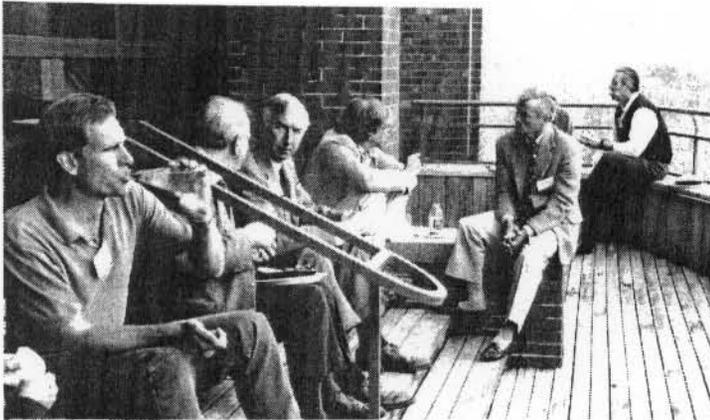
Federal Per Diem Rates can be accessed via the Internet with Netscape at: <http://dosfan.lib.uic.edu>. That location will bring you to the Department of State Home Page on the World Wide Web (WWW); the rates are available under America's Desk. If you use Mosaic or another WWW browser, connect to the URL at: <http://dosfan.lib.uic.edu/dosfan.html>. The Department of State Foreign Affairs Network (DOSFAN) is accessible via gopher at: [dosfan.lib.uic.edu](gopher://dosfan.lib.uic.edu) port 70. The Universal Resource Locator (URL) for this service is: <gopher://dosfan.lib.uic.edu>.



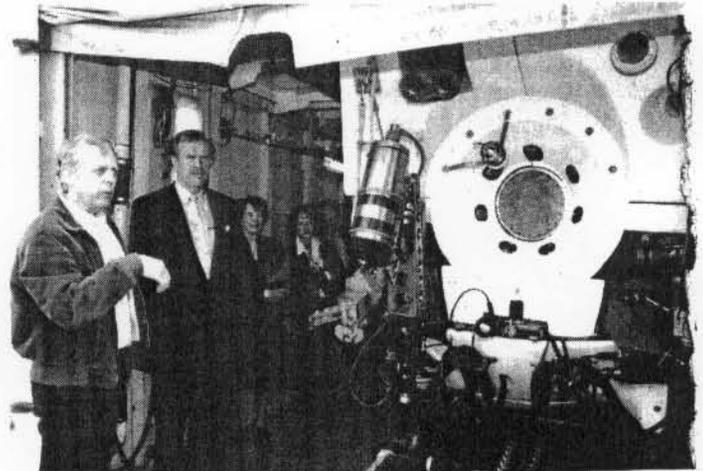
*Assistant Scientist Kathy Ruttenberg (left) hosted new and current Members in her McLean Lab during an orientation tour May 16. Next to Ruttenberg (left to right) are Anne Sawyer, Joyce Moss, Lisina Hoch and Bob James.*



*Roger Stokes (right) and new Member Paul Keeler discuss underwater imaging during the new Member tour.*



*Scientific and Technical staff and their Trustee/Corporation partners enjoyed the Clark 5 deck during lunch May 17.*



*Dudley Foster (left) explains Alvin operations aboard Atlantis during the Member tour May 16.*



*Senior Scientist Judy McDowell (left) chats with Trustee Bill Kealy and his wife Ellen at the Partnership Program lunch May 17.*

## **Scenes from the Spring Trustee/Corporation Meetings**

**Photos by Tom Kleindinst**



Corporation Member Dodge Morgan (left) with Peter McCormick, Trustee and Corporation Treasurer in John Toole's lab.



Associate Scientist John Toole (right) passes equipment to Trustee Al Zeien that he used on a recent South Atlantic cruise during a Friday afternoon science briefing.



Enjoying the events are Honorary Trustees (left to right) Guy Nichols, Tom Wescott and Kent Swift.



Honorary Member Anne Sawyer looks at some data in Kathy Ruttenberg's lab during the Member tour May 16.



Julie Allen (standing) guides Corporation Members Sam Bemiss (top) and Tom Tierney through the Internet and WHOI's Web site in the new Employee Training Facility in Clark Laboratory.

## Retirement of Research Vessel *Atlantis II* Marks the End of An Era

### July 23 Celebration Planned

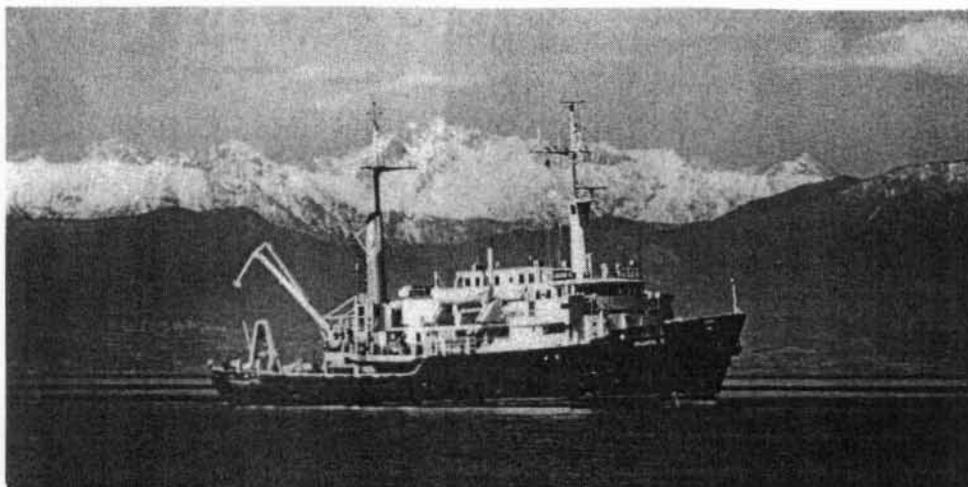
After a 33-year career and countless contributions to ocean sciences, the 210-foot Research Vessel *Atlantis II* is being retired from the Woods Hole Oceanographic Institution's research fleet and from the national academic research fleet. The ship, support vessel for the deep-diving submersible *Alvin* since 1984, returned to Woods Hole July 3 from its last science cruise.

*Atlantis II's* Voyage #134 departed Woods Hole June 20 to conduct chemical studies on the continental slope south of Cape Cod, Massachusetts., with 12 *Alvin* dives and other scientific activities planned. Chief Scientist was Associate Scientist Bill Martin of WHOI's Marine Chemistry and Geochemistry Department.

No other research vessel has covered as much of the ocean as the *Atlantis II*. During its career the ship sailed more than 1 million miles (1,006,912) in every ocean on 468 cruises and spent 8,115 days at sea conducting ocean research and engineering projects. *Atlantis II* visited 112 ports in 78 nations and hosted thousands of visitors, from school students and local residents to scientists and government officials at all levels, including Vice President Hubert Humphrey in 1967 and Japan's former Crown Prince and now Emperor Akihito in 1987.

*Atlantis II's* first science cruise, to Bermuda and back for geophysical research, departed Woods Hole February 21, 1963, just three weeks after delivery from a Maryland shipyard. Bottom dredges, bathymetry, photography, reflection profiling, plankton tows and hydrographic stations were taken on that first cruise. Chief Scientist was Geophysicist John Reitzel and the scientific party included Hartley Hoskins and Rudy Scheltema. First captain was Emerson Hiller, previously master of

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*Atlantis II* in the Black Sea in 1969. The ship has sailed over one million miles.

*R/V Chain*. Chief Engineer was Dwight Hamblet, and the crew included Mike Palmieri as Third Mate, John Whebble as First Engineer, Ray Rioux as Second Engineer, John Bizzozero as Third Assistant, Paul Howland as Able Seaman, and Alden Cook as Radio Officer.

The ship's contributions to the nation were to begin almost immediately. *Atlantis II's* second voyage, intended to be a routine biology cruise in the Gulf of Maine with Nat Corwin as Chief Scientist, departed Woods Hole April 5, 1963 but was soon interrupted with the news that the U.S. nuclear submarine *Thresher* had sunk 220 miles east of Cape Cod in 8,000 feet of water. The *A-II* was asked to proceed to the scene to assist in the search. The ship collected the first photographic evidence of the sub's remains, receiving a commendation from the Navy for its work.

There are many "firsts" and notable events in the ship's career, starting in 1966 when *Atlantis II* became the first research vessel to take a computer to sea. In October 1975 the ship departed Woods Hole for what was to become the longest voyage by miles of any Institution vessel, a 573-day trip over almost 80,000 miles around the world with a return to Woods Hole on May 21, 1977. In 1986 the vessel visited the

wreck of the R.M.S. *Titanic* in the North Atlantic Ocean, discovered in 1985 by another Institution vessel, *R/V Knorr*, with the new towed imaging system *Argo*. Twelve *Alvin* dives were made to the wreck to test the Institution's prototype remotely operated vehicle *Jason Jr.* and other deep-sea imaging systems amidst worldwide publicity.

During its first twenty years of operation, *Atlantis II* conducted cruises in all disciplines as a general purpose global research vessel. The original steam propulsion system was replaced by diesel in 1979 to reduce operating costs and increase the range of ports in other nations. In 1983 the vessel underwent a mid-life refit and was converted to support sea-going operations for the three-person submersible *Alvin*, which needed a more capable support vessel. Much of the ship's work since 1984 has focused on exploration of the Mid-Ocean Ridge in the Atlantic and Pacific for biological, geological and geochemical studies with *Alvin*, although *Atlantis II* also continued to perform general oceanographic research.

*Atlantis II* was built by the Maryland Shipbuilding and Drydock Company in Baltimore, Maryland, under a \$5 million grant from the

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## A-II Retires *cont. from page 10*

National Science Foundation and launched September 8, 1962. The ship was christened by biologist Dr. Mary Sears of WHOI. Principal speaker at the launch ceremony was National Science Foundation Director Dr. Alan Waterman. *Atlantis II* arrived in Woods Hole February 1, 1963 from Baltimore and was officially turned over to WHOI that day. At the time it was considered the first of the modern fleet of oceanographic research vessels built to serve the United States academic research community.

Fondly called the *A-II* by Institution staff, the ship was named for the Institution's first research vessel, a 142-foot steel-hulled ketch named *Atlantis* which sailed from 1931 until it was retired in 1964 after a remarkable 33-year career. *Atlantis* was sold to the Government of Argentina in 1966, rechristened *El Austral*, and is still in limited service to oceanography.

*Atlantis II* will depart Woods Hole for the last time on July 23 for a Louisiana shipyard, where the stern A-frame for submersible launch/recovery will be taken off the ship. With National Science Foundation approval, the ship has been sold to a private U.S. firm which intends to use it for fisheries research in the Pacific and Gulf of Alaska.

An Institution celebration is planned July 23, with current National Science Foundation Director Neal Lane expected to participate in the festivities. Invitations with an RSVP have been sent to WHOI staff, graduate students, retirees, Trustees and Corporation Members, former officers and ship's crew to attend the celebration and farewell ceremony, which begins at noon on the WHOI dock.

Commemorative T-shirts and baseball hats will be on sale, and a booklet highlighting the ship's career will be available to everyone at the celebration. Extra copies will also be available from the News Office. Members of the *Atlantis II* Celebration Planning Committee are: Dick Pittenger, Rick Chandler, Ernie Charette, Hovey Clifford, Joe Coburn, Vicky Cullen, Bob Dinsmore, Ruth Goldsmith, Shelley Lauzon, Bill McKeon, Dorsey Milot, Patty Odams, Pat Remick, Jacquie Sutor, Bruce Warren and John Waterbury.

## Staff Honors and Awards

Senior Scientist Tim Stanton of the Applied Ocean Physics and Engineering Department has been elected a Fellow of the 7,000-member Acoustical Society of America "for significant advances in acoustic scattering."

Information Systems Associate Maggie Rioux of the Library was honored in April with the Distinguished Alumna Award from the University of Rhode Island Graduate School of Library and Information Studies. The award was presented "in appreciation and recognition of outstanding professional commitment and distinguished achievements in the field of library and information science" at the school's 19th annual alumni gathering.

Property Administrator Lee Wells has completed all the requirements to become a Certified Professional Property Administrator (CPPA). To become a CPPA requires passing tests in 14 categories of property management, from acquisition through disposition, and having at least two years of experience in seven of the categories. Lee received a certificate and pin from the National Property Management Association earlier this year.

Scientist Emeritus Dave Ross of the Geology and Geophysics Department has become a columnist for the magazine *Saltwater Fly Fishing* and writes about marine science and fly fishing. Dave says he plans "to put a lot of research time into this challenging project". Call him at ext. 2578 if you have any ideas or thoughts for future columns. His first columns focused on understanding tides and tidal currents.

Scientist Emeritus Frank Mather, considered "the father of cooperative gamefish tagging" by many, was honored in March with the Lifetime Achievement Award from Florida's West Palm Beach Fishing Club and Palm Beach County Fishing Foundation. The award honors "an individual who has demonstrated exceptional commitment to sportfishing and conservation" and noted that "Frank Mather's vision and innovation in gamefish research should be an inspiration to the scientific and sportfishing community. He played an instrumental role in the development of how migratory species of fish are managed."

### Employee Capital Campaign Clambake Set for July 20 on the WHOI Dock

Back by popular demand is the Employee Capital Campaign Committee's Authentic New England Clam and Lobster Bake, which will be held July 20 on the Iselin Mall on the WHOI dock.

Bakemasters Bruce Lancaster and Hovey Clifford and their crew will prepare the bake beginning at 4 p.m. The meal includes clams, mussels, corn on the cob, potatoes, linguica and sausage and will be served about 5 p.m. Tickets are \$25 each with lobster, or \$18 each without lobster.

For reservations or more information call the Development Office at extension 4895 (508-289-4895 from outside WHOI). Space is limited to 150 people. All proceeds benefit the Institution's Capital Campaign.

## New Faces



Rachel G. Adams  
JP Student  
MC&G  
Clark 439  
ext. 2931  
M. Conte



Angeles Aguilera-  
Bazan  
Guest Investigator  
Biology  
Redfield 3-32  
ext. 2569  
D. Anderson



Per Carlsson  
Guest Investigator  
Biology  
Redfield 3-24  
ext. 4918  
D. Caron



Brian D. Connolly  
Research Assistant III  
AOP&E  
Bigelow 1-11  
ext. 3439  
W. Geyer



Laurence Connor  
Postdoctoral Fellow  
AOP&E  
Bigelow 411  
ext. 3536  
G. Frisk



Geoffrey K. Ekblaw  
Welder  
Facilities  
Iselin  
ext. 3330  
R. McCabe



Annette Frese  
Research Assistant II  
AOP&E  
Bigelow 109  
ext. 3308  
C. A. Butman



Sonsales Gonzales  
Guest Investigator  
Biology  
Redfield 3-32  
ext. 2569  
D. Anderson



Hillel Gordon  
Guest Investigator  
MPC  
Crowell  
ext. 3376  
A. Solow



Michael Gravois  
Research Assistant II  
Biology  
Redfield 2-12  
ext. 3467  
B. Howes



Xicheng Hu  
Postdoctoral  
Investigator  
MC&G  
Fye 104  
ext. 2740  
J. Moffett



Jeffrey King  
Distribution Assistant  
Facilities  
Quissett Warehouse  
ext. 2349  
J. Murphy



Jason Schwaber  
Research Assistant II  
MC&G  
Fye 136C  
ext. 3222  
O. Zafiriou



Andreas P. Teske  
Postdoctoral Scholar  
Biology  
Redfield 2-40  
ext. 2307  
H. Jannasch



Caixia Wang  
JP Student  
PO  
Clark 330  
ext. 3365  
J. Price/P. Rizzoli

## WHOI Logo Merchandise Licensed to Local Firm; Employees Receive Discount

Photos  
Unavailable

Shannon A. Wagner  
Guest Investigator  
Biology  
Redfield 3-32  
ext. 2921  
D. Anderson

Robert Waters  
Engineering Assistant II  
DSV *Alvin*/ALOPS  
Blake 119  
ext. 2642  
D. Foster

The Institution has entered into a non-exclusive licensing agreement with the Falmouth-based Soft as a Grape (SAAG) clothing firm to produce a line of clothing based on the Institution logo, which is a registered trademark, and on other Institution visual and computer-related images. The new line is called Woods Hole Wear - Images from the Woods Hole Oceanographic Institution.

Clothing with the WHOI logo went on sale May 23 at the new Soft As A Grape store at 97 Water Street in Woods Hole, next to the Institution's Co-op building. Later this summer items with other WHOI images will start appearing in the store, and will eventually be sold in the SAAG Main Street, Falmouth, stores.

WHOI will receive royalties from all sales of WHOI-related merchandise. WHOI employees can purchase the WHOI items and other SAAG clothing at a 35 percent discount by showing a valid WHOI identification card. The purchaser must be the ID card holder, and the discount is valid only at the SAAG Woods Hole store. The WHOI logo items, with few exceptions, differ from those sold at the Institution's Exhibit Center, where employees also receive a discount.

If all goes well, SAAG plans to market these items nationally through catalog sales to museums and science centers, gift shops, at gift shows, and in the firm's own stores. SAAG currently has 14 stores, five of them in Florida and the rest on Cape Cod, and has sales representatives around the nation.

A WHOI team is working with SAAG on designs, packaging and other details and will review all items prior to sale. Team members are Shelley Lauzon (chair), Vicky Cullen, Nancy Hossfeld, Hélène Longyear, Dorsey Milot and Paul Clemente. Royalty income will go into the Institution's unrestricted funds to support research and education programs.

### Promotions

Julie M. Allen (CIS)  
to Information Systems Specialist 2/21/96

Shirley J. Barkley (AOP&E)  
to Staff Assistant III 3/4/96

Ken O. Buessler (MC&G)  
to Associate Scientist w/Tenure 3/1/96

Jeffrey Clemishaw (Facilities)  
to Carpenter 5/12/96

Terence Donoghue (AOP&E)  
to Senior Research Assistant I 5/1/96

Annda Flynn (CIS)  
to Center Administrator 4/24/96

Susan Handwork (G&G)  
to Center Administrator 3/11/96

Matthew C. Heintz (ALOPS)  
to Mechanical Shop Section Head 3/11/96

Mark Kurz (MC&G)  
to Senior Scientist 5/16/96

Lauren Mullineaux (BIOLOGY)  
to Associate Scientist w/Tenure 4/12/96

Charles Olsen (Facilities)  
to Senior Plant Mechanic 5/12/96

Delia W. Oppo (G&G)  
to Associate Scientist w/o Tenure 3/4/96

Alora Paul (Library)  
to Information Systems Assistant III 4/28/96

Jeanne Peterson (Directorate)  
to Staff Assistant II 4/28/96

Lisa Raymond (Library)  
to Information Systems Assistant III 4/28/96

Dajun Tang (AOP&E)  
to Associate Scientist w/o Tenure 5/16/96

Deborah Taylor (PO)  
to Staff Assistant III 4/15/96

Kevin Thompson (Facilities)  
to Senior Plant Mechanic 5/12/96

Robert Wheatcroft (AOP&E)  
to Associate Scientist w/o Tenure 5/16/96

## Trustee/Corp. Members *continued from page 3*

**Joel P. Davis** of Brooksville, ME, President and Treasurer of Seapuit, Inc.;

**Thomas J. Devine** of New York City, a management and financial consultant;

**Joseph Z. Duke III** of Hobe Sound, FL, President and Design Director of Arc International, Inc.; and

**Cecil B. Thompson** of McLean, VA, Chairman and Chief Executive Officer of CYGNUS Corporation and Co-Chairman of Amer/Asian Communications Corporation.

**New Honorary Trustees** are:

**Karen G. Lloyd** of South Dartmouth, MA, Founder, Vice President and Director of The Lloyd Center for Environmental Studies;

**Frank Press** of Washington, DC, and Falmouth, Cecil and Ida Green Senior Fellow at the Carnegie Institution of Washington and former President of the National Academy of Sciences;

**Robert M. Solow** of Boston, Institute Professor at MIT and Nobel Laureate in Economic Science;

**E. Kent Swift** of Woods Hole, President and Treasurer of Harborside Marine & Sports; and

**F. Thomas Westcott** of Attleboro, MA, Chairman of the Board and Treasurer of Westcott Construction Company.

The twelve new **Members of the Corporation** elected to three-year terms in the Class of 1999 are:

**Lawson W. Brigham, USCG (Ret.)**, former Commanding Officer of the U.S. Coast Guard (USCG) polar ice-breaker *Polar Sea*, and former Chief Strategic Planner at USCG headquarters. He was a Research Fellow in the Marine Policy Center and a science faculty member at the Coast Guard Academy, where he received his undergraduate degree. He earned his master's degree at Rensselaer Polytechnic Institute and is a graduate of the Naval War College. He resides in Seabrook, MD.

**Richard M. Burnes, Jr.**, Founder and General Partner of Charles River Ventures in Boston and former Vice President at Federal Street Capital Corp. He is a director of Abacus Direct Corporation, Cascade Communications, CellCall, Inc., Concord Communications, Inc. and Seragen, Inc. A graduate of Boston University and Harvard College, he is a resident of Boston.

**Lisina M. Hoch**, an honorary life trustee of The Asia Society. She is also a Fellow of the Explorers Club and a member of the National Council, World Wildlife Fund. She received degrees from schools in Zurich, Switzerland, and resides in Irvington, NY, and Vineyard Haven, MA.

**Robert L. James**, Chairman Emeritus of McCann-Erickson Worldwide. He was the company's Chairman and Chief Executive Officer (CEO) and a former Vice President of Ogilvy & Mather and Product Manager at Colgate Palmolive. He is a trustee of South Street Seaport Museum, OpSail and the National Academy of Sciences President's Circle, and is a director of the

Smithsonian Institution and vice commodore of the New York Yacht Club. A graduate of Colgate University, he received his M.B.A. from Columbia University and resides in Greenwich, CT.

**Paul J. Keeler, Jr.**, a Principal of Morgan Stanley & Company, Inc., and former President, CEO and Vice Chairman of Tianchi Telecommunications Corp. A graduate of Columbia University, he was a consultant to major securities firms in the areas of technology, marketing and joint venture development. He has served as President of Westinghouse Communications Software, Inc., as Director of MCI Communications Corp., and as President and CEO of Halcyon Securities Corp. He resides in Greenwich, CT.

**Charles R. LaMantia**, President and CEO of Arthur D. Little, Inc. He received his B.A., M.S. and Sc.D. degrees from Columbia University and attended Harvard Business School. Prior to his current position he was Vice President of Chemical, Metals and Energy Industries at Arthur D. Little, Inc., and served as President of Koch Process Systems, Inc. He is a member of the Board of Directors of State Street Boston Corporation, Conference Board, Massachusetts Business Roundtable, and the Massachusetts Governor's Council on Economic Growth and Technology. He resides in Lexington, MA.

**A. Lee Loomis, III**, General Partner of Downtown Associates in New York City and Chairman of the Board of Seamen's Church Institute of New York and New Jersey. He is a trustee of Lenox Hill Hospital, New York City Housing Fund, Mystic Seaport Museum, and The Millbrook School; a director of Alliance Capital Reserves, Inc., and commodore of the New York Yacht Club. He is a graduate of Harvard College and resides in New York City.

**Gratia R. Montgomery**, an advocate of environmental preservation for many years. She organized the purchase of the Colonel E.H.R. Green estate in Dartmouth, MA, through the Round Hill Associates of Boston and is the Founder and Primary Facilitator of the Tia-Ping Foundation. Shortly after meeting WHOI scientist George Grice in 1970 aboard a cruise to Antarctica, she established the Tia-Ping Predoctoral Fellowship in Marine Biology at WHOI. She resides in South Dartmouth, MA.

**Joel Moses**, Provost of MIT, was a former Dean of MIT's School of Engineering and head of the Department of Electrical Engineering and Computer Science. He received his bachelor's and master's degrees from Columbia University and his Ph.D. from MIT, where he still holds the position of professor. A member of the National Academy of Engineering, he resides in Weston, MA.

**Joyce L. Moss**, President of Turner Moss Company and a former Vice President of Private Banking at Citicorp. She previously was Director of Special Financial Projects at Pan American Airways and worked in the Finance Department at TransWorld Airways. She is a

*Continued on next page*

## Trustee/Corp. Members

*continued from page 14*

trustee of the Wildlife Conservation Society and Wildlife Preservation Trust International and is a board member of North Haven Development Committee and 10 Gracie Square Corporation. She received her B.S. degree in economics at the Wharton School, University of Pennsylvania and resides in New York City.

**Thomas J. Tierney**, Worldwide Managing Director of Bain & Company, Inc. He received his B.A. degree from the University of California at Davis and his M.B.A. degree from Harvard University. He is a director of the California Nature Conservancy, Harvard Business School Alumni Association, United Way of Massachusetts Bay, and the

Hoover Institution, and is active in the Young President's Organization and the Conference Board. He resides in Wellesley, MA.

**A. Robert Towbin**, Managing Director of Unterberg Harris, previously served as President and CEO of the Russian-American Enterprise Fund and as a Managing Director of Lehman Bros. He is a director of Bradley Real Estate, Inc.; Columbus New Millennium Fund in London; Gerber Scientific, Inc. and Globalstar Telecommunications. A graduate of Dartmouth College, he is a resident of New York City.

Twenty-four **Members** were re-elected to the Corporation, and six were made Honorary Members.

**New Honorary Members** are:

**Randolph W. Bromery** of Amherst, MA, President of Springfield College and former Chancellor

of the University of Massachusetts at Amherst;

**R. Phillip Hanes, Jr.** of Winston-Salem, NC, President of River Ridge Cattle Company and former CEO of Hanes Companies, Inc.;

**Phyllis F. McKee** of Greenwich, CT, Founder and Owner of KeyHole Boutique and former advisor to Liberty Mutual Insurance Companies;

**Willis B. Reals** of Falmouth, former Chairman and CEO of Texaco Chemical Co.;

**Sidney J. Weinberg** of Marion, MA, a Limited Partner of The Goldman Sachs Group and previously Vice President of the Textile Division of Owens-Corning Fiberglass Corporation; and

**F. Thomas Westcott** of Attleboro, MA, Chairman of the Board and Treasurer of Westcott Construction Company.

## Adams, Smith Chairs *continued from page 2*

Hope Noyes Smith, active supporters of the Institution since 1986, were also present for the presentation of the Smith chair.

Director Bob Gagosian, in introducing Bob Beardsley, said that he had "almost singlehandedly" established the Institution as a world leader in coastal physical oceanography, noting that he set the standard and tone for the entire field. "So much so, that a colleague wrote of Bob that he 'is the intellectual and spiritual leader of coastal oceanography in the United States (and probably the world) today.'"

Robert Beardsley is a graduate of the Massachusetts Institute of Technology (MIT), where he received a B.S. degree in nuclear physics in 1964 and a Ph.D. in physical oceanography in 1968. An appointment as an assistant professor of oceanography at MIT followed in 1968, and he was promoted to associate professor in 1972, a position he held until 1975. Beardsley joined the WHOI staff in 1975 as an associate scientist and was promoted to senior scientist in 1981. He was Chair of the Physical

Oceanography Department from 1985 to 1990, and served as Director of the Coastal Research Center from 1992 to 1995. He has also served as a lecturer at MIT from 1975 to 1977 and as an adjunct professor of oceanography at the University of Rhode Island from 1982 to 1987.

"I'm still in a state of shock. It is a great privilege and a great honor," Bob Beardsley told the Trustees and Corporation Members. "Like Peter, I feel gratitude toward the people who nominated me, to the whole process, and to the Institution. I don't know how many of you have experienced working in a place where you really like to go, where most of the people you work with are friends - you may not love all of them, but they are all there to help you - where the spirit of interaction is so great. I visit other institutions a lot and I always welcome, when I come back, how nice it is to greet friends in the hall, who I can then sit down and really talk about my science with, who I know personally. This has become very much a family to me."

Bob Beardsley thanked those who supported the senior scientists chairs

as well as those who supported the new Senior Technical Staff awards. "I couldn't stand here in front of you today without the support of some of the key technical staff people we have at this Institution. I might have a good idea about making measurements somewhere, but unless I can go and get technical help to do it it wouldn't happen," he said. "A few years ago I needed to make some meteorological measurements that had never been made on the coastal ocean before, related to heat distribution and how it causes stratification. I was able to turn to people here and get technical help to be able to do that. I appreciate very much the positive attitude here at WHOI and the support that we can all give to each other."

The Institution now has eight endowed senior scientist chairs: the Henry Bryant Bigelow Chair, the W. Van Alan Clark Sr. and W. Van Alan Clark Jr. Chairs, the Columbus O'Donnell Iselin Chair, the Stanley W. Watson Chair, the Adams Chair, the Walter A. and Hope Noyes Smith Chair, and the Henry and Grace Doherty Oceanographer.

## Ship Notes

### ATLANTIS II/ALVIN

R/V *Atlantis II* and DSV *Alvin* departed Woods Hole June 5 for biological and ecological studies at Deep Water Dumpsite 106 off the New York/New Jersey coast, returning to Woods Hole June 17.

The ship departed June 20 on Voyage #134, its last science mission before retirement, to conduct chemical studies to determine benthic fluxes and pore water concentrations of carbon and related solutes of sediments on the continental margin. Twelve *Alvin* dives were made to collect bottom water, deploy benthic flux chambers and to core the sediments south of Woods Hole.

*Atlantis II* returned to Woods Hole July 3. *Alvin* was off-loaded July 9 to begin a scheduled overhaul in the Iselin high bay. *A-II* will remain at the dock until it sails for the last time from WHOI July 23 following an Institution celebration of its 33-year career (see article page 10).

### KNORR

R/V *Knorr* arrived at Bridgetown, Barbados, June 20 and departed June 27 on Leg XIX of Voyage #145. Scientists are investigating the relations between volcanic, tectonic and hydrothermal activity on the Mid-Atlantic Ridge at a segment of the Mid-Atlantic Ridge influenced by the Azores Hotspot known as Lucky Strike. The remotely operated *Medea/Jason* imaging system, the *Argo II* optical/acoustical survey system, and the DSL-120 side scan sonar system are being used to map the Lucky Strike hydrothermal vent field and other vents in the area and to obtain detailed geological data about the ridge segment, discovered in 1993 during *Alvin* dives.

*Knorr* is scheduled to return to Woods Hole August 8 after spending most of the past two years working in the Indian Ocean for the World Ocean Circulation Experiment (WOCE). The vessel will undergo scheduled maintenance before departing for physical oceanographic studies in the North Atlantic in October.

### OCEANUS

R/V *Oceanus* departed Woods Hole June 22 on Voyage #280, the third in a series of cruises supporting the Ocean Margins Program of the Department of Energy. Twenty-one moorings were redeployed from the large instrumented mooring array deployed on Voyage #277 on the continental shelf near Cape Hatteras and the Virginia Capes, and one BASS tripod was recovered and redeployed.

*Oceanus* returned to Woods Hole June 30 and

Photo by A. D. Colburn



R/V *Knorr* anchored off Tristan da Cunha in the South Atlantic for an afternoon in April, giving students from the local school a tour of the ship. Master A.D. Colburn said the 427 islanders were happy to see the ship, one of few visitors to the volcanic island each year, and noted that mail is delivered only twice a year! The ship donated copies of "Water Baby: The Story of Alvin" by Victoria Kaharl and "Volcano Weather" by Henry Stommel to the island's library.

Photo by Patricia Pasanen



*Knorr* Chief Engineer Dave Hayden (right) and Kevin Fisk visited Cape of Good Hope, "the south-western most point of the African continent," during *Knorr*'s port call at Cape Town, South Africa, March 28-April 3.

departed July 8 for the first of five cruises in 1996 supporting the Coastal Mixing and Optics Experiment south of Nantucket. The ship will return to Woods Hole July 13 and will spend the summer working out of Woods Hole on cruises in various disciplines ranging from two days to two weeks.