AQUAVET® I Experience Report

Sam Oakey
University of Georgia CVM, Class of 2024

Fig 1: Group picture at Woods Hole

AAFV Scholarship Committee,

I am extremely grateful and beyond thankful for the honor of being awarded the 2022 Drury Reavill Memorial Scholarship. Dr. Reavill was an amazing board-certified pathologist who helped co-found and support AAFV, and she contributed to many publications and keynote pathology books to guide future pathologists. As a rising 3rd year student who hopes to become a pathologist who specializes in fish, this scholarship shows me I have what it takes to continue this path and achieve great things. This scholarship will help me follow in the footsteps of Dr. Reavill by supporting me through AQUAVET® I and it also gives me the motivation to pursue my dreams and contribute to veterinary medicine as Dr. Reavill has done for many years. I hope to make many significant contributions to aquatic medicine and create a non-profit supporting and educating veterinarians in underdeveloped countries on disease pathology in aquaculture.

My career goal is to become a pathologist specializing in aquaculture diseases with hopes of aiding in food availability to those in need.

This scholarship has helped me complete the AQUAVET® I course and gain lifelong colleagues and mentors in aquatic medicine. This course contained a combination of didactic and hands-on training via field trips and labs that helped me understand aquatic species at a medical level. The course took place at Roger Williams University in Bristol, Rhode Island for a 4-week long summer course. The first week of the course began an introduction to invertebrates which included clinical skills such as blood draws and anatomy. We went snorkeling off the beach and collected a variety of invertebrates including whelks, crabs, and scallops. A highlight of the invertebrate segment was when Dr. Bob Maze showed us that his oyster farm was filmed for a cooking show! It showed the importance of aquaculture systems in providing easy access to THE FRESHEST food available.

The next few weeks included introductions of various fish health avenues. I knew food-based aquaculture was an avenue, but I did not know much about ornamental aquaculture. We had Dr. Roy Yanong lecture to us about fish anatomy and all the amazing work the Tropical Aquaculture Lab in Florida is doing at raising ornamental fish instead of taking too many fish from reefs. This led to an interesting lecture on how much ornamental aquaculture is too much. Many developing coastal nations rely on using their native waters to collect and sell ornamental fish and corals to aquarists. These small island nations base their economy on their rare fish, and it is a dynamic that veterinarians are balancing with island nations based upon the demand for ornamental species. Additionally, during the aquaculture segment, we had a fun catfish lab with Dr. Lester Khoo! We acted like fish veterinarians who recently received sick fish to our lab and followed steps to diagnose the disease. This activity helped us learn how to examine a fish both externally and internally to come up a diagnosis. Many of the fish had *Edwardsiella* and it was great to see the gross presentation of the disease since my seminar topic for AQUAVET® was on histopathology of various *Edwardsiella* species. I had only ever dealt with the histopathology, but it was a great experience to look at the live fish and make the connections to the histopathologic findings!

Fig 2: Ice cream break between classes at Jules in downtown Bristol, Rhode Island. Photo credit Dr. Roy Yanong.

Of course, the pathology segment was my favorite part of AQUAVET®! I learned so much about normal fish histology and differences between elasmobranchs and bony fish. Dr. Frasca and Dr. Reinhardt did an amazing job of teaching us and providing us with slides to examine during labs. We were able to see the histopathologic lesions of many fish diseases and have access to digital slides for future review. Furthermore, we had Dr. Jill Arnold come by to talk about fish hematology and the differences between fine and course granulocytes. This segment blew my mind, and it was super cool!

During the last half of the program, we began attending field trips to various aquariums. We toured the New England aquarium and the veterinarians their came to RWU to help us perform necropsies on sea turtles and aquatic birds. Many of our sea turtles were killed due to cold shock which was extremely sad and shocking to me as I don't have much experience with sea turtles. I did not realize how quick temperature changes due to climate change can wipe out dozens of yearling sea turtles. For the bird necropsy, I had a pelican who's cause of death was likely due to excess nematodes within the GI tract. It was like scene from a horror movie—worms bursting through the walls of the GI tract! We were able to conduct a real report for submission after our necropsy which made the experience not just good for learning, but a contribution to the scientific community. Furthermore, we went on a field trip to Long Island Aquarium and the New York Marine Rescue Center. At the aquarium, we were able to see their rescued seals and sea lions as well as frag our own corals! I had always wanted to learn how to raise and

frag corals, and we were given a crash course all about corals with the amazing Joe Yaiullo. At the rescue center, we were able to do physical exams and blood draws on seals and sea turtles. The staff explained the injuries of each animal and their progression through rehabilitation which really highlighted the amazing work they all do! Additionally, we had a field trip to mystic aquarium where we had a behind the scenes tour of their hospital and quarantine area. We were guided by Dr. Tuttle who explained the importance of training their marine mammals to provide stress free veterinary care. Our last trip was at Woods Hole where we learned anatomy on seals and dolphins through necropsies of animals who died of strandings. Drs. Field and Sidor helped us through the necropsies and gave us lectures on all sorts of cases they've encountered in their careers.

Fig 3: New York Marine Rescue group picture with all the amazing staff who helped us!

To conclude our time in AQUAVET ® I, we ended with fish surgery on striped bass. Drs. Boylan, Groocock and Sanders guided us through splenectomies, ovariectomies, and enucleation. It was my fish time conducting surgery on a fish, and my first enucleation of a live patient! My surgery group was led by Dr. Jessie Sanders who did an amazing job of making surgery stress-free and answered all our burning fish questions.

Fig 4: Left- Dream team after our fish surgery! Right- My surgery team got matching temporary tattoos to celebrate!

Once again, thank you for awarding me the Drury Reavill Memorial Scholarship and supporting my dreams to becoming a fish pathologist. At the conclusion of my time at AQUAVET®, I made 24 new friends who will all do exceptional things with their career, including two international students from Hong Kong and Malaysia who taught me so much about their culture. We had a little COVID outbreak towards the end of the program, but we were all still able to have a great time!

Fig 5: Mass stranding of AQUAVET® I students after our last lecture. Photo credit Dr. Bob Maze who ran up the hill to get us at our good angle.