

School of Marine Science Admits Class of 2004

The School of Marine Science at VIMS has completed the selection process for the incoming class of 2004, tending offers of admission to 47 of the 152 students who applied.

To date, 70 percent of those offered admission have enrolled at VIMS. "That's an impressive figure," says Dean of Graduate Studies Dr. Iris Anderson, "as we compete with all the other leading marine science graduate schools for students."

About 60% of the incoming students will work toward a master's degree, while the remaining students will seek the Ph.D. Seventy percent of the incoming students are from outside Virginia.

One striking feature of the incoming class, notes Anderson, is the relatively small percentage of interna-

tional students. Students from outside the U.S currently make up about 12 percent of VIMS' enrollment, but the incoming class comprises only 2 foreign students (6%).

Anderson attributes the decline to tougher immigration rules that require faculty to guarantee funding to foreign students for the entirety of their graduate career. "That's a difficult promise to make," says Anderson, "particularly in a time of shrinking budgets."

Another change from previous years is the high percentage of females in the incoming class. "Women make up 70% of our incoming students," says Anderson. The current student body is about equally split between males and females.

VIMS Finds Pathogen in Non-native Oysters

VIMS scientists have discovered an unexpected parasite in non-native oysters *Crassostrea ariakensis* being held in Bogue Sound, North Carolina.

The parasite appears to be an undescribed species in the genus *Bonamia*, a group of single-celled protozoans that infect oyster blood cells. Known species of *Bonamia* occur in oysters in France and New Zealand where they cause significant mortality. Although *Bonamia* is known to occur in a small population of European flat oysters introduced and established in Maine, the parasite has never been reported in the mid-Atlantic area.

Dr. Eugene Burreson announced the discovery of the parasite in December 2003 during a regional meeting at VIMS of scientists who are conducting studies on the non-native oyster. Burreson reported that 60% of the oysters in two recent samples had light infections. The parasite was first observed in routine histological sections and its identity was confirmed with DNA-based diagnostic tools.

Oysters from the same spawn held in the Chesapeake Bay do not show the infection and it has not been observed in more than 1,000 non-native oysters examined to date by VIMS from Chesapeake Bay or the coast of Virginia.

"The big mystery right now is where this parasite is coming from," said Burreson. "It seems that oysters are acquiring the parasite from something in Bogue Sound, but we have no idea what the source animal is." The parasite has never been observed in native oysters anywhere along the East Coast.

It is unclear at this point if the parasite will cause mortality in *C. ariakensis*, but other similar parasites are very pathogenic to their hosts. Studies are underway to determine mortality, source of infection, and also to determine if the parasite can survive in lower salinities typical of Chesapeake Bay.

Non-native oysters have performed well against MSX and Dermo, the diseases that have decimated Chesapeake Bay oyster populations, but this new finding is cause for concern. If the parasite causes mortality and can survive at Chesapeake Bay temperatures and salinities, it may limit usefulness of *C. ariakensis* for restoration of the oyster resource.

"This doesn't seem to be an issue of *C. ariakensis* introducing an exotic disease to the native oyster, it is an issue of a local parasite causing problems in *C. ariakensis*," said Burreson.

Explore the Bay with CBNERRVA

The Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERRVA), in partnership with York River State Park, is offering free educational boat trips in the York River and Taskinas Creek this summer. Professional field educators will lead hands-on activities highlighting the plants and animals of these waterways. Taskinas Creek is one of four CBNERR sites in Virginia.

York River Marine Biology Boat Trips

Saturday, June 19

Join this trip on a VIMS vessel to collect York River animals using crab pots, habitat cages, a plankton net, and a trawl net. Trips will run from the floating dock in Taskinas Creek. 11am – 12:30pm OR 1pm – 2:30pm.

Tour of the Reserves Canoe Trips

Wednesday, July 28

Thursday July 29

Wednesday, August 18

On these trips, participants will take a 5-hour canoe trip through Taskinas Creek and the nearby York River to explore the salt marsh and collect estuarine animals using seine nets. 9:30am – 2:30pm.



To reserve space for these programs or for more information, contact York River State Park at yorkriver@dcr.state.va.us or 757-566-3036. Space is limited. Participants must sign up in advance and fill out a health form and liability waiver. Everyone must wear sneakers or sturdy sandals that can get wet and muddy and sign in for trips 15 minutes prior to departure time. Children must be at least 50 pounds. York River State Park parking fee is \$3 per car on the weekend and \$2 per car on weekdays. Trips are weather dependent.

Study Reveals Sharp Drop in SAV

VIMS' annual analysis of submerged aquatic vegetation (SAV) in Chesapeake Bay shows a significant decline in bay grass coverage during 2003. The 30% decrease recorded by VIMS researchers offsets significant increases in bay grass acreage measured during the previous few years of drought.

Scientists at VIMS and elsewhere around the Bay attribute the decline to last summer's heavy rains and cloudy weather. Near-record river flows in 2003 washed large amounts of nutrients and sediments into the Bay, which combined with cloudy, rain-filled days to hinder the growth of the Bay's underwater grasses.

VIMS measured 64,709 acres of underwater grasses in 2003, significantly lower than the previous year's record level of 89,659 acres. The 2003 total represents just 35% of the 2010 restoration goal of 185,000 acres set by the Chesapeake Bay Program (CBP).

"Nature continually reminds us that SAV is very sensitive to water quality," says Dr. Robert Orth, who heads VIMS' annual bay grass survey.

"Acreage fluctuations over the past two years reinforce the message that SAV can rapidly rebound when conditions improve, but also decline just as rapidly when conditions worsen as they did in 2003."

"Wet and dry years have become proxies for the problems that face the Bay and what we hope the Bay can be," adds

Dr. Ken Moore, who along with Orth heads VIMS' SAV program.

The Chesapeake Bay Program uses the VIMS data to track progress toward its SAV restoration goals. VIMS researchers base their yearly report on analysis of more than 2,000 aerial photographs.

For more information on VIMS' SAV program and data, visit www.vims.edu/bio/sav

