

# BARBARA BEVACQUA

## Curriculum Vitae

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I am a detail-oriented, personable individual with a hands-on approach and strong work ethic. I excel in challenging research environments, including the Arctic Circle and biotechnology labs. I have a broad foundation in environmental science, and am adept at conveying complex scientific concepts. Skilled in applied statistics, with experience in classical, robust, and Bayesian frameworks using R. Independent yet collaborative, highly trainable, and motivated to expand a diverse skill set.

### EDUCATION

**B.S in Biology, Western Washington University** | June 2020 | Cum Laude | 3.94 GPA  
Emphasis in Ecology, Evolution and Organismal Biology

### SCHOLARSHIP AND AWARDS

#### **NOAA Hollings Scholar**

Two year tuition support and a paid summer internship position within NOAA.

#### **WWU Marine Science Scholar**

Immersement in and overview of Marine Science concepts, methods and communication in the Salish Sea, included field work and lab work.

#### **WWU Western Undergraduate Exchange Scholarship**

Merit based scholarship for reduced tuition at Western Washington University, awarded to the top 10-15% of admitted freshmen.

#### **3rd Place Poster Winner**

2018 Long Term Ecological Research Station All Scientists Meeting Undergraduate Research Poster Contest.

### WORK EXPERIENCE

#### **Algae Technician - Shelton WA , Dec 2023 - Present**

##### **Clam Fresh, Island Enterprises Incorporated (Squaxin Tribe), Dave Schupert**

Responsible for overseeing the continuous microalgae bag system that feeds hatchery juvenile manilla clams and pacific oysters; overseen by Squaxin Tribal members. This is the first time algae has been grown at this facility since 2020.

*Duties/Qualities gained:* Sterile Technique, algae culture inoculation and maintenance, preparing growth media and nutrients, phytoplankton tows and identification, autoclave operation, pump maintenance, pump filter cleaning/replacement.

Troubleshooting equipment and collaborative problem solving when it comes to diagnosing why cultures may be crashing or thriving, and applying those lessons to the entire culture system.

#### **Field Technician - Olympia WA , Apr 2023 - Nov 2023**

##### **Wild Fish Conservancy Northwest, Jamie Glasgow**

Conducted conservation and restoration field work in western washington to support wild fish populations.

*Duties/Qualities gained:* Field work based largely in streams and watersheds to support various research and restoration efforts to conserve wild fish populations. This includes but is not limited to water typing, building beaver dam analogs, habitat surveys, electrofishing, fish passage surveys, gastric lavage and fish abundance surveys.

#### **WCC Puget SoundCorps - Olympia WA , Jun 2022 - Apr 2023**

##### **Washington Dept. of Natural Resources, Aquatic Reserves, Samantha Lindhart**

Provide baseline and trend monitoring data of important nearshore habitats and species within the state-designated Aquatic Reserves.

*Duties/Qualities gained:* A mix of field, lab office and outreach work in regards to forage fish, invasive green crabs, sediment, eelgrass, amphibian surveys, water quality and more in a team setting. Includes writing and optimizing standard operating procedures, research via marine vessels, creating and curating a community newsletter, and exposure to State Aquatic Land Management and Stewardship practices.

#### **Production Associate - DNA Bothell WA , Apr 2021 - Oct 2021**

##### **Blue Heron Biotech, Eurofins Genomics, Nora Lindereth**

Subcloning complex/problematic gene products as a step in the gene production process.

*Duties/Qualities gained:* Carrying out restriction enzyme digests, DNA ligations, PCR, gel electrophoresis + DNA purification, operating robots, maintaining Blue Heron's vector library, daily troubleshooting when targets fail any number of steps of the production process.

#### **Laboratory Technician Bellevue WA , Jan 2021 - Apr 2021**

##### **GS Labs, Rapid Covid Testing Center**

Conductance and reading of Covid-19 rapid antigen and antibody tests.

*Duties/Qualities gained:* Precision in a fast paced environment, training technicians, efficient workflow with others, bloodborne pathogen safety, appropriate PPE, advocating for increased data quality and accuracy standards.

**Field Technician** *Seattle WA , Oct 2020 - Jan 2021*

**Resilient Forestry**, Dr. Sean Jeranimo, Miles Lefevre

Field work throughout the Pacific Northwest supporting various forestry consulting needs, specializing in multiple stakeholder lands and bridging academic and industrial forestry.

*Duties/Qualities gained:* Off road driving, handheld GPS navigation, PNW plant identification, client interaction, stand exam/assessment (DBH, increment boring, slope/aspect, tree height via laser etc.), hiking with gear through rough terrain and harsh weather.

**Independent Study** *Bellingham WA , Jan - Mar 2020*

**WWU Huxley College of the Environment** Dr. Kathryn Sobocinski

Assisting in the development of a study on the effects of bird predation on herring eggs.

*Duties/Qualities gained:* Orientation and synthesis of current methods utilizing point of view cameras deployed in the marine environment.

**Research Technician** *Bellingham WA, Jun 2017 - Oct 2019*

**Institute for Watershed Studies**, Micheal Hiles, Dr. Robin Mathews

Participation in the ongoing water quality monitoring of Lake Whatcom and its tributaries.

*Duties/Qualities gained:* Mastery of a range of benchtop aquatic chemistry/water quality procedures and field sampling techniques to a rigorous quality control/quality assurance standard. Lake sampling in unfavorable conditions (wind/rain) from a small boat. Methods involve working independently as well as with other technicians using a YSI sonde sensor and collecting and analyzing water samples in the lab for the same parameters. Parameter measured: Dissolved Oxygen, pH, chlorophyll, Total Nitrogen and Phosphorus, conductivity, temperature, total suspended solids, freshwater algae.

**NOAA Hollings Intern** *Milford CT, Jun - Aug 2019*

**NOAA NEFSC Milford Laboratory**, Renee Mercaldo-Allen, Dr. Julie Rose

A preliminary investigation into the relationship between oyster harvesting vessel sound and fish abundance at oyster cages in Long Island Sound, leveraging point of view cameras.

*Duties/Qualities gained:* Marine fauna data collection onboard a research vessel, fish identification and measurement (live from nets and from video footage), problem solving in the face of methodological and field challenges, data handling and analysis (mainly in R). Exposure to East Coast oyster aquaculture and hatchery maintenance. Collaboration within a research team. Designing, conducting, and presenting research to federal NOAA officials.

**Student Research** *Bellingham WA, Sep - Dec 2018*

**Schwarz Lab WWU Biology Department**, Dr. Dietmar Schwarz

Participation in research focusing on desiccation resistance in Snowberry and Apple Maggots.

*Duties/Qualities Gained:* Applied laboratory methods in rearing and breeding flies, weighing and dissecting flies/pupae under a dissecting scope, insight into evolutionary processes that influence hybridization and speciation.

**REU Independent Research** *Fairbanks AK, Jun-Aug 2018*

**University of Alaska Fairbanks International Arctic Research Center**, Dr. Alexander Kholodov, Dr. Katie Spellman

Explored the relationship between the presence/absence of permafrost and the productivity of a culturally significant understory shrub Labrador Tea (*R. groenlandicum*) in the Alaskan Boreal Forest.

*Duties/Qualities gained:* Comfort working alone for long hours in the Alaskan Boreal Forest. Practice in experimental design, data analysis and statistics; presenting and communicating research. Survey of current polar ecosystem ecology and geoscience research. Visit to remote Toolik Field Station.

**Laboratory Assistant**, *Anacortes WA , Apr 2017 -Jun 2017*

**Shannon Point Marine Center**, Dr. Kathy Van Alstyne

Provided support to Dr. Van Alstyne's marine chemistry and algae research.

*Duties/Qualities gained:* Independent completion of tasks, mixing growth media for algae, and caring for marine snails, weighing and processing algae samples. ImageJ.

**SUPPLEMENTAL EXPERIENCE**

**FieldWork Assistance** *AK , Jul 2018*

**Poker Flats Research Range**, Dr. Hideki Kobayashi

Collection and identification of understory vegetation to validate and improve parameterization of CO2 flux modeling from satellites.

**Teacher**, *Anacortes WA , Oct 2016-2018*

**Kid's Night Out @ Western**, Alision Paul

Responsible for the content, layout, and teaching of a marine science class aimed towards elementary students. Subjects covered include marine mammals, deep sea organisms, mollusks, crustaceans and echinoderms, explored throughout lecture and via hands-on activities such as crafts and touch tanks.

**Student Research, Bellingham WA , Apr-May 2017**

**Rider Lab WWU Chemistry Department, Dr. David Rider**

Introduction to processes applying thin-film and polymer chemistry techniques to efficiently produce methanol and hydrogen fuel via cuprous oxide plated gold nanoparticles on photocathodes.

**Volunteer Educator, Bellingham WA , 2016-2018**

**WWU Extended Education, Alision Paul**

Volunteered for a number of related events to share marine science knowledge with the community, mainly middle school or elementary aged children, such as Compass to Campus, the Girls in Science Engineering Math and Science (GEMS) Fair, and operating touch tanks of marine organisms.

**Speaker Honolulu HI , Apr 2015**

**TEDx Youth @ Punahou**

Delivered a presentation to the community entitled "How Big Is Your Picture?" stressing the importance of continually widening your world view in all aspects of your personal and professional life, demonstrating how a failure to continuously seek out new and varied information can lead to short sighted and ineffective solutions.

**PRESENTATIONS AND WORKSHOPS**

**Aquaculture America, Honolulu Hawaii Feb 2020**

*Poster Presentation, "Does Anthropogenic Noise Influence Habitat Quality For Fish Associated With Oyster Aquaculture Cages And Natural Boulder Reef Environments?"*

**Arctic Workshop, Stockholm Sweden Apr 2019**

*Poster Presentation, "The Influence of Growing Season Frozen Ground on the Productivity of *Rhododendron groenlandicum* in the Alaskan Boreal Forest"*

**Toolik All Scientists Meeting, Portland Oregon Feb 2019**

*Poster Presentation, "The Influence of Growing Season Frozen Ground on the Productivity of *Rhododendron groenlandicum* in the Alaskan Boreal Forest"*

**LTER All Scientist Meeting, Asilomar California Sep 2018**

*Poster Presentation, "The Influence of Growing Season Frozen Ground on the Productivity of *Rhododendron groenlandicum* in the Alaskan Boreal Forest"*

-Third place winner in undergraduate poster contest.

**Climate Change in My Community Workshop, Fairbanks Alaska June 2018**

International Arctic Research Center, University of Alaska Fairbanks, NASA

**SKILLS AND LICENSES**

*Certifications:*

HAZWOPER 40hrs Certified  
CPR/First Aid  
Valid Driver's License  
Wa Safe Boater Education Card

*Misc*

Data Manipulation/ Visualization  
Classical/Robust Statistic Analysis  
Rstudio  
Unix/Bash - basic Bioinformatics,  
Basic GIS  
Technical/Scientific Writing  
Public Speaking  
Science Communication  
Painting/Graphic Design  
Newsletter Editing/Curation  
Microsoft Office (Excell, Access, Word,  
Etc).  
Medical Laboratory PPE  
Bloodborne Pathogen Prevention  
Covid-19 Rapid Antigen/Antibody Test

*Field*

Camping + Backpacking  
Macro Algae Identification  
Crab Trapping and Identification  
Ysi (Sonde) Meter Calibration and Deployment  
Water Sample Collection and Handling  
Van Dorn sampler and CTD  
PNW Vegetation Identification  
Trailing Boats  
Operating Boats  
Swimming (Advanced)  
Plot Establishment and Monumenting  
Relascope (Variable Diameter Plots)  
Radio Communication  
Forestry Stand Exams  
Fixed Radius Plots  
Varied Radius Plots  
Relascope, BAF  
Handheld Data Loggers  
Handheld GPS  
Off Road Driving  
Bear Safety  
Tree Diameter at Breast Height  
Tree Coring  
Laser Range Finder

*Laboratory*

Water Quality Benchtop Methods:  
Alkalinity, Dissolved Oxygen, Turbidity,  
Nutrients, Chlorophyll Concentration, Ph,  
Conductivity, Salinity Etc.  
Instrumentation - Centrifuge, Ph Meter,  
Turbidimeter, Fluorometer, Tissue Grinder,  
Multiprobe Robot, Autoclave Etc. Ysi (Sonde)  
Calibration + Deployment  
Microscopy  
Compound, dissecting, SEM  
Gel Electrophoresis/DNA purification  
Restriction Enzyme Digests  
PCR  
Sterile Technique  
Algae Culture Inoculation and maintenance  
Cell Density / Hemocytometer