

Students, Senior Citizens Receive Hands-On Training and Volunteer Thousands of Hours as Part of MRC Outreach Program



Some of last fall's MRC College interns and AmeriCorps Volunteers.
Bottom (left to right) Katherine Tungate, Stephanie Sit, and Amy Rostron.
Top (left to right) Sarah McGrath, Sarah Honsberg, Joan Lemieux, and Pat Kosky.

Any scientist or staff member who works in the Marine Resources Center (MRC) will tell you that caring for the facility's diverse aquatic animals—as many as 75 different species—and maintaining the 100 or so tanks in which they're held is a challenging job. Now student interns are getting a taste of what it's like to work in the state-of-the-art facility through hands-on experience in animal care and culture, tank maintenance, and water quality testing. They're also assisting MRC scientists in a variety of research projects. The interns are part of the recently developed MRC Outreach Program which provides educational training for recent college graduates and current undergraduates, high school students, and members of the Cape Cod Senior AmeriCorps Program.

The MRC began building the program in September 2000 as part of an overall goal to increase community outreach and education efforts. "The MRC is well suited to show the public the marine animals that form part of the backbone of the MBL," says MRC Director, Roger Hanlon. "We are all convinced that educating the public about what we are doing is of critical importance."

Creating a college intern program was the first step in getting the Outreach Program off of the ground. "We began by building relationships with local colleges including UMass Dartmouth, Cape Cod Community College, and the Massachusetts Maritime Academy," says MRC Special Projects Coordinator, Beth Linnon. In January 2001, the Program welcomed its first two college interns. Since then 16 college students have spent either a part of, or an entire, spring, summer, or fall semester at the MBL. As word has spread beyond the local area, students have traveled from as far away as California to participate in the internship program. Linnon expects the first foreign student to participate this summer.

Besides performing routine duties such as feeding animals, cleaning equipment, and maintaining water quality in aquaria and holding tanks, interns are given the opportunity to assist MRC scientists with a variety of research projects—from analyzing the behavior of cuttlefish and squid to using molecular biology to better understand growth factors in aquacultured organisms such as fish and bivalves.

While there is no monetary compensation or housing provided for interns, most obtain college credit for their work. The program also serves as a springboard for

Science News

From the Architectural Dynamics in Living Cells Program ...

Publication:

Inoué, S., O. Shimomura, M. Goda, M. Shribak, and P.T. Tran. 2002. Fluorescence polarization of green fluorescence protein. *Proc. Natl. Acad. Sci. USA* 99(7): 4272-4277.

From Center for Advanced Studies in the Space Life Sciences (CASLS) ...

A workshop, "Outcomes of Genome-Genome Interactions" (chaired by Mitchell Sogin), was held at the J. Erik Jonsson Center from May 1 to 2. For more information, contact Diana Blazis by phone, (508) 289-7535; fax, (508) 289-7951; e-mail, dblazis@mbl.edu or go to the CASLS website, <http://www.mbl.edu/CASLS>.

From the Laboratory of Paul Colinvaux...

Elsevier Publishers recently reported that the most downloaded publication from their journal *Paleogeography, Paleoclimatology, Paleoeology* in the last 12 months was: P.A. Colinvaux and P.E. De Oliveira, 2001. Amazon plant diversity and climate through the Cenozoic. vol 166 (1-2) pp. 51-63.

From the Marine Resources Center...

Roxanna Smolowitz will give a biology seminar at WHOI, in the Redfield Auditorium on May 9, at noon. The talk is titled, "Epizootic Shell Disease of *Homarus americanus*"

Publications:

Hall, K.C.; Hanlon, R.T. 2002. Principal features of the mating system of a large spawning aggregation of the giant Australian cuttlefish *Sepia apama* (Mollusca: Cephalopoda). *Mar. Biol.* 140: 533-545.

Shashar, N., C.A. Milbury, R.T. Hanlon, R.T. (2002). Polarization vision in cephalopods: neuroanatomical and behavioral features that illustrate aspects of form and function. *Mar. Freshwat. Behav. Physiol.* 35(1-2): 57-68.

Employee News

Please welcome the following new employees:

Kevin Uhlinger, Research Assistant,
Marine Resources Center

Zy Biesinger, Research Assistant,
The Ecosystems Center

Jonathan Benstead, Postdoctoral
Scientist, The Ecosystems Center

Benefits Buzz

The MBL is pleased to provide a service called Unum's LifeBalance Program, a feature of your Unum life and long term disability coverage.

It can be difficult to balance the demands of work with those of your personal life. Stress, work, concerns and coping with personal situations can throw your life out of balance. LifeBalance is a one-stop resource that offers consultation, information, and personalized community referrals 24 hours a day, 7 days a week for you and your family members.

Your call will be answered by expert consultants who are ready to assist you with issues such as:

Everyday Issues: house sitting, appliance repairs, buying big ticket items, pet sitter/petcare, healthy lifestyle, nutrition, and exercise. *Legal Matters:* divorce, family matters, landlord/tenancy, real estate, consumer issues, criminal, debit/credit matters, attorney selection. *Financial Issues:* budgeting, debt management, investing, insurance options, taxes, retirement planning. *Education and Schooling:* homework issues, study habits, college application process and selection, special needs programs, scholarships. *Work Issues:* co-worker relationships, change in workplace, business travel, career planning, communication skills.

And there's so much more — parenting and child care, resources for seniors, disability and accessibility, addiction and recovery, and emotional well-being.

LifeBalance is part of your MBL benefits package and is easy to use. Best of all, you may call as often as you like. The Masters-level consultant will help assess your situation and develop a plan with you to resolve concerns. Calls are strictly confidential.

For more information visit the LifeBalance website, www.lifebalance.net (ID is "lifebalance"; Password is also "lifebalance"), or call 1-800-854-1446.

Recent Gifts and Grants

The Andrew W. Mellon Foundation awarded a grant of \$500,000 to the MBL/WHOI Library to support the Universal and Biological Indexer and Organizer project. This new taxonomic system provides an innovative means of accessing, sorting, and collating information contained in databases distributed throughout the internet.

The Grass Foundation renewed funding for the Neural Systems and Behavior Course in the amount of \$120,000 and for the Neurobiology Course in the amount of \$105,000. These grants provide support for these courses from 2002 through 2004.

The Catherine Filene Shouse Foundation awarded an additional grant of \$51,000 to provide support for female investigators and students at the Lab this summer in the following amounts: \$20,000 for an expendable fellowship; \$18,000 for three course scholarships; and \$13,000 for a student participating in the SES program.

The Irving Weinstein Foundation, Inc. awarded a grant of \$25,000 to support a new course titled "Advances in Genome Technology and Bioinformatics."

National Library of Medicine awarded \$282,820 for "Professional Services in Support of NLM's Efforts to Encourage the Use of Computers and Information Science in Medicine." Cathy Norton is the principal investigator.

Department of Energy (DOE) awarded \$30,000 for "Investigations into the Metabolic Diversity of Microorganisms as Part of Microbial Diversity." Caroline Harwood is the principal investigator.

US Department of Agriculture (USDA) awarded \$179,678 for "Characterization of myostatin expression in fish." Frederick Goetz is the principal investigator.

National Institutes of Health (NIH) awarded \$208,971 (first of five years) for "Frontiers in Reproduction Training Course and Symposium." Asgerally Fazleabas is the principal investigator.

NASA awarded \$180,250 for "Predicting changes in regional and global biogeochemical cycles." Jerry Melillo is the principal investigator.

National Science Foundation (NSF) awarded the following grants:

- \$700,000 for "LTER: Plum Island Sound Comparative Ecosystem Study (PISCES): Effects of Changing Climate and Sea Level on Estuarine Trophic Dynamics." Charles Hopkinson is the principal investigator.
- \$131,140 for "Species-, Community-, and Ecosystem-Level Consequences of the Interactions Among Multiple Resources." Edward Rastetter is the principal investigator.
- \$113,142 for "Structure/Function Investigation of Gamma-Carboxyglutamic Acid-Containing Conotoxins." Alan Rigby is the principal investigator.
- \$73,686 (first of three years) for "Na and Ca Transport Across the Plasma Membrane of Squid Giant Axons: Mechanisms of Metabolic Control of the Na/Ca Exchanger." Luis Beauge is the principal investigator.
- \$58,000 for "LTER: Plum Island Sound Comparative Ecosystem Study (PISCES): Effects of Changing Land Cover, Climate and Sea Level on Estuarine Trophic Dynamics." Charles Hopkinson is the principal investigator.

Important Parking Notice:

All vehicles parked on MBL property **MUST** have a 2002 parking sticker or valid visitors pass. Violators will be towed.

Administrative Offices Move from Candle House to Homestead

The following administrative offices have relocated (or are in the process of relocating) from Candle House to the Homestead building:

Office of Education

Homestead 1st Floor - x7340

Admissions (H-113), Course Lab Keys (H-115), International Visitors (H-105)

Summer Research Space Coordinator

Homestead 1st Floor - x7441

Summer Research Registration and Keys (H-102)

Human Resources Office

Homestead 1st Floor - x7422

Employment Opportunities, Employee Benefits, etc. (H-110)

Financial Services Office

Homestead 2nd Floor - x7275

Accounts Receivable (H-205), Accounts Payable (H-203), Payroll (H-206), Financial Services Administration (H-212)

Research Administration

Homestead 2nd floor

Research Contracts and Grants Accounting (H-211, 215, 207)

Biological Bulletin

Homestead 3rd Floor, x7149

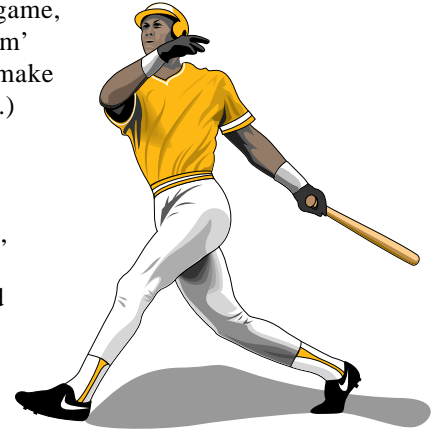
Editorial Offices (H-313, 315, 316, 317)

Play Ball!

It's time to play softball!! The MBL is fielding a team again this year and you are invited to participate. Other teams in the league are from WHOI, USGS, the Fisheries, and local businesses. Games are scheduled for once a week from late May through the end of August, at 5:30 PM at either Belltower Park or the WHOI campus. A schedule will be available soon.

This is low-key, co-ed, slow pitch softball, with no balls or strikes. The games are for fun, relaxation, and comraderie. Anyone can play, including summer and year-round employees, students, faculty, and scientists and their visitors, spouses, and adult family members. (While it is not required that you commit to playing every game, it is important for the 'team' aspect that you intend to make the majority of the games.)

Please let Susan Goux, in Human Resources (x7422, humanres@mbl.edu), know if you are interested in playing on the team this season.



MRC Outreach Program, from page 1...

future careers in the marine sciences. "So many young people think they want to grow up to be marine biologists," says Linnon. "The internship program is great for helping them determine what they'd like to focus on for their future career pursuits."

Amanda Magliozzi, a UMass Dartmouth graduate, was one of the first students to participate in the college internship program. Magliozzi always knew she wanted to work in the field of biology, but the MRC internship gave her a broader idea of what types of jobs were available and helped her land her current position at Wyeth Biopharma in Andover, Massachusetts. "My experience at the MRC showed that I was a well-rounded college student who obtained and completed a very competitive and rigorous internship while still attending college fulltime," says Magliozzi. "It also allowed me to gain some general microbiology and laboratory experience that made me a more suitable candidate at my present job."

Although the internship program focuses primarily on college students, there are limited opportunities for motivated high school students. These students, referred to as pre-interns, participate mainly in the care and maintenance of MRC animals and tanks, however some have pursued research projects. Recently, a high school graduate from Falmouth, Maine assisted Hanlon with cuttlefish behavioral research for a semester before heading off to begin her college career at Mount Holyoke College. "It is our hope that the pre-interns may eventually return and join us again as college interns one day," says Linnon.

A third component of the MRC Outreach Program is its association with the Cape Cod Senior Environmental Corps. As part of the nationwide AmeriCorp Program, members receive a modest stipend in return for volunteering at least 900 hours here and at other facilities within a two-year time period. Four Senior AmeriCorps members are currently carrying out part of their tour of duty at the MRC. Like the student interns, the AmeriCorps volunteers help MRC staff in the basic tank maintenance and animal care duties that are crucial to the success of the facility.

Since the Outreach Program began, 35 individuals—a mix of college, high school and AmeriCorp Seniors—have contributed an impressive 4426 hours of their time to the MRC. Linnon is expecting at least twice as many college interns this summer as compared to last summer. Eight college interns, four high school students, and two AmeriCorps Seniors will take part in the Program. After just one year in existence, the MRC Outreach Program has proved to be not only a community outreach tool, but an important source of support for the busy MRC staff. "I have had interns produce quite a lot of research data as have other MRC scientists," says Hanlon. "The staff have benefited even more since we have such a massive workload related to animal husbandry."

Although the Outreach Program has grown immensely over the last year, it is still limited by the time that the MRC's scientists and staff can devote to the participants. While there are no current plans to significantly expand the program, all of the MRC's faculty are interested in having an intern in their labs for most of the coming year, says Hanlon.

Library News

MBL/WHOI Library is offering a trial for the month of May to BioOne—a unique online collection of more than 47 biological science society journals.

Read more about BioOne & access the trial at <http://www.bioone.org/bioone/?request=index-html>

Borrow books directly from participating regional libraries via the Virtual Catalog. This is a fast alternative when a book you need is not available from our collection. Books usually arrive within a week and may be kept for one month. Email updates notify you of the status of your request and the book's arrival.

Read more about Virtual Catalog and access the service with your OneCard at <http://www.mblwhoilibrary.org/vcatalog/>

Comments and questions may be directed to: library@mbl.edu

2002 Spring Courses

Rapid Electrochemical Measurements in Biological Systems

May 9 - May 13, 2002

Loeb 208, x7559

Director: Greg A. Gerhardt, Center for Sensor Technology, University of Kentucky

Students:

Catarina Almeida, Universidade Aveiro
Christopher Baccei, Merck Research Labs
Cao, Bo-Jin, University of Texas
Ray Caldwell, University of North Carolina, Chapel Hill
Idil Cavus, Yale University
John Conour, University of Illinois at Urbana-Champaign
Christopher Douglas, University of Michigan
Kristen French, Medical University of South Carolina
Adriana Galvan, Emory University
Chris Herzog, Ohio State University
Fiona Inglis, Tulane University
Wayne Korzan, University of South Dakota
Guichu Li, East Carolina University School of Medicine
Joshua Martin, Ohio State University
Elizabeth Noll, Brigham & Women's and Children's Hospitals
Weite Oldenziel, University Centre for Pharmacy
Oyvind Overli, University of South Dakota
Martin Sarter, The Ohio State University
Christina Schad, Chicago Medical School
Joshua Sokoloski, University of Pittsburgh
Robert Stephens, Ohio State University
Craig vanHorne, Brigham & Women's Hospital
Amy Wagner, University of Pittsburgh
Lauren Willis, Medical University of South Carolina
Agustin Zapata, National Institutes of Health

Analytical & Quantitative Light Microscopy

May 9 - May 17, 2002

Loeb 210, x7562

Directors: Greenfield Sluder, University of Massachusetts Medical Center, Worcester; David Wolf, BioHybrid Technologies, Inc.

Students:

Samit Chatterjee, Weill Medical College of Cornell University
Emma-Louise Cooke, AstraZeneca R&D
Anne Charnwood Counterman, Pennsylvania State University
Espinosa Ricardo Tanguma, University of San Lui
Robert Fischer, The Scripps Research Institute
John Fitzpatrick, Yale University School of Medicine
Shawna Fleming, Brown University
Lianwu Fu, University of Alabama, Birmingham
Michael Galko, Stanford University School of Medicine
Greta Glover, Oregon Health and Sciences University
Heather Green, New York University
Lore Gruenbaum, Boehringer Ingelheim Pharmaceuticals
Piotr Habdas, Emory University
Carlos Hidalgo, Instituto Venezolano
Melissa Iszard, Raytheon Polar Services
Melissa Jungnickel, UMass Medical School
Songtao Liu, Fox Chase Cancer Center
Elizabeth Luna, University of Massachusetts Medical School
Caroline McKeown, University of Utah
Simona Paladino, University of Naples
Tracee Panetti, Temple University School of Medicine
Kira Poskanzer, University of California, San Francisco
Maureen Powers, Emory University
Marc Raphael, The Naval Research Laboratory
Nasser Rusan, University of Massachusetts
Jörg Schaffer, Carl Zeiss, Inc.
Jeremy Smyth, University of Massachusetts
Jenny Tam, Tufts University
Jeffrey Welch, Duke University Medical Center
Akihiro Yamamoto, RIKEN
Keren Zandbank-Zuker, Hebrew University
LingLi Zhang, University of Pennsylvania

Frontiers in Reproduction

May 19 - June 29, 2002

Loeb 308, x7528

Course Directors: Asgerally T. Fazleabas, University of Illinois Chicago; Patricia Hunt, Case Western Reserve University; and Teresa Woodruff, Northwestern University

Students:

Kamil Akcali, Bilkent University
Katherine Bachman, Case Western Reserve University
Dolores Busso, Buenos Aires University
Ryan Gill, University of Kansas Medical Center
Joanna Gonsalves, University of California, San Francisco
Outi Hallikas, University of Helsinki
Hakhyun Ka, University of Kansas Medical Center
Umit Kayisli, Yale University School of Medicine
Pamela Kreeger, Northwestern University
Christian Perez, University of Pennsylvania
Tracy Prosen, University of Pittsburgh
Geetanjali Sachdeva, Institute for Research in Reproduction
Rama Soundararajan, Indian Institute of Science
Javier Torr ns, New Jersey Medical School, UMDNJ
Janet Tou, NASA Ames Research Center
Eileen Wang, Northwestern Medical School

Medical Informatics

May 26 - June 2, 2002

100 Water Street, x7341

Director: James Cimino, Columbia University

Students:

Dale Alverson, University of New Mexico
Karen Anderson, University of North Dakota
Dale Bergman, Alberta Research Council
Mark Binstock, Ohio Permanente Medical Group
Kathy Bowles, University of Pennsylvania
Lynn Bragdon, Veterans Affairs Medical Center
Tina Brock, University of North Carolina, Chapel Hill
Grace Chen, Hospital Authority, Hong Kong
Chomba Chuma, Avenue Healthcare Ltd., Kenya
Janet Cowen, Maine Medical Center
Cheryl Dee, University of South Florida
Rosaline Dhara, Centers for Disease Control and Prevention
William Erdley, University of Buffalo
Barrie Hayes, University of North Carolina, Chapel Hill
Nancy Henry, Pennsylvania State University
Christine Kovach, Kaiser Permanente Northwest
Anita Lambert-Lanning, Toronto West Hospital-University Health Network
Anthony Luberti, The Children's Hospital of Philadelphia
Donald Marazzo, Family Health Council
Mary Markland, University of North Dakota
Jennifer McCabe, James Madison University
Fred Pond, Dartmouth College
Neville Prendergast, Washington University School of Medicine
Gregory Raglow, Good Samaritan Family Practice Center
Shantaram Rangappa, Virginia Commonwealth University
Nan Robertson, Kaiser Permanente-Northwest
Jorge Ruiz, University of Miami School of Medicine
Sunil Sinha, VA Maryland Health Care System
Scott Smith, University of North Carolina
Jeffrey Suzewits, Southern Illinois University School of Medicine

May 2002 Calendar

For updates, please check our website, <http://www.mbl.edu/weekly/>

Monday, May 6

BUMP Thesis Defense

"The role of nutrients, grazing and seasonality in controlling microphyto-benthic standing crop in Waquoit Bay, Massachusetts"

Mark Lever, Candidate, Master of Arts Degree

Meigs Room, Swope Center, Noon

Monday, May 6

BCC/Atlantic Aquabusiness Conference

"Sustainable aquaculture: Food for the mind"

Bristol Community College

8:00 AM - 2:00 PM

Tuesday, May 7

The Ecosystems Center Seminar Series

"Pacific salmon, marine-derived nutrients, and the dynamics of riverine/riparian systems"

Robert Naiman, University of Washington

Whitman Auditorium, 12:15PM

Tuesday, May 7

Sea Grant Program of WHOI – Oceans Alive

"Glacial history and contaminant transport on Cape Cod"

Amy Mulligan, WHOI Marine Policy Center

Redfield Auditorium, 7:00 PM

Wednesday, May 8

MBL/BUMP Spring Seminar Series

TBA

Peter Helper, UMass, Amherst

Candle House 104/105, Noon

Friday, May 10

The Bay Paul Center Seminar Series

"Evolution of dimorphic genomes in ciliates"

Laura Katz, Smith College and

UMass, Amherst

Candle House 104/105, 4:00PM

Tuesday, May 14

The Ecosystems Center Seminar Series

TBA

Heidi M. Nepf, MIT

Lillie Auditorium, 12:15PM

Wednesday, May 15

MBL/BUMP Spring Seminar Series

"Regulation of protein synthesis-dependent synaptic plasticity"

Justin Fallon, Brown University

Candle House 104/105, Noon

Thursday, May 16

WHOI Distinguished Lecturer Series

TBA

Daniel Dennett, Center for Cognitive

Studies at Tufts University

Redfield Auditorium, 4:00 PM

Thursday, May 16

New England Oceanography

Seminar Series

"Atmospherically-forced ocean response during the winter in the Gulf of Maine"

Wendell Brown, SMAST

WHOI, Carriage House, 4:00 PM

Tuesday, May 21

The Ecosystems Center Seminar Series

TBA

Candle House, 12:15PM

Wednesday, May 22

MBL/BUMP Spring Seminar Series

"Nonmuscle myosin II associates with motile axoplasmic organelles: implications for axonal transport"

Joe DeGiorgis, Brown University

Candle House 104/105, Noon

Monday, May 27

MBL Holiday - Memorial Day

Tuesday, May 28

The Ecosystems Center Seminar Series

"Replacing the Nile – have anthropogenic nutrients replaced the fertility once brought to the Mediterranean by a great river?"

Scott Nixon, University of Rhode Island

Lillie Auditorium, 12:15PM

Friday, May 31

The Bay Paul Center Seminar Series

"A second *E. coli* genome sequence:

An enterohemorrhagic O157:H7 strain"

Nicole Perna, University of Wisconsin

Redfield Auditorium, 7:00 PM

MEETINGS AND COURSES

May 1-5, Developmental Biology of Sea Urchins

May 4-8, NAQLM Course

May 9-17, AQLM Course

May 9-13, Rapid Electrochemical Measurements Course

May 10-11, New England Society for Electron Microscopy

May 15-22, Dibner History of Biology Seminar

May 17-21, Scleroderma

May 19-June 15, Aquavet I

May 19-June 1, Aquavet II

May 19-June 29, Frontiers in Reproduction

May 26-June 2, Medical Informatics

For information about meetings and courses at the MBL, please call (508) 289-7214.

2002 Pre-Season Shuttle Schedule

Monday-Friday ONLY, March 25-June 7

Morning Runs.....

Leave Devils Lane, 8:15 AM

Continuous runs (with passenger(s) only.)

Last departure, 10:10 AM

Noontime runs.....

Leave Lillie Leave Devils Lane

11:40 AM 11:50 PM

12:00 PM 12:10

12:20 12:30

12:40 12:50

1:00 1:10

1:20 1:30

From 11:40 AM- 1:20 PM, the bus will run with or without passengers.

The 1:30 PM runs with passenger(s) only.

Evening runs.....

Leave Lillie, 4:30 PM

Continuous runs (with passenger(s) only.)

Last departure, 6:25 PM

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