CURRICULUM VITAE

**Mrunmayee G. Pathare**

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Brosnahan Lab Phone: 2283042007

Biology

Redfield 330

Woods Hole Oceanographic Institution

Woods Hole, MA

**EDUCATION**

B.Sc.: Zoology (concentration: Fishery Science), Mumbai University, June 2008

M.Sc.: Environmental Science, Mumbai University, January 2011

M.S.: Biology, University of Louisiana at Lafayette, May 2019

**PROFESSIONAL EXPERIENCE**

**Research Assistant II: Brosnahan lab August 2019- present**

*Woods Hole Oceanographic Institution*

Developing and supporting in-situ monitoring sensor network for water-quality control and studying the ecophysiology of Harmful Algal Blooms. Assisting in developing tools for automated, web-based data identification of Harmful Algal Bloom species in New England, Bering Sea, and Singapore. Assisting in fieldwork, calibration and maintenance of Imaging Flow Cytobots and other environmental sensors. Conducting off-site training on the calibration and deployment of Imaging Flow CytoBots. Writing technical descriptions of training materials for use by outside institutions. Culture media preparation and maintenance of algal cultures, microscopy for phytoplankton cell counts.

**Volunteer May- July 2019**

*Great Lakes Center, State University of New York*

Mapped *Dreissena* distribution in Lake Michigan using underwater video still frames and Adobe Photoshop. Assisted with creating a DNA barcode library for native benthic invertebrates in the Lake Erie.

**Graduate Research Assistant August 2016- May 2019**

*Stauffer lab, University of Louisiana at Lafayette*

Studied the effects of microzooplankton grazing on phytoplankton size-class abundance using dilution experiments, flow cytometry, microscopy and chlorophyll pigment analysis. Developed and standardized flow cytometry protocol for analysis of environmental phytoplankton samples. Maintained semi-continuous cultures and batch cultures of phytoplankton and heterotrophic nanoflagellates. Participated in two oceanographic research cruises. Acted as assistant coordinator for NSF REU program 2018.

**Graduate Teaching Assistant August 2018- December 2019**

*University of Louisiana at Lafayette*

Graduate teaching assistant for Estuarine Ecology (BIOL 440G). Organized and planned a field trip at Louisiana Universities Marine Consortium and onboard research vessels. Graded assignments and research papers, proctored exams and coordinated guest lectures.

**Research Assistant January 2013- June 2014**

*Shiller lab, University of Southern Mississippi*

Reported seasonal changes of freshwater sources on the Louisiana shelf using oxygen isotopes as a marker. Conducted monthly sampling for assessing groundwater radon concentrations in ground water at Stennis Space Center. Maintained MSDS information and updated laboratory protocols.

**Visiting Lecturer of Environmental Science January 2012- December 2012**

*SNDT Women’s University, Mumbai University*

Prepared lecture plans and conducted lectures and laboratory exercises in accordance with Mumbai University syllabus for first year undergraduate classes**.** Fulfilled academic service duties such as supervising social work-related volunteer activities of student societies.

**Project Assistant January 2011- December 2012**

*Thakur College, Mumbai University*

Performed taxonomic identification of meio- and macrobenthos sampled from rocky, muddy and sandy shorelines of Mumbai. Conducted water quality assessments including biological oxygen demand, chemical oxygen demand, total dissolved oxygen, particulate organic carbon. Produced reports about the effects of environmental controls and anthropogenic disturbance on meiobenthos in Mumbai. Conducted toxicology assays on benthic macro-invertebrates (*Perna viridis*) to study effects of heavy metal exposure.

**Summer Research Intern May 2008- August 2008**

*Ingole lab, National Institute of Oceanography, Goa*

Cultured nematode worms to report the life cycle and adaptations of *Daptonema normandicum* to heavy metal toxins (cadmium and zinc). Participated in one-day cruises sampling the Mandovi estuary in Goa for benthic meio- and macrofauna, collected, processed and identified benthic macro and meiofauna using microscopy.

**RESEARCH INTERESTS:**

Plankton ecology; Harmful Algal Bloom monitoring and mitigation; Marine food webs; Modeling of phytoplankton physiology and population dynamics; Automated image analysis and machine learning for image classification; Data visualization in R

**AWARDS:**

$400 Richard G. Neiheisel Phi Beta Kappa Outstanding Master's Graduate Award (2019)

$75 Conference funding from Student Government Association, University of Louisiana at Lafayette (2018)

$300 Student Travel Grant from Coastal and Estuarine Research Federation (2017)

$300 Student Travel Grant from Graduate Student Organization, University of Louisiana at Lafayette (2017)

Awarded a first class for Master of Science in Environmental Science, in recognition of academic excellence by Mumbai University (2011)

Awarded a first class with distinction for Bachelor of Science in Zoology, in recognition of academic excellence by Mumbai University (2008)

**TRAINING AT WHOI:**

IFCB training at McLane Research Laboratories (2019)

**FIELD AND CRUISE PARTICIPATION:**

2021 Conducted Off-site IFCB training/workshop NWF NOAA, Seattle

2021 NOAA Northeast fisheries Scallop Survey 2021, preparation and set up of IFCB on R/V Hugh Sharp

2021 Nauset Marsh, MA (R/V Limulus). Assisted in sampling for *Alexandrium* cells, recovery and deployment of HOBO loggers from mooring.

2021 Nauset Marsh, MA (R/P Alma). Deployment and maintenance of IFCBs on R/P Alma, remote management of data and troubleshooting, assisting with sediment collection

2020 University of Alaska, Fairbanks Artic Harmful Algal Blooms (R/V Sikuliac) cruise prep and set up of IFCB on-site in Seward Alaska

2020 Nauset Marsh, MA (R/V Limulus). Assisted in sampling for *Alexandrium* cells, recovery and deployment of HOBO loggers from mooring.

2020 Nauset Marsh, MA (R/P Alma). Deployment and maintenance of IFCBs on R/P Alma, remote management of data and troubleshooting, assisting with sediment collection.

2017 Louisiana Gulf ecosystem monitoring and modeling cruise (LADC-GEMM) (5 days) October 2017. CTD rosette deployment, data management, conducting microzooplankton dilution experiments, phytoplankton sampling and preservation.

2017 NOAA Gulf of Mexico ocean acidification cruise (GOMECC-3) (34 days) July-August 2017. Phytoplankton, microzooplankton, and mesozooplankton sample collection and preservation, conducting microzooplankton and mesozooplankton on-deck incubation grazing experiments.

**PUBLICATIONS:**

Hubbard K.A., Villac M.C., Chadwick C, DeSmidt A.A., Bouchard J.N., Fachon E, Brosnahan M.L., Richlen M., **Pathare M.G.,** Mordy C., Wisegarver E., Stockwell D., Lin P., Pickart R., Anderson D.M. Spatiotemporal transitions in Pseudo-nitzschia species assemblages from the Alaskan Arctic. PLoS One (In Prep)

Sweet J.A., Morrison W., **Pathare M.G.,** Parsons M., Roberts B., Bargu S., Stauffer B.A. Trends in phytoplankton dynamics in Louisiana estuaries: building a baseline to understand current and future change. Mar. Pollut. Bull. (In prep)

**Pathare M.G.,** Stauffer B.A. Preferential grazing of microphytoplankton and nanoplankton by microzooplankton in Atchafalaya Vermilion Bay. (In Prep)

**Pathare, M.G.,** Lahir, Y.K, Afonso, G.L., Mohite, V.T. (2012). Study on the Biodiversity of Meiofauna of Dadar coast, Central-Mumbai. *J Exp Zool. India.* (15) 1, 265-268

Lahir, Y.K., **Pathare, M.G.,** Afonso, G.L., Mohite, V.T. (2011) Study on anthropogenic influence on feeding behavior of Rhesus Macaques at Kanheri Caves, Mumbai. *J.Exp. Zool. India.* Vol. 15, No. 1, pp. 143-147, 2012. *J.Exp. Zool. India.* (14)2, 639-642

Mayenkar, V, **Pathare, M.G.**, Afonso, G.L., Mohite, V.T., Lahir, Y.K., Raut, P.D. (2012) Effects of sub-lethal dose of nickel on the biochemical parameters in the tissues of female crab Scylla Serrata, from Mumbai coast*. J. Ecophys. Occup. Hlth.* 12; 69-76

Mohite, V.T., Lahir, Y.K., **Pathare, M.G.**, Agwuocha, S.B., Mane, U.H. (2011). Study on the effects of exposure of sub lethal dose of cadmium and zinc on the enzymatic activity in the tissues of green mussel – *Perna* *viridis* (L) from Ratnagiri coast, Maharashtra. *J. Ecophysiol. Occup. Hlth*. 11; 131-140

**CONFERENCE PRESENTATIONS:**

**Pathare, M.G.,** Prevost, H.J. and Staffer B.A. Trophic interactions between microzooplankton and phytoplankton in the Atchafalaya Vermilion Bay. Oral presentation at Gulf Estuarine Research Society Biennial meeting, Galveston, TX Oct 2018

**Pathare, M.G.,** Prevost, H.J. and Staffer B.A. Trophic interactions between microzooplankton and phytoplankton in the Atchafalaya Vermilion Bay. Oral presentation at 18th biology Graduate Student Symposium, Lafayette, LA, Sep 2017

**Pathare, M.G.,** Prevost, H.J. and Staffer B.A. Trophic interactions between microzooplankton and phytoplankton in the Atchafalaya Vermilion Bay. Poster presentation at State of the Coast 2018, New Orleans, LA. May 2018

**Pathare, M.G.** and Stauffer, B.A. Impact of microzooplankton grazing on phytoplankton growth and community structure in a sub-tropical estuary. Poster presentation at 24th CERF biennial conference, Providence, RI. Nov 2017

**Pathare, M.G** and Stauffer, B.A. Trophic interactions between microzooplankton and phytoplankton in a sub-tropical estuary. Poster presentation at the 17th biology Graduate Student Symposium, Lafayette, LA, Sep 2017

Mohite, V. T., Agwuocha, S.B., **Pathare, M.G**., Afonso, G.L. Study on the effects of exposure of sub-lethal dose of nickel on the biochemical parameters in the tissues of female crab *Scylla* *serrata*, from Mumbai coast. Poster presentation at the current trends in Life Science, University of Mumbai, Mar 2012

**CONTRIUBTED CONFERENCE PRESENTATIONS:**

Michael L. Brosnahan, Alexis D. Fischer, Jane Lewis, Dave Kulis, **Mrunmayee Pathare**, Stephanie Lim, Charles Culbertson, Donald M. Anderson. Cyst dormancy cycling controls *Alexandrium catenella* bloom termination in the Nauset marsh. The 19th International Conference on Harmful Algae, Oct 2021

M. Brosnahan, M. Richlen, D. Beaudoin, **M. Pathare**, E. Andrews, R. Govostes, T. Mikulski, G. Doucette, B. Keafer, H. Sosik, S. Drapeau, C. Roesler, C. Mouw, D. Ward, J. Kritzer, K. Hubbard, D. M. Anderson. NHABON-NE, an adaptive sensor network for real-time harmful algal bloom surveillance and data sharing. The 7th Conference of the International Society For Applied Phycology, May 2021

M. Brosnahan, M. Richlen, D. Beaudoin, M. Pathare, E. Andrews 1, R. Govostes 1, T. Mikulski 2,8, G. Doucette 2, B. Keafer 1, H. Sosik 1, S. Drapeau 3, C. Roesler 3, C. Mouw 4, D. Ward 5, J. Kritzer 6, R. Stumpf, Y. Li, K. Hubbard 7, D. M. Anderson. “NHABON-NE, an adaptive sensor network for real-time harmful algal bloom surveillance and data sharing.” International Society for Applied Phycology Virtual meeting, 2021.

Kurtay G., **Pathare M.G.,** Stauffer B.A. Impacts of hurricane Harvey on phytoplankton functional groups in the northern Gulf of Mexico. Gulf Estuarine Research Symposium, Oct 2019

Stauffer, B., Kurtay, G., **Pathare, M.,** Schnetzer, A. Enhanced microzooplankton grazing in surface waters of the northern Gulf of Mexico following hurricane Harvey. ASLO, Puerto Rico, May 2019

Kurtay, G.; **Pathare, M.;** Stauffer, B.: The impacts of Hurricane Harvey on phytoplankton functional groups in northern Gulf of Mexico, Gulf Estuarine Research Society Conference. Galveston, TX. Oct 2018

Prevost, HJ; **Pathare, M**; Stauffer, BA. Comparison of Seasonal Abundances of Pico- and Nanoplankton in a South Louisiana Estuary (poster presentation). Gulf Estuarine Research Society Conference. Galveston, TX. Oct 2018

Prevost, HJ; **Pathare, M**; Stauffer, BA. Changes in Seasonal Abundances and Phytoplankton Community Composition at Vermilion Bay, Louisiana (poster presentation). UL Lafayette REU and Summer Undergraduate Research Symposium. Lafayette, LA. May 2018