

# National Shellfisheries Association

## QUARTERLY NEWSLETTER



WINTER 1997

SOUTHAMPTON, NEW YORK

### President's Message

Well, I've just returned from Tonga, where I was teaching my Tropical Marine Biology course during January. In addition to many close encounters with shellfish in the field (and at the table), I had the opportunity to visit the mollusk hatchery in Nuku'alofa, Tongatapu where the researchers there are having good success raising *Trochus* top shells and *Tridacna*. I didn't recruit any session chairs for the upcoming meeting, but ... no worries. You'll see in the MEETING PROGRAM in this newsletter that Program Chair Jay Parsons has assembled an outstanding collection of contributed papers and special sessions.

The ANNUAL MEETING is just around the corner! If you haven't yet done so, take advantage of the early registration rates (good through March 10). When you book a room with the Fort Walton Beach Holiday Inn, be sure to mention you are participating in the NSA meeting. Also, don't forget to collect your items or concoct your home-brews for the annual NSA Auction. You can mail these directly to Auctioneer Sandy Shumway prior to the meeting or bring them with you when you come to Florida. As of now, we are clearly understocked - please help!

Other important items: by now, you should have received both the NSA dues invoice and the ELECTIONS BALLOT. Your prompt attention to both is appreciated. The Elections Committee has worked hard to put together a solid list of candidates; your input is very important to the future success of the association.

As this is my last President's Message, I would like to take the opportunity to express my gratitude to all the NSA officers, committees and members for making my term an enjoyable one. In looking back at the 6 years between the time I served my first year as Treasurer, and now, I recall many challenges and much satisfaction in seeing how much NSA has grown. But most of all, I remember how much I have enjoyed working with, and getting to know, so many wonderful people. Thanks for a great run!

Steve Tettelbach

### ATTENTION.....

### AUCTION ITEMS NEEDED!!!!



Do your spring cleaning early and be sure to donate your new-found treasures to the NSA Student Auction. *No item is too small or too tacky.* Books, prints, shells, stamps, shellfish paraphernalia, and even unemployed students have brought good prices in the past. T-shirts and home-brew have proven to be especially popular. Help the Student Endowment Fund and clean the attic at the same time. Don't forget, your contributions are tax deductible!

You can either mail your contributions to Sandy Shumway or bring them with you to the meeting. If you are bringing items to the meeting, please let Sandy know what you plan to bring so we get an inventory list together before the auction....it makes life easier for the Treasurer during the event.

See you all in Florida.

### *In this issue ...*

- Annual Meeting registration form
- full program schedule
- hotel and air details
- remote sensing workshop update
- JSR questionnaire
- Aquaculture industry news
- Course & conference announcements

and more



## Metamorphoses

Congratulations to **Ken Chew** who is now serving as the Interim Director of the School of Fisheries at the University of Washington and to **Bill Hershberger** who replaces Ken as the Director of the Western Regional Aquaculture Center (WRAC).

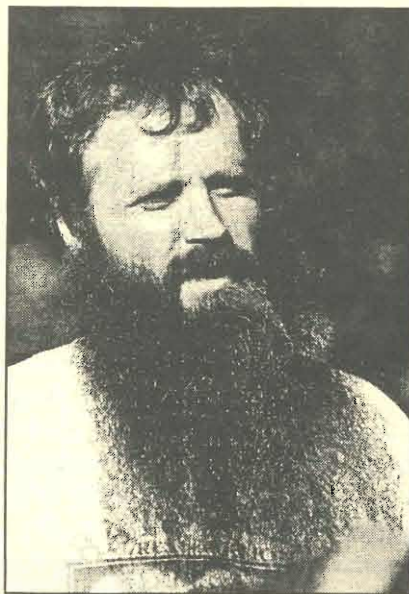
Two familiar NSA members successfully defended their Ph.D. dissertations. Congratulations to **Dr. Gary Wikfors**, University of Connecticut and Milford NMFS Lab, and to **Dr. Michael Moyer**, University of South Florida. For more on Mike's defense, please see accompanying photograph.

Your NSA Quarterly Newsletter editor, **Maureen Krause**, was recently married to Dr. William Horak, a nuclear engineer at Brookhaven National Laboratory. In addition to the responsibilities outlined in his vows, Bill has already agreed to help assemble newsletters at mailing time!

If you have any news to announce in this column, please contact either Maureen Krause or Jay Parsons at the addresses given on the back page.

### **Dr. Mike Moyers sheds his beard following dissertation defense**

In 1982 Mike promised to shave his 3-year-old beard when he received his Ph.D. Seventeen long years later, all 18 inches were clipped with the help of his friends. Even his wife Jill had never seen him clean shaven! So Mike, are you going to let the rest of NSA see your chin at the Annual Meeting?



## *Aquaculture '98*

**Las Vegas, Nevada    February 14-19, 1998**

**Register early and save significant \$\$\$\$**

Shellfish topics currently being covered include: oyster disease research, HAACP, oyster culture, scallop culture, crayfish, shrimp, sea urchins, cold water aquaculture, abalone, and pearl oyster culture. If you don't see your favorite topic here, it's not too late. There is still time to volunteer to organize a special session. If you are interested, call Sandy Shumway SOON.

More information will be available at the meeting in Fort Walton Beach.

## Recruits Corner

It's almost time for that little trip to Florida. The 89th Annual National Shellfisheries Association Meeting in Fort Walton Beach, Florida is scheduled for April 20-24, 1997. In order to make the meeting more fulfilling, may I suggest helping out the Recruits with some of their tasks. This is a great way to meet people and have a little fun in the process. We need help with the registration desk, AV equipment, NSA sales booth, the annual student reception and the NSA auction. Which reminds me, if you have any items you wish to donate for the auction, please bring them with you and contact Sandy Shumway before the meeting. Almost anything goes! Just a reminder, some of these events directly contribute to Student Endowment Fund which helps defray registration or travel costs for those attending the meeting. If you received an award from this fund, you are expected to assist in some capacity. If you wish to help out, which I hope you will, please contact Ryan Carnegie at [rcarnegi@apollo.umenfa.maine.edu](mailto:rcarnegi@apollo.umenfa.maine.edu) or myself at [anderjl@mail.auburn.edu](mailto:anderjl@mail.auburn.edu). See you in Florida!

James Anderson



## **Industry Update**

In terms of an industry update with a west coast focus, there are several items of general interest to shellfish biologists and members of the aquaculture industry.

1. The Pacific Coast section of NSA held its annual meeting in conjunction with the 50th annual meeting of the Pacific Coast Oyster Grower's Association this past October in Lake Chelan, a mountain resort town in eastern Washington State. The meeting was well attended with several hundred people from industry, academia and the regulatory agencies participating. Of specific interest to industry members were details relating to HACCP regulatory compliance which will be kicking in at the end of this year. The details are nothing new to the shellfish industry regarding the need to develop a plan to incorporate HACCP regulations within individual operations; however, it was emphasized that the clock is ticking with respect to the need to get a plan on file with the various state agencies responsible for compliance well before the December 1997 deadline.

An update of the Molluscan Broodstock Program (MBP) was provided by Dr. Chris Langdon, Hatfield Marine Science Center, Oregon State University. In 1996, three cohorts of fifty full-sib families of Pacific oysters, originating from Washington State broodstock (Dabob Bay), were planted in Willapa Bay and southern Puget Sound, WA and in Tomales Bay, CA. Each family of oysters is being grown out in vexar bags (10 replicate bags per family) in the intertidal, either on bottom or on racks. A second group of families were also produced from Dabob Bay and Willapa Bay broodstock oysters, and is currently being over-wintered in Oregon prior to dissemination to Alaska and Oregon commercial grow out bays in the summer of 1997. The first assessment of families will occur in the Spring of 1997. Production of the second generation from first generation selected lines will occur in 1998, with continued funding through the USDA Special Grants Program awarded to the Agricultural Experiment Station, Oregon State University. Broodstock lines originating from the first generation selected lines will be available to growers beginning in the year 2000. The annual report describing in detail the overall MBP including the planning and development efforts by the Western Regional Coordinating Council (WRCC) is available from Chris Langdon (Hatfield Marine Science Center, 2030 South Marine Science Drive, Newport, OR 97365). Also, the WRCC will be holding its 1997 meeting in Seattle during the World Aquaculture Society meeting in February.

In other MBP news, tetraploid Pacific oysters were produced in the summer of 1996 at the Taylor Resources shellfish hatchery, Quilcene, WA under the direction of Dr. Stan Allen. Ripe triploid females were strip-spawned and their eggs treated with cytochalasin B to inhibit the formation of the first polar body following fertilization by diploid male oysters. Analysis of seven-day-old larvae showed that approximately

40% of the larvae were tetraploid. These animals are being over-wintered at the Taylor Resources hatchery prior to field planting this spring. A portion of the surviving oysters will be made available to the industry generally, although any use in the production of all triploid lines from tetraploids will likely first require a grower to enter into a licensing agreement with Rutgers University.

In other regional news, an ongoing oyster mortality study administered by the Pacific Shellfish Institute, the education arm of the PCOGA, is ongoing. Results of the Washington Sea Grant funded study to assess mortality patterns of adult Pacific oysters in certain bays during the summer months indicate that:

1. Culture density appears to be a factor in the pattern of mortalities with higher densities of oyster out plants resulting in a higher percentage of mortalities. Also, plants of seed or juveniles in higher density bags resulted in generally higher mortalities, as well.

2. Regions characterized by reduced circulation were mortality prone areas as up to 60% of oysters are lost in some years in certain circulation restricted bays. Well flushed grow out beds had few reports of mortalities in 1996.

Research is currently focused on documenting significant variation in phytoplankton taxa occurring in bays with and without a pattern of oyster mortality.

Finally, the Pacific Coast Section of NSA will be meeting jointly again with the PCOGA in September (25-27) in Newport, OR. It is not too early to start making plans for a visit to the Oregon coast in 1997. For information, please contact me at 15425 Smoland Lane, Bainbridge Island, WA 98110 (email: jdavis@wolfenet.com) and I will forward information about this meeting

Jonathan P. Davis

## **APHIS addresses shrimp viral diseases**

The Animal and Plant Health Inspection Service (APHIS) of the USDA is working cooperatively with the Joint Subcommittee on Aquaculture to assess the risk posed to wild shrimp populations by three foreign viral diseases. Yellow-head, white-spot, and Taura syndrome diseases were introduced to the U.S. last year and affect cultured shrimp farms. The viruses' potential to threaten Gulf Coast wild shrimp populations is now being explored. For information regarding this and other APHIS activities and services, please contact Jim Rogers at APHIS, Legislative and Public Affairs, 4700 River Road, Unit 51, Riverdale, MD 20737-1232, phone (301) 734-8563, or email jrogers@aphis.usda.gov.



## **Estuarine Research Federation Announces 1997 Conference in Providence, Rhode Island**

The Estuarine Research Federation will hold its 14th International Conference on October 12-16, 1997, at the Rhode Island Convention Center in Providence. The theme of the conference is "The State of Our Estuaries," a topic that will be addressed through thematic sessions, oral and poster presentations, and workshops.

Some of the topics include the consequence of human development in the coastal zone; the physical and ecological responses of systems to changes in freshwater flow; the recovery of bays and estuaries; the consequence of habitat changes on estuarine systems; the effects of sea level rise on our estuaries; and phytoremediation.

Workshop topics include coastal land loss in the United States; denitrification; ecological economics of estuaries; using the Internet to conduct investigations in marine science; and using stable isotopes to trace linkages between watersheds and estuaries; investigation-based teaching in introductory coastal and marine courses; the ecological economics of estuaries; regional assessments of estuarine health; and methods by which scientists can influence elected officials.

Conference organizers have included a number of field trips to New England's unique estuarine attractions on Narragansett Bay, and along the beautiful Rhode Island and Connecticut beaches.

The deadline for submitting abstracts is April 1, 1997. For more information, or to receive registration materials,

contact the Estuarine Research Federation, 490 Chippingwood Drive #2, Port Republic, MD 20676; Phone: (410) 586-0997; Fax: (410) 586-9226; Email: jbarth@cbl.cees.edu.

The Estuarine Research Federation, created in 1971, is a multidisciplinary organization of individuals who study and manage the structure and functions of estuaries and the effects of human activities on these fragile environments. The Federations' members are dedicated to advancing human understanding and appreciation of the Earth's estuaries and coasts, to the wise use and management of these environments and to making the results of their research and management action as available to their colleagues and to the public. Members of the Federation include academic researchers, public sector managers, teachers, consultants, students and others who are interested in estuaries. For information about the Estuarine Research Federation, call (410) 586-0997 or visit the ERF website at <http://cbl.cees.edu/erf/>.

## **NSA Special Session held at WAS Meeting**

A special thanks to Neil Bourne and Linda Townsend for organizing a special session: Molluscan Aquaculture in the 21st Century, where are we going? for the WAS annual meeting held in Seattle in February. The session covered a broad spectrum of issues facing the industry, including the Molluscan Broodstock Program, aquacultural efforts in the U.S. - affiliated Pacific islands, education and training, and new species development. It is hoped that more co-operative efforts can be launched in the future.



In February, 1949, this building became the first marine laboratory operated by the State of Florida when the first marine biologist employed by the state reported to work in Apalachicola. It was previously an oyster shucking house conveniently located on the waterfront. The structure is still standing and looks much like it did almost fifty years ago, and can be seen by those making the visit to Apalachicola during the annual meeting. As well as providing facilities for oyster and shrimp research, the adapted oyster house also housed Florida's first seafood sanitation laboratory. The research program of the State Department of Environmental Protection (as the agency is now called that provides the aegis) is now centered in a complex of large buildings in St. Petersburg. Several field installations also serve the effort. A staff of about 400 works on various aspects of marine research.

Photo complements of Robert Ingle, who helped found the lab in 1949.



## 1997 Annual Meeting

### FINAL Registration for Fort Walton Beach Meeting

This newsletter contains the complete program, registration form and hotel reservation information for persons wishing to attend the 89th Annual Meeting April 20-24, 1997, in Fort Walton Beach, Florida. In order to receive the lowest registration rates, your forms must be received by March 10th. We would also like to encourage you to book your room early and be sure to **identify yourself as an NSA meeting participant** when you call. Detailed information regarding the hotel and airfares is provided elsewhere on this page.

Please note that a workshop on Spatial Data and Remote Sensing in Invertebrate Fisheries will be held on April 19th and 20th in conjunction with the NSA meeting. This workshop, Sponsored by the NSA, NOAA, the National Underwater Research Program, and the Maryland Department of Natural Resources, will address the application and interpretation of information derived from satellite and aircraft imagery, underwater remote sensing systems, and other monitoring and measuring devices as applied to invertebrate fisheries. Three sessions: Habitat, Research, and Monitoring are planned. As detailed in the announcement on page 12, the cost for this workshop has been reduced from \$50 to \$15! Additional registration information and contact numbers are also provided on page 12.

### From the Student Awards/Endowment Committee

A few facts:

Over 25 students applied for travel support to attend the upcoming meeting in Ft. Walton Beach, and there will be 50 - no lie!!!- students competing for presentation awards (41 oral, 9 poster). This is shaping up to surpass the record level of student involvement at the last meeting in Baltimore, and it bodes well for the future vigor of the organization. Travel award decisions are expected by mid-February. If you applied for an award and have not yet been notified regarding the status of your application, please contact Student Awards Committee chair Dr. Dan Kreeger by email at [kreeger@sas.acnatsci.org](mailto:kreeger@sas.acnatsci.org) or by phone at (215) 299-1184.

### Hotel Reservation Information

We have reserved a large block of rooms at the Fort Walton Beach Holiday Inn at a special conference rate of \$70 standard, \$80 poolside, \$90 Gulf front, and \$110 suite (prices do not include local and state taxes). For students and others wanting to save money, 3 people are allowed to stay in one room. Please make your hotel reservation as soon as possible by calling the hotel directly at 1-800-732-4853 or 1-904-243-9181. Be sure to mention your participation in the NSA meeting. The hotel is about 8 miles from the Okaloosa County / Fort Walton Beach Airport. There is no limo service from the airport, but taxi service is available.

### Travel Arrangements

The Fort Walton Beach / Okaloosa County Airport is served by several major airlines (most with changes at larger airports required) including Northwest, US Air, Delta, ValueJet, and Atlantic South-East Airlines. "Flights to Sites" offers discounted fares on ALL major carriers to NSA conference attendees. They can be reached Monday through Friday, 9:00 to 17:30 at 1-800-609-0439.

Hertz, Avis, Budget, and National Car Rental services are available at the airport. There is no public transportation.

### Local Attractions

The Gulf Beaches of Fort Walton Beach and surrounding areas are absolutely spectacular. For those persons who want to get off of the beaten track and see more pristine parts of Florida, a tour of Apalachicola Bay is being arranged for Friday, April 25th (the day after the meeting officially ends). The tour will begin with an approximately 2 ½ hour van ride from Fort Walton Beach along the scenic panhandle coast, far removed from the major tourist areas. The day will continue with a boat ride (boat provided by the National Estuarine Research Reserve Laboratory), and a break for lunch at a locally well-known restaurant. In the afternoon, we have scheduled tours of two area research facilities: the Florida Dept. of Environmental Protection / NOAA Apalachicola National Estuarine Research Reserve Laboratory and the Florida Dept of Environmental Protection Shellfish Sanitation Laboratory. If you'd like to join the tour, please indicate your interest by checking the appropriate box on the registration form.

William Fisher

Visit [www.shellfish.org](http://www.shellfish.org) for the latest updates on meeting information, an electronic version of the registration form, as well as links to other shellfish-related sites



**National Shellfisheries Association 1997 Annual Meeting**  
**April 20 - 24 1996, Fort Walton Beach, Florida**  
**Registration Form**

Please complete a copy of this form for each person registering and mail to:  
Dr. William S. Fisher  
US Environmental Protection Agency, Gulf Ecology Division  
1 Sabine Island Drive  
Gulf Breeze FL 32561 USA

**Mailing Information:**

Name: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Country: \_\_\_\_\_ phone: \_\_\_\_\_ email: \_\_\_\_\_

**Name Badge Information (max. 25 characters for each line):**

Name: \_\_\_\_\_  
Organization: \_\_\_\_\_  
\_\_\_\_\_

**NSA Registration**

Fees include entry into all technical sessions, all coffee and refreshment breaks, President's Poolside Reception on Sunday evening (hors d'oeuvres), buffet lunch on Monday, student reception and auction (hors d'oeuvres, beer, wine) on Tuesday evening, and the buffet Business Luncheon on Wednesday.

	<u>By March 10</u>	<u>After March 10</u>	<u>Total \$</u>
NSA Members	\$150	\$200	\$ _____
Student members	\$115	\$145	\$ _____
Non-Members	\$215	\$255	\$ _____
Daily Registration	\$75	\$75	\$ _____
NSA Membership	Regular: \$45 Student: \$25		\$ _____

Additional Tickets for Activities

	<u>Per ticket</u>	
President's Reception	\$25	\$ _____
Monday Buffet Lunch	\$15	\$ _____
Student's Reception/Auction	\$25	\$ _____
Buffet Business Luncheon	\$20	\$ _____
<b>Total Fees enclosed*</b>		<b>\$ _____</b>

If you're interested in joining the tour of Apalachicola Bay on Friday, April 25th, please check here (no obligation) \_\_\_\_\_

Name on credit card \_\_\_\_\_ Signature \_\_\_\_\_  
Number \_\_\_\_\_ Circle type of card **VISA    MASTERCARD**  
Expiration Date \_\_\_\_\_ (only ones accepted)

\* If you wish to pay by credit card, please add an additional 4% to the total cost.

Please mail a copy of this registration form, credit card information (above), or a check or money order made payable to NSA '97 to the address given above. Questions concerning registration should be directed to Bill Fisher through email (fisher.william@epamail.epa.gov) or fax (904-934-2402).

**National Shellfisheries Association  
89th Annual Meeting  
Holiday Inn—Fort Walton Beach, Florida  
April 20-24, 1997**

**ACTIVITIES SCHEDULE**

**SUNDAY, April 20, 1997**

1:00-6:00 EXCOM meeting Board Room A  
3:00-7:00 Registration Ballroom C  
7:00-11:00 President's Reception Tiki Bar

**MONDAY, April 21, 1997**

8:00-2:00 Registration Ballroom C  
AM: Ballroom A Reproductive Biology and Physiology of Freshwater Bivalves  
Ballroom B Molluscan Disease I  
Ballroom D Crayfish followed by Scallops: Problems and Solutions  
Break Poster Session Ballroom C  
12:00 Lunch Poolside Buffet  
PM: Ballroom A Reproductive Biology and Physiology of Freshwater Bivalves  
Ballroom B Bivalve Biology  
Ballroom D Bivalve Culture  
Break Poster Session Ballroom C  
4:20 Ballroom C Poster Session with authors  
7:00-10:00 Ken Chew's Annual Chinese Banquet. Tickets and information available at registration desk.

**TUESDAY, April 22, 1997**

8:00-2:00 Registration Ballroom C  
AM: Ballroom A *Perkinsus* Genetics followed by Marine Genetics  
Ballroom B Current Issues and Solutions for Shellfish Sanitation Programs followed by Contemporary Issues of the Gulf of Mexico Oyster Industry  
Ballroom D Particle Processing in Bivalves: Capture, Transport, Selection  
Break Poster Session Ballroom C  
PM: Ballroom A Marine Genetics followed by Oyster Management  
Ballroom B Molluscan Disease II  
Ballroom D Crustacean Health  
Break Poster Session Ballroom C  
7:00-11:00 Student Reception and Sandy Shumway's Annual Action-packed and Audacious Auction in Aid of Student Endowment Fund - Prime Time Room.

**WEDNESDAY, April 23, 1997**

8:00-2:00 Registration Board Room A  
AM: Ballroom A Gene Conservation: Management and Evolutionary Units in Freshwater Mussel Management  
Ballroom D Toxicants/Toxins and Shellfish  
Break Poster Session  
12:00-2:00 Lunch Luncheon Banquet and Annual Business Meeting Ballroom B&C  
PM: Ballroom A Gene Conservation: Management and Evolutionary Units in Freshwater Mussel Management  
Ballroom D Shellfish Restoration  
Break Poster Session Ballroom C

**THURSDAY, April 24, 1997**

8:00-2:00 Registration Ballroom C  
AM: Ballroom A Bivalve Physiology followed by Crab Fisheries  
Ballroom B Hard Clam Task Force Strategy Roundtable  
Ballroom D Current Issues Concerning Interactions between Aquaculture Introductions and Native Resources  
Break Ballroom C  
NSA Meeting Closes at Noon  
PM: Ballroom A Approaches to Blue Crab Stock Assessment Workshop

Note: Posters will be available for continuous viewing. There will be a special poster session Monday afternoon starting at 4:20 when presenters will be available to answer questions and discuss their research. Posters should be removed by Thursday morning.





**MONDAY MORNING APRIL 21, 1997**

	<b>FW Bivalves Ballroom A Chair: Catherine Gatenby</b>	<b>Molluscan Disease I Ballroom B Chair: Bruce Barber</b>	<b>Crayfish Ballroom D Chair: David Rouse</b>
8:20	Research needs for freshwater mussels. NEVES*	Choptank River oyster recovery project. MERRITT*, GAFFNEY, PAYNTER	Polyculture of red claw crayfish with tilapia. KOTHA**, ROUSE
8:40	Impoundments and mussel reproduction. MCMURRAY**, SCHUSTER	ELISA assay for <i>Perkinsus marinus</i> . DUNGAN*, HAMILTON	Reproduction of procambrian crawfishes. HUNER*, SHIELDS, BOHANNON, KONIKOFF, GUILMET
9:00	Growth and reproduction of <i>Margaritifera falcata</i> . TOY**	Juvenile oyster disease resistance. FARLEY*, LEWIS, RELYEA, ZAHTILA, RIVARA	A quest to determine crayfish condition. TURKER, EVERSOLE*
9:20	Chemosensory abilities of gravid freshwater mussels. HENLEY**, NEVES	JOD experimental studies. LEWIS*, FARLEY, CIPRIANO, SMALL	Contribution of supplements to crawfish growth. MCCLAIN*
	<b>FW Bivalves (continued)</b>	<b>Molluscan Disease I (continued)</b>	<b>Scallops Ballroom D Chair: Dan Marelli</b>
9:40	Reproduction among freshwater bivalves and mediating mechanisms. HEARD*	<i>Perkinsus marinus</i> transmission via oyster fecal matter. SCANLON**, CALVO, BURRESON	Reproduction and recruitment strategies in Florida bay scallops. MARELLI*, ARNOLD
10:00	<b>BREAK</b>		
10:20	Metamorphosis of mussels on hosts in captivity. WATTERS*, O'DEE	Cellular volume regulation in <i>P. marinus</i> . PAYNTER*, PARKER, BEAVEN	Reproductive biology of the calico scallop. MOYER**, BLAKE
10:40	Survival of juvenile unionids. RUESSLER*, KELLER	Protease expression in <i>Perkinsus marinus</i> cultures. LA PEYRE*, COOPER	Larval survival of the rock scallop. RHEE**, DAVIS
11:00	Microtubule role in cleavage furrow position. LYNN*, WALKER	Treatment of <i>P. marinus</i> -contaminated materials. BUSHEK*, HOLLEY, KELLY	Influence of temperature on bay scallop spawning. TAMMI**, TURNER, RICE
11:20	<i>Dreissena polymorpha</i> gill musculature. MEDLER*, SILVERMAN, DIETZ, THOMPSON	Superoxide dismutase activity in <i>P. marinus</i> . AHMED*, GAUTHIER, WRIGHT, VASTA	Bay scallop restocking in Sarasota Bay, Florida. LEVERONE**
11:40	Cell volume regulation in mussels. DIETZ*, SILVERMAN, NEUFELD, WRIGHT	Superoxide dismutase cDNA from <i>Perkinsus marinus</i> . WRIGHT**, VASTA	Composting calico scallop processing residues. MAHAN*

**MONDAY AFTERNOON APRIL 21, 1997**

	<b>FW Bivalves (continued)</b>	<b>Bivalve Biology Ballroom B Chair: David Bushek</b>	<b>Bivalve Culture Ballroom D Chair: Jonathan Davis</b>
1:20	Seasonal metabolism of two unionid mussels. HORNBAACH, BAKER*	Effect of lipids during broodstock conditioning. CAERS**, COUTTEAU, SORGELOOS	Growth and survivorship in triploid Mediterranean mussel. DAVIS*
1:40	Coexistence of native clams and zebra mussels. NICHOLS*, WILCOX	Impact of cytoprotectants on oyster embryos. LIU**, ROBINSON	Performance of triploid oysters in Louisiana. SUPAN*, WILSON, ALLEN
2:00	Oxygen consumption and anaerobic changes in mussels. CHEN**, HEATH, NEVES	Natural history and habitat characteristics of softshell clams. MACKENZIE*	Management strategies for fouling control. RIKARD*, WALLACE, NELSON
2:20	Glycogen levels in unionids. PATTERSON**, PARKER, NEEVES	Long-term patterns of oyster settlement. KENNY*, ALLEN, BUSHEK	Florida hard clam aquaculture production. STURMER*, VAUGHAN
2:40	Algae in guts of unionids. PARKER*, GATENBY, PATTERSON	Hard clam larval and juvenile growth rates. DEMING**, RUSSELL	Arkshell culture in Virginia. MCGAW*, CASTAGNA
3:00	<b>BREAK</b>		
3:20	Population dynamics of <i>Leptodea fragilis</i> . NICHOLS*, AMBERG	Utilization of microphytobenthos by mussels. KREEGER*, NEWELL, HUANG	Aquaculture production of the penshell, <i>Atrina maura</i> . CARDOZA-VELASCO**, MAEDA-MARTÍNEZ
3:40	Effect of test conditions on copper toxicity. KELLER*, RUESSLER, KERNAGHAN	Oyster relaying: survival, <i>Vibrio vulnificus</i> , and indicator microorganisms. VINES**, BRADY, KUCUKTAS, DEPAOLA, MOTES	Aquaculture development park. DAVIS-HODGKINS*, EDNOFF, VAUGHAN
4:00		Characterizing an oyster-cnidarian inquiline symbiosis. MULHOLLAND**, FRIEDL	Impact of oyster aquaculture on benthic invertebrate communities. DUMBAULD*
4:20	<b>POSTER SESSION</b>		
4:40	<b>POSTER SESSION</b>		
5:00	<b>POSTER SESSION</b>		

\* Denotes presenting author. \*\* Denotes that presenter is a student eligible for Nelson Award.



**TUESDAY MORNING APRIL 22, 1997**

	<b>Perkinsus Genetics Ballroom A Chair: Eugene Bureson</b>	<b>Shellfish Sanitation Ballroom B Chair: Mark Tamplin</b>	<b>Particle Selection Ballroom D Chair: Peter Beninger</b>
8:20	Genetic manipulation of <i>Perkinsus marinus</i> . BURKETT*, VASTA	Point and non-point sources of <i>Escherichia coli</i> . PARVEEN**, TAMPLIN	Videomicroscopy and suspension feeding. HART*
8:40	Protein phosphatase cDNA from <i>Perkinsus marinus</i> . COSS**, WRIGHT, VASTA	Risk of <i>Vibrio vulnificus</i> . TAMPLIN*, JACKSON	Small particle interaction with bivalve gill cirri. SILVERMAN*, LYNN, DIETZ, BENINGER
9:00	Conserved genes from <i>Perkinsus</i> isolates. ROBLEDO*, WRIGHT, COSS, GOGGIN, VASTA	Florida <i>Vibrio vulnificus</i> time/temperature matrix assessment. HEIL*, COLLINS	Muscular regulation of interfilament distance and ostial dimension. MEDLER**, SILVERMAN
9:20	Electrophoretic karyotype of <i>Perkinsus marinus</i> . BURKETT*, VASTA	Ozone inactivation of red tide. RODRICK*	Particle processing mechanisms of eulamellibranchs. DUFOUR**, BENINGER, BOURQUE
	<b>Perkinsus Genetics (continued)</b>	<b>Gulf of Mexico Oyster Ballroom B Chair: Tom Soniat</b>	<b>Particle Selection (continued)</b>
9:40	Competitive PCR for <i>P. marinus</i> . WRIGHT, ROBLEDO, GAUTHIER**, VASTA	Challenges facing the Texas oyster fishery. RAY, BENEFIELD*	Hydrodynamics of particle capture in bivalves. WARD*, SANFORD, NEWELL, MACDONALD
10:00	<b>BREAK</b>		
10:20	PCR assay for quantitation of <i>Perkinsus marinus</i> . YARNALL**, STOKES, BURRESON	Louisiana's oyster issues. MELANCON*, SONIAT, DUGAS	Mucus and particle processing in bivalves. BENINGER*, SILVERMAN, LYNN, DIETZ
10:40	PCR diagnosis of <i>Perkinsus marinus</i> in invertebrates. COSS**, WRIGHT, ROBLEDO, RUIZ, VASTA	Challenges and prospects: Mississippi's oyster industry. PERRET*, BUCHANAN, BRAINARD, JOHNSON	Modeling particle processing in bivalves. WARD*, LEVINTON, SHUMWAY, CUCCI
	<b>Marine Genetics Ballroom A Chair: Ami Wilbur</b>	<b>Gulf of Mexico (continued)</b>	<b>Particle Selection (continued)</b>
11:00	Phylogenetic analysis of the <i>Haplosporidia</i> . REECE*, SIDDALL, BURRESON	Prospects for the Alabama oyster industry. VAN HOOSE*	Postingestive selection in lamellibranch bivalves. SMITH**, MACDONALD
11:20	Selection of oysters for resistance to parasites. CALVO*, HARMON, BURRESON	The oyster industry in Florida. GUNTER*, MARSHALL, BERRIGAN	Feeding response of eastern oysters to peat. STRYCHAR**, MACDONALD
11:40	Evaluation of American oyster stocks. PAYNTER, GAFFNEY*, MERITT	Implementation assessment for the shellfish challenge. FARROW*, KLEIN, PAIT, JOHNSON, KOPFLER, HERRINGTON, ACHE	Effects of current speed on shell gape. NEWELL**, WILDISH

**TUESDAY AFTERNOON APRIL 22, 1997**

	<b>Marine Genetics (continued)</b>	<b>Molluscan Disease II Ballroom B Chair: Susan Ford</b>	<b>Crustacean Health Ballroom D Chairs: Gretchen Messick &amp; Carl Sidermann</b>
1:20	Amplification and sequencing of <i>Bonamia ostreae</i> . CARNEGIE**, DISTEL, BARBER	Isolation of <i>Perkinsus</i> sp. from softshell clams. MCLAUGHLIN, FAISAL*	Diseases of Pacific crabs. SPARKS*, MORADO
1:40	Selection for resistance to juvenile oyster disease. DAVIS**, CROSBY, BARBER, HAWES	Clam sarcoma and plasma protease inhibition. ELSAYED, MCLAUGHLIN, FAISAL*	SPARKS, MORADO (continued)
2:00	Hybridization between oysters. GUO, ALLEN*, WANG	Biochemistry of the phagosome in oyster hemocytes. BEAVEN**, PAYNTER, WOJCIK	Chitinoclasia prevalence in American lobster. KAPAREIKO*, ZISKOWSKI, ROBOHM, CALABRESE PEREIRA, SPALLONE
2:20	The Portuguese oyster is of Asian origin. O FOIGHIL, GAFFNEY*, HILBISH	Chemiluminescent response of oyster hemocytes to <i>Listonella</i> . BRAMBLE**, ANDERSON	Rhizocephalan parasites and their decapod hosts. GLENNER*, HØEG
2:40	Population structure of bay scallops. WILBUR*, GAFFNEY	Feeding behaviour of <i>Urustoma</i> . BRUN**, BOGHEN	GLENNER, HØEG (continued)
3:00	<b>BREAK</b>		
	<b>Oyster Management Ballroom A Chair: Anja Robinson</b>	<b>Molluscan Disease II (continued)</b>	<b>Crustacean Health (continued)</b>
3:20	Native oyster restoration in Oregon. ROBINSON*, JOHNSON	A rapid identification system for estuarine bacteria. CROSBY**, BOETTCHER, BARBER	BP and TS viruses in shrimps. OVERSTREET*
3:40	Oyster reef functioning and development. COEN**, WENNER, KNOTT, BOBO, HADLEY, RICHARDSON, STENDER, GIOTTA	Life cycle studies of <i>H. nelsoni</i> . STOKES*, FLORES, BURRESON, ALCOX, GUO, FORD	OVERSTREET (continued)
4:00	GIS for oyster management in Alabama. RODGERS**, ROUSE	QPX infection of hard clams in the northeast. SMOLOWITZ*, LEAVITT	Host size and taura syndrome virus virulence. LOTZ*
4:20	Impact of structural parameters on price spread. DIAGNE**, KEITHLY	Occurrence of QPX in Virginia hard clams. CALVO, WALKER, BURRESON*	Parasitic dinoflagellates of crustaceans. SHIELDS*
4:40	Relaying of oysters by Louisiana fishermen. KEITHLY*, DIAGNE, DUGAS	New and unusual <i>Perkinsus</i> pathogenic to scallops. BOWER*, BLACKBOURN, MEYER	Culture of <i>Hematodinium perezii</i> . WHITTINGTON**, FRIDLEY, HARMON, SHIELDS
5:00		Summer mortality and the stress response. FRIEDMAN*, SHAMSELDIN, PILLAI, OLIN, CHERR, JACKSON, RIFKIN, UHLINGER, CLEGG	Epizootiology and disease progression. MESSICK*



**WEDNESDAY MORNING APRIL 23, 1997**

	<b>Gene Conservation Ballroom A Chair: Tim King</b>	<b>Toxicants/Toxin and Shellfish Ballroom D Co-Chairs: Fu-Lin Chu, Aswani Volety &amp; Esther Peiere</b>
8:20	Units of conservation. BOWEN*	Effects of harmful and toxic algal blooms on shellfish. SHUMWAY*
8:40	BOWEN (continued)	Role of harmful algal blooms in shellfish disease. LANDSBERG*
9:00	Molecular stock assessment. KARL*	Histopathology of bay mussels. MORADO*, MOONEY
9:20	KARL (continued)	Histopathology of Gulf of Riga <i>Macoma balthica</i> . PETERS*, LEHTONEN
9:40	Mating systems and genetic variation in <i>Utterbackia</i> . HOEH*, BERG, GUTTMAN	Mussel reproductive histopathology in the Massachusetts Bays. KIMBALL*
10:00	<b>BREAK</b>	
10:20	Genetic structure of unionid populations. BERG*, HOEH, GUTTMAN	Effects of barium on white sea urchin fertilization. SPANGENBERG**, CHERR
10:40	BERG, HOEH, GUTTMAN (continued)	Lipid class composition of oysters exposed to PAHs. CHU*, LI, VOLETY, CONSTANTIN, HALE
11:00	Species delineation in freshwater mussels. ROE**, LYDEARD	Trace metal burdens and hemocyte activities. OLIVER*, FISHER
11:20	<i>Pleurobema pyriforme</i> as a species complex. KANDL**, LIU, MULVEY, BUTLER, HOEH	Effects of PAHs on oyster hemocytes. VOLETY*, CHU, CONSTANTIN, HALE
11:40	Genetic relationships among lanceolate <i>Elliptio</i> . MULVEY*, LIU	Immunomodulation and <i>Perkinsus marinus</i> infections. ANDERSON*, BRUBACHER, CALVO, UNGER, BURRISON

**WEDNESDAY AFTERNOON APRIL 23, 1997**

	<b>Gene Conservation Ballroom A Chair: Rita Vilella</b>	<b>Shellfish Restoration Panel Discussion Ballroom D Chair: Dot Leonard</b>
2:00	Genetic diversity of unionids. JOHNSON*, QING-LIANG, FARRIS	Shellfish Restoration
2:20	Molecular phylogenetic relationships among Anodontinae. LIU*, MULVEY	Shellfish Restoration
2:40	Biomarker assessment of environmental contamination with freshwater mussels. BLACK*	Shellfish Restoration
3:00	Conservation status of freshwater mussels. WILLIAMS*	Shellfish Restoration
3:20	<b>BREAK</b>	
3:40	Species and subspecies under the Endangered Species Act. LOHOEFENER*	Shellfish Restoration
4:00	NMFS and the Evolutionary Significant Unit concept for Pacific salmon. NAMMACK*	Shellfish Restoration
4:20	Role of refuges in conserving the biological and genetic diversity of freshwater mussels. MORRISON*	Shellfish Restoration
4:40	Freshwater mussel national strategy. VON OETTINGEN*, MIGNOGNO	Shellfish Restoration
5:00	Genetic and disease concerns for translocation programs. VILLELLA, KING*, STARLIPER	Shellfish Restoration
	<b>Gene Conservation Ballroom A Chair: Ed Pendleton</b>	
5:20	Panel Discussion	

\* Denotes presenting author. \*\* Denotes that presenter is a student eligible for Nelson Award.

**Poster Session**

Barans, Bobo, Richardson. \* Research experiences for minorities in marine and environmental science

Bobo\*, Richardson, Coen, Burrell. A preliminary overview of *Perkinsus marinus* in South Carolina oyster populations 1972-1996

Caers\*\*, Couteau, Sorgeloos. Effect of lipid supplementation on the lipid composition and growth of juvenile *Tapes philippinarum* fed *Tetraselmis suecica*

Cardenas\*\*, Dankert. Biochemical characterization of an enzymatic cascade involved in the immune response of the crayfish *Procambarus clarkii* to non-self molecules

Christophersen\*\*, Strand. Advantages of using a heliothermic marine basin for on-growing hatchery reared scallop (*Pecten maximus*) spat

Fernandez\*\*, Lira, Scarpa. Effect of planting density and predator exclusion on growth and survival of northern hard clam, *Meretricaria mercenaria* at the Indian River Lagoon, Florida

Ford\*, Powell, Hofmann, Klueck. A mathematical model for *Haplosporidium nelsoni* (MSX)-oyster interactions

Hadley\*, Bobo, Erskine, Coen. Oyster spatfall monitoring in South Carolina using French collector tubes



**THURSDAY MORNING APRIL 24, 1997**

	<b>Bivalve Physiology Ballroom A Chair: Sandra Shumway</b>	<b>Hard Clam Task Force Strategy Roundtable Ballroom B Chair: Gef Filmlin</b>	<b>Aquaculture Panel Discussion Ballroom D Chair: Fred Kern</b>
8:20	Basiphil cells are generative cells in <i>Mercenaria mercenaria</i> . EBLE*, MCCLOY	Hard Clam Roundtable	Aquaculture and Interactions
8:40	Induction of hemocyte chemiluminescence. FRIEDL*	Hard Clam Roundtable	Aquaculture and Interactions
9:00	<i>In vitro</i> mitoses of clam cardiac cells. KLEINSCHUSTER*, PARENT, WALKER, FARLEY	Hard Clam Roundtable	Aquaculture and Interactions
9:20	Digestive tubules in oysters at different tides. WINSTEAD*	Hard Clam Roundtable	Aquaculture and Interactions
	<b>Crab Fisheries Ballroom A Chair: Harriet Perry</b>	<b>Hard Clam Roundtable (continued)</b>	<b>Aquaculture (continued)</b>
9:40	Stock assessment of blue crabs in the Gulf of Mexico. PERRY, GUILLORY*, WAGNER, STEELE, HEATH	Hard Clam Roundtable	Aquaculture and Interactions
10:00	<b>BREAK</b>		
10:20	Monitoring of blue crab in Texas. WAGNER*	Hard Clam Roundtable	Aquaculture and Interactions
10:40	Blue crab abundance trends. GUILLORY*, PREJEAN	Hard Clam Roundtable	Aquaculture and Interactions
11:00	Fishery independent sampling in Mississippi. PERRY*, WARREN, TRIGG	Hard Clam Roundtable	Aquaculture and Interactions
11:20	Size decline in Maryland blue crabs. ABBE*	Hard Clam Roundtable	Aquaculture and Interactions
11:40	Behavioral responses of red king crab to crab pots. ZHOU*, SHIRLEY	Hard Clam Roundtable	Aquaculture and Interactions

**NSA meeting closes at noon.**

**THURSDAY AFTERNOON APRIL 24, 1997**

1:20-4:00	Blue Crab Stock Assessment Workshop Ballroom A Chair: Jim Duffy	
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**Poster Session**

Jordan\*\*, Deaton, Cardenas, Dankert. Characterization of the activation of the phenoloxidase system of host defense in the oyster *Crassostrea virginica*

Jordan\*\*, Deaton, Cardenas, Dankert. Initial characterization of the hemolymph phenoloxidase system in the scallops *Argopecten irradians* and *Placopecten magellanicus*

Langan\*, Kuenstner, Parsons, Shumway, Simonitsch. Sea scallop enhancement and culture in New England

Lellis\*, Pierhoples. Development of anesthetics for the mussel *Elliptio complanata*

McKnight\*\*, Mathews, Avery, Lee. Distribution and color morph ecology of green crabs in southern New England

Nichols\*. Feasibility of using detrital based diets to support growth and survival of native clams

Roussy\*, Myrand. Assessment of biological parameters for management of mussel seed collection in Amherst Basin (Magdalen Islands, Quebec)

Shields\*, Messick. Aspects of the life cycle of *Hematodinium perezii* in the blue crab, *Callinectes sapidus*

Sipe\*\*, Wilbur, Cary. Molecular determination of symbiont transmission strategies in wood-boring bivalves (Fm. Teredinidae)

Waller\*, Cope, Bartsch, Luoma. Variation in emersion and thermal tolerances of selected freshwater unionid mussels

Whittington\*\*, Bernstein, Shields. Changes in aspects of the blood chemistry of blue crabs infected with *Hematodinium perezii*

Wilbur\*, Gaffney. A nuclear marker for the molecular identification of Kumamoto oyster (*Crassostrea sikamea*) broodstock

**\* Denotes presenting author. \*\* Denotes that presenter is a student eligible for the Nelson Award.**



## Important Update Information

### Spatial Data and Remote Sensing Invertebrate Fisheries - Workshop April 19 - 20, 1997 Holiday Inn - Fort Walton Beach Florida

Some changes and additions to the workshop brochure enclosed in the NSA newsletter follow:

- The deadline for abstracts has been extended. We will accept pertinent abstracts until February 28, 1997. We currently have more than a dozen accepted abstracts which cover the initial categories of habitat, research, and management very well. Due to several excellent submittals related to satellite remote sensing, this subject area will be included in the upcoming prospectus.
- We have been able to line up financial support to assist in presenting this workshop. Due to this support we are able to help offset the original \$50 registration fee. We realize this may have been difficult to justify considering that most participants in this workshop are also registering for the NSA meeting and that NSA registration does not cover the Remote Sensing Workshop. We have reduced registration to \$15 which will include a continental breakfast on Saturday and Sunday and a Dinner Buffet Saturday night. Those who have previously registered at the \$50 dollar rate will be reimbursed shortly. Please get your registration forms in as soon as possible (even if you must pay at the door). We must have an accurate counting of attendance to provide the hotel. A registration form is provided below.
- A prospectus and publication of abstracts will be sent to all registrants soon after the February 28th deadline.

#### *Abstract Information*

A single page (8 1/2" x 11") abstract of up to 200 words is required for those presenting platform talks or posters. The deadline for abstracts is February 28, 1997. Please provide the full title of the paper, authors names, affiliations and complete addresses, and indicate on the lower right hand corner of the abstract page: 1) Which general theme (habitat, research, or management) best suits your contribution; and 2) your preference for platform or poster presentation. Mail or email your abstract (attached ASCII file) to: Cooperative Oxford Laboratory, Attn: Gary Smith, 904 S. Morris St., Oxford, Maryland 21654, [gsmith@hpel.cees.edu](mailto:gsmith@hpel.cees.edu), Telephone: (410) 226-0078.

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## WORKSHOP REGISTRATION

Mail to Kim Insley, MD Department of Natural Resources  
Cooperative Oxford Laboratory  
904 S. Morris Street, Oxford, Maryland 21654-9724

NAME \_\_\_\_\_  
ORGANIZATION \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TELEPHONE # \_\_\_\_\_  
FAX# \_\_\_\_\_

Registration fee - (\$15.00)

Make checks payable to DNR Invertebrate Fisheries Workshop.



## **Shellfish Mariculture Techniques** **Course Offered**

**Dates:** May 27 to June 6, 1997

**Description:** Two week residential course taught at the University of Maine's Darling Marine Center. Participants will explore the theory and practice of marine bivalve culture as practiced in the Northeastern U.S. Course will include lectures, considerable "hands on" experience, and field trips to commercial hatcheries and farms. Prerequisites: General knowledge of biology or relevant work experience.

**Topics:** Taxonomy, Anatomy, Reproductive Biology, Candidate Species, Algal Culture, Larval Rearing, Genetics, Pathology, Site Selection, Water Quality Issues  
**Instructors:** Bruce Barber and Chris Davis

**Cost:** University of Maine tuition (4 cr.) and \$250 course fee payable to the Darling Marine Center. Limited housing (\$90 total) and meals (\$20/day) are available. Contact the Darling Center directly at (207) 563-3146 for registration details or any other questions.

**Registration Deadline:** May 12, 1997

For further details, please contact **Dr. Bruce J. Barber**, Associate Professor School of Marine Sciences 5735 Hitchner Hall University of Maine Orono, ME 04469-5735 207/581-2783 (office) 207/581-2729 (fax)

### **Publication available**

The Coastal Marine Experiment Station of Oregon State University has just released a detailed report for the Molluscan Broodstock Program (MBP) entitled "Genetic Improvement of Cultured Pacific Oysters by Selection". Much of this document was developed as the result of a meeting of the Western Research Coordinating Committee (WRCC-99) held in November, 1995. For a copy of the report, please contact Dr. Chris Langdon at the Hatfield Marine Science Center, 2030 South Marine Science Drive, Newport, NOR 97365, or by email at [langdonc@ccmail.orst.edu](mailto:langdonc@ccmail.orst.edu).

### **PCOGA Newsletter now** **available through 'Net**

Attention all oyster growers: the Pacific Coast Oyster Growers Association newsletter is now available online. The newsletter details information of particular interest to shellfish farmers in the Pacific Northwest, including governmental affairs, HACCP and water quality news, and local industry notes. To check them out, surf to <http://www.expound.com/pcoga.html>.

## **NSA Scientist Featured in the** **New York Times**

Anja Robinson's efforts to reintroduce native *Ostrea lurida*, also known as Yaquina or Olympic oysters, to the Pacific Northwest are receiving the attention of the national press. Working in concert with John Johnson from the Oregon Department of Fish and Wildlife and a Netarts oyster grower, they have successfully seeded several bays with the small oyster. In the late 1800's, this species supported a large fishery along the Oregon and Washington coasts, and Anja hopes to see the fishery return. The *New York Times* featured Anja's project in its Sunday, February 2nd edition.

### **Sea Grant Opportunities** **GRADUATE STUDENT FELLOWSHIPS** **1997-1998**

Applications are being accepted for the Sea Grant Industrial Fellows Program: Graduate students in a marine / coastal-related field or with marine / coastal interests from any accredited institution of higher education are eligible.

The Sea Grant Industrial Fellows Program provides, in cooperation with specific companies, support of highly qualified graduate students who are pursuing research on marine/coastal-related topics of mutual interest to a particular industry or company. In a true partnership, the student, the faculty advisor, Sea Grant, and the industry representative work together on a project from beginning to end. Research facilities and the cost of the activity are shared. The fellowship can be three years, though funding will be in annual increments. No more than \$30K of federal funds may be requested in any one year.

The complete announcement is available at <http://www.mdsg.umd.edu/NSGO/IndustrialFellow.html>

### **Summer Jobs!**

Summer Technicians: Rutgers University Shellfish Research Laboratory, Port Norris, NJ. Laboratory and field-oriented positions in several areas of shellfish biology including aquaculture, genetics, physiology and parasitology, starting May 1997. Dormitory facilities are available. We are seeking talented undergraduates or recent college graduates who have an interest in any of the above-mentioned areas. C.D.: ASAP. Send resume & cover letter to Gregory A. DeBrosse, Haskin Shellfish Research Laboratory, 6959 Miller Avenue, Port Norris, NJ 08349



## Upcoming Meetings

**International Boston Seafood Show:** March 18-20, Hynes Convention Center, Boston, Massachusetts. For details phone (207)842-5599, or Fax: (207)842-5505.

**Feed Ingredients Asia '97:** March 18-20, 1997, Singapore International Convention & Exhibition Centre. Exhibitors will display a diverse cross section of products needed to formulate top quality feed. For exhibition booking and other inquiries, contact: Andrew West, Exhibition Sales Manager, Turret Group plc, Turret House, 171 High Street, Rickmansworth, Hertfordshire WD3 1SN, England. Phone +44 (0) 1923 777000, FAX: +44 (0) 1923 771297.

**11th International Pectinid Workshop:** April 10 - April 15, 1997, La Paz, Baja California Sur, Mexico. This workshop will focus on pectinid biology, fisheries, and aquaculture. This meeting presents a unique opportunity for science and management to compare and contrast experiences with scallop fondlers from around the world. For registration and further information, contact: Esteban Fernando Félix-Pico, Dept. of Fisheries and Marine Biology, CICIMAR-IPN, Playa el Conchalito S/N, APDO Postal 592, 23000 La Paz, B.C.S., Mexico; Phone: 52-112-25344 (Ext. 2428), FAX: 52-112-25322, email: efelix @vmredipn.ipn.mx

**National Shellfisheries Association 89th Annual Meeting:** April 20-24, 1997, Ft. Walton Beach, Florida. See this newsletter for details! For questions concerning local arrangements, contact Dr. William Fisher at phone: 904-934-9394, Fax: 904-934-2402, or e-mail fisher.william @epamail.epa.gov. For program information, please contact Dr. Jay Parsons at phone: 709-778-0307, FAX 709-778-0535, or e-mail jparsons@gill.ifmt.nf.ca

**IV Central America Symposium on Aquaculture:** April 22-24, 1997, Tegucigalpa, Honduras, Central America. Focus will be on sustainable shrimp and tilapia farming. Hosted by the Asociacion Nacional de Acuicultores de Honduras and the Latin American Chapter of the World Aquaculture Society. For information contact John Cooksey at 206-485-6682, Fax: 206 483-6319.

**Open-Ocean Aquaculture II:** April 23-25, Aston Wallea Resort, Maui, Hawaii. Organized by Sea Grant, this conference will emphasize Pacific species and systems for a high energy, open-ocean environment. For program details, contact Ray Tabata at phone: 808-956-2866, Fax: 808-956-2858, or e-mail ocnaqua@hawaii.edu

**Martinique '97 - Island and Tropical Aquaculture:** May 3-9, Les Trois-Ilets, Martinique, F.W.I. This conference will be a global forum for discussing and evaluating marine and coastal tropical aquaculture. Planned special sessions will focus on aquaculture development in the Caribbean and new developments in the emerging aquaculture industry of ornamental fish and invertebrates. For details contact: European Aquaculture Society, Martinique '97, Slijkensesteenweg 4, B-8400 Oostende, Belgium, phone: +32 59 32 38 59, Fax: +32 59 32 10 05, Email: eas@unicall.be

**Aquaculture Canada 97:** June 9-15, 1997, Quebec City, Quebec, Canada. The 14th Annual Meeting of the AAC will be held at the Radisson-Hotel des Gouverneurs. The Theme for the meeting is "From Research to Market". For more information contact: Yves Bastien at phone: 418-368-7656, Fax: 418-356-1275, or e-mail ybastien@quebecetel.com.

**Atlantic Aquaculture Exposition & Conference:** June 19-21, 1997, St. Andrews, New Brunswick. For full details contact: Sydney Jane Brittain, Master Promotions, phone: 506-658-0018, Fax: 506-658-0750, e-mail show@nbnet.nb.ca

**American Malacological Union:** June 22-27, Santa Barbara, California. The 1997 meeting will be held jointly with the Western Society of Malacologists and feature two major symposia, "Deep-Sea Mollusca", convened by Jerry Harasewych, and "Traditional vs. Phylogenetic Systematics", convened by Gary Rosenberg. There will also be a special session on Cephalopods of the North Pacific chaired by Eric Hochberg. The meeting will be held at the Radisson Hotel, and field trips to observe Pleistocene exposures and collect late Pleistocene marine invertebrates will be conducted. Electronic registration forms are available by e-mailing the address below, and meeting abstracts will be posted by mid-April at a website on the Mollusca File Server at UC Berkeley. For further details, contact: Eugene Coan, President, AMU, at 891 San Jude Ave., Palo Alto, CA 94306-2640, phone: 415-493-8242; FAX: 415-977-5799, or email gene.coan@sierraclub.org

**PCOGA-NSA/PCS Annual Meeting:** September 25-27, 1997, Hotel Newport, Newport, Oregon. Annual joint convention of the Pacific Coast Section of the NSA and the Pacific Coast Oyster Growers Association. For further information, contact NSA/PCS Chair Brett Dumbauld at the address listed on the back page of this newsletter.

**Japanese Society of Fish Pathology, International Symposium on Diseases in Marine Aquaculture:** October 3-5, 1997, Hiroshima, Japan. This meeting will stimulate joint research efforts in the field of fish pathology science, and will result in



### **Upcoming meetings, continued**

further progress of marine fish and shellfish aquaculture. The official language of the symposium is English. Sessions will consist of presentations on viral, bacterial, fungal, protozoan, parasitic and non-infectious diseases of fish and shellfish in the marine environment. Deadline for abstract submission is May 30, 1997. Please contact the Chairperson, Dr. K. Muroga, for more information at the Faculty of Applied Biological Science, Hiroshima University, Kagamiyama 1-4-4, Higashihiroshima, 739, Japan; Phone: Japan-824-24-7977 or 7947; FAX: Japan-824-22-7059

**Third International Abalone Symposium:** October 5-11, 1997, Monterey, California. This meeting will feature symposia on abalone aquaculture, biotechnology, ecology, fisheries management, morphometrics, nutrition, life history biology, and more. Registration is required by June, 1997. For further details, contact: Catherine Ashley, California Sea Grant College, 9500 Gilman Drive, La Jolla, CA 92093-0232. FAX: (619) 534-2231, email [cashley@ucsd.edu](mailto:cashley@ucsd.edu)

**14th International Estuarine Research Federation Conference:** October 12-16, 1997, Rhode Island Convention Center, Providence, Rhode Island. See accompanying article on page 4 for more information. Phone: (410) 586-0997 or visit the ERF website at <http://cbl.cees.edu/erf/>

**III Clama, the 3rd Latin American Malacological Congress:** October 13-17, 1997, Ensenada, Mexico. Sponsored by the Committee for the Latin American Malacological Meetings. For information, contact: M.C. Claudia Farfan, Jefe Departamento de Acuicultura, CICESE, Baja California, Apdo, Postal 2732, Ensenada, BC, Mexico; FAX (in Mexico): (617) 44880; FAX (in US): 011 52617/44880, phone: (617) 44501/06 or 5050/53

**Second International Conference on Molluscan Shellfish Safety (ICMSS II):** November 17-21, 1997, Iloilo City, Panay Island, the Philippines. A forum for growers, processors, and regulators. Oral and poster contributions welcome. Please contact Dr. Rhodora A. Corrales, Chair, Organizing Committee, for more information at: Marine Science Institute, University of the Philippines, Diliman, Quezon City 1101, the Philippines; FAX (63-2) 9215967; email [rhod@msi.upd.edu.ph](mailto:rhod@msi.upd.edu.ph)

**Aquaculture '98:** February 14-19, 1998, Las Vegas, Nevada. Triennial meeting of the World Aquaculture Society, the National Shellfisheries Association and the American Fisheries Society Fish Culture Section. Mark your calendar now!

**Third International Symposium on Aquatic Animal Health:** August 30-September 3, 1998, Renaissance Harborplace Hotel, Baltimore, Maryland. Please see announcement on this page and contact the symposium office before March 31, 1997 to be added to the mailing list for detailed announcements.

### **Third International Symposium on Aquatic Animal Health**

**August 30 - September 3, 1998,  
Baltimore, Maryland, USA.**

The symposium will be the first major international meeting to focus comprehensive presentation and discussion on the health of a diversity of aquatic animals including shellfish, fish, and marine mammals. The symposium will be sponsored by the American Fisheries Society - Fish Health Section, Asian Fisheries Society, European Association of Fish Pathologists, International Association for Aquatic Animal Medicine, Japanese Society of Fish Pathology, and the **National Shellfisheries Association**. The meeting is supported by The Johns Hopkins University and the University of Maryland at Baltimore. The symposium will cover four days of plenary lectures and contributed oral and poster presentations. Tours will be offered of facilities at the Aquatic Pathobiology Center, U. of Maryland, the Center for Marine Biotechnology, and the National Aquarium in Baltimore. For further information please contact: Dr. Sarah L. Poynton, Division of Comparative Medicine, Johns Hopkins University School of Medicine, Ross Research Building 4th Floor, 720 Rutland Avenue, Baltimore, MD 21205, USA. If you would like to attend, please register your interest before **March 31, 1997**.

Phone: 410-955-3273

FAX: 410-550-5068

Email: [spoynton@welchlink.welch.jhu.edu](mailto:spoynton@welchlink.welch.jhu.edu)

### **Aquaculture Courses Offered**

The Aquaculture Division at Harbor Branch Oceanographic Institution offers training courses ranging from "Backyard Aquaculture" to "Genome Manipulation". Interested parties can contact or visit HBOI's Aquaculture Division at 5600 U.S. 1 North, Ft. Pierce, Florida 34946, or call 1-800-333-HBOI, ext. 416 (in US), or 561-465-2400 ext. 416 (outside US), Fax: 561-466-6590, or through the web [www.hboi.edu](http://www.hboi.edu)

### **Marine Biology Web Page**

<http://life.bio.sunysb.edu/marinebio/mbweb.html>

Features MBREF, a developing list of primary references for students interested in marine research, with links to organismal information, tides, marine labs, announcements about educational CDs, and more.



## QUESTIONNAIRE

Time flies when you're having fun, or so the saying goes. It's been 10 years since I assumed the role of Editor of *JSR* and I would like to solicit your opinions regarding the *Journal* and its future. Please answer the following questions and give some serious thought to helping out as a reviewer.

Is the JSR generally useful to you?                      Yes                      No  
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**THANK YOU!!!!!!**



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