



Contributed by Tyler Frankel

Fall Newsletter

November 2022



Inside this issue

- President's Podium
- Board Member Spotlight
- Upcoming Events
- Chesapeake Bay Update
- Career Opportunities

Announcements

**SETAC North America
43rd Annual Meeting**

**13-17th November, 2022
Pittsburgh, PA**



Contributed by Tyler Frankel

Mission Statement

Serving the Chesapeake-Potomac Region (Maryland, DC, Virginia, and West Virginia), our chapter of SETAC North America (SNA) provides a professional forum for individuals from private industry, academia, and government agencies who are engaged in the study, analysis and solutions for environmental problems, management, and regulation of natural resources, and/or research and development. We facilitate networking and educational opportunities for scientific professionals, mentoring and career guidance for students, and environmental education and outreach for the public.



Keep in touch with CPRC SETAC



CPRC Leadership and Committees

Officers		
President	Guangbin Li, University of Maryland College Park	president.cprc.setac@gmail.com
Interim Vice President	Meredith Bohannon, U.S. Army Public Health Center	vice.president.cprc.setac@gmail.com
Past President	Nathalie Lombard, University of Maryland, Baltimore County	nlombard@umbc.edu
Treasurer	Nathan Sell, American Cleaning Institute	treasurer.cprc.setac@gmail.com
Secretary	Thomas Bean, FMC at the Stine Research Center	cprc.setac@gmail.com
Board Members		
2022 – 2024	Andrew East, U.S. Army Public Health Center	andrew.g.east.civ@mail.mil
2021 – 2023	Ben Burruss, Trinity Consultants	Ben.Burruss@safebridge.com
2021 – 2023	Rachel Eberius, US EPA	reberius@gmail.com
2021 – 2023	Jada Damond, Student Representative, University of Maryland, Baltimore County	damond1@umbc.edu
2020 – 2022	Tyler Frankel, University of Mary Washington	tfrankel@umw.edu
2020 – 2022	Upal Ghosh, University of Maryland Baltimore County	ughosh@umbc.edu
Web Presence (cprcsetac.wordpress.com)		
Website	Ben Burruss, Trinity Consultants	website.cprc.setac@gmail.com
Social Media	Jada Damond, University of Maryland, Baltimore County	socialmedia.cprc.setac@gmail.com
Newsletter Editor	Mandar Bokare, University of Maryland Baltimore County	newsletter.cprc.setac@gmail.com
Assistant Editors	Michael Quinn, Andrew East, Nathalie Lombard	

President's Podium



Fall in our region is a time of getting outside for a lot of activities filled with color and fun, farm festivals, photography, hiking, trick-or-treat, etc. For the first time in three years, I heard many people are planning to resume activities and plans that had been cancelled or delayed in previous years. A good example is the wedding boom in 2022, with an estimation of 2.6 million weddings - the most since 1984 in the U.S.

In 2022, CPRC organized multiple in-person activities with caution by following both local and CDC guidance. We hosted our first joint spring meeting with the Hudson Delaware Chapter on April 10th-12th, 2022. It was so exciting to meet our members and friends in Newark, Delaware since it has been two years since our last in-person spring meeting in 2019. The joint meeting provided a great opportunity for nearly 100 members and friends from both chapters to get to know each other and sharing amazing results and ideas on different topics in the field of ecological risk and chemicals of emerging concern. This meeting also featured a series of outstanding talks and short courses from a variety of speakers, including the keynote presentation by Dr. Dominic Di Toro (University of Delaware) on the topic of "Second Generation models of Environmental Partitioning and Toxicity: The End of the Age of Octanol." Dr. Krisa Camargo of Texas A&M University gave us a short course of "Hazardous Waste and Superfund – a primer and a trainee's research experience in Texas". CPRC Event Planning Committee also successfully organized Happy Hour in July, Hike in September, and Fall Seminar in October, providing opportunities to socialize and network with CPRC members, professionals and environmental enthusiasts. In this coming year, I hope CPRC will continue to host "colorful" events for our members!

President's Podium

I would like to remind you to check the updates on our website and stay connected by subscribing to our social media. There will be three important announcements expected to be posted on our website soon. First, please mark your calendar on April 17th-18th to join us in 2023 Spring Meeting will be held at Easton, MD, "the 8th Best Small Town in America". More details about the Spring Meeting will be released soon. Second, we will be transiting our old website to a new platform in order to better organize the contents and events. We hope this new website will create a more diverse, inclusive, and convenient platform to improve our members' engagement. We also hope you will have a better experience in receiving updates, news, and reminders, and in managing your registration for future CPRC events. During the transition period, we will still maintain and update the old website so that you will have sufficient time to get to know all the functions provided in the new website.

Meanwhile, the SETAC North America meeting (43rd) will start on Nov. 13th, 2022 at Pittsburgh, PA, with virtual attendance also available. Although there will be no CPRC event this year at SETAC, I would like to encourage our members to meet each other, and support our students' posters and platform presentations. In addition to these, our Event Planning Committee will be organizing more in-person activities in the future. If you are having any ideas, suggestions, and/or comments to our new website and events, please share them with us and our contact information can be found here.

If you want to know more about or are interested in being involved with CPRC SETAC in any forms (e.g., volunteers, donation, events host, etc.), please feel free to contact us at president.cprc.setac@gmail.com or directly speak with any of our officers and boards of director. Nominations for Officers and Boards will soon open. As always, we welcome volunteers in any of our committee: Events Planning, Communications, Memberships, and Inclusive Diversity, with more details available here. Please also consider sending us a note or photo to tell us your research stories and activities, at socialmedia.cprc.setac@gmail.com.

I look forward seeing you all soon in CPRC events and wish you all the best!

Guangbin Li, Ph. D

CPRC President 2022-2023

New Member Spotlight

DR. MEREDITH BOHANNON, Interim Vice President

Dr. Meredith Bohannon is a current member in CPRC SETAC Event Planning Committee and previously served on BoD as treasurer for more than 3 years. Dr. Bohannon received her PhD in the Marine-Estuarine-Environmental Sciences (MEES) program at the University of Maryland-College Park (UMCP) in 2014, focusing on hepatic gene expression in PCB-exposed Japanese quail embryos as a global screen for biomarkers of exposure and effect. After completing graduate school, she was a postdoctoral research associate in the Environmental Science and Technology department at (UMCP). During this time, she shifted gears in her research by learning and running gas chromatography to determine levels of PCBs, DDE, and other legacy organochlorine contaminants in plasma samples of bald eagle nestlings around the Great Lakes as part of a fifty-year effort to remediate and monitor the Great Lakes ecosystem. During her time as a postdoc, she taught multiple college courses at UMCP of such subjects as toxicology, environmental health, endocrinology, neurobiology, and anatomy and physiology. She eventually made the choice to leave academia to contribute to the field of toxicology in the avenue of civil service; she currently works at the U.S. Army Public Health Center at Aberdeen Proving Ground where she conducts toxicity studies to determine safe occupational and environmental levels of compounds and chemicals pertinent to military use.



2022 CPRC/HDC Annual Spring Meeting Summary



CPRC-HDC
Joint Spring Meeting 2022

FMC

Exponent® | eurofins | agrosience services



The Chesapeake-Potomac and Hudson-Delaware Regional Chapters of SETAC held a joint 2022 spring meeting on April 11th and 12th at the FMC Stine Research Center in Newark, Delaware. The chapters welcomed nearly 100 registrants from academia, business, and government for the in-person meeting. In addition, there were 5 registrants who were granted permission to participate virtually. The 2-day event was packed with scientific programs, field trips, short courses, and tours of the FMC greenhouses.

2022 CPRC/HDC Annual Spring Meeting Summary

Early arrivers gathered on Sunday, April 10th, at the Delaware Humane Association (Riverfront East side) for a guided tour of the Wilmington Wetlands led by Marian Young, President of BrightFields, Inc. The attendees visited several locations where BrightFields is performing environmental work to restore brownfield properties in collaboration with the Delaware Department of Natural Resources and Environmental Control. The tour was then treated to a visit to the Russell W. Peterson Urban Wildlife Refuge and the South Wilmington Wetland Parks which is not yet open to the public.



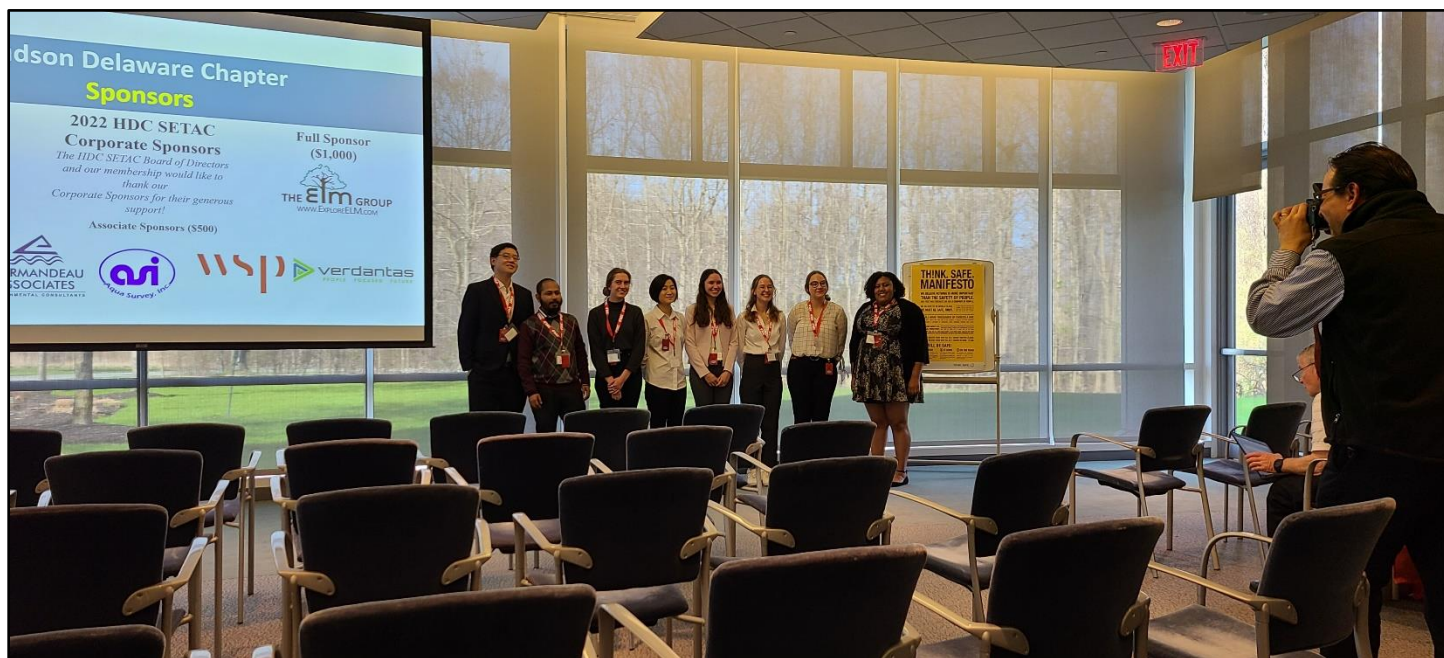
On Monday, participants filled the conference room at the FMC Stine Research Center for a daylong scientific program. The in-person attendance was very strong, especially after the two-year Covid-19 pandemic. Dr. Dominic DiToro (University of Delaware) delivered the keynote address, discussing the “Second Generation models of Environmental Partitioning and Toxicity: The End of the Age of Octanol.” The first day's scientific program also included a short course on “Designing a robust

and spatially representative long-term monitoring program” by Dr. Ying Wang and Dr. Kenneth Takagi of WSP.



Posters were displayed on the second floor with topics covering the toxicity of traditional persistent contaminants such as metals to emerging contaminants such as Per- and Polyfluoroalkyl Substances (PFAS) and microplastics. A rapid-fire poster session was held in the afternoon. Each presenter was given 5 minutes to describe their poster. This was a very lively event and all the students (including those who gave platform presentations during the day) are commended for their enthusiasm. While it was a hard choice, student awards for first, second, and third place were given for both poster and platform presentations. In addition, 8 students received travel awards of \$100. The day ended with evening social and dinner at Klondike Kates.

2022 CPRC/HDC Annual Spring Meeting Summary



Platform					
	First Name	Last Name	Institute	E-mail	Title
1st	Kristen	Prossner	Virginia Institute of Marine Science	kmprossner@vims.edu	Rapid measurement of PAH contamination in oysters using novel antibody-based biosensor technology
2nd	Anthony	Sigman-Lowery	University of Delaware	asigman@udel.edu	Physicochemical and Dissolved Organic Matter Properties of Novel Brominated Flame Retardants
3rd	Jada	Damond	University of Maryland, Baltimore County	damond1@umbc.edu	Measuring In-Situ Surface Water Methylmercury Concentrations Using a Novel Equilibrium-Based Passive Sampler

2022 CPRC/HDC Annual Spring Meeting Summary

Poster					
	First Name	Last Name	Institute	E-mail	Title
1st	Carolyn	Willmore	University of Mary Washington	cwillmor@umw.edu	Assessing the Presence and Concentration of Anthropogenic Contaminants Near the Crows Nest Natural Area Preserve (Stafford, VA)
2nd	Sophia	Weldi	University of Mary Washington	sweldi@umw.edu	Comparing the Impacts of Common Deicing agents NaCl and MgCl ₂ on the Viability, Embryonic Development, and Behavior of the Freshwater Gastropod <i>Physa acuta</i>
3rd	Abdullah	Al-Amin	Temple University	tuj63430@temple.edu	The effects of dissolved organic carbon (DOC) on metal dynamics in stormwater bioretention bed

On the second day, some attendees started the day bright and early at 6:30 am by participating in a Morning Bird Walk led by several staff from FMC. The second day’s scientific program started with a short course on Hazardous Waste and Superfund – a primer and a trainee’s research experience in Texas by Dr. Krisa Camargo of Texas A&M University. The platform presentation topics ranged from aquatic toxicity testing to tracking PCB contamination source using passive samplers.



The second day ended with an outdoor short course led by Don Nazario (Normandean Associates) and Dr. Dan Millemann (NJDEP) on field methods for assessing stream health. Participants had a hands-on opportunity to collect freshwater macroinvertebrates for identification and sediment samples via vibracoring.

2022 CPRC/HDC Annual Spring Meeting Summary

The methodologies presented are two of several tools available to scientists to assess the health of streams, their aquatic communities, and the possible contamination of a site by pollutants. Check out your local watershed association for opportunities to monitor stream water quality in your own backyard.

The meeting was made possible due to many generous donations from our sponsors, including FMC, Eurofins, Exponent, Exxon Mobil, The ELM group, Terraphase, Verdantas, ASI, WSP, and Normandeau Associates, Integral consulting inc., Wellington laboratories, Tetra Tech, Environmental & Turf Services Inc., and the many volunteers who donated their time to help make the meeting a tremendous success.

2022 CPRC/HDC Annual Spring Meeting Summary



**2022 HDC SETAC
Corporate Sponsors**
*The HDC SETAC Board of Directors
and our membership would like to thank our
Corporate Sponsors for their generous support!*



Sustaining Sponsor - \$1500 +

Full Sponsors - \$1000



Associate Sponsors - \$500



Chesapeake Potomac Regional Chapter of SETAC



Keystone Sponsors 1000\$+

Secondary Producers 500\$

Primary Producers 250\$



Award Winners' Abstracts

Rapid measurement of PAH contamination in oysters using novel antibody-based biosensor technology

KRISTEN PROSSNER

Virginia Institute of Marine Science

Abstract

Sessile, filter feeding bivalves such as oysters can readily bioaccumulate environmental contaminants like polycyclic aromatic hydrocarbons (PAH) freely dissolved in water. With limited metabolic capacity, oysters lack an efficient means to excrete PAH. Conventional analytical methods for measuring PAH contamination in seafood are time-consuming and expensive, limiting their utility in time sensitive events (i.e. oil spills and floods) or for widespread environmental monitoring. Current screening methods intended to prioritize samples for more extensive analyses are unreliable. A highly sensitive antibody-based biosensor method has been developed to measure total 3-5 ring PAH concentration in small volume (1-2 mL) aqueous samples in minutes. Concentrations measured using this method correlate well with conventional GC-MS analysis. With these features, the biosensor has shown great promise as a screening tool to measure PAH contamination in oysters and was utilized to rapidly and inexpensively measure PAH concentration in oysters throughout an entire river watershed in southeast Virginia impacted by legacy PAH contamination. To explore the applicability of this method in time sensitive scenarios such as oil spill response, a laboratory study was conducted in which adult *C. virginica* oysters were exposed to the water-accommodated fraction of heavy crude oil for 3 days followed by a 14-day depuration period in uncontaminated water. Throughout the study, animals were sampled to compare the ability of the biosensor to track changes in PAH concentration over time to that of conventional body burden analysis by GC-MS. The biosensor measurements showed the rapid uptake of PAH during the dosing period and then traced the depuration of the contamination by the oysters during the two-week study. With the ability to measure concentrations in near real-time at a fraction of the cost compared to conventional GC-MS, biosensor technology shows promise as a powerful screening tool to improve human health risk assessments as well as environmental monitoring and remediation efforts.

Award Winners' Abstracts

Physicochemical and Dissolved Organic Matter Properties of Novel Brominated Flame Retardants

ANTHONY SIGMAN-LOWERY

University of Delaware

Abstract

The compounds 1,2-bis(2,4,6-tribromophenoxy) ethane (BTBPE), hexabromobenzene (HBB), bis(2-ethylhexyl) tetrabromophthalate (TBPH), 2-ethylhexyl 2,3,4,5-tetrabromobenzoate (TBB), and pentabromobenzene (PBB) are among a group of novel brominated flame retardants (NBFRs) that have replaced legacy polybrominated diphenyl ethers (PBDEs). To date, most of the physicochemical and partitioning properties of these compounds have been estimated based upon their structures using various linear free energy relationships (LFERs) and these values have yet to be corroborated by experimental data. For this study, we measured the aqueous solubility, n-octanol-water (K_{ow}), and dissolved organic carbon partition coefficients (K_{DOC}) for these five HBFRs. Measurements for aqueous solubility and K_{DOC} were conducted using batch equilibrium approaches and compared to values estimated using both single (sp-) and polyparameter (pp-) LFERs. Dissolved organic matter (DOM) used in this study included an International Humic Substances Society Standard reference material (Suwannee River Natural organic matter or SRNOM) and DOM isolated from the Arctic and Antarctic. The aqueous solubilities of the NBFRs ranged from 2.1 μg to 16.9 μg . The Suwannee River NOM log K_{DOC} for BTBPE, HBB, TBB, TBPH, and PBB were 4.69, 4.34, 4.85, 4.12, and 4.02 L kg^{-1} organic carbon, respectively. While these measured log K_{DOC} values for PBB and HBB compared favorably to those calculated using pp-LFER models with Abraham solvent parameters for Suwannee River Fulvic Acid, the measured log K_{DOC} values for BTBPE, TBB, and TBPH were several orders of magnitude lower than their modelled counterparts. PBB and TBPH exhibited no change in partitioning behavior with the Arctic DOM, while BTBPE and TBB exhibited lower partitioning to the Arctic DOM as compared to the SRNOM. Surprisingly, none of the NBFRs (TBB excepted) partitioned significantly to the Antarctic DOM. Work is ongoing to determine the experimental octanol-water partition coefficients via reversed phase-HPLC.

Award Winners' Abstracts

Measuring *In-Situ* Surface Water Methylmercury Concentrations Using a Novel Equilibrium-Based Passive Sampler

JADA DAMOND

University of Maryland, Baltimore County

Abstract

Mercury is a global pollutant that is transformed in aquatic environments into the more toxic and bioaccumulative methylmercury (MeHg). Humans exposed to elevated levels of MeHg, primarily through the consumption of contaminated fish, are at risk for adverse health effects. Accurate MeHg measurements in water are crucial for adequate site risk assessment and remedial practices, however its transformative nature, temporal variability, and concentrations too low for instrument detection limits (pM at unaffected sites) make MeHg measurement through traditional grab sampling difficult. Passive sampling can provide time-integrated measurements and improved detection limits. This work presents results of the first surface water field deployment of a novel equilibrium-based passive sampler for MeHg composed of activated carbon suspended in agarose gel (ag+AC). Previous tests of these samplers [1] showed that they provided robust estimates of aqueous MeHg concentrations in controlled laboratory studies using environmentally relevant matrices. Samplers were deployed to measure sub-ng/L MeHg concentrations in surface waters at two locations in East Fork Poplar Creek (EFPC) in Oak Ridge, TN. EFPC is impacted by extensive mercury contamination arising from lithium isotope separation at the Oak Ridge Y-12 security complex in the mid-20th century. The ag+AC passive samplers were deployed for 7 and 14 days, after which samplers and corresponding water grab samples were analyzed for MeHg. Aqueous predictions using the measured MeHg concentration in the sampler and a previously determined partitioning coefficient were within a factor of 1.6 of the direct water measurements at both timepoints. This work demonstrates that these ag+AC samplers are a useful tool to obtain reliable, time-integrative *in-situ* measurements of aqueous MeHg concentrations in environmental deployments. [1] Sanders et al., *Environmental Toxicology and Chemistry*, 2020, 39:323-334

Award Winners' Abstracts

Assessing the Presence and Concentration of Anthropogenic Contaminants Near the Crows Nest Natural Area Preserve (Stafford, VA)

CAROLYN WILLMORE

University of Mary Washington

Abstract

Various anthropogenic pollutants have been identified as contaminants of concern for freshwater environments including excess nutrients such as nitrogen and phosphorus, trace metals, and microplastic particles. The Crow's Nest Natural Area Preserve (Stafford, VA) accounts for over 60% of all the marshes in the county and includes over twenty miles of stream, wetland, and riparian buffer that serve as a habitat for sixty species of migratory birds and over forty freshwater teleost species. Little research has been done to examine the spatiotemporal presence and concentrations of the above pollutants in surface waters and sediments near this ecologically important location. As such, this study examined the concentrations of 1) nitrate, orthophosphate, total phosphorus, dissolved oxygen, and pH in surface waters and 2) phosphorus, magnesium, zinc, iron, copper, and microplastic concentrations in sediments collected from Accokeek Creek (six sampling sites), Potomac Creek (four sampling sites), and the Potomac River (four sampling sites). For each site, one liter surface water samples were collected and immediately analyzed for nutrient concentrations, pH, and DO using a Hach D1900 portable spectrophotometer and Hanna HI98194 multiparameter meter, respectively. Additionally, 2" x 6" sediment core samples were collected in stainless steel tubes and immediately frozen to 4°C. Portions of these samples were then sent to Waypoint Analytical (Richmond, VA) for analysis. Samples from each site were dried at 90°C for 24h and 10g of each digested using wet peroxide oxidation, density-separated using NaCl, and filtered onto Whatman filter papers. Nile red stain was then applied to filter papers and the number and type of microplastic particles assessed using a fluorescent microscope (420–495 nm). While this study is still ongoing, preliminary results have indicated relatively low levels of excess nutrient contamination and trace metals near the preserve. Microplastics appear to be ubiquitous across all samples, with higher concentrations occurring downstream in Accokeek Creek. This preliminary environmental health assessment serves as an important management tool for the Crows Nest Preserve and allows for the comparison of other surface waters in the Virginia.

Award Winners' Abstracts

Comparing the Impacts of Common Deicing agents NaCl and MgCl₂ on the Viability, Embryonic Development, and Behavior of the Freshwater Gastropod *Physa acuta*

SOPHIA WELDI

University of Mary Washington

Abstract

Approximately 24 million tons of deicers are applied to United States roadways every year. Over half of this volume has been shown to enter surface waterways through runoff, resulting in the salinization of freshwater environments. While the USEPA recommends that chloride concentrations do not exceed a four-day average of 230 mg/L more than once every 3 years, recent studies have observed concentrations of over 600 mg/L during winter months. Compared to aquatic vertebrates, little is known about the effects of the two most common road deicing salts, NaCl and MgCl₂, on sublethal endpoints in invertebrate species. Thus, the goals of this study are to assess the effects of aqueous NaCl and MgCl₂ exposure on 1) *Physa acuta* embryo cluster viability and development and 2) adult mobility (average mobile speed, average speed, total distance traveled, acceleration, number of frozen events and time spent frozen). Newly laid (<24hr old) embryo clusters were collected and exposed to 0, 100, 250, or 500 mg/L NaCl or MgCl₂ using a static exposure method. Viability, developmental stage, and hatching success of each embryo was assessed daily for ten days. Adults were exposed to 0, 100, 250, 500, and 1000mg/L NaCl or MgCl₂ for 7d using static replacement. On days 0, 3, and 7 individuals were placed into a recording chamber and mobility recorded and analyzed using ToxTrac (v. 2.83). While this experiment is still ongoing, preliminary results suggest dose-dependent decreases in embryonic developmental rate and mobility, with more severe effects caused by MgCl₂ exposure. As there is currently no research on the effects of NaCl or MgCl₂ on *P. acuta*, these findings provide novel insight into the impacts of these two commonly utilized agents on a non-model freshwater invertebrate species, suggesting that similar effects may also be exerted on endangered or keystone aquatic species.

Award Winners' Abstracts

The effects of dissolved organic carbon (DOC) on metal dynamics in stormwater bioretention bed

ABDULLAH AL-AMIN

Temple University

Abstract

Dissolved organic carbon (DOC) is heterogeneous and consists of various molecular weight compounds with a range of functional groups (carboxyl, carbonyl, phenol, aryl, and amide). Dissolved organic carbon (DOC) has the capacity to form complexes with metals which in turn influences metals fate and transport. Stormwater runoff can contain DOC and metals, and other contaminants, which are introduced to the stormwater management practice (SMP) which includes soil media with some sorption capacity for contaminants. This study focused on the effects of DOC on metal dynamics in the horizontal and vertical transects of the SMP bioretention bed.

Samples were collected in longitudinal and vertical transects of the SMP bioretention bed. A batch study was conducted to evaluate the effect of DOC (0, 15, and 50 mg/L) on dynamics of ten metals (iron, manganese, cobalt, cadmium, copper, zinc, arsenic, tin, antimony, and lead); additionally sequential extractions were conducted to determine exchangeable (bioavailable), carbonate bound, mineral bound, and organic matter bound.

Leachate metal concentration tended to increase with increasing DOC concentration in the longitudinal and vertical transects. Metal concentration decreased with increasing distance from the SMP inlet, regardless of DOC concentration, which may be caused by incoming suspended solid accumulating near the inlet. Metal leachate concentration decreased with increasing depth in the vertical transects. Extracted metal revealed a general trend for cumulated metal fractions: mineral bound ~ organic matter bound > carbonate bound > exchangeable. No significant trend was found for the effect of DOC on different fractions. These results indicate that there are clear spatial patterns, with greater leachable metals near the inlet and that DOC could increase leachability, but that vertical mobility of metals is limited based on four years of SMP use.

CPRC SETAC Board Member Spotlight

BEN BURRUSS, M.S. RQAP-GLP.

Managing Consultant

Trinity Consultants, dba SafeBridge Regulatory & Life Sciences Group

Area of Interest: Environmental fate and effects of antimicrobial and pharmaceutical ingredients, study monitoring, pesticide registration and regulatory compliance, and scientific/business data management.



Greetings from Charlottesville, Virginia! My name is Ben Burruss and I am currently serving in my second year as Board Member of CPRC SETAC. I have had the privilege to serve in several other leadership roles within CPRC and I am excited to be a current member of the Program Committee for the 43rd SETAC North America Annual Meeting. It is an honor to be selected for this newsletter's Board Member Spotlight.

I am a native of Charlottesville, a beautiful and vibrant town situated in central Virginia and home of the University of Virginia. I currently reside in Crozet, which is a small town outside Charlottesville nestled next to the Blue Ridge Mountains and Shenandoah National Park.

The town, Crozet, is named after Claudius Crozet who engineered the Blue Ridge Tunnel. At the time of its completion, it was the longest tunnel in the United States! If you are ever in the area, I recommend visiting the tunnel, which was reopened in 2020 with an access trail.

My love for science grew exponentially as a senior in high school, when my chemistry teacher made the subject fascinating and fun to learn. As a result, I selected Chemistry as my undergraduate major early on and completed my B.S. from the University of Mary Washington (Go Eagles!) located in Fredericksburg, VA. As an undergraduate, I was also intrigued by the environment and its intersection with chemistry, and I wanted to gain some research experience. Therefore, while pursuing my B.S. degree, I conducted independent research studying the physical and photochemical characteristics of fulvic, humic, and whole fractions of natural organic matter in surface water collected from the Rappahannock River.

CPRC SETAC Board Member Spotlight

Following graduation from UMW, I took a job at Universal Laboratories (UL) as a lab technician performing wet chemistry and microbiological methods on samples from municipal treatment plants. My role at UL advanced to Technical Director, where I was overseeing the day-to-day operations of the lab in addition to performing lab analyses. In seeking new opportunities to learn and grow my career, I joined SafeBridge (formerly Toxicology Regulatory Services) in 2013 as an Associate Scientist/Quality Assurance Auditor. I certainly missed being in the lab, but I was excited at the opportunity to learn and grow professionally. It was in this new role at SafeBridge that my exposure to toxicology as a scientific field began, and I have since learned a great deal about toxicology and its relevance to the regulation of chemicals. Also, at SafeBridge, I learned a great deal about Good Laboratory Practices (GLPs) as it related to my job function and eventually received my credential as a Registered Quality Assurance Professional (RQAP) in GLPs. If you do not know a lot about GLPs and would like to know more, please reach out to me!

I am now in my 10th year at SafeBridge. As a Managing Consultant, my primary responsibility is providing testing program management, scientific study monitoring, and quality assurance oversight of environmental fate and effects testing programs. In addition, I provide regulatory support services for biocidal/antimicrobial ingredients and products and perform hazard and risk assessments on a variety of chemicals. During my employment at SafeBridge, I wanted to further my education, so I pursued and received my M.S. in Environmental Science at the University of Virginia in 2020. It was challenging to work nearly full time and pursue a graduate degree, but it was worth it in the end! My master's thesis research involved the investigation of the spatiotemporal variability and sources of dissolved organic nitrogen in streams on the Eastern Shore of Virginia. One of the more memorable moments from my graduate research occurred while on a solo trip to the Eastern Shore. I was sampling a low-relief stream when I misjudged the firmness of the sediment layer and ended up sinking my leg so far into the sediment that nearly a third of my leg was stuck in the sediment, causing me to lose my balance. Luckily, I was able to get myself free from the sediment with the help of a tree branch, but my clothes and phone were ruined with the water and odorous sediment that flooded into my chest waders.

CPRC SETAC Board Member Spotlight

As a consultant, I love having the opportunity to work on a variety of different projects to help clients achieve their regulatory and scientific objectives. Over the years, I have benefited greatly from the knowledge of experienced toxicologists and regulatory affairs professionals and have been encouraged to learn through professional development opportunities such as those related to SETAC. In 2014, I attended my first SETAC North America Annual Meeting in Vancouver and had the best time. I wanted to get involved with the society more, so I looked up the local chapter and starting volunteering on the committees. Being involved with CPRC SETAC has been, and continues to be, a wonderful opportunity to network professionally and have exposure to great science. So, please consider getting involved with our chapter!

On the more personal side of things, I enjoy spending time with my wife and our two wonderful children (my son is almost 4 and my daughter is 18 months!). We enjoy going on outdoor adventures, playing soccer, cooking/baking, and watching Pixar/Disney movies!

Thank you for reading my spotlight! Please reach out to me if you have any questions about what I do, what it's like to work in industry as consultant, or how CPRC SETAC can help you!

Upcoming Events

CPRC goes to SETAC NA
43rd Annual Meeting

Fill in and Visit the ONLINE FORM to:

- Promote your work
- Learn about the research within CPRC
- Find common interests
- Create new connections
- Develop new projects

Stay tuned for an informal CPRC Get Together during the meeting!

Let CPRC members know about your abstracts by entering your details here:

https://docs.google.com/spreadsheets/d/1Zpyos1G2qJzZKWua7BSgJzfJGn26ye2t/edit?usp=sharing_eil_se_dm&rtpof=true&sd=true&ts=63518634

Upcoming Events



Save the date!

**CPRC @
Rockville
Science Cafe**

January 17th 2023, 7 to 8 pm

Online Event

<https://www.rockvillesciencecenter.org/rockville-science-cafe>

Upcoming Events



THE CHESAPEAKE AND POTOMAC REGIONAL
CHAPTER OF THE SOCIETY OF ENVIRONMENTAL
TOXICOLOGY AND CHEMISTRY



APRIL 16-18, 2023

SAVE THE DATE

EASTON, MD

CPRC SETAC events in the past year

CPRC SETAC Hike and Dine at Harpers Ferry

By Nathalie Lombard and Jada Damond



Figure 1. View of Harpers Ferry from Maryland Heights. The picture was selected for the advertisement of the CPRC SETAC Hike

CPRC Events Planning Committee organized a hike on September 10th, as an informal opportunity to socialize and network with CPRC members and environmental enthusiasts.

Harpers Ferry was carefully chosen, as it is located at the intersection of three states belonging the Chesapeake Potomac Regional Chapter, i.e. Maryland, Virginia and West Virginia, was only 1h of drive from D.C., and offers spectacular views of the confluence of Shenandoah and Potomac Rivers. The day started with a nice sun, agreeable temperature and

nice breeze, a perfect weather for a lovely hike.

We followed the [Murphy-Chambers farm trail](#), an easy hike of 3 miles, which featured a beautiful scenery of the Shenandoah River and mountainous skyline in addition to historical sites significant during the Civil War, like the [John Brown Fort](#). We were quite surprised to see only the foundation of the Fort but learnt that the building was several times dismantled and transported to several locations until 1968, when it finally was rebuilt in Harpers Ferry Lower Town, close to its original location.



Figure 2 CPRC members and friends enjoying the overlook on the Shenandoah River from the River Vista site.

CPRC SETAC events in the past year

After taking the shuttle to Lower Town, we finally found the Fort and discovered the historic downtown. The town features some more scenic views, replicas of old shop, and several educational opportunities such as the Restoration Museum where you learn how archeologists piece clues together to reconstruct building history. The day concluded with a resting break at the Rabbit Hole, where we enjoyed local drinks and food, and discussed locations for future hikes.

You may know of beautiful locations that you would like to share with CPRC SETAC members. Please share your ideas and/or help organizing the next hike by emailing CPRC SETAC Vice President at vice.president.cprc.setac@gmail.com.



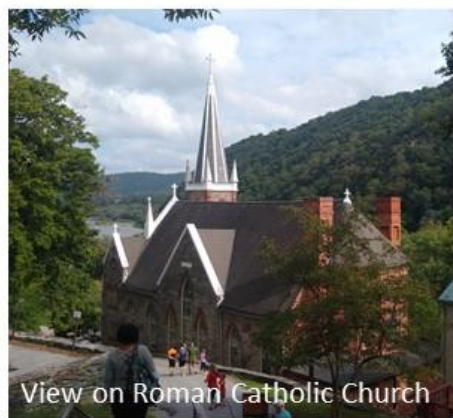
Overlook on Potomac-Shenandoah confluence from Lower Town



House in Lower Town



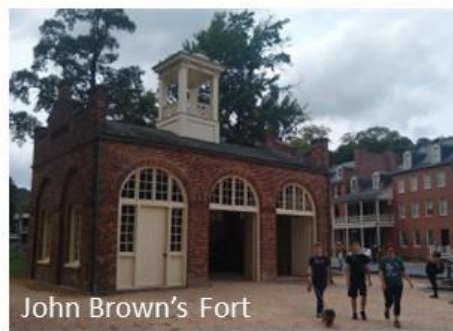
Canons on Murphy Farm



View on Roman Catholic Church



Ruins of Episcopal Church



John Brown's Fort

Figure 3 Additional pictures of the Harpers Ferry Hike.

CPRC SETAC Events in the past year

Monitoring stream ecology: Field methods for assessing stream health and why we use them"

By Don Nazario (Normandaeu Associates) and Dr. Dan Millemann (NJDEP)



Chesapeake Bay Update

A partnership to highlight the biodiversity of the urban estuary

Eric Schott and the Biodiversity team*

*(A.k.a. Charmaine Dahlenberg, Tsetso Bachvaroff, Lisa Scheifele, Adam Frederick)

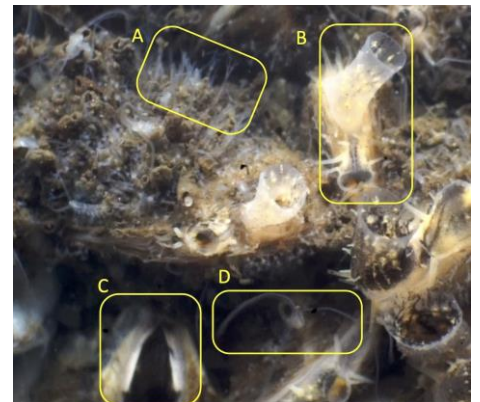
A new floating wetland project stimulates collaborations

Floating wetlands are artificial habitats that host meticulously planned ecosystems, designed to attract native species while helping to improve water quality. While floating wetlands have traditionally been used in stormwater retention ponds, in 2017 the National Aquarium launched a 400 square foot floating wetland prototype to further test this technology in the tidal waters of Baltimore's Inner Harbor. This project is part of a larger effort to re-imagine the post-industrial waterfront by reintroducing up to 15,000 square feet of beneficial floating wetland habitat over the next several years. Concurrently, a collaborative partnership between the National Aquarium (NA), Institute of Marine and Environmental Technology (IMET), and the Baltimore Underground Science Space (BUGSS) has been established, leveraging complementary areas of expertise to reveal and quantify the Harbor's existing biodiversity and how it may change over time as floating wetlands are introduced.

A simple platform for research and education

- "Biodisks"

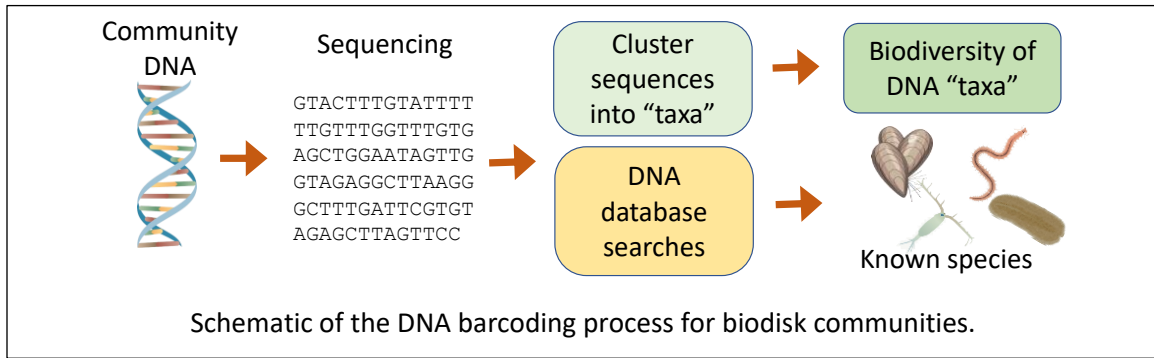
For 20 years, Maryland Sea Grant has used "Biodisks" to demonstrate to K-12 students the small life forms that are the foundation of estuarine ecology. The Harbor Biodiversity team recognized that this



Left: The "Biodisk" platform for recruiting and studying sessile communities. **Right:** Suspension feeders at 10x magnification. A) bryozoans; B) dark false mussel; C) barnacle; D) whip mud worm. Depending on the local conditions, the relative proportion of these species varies. We also use DNA barcoding to identify the less visible species that also grow in this community. *Photos, IMET-UMCES.*

platform has high value for scientific observations as well, and has adapted this low-tech method for

quantification of biodiversity by both videographic and DNA barcoding methods. The principle is to deploy fresh clean acrylic disks in the water each spring, and monitor the recruitment and growth of the sessile invertebrates that grow on them over the next 8 months. Every month, disks are taken to the lab, video-recorded, and samples taken for DNA barcoding. The videos are viewed by teams of researchers who identify and enumerate organisms.

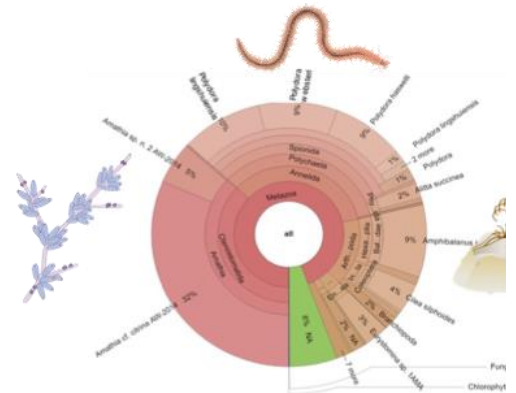


DNA barcoding to look deeper into biodiversity

Scrapings of the biodisks are also archived for DNA extraction. BUGSS, IMET, and the Aquarium have performed Biofilm and DNA Barcoding studies since 2016, identifying an aquatic biodiversity baseline of Baltimore's Inner



Left: BUGSS members amplifying barcode DNA just before the 2020 pandemic shutdown.



Right: Graphical representation of *COX1* DNA barcoding. The visually observed species are prominent in DNA, and there are many less abundant species that were not visualized. *Photo: BUGSS; Illustration IAN-UMCES.*

Harbor. Several different genes are sequenced to create a large data-set to compare with global DNA sequence databases. This produces a list of putative species present, as well as a molecular estimate of abundance.

The list of putative taxa identified is represented graphically, such as plot of *COX1* based sequence barcoding targeting metazoans from biodisks installed in the inner harbor in the summer of

CPRC SETAC Fall 2022 Newsletter

2018. In this barcoding process, after community DNA extraction the *COX1* sequence is amplified and thousands of sequences are produced. The concept is that each unique sequence represents one species or taxon and the abundance of that sequence will be proportional to the abundance of the living organisms. The sequences are then matched to reference databases which provides a link from sequence to taxonomy information. In the plot shown the outer bands represent the finest taxonomic resolution based on sequence matches with the proportions representing the abundance of that sequence in the data, and each successive category towards the center of the plot represents progressively broader taxonomic categories. The sequence data provides a permanent record of the biodiversity of the Inner Harbor during that sampling period, which can be used to describe changes between years, seasons or sites using consistent and objective methods.

What's next?

The biodiversity collaboration has generated a manuscript for peer reviewed publication. One clear lesson is that even in a polluted urban estuary, the suspension feeding community is resilient and robust. Year to year and place to place, the ratio of mussels, barnacles, bryozoans and other life will change depending on salinity and other factors, yet there is always some growth. We have begun to explore and describe the ecosystem services of this community. Studies are starting this summer to quantify the ability of the community to consume phytoplankton, sequester nutrients, and remove harmful bacteria from the water. Other pilot projects will compare DNA barcode data of blue crab stomach contents to the communities seen on the disks. And most intriguingly, we are collaborating with UMBC artist Stephen Bradley as he builds a "Bio-buggy" to carry a microscope and HD screen to allow our scientific observations to take place on the shore and piers, where the public can directly observe the dynamic life in the harbor.

Links:

IMET-UMCES

<https://www.umces.edu/research-highlights/scientists-exploring-life-baltimores-inner-harbor>

https://www.mdseagrant.org/interactive_lessons/biofilm/

Aquarium blog

<https://aqua.org/stories/2021-12-15-floating-wetlands-five-lessons-over-eleven-years>

BUGSS

<https://bugssonline.org/group-projects/barcoding-the-harbor/>

CPRC SETAC Fall 2022 Newsletter

Stephen Bradley art

<https://urbantells.net/2021/08/29/circa-imet-air/>

Image credits

National Aquarium, UMCES-IAN, BUGSS.

Career Corner

Toxicology opportunities at the Army Public Health Center

The U.S. Army Public Health Center is a matrixed organization founded and dedicated to ensure the health of people, communities, animals and the environment located at Aberdeen Proving Ground, Maryland. Our mission is to enhance Army readiness by identifying and assessing current and emerging health threats, developing and communicating public health solutions, and assuring the quality and effectiveness of the Army's Public Health Enterprise. The Toxicology Directorate, in collaboration with a host of DoD, government, private, and international entities, provides data about the toxicity of military-unique and military-relevant compounds and the risks they pose to Soldiers, civilians and the environment. The Toxicology Directorate is looking for candidates to join their workforce in two positions to include Biologist/Toxicologist (GS-11-13) and Veterinary Histopathologist (GS-13-14). Those interested in any of those career tracks are welcomed to contact Dr. Michael Quinn at michael.j.quinn104.civ@mail.mil or call at 410-404-7705. More information on APHC and the Toxicology Directorate can be found at: <https://phc.amedd.army.mil/Pages/default.aspx>

National Aquarium

Conservation Technician

<https://recruiting.ultipro.com/NAT1020NAQUA/JobBoard/807a3c85-8038-7ec5-5c50-4abbbd08029e/OpportunityDetail?opportunityId=d01db4c9-c2e9-4be2-abf1-a8372db466f9>

Eurofins EAG Agrosience, LLC

Avian Scientist: <https://jobs.smartrecruiters.com/Eurofins/743999846153552-avian-scientist>

Quality Assurance Associate: <https://jobs.smartrecruiters.com/Eurofins/743999846145752-quality-assurance-science-laboratory>

Assistant Scientist I, Aquatics Ecotoxicology:

<https://jobs.smartrecruiters.com/Eurofins/743999846143140-assistant-scientist-i-aquatics-ecotoxicology>

Environmental, Health & Safety Administrator:

<https://jobs.smartrecruiters.com/Eurofins/743999845597470-environmental-health-safety-ehs-administrator>

Career Corner

Assistant Scientist, Plants & Insects: <https://jobs.smartrecruiters.com/Eurofins/743999845070841-assistant-scientist-plants-insects>

Aquatics Lab Technician:
<https://jobs.smartrecruiters.com/Eurofins/743999844176791-aquatics-lab-technician>

Technician, Plants & Invertebrates: <https://jobs.smartrecruiters.com/Eurofins/743999844007241-technician-plants-invertebrates>

Study Director, Ecotoxicology: <https://jobs.smartrecruiters.com/Eurofins/743999843749051-study-director-ecotoxicology-remote->

Assistant Scientist I, Biologics: <https://jobs.smartrecruiters.com/Eurofins/743999838819862-assistant-scientist-i-biologics>

Director of Biologics: <https://jobs.smartrecruiters.com/Eurofins/743999825598099-director-of-biologics>

Staff Scientist, Analytical Chemistry: <https://jobs.smartrecruiters.com/Eurofins/743999846387521-staff-scientist-analytical-chemistry>

Senior Scientist, Environmental Fate: <https://jobs.smartrecruiters.com/Eurofins/743999846386151-senior-scientist-environmental-fate/>

US Fish and wildlife services

Biologist, GS- 0401-12: <https://www.usajobs.gov/job/684215800>

Please visit the CPRC SETAC website to keep updated with latest job postings:

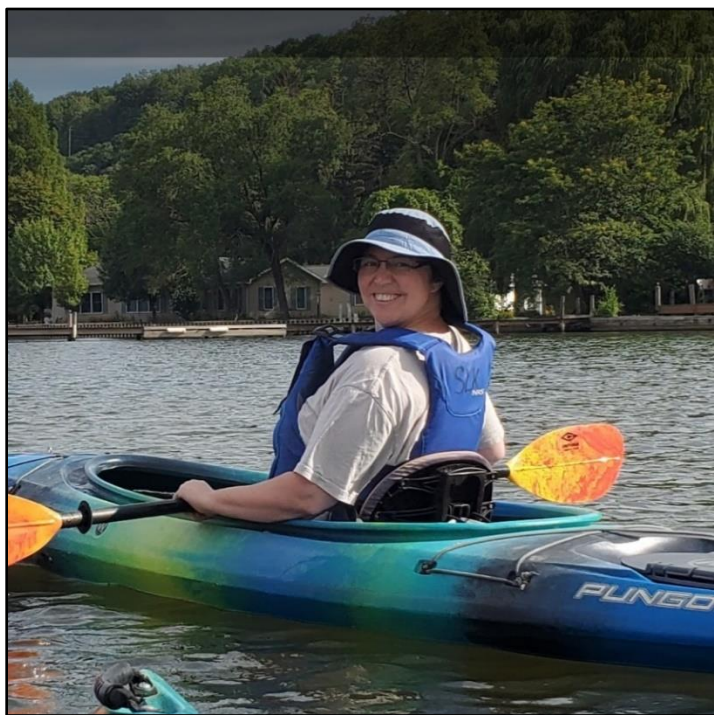
<https://cprcsetac.wordpress.com/job-opportunities/>

Career Corner

Career Advice for Young Professionals

MEREDITH BOHANNON

U.S. Army Public Health Center (APHC)



Reading a person's CV, resume, or biographical sketch, one can easily get the impression that their career development and progression just fell into place. That is not the reality for anyone.

My basic professional sketch goes something like this: I graduated with my Ph.D. from the Marine-Estuarine-Environmental-Sciences Program at the University of Maryland (UMD) in 2014, during which time I studied the effects of PCBs on gene expression in Japanese quail and subcellular markers of toxicity in a wild bird population at the upper Hudson River Superfund site in New York. I was then a postdoctoral research assistant in the

Environmental Sciences and Technology (ENST) Department at UMD from 2016-2019, assisting with an ongoing 30+ years-long biomonitoring project funded by the Michigan state Department of Environmental Quality to assess levels of PCB and other organochlorine compounds in bald eagle nestling plasma from Michigan. During that time I also taught numerous courses in the Biology and ENST Departments at UMD. I am currently a Biologist at the U.S. Army Public Health Center (APHC) at the Defense Health Agency within the Department of Defense at Aberdeen Proving Ground, MD. The path here was much more circuitous than this sketch suggests, and while I don't have space here to offer up my entire story, I do offer up some select pieces of advice for the reader's own career path.

The first piece of advice is, know where you want to end up, and develop the specific skills to get you there. For a long time, I thought I was going to end up in college-level instruction, so I taught more classes. It took me a while to figure out that I preferred labwork and "doing science" more than teaching about it, so I started developing different skills. My current job takes more advantage of the training and experiences I curated for myself than many other jobs out there

Career Corner

The second is, develop your network. This is professional lingo for, make lots of friends. You never know who will think of you for a job. My first teaching gig as instructor of record came at the recommendation of my supervisor when I was a TA in grad school. My postdoc emerged in a hallway conversation with one of my committee members. My current job happened because of an email from one of my graduate advisor's other graduate students who had a job to fill. You never know who you'll align with at the right moment.

The third is, develop your support group. This will probably take the form of a few select mentors, a number of professional peers, and honestly, even people you don't really like. Everyone has their own insight to offer in the journey we are all on to a satisfying and fulfilling career in science.

The fourth is, take risks. Put yourself out there as often as possible. Apply for lots of grants, apply for lots of jobs, submit your manuscripts to "reach" journals. Think about your peers and mentors, or better yet your professional idols. What positions do they hold? What experience do they have that got them where they are? What experience can you garner that will get you where they are one day? Think big, don't play the easy game. You will fail sometimes. Correction, you will fail A LOT. I'm not being supercilious, I'm being realistic. Everyone fails a lot, even the most successful people. Sometimes imposter syndrome can get in your way. If you find yourself with this issue, find someone in your field with whom you can talk to about it (see the third piece of advice, above), because everyone experiences it. Anyone who tells you they've never had imposter syndrome is lying to themselves.

The last is, keep going. I spent a long time looking for what I thought was going to be my final landing spot. If you are training to be a scientist, then you are always looking for the next question to ask. You are driven. And you will never be "done" looking for the place where you can settle. The next opportunity will be just around the corner.

Upcoming Webinars of Interest

SERDP/ESTCP Webinars

Technical Advances for Managing Munitions Constituents at DoD Sites (11/03/2022)

This SERDP and ESTCP webinar focuses on DoD-funded research efforts to advance remediation of munitions constituents (MC) for contaminated surface and/or ground waters. Specifically, investigators will cover their efforts to evaluate natural attenuation of MC as a remedial option and optimize MC hydrolysis and adsorption by carbonaceous amendments.

Craig Tobias, PhD, University of Connecticut

Wenqing Xu, PhD, Villanova University

Forecasting Dryland Ecosystem Vulnerability to Change (11/17/2022)

This SERDP and ESTCP webinar focuses on DoD-funded research efforts to improve natural resource management by improving understanding of how disturbance and climate variability impact DoD lands. Specifically, investigators will present vulnerability assessments of plant species at dryland installations, as well as tools for predicting responses of vegetation and ecological processes to climate change and disturbance.

Scott Ferrenberg, PhD, U.S. Geological Survey

Sasha Reed, PhD, U.S. Geological Survey

Modeling and Monitoring Tools to Support Passive and Active NAPL Remediation Approaches (12/15/2022)

This SERDP and ESTCP webinar focuses on DoD-funded research efforts to build upon hydrologic modeling elements necessary for strengthening DoD installation water resilience. Specifically, the investigators will discuss the development and accuracy of next-generation intensity-duration-frequency curves for enhancing hydrologic design, and coupled models to support evaluation of mission-assurance risk from disruption of water infrastructure.

Mark Widdowson, PhD, Virginia Tech

Thomas McHugh, PhD, GSI Environmental, Inc.

Upcoming Webinars of Interest

AAEES Webinars

The EPA's Brownfield Program: Little-Known Funding Mechanism to Address Asbestos, Lead - Case Study: Grim Hotel, Texarkana (11/16/2022)

Daphnea Ryan, City of Texarkana

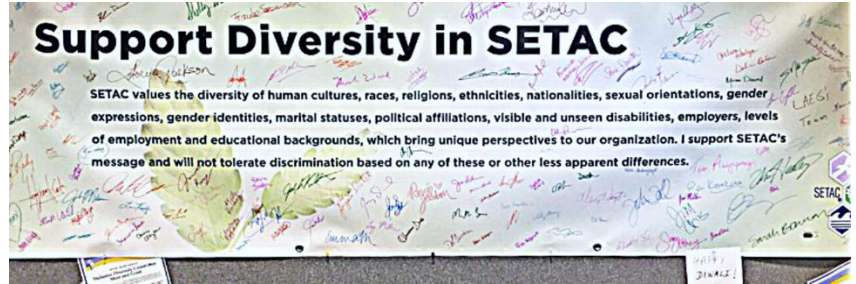
Melissa Tidemann, Stanley Consultants

Julie Oriano, Stanley Consultants

Inclusive Diversity

SETAC NA Inclusion Diversity Committee

Started in 2018 by Latonya Jackson and Austin Gray to increase representation in SETAC NA. We are your advocating body and work from your input and needs.



Everyone must contribute to building an inclusive SETAC environment. If you see something, say something!

SETAC NA's Whistleblower Policy

<https://www.setac.org/page/SETACWhistleblower>

You can email directly to directors@setac.org, send your issue to a member of the Board or Council, or you if this is pertaining to a very serious or sensitive issue relating to unethical or illegal conduct, you can go straight to the SETAC attorney bbmceachern@pensacolalaw.com

Whistleblower policy: Our policy encourages individuals to put their names to allegations because appropriate follow-up questions and investigation may not be possible unless the source of the information is identified. Concerns expressed anonymously will be explored appropriately, but consideration will be given to:

- The seriousness of the issue raised
- The credibility of the concern
- The likelihood of confirming the allegation from attributable sources

Questions or Suggestions for your ID Committee? Want to Get Involved?

Join our group email list

<https://www.setac.org/group/Diversity>

Attend our monthly meetings

First Wednesday of the month @ 10am PST/1-2pm EST


Anonymous Comment boxes

- Monitored by ID Committee <https://tinyurl.com/y3d8cyqq>
- Monitored by SETAC

 @Diverse_SETACNA

 @InclusiveDiversity-SETAC

 @inclusivediversity_setac

 <https://www.setac.org/general/custom.asp?page=SNADiversity>

Inclusion Diversity Highlights at SETAC NA 43rd Annual meeting

Gathering of Empowered Minds Social | 17:30–19:30 EST

16 November | Room 319/320

[View Pricing](#) | Pre-registration Required

You can sign up when you [register for the meeting](#) or add the event to your existing registration by visiting the [SETAC Store](#).



The SETAC North America Inclusive Diversity Committee presents the 2022 Gathering of Empowered Minds (GEM) Social, a space for social connection, support and engaging in actionable dialogue. Join us in-person for appetizers and round-table discussions following our speaker. More information will follow soon! Find our definition of diversity and follow event updates on [Twitter](#) and [Facebook](#).

Tips for Making Your Research Group an

Inclusive and Diverse Environment | 13:00–17:00 EST

13 November | Room 321

\$25 | Pre-registration Required

You can sign up when you [register for the meeting](#) or add the event to your existing registration by visiting the [SETAC Store](#).

With the increasing changes in demographics in the US, it is critical that we recruit, maintain and support diversity in our institutions. Our responsibility to educate and include people of color, first to college, low income, individuals with disabilities, and students who identify with the LBGTQ+ community is especially important in the field of toxicology. Individuals from the named groups are particularly vulnerable to environmental toxins. The proximity of superfund sites to low-income communities, the increased exposure of people of color, immigrants, and individuals from low-income backgrounds to environmental toxins, and the impaired educational systems in many of these same communities are just a few reasons why these concerns must be addressed. In moving forward it is important to 1) Increase funding to provide opportunities to allow diverse students to participate in laboratory research; 2) Build an inviting and welcoming environment to retain a diverse body of students; 3) Promote and hire a diverse group of faculty committed to increasing and including diversity; 4) Highlight environmental justice issues in our research and teaching; 5) Highlight scientists of color and their contributions to the field, and 6) Promote all of the above within professional societies.

CPRC SETAC Fall 2022 Newsletter

Gender And Equity Allyship In The Workplace: A Conversation with Aurora Sharrard | 17:30–19:00 EST

15 November | Room 317/318

[View Pricing](#) | Pre-registration Required

You can sign up when you [register for the meeting](#) or add the event to your existing registration by visiting the [SETAC Store](#).



Aurora Sharrard

University of Pittsburgh

Join Women in SETAC for a second event open to all SETAC attendees. This will be an informal discussion-based event moderated by [Aurora Sharrard](#) (University of Pittsburgh) that focuses on allyship for gender equity. The goal of this discussion is for attendees to identify actionable ways to practice gender allyship in communities and workplaces.

Women in SETAC | 12:30–14:00 EST

15 November | Room 317/318

[View Pricing](#) | Pre-registration Required, Lunch Included

You can sign up when you [register for the meeting](#) or add the event to your existing registration by visiting the [SETAC Store](#).



Equity for Women in Science Is a Critical Component of Holistic Sustainability in STEM Innovations and Progress

Aurora Sharrard

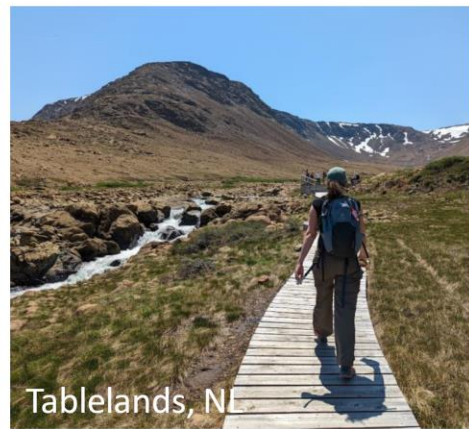
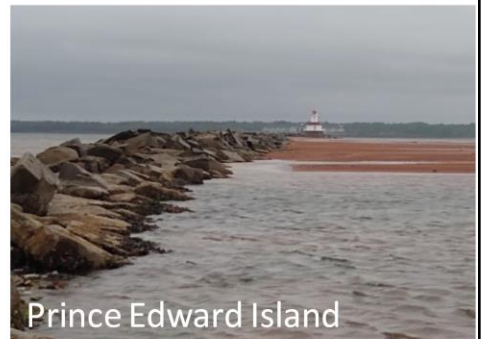
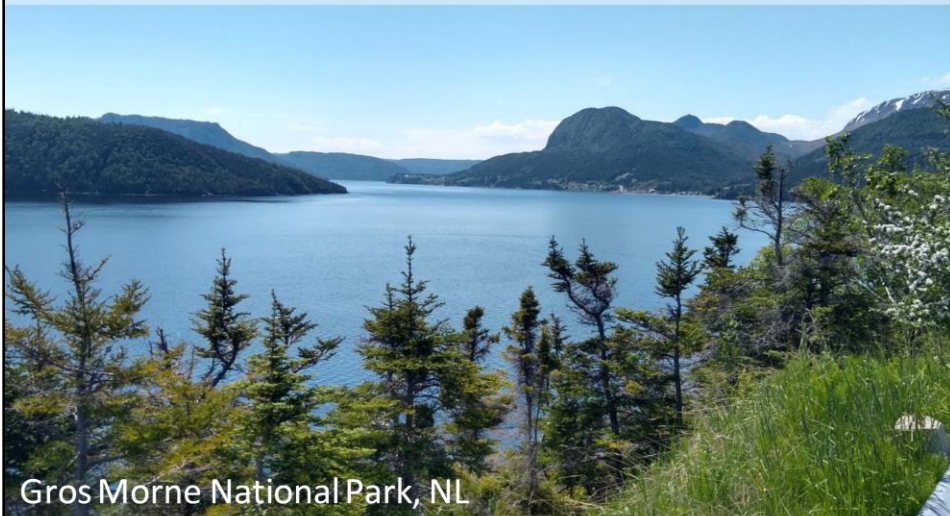
University of Pittsburgh

Dr. Aurora Sharrard is the Executive Director of Sustainability at the University of Pittsburgh, leading Pitt's Office of Sustainability, cross-departmental sustainability staff, and University-wide sustainability strategy, activities, policies, collaborations, and partnerships. The [Pitt Sustainability Plan](#) guides these efforts with 61 sustainability goals at the intersection of equity, environment, and economics. Building on past progress and successes, Dr. Sharrard and [her colleagues](#) work daily across the spectrum of sustainability, including pursuing carbon neutrality by 2037 as part of the [Pitt Climate Action Plan](#), incorporating sustainability into the curriculum, providing access and opportunity to all, transparently communicating progress, and embedding a culture of sustainability into the University of Pittsburgh so that it's a sustainability leader in every scale, from campus to international.

Women in SETAC is sponsored by 3M.

Summer Fun Activities

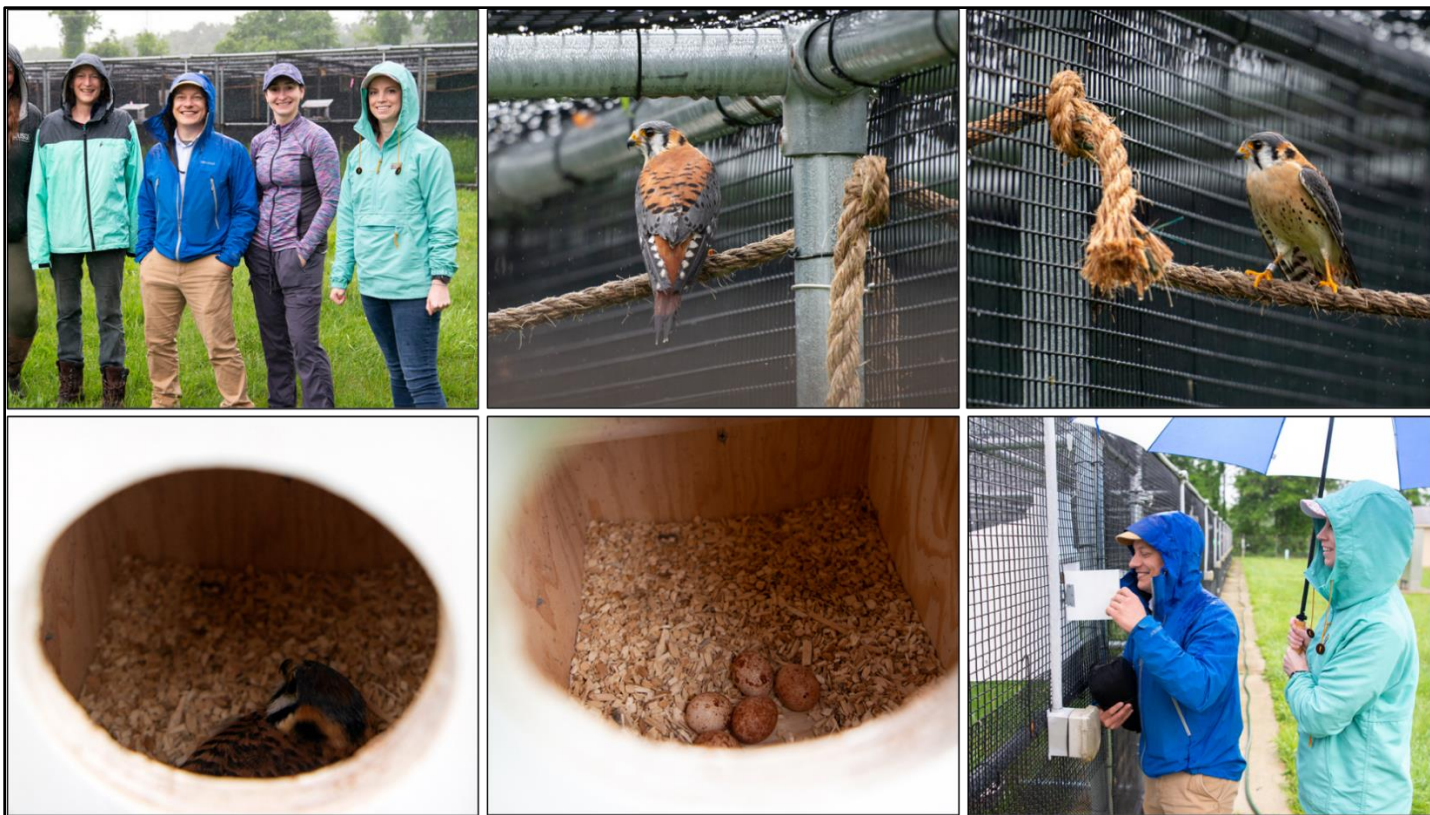
Road Trip Vermont to Newfoundland and Labrador



Picture credits: Nathalie Lombard



Picture credits: Tyler Frankel



Picture credits: Andrew East



Picture credits: Scott Lynn

CPRC SETAC Membership



SETAC: The Society of Environmental Toxicology and Chemistry is an independent, nonprofit professional society that provides a forum for individuals and institutions engaged in the study of environmental issues, management and conservation of natural resources, environmental education, and environmental research and development.



CPRC: The Chesapeake and Potomac Regional Chapter of SETAC is a non-profit organization started in the year 1983. CPRC's mission is to promote the exchange of information among environmental scientists in the Mid-Atlantic States.

Note: you do not have to be a SETAC member to be a member of CPRC.

There are three ways to join/renew:

- 1) Preferred Method: SETAC North America (SNA) ([LINK](#)). SNA will send us your contact information so we can add you to our chapter mailing list. You do not have to be an SNA member to use this option.
- 2) PayPal CPRC ([LINK](#)): Credit cards accepted, no PayPal account needed. Enter appropriate fee amount (\$5 student, \$15 professional). Please note that it is easier for us to track your membership when you join via the SNA site (option1 above).
- 3) Snail Mail: Check and money orders accepted. Please include your name, affiliation and address with your payment.

SETAC-CPRC P.O. Box 2728

Brooklyn, MD 21225

Attn: Nathan Sell, Treasurer

Membership renewals occur every December. If you have any difficulty with your membership application or payment, please contact Nathan Sell (treasurer.cprc.setac@gmail.com).

CPRC SETAC Sponsorship Opportunities

STEP THREE: PAYMENT INFORMATION

Please submit a completed copy of this form and a check (payable to "CPRC SETAC") to the following address:

CPRC SETAC Treasurer
 PO Box 2728
 Brooklyn, MD 21225
 Attn: Meredith Bohannon

If you have any difficulty with your sponsorship payment, or have any questions, please contact CPRC Treasurer Meredith Bohannon (treasurer.cprc.setac@gmail.com) or (cprc.setac@gmail.com).

CPRC SETAC Sponsorship Form

ADDITIONAL SPONSORSHIP BENEFITS BY TIER⁴

Benefit	Primary Producer (\$250/year) ^A	Secondary Producer (\$500/year) ^A	Keystone Sponsor (\$1000+/year) ^A
Complimentary Spring Meeting Registration(s) ^B		1	2
Table and poster display space at a CPRC annual meeting (if requested)			✓
Logo appears in CPRC newsletter and meeting documents. Logo and link posted on CPRC website ^C	2 years ^C	3 years ^C	5 years ^C
Advertising in newsletter	Half Page	Full Page	Full Page
Advertising in Spring Meeting Program		Half Page	Full Page

^A Sponsorship Tier is determined by the total amount given on an annual basis from **STEP TWO**.

^B Complimentary Spring Meeting Registrations are granted on an annual basis according to the sponsorship tier with the recommendation that they are to be used within a year.

^C Length of time during which the logo appears in the newsletter, meeting documents, and website is a benefit only and does NOT represent a commitment to provide sponsorship money on an annual basis.

CPRC SETAC Sponsors (Keystone)



Integral Consulting Inc. is a national science and engineering firm providing multidisciplinary services in the fields of health, environment, technology, and sustainability.



We are currently seeking highly motivated individuals for the following positions to support our growing environmental practice on the East Coast:

- Senior-level Toxicologist
- Junior- and Mid-level Toxicologists/Human Health Risk Assessors
- Senior-level Ecological Risk Assessor
- Junior- and Mid-level Ecological Risk Assessors
- Mid-, Senior-, and Principal-level Engineers
- Mid- and Senior-level Geologists
- Mid-, Senior-, and Principal-level Hydrogeologists



Why work for Integral?

Technically Stimulating

Every day, our staff is involved in a diverse range of projects for a variety of clients—applying skills and making recommendations that lead to positive change.

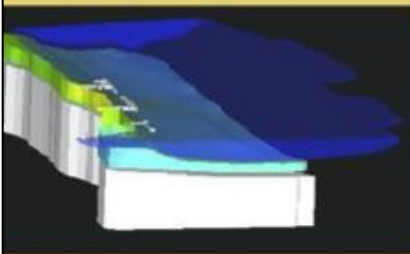
Unique Collaboration

The Integral name reflects our very purpose: To gather teams of professionals with distinctly different yet complementary skills, and to apply their integrated knowledge and perspective in ways that surpass our clients' expectations.

Supportive Environment

Outstanding benefits include company-subsidized medical, dental, and vision plans, company-paid life and short- and long-term disability insurance, a 401(k) plan and company match, flexible spending accounts (cafeteria plan), health club reimbursement of \$20 per month, and vacation/sick leave.

For more information, please visit our web site at www.integral-corp.com/careers



Health ■ Environment ■ Technology ■ Sustainability

www.integral-corp.com



CPRC SETAC Sponsors (Keystone)



*Reference Standards for PFAS, PCBs,
PCDDs, PCDFs, BFRs and more*

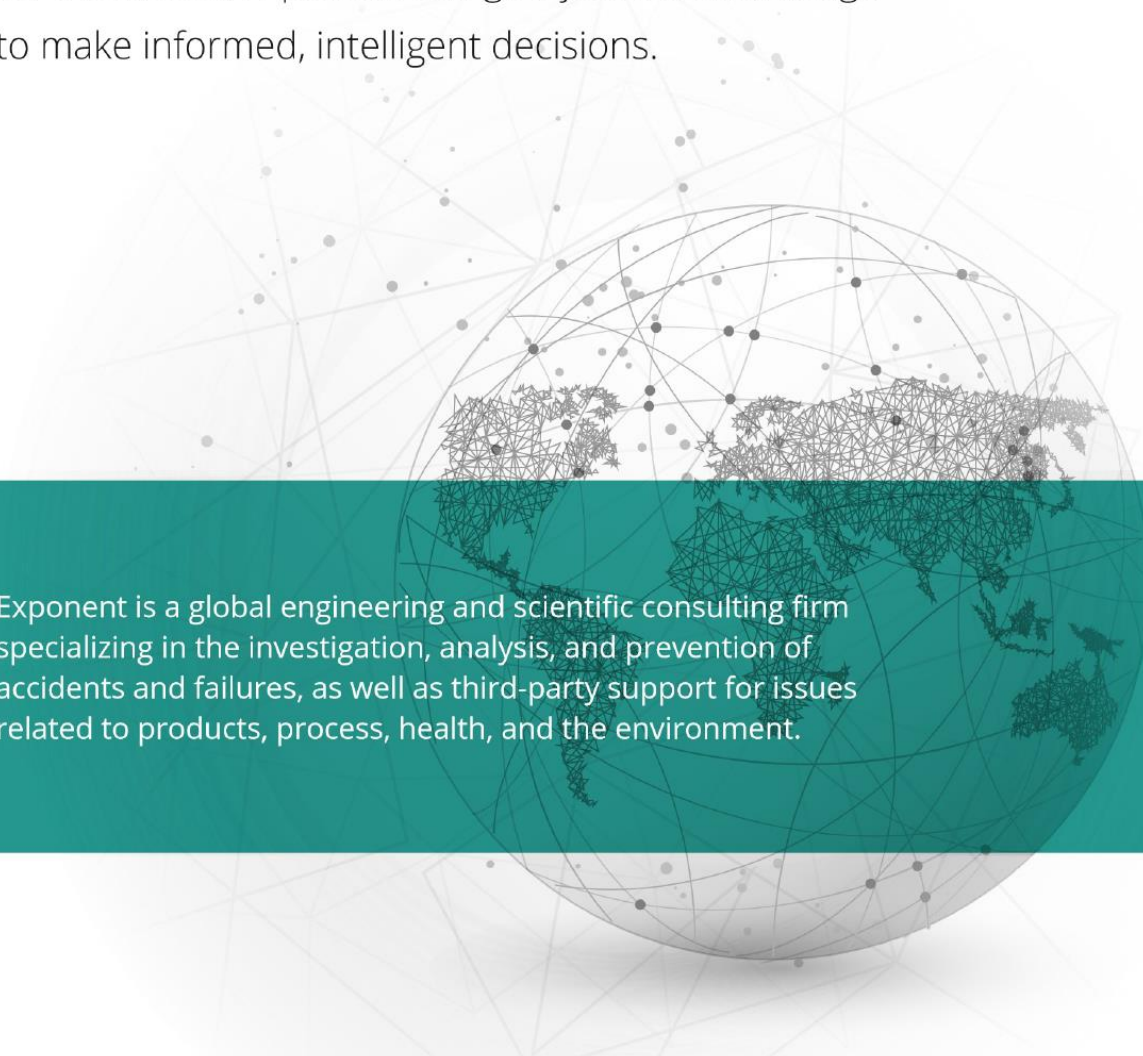
*Certified to ISO 9001:2015, ISO/IEC
17025:2017 and ISO 17034:2016*

www.well-labs.com



CPRC SETAC Sponsors (Keystone)

Whether you need the scientific explanation for the cause of an event, or you are charting a course for the future, Exponent can give you the knowledge to make informed, intelligent decisions.



Exponent is a global engineering and scientific consulting firm specializing in the investigation, analysis, and prevention of accidents and failures, as well as third-party support for issues related to products, process, health, and the environment.

www.exponent.com | 888.656.EXPO

Exponent[®]

When you need to know

CPRC SETAC Sponsors (Secondary Producers)



ENVIRONMENTAL & TURF SERVICES, INC.

Providing water quality risk assessment, risk management, monitoring, and expert testimony services, including toxic torts.

- Regulatory assistance with EPA compliance (FIFRA and TSCA)
 - Computer simulation modeling
 - Focus on pesticides and fertilizers for turf and agriculture
 - Focus on lead and arsenic for shooting ranges
- Staff expertise in environmental chemistry and toxicology, agronomy, hydrogeology, GIS, and hydrology
 - FIFRA data compensation and toxic torts
 - Nutrient impacts and TMDLs

Contact: Stuart Z. Cohen, Ph.D., CGWP
www.environmentalandturf.com
Wheaton, MD
301-933-4700
ets@ets-md.com

CPRC SETAC Sponsors (Secondary Producers)



agroscience services

CPRC SETAC Sponsors (Secondary Producers)



TETRA TECH

KEY SERVICE AREAS

Ecology

Bioassessment • Biocriteria Development • Monitoring Design • Ecological Risk Assessment/Data Analysis
ESAs/Fisheries Ecology/Fish Tissue Analysis • Indicator Development/Stressor Identification • Watershed Assessment

Toxicology

NPDES Toxicity Testing/WET Training • Site-specific Criteria Development Water
Effect Ratio Studies • Human Health • Ecotoxicology

Quality Assurance

Laboratory Audits • Quality Assurance Plan Development • QA/QC Training

Communication/Outreach

Ecotoxicology Workshops • Risk Communication Symposium/Workshop Facilitation

Restoration/Mitigation

Habitat Assessment/Restoration • TMDLs • UAAs • Water Quality Modeling



www.tetrattech.com

CPRC SETAC Sponsors (Primary Producers)



IMPROVING THE QUALITY OF THE ENVIRONMENT IN WHICH WE LIVE, ONE PROJECT AT A TIME®

Interdisciplinary Environmental Services

- Emerging Contaminants
- Ecotoxicology Laboratory
- Investigation and Remediation
- Planning and Permitting
- Engineering Design
- Coastal Resiliency

EA Engineering, Science, and Technology, Inc., PBC
A Proud Supporter of SETAC



Offices Nationwide
www.eaest.com

The collage features various chemical structures and laboratory glassware. The logos include:

- SafeBridge CONSULTANTS, INC.
- TRS TOXICOLOGY REGULATORY SERVICES
- REDSTONE
- Trinity Consultants
- SafeBridge® Regulatory & Life Sciences Group