

Brittany Wolfe-Bryant

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EDUCATION

University of North Carolina; Wilmington, NC
M.S. in Marine Biology, August 2017-May 2023

University of Maine; Orono, Maine
B.S. in Marine Science, Concentration in Marine Biology; May 2012

Darling Marine Center, Walpole, Maine Semester by the Sea – Fall Semester 2010

RESEARCH EXPERIENCE

Shellfish Hatchery Manager/ Extension Specialist April 2020- Present
Patuxent Environmental & Aquatic Research Lab, Morgan State University, St. Leonard, MD

-Shellfish Hatchery Manager- *Morgan State University PEARL*

- Manage a small-scale low salinity shellfish research hatchery breeding oysters and soft shell clams, perform all the duties of a manager, larval specialist, and algae specialist.
- Coordinate field work at multiple field sites, breeding season plans, managing shellfish inventory
- Writing job descriptions, conducting interviews for research tech and intern positions, training and managing graduate and undergraduate student workers
- Grant writing, ordering and supplies,
- Established an entire algae room from the ground up, currently growing 11 strains of algae: (T-iso, C-iso, Iso, Mono, CCMP 609, CHGRA, TW, PLY 429, UTEX 2341, Nanno sp.). Designed and co-constructed incubator dedicated to algae flasks, carboy shelving unit and kwall system

-Extension Specialist- *Maryland Sea Grant and University of Maryland Extension*

- On-site visit to local farms to answer questions and troubleshoot problems
- Created a series of educational videos about the Maryland oyster industry (history, wild harvest, aquaculture, researchers, conservationists, seafood restaurants)
- Purchased equipment to provide a free disease testing service to local oyster farmers
- Public outreach, ran booths at Patuxent River Appreciate Day (PRAD) and U.S. Oyster Festival
- Attend local oyster and aquaculture related meetings: proxy for The State of Maryland Oyster Advisory Commission, Maryland Aquaculture Coordinating Council, Northeast/Mid-Atlantic Coast Regional Aquaculture and Seafood Meeting, Maryland Seafood Production Aquaculture Extension Team meeting
- Designing a stakeholder needs assessment for the Southern Maryland region
- Serving on an extension review panel reviewing several pre and full proposals for Maryland Sea Grant

Graduate Research Assistant & Graduate Teaching Assistant August 2017- March 2020
Shellfish Research Hatchery, University of North Carolina Wilmington, Wilmington, NC

Advisor: Dr. Ami Wilbur

- DNA extraction, using modified PureGene DNA extraction protocol, used qPCR for detecting *Haplosporidium nelsoni* and *Perkinsus marinus* in oyster gill tissue
- Broodstock conditioning (oysters, scallops, hard clams, sunray venus clams, pen shells), spawning, larval bivalve husbandry, seed maintenance, adult bivalve husbandry, certified polyploid broodstock, larvae and seed using a flow cytometer, cultured healthy microalgal cultures for a bag system, participated in research projects led by the research facility

Polyploid Specialist/ Hatchery Manager November 2015-August 2017
Aquaculture Genetics and Breeding Technology Center, VIMS, Gloucester Point, VA

- Polyploid Specialist- Managed all polyploid oyster material:

- Managed polyploid material in the field at multiple field sites using rack and bag and adjustable long line system, inventory management, larval and adult oyster husbandry, certified polyploid seed, assisted in histological work

- Temporary Hatchery Manager-

- Oversaw all polyploid oyster spawning and hatchery maintenance at the Kauffman Aquaculture Center (KAC): pumped water, maintained algal cultures, broodstock conditioning, spawning, larval oyster husbandry, maintained upwelling and downwelling systems, seed maintenance, polyploid certification (flow cytometry), coordinated staff, supervised and trained interns

Algae Technician

March-November 2015

Aquaculture Genetics and Breeding Technology Center, VIMS, Gloucester Point, VA

- Executed algal culture techniques, grew and maintained healthy microalgae cultures
- Assisted in algal probiotic experiment for another academic facility; maintained records of experimental data, packed and shipped biological samples
- Trained Oyster Aquaculture Training participants in basic algal culturing techniques

Algae Technician

November 2014-February 2015

KCB Oyster Holdings LLC, Lottsburg, VA

- Performed algal culture techniques, grew and maintained healthy microalgae cultures
- Developed knowledge and maintenance of algal bag system, and flow through systems
- Performed weekly water quality tests
- Assisted with hatchery operations (cleaned and maintained broodstock/larval oysters)

Oyster Aquaculture Training Program Participant

April-September 2014

Aquaculture Genetics and Breeding Technology Center, VIMS, Gloucester Point, VA

- Experienced in oyster hatchery, field grow-out, laboratory setting, and field grow-out methods
- Conducted experiment with triploid/ tetraploid larvae, recorded, analyzed, and summarized data
- Assisted in flow cytometry of gill tissue/larvae to determine ploidy
- Acquired basic plumbing and construction skills

Internship/ Volunteer

May 2011- April 2014

National Marine Life Center, Buzzards Bay, MA

- Served as Animal Care Volunteer for stranded seals, aquatic turtles, and terrestrial turtles: assisted in feeding, restrained seals, administered treatments
- Final project: Created educational coloring sheets with accurate marine facts about the organisms, and created a volunteer training tutorial for future volunteers
- Performed water quality and *E. coli* tests
- Conducted public outreach and education services

Student Laboratory Technician IV

January 2010-May 2012

Dr. Paul Ramson's Research Lab, University of Maine, Orono, Maine

- **Senior project:** Variation in Susceptibility to *Roseovarius* Oyster Disease among Genetic Lines of Eastern Oysters *Crassostrea virginica*.
- Cultured and maintained microalgae, prepared artificial sea water
- Fed and maintained *M. edulis*, *M. trossulus* and *C. virginica*.

Student Laboratory Technician III

January 2010-June 2012

Dr. Yong Chen's Research Lab, University of Maine, Orono, Maine

- Determined age of sea scallops (*Placopecten magellanicus*), examined shells for worm and/or impact damage.

Student Laboratory Technician IV

January 2010-May 2012

Dr. Ian Bricknell's Research Lab, University of Maine, Orono, Maine

Technician at the Aquaculture Research Center

- Counted lice on juvenile Atlantic Salmon, removed pit tags, and completed data entry
- Maintained juvenile Atlantic Salmon
- Performed water quality tests, assisted with assays, bacteria culturing, performed basic DNA and RNA work
- Disassembled and constructed recirculating systems

Hatchery Assistant

September 2008-May 2010

Sea & Reef Aquaculture, University of Maine, Orono, Maine

- Managed broodstock, larval, and grow out phases of numerous marine ornamental fish species
- Maintained live zooplankton cultures including Rotifers and *Artemia sp.* and sustained cultures of phytoplankton
- Maintained, repaired and performed daily assessments on saltwater recirculation systems
- Carried out daily water quality, organized files, fish data, and supply logs
- Sampled, observed, evaluated, and packed fish to be transported
- Supervised and trained students, and lead tours of the facility

PUBLICATIONS de Sousa JT, Allen SK, Jr., **Wolfe BM**, Moss Small J (2017) Mitotic instability in triploids and tetraploid one-year old Eastern oyster, *Crassostrea virginica*, assessed by cytogenetic and flow cytometry techniques. *Genome* 61: 79-89

PRESENTATIONS **Wolfe, B.M.** & Wilbur, A.E. (March 2019). Evaluation of Temporal Patterns of Chromosomal Loss in Families of Tetraploid Oysters *Crassostrea virginica*. Presented at the World Aquaculture Society Aquaculture 2019 Triennial Meeting, New Orleans, LA.

Wolfe, B.M. & Wilbur, A.E. (March 2018). Effects of Reduced pH on Growth and Chromosome Loss in Tetraploid Oysters *Crassostrea virginica*. Presented at the National Shellfisheries Association Annual Meeting, Seattle, WA.

Wolfe, B.M. & Allen, S.K. Jr. (March 2015). Comparative Larval Performance Between Tetraploid x Tetraploid and Tetraploid x Diploid Constructs Using Mosaic and Non-Mosaic *Crassostrea virginica* parents. Presented at the National Shellfisheries Association Annual Meeting, Monterey Bay, CA.

AWARDS The Gordon Gunter Award, *Genetics & Disease Section*, Poster Presentation, The National Shellfisheries Association Annual Meeting, Monterey Bay, CA 2015

GRANTS Maryland Sea Grant Omnibus RFP 2022-2024, Maryland Sea Grant, (September 2021), "2021-0029 Diversification of Maryland Shellfish Aquaculture: Development and Assessment of a Subtidal Grow-out Method for Culture of Soft Shell Clams (*Mya arenaria*)," \$140,000 for two years.

Maryland Industrial Partnerships, Maryland Technology Enterprise Institute (MTECH), (February 2021), "A High-Density, Live-Microalgal Diet for a Large, Profitable Oyster Industry," \$90,000 for one year.

iGap Small Tech Transfer Grant Sub-award, Morgan State University Office of Technology Transfer, (February 2021), "Development of Heat Tolerant Soft Shell Clams," \$10,000 for one year.

Chesapeake Oyster Education, Technology, and Monitoring Small Grants Program, Chesapeake Bay Trust and Chesapeake Oyster Alliance, (January 2021), "From the Water to Mouth-Watering: An Insight into the Oyster Industry," \$5,000 for one year.

**STUDENTS
MENTORED**

Summer 2022:

Jessica Baniak, Morgan State University PEARL, "Pushing the Limits, Heat Tolerance in Soft Shell Clams"

Kayla McVey, Morgan State University PEARL, "Evaluation of a Low Salinity Tolerant Eastern Oyster Line for Oyster Reef Living Shoreline Application"

Mya Sharpe, Morgan State University PEARL, "Using PCR Assay to Detect Dermo Disease in Eastern Oysters in Maryland Waterways"

Summer 2021:

Kyle Edwards, Morgan State University PEARL, "A Pilot Study of Soft Shell Clam Culture in Subtidal Maryland Waters"

Elissa Tuten, Morgan State University PEARL, "Comparison of Three Algae Diets for Easter Oyster Production"

Fall 2018:

Thomas Gomes, University of North Carolina Wilmington, "Exploring the Presence of Wild Polyploid Oysters Adjacent to Research Aquaculture Lease"

**REVIEWER
SERVICE**

Maryland Sea Grant Omnibus 2022-2024 Proposal Extension Review Panel- July 2021

Maryland Sea Grant Omnibus 2022-2024 Pre-proposal Extension Review Panel- March 2021

**COMMISSION
MEMBERSHIPS**

The State of Maryland Oyster Advisory Commission- Proxy (April 2020- present)