



Aquatic Sciences



Aquatic Sciences is part of the College of Agriculture & Related Sciences at Delaware State University

A Quarterly Newsletter

Spring 2005

Student Highlights

Meet the staff and students of Aquatic Sciences
Page 2



Featured Staff

Meet research assistant professor, Dr. Gulnihal Ozbay
Page 2

New Logo Released

Check out our New Logo
Page 2

Student Highlights

See what our students are up to.
Page 3

Aquatic Science Classes at a Glance

Check out one of our classes and see what students do
Page 3



Research Highlights

Follow along with one of our research projects in Aquatic Sciences
Page 4

Aquaculture Facility Receives New Building

As some of you may have read in a previous newsletter (Jan 04), we lost one of our of our aquatic science labs to a fire. Well, with all bad news comes good news. Construction of our new facility is underway and we will be up and running in the near future. The new building will be temperature controlled and will feature closed-loop recirculation systems



Construction Begins

for aquaculture research. One small 18 tank system (720 gallon total) will be used for fish larviculture, and two larger systems consisting of 9 tanks each (5,000 gallon total) will be utilized to conduct research on fish growth and survival. In addition, two production sized systems (10,000 gallon total) will be used to conduct research and simulate conditions in

commercial re-circulating fish production tank systems. We will continue to provide updates on our progress.

Dr.'s Fox, McIntosh & Ozbay Receive Funding

Dewayne Fox, assigned as principle investigator for DSU's portion of the Living Marine Resources Cooperative Science Center (LMRCSC) grant was recently awarded funding for three separate projects involving research on identifying spawning habitat of Atlantic sturgeon, site fidelity of sandbar sharks and the ecology of yellow phase American eels. The LMRCSC is a program of the National Oceanic and Atmospheric Administration (NOAA). Additional funding for the Atlantic Sturgeon work has been provided through the Pennsylvania State Wildlife Grants Program and NOAA's Anadromous Fish Conservation Act Fund.

Dennis McIntosh and **Gulnihal Ozbay** were recently awarded research grants through the LMRCSC to study baseline production parameters for the Delaware state fish, (weakfish) and harmful algal roadblocks to American oyster restoration, respectively. Additional funding was also secured by Dr. Ozbay from the United States Department of Agriculture (USDA) to help develop the Aquatic Sciences program here at DSU. Thanks, Dewayne, Gulni and Dennis!

Graduate Student Patrick Erbland Joins DSU

Hello DSU, for those of you I have yet to meet, I am a new Masters student working under Dr. Ozbay. I come from a Navy family and spent most of my childhood moving around. I have lived in FL, VA, IL, NY, Newfoundland and Italy. While this life has given me many great experiences I have also contracted a terminal case of the travel bug.



In December of 2000 I obtained a B.S. degree in Biology from Binghamton University. While

enrolled at Binghamton I conducted undergraduate research at U of Wisconsin's Water Institute pertaining to water quality and plankton ecology in lake Michigan as well as some work on the dreaded Zebra Mussel.

After a failed attempt as a ski bum in Lake Tahoe, I served a season aboard the Delaware Bay's own A.J. Meerwald. This is a sailboat that principally teaches the public about marine life and environmental concerns in the bay. Then I was off to work for the great State

**(Continued on next page)*

Who Are We?

The Staff

Dewayne Fox (Ph.D.) Fish Ecology/Biology & Aquatic Ecology

Dennis McIntosh (Ph.D.) Aquaculture, Nutrient Management, Cooperative Extension

Gulnihal Ozbay (Ph.D.) Marine Fisheries, Nutrient Management

Grant S. Blank (M.A.) Research Technician

Lori M. Brown (B.A./B.S.) Research Technician

Donald Wujtewicz (M.S.) Project Manager, Ponds

Graduate Students

Patrick Erbland, (Advisor: Gulnihal Ozbay)

Jessie Thomas (Advisor: Dewayne Fox)

Student Research Assistants

Kelvin Barthelmeh, Freshman, Natural Resources

Chris Cawley, Senior, Agricultural Business

Matthew Grabowski, Senior, Fish & Wildlife Management

Monica Jackson, Junior, Biology

Matt Jones, Sophomore, Fish &, Wildlife Management

Brandon Martin, Sophomore, Fish & Wildlife Management

Christie Starke, Freshman, Wildlife Management

Featured Staff

Gulnihal Ozbay
Research Assistant Professor

Gulni came to DSU in December of 2002 from Auburn University where she completed her Ph.D. in Aquaculture working on the characterization and treatment of effluents from channel catfish ponds in Alabama.



Dr. Ozbay was brought to DSU with funding from the LMRCSC grant which is part of the National Oceanic and Atmospheric Administration (NOAA). Gulni's research focus has been American Oyster habitat restoration, including water quality interactions and determining feeding differences among various age classes of oysters.

In addition to Gulni's own research interest, she has taught both Hydrology and Ichthyology at DSU and she actively encourages student participation through initiating several ongoing research projects. Currently, Gulni is collaborating with several faculty on campus and abroad for the purpose of establishing a Global Seminar Program for students at DSU. Dr. Ozbay has also recently taken on the responsibility of supervising graduate student Patrick Erbland (see Page 1 of this issue).



Aside from her research and teaching interests, Gulni enjoys the outdoors and exploring the eastern shore. She and her husband, Anthony, also stay very busy taking care of their daughter, Odell.

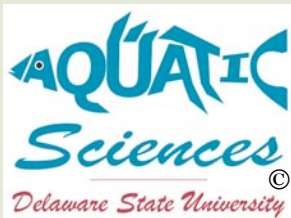
Patrick Erbland (Continued from Page 1)

of Utah where I was involved with aquatic species conservation. Finally, I have spent the last two years working on an "educational" farm in the foothills of the Berkshire mountains in western Massachusetts where I longed to once again smell that salty sea air.

My project at DSU, while not yet cemented, will be looking at the ecology of Eastern Oyster communities in the area. In so doing I hope to contribute to the preservation of an ecosystem that is essential to the mid-Atlantic marine environment. In addition, I hope to be involved in other graduate and faculty research and to learn as much as I can during my time here at DSU. Oh, and I am an outdoorsy person whose interest include gardening, hiking, primitive skills, cycling, fishing, cooking, sailing (although my student stipend keeps the schooner of my dreams painfully out of reach), carpentry, photography and long walks on the beach.

New Logo Released

This past fall, research technician, Lori Brown worked diligently to create a new Aquatic Sciences logo. Some of you may have already seen our logo as a sticker this past fall at Coast Day O4. Our new logo, shown below, will be incorporated in everything from stickers to T-shirts, our newsletter and our new web site <http://cars.desu.edu/aqua-sci> (also created by Lori Brown). Look for us, more of our stickers and another Aquatic Sciences shirt giveaway at the Delaware State Fair, July 21-30, 2005.



Student Highlights

Student Research Assistants to Present at DSU Honors Day

Student research assistant, **Monica Jackson**, will be giving an oral presentation on "Flow cytometry and sample preservation in marine phytoplankton analyses" at DSU's Honors Day March 31st. Monica has been working with Dr. Gulnihal Ozbay refining the protocol for flow cytometry use in algal sample analysis.



In addition to Monica's presentation, four other Aquatic Science student research assistants will be giving presentations at Honors' Day this year. **Chris Cawley** will be presenting on the effects of highway retention pond runoff on a farm creek and **Brandon Martin** along with

Matt Grabowski will be presenting on water quality in constructed wetlands. **Matt** will also be presenting on external tag retention and post tagging survival in Delaware Bay weakfish. Finally, **Callye Masten** will be giving a presentation on the market demands of bait-fish in Delaware.

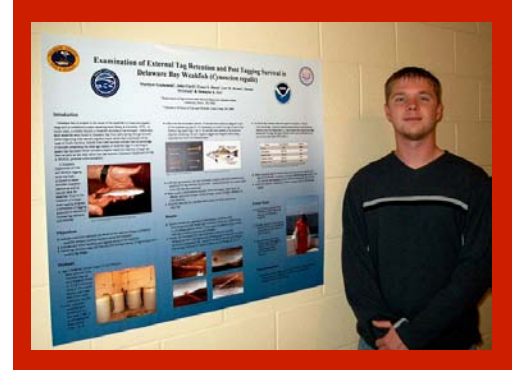
Jessie Thomas Completes First Portion of American Eel Research

Congratulations Jessie! Part one of Jessie Thomas's thesis research on American eels has been completed. As you may recall from our previous newsletter (June 04), Jessie was evaluating suture techniques for placing radio frequency transmitters in American eels so that she can track their movements in Dover's Silver Lake, Fork Branch and the St. Jones River. Well, Jessie has assessed the suture techniques and along with the help of DSU faculty, staff and students she has implanted and is now monitoring approximately 20 tagged eels in and around the St. Jones River for the 2nd portion of her research. This spring, Jessie intends on trying to implant transmitters into 20 more eels that she can monitor throughout the summer. Keep up the great work Jessie!



Grabowski Wins Award

Fish and Wildlife senior, **Matt Grabowski** recently earned a 2nd place award for his poster entitled "Examination of external tag retention and post tagging survival in Delaware Bay weakfish (*Cynoscion regalis*)" at the National Oceanic and Atmospheric Administration's 2004 Education Science Forum held at the City College of New York. Matt's poster was one of more than 135 entries. Earning a 2nd place award is pretty impressive considering Matt was competing with students from such prestigious institutions as The University of Miami, University of Maryland and CUNY to name a few. Congratulations Matt! For more information regarding Matt's project see Page 4 of this newsletter or come by and see Matt give a talk at Honors Day on March 31st in the MBNA building here on campus.



Dr. McIntosh Teaches Aquaculture and Takes Class on Tour of Aquaculture Production Facility

Dr. McIntosh started off the spring semester by providing students the opportunity to take "Aquaculture" through the College of Agriculture and Related Sciences. This course features instruction on the fundamentals of aquaculture and includes hands on practical learning about various aspects that are important to aquaculture production. Some of the topics discussed in this course include pond engineering, water quality, fish biology, production systems and business plan development.

As part of his course, Dr. McIntosh scheduled an aquaculture tour with a Tilapia production facility located in Delaware. While at the fish farm students were able to spend about two hours listening and discussing actual production aquaculture with fish biologist Phil Shambach and owner/managers Joel and Floyd Blessing. The Blessings and Phil Shambach are great folks and gave our students some real insight into the realities of production aquaculture. We thank them for allowing our students this great opportunity.



Research Highlight

Weakfish Project

As you may recall, DSU staff and students are working in conjunction with Delaware Division of Fish and Wildlife Biologist, John Clark to assess tag retention and survival in Delaware's State fish (Weakfish). Currently, part one of our two part weakfish tag retention study has been completed. Our initial efforts focused on the retention of four tag types (Floy internal, Hallprint internal, Hallprint dart, and Hallprint T-bar) as well as survival of weakfish in a recirculation system for sixty days. After the initial 60-day trial was concluded, the highest retention and survival rates were obtained for the Hallprint dart and T-bar type tags (shown below).

The second part of our study began in early November and will end in May. Our objective is to perform a six month retention trial to further quantify the results from our first trial. In this trial, however, only the the



Dart and T-bar tags are being used due to their higher retention rates and better weakfish survival. So far, survival in trial two has been extremely good, with only two fish mortalities. One fish was from the control group that was not implanted with tags and one fish was from the T-bar tagged group. As we continue into the 2nd half of this six month trial, tag retention rates appear to be relatively even between the two tag types. Once our study concludes, John Clark and the Division of Fish and Wildlife will use the information from our indoor trial to determine if a large scale weakfish tagging program in Delaware Bay is feasible.

C/O Grant S. Blank
Delaware State University
Department of Agriculture & Natural Resources
1200 North DuPont Highway
Dover, DE 19901-2277

Addressee Name
4321 First Street
Anytown, State 54321