Erin K. Peck (she/her)

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**I. CURRENT POSITIONS (IN TRANSITION)**

**Oak Ridge Institute for Science and Education (ORISE) Postdoctoral Research Fellow** *Oct 2022 – Oct 2023*

In collaboration with Northeast Climate Adaptation Science Center, Amherst, MA & USGS Woods Hole Coastal and Marine Science Center, Woods Hole, MA

Advisors: Dr. Jon Woodruff & Dr. Neil Ganju

Working to geospatially integrate and assess new proxies for salt marsh integrity including wetland above ground biomass, normalized marsh elevation, and sediment-based lifespan; additionally, assessing geomorphic effectiveness of salt marsh restoration techniques (e.g., runnels), impacts of shoreline hardening; projecting salt marsh lifespan under sea level rise and mitigation scenarios.

**Postdoctoral Researcher, University of Delaware, Newark, DE** *May 2021 – Oct 2022*

Advisor: Dr. Shreeram Inamdar

Studying impacts of relict milldams on stream geomorphology and sediment transport; linking alteration of riverscapes on riparian groundwater and sediment biogeochemistry, especially nitrogen cycling; developing a watershed-scale model of denitrification in storm sediment plumes; assessing the potential for buried hydric soils to aid in stream and riparian restoration goals.

**II. EDUCATION**

Ph.D., Oregon State University, Corvallis, OR *June 2021*

College of Earth, Ocean, & Atmospheric Sciences (CEOAS)

Major: Ocean, Earth, & Atmospheric Sciences

Discipline: Ocean Ecology & Biogeochemistry

Minor: Risk & Uncertainty Quantification in Earth Systems

Advisor: Dr. Robert A. Wheatcroft

Graduate Certificate in College & University Teaching *September 2019*

Graduate School, Oregon State University, Corvallis, OR

M.S., Oregon State University, Corvallis, OR *June 2017*

CEOAS

Major: Ocean, Earth, & Atmospheric Sciences

Discipline: Ocean Ecology & Biogeochemistry

Advisor: Dr. Robert A. Wheatcroft

B.A., Franklin & Marshall College, Lancaster, PA *May 2014*

Major: Environmental Science Minor: Geoscience

Magna Cum Laude

**III. GRANTS & FELLOWSHIPS**

**Chesapeake Bay Trust: Pooled Monitoring Initiative’s Restoration Research Award Program 2022** (2022-2024); $110,000

“Memories of the soil: Evaluation of soil nitrogen stable isotope as a robust metric to assess floodplain restoration and nitrogen removal effectiveness”; Co-PI: Shreeram Inamdar

**US National Science Foundation, Hydrologic Sciences** (2022-2025); $800,000

“Saturated, suffocated, and salty: Hotspots of ammonium-N and dissimilatory nitrate reduction to ammonium (DNRA)-denitrification dichotomy in anoxic riparian soils”; Co-PIs: Shreeram Inamdar, Marc Peipoch, Jinjun Kan, & Dipankar Dwivedi

**US Environmental Protection Agency (EPA) Wetland Program Development Grant** (2021-2023); $228,556

“Back from the past? Assessing potential of relic, hydric soils for wetland and floodplain restorations”; Co-PI: Shreeram Inamdar

**National Science Foundation Research Traineeship (NRT) Fellow in Risk & Uncertainty Quantification in Marine Science at Oregon State University** (2019-2020); 1-year stipend ($34,000), tuition, & fees

Worked in a transdisciplinary group including Jasmine King (environmental policy scientist), Rosemary Pazdral (hydrologist), and Emerson Webb (statistician), studying the socio-ecogeomorphological connectivity of Oregon estuaries and watersheds and the vulnerability of these systems to climate and land-use change.

**The Geological Society of America (GSA) Award for Geochronology Student Research (AGeS2)** (2019-2020); $9,447

Worked with Tom Guilderson at Lawrence Livermore National Laboratory to quantify salt marsh reemergence rates following the 1700 Cascadia Subduction Zone earthquake using high sample density radiocarbon dating and Bayesian age-depth modeling.

**Oregon Sea Grant Robert E. Malouf Marine Studies Scholarship** (2018-2019); $10,800

Developed and implemented a series of hands-on learning activities using Oregon salt marsh sediment cores with tsunami deposits for under-represented K-12 students from Oregon public schools.

**Oregon Sea Grant Omnibus Grant** (2016-2018); $200,000

“Competing effects of relative sea-level rise and fluvial inputs on blue carbon sequestration in Oregon salt marshes”; Co-PIs: Robert A. Wheatcroft & Laura S. Brophy

**IV. PEER REVIEWED PUBLICATIONS**

**Peck, E.K.**, S. Inamdar, M. Peipoch, & A. Gold. (*in review*). Influence of relict milldams on riparian sediment biogeochemistry.

Inamdar, S., **E.K. Peck**, M. Peipoch, M. Sherman, J. Hripto, A. Gold, … & T. Trammell. (*in review*). Saturated, suffocated, and salty: Human legacies amplify nitrogen pollution in riparian zones*.*

Bacmeister, E., **E.K. Peck**, S. Bernasconi, S. Inamdar, J. Kan, & M. Peipoch. (2022). Stream nitrogen uptake associated with suspended sediments: a microcosm study.

**Peck, E.K.**, T.P. Guilderson, M.H. Walczak, & R.A. Wheatcroft. (2022). Recovery rate of a salt marsh from the 1700 CE Cascadia Subduction Zone earthquake, Netarts Bay, Oregon. *Geophysical Research Letters.*

**Peck, E.K.**, S. Inamdar, M. Sherman, J. Hripto, M. Peipoch, A. Gold, & K. Addy. (2022). Nitrogen sinks or sources? Denitrification and nitrogen removal potential in riparian legacy sediment terraces affected by milldams. *Journal of Geophysical Research: Biogeosciences*.

Sherman, M., J. Hripto, **E.K. Peck**, A. Gold, M. Peipoch, P. Imhoff, & S. Inamdar. (2022). Backed-up, saturated, and stagnant: Effect of milldams on upstream riparian groundwater hydrologic and mixing regimes. *Water Resources Research.*

**Peck, E.K.** & R.A. Wheatcroft. (2022). Spatiotemporal variation in Oregon salt marsh expansion and contraction. *Estuarine, Coastal and Shelf Science.*

Buser-Young, J.Z., **E.K. Peck**, P. Chase, L. Lapham, & F. Colwell. (2022). Biogeochemical dynamics of a changing high-latitude wetland. *Journal of Geophysical Research: Biogeosciences*.

Hripto, J., S. Inamdar, M. Sherman, **E.K. Peck**, A. Gold, S. Bernasconi, K. Addy, & M. Peipoch. (2022). Effects of relic-low-head dams on stream denitrification: Seasonality and biogeochemical controls. *Aquatic Sciences.*

Krieg, C., E. Johnson, **E.K. Peck,** J. Kan, & S. Inamdar. (2021). After the Storm: Fate and Leaching of Particulate Nitrogen (PN) in the Fluvial Network and the Influence of Watershed Sources and Moisture Conditions. *Water*.

Lewis, E., S. Inamdar, A. Gold, K. Addy, T. Trammell, D. Merritts, ... & **E.K.** **Peck.** (2021). Draining the landscape: How do nitrogen concentrations in riparian groundwater and stream water change following milldam removal? *Journal of Geophysical Research: Biogeosciences*.

Ewton, E., S. Klasek, **E.K. Peck**, & F. Colwell. (2021). Microbial community characteristics largely unaffected by X-ray computed tomography of sediment cores. *Environmental Science & Technology Letters.*

**Peck, E.K.**, R.A. Wheatcroft, & L.S. Brophy. (2020). Controls on sediment accretion and blue carbon burial in salt marshes: Insights from the Oregon coast, USA. *Journal of Geophysical Research: Biogeosciences*.

de Wet, C.B., A. Moser, K. Oxman, & **E.K.** **Peck.** (2015). Semi-arid and cyclic carbonates; deposition and diagenesis of the Middle Cambrian Buffalo Springs Formation, Morgantown, Pennsylvania, USA. *PA Geology*.

**V. TECHNICAL REPORTS**

Brophy, L.S., **E.K. Peck**, S.J. Bailey, C.E. Cornu, R.A. Wheatcroft, L.A. Brown, & M.J. Ewald. (2018). Southern Flow Corridor effectiveness monitoring, 2015-2017: Sediment accretion and blue carbon. Prepared for Tillamook County and the Tillamook Estuaries Partnership, Tillamook, Oregon, USA. Corvallis, Oregon: Institute for Applied Ecology.

Brophy, L.S., L.A. Brown, M.J. Ewald, & **E.K. Peck.** (2017). Baseline monitoring at Wallooskee-Youngs restoration site, 2015, Part 2: Blue carbon, ecosystem drivers and biotic responses. Corvallis, Oregon: Institute for Applied Ecology.

Brophy, L.S., L.A. Brown, M.J. Ewald, & **E.K. Peck.** (2015). Baseline monitoring at Wallooskee-Youngs restoration site, 2015, Part 1: Blue carbon and channel morphology. Corvallis, Oregon: Institute for Applied Ecology.

**VI. CONFERENCES**

American Geophysical Union (AGU) Fall Meeting, Chicago, IL December 2022

Poster – Controls on salt marsh carbon burial along the Oregon coast

*Goldschmidt 2022, Honolulu, HI July 2022*

Poster – From free-flowing and dynamic to backed up and stagnant: How do milldams alter denitrification and processing in riparian sediments?

*University of Delaware International Workshop on Biogeochemical Cycling in Coastal Soils, Newark, DE May 2022*

Presentation – Nitrogen sinks or sources? Denitrification and nitrogen removal potential in riparian legacy sediment terraces affected by milldams

*Pacific Estuarine Research Society 2022 Meeting (virtual) March 2022*

Presentation – Spatiotemporal variation in Oregon salt marsh expansion and contraction

American Geophysical Union (AGU) Fall Meeting, New Orleans, LA (virtual) December 2021

Presentation – Memories of the soils: Can δ15N characterize the influence of milldams on nitrogen processing in riparian soils?

AGU Fall Meeting, San Francisco, CA (virtual) December 2020

Presentation – Linking salt marsh lateral change with vertical accretion: Insights from the Oregon coast, USA

GSA Annual Meeting, (virtual) October 2020

Presentation – Rate of salt marsh reemergence following the 1700 Cascadia Subduction Zone Earthquake

CERF 25th Biennial Conference, Mobile, AL November 2019

Poster – Time-varying drivers of tidal wetland sediment accumulation over the last century measured using biogeochemical proxies

AGU Fall Meeting, Washington, DC December 2018

eLightning Presentation – Controls on sediment accretion and blue carbon burial in salt marshes: Insights from the Oregon coast

State of the Coast, Coos Bay, OR October 2018

Poster – Changing sediment and blue carbon accumulation recorded in Oregon salt marshes

AGU Fall Meeting, San Francisco, CA December 2016

Poster – Influence of sea level rise on tidal wetland sediment and carbon accumulation under differing fluvial sediment supply in the Pacific Northwest

ARCS Annual Luncheon October 2016

Poster – Influence of sea level rise on tidal wetland carbon and sediment accumulation under differing sediment supplies

CERF 23rd Biennial Conference, Portland, OR November 2015

Poster – Quantifying sediment and carbon accumulation in Oregon tidal wetlands

**VII. HONORS & AWARDS**

* University of Delaware Isotope Scholars Program (2022)
* Murray Levine Memorial Fund for Teaching Assistant Excellence (2021); $500
* CEOAS Student Travel Award (2019); $200
* Coastal & Estuarine Research Federation (CERF) Student Travel Award (2019); $300
* The Coastal Society Second Place Student Poster Award (2019); $100
* State of the Coast Runner-Up Student Poster Award (2018)
* Oregon Sea Grant Scholars Travel Award (2018); $500
* Murray Levine Memorial Fund for Teaching Assistant Excellence (2016); $500
* Achievement Rewards for College Scientists Scholar Award (2014-2017); $18,000
* Phi Beta Kappa Society (2014-Present)
* Franklin & Marshall Environmental Science Award (2014); $500
* Lloyd S. Yeakel Memorial Award in Geology for outstanding performance in the field of sedimentology (2013); $500

**VIII. INVITED SEMINARS**

Franklin & Marshall College Lite Lunch Seminar (Lancaster, PA) October 2021

Insights into centennial-scale salt marsh morphodynamics from the Oregon coast

Stroud Water Resource Center Lunch Seminar (Avondale, PA) July 2021

Insights into centennial-scale salt marsh morphodynamics from the Oregon coast

Pacific Northwest Blue Carbon Working Group (Oregon coast, OR; virtual) March 2021

Controls on sediment accretion and blue carbon burial in tidal saline wetlands: Insights from the Oregon coast

Pacific Northwest National Laboratory Seminar (Richland, WA; virtual) January 2021

Creating a high-resolution chronology to determine intertidal accommodation space-filling after the 1700 Cascadia Subduction Zone earthquake

University of Washington ‘Seismolunch’ Seminar (Seattle, WA; virtual) December 2020

Creating a high-resolution chronology to determine intertidal accommodation space-filling after the 1700 Cascadia Subduction Zone earthquake

Oregon Sea Grant (OSG) Coffee with Colleagues (Corvallis, OR; virtual) May 2020

Outreach as an OSG Malouf Scholar and results from my OSG-funded research: Controls on sediment accretion and blue carbon burial in Oregon tidal saline wetlands

CEOAS Ocean Ecology & Biogeochemistry Seminar (Corvallis, OR) January 2020

Controls on sediment accretion and blue carbon burial in tidal saline wetlands: Insights from the Oregon coast

USGS Brownbag Seminar Series (Portland, OR) October 2018

Controls on sediment accretion and blue carbon burial in tidal saline wetlands: Insights from the Oregon coast

**IX. RESEARCH EXPERIENCE**

**Oak Ridge Institute for Science and Education (ORISE) Program** Fall 2022 – Present

Postdoctoral Research Fellow at the Northeast Climate Adaptation Science Center, Amherst, MA (Dr. Jon Woodruff) & USGS Woods Hole Coastal and Marine Science Center, Woods Hole, MA (Dr. Neil Ganju)

Creation of a decision framework for salt marsh conservation and restoration along the Northeast USA

**University of Delaware, Newark, DE**

Postdoctoral Researcher (Dr. Shreeram Inamdar) Spring 2021 – Fall 2022

Influence of relict Mid-Atlantic milldams on sediment transport & biogeochemistry

**Oregon State University, Corvallis, OR**

Graduate Research & Teaching Assistant (Dr. Robert Wheatcroft) Fall 2014 - Spring 2021

Centennial-scale assessment of drivers of salt marsh accretion & blue carbon burial along the Oregon coast

Collaborator – Institute for Applied Ecology (Laura Brophy) January 2015 - March 2016

Assessment of blue carbon sequestration rates in restored Oregon tidal saline wetlands

Research Assistant – South Slough National Estuarine Research Reserve (Craig Cornu) November 2014 - February 2015

Development of collaborative research framework & proposals for the PNW Coastal Blue Carbon Working Group

**Franklin & Marshall College, Lancaster, PA**Hackman Research Scholar – Earth & Environment Department (Dr. Robert Walter) June 2013 - June 2014

Identification of sources of suspended sediment to a Mid-Atlantic stream using Bayesian fingerprinting

Hackman Research Scholar - Chemistry Department (Dr. Jennifer Morford) June 2012 - June 2013

Identification of thiols and trace metals in salt marsh porewater from Great Bay, NH

Laboratory Assistant - Biology Department (Dr. Carl Pike) Spring 2012

Assessment of physiological responses of various plant species grown under elevated CO2

**X. DIVERSITY, EQUITY, & INCLUSION (DEI) TRAINING & ACTIVITIES**

CIRTL, Disrupting bullying in academia webinar (2 1.5-hr seminars; participant) *Spring 2022*

Reviewer for CEOAS Ocean Ecology & Biogeochemistry Group’s DEI Mission Statement *Winter 2021*

Social Justice Education Initiative Workshop Tier 1 & Tier 2 (10 hr; participant) *Summer & Fall 2020*

Discussion with CEOAS Deans about college-wide DEI initiatives *Summer 2020*

OSU SNR522: Ethics of Conservation focus on Traditional Ecological Knowledge (4 credit hr) *Spring 2020*

Unpacking Diversity CEOAS Professional Learning Community (participant & organizer) *2018 - 2021*

OSU GRAD542: The Inclusive Classroom: Difference, Power, & Discrimination (4 credit hr) *Spring 2019*

OSU’s SMILE Spring Challenge Event for underserved Oregon K-12 students (organizer) *Spring 2019*

Oregon Women in Higher Education Annual Conference (8 hr; participant) *Winter 2018*

SERC, InTeGrate Webinar (1-hr seminar; participant) *Fall 2018*

CIRTLCast DEI Seminar Series (4 1-hr seminars; participant) *Fall 2018*

**XI. TEACHING EXPERIENCE & PRODUCTS**

*\*Teaching portfolio is available upon request.*

**Peck, E.K.** (published online January 2020). Teach the Earth Activity: Identifying tsunami sand in salt marsh stratigraphy. Science Education Resource Center (SERC) at Carleton College*.* serc.carleton.edu/teachearth/activities/234763.html

OSU Graduate Certificate in College & University Teaching Coursework Fall 2017 – Summer 2019

* Theories of Teaching & Learning
* Course Design & Methods
* Professional Development in Teaching, emphasis on Diversity, Equity, & Inclusion
* The Inclusive Classroom: Difference, Power, & Discrimination
* College & University Teaching Internship
* College & University Capstone Seminar

Graduate Teaching Assistant – Oregon State University, Corvallis, OR Fall 2014 – Spring 2021

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| --- | --- | --- | --- | --- |
| Course No. | Title | Credit Hour | Students | Term/Year |
| eGEO 300 | Sustainability for the Common Good | 3 | 49 | F14 |
| eOC 103 | Exploring the Deep/Geog. of World Oceans | 4 | 48 | F14 |
| OC 201 | Oceanography | 4 | 48 | W15 |
| OC 201 | Oceanography | 4 | 17 | SP15 |
| OEAS 500 | Cascadia Field Course | 4 | 18 | F15 |
| OC 201 | Oceanography | 4 | 24 | W16 |
| OC 103 | Exploring the Deep/Geog. of World Oceans | 4 | 50 | SP16 |
| OEAS 500 | Cascadia Field Course | 4 | 16 | F16 |
| OEAS 520 | The Solid Earth | 4 | 13 | F16 |
| OEAS 520 | The Solid Earth | 4 | 21 | W18 |
| OEAS 520 | The Solid Earth | 4 | 16 | W19 |
| OC 499 | Geological Oceanography | 4 | 25 | SP19 |
| eOC 103 | Exploring the Deep/Geog. of World Oceans | 4 | 20 | SU19 |
| OEAS 540 | The Biogeochemical Earth | 4 | 30 | F20 |
| OEAS 520 | The Solid Earth | 4 | 15 | W21 |
| OC 499 | Geological Oceanography | 4 | 25 | SP21 |

Tutor – Franklin & Marshall College, Lancaster, PA Spring 2014

Sedimentology & Stratigraphy (20 undergraduate students)

**XII. STUDENT MENTORSHIP**

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| Alexis Yaculak | Ph.D., Water Science & Policy, UDel | Expected 2025 |
| Bisesh Joshi | Ph.D., Water Science & Policy, UDel | Expected 2025 |
| Matthew Sena | Ph.D., Water Science & Policy, UDel | Expected 2025 |
| Nathaniel Levia | B.S., Entomology & Wildlife Ecology, UDel | Expected 2024 |
| Sophia Bradach | B.S., Soil Science, Stockton University | Expected 2023 |
| Rachel Zobel | Ph.D., Water Science & Policy, UDel | Expected 2024 |
| Eva Snell Bacmeister | M.S., Water Science & Policy, UDel | Fall 2022 |
| Johanna Hripto | M.S., Water Science & Policy, UDel | Winter 2022 |
| Melissa Sherman | M.S., Water Science & Policy, UDel | Winter 2022 |
| Justine Paul Berina | B.A., Wooster College; UDel Summer Scholar | Spring 2022 |
| Raymond Ngo | B.S., Oceanography, OSU | Spring 2019 |
| Sean Mahaffey | B.S., Oceanography, OSU | Spring 2018 |
| Irene Garris | B.S., Oceanography, OSU | Spring 2017 |
| Jake Turner | B.S., Geology, OSU | Spring 2016 |
| Grace Molino | NSF Research Experience for Undergraduates, OSU | Summer 2016 |

**XIII. OUTREACH EXPERIENCE**

Fair Hill Natural Resources Management Areas, MD, First Saturday Hike Series June 2022

Guest speaker on a public hike about issues related to stream restoration and water quality

Oregon Sea Grant Growing Engineers and Marine Scientists Webinar December 2020

Engaged with 6th – 12th graders about my research and experiences as a woman in marine science

OSU Marine & Geology Repository Grand Opening January 2020

Spoke with Oregon community members about Oregon salt marshes ecosystem services and vulnerability to sea level rise and landscape alteration

Sitka Sedge Technical Team Meeting October 2019

As an expert scientist, spoke with the Sitka Sedge Technical Team and members of the Tierra Del Mar community about restoration options for a faulty tide gate in the southern portion of Sand Lake Estuary

Corvallis da Vinci Days July 2019

Designed and delivered a booth with the goal of communicating to Corvallis community members how Oregon’s salt marshes record the history of Cascadia Subduction Zone earthquakes and tsunami

OSU’s Science & Math Investigative Learning Experiences (SMILE) Spring Challenge Event April 2019

Designed and implemented a series of hands-on learning activities for K-12 students organized by OSU’s SMILE program. SMILE seeks to provide underserved Oregon K-12 students with pathway programs to degrees and careers in STEM. My activities guided ~60 high school students, ~100 elementary school students, and ~25 K-12 teachers in the SMILE program through an activity investigating organic carbon burial in salt marsh cores at the OSU Marine Geology Repository

Hatfield Marine Science Day April 2019

Designed and delivered a booth with the goal of communicating to Oregon coastal community members how Oregon’s salt marshes record the history of Cascadia Subduction Zone earthquakes and tsunami

**XIV. ORGANIZATIONS & COMMITTEES**

*Lead Organizer:*

CEOAS Association of Graduate Students Professional Development Group Fall 2019 - Spring 2020

CEOAS Ocean Ecology & Biogeochemistry Grad Night Fall 2017 - Fall 2019

*Organizing Member:*

Unpacking Diversity CEOAS Professional Learning Community Fall 2019 - Spring 2021

CEOAS Promotion & Tenure Graduate Student Evaluation Committee Fall 2018

CEOAS Academic Mentoring Program Winter 2018

CEOAS Science Communication Group Fall 2017 - Winter 2020

**XV. AD HOC REVIEWER**

Manuscript Peer Reviewer for *Estuaries and Coasts Summer 2022*

Manuscript Peer Reviewer for *Limnology and Oceanography Spring 2022*

Application Reviewer for the 2019 Oregon Sea Grant Summer Scholars Program *Spring 2022*

Manuscript Peer Reviewer for *Earth Surface Processes and Landforms* *Fall 2021*

Application Reviewer for the 2021 Oregon Sea Grant Malouf Fellowship *Summer 2021*

Manuscript Peer Reviewer for *Estuaries and Coasts* *Summer 2020*

Application Reviewer for the 2019 Oregon Sea Grant Summer Scholars Program *Spring 2019*

Application Reviewer for the 2018 Oregon Applied Sustainability Experience *Spring 2018*

Manuscript Reviewer for *Limnology and Oceanography: Methods* *Winter 2017*

**XVI. PROFESSIONAL MEMBERSHIPS & WORKING GROUPS**

Association for the Sciences of Limnology and Oceanography *2022 - Present*

Pacific Estuarine Research Society *2022 - Present*

Coastal Estuarine Research Federation *2020 - Present*

The Geological Society of America *2019 - Present*

American Geophysical Union *2016 - Present*

Pacific Northwest Blue Carbon Working Group *2014 - Present*

**XVII. RESEARCH SKILLS**

*Software proficiency:* Microsoft Office Products, Adobe Illustrator, MATLAB, ArcGIS Pro, ArcGIS Desktop, Fiji (ImageJ), R & RStudio, OsiriX

*Laboratory proficiency:* Gamma detection of excess 210Pb & 137Cs, Loss on ignition, Organic carbon & nitrogen analysis by CNH analysis, Recent organic radiocarbon sample preparation, Stable carbon & nitrogen isotope sample preparation, X-ray fluorescence (XRF) core scanning, Computed tomography (CT) analysis, Particle size analysis, Glove bag & glove box sample preparation, Partial sediment digestion, ICP-OES

*Field proficiency:* Salt marsh sediment core collection techniques, Hand-auguring, Stream & groundwater well sampling, Deployment & maintenance of YSI EXO & In-Situ Aqua TROLL multiparameter sensors; RTK GPS