

# NEHA ACHARYA-PATEL

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## EDUCATION

**University of Victoria | Victoria, BC | September 2020 - Present**

PhD Candidate, Department of Biochemistry and Microbiology (4.00 CGPA)

**University of British Columbia | Vancouver, BC | May 2016**

BSc Biology with Distinction and Marine Specialization (3.33 CGPA)

## SCHOLARSHIPS, HONOURS, AND AWARDS

**2019 North American Rolex Scholar | Our World-Underwater Scholarship Society® | April 2019 – April 2020**

I was the first Canadian North American regional recipient since the award's inception in 1974. This award allowed me to travel the world and work with diving professionals and marine scientists to build my global professional network and broaden my perspective on potential careers in diving integrating my well-rounded scientific background and desire to preserve coastal and marine eco-systems. (USD 25,000)

**Graduate Fellowship | University of Victoria | July 2020**

Awarded for excellent academic performance by the Faculty of Graduate Studies. (CAD 10,000)

**Graduate Entrance Scholarship | University of Victoria | July 2020**

Awarded for excellent academic performance by the Faculty of Graduate Studies. (CAD 5,000)

**Graduate Award | University of Victoria | July 2021**

Awarded for excellent academic performance by the Faculty of Graduate Studies. (CAD 7,000)

**Bob Wright Graduate Award | University of Victoria | Nov. 2021**

Awarded to two or more outstanding graduate students in Marine Sciences by the Faculty of Graduate Studies. (CAD 12,500)

**Commander Peter Chance MASC Fellowship | University of Victoria | July 2021**

Awarded to a first-class graduate student in a maritime area by the Faculty of Graduate Studies. (CAD 8,500)

**Mitacs Accelerate Grant | Mitacs | March 2022 – May 2023**

The Mitacs Accelerate Fellowship provides graduate student support in partnership with the Blue Futures Pathway program of the Student on Ice Foundation. (CAD 45,000)

**Stephenson Exploration Advancement Grant | The Explorers Club | May 2022**

This is a highly competitive international grant for marine researchers under 35 years old at any career stage. The Philip Stephenson Foundation promotes marine exploration, protection, and conservation projects focused on adding value to people's lives and the health of the environment. (USD 10,000)

**NSERC Canada Graduate Scholarship – Doctoral (CGS-D) | NSERC | May 2023**

The prestigious CGS D program allows excellent students to pursue doctoral studies in Canada. The objective of the program is to reward and retain highly qualified doctoral students at Canadian institutions to meet the needs of Canada's knowledge economy. (CAD 35,000/yr)

## EMPLOYMENT EXPERIENCE

**Freediving Instructor | Bottomdwellers Freediving | Victoria, BC | May 2021 – Present**

I instruct new freedivers in the safe and effective techniques needed to explore underwater using breath hold.

**Contract Survey Diver | Stormcoast Diving & Fisheries and Oceans Canada | Victoria, BC | June 2020 – Present**

I perform SCUBA surveys to monitor biodiversity and complete subtidal environmental assessments to promote responsible development and assess ecosystem health.

**Teaching Assistant | Department of Biochemistry and Microbiology | University of Victoria | Sept. 2020 – Present**

Moderated online lectures and marked exams for 2<sup>nd</sup> year Intro to Biochemistry and 3<sup>rd</sup> year General Biochemistry courses. Provided hands on guidance in 3<sup>rd</sup> year General Biochemistry labs.

**Research Technician/ Scientific Diver | Hakai Institute | Central Coast, BC | May 2017-April 2019**

I performed subtidal SCUBA and terrestrial field research activities to investigate the nearshore coastal ecosystem of BC. My position including boat driving, invertebrate/vertebrate/algal diversity surveys, abundance and growth surveys. Other duties included molecular genomic lab techniques, and lab processing for other ecological analyses.

**Research Assistant/Divemaster | The Maru Research Center | Kande, Nkhata Bay Region, Malawi | Jan. – May 2017**

I performed SCUBA surveys to monitor biodiversity and reproductive behavior of Malawian cichlids. Measured catch abundance and diversity of local fisheries, and logged and analysed data. I also ran the dive shop operations – dive guiding, retail, boat driving.

**Aquarist/Interpreter | Ucluelet Aquarium | Ucluelet, BC | May – Sept. 2016**

My duties included animal care, maintaining habitats, and organism collection using free diving and SCUBA. I developed public education programs and interpreted for and interacted with the public.

**Research Assistant | Adams Lab | University of British Columbia | Vancouver, BC | Sept. 2015-May 2016**

My duties included seed cleaning and plant care, as well as molecular techniques like DNA extraction and microsatellite analysis for the purpose of examining allele diversity in Paw-Paw for commercial production purposes.

## OUTREACH/COMMUNICATIONS

### Virtual Classroom Session | Exploring by the seat of your pants | June 2022, February 2023

I spoke to multiple middle school classes across North America about my work as a marine explorer and scientist.

Seeing The Invisible: [https://www.youtube.com/watch?v=8CfIFA5ljgA&ab\\_channel=ExploringByTheSeatOfYourPants](https://www.youtube.com/watch?v=8CfIFA5ljgA&ab_channel=ExploringByTheSeatOfYourPants)

### Outreach Coordinator for the Blue Futures Pathways (BFP) Program | March 2022 – Current

I work on engaging youth across Canada with mentorship, employment and training opportunities that are available through the BFP Program. I have given talks to university students, youth in First Nation communities, and am mentoring multiple individuals as they carve their path in the Sustainable Blue Economy: [soifoundation.org/en/bfp/](http://soifoundation.org/en/bfp/)

### UN Ocean Decade Early Career Ocean Professional (ECOP) Canadian Chapter Founder | May 2020 – Current

Co-founded an ECOP chapter to create a meaningful network of Canadian Ocean resources to elevate ECOPs to higher level conversations in the context of the UN Ocean Decade: [www.ecopdecade.org](http://www.ecopdecade.org)

### Social Media Team Member | Our World Underwater Scholarship Society | June 2020 – Current

Work with a team of other past OWUSS scholars/interns to cooperatively curate the @OWUSS\_ Instagram feed

### Scholarship Film | Thriving in Uncertainty | June 2020

Shot and edited a film capturing my experiences and takeaways during my time as the 2019 North American Rolex Scholar. [www.youtube.com/watch?v=k4wxFOH\\_q0M&ab\\_channel=OWUSSOfficial](https://www.youtube.com/watch?v=k4wxFOH_q0M&ab_channel=OWUSSOfficial)

## VOLUNTEER EXPERIENCE

### BCMB Symposium Organiser | Department of Biochemistry and Microbiology | University of Victoria | Sept. 2020 – March 2022

Worked with a group of fellow graduate students to plan and organize the 2021, and 2022 online research symposium.

### Scientific Diver | Universidad Mayor De Santiago | Greenwich Island, Antarctica | Feb. – March 2019

### Scientific Diver | Oceanwise Vancouver Aquarium | Cambridge Bay, Nunavut | August 2019

### Scientific Diver | Harley Lab | University of British Columbia | Sept. – Dec. 2015

### Scientific Diver | Bamfield Marine Sciences Centre | June – July 2015

Assisted dive team with organism collection, quadrat and transect surveys, and abundance measurements.

### Research Assistant | @Lab | La Paz, Mexico | Sept. 2019

Assisted with the creation of a reference library of DNA Barcodes for cryptic fish in the Gulf of California. Used molecular techniques to extract, amplify and sequence genes of interest.

### Field Assistant | Comunidad y Biodiversidad | La Paz, Mexico | Sept. 2019

Joined an interdisciplinary expedition to the fishing cooperatives on the Vizcaino Peninsula to collect and download abiotic data from a subtidal sensor array.

### Research Assistant | Arctic Research Foundation | Cambridge Bay, Nunavut | August 2019

Joined a research cruise for the Kitikmeot Sea Science Study in the Central Arctic Ocean; Helped with oceanographic sampling and identification of benthic fauna.

### Algaculture Technician | Kande Spirulina | Kande, Nkhata Bay Region, Malawi | Jan. -May 2017

Cultured strains of *Arthospira platensis* in a laboratory for eventual transplant into outdoor production vats. The project aimed to provide local communities with a sustainable source of protein.

### Student Ambassador for Bamfield Marine Sciences Centre | University of British Columbia | Sept. 2015 – May 2016

I worked with a team of fellow Bamfield alumni to coordinate student outreach and organize information sessions to promote the benefits of field-based learning. Provided guidance and mentoring to prospective students.

### Aquatic Ecosystems Research Lab Volunteer | University of British Columbia | Oct. 2013 – Feb. 2015

I performed fish dissection and measurements of otoliths and gonads. Used a bomb calorimeter to seasonally quantify caloric value of different fish species.

## PRESENTATIONS

1. **Acharya-Patel, N.**, Dudas, S., Rubidge, E., Frid, A., and Helbing, C.C. 2023. Evaluating Environmental DNA (eDNA) as a tool to monitor Rockfish Conservation Areas (RCAs). International Marine Protected Area Congress, (February 3-9) Vancouver, British Columbia. **Platform presentation.**
2. **Acharya-Patel, N.**, Dudas, S., Rubidge, E., Frid, A., and Helbing, C.C. 2023. Evaluating Environmental DNA (eDNA) as a tool to monitor Rockfish Conservation Areas (RCAs). International Temperate Reef Symposium (January 8-12) Hobart, Tasmania. **Platform presentation**
3. **Acharya-Patel, N.**, Bergman, L.C., Cram, K., Lyons, S., Warren, R., Coombe, L., Lowe, C., Birol, I., Macdonald, T., and Helbing, C.C. 2022. Monitoring marine pollution effects through new targeted environmental DNA (eDNA) testing in the Pacific Northwest. Early Career Scientist Conference, International Council for the Exploration of the Sea (ICES) and North Pacific Marine Science Organization (PICES) (July 18-21) St. John, NFLD. **Platform presentation.**
4. **Acharya-Patel, N.**, Bergman, L.C., Cram, K., Lyons, S., Warren, R., Coombe, L., Lowe, C., Birol, I., Macdonald, T., and Helbing, C.C. 2021. Monitoring marine pollution effects through new targeted environmental DNA (eDNA) testing in the Pacific Northwest. Society of Environmental Toxicology and Chemistry (SETAC) 42<sup>nd</sup> Annual meeting, Portland, OR (Nov. 15-19) VIRTUAL due to COVID-19 pandemic. **Platform presentation.**

5. **Acharya-Patel, N.,** Bergman, L.C., Cram, K., Lyons, S., Warren, R., Coombe, L., Lowe, C., Birol, I., Macdonald, T., and Helbing, C.C. 2021. Monitoring marine pollution effects through new targeted environmental DNA (eDNA) testing in the Pacific Northwest. Environmental DNA Technical Exchange Workshop (Oct. 19-21) VIRTUAL due to COVID-19 pandemic. **Platform presentation.**
6. **Acharya-Patel, N.,** and Helbing, C.C. 2021. Optimizing eDNA assays to assess marine ecosystem health. **Departmental Seminar,** University of Victoria, Victoria, BC (Feb. 18)
7. **Acharya-Patel, N.,** Bergman, L.C., Cram, K., Lyons, S., Warren, R., Coombe, L., Lowe, C., Birol, I., Macdonald, T., and Helbing, C.C. 2021. Monitoring marine pollution effects through new targeted environmental DNA (eDNA) testing in the Pacific Northwest. Canadian Ecotoxicity Workshop, Halifax, NS (Oct. 3-6) VIRTUAL due to COVID-19 pandemic. **Platform presentation.**
8. **Acharya-Patel, N.** 2020. Using Environmental DNA to Assess the Effects of Marine Pollution. **Three Minute Thesis,** University of Victoria, Victoria, BC (Mar. 5) VIRTUAL due to COVID-19 pandemic.
9. **Acharya-Patel, N.** 2019. Our World Underwater, The Experience of a Rolex Scholar. American/Canadian Association of Underwater Science Joint Conference, Vancouver, BC (Oct. 5-9). **Platform presentation.**
10. **Acharya-Patel, N.** 2019. Our World Underwater, The Experience of a Rolex Scholar. Oceanwise Vancouver Aquarium open house, Canadian High Arctic Station, Cambridge Bay, NU (Aug. 28). **Platform presentation.**
11. **Acharya-Patel, N.,** Milsom, W.K. 2016. The Causes of Cardiorespiratory Synchrony in the Elasmobranch fish *Squalus suckleyi*. University of British Columbia, Multidisciplinary Undergraduate Research Conference, Vancouver, BC (Mar. 29-31) **Platform presentation.**
12. **Acharya-Patel, N.,** Milsom, W.K. 2016. The Causes of Cardiorespiratory Synchrony in the Elasmobranch fish *Squalus suckleyi*. Pacific Ecology and Evolution Conference, Bamfield, BC (Feb. 27 – Mar. 1) **Platform presentation.**

## PEER-REVIEWED PUBLICATIONS

1. **Acharya-Patel, N.,** Allison, M.J., and Helbing, C.C. 2022. Environmental DNA: Revolutionizing ecological assessments with genomics, *in: Genomics and the global bioeconomy* (C. Lopez-Correa and A. Suarez-Gonzalez, eds), Translational and applied genomics series (G. Patrinos, series ed), Elsevier Inc., Cambridge, MA. Invited chapter.
2. **Acharya-Patel, N.,** Deck, C. A., Milsom, W.K. 2018. Cardiorespiratory Interactions in the Pacific spiny dogfish *Squalus suckleyi*. Journal of Experimental Biology. 221(Pt 17): jeb183830. Published 2018 Sep 13. doi:10.1242/jeb.183830.

## TECHNICAL REPORTS

1. **Acharya-Patel, N.,** Helbing, C.C., Dudas, S., and Rubidge, E. 2022. Evaluating Environmental DNA (eDNA) as a tool to monitor Rockfish Conservation Areas (RCAs). 4 pp. Department of Fisheries and Oceans.
2. **Acharya-Patel, N.,** Helbing, C.C., Dudas, S., Bigg, M., and Hodes, V. 2022. Tracking the Olympia Oyster using environmental DNA (eDNA). 4 pp. Department of Fisheries and Oceans.

## OTHER PUBLICATIONS

**Our World Underwater Scholarship Society | North American Scholar Blog | April 2019 – March 2020**  
[owussnorthamerica.org/category/scholar-journeys/2019-scholar-journey/](http://owussnorthamerica.org/category/scholar-journeys/2019-scholar-journey/)

**Canadian Geographic Magazine | Blog | May – August 2019**  
[www.canadiangeographic.ca/author/neha-acharya-patel](http://www.canadiangeographic.ca/author/neha-acharya-patel)

**Arctic Research Foundation | Arctic Focus Blog | August 2019**  
[www.arcticfocus.org/stories/discovering-ice-breaker-channel-through-kitikmeot-sea-science-study](http://www.arcticfocus.org/stories/discovering-ice-breaker-channel-through-kitikmeot-sea-science-study)

## CERTIFICATIONS

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| • Small Vessel Operator Proficiency                            | Nov. 2022  |
| • Small Domestic Vessel – Basic Safety                         | Nov. 2022  |
| • DCBC Occupational Scuba Certification                        | June 2020  |
| • Dive Accident Management Certification                       | May 2023   |
| • Scuba Diving International Scuba Instructor with Specialties | Jan. 2020  |
| • Performance Freediving International Freediving Instructor   | Dec. 2019  |
| • PADI Tec 40, 45  | Nov. 2019  |
| • DAN Diving First Aid for Diving Professionals Instructor     | Mar. 2021  |
| • Canadian Association of Underwater Science Level 1/2         | Oct. 2017  |
| • Workplace Hazardous Materials Information System (WHMIS)     | Sept. 2020 |
| • Maritime Radio Certification                                 | May 2017   |
| • Pleasure Craft Operators Card                                | May 2015   |