

Research Profile



First name: Gulnihal **Last name:** Ozbay
Title: Associate Professor
Department: Agriculture and Natural Resources
Work Address: 1200 N. Dupont Hwy. Dover DE 19901
Phone: 302-857-6476
Fax: 302-857-6402
Email: gozbay@desu.edu
Research website: <http://cars.desu.edu/faculty/gozbay>

Professional Education:

- Ph.D. Auburn University, Auburn, AL, 2002
Fisheries and Aquaculture (Concentration: Water Quality & Aquaculture)
Research Project: Studies of Channel Catfish *Ictalurus punctatus* Pond Effluent Characteristics and Treatment Options. Faculty Advisor: Dr. Claude E. Boyd
- M.Sc. University of Maine, Orono, ME, 1996
Bio-Resource Engineering (Concentration: Marine Bio-Resources)
Research Project: The Effects of CaCO₃ Buffering on the Hemolymph Acid-Base Level of the American Lobster (*Homarus americanus*): A Pre-Shipment Conditioning Technique. Faculty Advisor: Dr. John G. Riley
- B.Sc. University of Ondokuzmayis, Samsun, TURKEY, 1991
Fisheries and Aquaculture Engineering (Concentration: Aquaculture)
Capstone Research Projects: Aquaculture and Spawning Succession of Gilthead sea bream (*Sparus aurata*) in the Lagoon System in Aegean Sea, Turkey; Raceway Culture of Rainbow Trout (*Oncorhynchus mykiss*) in Antalya, Turkey

Research Interest Area(s):

Research focus is on marine aquaculture, habitat restoration and water quality issues, specifically research in the associations between algae, shellfish, and water quality, water quality driven toxicity in harmful algae, shellfish-algae dynamics, nutrient and water quality management, aquatic ecology and health, seafood safety, and drinking water quality.

Active Grants & Funding:

1. "Microbial and Chemical Contaminants in Processed Catfish for Food Safety." USDA-FSIS Grant. Amount: \$150,000. Award Period: 09/25/2010-09/24/2011. PI.
2. "Enhancing Geographic Information System Education and Delivery through Collaboration: Curricula Design, Faculty, Staff, and Student Training and Development, and Extension Services". USDA-NIFA CBG Grant Program. Amount: \$299,996. Award Period: 09/01/2010-08/30/2013. PI.



3. "A geospatial teaching laboratory for student education". USDA-NIFA CBG Grant Program. Amount: \$140,978. Award Period: 09/01/2010-08/30/2011. PI.
4. "Inactivation of enteric foodborne viruses in high risk foods by non-thermal processing technologies". USDA-AFRI Grant Program. Amount: 3 Million. Award Period: 2/1/2011 - 1/31/2016. DSU PI (Co-PI).
5. "Microbial and Chemical Contaminants in Processed Catfish for Food Safety." USDA-FSIS Grant. Amount: \$555,550. Award Period: 09/25/2009-09/24/2011. PI.
6. "Monitoring Aquatic Health and Habitat Value of Oyster (*Crassostrea virginica*) Gardening and Restoration through Community Based Oyster Enhancement Efforts." USDA Evans-Allen Grant. Amount: \$209,750. Award Period: 09/01/2010-08/31/2012. PI.
7. "Oyster Restoration Efforts at Delaware's Inland Bay." DuPont C. Clear into the Future Environmental Stewardship Grant. Amount: \$25,000. Period: 07/01/2010 – 06/30/2011. PI.
8. "Male African-Americans on the DSU Campus: A Study of Factors Affecting Their Recruitment, Retention and Graduation Rates". DSU Center for School Change: Excellence in Teaching and Professional Development. Amount: \$1,500. Award Period: 01/01/2011 – 09/30/2011. PI.
9. "Research Experience for Undergraduates Site: Undergraduate Research in Molecular Genetics & Genomics at DSU." National Science Foundation Grant. Amount: \$250,000. Award Period: 05/2010 – 09/2012. Co-PI.
10. "Benthic diatom assemblages as environmental indicators in Blackbird Watershed, Delaware." NOAA ECSU. Amount: \$146,895. Award Period: 06/01/2008 – 05/31/2011. PI.
11. "Persistence of Enteric Viruses in Oysters (*Crassostrea virginica*)". USDA-NRI Grant. Amount: \$100,000. Award Period: 10/01/2008 – 9/30/2011. PI.
12. "Mid-Atlantic Drinking Water Program Region 3" USDA National Integrated Water Quality Program (NIWQP) Grant. Amount: \$2.4 Million. Award Period: 10/01/2008 – 9/30/2012. Co-PI.
13. "Mid-Atlantic Drinking Water Program: Drinking Water and Human Health. National Integrated Water Quality Program (NIWQP) -Environmental Protection Agency (EPA) Region 3 Grant. Amount: \$160,511 (DSU: 48,000). Award Period: 12/01/2009 – 11/30/2012. Co-PI. Delaware Water Resources, NSF-EPSCOR and NSF-SMILE Programs Student Internship Grants
14. "Monitoring Aquatic Health and Habitat Value of Oyster (*Crassostrea virginica*) Gardening and Restoration through Community Based Oyster Enhancement Efforts." NSF SMILES Grant Program. Amount: \$10,000. Award Period: TBD. PI. Funding is requested for two internship students.
15. "Evaluation of Benthic Diatoms as Water Quality Indicators in Blackbird Creek Watershed, Delaware." NSF EPSCOR Grant Program. Amount: \$4,750. Award Period: 06/01/2010-08/30/2010. PI. Funding is requested for the internship student.
16. "Oyster Restoration Efforts at Delaware Inland Bays: Utilizing rip-rap as a substrate for oys-



ters.” USGS Water Research Grant. Amount: \$3,500. Period: 06/01/2010-02/28/2011. PI.

Professional Affiliations:

- American Water Resources Association
- World Aquaculture Society
- American Fisheries Society
- National Shellfisheries Association
- Institute of Food Technologists (IFT)
- Atlantic Estuarine Research Society
- Harmful Algae Research Society
- Society of Advocates for Sustainable Environment
- North American Benthological Society
- Global Aquaculture Advocate
- Estuarine Research Federation Society
- American Association for Advancement of Science
- East Coast Shellfish Growers Association
- American Association of University Professors

Honors and Awards Received (last five years):

- 2010 DSU Faculty Excellence Award in Student Advising and Mentoring - Delaware State University
- 2009-2010 Women in Color All Star Technology Award – Dallas, TX, USA
- 2009-2010 DSU Professional Development Travel Award for IFT Conference in Chicago, IL.
- 2010 DSU Professional Development Travel Award for Aquaculture Europe 2010, Porto, Portugal
- 2010 DSU Professional Development Travel Award, Seminar Lecture, Istanbul Technical University, Istanbul, Turkey
- 2010 Faculty Merit Pay Delaware State University, Dover, DE
- 2009 Distinguished Scientist Award- Delaware State University, College of Agriculture & Related Sciences
- 2009 DSU Faculty Excellence Award in Research & Creative Activity – Delaware State University
- The Prestigious Coastal America Partnership Award for 2009 -recognizes outstanding Coastal America Partnership for “Delaware Bay Oyster Restoration Task Force”.
- Excellence in Government Awards □Gold Medal□ - Delaware Bay Oyster Revitalization, May 7, 2009
- 2008 Government Award to Delaware Bay Oyster Restoration Project at the 26th Annual Recognition Dinner of the Water Resources Association of the Delaware River Basin In “Success for Delaware Bay Oyster Project”, April 16, 2008, PA, USA
- Modern Day Technology Leader Award 2008-2009 Organization: Career Communications Group, Inc, Baltimore, MD, USA
- 2008-2009 DSU Professional Development Research Award for Oyster Gardening & Bacterial Monitoring Research



- Nominated for 2009 Morrison-Evans Outstanding Scientist Award-Association of Research Directors, Inc. 15th Biennial Research Symposium by Delaware State University, College of Agriculture & Related Sciences
- Nominated for Distinguished Early Career Award, WAS-USAS, World Aquaculture Society Meeting, February 15 – 18, 2009, Seattle, WA
- Nominated for Secretary (2009 – 2011) for Atlantic Estuarine Research Society
- Nominated for Secretary (2010-2012) for World Aquaculture Society
- Distinguished Service Award, 11th Annual Philadelphia AMP Research Symposium & Mentoring Conference, April 5, 2008, PA, USA.
- 2009 Embassy Science Fellow at the U.S. Embassy in Majuro, Marshall Islands

Listed In:

- MARQUIS Who's Who in America 2009 110th Edition
- Montclair Who's Who in Collegiate Faculty 2010-2011 Edition
- MARQUIS Who's Who of American Women 2010-2011 Edition
- MARQUIS Who's Who in the World 2011 Edition
- Cambridge Who's Who Registry among Executives & Professionals 2010-2011 Edition
- MARQUIS Who's Who in Science & Engineering 2011-2012 11th Edition

Publications (last three years):

- Ozbay, G., Holloway, F. Hughes, J., Ukaegbu, O. and Dillard, C. (2010). Investigating Growth Responses, Survival, and Cellular Activities of Harmful Algal Species, *Karlodinium veneficum* and *Prorocentrum minimum* under Various Environmental Conditions: Students Harmful Algal Research Projects. *Journal of Environmental Monitoring & Restoration*. In Press.
- Marenghi, F. and Ozbay, G. (2010). Floating Oyster, *Crassostrea virginica* Gmelin 1791, Aquaculture as Habitat for Fishes and Macroinvertebrates in Delaware's Inland Bays: The Comparative Value of Oyster Clusters and Loose Shell. *Journal of Shellfish Research*. 29(4):887-902.
- Fay, J. and Ozbay, G. (2010). Evaluating Aquatic Health at Oyster Gardening Restoration Sites in the Delaware Inland Bays, USA. *The World Aquaculture Society*. 51(4): 62-65.
- Marenghi, F. and Ozbay, G. (2010). Preliminary Habitat Assessment of Floating Oyster (*Crassostrea virginica*) Gardens (Delaware). *Ecological Restoration Journal*. 28(3):254-257. ISSN 152204740 E-ISSN 1543-4079.
- Ozbay, G. and Jackson, M. (2010). Flow Cytometry Application in Marine Phytoplankton Study: A Case Study Investigating the Effects of Formalin Preservation on Phytoplankton Count and Cell Integrity. *Journal of Biotech Research*. 2:79-100. ISSN: 1944-3285.
- Ozbay, G. and Gibson, A. (2010). Grass-Roots Oyster Aquaculture Provides Habitat for Juvenile Blue Crabs. *Global Aquaculture Advocate* July/August: 40-41.
- McKenzie, J.F. and Ozbay, G. (2010). Viability of a Freshwater Mussel (*Elliptio complanata*) as a Biomechanical Filter for Aquaculture Ponds II: Effect on Aquaculture Pond Water Quality. *Journal of Applied Aquaculture* 22(1): 39-56. DOI 10.1080/10454430903539152.
- McKenzie, J.F. and Ozbay, G. (2009) Viability of a Freshwater Mussel (*Elliptio complanata*) as a Biomechanical Filter for Aquaculture Ponds I: Clearance Rate of Chlorophyll- α . *Journal of Applied Aquaculture*. 21(4):205-214. DOI: 10.1080/10454430903113826.9. Rossi-Snook, K.,



- Marenghi, F. and Ozbay, G. (2009). Oyster (*Crassostrea virginica*) Gardening for Restoration in Delaware Inland Bays. *Aquaculture International Journal* 1–6 DOI 10.1007/s10499-009-9271-5.
- Marenghi, F. Ozbay, G., Erbland, P. and Rossi-Snook, K. (2009). Comparison of Species Composition, Diversity and Abundance in Sub-tidal and Floating Oyster (*Crassostrea virginica*) Gear Habitat from Delaware's Inland Bays. *Aquaculture International Journal* 1–11 DOI 10.1007/s10499-009-9273-3.
 - Ozbay, G., Lambert, M.S. and Polioudakis, E. (2009). Sedimentation of Soils from Three Physiographic Regions of Alabama at Different Salinities. *Journal of the World Aquaculture Society* 40(4):540-546.
 - Lambert, M.S., Ozbay, G., and Richards, G.P. (2009). The Influence of Feral Horse Activity on Water and Shellfish (*Gukensia demissa*) Quality along the Western Coast of Assateague Island National Seashore, Maryland. *Journal of Archives of Environmental Contamination & Toxicology* 57:405–415. Published online: 09 January 2009. DOI. 10.1007/s00244-008-9277-4.
 - Ozbay, G., Marenghi, F. and Fay, J. (2009). The Application of Geographic Information Systems (GIS) in Oyster Restoration (*Crassostrea virginica*) in Delaware Inland Bays. *Journal of Environmental Monitoring & Restoration*. 5:89-95.
 - Marenghi, F. Ozbay, G., Rossi-Snook, K. and Chalabala, E.J. (2009). Restoration Program in Inland Bays Improves Ecosystems as Oyster Populations Recover. *Global Aquaculture Advocate* March/April: 16-17.
 - Ozbay, G., Marenghi, F., Rossi-Snook, K., Ewart, J. and Chalabala, E.J. (2009). Delaware Oyster Gardening and Restoration - A Cooperative Effort. YSI Application Note, YSI Aquaculture 0409 A571. 2009 YSI Inc.
 - Ozbay, G. (2009). Habitat Value of Oyster Culture Gear. *East Coast Shellfish Growers Association Magazine* 3:08: 5-7.
 - McKenzie, J.F. and G. Ozbay. (2008). Evaluation of a Closed Recirculating Holding System for Freshwater Mussels (*Elliptio complanata*). *Proceedings of the 7th International Conference on Recirculating Aquaculture*. July 25-27, 2008, Roanoke, VA, USA, pp. 157-165.
 - Erbland, P.J. and Ozbay, G. (2008). A Comparison of the Macrofaunal Communities Inhabiting a Created Oyster (*Crassostrea virginica*) Reef and Oyster Aquaculture Gear in Indian River Bay, Delaware. *Journal of Shellfish Research*. 27(4):757-768.
 - Jackson, A.R., Rouse, D.R. and Ozbay, G. (2008). The Effects of Oyster (*Crassostrea virginica*) Structure and Bioactivity on Water Quality, Sediment Nutrients, Infaunal Communities, and Transient Fish Biomass. *Journal of Environmental Monitoring & Restoration*. 4:66-82.
 - Ozbay, G., Jackson, M., Munyei, N., and Reiter, M. (2008). Temperature- and Salinity-Dependent Phytoplankton Profiles for the St. Jones River Watershed, Delaware. *Journal of Environmental Monitoring & Restoration*. 4:29-38.
 - Jackson, A.R. and Ozbay, G. (2008). Ecological Sustainability in Shrimp Aquaculture. *The World Aquaculture Society*. 39(3):42-53.