
NEWSLETTER

WOODS HOLE
OCEANOGRAPHIC INSTITUTION



MARCH 1992

Photo by Shelley Lauzon



Craig Dorman selects a name from United Way contributors. And the winner is....

United Way Campaign Raises Over \$24,000

The 1991 United Way campaign at WHOI collected \$24,293.25 through payroll deduction, cash and checks. Contributions were received from 169 employees, representing 20 percent of WHOI's 850 employees. The total raised is about \$1,000 less than the 1990 campaign.

Garber Travel generously donated two round-trip airline tickets to the campaign. Craig Dorman, co-chairman of the 1991 United Way campaign with Shelley Lauzon of the News Office, recently picked the lucky winner from the 169 contributors (see photo above). Congratulations to Dan McCorkle of the Geology and Geophysics Department!

DSV *Alvin* Sets Dive Record

DSV *Alvin*, the world's most active deep-diving manned submersible, set another record March 8 when it made Dive #2,500. *Alvin* is one of only six deep-diving manned submersibles in the world and is the most experienced of the group with 28 years of operation.

Dive #2,500 was made in 2,536 meters (roughly 8,300 feet) of water on the East Pacific Rise at 9°46' North, 104°17' West off the Mexican coast. *Alvin* pilot was Tim Connors and scientific observers were Karen von Damm of the University of New Hampshire and Debra Colodner of MIT. *Alvin* and *Atlantis II* arrived in Manzanillo, Mexico, March 16 to complete the cruise and are scheduled to depart for another series of dives March 20.

WHOI Adopts No Smoking Policy

After nearly two years of discussion, WHOI's new no smoking policy will take effect September 1, 1992. The new policy extends the safeguards for a healthy workplace adopted in the 1985 Smoking Policy (Institution Memorandum #1-85) by restricting smoking in the interiors of all WHOI buildings and vehicles.

The 1985 smoking policy recognized the increasing evidence of health hazards to the non-smoker and prohibited smoking in conference rooms and classrooms (state law prohibits smoking in rooms of "public assembly"). The policy provided for informal resolution about other workplace smoking between parties. An area was to be declared non-smoking if an informal resolution could not be made and the non-smoker was still experiencing "discomfort."

In response to a number of complaints to various members of the Director's Council, a review of the 1985 policy began in January 1991. The Women's Committee initiated discussions about current smoking policy/practices because of its interest in wellness activities and conducted a survey of WHOI employees and students, numbering about 1,000. Of the 497 completed questionnaires received, 462 were from non-smokers. The survey results were then brought to the Policy Advisory Committee (PAC) for discussion and possible policy review.

The 18-member PAC, includes two representatives each from the Graded and Marine Personnel Committee and Staff Committee as

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WHOI's Economic Impact Felt Across Cape Cod

As the second largest non-government employer on Cape Cod (Cape Cod Hospital is the largest with 1,200 employees), WHOI has a major impact not only in Falmouth but across Cape Cod and within Massachusetts.

The Institution's annual operating budget is approximately \$77 million, of which \$33 million is payroll and an additional \$12 million is benefits. About 75 percent of the 850 employees and 135 graduate students live in Falmouth, and they pay about \$400,000 in taxes to the town each year. The Institution itself pays about \$70,000 in annual real estate taxes to the town since many of its buildings (housing, for example) are not tax-exempt. It is the largest non-commercial taxpayer in Falmouth and the sixth largest taxpayer overall.

The remaining 25 percent of employees, excluding the ships' crews who live throughout the U.S., live elsewhere on Cape Cod. Altogether WHOI employees pay an estimated \$1.5 million in taxes to the Commonwealth of Massachusetts.

New money is provided to the state through the \$68 million received from competitive federal contracts and grants. The Institution receives

about \$50,000 from the Commonwealth of Massachusetts.

Most of that contract and grant money goes into the local economy, either through employees or through the Institution itself. For example, WHOI purchases \$8 million in supplies and services in Falmouth, including \$400,000 for fuel for buildings, \$125,000 for landscaping services, \$100,000 for catering services, and \$20,000 at a local lumber yard.

An additional \$1.5 million is spent on supplies and services from other Cape towns, and \$11,470,000 more is spent on supplies and services off-Cape but within Massachusetts. Visitors to WHOI spend many more hundreds of thousands of dollars in the community, including an estimated \$100,000 in local motels.

New facilities at WHOI have brought additional funds and jobs to the area. The National Ocean Sciences Accelerator Mass Spectrometry Facility at McLean Laboratory, completed last year, created 8-10 new jobs and will bring \$5 million to the Institution over a three-year period through a National Science Foundation grant. The accelerator itself was built by a Massachusetts firm, U.S. A MS Corporation in Topsfield.

In addition to the direct economic impact of the Institution, the location of WHOI and other scientific research facilities in Woods Hole has led to the establishment of many "spin-off" marine scientific instrumentation firms in the area. A recent state study revealed that 45 percent of Massachusetts' marine electronics firms are located within a 45-minute drive of WHOI.

Photo by Shelley Lauzon



In warmer days, contractor Danny Knight of West Wareham painted the flagpole in front of the Bigelow Laboratory.

Sea Stories Solicited for Oceanus Magazine

A new "Sea Stories" department is being considered for Oceanus magazine—here's your chance to tell the world your favorite yarn. Please dust off your favorite stories and either send them to the Oceanus office, Caryn House, or call the editor, Vicky Cullen, ext. 2719.

Stories can be long or short, names may be disguised to protect the guilty, and editorial help will be available. Tips about stories the magazine staff might investigate are also welcome. There will be a reward for sea stories published...the staff could also use some help in figuring out what the reward should be.

The Newsletter is published monthly for employees, students and members of the Woods Hole Oceanographic Institution community. Copy deadline is the 25th of the month. Ideas for stories, photos, and items of interest to the community are welcome and should be sent to: Editor, Newsletter, News Office, Woods Hole Oceanographic Institution, Woods Hole, MA 02543. Telephone 508-457-2000 ext. 2270 or 3340.

Editor: Shelley M. Lauzon
Staff Support: Kathleen Patterson

Science/Technology Center at WHOI Would Be Possible with Planning Board Article

The Institution's long history of technology development and transfer of that technology to industry will be enhanced by a variance to Falmouth's zoning by-laws that the Planning Board will sponsor at the April Town Meeting.

The proposed by-law modification would permit WHOI to use a very restricted amount of space on the Quissett Campus, in current or new buildings, for production of items that could be sold. The idea behind the variance, according to Craig Dorman, is that if our own scientists or engineers work with a company to take one of our ideas into production, in some cases it might prove beneficial to actually build the prototypes here, in close contact with the researchers. "We actually can do this now," Dorman said. "The only difference the variance makes is that the product could be sold. Our interpretation of the current law is that now the products would have to be given away or otherwise disposed of to prevent our activities from being classed as 'manufacturing,' which current zoning does not permit. We believe the variance will remove this barrier to industries' willingness to work closely with us on our campus."

Once the procedures for transitioning from a one-of-a-kind laboratory built instrument to a manufacturable product were developed, Dorman said, WHOI would want and expect production to occur elsewhere, such as in the sponsoring company's plant or, if a new facility is required, at a location like the Falmouth Technology Park.

"It is our intent and desire not to establish a WHOI manufacturing operation," Craig Dorman said. "Our objective is to identify projects that are compatible with our ongoing research activities, that originate with our science. We want to create enhanced opportunities for educa-

tion, for consulting, to expand our sponsor base and certainly to help the overall wellness of the area from both an economic and an intellectual standpoint, but only by activities we have historically conducted and that are fully compatible with our basic research and graduate education ethic."

Dorman notes that WHOI has conducted on-campus collaborative efforts with industry and other organizations for years on an ad hoc basis. Examples of collaborators include the Ocean Industry Program participants (oil companies), Associates of Cape Cod, Taylor Seafoods, Webb Research Corporation and Sea Education Association. Dorman also points to USGS as an example of a non-WHOI organization located in WHOI buildings on the Quissett Campus, using our resources and facilities, to the benefit of both organizations as well as the region, state and nation.

Dorman discussed the "science and technology center" concept with WHOI staff at an open meeting in August 1991. Several projects have provided the stimulus to move ahead beyond continuing collaborative efforts to plan for an expanded technology transfer program. Dorman says the Slocum glider, a joint effort between WHOI staff and Webb Research Corporation, and the development of the next generation of conductivity/temperature/depth sensors by Neil Brown and colleagues are just two examples of projects that need to move from the prototype stage to the point where they can be manufactured on a regular basis for the world ocean science community.

"Our primary purpose and objective is basic science and education. In the process of doing our research, our expertise can and does lead to products which can be commercially

manufactured to be used routinely both by ourselves and by other research institutions," Dorman said. "We are interested only in those projects with a high science content and a high degree of collaboration between our staff and the organization working with us on the project. If the project doesn't meet those two basic criteria it doesn't belong here."

Dorman noted that instrument development was one of the first two major initiatives to emerge in 1989 from WHOI's long range research planning process. Since it was identified, WHOI has raised nearly \$3 million of philanthropic support to start it up and endow it. "It seems foolish and selfish to inspire our scientists and engineers to initiate projects to benefit the instrumentation needs to expand our studies of global processes if we don't help them bring their successes to bear on the field as a whole," Dorman said. "This can only be done by getting the new hardware, software and techniques into production. We have an obligation to our federal and philanthropic sponsors, as well as to the global society that is worried about the environment, to do whatever we reasonably can do to simplify this transition process. The variance to the zoning bylaw was aimed at one of the potential impediments to our goal." Dorman commented that similar rationale applies to other outcomes of our research, such as simple and quick methods for testing for shellfish toxicity, or expansion of Associates of Cape Cod's societally beneficial current use of the horseshoe crab to test for medicinal purity.

The proposed change to the bylaw strictly limits the amount of space on the Quissett Campus that could be used for pilot-level production to one-half percent (.5%) of the lot area

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Technology Initiative Program Awards 1991

Twenty-three proposals were received for the 1991 Technology Initiative Program Awards. A total of \$227,000 was awarded to the 10 proposals listed below. Support for these awards is provided by the W. M. Keck Technology Initiative Program, Walter A. and Hopé Noyes Smith Special Fund, the G. Moss Innovative Fund, and the Director's Innovative Fund.

Ken O. Buesseler, "Vertically Integreating Water Sampler," Keck.
Joel C. Goldman and Michael D. DeGrandpre, "An Optical Microsensor for studying Photosynthetic Marine Aggregates," Keck & Ins. Cap. Equip.

Neil L. Brown, "Oxygen Sensor," Keck.

Robert Weller and Alan Hinton, "Digital Signal Processing Hardware for Acoustic Measurement of Rain Rate and Wind Speed," Keck & Smith.

G. Michael Purdy and William S. Holbrook, "The Design of a New Generation of Ocean Floor Seismics Instrumentation," Keck.

Peter L. Tyack, "At-Sea Realtime Dolphin Tracking with Integrated Video and Location Estimate Display," Keck.

Neil Brown, Mike Purdy and Dan Frye, "A Non-Invasive Technique for Economic Use of Retired Submarine Telephone Cables," Keck.

James Irish and Wayne Geyer, "Feasibility Studies for the Next Generation Lagrangian Drifter Using Cellular Phone Telemetry and GPS Positioning," Keck & Moss.

Eugene Terray and Albert Williams, "A New Oceanographic Wave-Direction Observing System," Keck.

Nobu Shimizu, "Construction of a Micro-Heating Stage for Melt Inclusion Studies," Directors Innovative, Institution Capitol Equipment.

Photo by Craig Dickson



Atlantis II in the Eastern Pacific, 1991.

Recently Published Technical Reports and Theses

Copies of the following are available from the Document Library in Clark unless still in press. Contact Susan Berteaux, ext. 2269.

The Marine Geochemistry of Rhenium, Iridium and Platinum

Debra Colodner

1991. The Marine Geochemistry of Rhenium, Iridium and Platinum. Ph.D. Thesis, MIT/WHOI, WHOI-91-30. (272 pages)

ESOM I and II Final Report

Alessandro Bocconcelli, Henri Berteaux, Daniel E. Frye and Dr. Bryce Prindle
WHOI-91-34. (85 pages)

Vacuolation, Proliferation and Neoplasia in the Liver of Boston Harbor Winter Flounder (*Pseudopleuronectes americanus*)

Michael John Moore

1991. Vacuolation, Proliferation and Neoplasia in the Liver of Boston Harbor Winter Flounder (*Pseudopleuronectes americanus*). Ph.D. Thesis, MIT/WHOI, WHOI-91-28. (269 pages)

Cruise Report - Oceanus 218 - March 20-April 9, 1990

Warm Ring Inertial Critical Layer Experiment (WRINCLE)

Raymond W. Schmitt and Elyn T. Montgomery
WHOI-91-33. (41 pages)

Acoustic Wave Scattering from a Random Ocean Bottom

Dajun Tang

1991. Acoustic Wave Scattering from a Random Ocean Bottom. Ph. D. Thesis, MIT/WHOI, WHOI-91-25. (133 pages)

Time-Dependent Ventilated Thermocline

Zhengyu Liu

1991. Time-Dependent Ventilated Thermocline. Ph.D. Thesis, MIT/WHOI, WHOI-91-36. (216 pages)

In Memoriam

Juanita Mogardo, a hostess at WHOI with responsibility for the Institution's catering operation in the late 1970s, died March 4, 1992 in Falmouth at age 75. Juanita began working at WHOI in 1950 as a cook at Challenger Hall during the summer months, finding year-round work in 1956 as a lab assistant in the Biology Department. For many years she took a summer leave of absence to cook at the National

Academy of Sciences. She gave up her dual career in 1975 when she was assigned full-time as a Services Assistant in the Facilities Department. In 1977 she was promoted to Hostess, a position she held until her retirement in 1981. As Hostess, Juanita catered luncheons, dinners and receptions for groups of all sizes. Her talents and hard work were acknowledged by both employees and visitors in the many letters and

notes of appreciation she received through the years.

Editor's Note: Due to space limitations, the Newsletter will carry brief death announcements beginning in this issue. The full obituary will continue to be posted on bulletin boards throughout the Institution. Copies will be available from the News Office, ext. 3340, in the Co-op Building.

Sci-Tech Center *cont. from page 3*

zoned for public use. "This very tightly constrained modification is not required for WHOI to continue its technology transfer efforts," Dorman stressed. "It simply would make it easier for us to develop a potential product and work here with a partner to evolve a manufacturing technique to test whether that product is commercially reasonable. We set limits so that any real production for profit absolutely has to leave to remain viable.

"One of the hardest things for this nation, not just for us, has been making the psychological, ideological and physical transition from the initial idea of a single individual working in a laboratory to the market development of that process or product in an economically competitive sense," Dorman said. "What we are trying to do here at WHOI is build a philosophy, an approach and a capability that would help us rationalize that process and do it better."

Dorman said the Institution would benefit from development of state-of-the-art instrumentation and techniques resulting from the proximity of WHOI staff and people directly involved in product development, whether it be hardware, software or technique. Another positive outcome of such efforts ultimately would be the creation of jobs in environmentally beneficial commercial ventures, an area the state is encouraging as it seeks to diversify the economic base on Cape Cod.

There has been considerable interest in WHOI's concept from Congressional representatives, the Cape Cod Commission, state government officials and others who are looking at developing secure, long-term year-round employment opportunities on the Cape related to marine research and instrumentation.

The Institution has no immediate plans for additional buildings on the Quissett Campus and is not presently negotiating with any firms about such a facility or any start-up production activity in present facilities. The proposed modification to the zoning bylaw would, however, enable WHOI to move forward when and if an opportunity for a collaborative venture arises. "In crass terms," Dorman said, "having such opportunities available is part of the 'art of the deal' whereby potential partners can reach agreement without unduly restricting delay or argument."

Dorman sees no conflict with the Falmouth Technology Park because the science and technology center envisioned at WHOI would be strictly limited to the development of an idea and at most to pilot scale manufacturing of a few prototypes. Once the product and process showed commercial viability, the firm would be required to conduct manufacturing operations elsewhere. The firms would be encouraged, for example, to consider locating their facilities in Falmouth Technology Park.

"If the Institution's basic idea

proves sound, and initial trials in current facilities show industry that investment in the process is warranted, WHOI would consider establishing a physical science and technology center," Dorman said. "This idea was broached in our campus master planning process a few years ago, and has been discussed with staff and town and village representatives. Land behind the current McLean Laboratory could house several small and non-intrusive buildings. Of course, the Institution would submit any construction project to the town and the Cape Cod Commission for review prior to construction. We want to be completely open about what our plans are with all parties concerned."

While discussion about the zoning bylaw variance leads to a vote at the upcoming Town Meeting, the WHOI Policy Advisory Committee is considering detailed wording that encourages continued interaction with industry and other outside organizations, yet constrains WHOI activities to only those fully commensurate with our charter. "Given our resurgent national emphasis on economic competitiveness and global environmental security," Dorman said, "now is a very appropriate time to put into place the policies, procedures, permits and, most appropriately, well defined constraints that offer the best opportunity for actions that are simultaneously institutionally, locally, nationally and globally beneficial."

NEW FACES



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Sigalit Feinsilber
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Registered/ Certified Mail

All outgoing registered and certified mail is processed by Jane Caruso in the Security Office, Smith 206. Call Jane at ext. 2723 for further information.

Promotions

Scot P. Birdwhistell (Chemistry)
to Senior Research Assistant I (2/2/92)

Alan D. Chave (G&G)
to Associate Scientist w/Tenure (1/26/92)

Edward F. Dow (ISC)
to Information Systems Assistant III (1/26/92)

Patricia J. Duffy (Controller)
to Accounting Operations Manager (1/26/92)

Kathryn L. Elder (G&G)
to Research Assistant III (1/26/92)

Marie M. Johnson (Library)
to Information Systems Assistant III (1/26/92)

Anita D. Norton (G&G)
to Staff Assistant III (1/13/92)

Alora K. Paul (Library)
to Staff Assistant III (1/26/92)

Daniel F. Potter (AOP&E)
to Engineer II (1/8/92)

Margaret P. Stern (ALVIN Group)
to Staff Assistant III (1/26/92)

Dana R. Yoerger (AOP&E)
to Assistant Scientist w/Tenure (1/26/92)

Tucholke Elected to AAAS

Senior Scientist Brian Tucholke of the Geology and Geophysics Department was recently elected a Fellow of the American Association for the Advancement of Science (AAAS).

A Fellow is "a member whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished." Tucholke was cited "for research on the tectonic framework of the Atlantic Ocean basin and evolution of passive continental margins, including seismic and rock stratigraphy applied to paleoceanographic studies."

Political Activities Reminder

With the political season upon us, members of the Institution community are reminded that, as individual citizens, everyone is free, and encouraged, to participate in the political process.

However, because the Institution should not be seen as an advocacy organization, individuals should be sensitive to how they participate in this process. Activities in support of political candidates or political positions should not use Institution resources. As an example, correspondence in support of political candidates should be on personal stationery, not on WHOI letterhead, and Institution facilities should not be used for political meetings.

Employee Computer Loan Program Expanded

The computer loan program for WHOI employees has been enhanced to allow employees to purchase one computer in a three-year period. Employees are now able to purchase more than one computer through the program.

The loan program also provides an interest free loan of up to \$1,500 over a period of up to 18 months.

Associate Director for Institution Operations Larry Ladd approved the new guidelines after considering input from WHOI employees. The program encourages employees to gain computer expertise.

For further information on the computer loan program contact the Controllers Office.

Purchasing Office Notice

The Purchasing Office, located in the GEOSECS building on the Quissett Campus, now includes the following personnel and their commodity responsibilities:

Mo Moniz, Purchasing Manager, ext. 2721 - contracts and subcontracts.
Ken Bohr, Assistant Purchasing Manager, ext. 2374 - Marine, mechanical, fuel, gases and metals.
John Powers, Senior Buyer, ext. 2373 - Computers, computer supplies and peripherals, audio and video equipment.
Steve Ferreira, Buyer II, ext. 2372 - Electronic/electrical components,

diagnostic equipment, diving equipment and oceanographic instrumentation.

Sandra Sherlock, Buyer I, ext. 2376 - Scientific equipment and supplies, safety equipment, photographic equipment, supplies and services.
John Wood, Buyer I, ext. 3382 - Fasteners, plastics, drafting and graphic supplies, forms, O-rings, janitorial supplies, water, office furniture and supplies, catering, liquors, steward supplies and clothing.
Laura Oxford, Purchasing Expediter, ext. 2375 - Books, publications, Omnet service, AGU service, software upgrades, reprints. Expedites pur-

chase orders already placed.

Jeanne Silva, Staff Assistant/Receptionist - ext. 2371.

Dale DePonte, Staff Assistant - ext. 2664.

Note: Please fill in and sign the required documentation for any purchase requisition valued at \$2,500 and over. Note that Institution commitments for the purchase of goods and services are made only by purchase order via the Purchasing Office. An individual making commitments on behalf of the Institution does so at his/her own risk and will be responsible for his/her own actions.

Smoking Policy cont. from page 1

well as Department Chairs, members of the Director's Council, the Personnel Manager, Marine Policy Center Director, and the Manager of Submersible Operations. PAC had numerous discussions about the survey and its implications beginning in April 1991. PAC conducted an extensive review of documentation from the Department of Health and Human Services and other documents on the health effects of secondary smoke.

Discussions and debate proceeded over a period of several months on the smoking policies and experiences at other Institutions, the issues for WHOI and the implications of a smoking policy change. During this process members of PAC brought the issue to their respective groups/committees for discussion. In January PAC voted to adopt a no smoking policy. A few housing units are excluded.

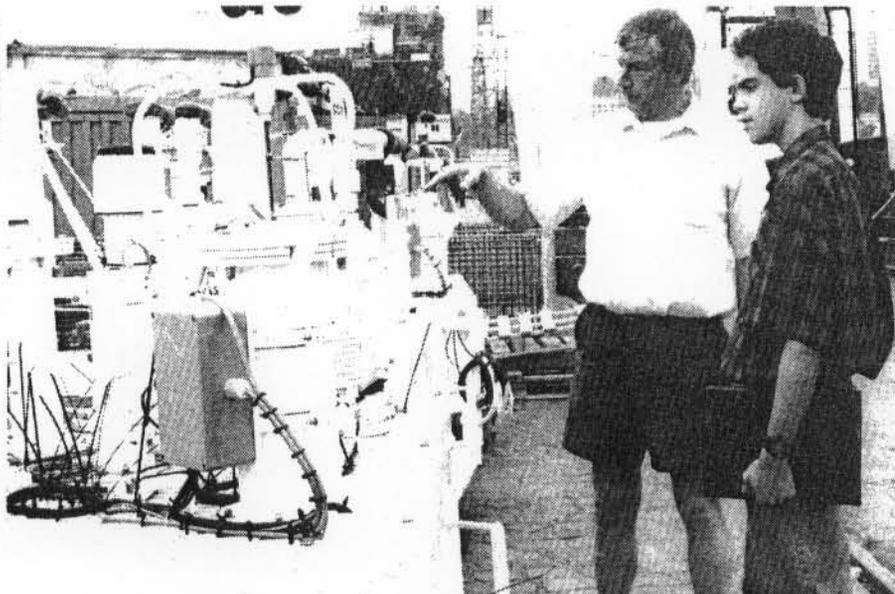
A smoking policy for the ships, also to be effective September 1, is under development.

A recent D.Gram announced the new smoking policy, providing six months notice for smokers to plan and adapt to the change. Programs are available for employees, students and their families who wish assistance to stop smoking. Books and tapes will be available. For further information on available resources contact Karen Rauss, ext. 2645.

Tabs Tallied

Congratulations to Tariesa Lemmon of the Payroll Office, who offered the closest guess as to the actual number of tabs in the recent Carpenter Shop effort to raise funds for the Linda Morse-Porteous Award. The actual total was 38,400 and Tariesa guessed 38,423. She received a cranberry scoop magazine rack made by Bud Baker. The effort raised \$165.27 for the award.

Photo by M. Miller



Dave Casiles explains an IMET sensor package aboard *Oceanus* to a reporter in June 1991 during a port call in the Azores.

Ship Notes

ATLANTIS II/ALVIN

R/V *Atlantis II* and DSV *Alvin* arrived in Manzanillo, Mexico, March 16, completing Leg XXXVIII of extended Voyage #125. They are expected to depart Manzanillo March 20 for an eight-day, 5-dive cruise, returning to Manzanillo March 27. *Atlantis II* and *Alvin* will depart April 1 for continued studies of hydrothermal vent communities along the East Pacific Rise, arriving in Acapulco April 28.

KNORR

R/V *Knorr* returned to Woods Hole March 10, completing Voyage #137. The ship will depart March 21 for a 18-day shipyard period in Jacksonville, FL, followed by an extended voyage to the South Pacific for the World Ocean Circulation Experiment (WOCE) through April 1993.

OCEANUS

R/V *Oceanus* is scheduled to arrive in Funchal, Madeira, March 20, completing the third and final leg of the spring 1992 field program for the Subduction Experiment. The ship will depart March 25 for physical

oceanographic studies in the eastern North Atlantic and will arrive in the Canary Islands April 24.

Melville Leaves Shipyard

WHOI, as project manager, and the Scripps Institution of Oceanography, operator of *Knorr's* sister ship *Melville*, received delivery of R/V *Melville* from McDermott Shipyard March 14, completing the shipyard phase of the *Knorr/Melville* project. *Melville* sailed for San Diego March 17 for final dockside outfitting before returning to service.

Chemistry Department Name Change

The former Chemistry Department is now the Department of Marine Chemistry and Geochemistry.

Mileage Rate Increased

As of January 1, 1992 the automobile mileage reimbursement rate is 28 cents per mile.