**Education**

UNIVERSITY OF WASHINGTON

**Ph.D.**School of Aquatic & Fishery Sciences, Winter 2013 (expected)

* Research Interests: Epigenetics, gene regulation, and using molecular techniques to characterize relationships between oysters and their environment.
* Thesis: DNA methylation as a source of epigenetic regulation in the Pacific oyster (*Crassostrea gigas*)
* Advisor: Dr. Steven Roberts

SEATTLE UNIVERSITY

**B.S.** Biology (*magna cum laude*), received February 2001

* Relevant coursework: Marine Biology, Invertebrate Physiology, Genetics
* Honors: Trustee Scholarship for Academic Excellence Recipient, Dean’s list 8 academic quarters, President’s list 4 academic quarters

SEATTLE PACIFIC UNIVERSITY

Coursework, Blakely Island Field Station, 1999 and 2000 (Summer)

* Relevant coursework: Marine Ecology, Marine Botany

**Honors & Awards**

* Word Aquaculture Society, Student Spotlight Award 2nd Place, Aquaculture 2013
* NRSP-8 Aquaculture Genomics Travel Award, Plant and Animal Genome XXI, 2013
* Thurlow C. Nelson Award for Outstanding Student Presentation, 104th National Shellfisheries Association Meeting, Seattle, WA, 2012
* EPA Science to Achieve Results (STAR) Fellowship, 2011
* Faculty Merit Award, M.S. student, University of Washington School of Aquatic & Fishery Sciences, 2010
* Student Scholarship Award for Applied Science, Pacific Coast Shellfish Growers Association, 2009
* Best Graduate Student Presentation, Pacific Coast Shellfish Growers Association, 2009
* Student Endowment Travel Award, National Shellfisheries Association, 2009 & 2010
* Victor and Tamara Loosanoff Fellowship & John G. Peterson Scholarship, School of Aquatic and Fisheries Science, University of Washington 2009/2010
* William H. Pierre Sr. Fellowship, School of Aquatic and Fisheries Science, University of Washington, 2008/2009

**Research & Laboratory Experience**

***Graduate Research Assistant, School of Aquatic & Fishery Sciences***

UNIVERSITY OF WASHINGTON, Seattle, WA

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| 2008 – present  | * Characterize Pacific oyster response to environment using differential gene expression analysis, DNA methylation profiling and transcriptome analyses.
* Develop and implement molecular tools to monitor environmental threats and assess associated effects on shellfish.
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**Research & Laboratory Experience, continued**

***Quality Control Analyst III***

SEATTLE GENETICS CORPORATION, Bothell ,WA

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| --- | --- |
| 2006 – 2008  | * Designed and performed validation of cell-based bioassay to assess potency of monoclonal antibody therapy in use in Phase II clinical trials.
* Performed inter-laboratory transfer and optimization of size-exclusion and cation-exchange HPLC methods.
* Directly supervised two analysts.
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***Quality Control Analyst,***

TARGETED GENETICS CORPORATION, Seattle, WA

2001 – 2006 *Senior Quality Control Analyst - Stability* Lead (2005 - 2006)

* Analyzed data and prepared concise technical reports for long-term stability studies for recombinant AAV product in Phase I & II clinical trials.
* Directly supervised two analysts.

 *Quality Control Analyst II (2003-2005)*

* Developed identity assays for stably transformed cell lines using Southern blots.
* Optimized assay to detect adenovirus impurities in rAAV drug products using Western blotting techniques.
* Responsible for training analysts on a variety of test methods including qPCR, Western Blotting, tissue culture.

*Quality Control Analyst I (2001-2003)*

* Performed release and stability testing of recombinant AAV product candidates. Methods utilized: real-time qPCR, Western blot analysis, LAL assays, cell-based infectivity assays, ELISA.

**Teaching Experience**

***Graduate Teaching Assistant,***

UNIVERSITY OF WASHINGTON SCHOOL OF AQUATIC & FISHERY SCIENCES

Spring 2009-2011 *Biology of Shellfish (FISH 310).*

* Hands-on instructor for semi-weekly labs.
* Responsible for grading weekly lab reports and tests.

Fall 2009, 2012 *Integrative Environmental Physiology (FISH 441/541)*

* Instructed weekly labs in molecular techniques and reviewed student’s on-line laboratory notebooks.
* Guided students’ independent 5 week research projects that examined aquatic organisms’ response to environmental stress using molecular techniques.

Winter 2008 *Integrative Environmental Physiology (FISH 441/541)*

* Prepared protocols for weekly molecular techniques labs.
* Prepared reagents and stocked supplied for molecular labs.

**Teaching Experience, continued**

***Volunteer Lab Instructor***

GEAR-UP WASHINGTON

Summer 2009 *Summer Institute Session -* *Puget Sound Threats and Processes*

* Developed and led a hands-on laboratory for high school students for GEAR-UP Summer Institute at UW. Students learned ways to examine aquatic systems by performing bivalve dissections, filter-feeding experiments, and using microscope techniques.

***Mentor***

ASSOCIATION OF WOMEN IN SCIENCE, Seattle Chapter

2007 - Present  *Girls in Engineering, Math and Science*

* Mentor middle school girls in a science enrichment program designed to encourage, maintain and broaden their interest in science.
* Provide hands-on support for students who performed laboratory and field work in diverse fields of science and mathematics.

***Undergraduate Teaching Assistant***

SEATTLE UNIVERSITY

Winter 1999 *General Biology II* (BIOL166)

* Responsible for instructing labs and grading weekly lab reports.

1999 - 2001 *Biology Tutor, Seattle University Learning Center*

* Provided one-on-one tutoring for undergraduate students in general biology courses.
* Read biology and zoology textbooks on tape for visually impaired students.

**Presentations & Posters**

* DNA methylation as a source of epigenetic regulation in the Pacific oyster (*Crassostrea gigas*), World Aquaculture Society: Aquaculture 2013, February 2013. Nashville, TN. Oral Presentation
* Epigenetic Mechanisms as a Source of Phenotypic Plasticity in the Pacific Oyster *Crassostrea gigas.* National Shellfisheries Association, 104th Annual Meeting. March 2012. Seattle, WA. Oral Presentation.
* Exploring the Role of DNA Methylation as a Source of Phenotypic Variation in *Crassostrea gigas*. ESF-EMBO Symposium – Epigenetics in Context: From Ecology to Evolution. September 2011. San Feliu de Guixols, Spain. Oral Presentation
* Investigating the Role of DNA Methylation as an Epigenetic Mechanism in the Pacific oyster (*Crassostrea gigas*). National Shellfisheries Association, 103nd Annual Meeting. March 2011. Baltimore, MD. Oral Presentation.
* Beyond the Genome: Epigenetic Regulation in the Pacific Oyster. Plant and Animal Genome Conference. January 2011. San Diego, CA. Poster Presentation.
* DNA Methylation Patterns & Epigenetic Regulation in the Pacific Oyster. PCSGA Annual Meeting. September 2010. Tacoma, WA. Oral Presentation.
* Pacific oysters & ecosystem health. Aquaculture 2010 / National Shellfisheries Association, 102nd Annual Meeting. March 2010. San Diego, CA. Oral Presentation.
* Pacific oysters and ecosystem health. SAFS Graduate Student Symposium. Nov 2009. Seattle, WA. Oral Presentation.

**Presentations & Posters, continued**

* Pacific oysters as indicators of ecosystem health. PCSGA Annual Meeting. September 2009. Portland, OR. Oral Presentation.
* Characterization of prostaglandin pathway genes of the Pacific oyster (*Crassostrea gigas*): Evidence for a role in immune response. National Shellfisheries Association 101st Annual Meeting. March 2009. Savannah, GA. Poster Presentation.
* Characterization of prostaglandins in the Pacific oyster *Crassostrea gigas*: evidence for a role in the immune response. SAFS Graduate Student Symposium. Nov 2008. Seattle, WA. Oral Presentation.

**Publications**

Roberts SB, Gavery M: [Is there a relationship between DNA methylation and phenotypic plasticity in invertebrates](http://www.frontiersin.org/Invertebrate_Physiology/10.3389/fphys.2011.00116/abstract)? *Frontiers in Physiology* 2012, 2:116.

Gavery M and Roberts SB. [Characterizing short read sequencing for gene discovery and RNA-Seq analysis in Crassostrea gigas](http://www.sciencedirect.com/science/article/pii/S1744117X11001018). *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics.* 2012, 7:2.

Gavery M, Roberts SB: DNA methylation patterns provide insight into epigenetic regulation in the Pacific oyster (*Crassostrea gigas*). *BMC Genomics* 2010, 11:483.

**Memberships**

* National Shellfisheries Association
* Association of Women in Science – Seattle Chapter

**Summary of Laboratory Skills**

* **Molecular Biology**: Isolation of DNA/RNA, PCR techniques: conventional, real-time quantitative and reverse transcription, cloning in chemically competent cells, cDNA library preparation, DNA radiolabeling/hybridization, next-generation sequencing (DNA, RNA) and bioinformatics, bisulfite sequencing.
* **Cell Biology**: aseptic culture of various mammalian cell types, infectivity and cell-proliferation bioassays, isolation and plating of oyster hemocytes
* **Immunology**: protein and cell-based ELISA systems, Western blot analysis
* **Biochemistry**. Gel electrophoresis (including SDS-PAGE), UV/Vis Spectrophotometry, size-exclusion HPLC, cation-exchange HPLC, reversed-phase HPLC