OINDRILA GHOSH

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EDUCATION

2018-2024 **PhD, Environmental Engineering:** Ghosh Lab, University of Maryland Baltimore County. (GPA: 3.7/4)

2017-2018 **Graduate Research Assistant:** Water Management and Hydrological Sciences, Texas A&M University. (GPA: 3.8/4)

2015-2017 **Master of Science (MSc), Ecology and Environment Studies:** Nalanda University, India. **(**GPA: 8.9/10; Uni Rank: 1)

2012-2015 **Bachelor of Science, Chemistry:** University of Delhi, India.

RESEARCH INTERESTS

- Exposure pathways for persistent (PCBs, PAHs, Dioxins) and emerging pollutants (PFAS) in the environment.
- Environmental health monitoring and exposure assessment.
- Passive sampling methods to monitor bioavailable concentrations in environmental and biological matrices.
- Environmental chemistry – mass spectrometric methods for target analysis of PFAS (LC-MS/MS) and POPs (GC-MS)

RESEARCH EXPERIENCE

2025-Present **Postdoctoral Associate, Civil and Environmental Engineering, University of Pittsburgh | Pittsburgh, PA, USA**

- Performed method development for fractionated and non-fractionated fish tissue to identify biological phase(s) responsible for PFAS uptake in organisms. Developing toxicokinetic modeling framework to predict tissue distribution and bioaccumulation potential for diverse PFAS in species of interest. (SERDP: ER24-4250)
- Risk assessment of communities impacted by industrial activities, chemical releases, AFFF applications through laboratory analysis and mathematical/ statistical modeling methods for evaluation of US EPA guidance parameters for regulatory compliance:
  - East Palestine, OH (NIEHS 1R21ES036032-01): Recruitment of community in-home sampling participants impacted by the 2023 Norfolk Southern train derailment, training Pitt students and community-based researchers on US-EPA guided sample collection methods (indoor and outdoor air, drinking water, soil), extractions and targeted LC/GC analysis to determine concentrations of PFAS and VOC/SVOCs in the collected in-home samples.
  - Beaver Co, PA (Heinz Endowments G0950): Community sampling through dust collection, personal wearable samplers and blood followed by targeted LC analysis and statistical modeling to quantify PFAS concentration and associated risk to communities impacted by industrial activity and the fire in the region of the train derailment.
- Developed and optimized analytical methods for PFAS, VOC/SVOC extractions from diverse environmental and biological matrices followed by targeted mass spectrometric analysis on LC-MS/MS and GCMS.
- Provided training to graduate students on EHS and GLP norm abiding methods of chemical/instrumental analysis in a laboratory setting.

2018-2024 **PhD Candidate in Environmental Engineering, University of Maryland Baltimore County | Baltimore, MD, USA**

- Thesis: Optimization of equilibrium passive sampling (PS) methods for surface water and porewater measurements (Link)

- Mathematical modelling of the transport of PCBs in PS from surface waters to assess the true nature of time-integrated measurement of bioavailable concentration provided by PS under fluctuating ambient concentration.
- Developed theoretically optimized, field-demonstrated PS devices that can perform accurate short-term measurements of bioavailable concentrations of PCBs by expediting approach to equilibrium, important for pollutant source tracking.
- Developed theoretically optimized, field-demonstrated vibration induced PS platforms that can perform accurate porewater measurements of bioavailable concentrations of PCBs and Dioxins by enhancing mass-transfer.
- Developed mathematically and experimentally optimized methods for loading isotopically labelled performance reference compounds for accurate equilibrium predictions in PS.

➢ Performed site characterization of contaminated sediments, through baseline monitoring prior and post application of large scale in-situ remediation.

➢ Developed novel functionalized polymeric thin films for equilibrium

passive sampling of PFAS compounds.

➢ Food-web modelling and statistical analysis to evaluate the impact of equilibrium correction methods on predicting bioavailable concentrations in fish.

➢ Extraction of PCBs/PAHs from soil, tissue and passive samplers followed by targeted mass spectrometric analysis on gas chromatographic instruments. (EPA Method SW-846)

2017-2018 **Graduate Research Assistant at Texas Water Resources Institute (TWRI), TAMU | College Station, TX, USA**

Analyzed spatial (surface and depth profile) variability of water chemistry in groundwater wells to establish continuity of geochemical processes within transboundary aquifers on the Texas and Mexico border.

2016-2017 **Masters Student in Environmental Science, Nalanda University | Bihar, India**

Thesis: Transport of biochar in saturated porous medium under various physical-chemical conditions

- Synthesized and characterized nano-sized biochar by pyrolysis of biomass (rice husk and sugarcane bagasse).
- Analyzed the impact of salinity, pH and grain size on the stability and transport of biochar nanoparticles through saturated porous media.

PUBLICATIONS

Journal Papers (Google Scholar Page)

2025

➢ Modeling Time Scale of Integration in Equilibrium Passive Sampling. Oindrila Ghosh, Songjing Yan, Mandar Bokare, Upal Ghosh. *Environmental Toxicology and Chemistry, 2025; vgae003* https://doi.org/10.1093/etojnl/vgae003

➢ Feasibility of short-term and flow-weighted long-term measurements using equilibrium passive sampling. Oindrila Ghosh, Louis Cheung, Nathalie Lombard, Upal Ghosh. *(Manuscript under review)*

➢ Passive sampling device design optimization for in-situ porewater and surface water measurements of hydrophobic organic contaminants. Oindrila Ghosh, Louis Cheung, Mehregan Jalalizadeh, Upal Ghosh. *(Manuscript under review)*

➢ Standardized method for loading PCB performance reference compounds into polymeric samplers. Oindrila Ghosh, Nathalie Lombard, Upal Ghosh. *(Manuscript under review)*

Reports

- PCB Source Tracking In Anne Arundel County Phase II. Nathalie Lombard, Louis Cheung, Oindrila Ghosh, Upal Ghosh. *Report for Anne Arundel County. (2024)*
- A-Street Ditch Segment 1 Baseline and Post-application Monitoring (October 2021). Oindrila Ghosh, Louis Cheung, Upal Ghosh. *University of Maryland Baltimore County. (2021). Report for A-Street Ditch Segment 1 Pilot Study (DE-1525), Wilmington, Delaware.* Report
- A-Street Ditch Segment 1 Baseline and Post-application Monitoring (October 2020). Oindrila Ghosh, Louis Cheung, Upal Ghosh. *University of Maryland Baltimore County. (2020). Report for A-Street Ditch Segment 1 Pilot Study (DE-1525), Wilmington, Delaware.* Report
- A-Street Ditch Segment 1 Baseline and Post-application Monitoring (March 2020). Oindrila Ghosh, Louis Cheung, Upal Ghosh. *University of Maryland Baltimore County. (2020). Report for A-Street Ditch Segment 1 Pilot Study (DE-1525), Wilmington, Delaware.* Report

Science Communication Articles

- Optimization of Passive Sampling for surface-water and sediment porewater measurements. Oindrila Ghosh. CPRC SETAC Newsletter, Spring 2022. Article
- Student Research Highlight, CPRC SETAC Newsletter, Spring 2022. Article
- Inclusive Diversity in Data Visualization. Nathalie Lombard, Oindrila Ghosh. CPRC SETAC Newsletter, Spring 2022. Article
- International Students' Perspective. Oindrila Ghosh. CPRC SETAC Newsletter, Spring 2021. Article

TALKS

TOPIC: Community-Engaged Investigation of Environmental Exposure From 2023 Train Derailment at East Palestine, OH

Nov-25	SETAC North America 46th Annual Meeting, Portland, OR (Platform)

TOPIC: Impact of Industrial Activity From Petrochemical Plant on Environmental Health in Beaver County, PA

Nov-25	SETAC North America 46th Annual Meeting, Portland, OR (Poster)

TOPIC: Optimization of passive sampling methods for surface water and porewater measurements

Nov-23	SETAC North America 44rd Annual Meeting, Louisville, KY. (Poster)
Jan-23	BATTELLE's Eleventh International Sediments Conference, Austin, TX. (Poster) *
Nov-22	SETAC North America 43rd Annual Meeting, Pittsburg, PA. (Poster)
Nov-21	SETAC North America 42nd Annual Meeting. (Virtual Platform) (Slides)

TOPIC: Time-Integration in Equilibrium Passive Samplers: A Mathematical Modeling Approach

Jan-25	BATTELLE's International Sediments Conference, Tampa, FL (Slides)
Sep-22	International Passive Sampling Workshop (IPSW), Utrecht, Netherlands. (Virtual Platform) (Slides)
Nov-21	SETAC North America 42nd Annual Meeting. (Virtual Platform) (Slides)
Nov-20	SETAC North America 41st Annual Meeting. (Virtual Platform) (Slides)
Sep-20	SETAC Chesapeake Potomac Regional Chapter Annual Fall Meeting.(Virtual Platform) (Slides) **

TOPIC: Non-Equilibrium Correction Methods used in Equilibrium Passive Sampling

Sep-19	International Passive Sampling Workshop (IPSW), Boston, MA. (Slides)
Apr-19	SETAC Chesapeake Potomac Regional Chapter Annual Spring Meeting, Fredericksburg, VA. (Slides)

TOPIC: Hydro-chemical Connectivity of the Allende-Piedras Negras Transboundary Aquifer

Jul-18	AWRA Summer Specialty Conference on the Science, Management, and Governance of Transboundary Groundwater, Fort Worth, TX (Slides)

AWARDS

2023 *Winner of the Student Paper Competition for the Battelle's Eleventh International Conference on the Remediation and Management of Contaminated Sediments. *(Highlight)*

2020 **3rd place Best Student Platform Presentation, SETAC Chesapeake Potomac Regional Chapter Annual Virtual Meeting, September 2020.

2017 Lechner Graduate Fellowship, College of Geosciences, Texas A&M University

LEADERSHIP

- Co-chaired scientific session titled "Per- and Polyfluoroalkyl Substances (PFAS) in Our Food: From Farms and Fields to Streams and Shores" at SETAC NA, Portland [Nov 2025]

TECHNICAL SKILLS

- **Equipment:**
  - LC-MS (Thermo Fischer TSQ-Quantis Triple Quadrupole LC-MS/MS)
  - GC-MS (Agilent 7890B GC with Agilent 5977B MS)
  - GC-ECD (Agilent 6890N)
  - Horiba LabRAM Soleil Raman Microscope
  - UV-Vis Spectrometer
- **Language:** MATLAB
- **Statistical modeling:** R
- **Design:** Adobe Lightroom, InDesign, Canva, BioRender