

## **Potomac Environmental Research and Education Center (PEREC) Evaluation and Proposal for Re-chartering – Fall 2022 through Fall 2025**

### Center Personnel:

R. Christian Jones, Professor of Environmental Science and Policy (ESP), PEREC Director

Amy Fowler, Assistant Professor of ESP, PEREC Associate Director

Gregory Foster, Professor, Chemistry and Biochemistry (CHEM) & PEREC Senior Resident  
Faculty Fellow

Randy McBride, Associate Professor, Atmospheric, Oceanic, and Earth Science (AOES) & PEREC,  
Resident Faculty Fellow

Kim de Mutsert, Assistant Professor, ESP & PEREC Resident Faculty Fellow (through Fall 2020)

J. Reid Nelson, Term Assistant Professor, ESP & PEREC Resident Faculty Fellow (starting Fall  
2021)

Scott Glaberman, Assistant Professor, ESP & PEREC Resident Faculty Fellow (starting Fall 2018)

Jennifer Salerno, Assistant Professor, ESP & PEREC Resident Faculty Fellow (starting Fall 2018)

Benoit Van Aken, Associate Professor, CHEM & PEREC Resident Faculty Fellow

Brittany Hupp, Assistant Professor, AOES & PEREC Resident Faculty Fellow (new in Fall 2022)

Cindy Smith, Associate Term Professor, ESP & PEREC K-12 Education Director

Dann Sklarew, Term Professor, ESP & PEREC Non-Resident Faculty Fellow

Laura Birsa, Field and Lab Technician, PEREC

Chelsea Gray, Webmaster, PEREC

PEREC Home: Potomac Science Center, 650 Mason Ferry Ave., Woodbridge, VA 22191

Center Web Site: <https://cos.gmu.edu/perec>

Submitted: December 12, 2022

The Potomac Environmental Research and Education Center (PEREC) was founded in July 2007 with an initial charter extending through June 30, 2012. The PEREC charter was subsequently renewed for another 5 year period through 2017. This document is presented in application for another five year charter from 2023-2027.

## **Introduction**

The Potomac River is the second largest tributary to the Chesapeake Bay and the largest subestuary of the Bay. The nation's capital and more than five million people call the Potomac watershed their home. The watershed covers some 14,670 square miles in Virginia, Maryland, West Virginia, Pennsylvania and the District of Columbia. Virginia has the largest number of residents in the watershed at 2.3 million and the largest amount of land area in the watershed, 5,700 mi<sup>2</sup>.

Despite its large size and importance, no major university environmental research center is located on the Potomac River and dedicated to its study. In Virginia the major aquatic research centers at the Virginia Institute of Marine Studies and Old Dominion University are located on the York and James Rivers, respectively. In Maryland major research centers are located on the Patuxent River and the main bay. Given the importance of the Potomac to the management of the Chesapeake Bay system, there is clearly a need for a major university research center on the tidal Potomac River. George Mason is ideally positioned to provide that leadership.

In addition to a need for an enhanced research capability, educational activities related to the ecology and management of the Potomac Watershed could clearly benefit from a university center of this sort. The Potomac River provides a natural rallying point for environmental education activities in the northern Virginia area. The major Northern Virginia population centers of Arlington, Fairfax, Prince William and Loudoun Counties and associated cities are entirely within the tidal Potomac's watershed. These rapidly growing jurisdictions currently house over 2 million residents with the number of children enrolled in K-12 public schools reaching just over 300,000. This region contains a highly educated populace that is eager to learn more about their environment and natural resources.

The Department of Environmental Science and Policy at George Mason University has had a long history of ecological studies in the tidal Potomac River and the larger watershed. Since 1984 ESP has headed a continuing monitoring program on the tidal Potomac River centered at Gunston Cove. This work has resulted in numerous research publications and presentations as well as master's theses and doctoral dissertations. Other areas within the watershed that have been studied by ESP faculty and students include streams in Prince William, Fairfax, and Clarke Counties, plant communities in Prince William Forest Park, vertebrate populations at Fort Belvoir, Pohick Bay Regional Park, Mason Neck National Wildlife Refuge, Quantico Marine Base, Prince William Forest Park and Airlie, and wetlands in Huntley Meadows Park and at the North Fork Wetlands Bank. A major study of the Potomac River Gorge just above Washington, DC was recently initiated.

## **Mission of PEREC**

To utilize the tools of scientific research, restoration, education, and policy analysis to help society understand and sustain natural processes in ecosystems, watersheds, and landscapes

## **Research Foci for the Center:**

- Restoration of the Potomac River and its Tributaries

- Sustainability of Natural Ecosystems in Suburban Areas
- Impact of Global Climate Change on Management of Aquatic Ecosystems
- Fostering of Ecological Stewardship and Environmental Citizenship

### **Analysis of Comparable Entities at Mason and other Universities**

It is difficult to find another Center at Mason with quite the same portfolio and mission as PEREC. PEREC has its own building apart from any of the “campuses”. Perhaps Point of View at the Carter Center is similar in that respect. However, Point of View is specifically designed and managed as a meeting center that utilizes the water as a backdrop for bringing groups together to work out conflicts. We study the water and its inhabitants to understand what makes our fragile Earth work. Another center that focuses on the Earth and biodiversity is the Smithsonian Mason School of Conservation which hosts classes that study nature, biodiversity, reproductive biology and habitat conservation. The researchers there are Smithsonian employees whereas the researchers at PEREC are GMU professors. There are other science based centers at GMU. Other Centers in the College of Science are concerned with molecular or medical science (MBAC, CAPMM) or computational science especially modeling, computational science, and geospatial science (CCSA, CFD, CEOSR, ESTC, CGEOINT, CISC, CMAI, COLA, CSC, CSISS). PEREC’s main foci are empirical studies directly measuring water quality and aquatic biology communities in situ in a real world setting and translating the results into management options for governments and NGO’s. Another way that PEREC is different is that it has a specific charge to reach out to K12 students and the general public to enhance environmental literacy.

There are similar research institutions in Virginia. The Virginia Institute of Marine Science (VIMS) has a three part mission that is similar to that of PEREC: “conduct research in coastal ocean and estuarine science, educate students and citizens, and provide advisory service to policy makers, industry, and the public.” VIMS was established in 1940 and has a substantial specific appropriation from the Commonwealth. VIMS has a visitor center with aquaria and a 300 foot pier into the York River for research. The entire School of Marine Science at William and Mary is located at VIMS. VIMS has 37 tenure line professors and 15 research professors. VIMS research expenditures totaled \$19.6 million (\$15.4 million from federal agencies, mostly NOAA) with 320 active awards in 2017. While VIMS maintains a substantial funding advantage over PEREC, it has been around for much longer, has direct funding from the Commonwealth, and also gets direct funding from NOAA and Sea Grant.

Other universities in Virginia also have aquatic science centers such as U.Va.’s Mountain Lake Biological Station, Blandy Farm Experimental Farm and Anheuser-Busch Coastal Research Station, ODU’s Blackwater Ecological Preserve, University of Lynchburg’s Claytor Nature Center, and Chincoteague Bay Field Station (operated by a consortium of Pennsylvania universities). Almost all of these are geared exclusively towards teaching and undergraduate programs with a minimum of research staff.

### **Fit with COS Institutional Mission and Research Strengths**

“The College of Science at George Mason University blends traditional science education with sought-after programs in molecular medicine, climate dynamics, planetary science, forensic science, environmental studies, and geoinformation science to prepare students for exciting careers at the cutting edge of interdisciplinary scientific domains. While serving as a vital community and regional resource for teaching and learning through hands-on programming for kindergarten through 12th grade (K–12) students, teacher training, and outreach programs, the college also undertakes pioneering research endeavors that offer insight and solutions to the complex issues that challenge today’s world” (COS Home Page)

PEREC is the home of most of the faculty concerned with environmental science from the fields of biology, ecology, chemistry and earth science. And we certainly espouse and practice interdisciplinary research at both the faculty level and the student level. We are actively engaged in cutting edge research such as environmental effects of microplastics, pharmaceuticals, and PFAs. We have outstanding and very productive K12 watershed education programs including teacher training and outreach.

### **Fit with the Mason Mission and Research Strengths**

PEREC is committed to the values outlined in George Mason’s Vision Statement, especially these:

- Our Students Come First: Our top priority is to provide students with a transformational learning experience that helps them grow as individuals, scholars and professionals”
- Diversity is our Strength: We include and embrace a multitude of people and ideas in everything we do and respect differences
- We are careful stewards: We manage the economic and natural resources entrusted to us responsibly and sustainably
- We act with integrity: We hold ourselves to the highest ethical standards as educators, scholars, students and professionals
- We thrive together: We nurture a positive and collaborative community that contributes to the well-being and success of every member

We are also helping Mason to maintain and enhance its standing as an R-1 institution by bringing in substantial amounts of external funding and using it to support faculty and student research particularly in an interdisciplinary framework.

### **Proposed Governance Structure, Leadership, and Staffing Plan**

Director, R. Christian Jones (0.25 FTE release per semester)

Duties: The Director is responsible for the day-to-day operations of the center and its physical resources (space, equipment, boats, vehicles). The Director will supervise Center administrative personnel. The Director will convene regular meetings (monthly to bimonthly as needed) of Center resident fellows and staff to facilitate

communication among center members and to obtain input concerning operations and budgets. The PEREC director will be chosen by the Dean with advice from the Chairs of participating departments (ESP, CBC, AOES) and the resident faculty fellows.

Associate Director, Amy Fowler (0.25 release per year)

Duties: The Director will appoint an Associate Directors to help with Center-level duties.

Head Technician, Laura Birsa

Duties: oversees the operation of PEREC resources including boats, vehicles, office supplies, and shared equipment like autoclaves and incubators. The technician may also be paid out of research grants to assist with individual research projects, particularly those of the Director.

PEREC Resident Faculty Fellows: Ten faculty been selected based on their research interests in the area of aquatic ecology, chemistry, and geomorphology and their need for research space in close proximity to aquatic systems. Resident fellows are expected to maintain an externally funded research program, mentor graduate and undergraduate students, and teach courses relevant to the mission of the center. An annual target of \$80,000 in external funds per resident faculty fellow has been established. Faculty not resident at PEREC may apply for nonresident fellow status. Nonresident fellows are expected to interact on a regular basis through teaching and/or research with center activities.

### **Review of Last Five Year's Performance and Proposed Goals for Research, Educational, Training and Translational Activities**

One of the most important measures of research productivity is peer reviewed publications (Table 1, Appendix A). During the period of performance evaluated here, PEREC faculty published 99 peer reviewed journal. In addition, there were 10 conference proceeding articles, 3 book chapters 24 technical reports, 19 poster presentations (number impacted by COVID), and 55 platform presentations at scientific meetings. This totals to 214 professional papers and presentations over the six-year evaluation period yielding an average output of 3.6 per faculty member per year. Our goal for the next three years is to attain an average output of 4.0 professional papers and presentations per year per faculty member.

Mason's PEREC has made great progress from 3 faculty when founded to 10 now (cover page) and external funding has increased from \$250K in 2012-13 to a maximum of over \$1 million in 2020 (Table 2). Over the period of this report a total of almost \$4 million has been awarded and expended from 64 separate awards. This compares to a total external funding in the 2007-2012 period of \$1.2 million and for the 2012-2017 period of \$2.8 million. So total external funding continues to rise at a robust rate. Furthermore 73 proposals totaling almost \$17 million were submitted, but not approved.

The average amount per PI per year is \$69,700. The goal stated in the last PEREC reauthorization report was \$80,000 per PI per year. Given the barriers imposed by COVID, our

performance was close to our goal. One note is that internal funding was not included in this report and several PI's garnered substantial internal funds.

Our student mentoring activities have been prodigious (Appendix B). Over the six-year evaluation period we have mentored 71 undergraduates, 43 M.S. students, and 38 Ph.D. students for a total of 152 students who have benefited from the faculty, equipment, space, and supply resources that PEREC provides. In addition, 49 graduate students have been supported financially by faculty research grants and contracts. And this does not include an average of 25 students supported per semester to deliver watershed education programs to K12 students. We plan to increase our support of students by 10% in the next three years.

Our outreach and educational programs have been extensive (Appendix B). Our faculty have led undergraduate summer programs funded by OSCAR for four summers including individual research projects and a summer seminar series. We have served as science fair judges, given guest lectures to K12 classes, served as judges for the Chesapeake Bay Bowl, produced videos of our work to share with the public, and given innumerable interviews that were shown or written up by local and regional media outlets. A highlight was a story published in *The Atlantic* magazine that was based on a research project led by Amy Fowler about the introduction and spread of invasive species by the bait industry.

Our translational activities have also included long-term collaborations with Fairfax County Department of Public Works and Environmental Services since 1984 encompassing both joint research studies and joint K12 educational activities. And for the past 10 years we have been developing an expanding relationship with Alexandria Renew Enterprises that includes a more extensive monitoring program than Gunston Cove and also some new outreach efforts. Our relationship with Prince William and Fairfax Public Schools continues to deepen including not only the Watershed Education Programs, but also a NOAA debris control grant that focused on educating students about and involving them in the reduction of single use plastic bottles including making videos of basic freshwater ecology research.

### **Requirements for Space, Facilities, and Equipment**

PEREC has space at the Potomac Science Center in Woodbridge. There are 10 faculty PI lab spaces, 12 shared lab rooms, 10 faculty offices and several shared office spaces, and one teaching lab which is used by both university and K12 classes. We also have a storage facility for boats and field equipment at the lowest level of the parking garage. And a separate boat storage enclosure adjacent to the parking garage. We have three larger boats on trailers (Carolina Skiffs) and three vehicles (see below). We have a variety of other equipment including LC-MS, AQ-2 colorimetric autoanalyzer, ultralow freezers, programable light-temperature incubators, water quality sondes, inverted and fluorescence microscopes, autoclaves, and deionized water filters (a full list could be obtained from inventory). While we currently have adequate equipment, we are planning to expand some our analysis to keep up with the state-of-the-art and would expect to receive several hundred thousand dollars in new equipment

over the next three years. Two items that are needed are a boat-mounted fish shocker and a FlowCam automated plankton and particle counter.

### **A Review of Past Five Years Budget and A Proposed Budget, including Projected Expenses**

College resources used by the Center includes \$10,000 in direct funds directly from the College to help support maintenance and operating expenses of the infrastructure at the Potomac Science Center. In addition COS provides about 35% of the salary and benefits of support technician Laura Birska who oversees the operation of PEREC resources including boats, vehicles, office supplies, and shared equipment like autoclaves and incubators. This amounts to about \$32,000 annually with the remainder of Laura's salary is supported by grants and contracts and lab fees.

Income from grants consists mainly of Indirect (Overhead) funds (Table 3). During the six-year period under evaluation, PEREC grants generated an estimated \$859,200 or \$143,200 per year. The College received an average of \$22,912 per year and PEREC received an average of \$7,160 per year. PEREC also contributed an average of \$5,012 per year to faculty home departments. PEREC spent \$17,500 in indirect funds on faculty travel, service contracts, small equipment, and lab and office supplies. The current balance in the PEREC Indirect Account is \$20,724.

PEREC also operates two cost centers: one for boats and one for vehicles. We have three 19-23 ft Carolina Skiffs. The daily charge for these boats is \$315 which is assessed against grant or departmental funds. The Center has three vehicles: a FORD 250 club cab pickup truck, a FORD Expedition, and a Toyota Highlander. Vehicle usage is assessed at \$1.41 per mile plus gas for the two tow vehicles and \$0.585 per mile for the Highlander (GSA/State Rate). Funds in both accounts are used to cover maintenance costs and depreciation. Current balances are \$1,387 in the vehicle fund and \$34,905 in the boat fund. We are accumulating enough in the boat fund to handle both expenses and appreciation, however the vehicle fund is barely keeping up with maintenance.

### **A Proposed Funding Plan, including External Funding and Projected Revenue**

The Proposed Funding Plan for the next three year period would be a continuation of the current funding plan. We will once again target \$80,000 per year per PI in external funding at full indirect rate. That would bring in the following amounts of Indirect funds on an annual basis. Total: \$266,667, College of Science: \$33,333, Dept: \$13,333, PEREC: \$18,667, PI: 28,000. In addition we would expect to receive the \$10,000 per year in direct funds from the College and the 35% contribution to the head technician's salary. The Director is expected to continue to receive 1 course release per semester and the Associate Director to receive 1 course release per year. HR, procurement, inventory, budget monitoring, and other departmental functions will continue to be handled by PI departments. The Boat and Vehicle funds will continue at their current operational protocol.

## Existing Internal and External Funding Proposals and Commitments

See above.

## A Summary of How Well Mission and Goals Were Fulfilled during the Previous Chartered Period

1. Over the period of this report a total of almost \$4 million has been awarded and expended from 64 separate awards. This compares to a total external funding in the 2007-2012 period of \$1.2 million and for the 2012-2017 period of \$2.8 million.
2. The average amount per PI per year is \$69,700. The goal stated in the last PEREC reauthorization report was \$80,000 per PI per year. Given the barriers imposed by COVID, our performance was close to our goal.
3. We had a total of 214 professional papers and presentations over the 6 year evaluation period yielding an average output of 3.6 per faculty member per year. We were targeting 2 journal articles per person per year and we ended up with about 2.3, slightly exceeding our goal.
4. Over the six year evaluation period we have mentored 71 undergraduates, 43 M.S. students, and 38 Ph.D. students for a total of 152 students who have benefited from the faculty, equipment, space, and supply resources that PEREC provides. In addition, 49 graduate students have been supported financially by faculty research grants and contracts. This greatly exceeded our goals.
5. We plan to continue to deliver watershed stewardship education experiences to thousands of Northern Virginia students each year. We delivered these programs to 15,000 middle school students per year during the 5 year period continuing our annual rate.
6. A journal article that was a comprehensive trend analysis of the long-term data set was published in an internationally prestigious journal and we plan to publish at least two more of these types of synthesis papers in the next 3 years. An article in *The Atlantic* magazine highlighted one of our faculty member's research.
7. We will continue and broaden the nationally recognized long-term ecosystem and water quality study of Gunston Cove on the tidal Potomac River. This almost 30 year comprehensive ecological study has been recognized as generating one of the most useful data sets for assessment of the success of management efforts in the Chesapeake Bay restoration effort. The more recent companion program at Hunting Creek is even more broadly based and includes strong efforts on micropollutants and PFAS, new frontiers in aquatic ecosystem studies.



**Table 1**  
**Number of Publications and Presentations by PEREC Faculty by Year**

YEAR	Peer-reviewed journal articles	Conference Proceedings	Book Chapters	Other Publications	Technical Reports	Poster Presentations	Platform Presentations
2017	9	4	2	0	4	2	11
2018	11	2	0	1	7	5	10
2019	20	1	0	1	4	5	14
2020	19	3	0	1	3	0	2
2021	21	0	0	1	2	1	10
2022	19	0	1	0	4	6	8
Total	99	10	3	4	24	19	55

**Table 2**  
**Externally Funded Grants & Contracts and  
Proposals Submitted But Not Approved by Year**

	Externally Funded Grants & Contracts Awarded		Externally Funded Grants and Contracts Submitted But Not Approved	
YEAR	Amount	Number	Amount	Number
2017	\$489,319	8	\$1,420,487	10
2018	\$478,012	9	\$1,015,498	15
2019	\$728,590	17	\$2,569,017	13
2020	\$1,069,523	11	\$3,090,616	15
2021	\$449,057	9	\$8,091,191	18
2022	\$701,128	11	\$769,850	2
Total	\$3,915,629	64	\$16,956,659	73

**Table 3**  
**Indirect Funds Raised Per Year  
Total and By Distribution**

Year	Total Indirect	University	Provost	COS	Dept	Center	PI
FY18 (2017-18)	89,280	26,784	31,248	14,285	3,125	4,464	9,374
FY19 (2017-18)	126,680	38,004	44,338	20,269	4,434	6,334	13,301
FY20 (2019-20)	120,600	36,180	42,210	19,296	4,221	6,030	12,663
FY21 (2020-21)	167,080	50,124	58,478	26,733	5,848	8,354	17,543
FY22 (2021-22)	236,320	70,896	82,712	37,811	8,271	11,816	24,813
FY23 (2022-23)	119,240	35,772	41,734	19,078	4,173	5,962	12,520
Six Year Total	859,200	257,760	300,720	137,472	30,072	42,960	90,216
Average per Year	143,200	42,960	50,120	22,912	5,012	7,160	15,036

## PEREC Research Proposals: Funded, Unfunded and Pending by PI

Proposal PI Name	Proposal Short Title	Proposal Submit to Sponsor Date	Proposal Project Start Date	Proposal Project End Date	Proposal Sponsor Name	Proposal Prime Sponsor Name	Proposal State	Proposal Application Type	Proposal Direct Cost	Proposal Indirect Cost	Proposal Amt Requested
De Mutsert, Kim	NGOMEX 2016: User-driven tools to predict and assess effects of reduced nutrients and hypoxia on living resources in the Gulf of Mexico	1/22/2016	9/1/2016	8/31/2019	National Oceanic & Atmospheric Administration (NOAA)		Awarded	New	0	0	899,996
De Mutsert, Kim	Applied Ecosystem Modeling to Support Marine Resource Management and Restoration in the Gulf of Mexico	9/20/2016	6/1/2017	5/31/2020	University Of Florida	National Oceanic & Atmospheric Administration (NOAA)	Awarded	New	0	0	87,223
De Mutsert, Kim	Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species in northern Virginia portion of the Potomac River	12/14/2018	1/1/2019	3/15/2020	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Awarded	New	0	0	4,984
De Mutsert, Kim	Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species in northern Virginia portion of the Potomac River	7/22/2019	4/22/2019	5/30/2020	Friends of Accotink Creek		Awarded	New	0	0	732
De Mutsert, Kim	Gulf Research Program Early-Career Research Fellowship	2/20/2019	9/1/2019	8/31/2021	Institute of Medicine of the National Academies		Awarded	New	0	0	76,000
De Mutsert, Kim	Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species in northern Virginia portion of the Potomac River	9/23/2019	10/1/2019	9/30/2020	Virginia Institute of Marine Science		Awarded	New	0	0	5,000
De Mutsert, Kim	NGOMEX synergistic activities and special issue	2/26/2020	4/1/2020	8/31/2021	National Oceanic & Atmospheric Administration (NOAA)		Awarded	New	0	0	60,483
Foster, Gregory	Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	4/26/2018	4/1/2018	9/30/2019	Alexandria Renewal Enterprises		Awarded	New	0	0	94,707
Foster, Gregory	Combined Sewer Overflow Monitoring in Alexandria, Virginia	1/16/2019	1/1/2019	12/31/2022	Alexandria Renewal Enterprises		Awarded	New	0	0	164,429
Foster, Gregory	Development of passive sampling methodologies for equilibrium sampling of PFAS compounds in surface and groundwater	3/5/2019	5/1/2020	1/31/2021	State Of Maryland	US Department of Defense (US DOD)	Awarded	New	0	0	79,438
Foster, Gregory	Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River for 2020-2022	5/29/2020	7/1/2020	6/30/2022	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	186,849
Foster, Gregory	Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River for 2020-2022	7/30/2021	7/1/2021	6/30/2022	Alexandria Renewal Enterprises		Awarded	Revision	58,633	33,421	92,054
Foster, Gregory	Presence, Principal Sources, and Ecological Risk of PFAS in the Tidal Freshwater Potomac River Along with Comparisons to PPCPs	2/18/2022	7/1/2022	6/30/2024	Alexandria Renewal Enterprises		Awarded	Renewal	214,266	98,298	312,564
Fowler, Amy	PEREC Undergraduate Science and Outreach Summer Project: Assessment of ecosystem health in the tidal freshwater Potomac environment	11/21/2016	5/29/2017	8/29/2017	Virginia Institute of Marine Science		Awarded	New	0	0	5,000
Fowler, Amy	Field surveys and comparative parasitology of freshwater native and invasive snails in Virginia and Maryland	1/11/2018	3/1/2018	2/28/2019	Washington Biologists' Field Club		Awarded	New	0	0	4,641
Fowler, Amy	Impacts of two functionally distinct invaders on facilitation and community succession	5/1/2018	9/1/2018	8/31/2019	State Of Maryland	US Department of the Interior (US DOI)	Awarded	New	0	0	13,722
Fowler, Amy	Rapid Assessment Survey for Introduced Marine Organisms along the Mid-Atlantic (New Jersey to Virginia)	3/31/2020	9/1/2020	8/31/2022	State Of Maryland		Awarded	New	0	0	14,130

## PEREC Research Proposals: Funded, Unfunded and Pending by PI

Proposal PI Name	Proposal Short Title	Proposal Submit to Sponsor Date	Proposal Project Start Date	Proposal Project End Date	Proposal Sponsor Name	Proposal Prime Sponsor Name	Proposal State	Proposal Application Type	Proposal Direct Cost	Proposal Indirect Cost	Proposal Amt Requested
Fowler, Amy	Is there a lesser of two evils? Castrating parasites of an estuarine crab host in the Chesapeake Bay along a salinity gradient	1/15/2021	3/1/2021	2/28/2022	Washington Biologists' Field Club		Awarded	New	2,769	0	2,769
Fowler, Amy	Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	3/30/2021	1/31/2022	1/30/2023	Virginia Academy of Science		Awarded	New	1,248	0	1,248
Fowler, Amy	Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia, August 2022	4/27/2022	7/1/2022	6/1/2023	State Of Maryland	National Oceanic & Atmospheric Administration (NOAA)	Awarded	New	2,500	0	2,500
Fowler, Amy	Fowler_VA_Seagrant_SOFT	7/28/2022	7/31/2022	7/30/2023	Virginia Sea Grant	National Oceanic & Atmospheric Administration (NOAA)	Awarded	New	2,500	0	2,500
Fowler, Amy	Fowler_DE_Seagrant_SOFT	7/28/2022	7/31/2022	7/30/2023	University of Delaware		Award Notification Received	New	2,500	0	2,500
Glaberman, Scott	Next-generation effects-based monitoring of contaminants in the Anacostia and Potomac Rivers	12/2/2019	3/1/2020	2/28/2021	University of the District of Columbia	US Geological Survey	Awarded	New	0	0	10,000
Glaberman, Scott	Collaborative Research: Determining the role of ER stress in the evolution of large bodies and long lifespans	4/1/2020	9/1/2020	8/31/2023	National Science Foundation (NSF)		Awarded	New	0	0	366,365
Glaberman, Scott	Collaborative Research: Determining the role of ER stress in the evolution of large bodies and long lifespans	12/17/2020	9/1/2020	8/31/2023	National Science Foundation (NSF)		Awarded	Revision	28,301	16,132	44,433
Glaberman, Scott	Developing a Nematode High-Throughput Toxicity System	8/20/2021	9/15/2021	9/14/2022	Bayer AG		Awarded	New	11,715	0	11,715
Jones, R	Ecological Study of Hunting Creek - 2016	3/21/2016	3/15/2016	3/14/2017	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	146,791
Jones, R	Ecological Study of Hunting Creek: Research Assistantship	5/24/2016	5/26/2016	8/26/2016	Alexandria Renewal Enterprises		Awarded	Revision	0	0	4,271
Jones, R	Ecological Study of Hunting Creek: Research Assistantship	8/17/2016	8/25/2016	5/24/2017	Alexandria Renewal Enterprises		Awarded	Revision	0	0	7,829
Jones, R	An Ecological Study of Hunting Creek - 2017	4/10/2017	3/15/2017	3/14/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	167,481
Jones, R	Annimox Research Assistant	8/11/2017	8/25/2017	8/24/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	10,706
Jones, R	An Ecological Study of Hunting Creek - 2018	4/26/2018	4/1/2018	9/30/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	218,853
Jones, R	Annimox Assistant 2018-19	9/25/2018	10/1/2018	9/30/2019	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	10,837
Jones, R	An Ecological Study of Hunting Creek: 2018-19 supplement	2/12/2019	2/1/2019	9/30/2019	Alexandria Renewal Enterprises		Awarded	Revision	0	0	7,675
Jones, R	An Ecological Study of Hunting Creek- 2019 Continuation	9/6/2019	10/1/2019	12/31/2019	Alexandria Renewal Enterprises		Awarded	Revision	0	0	23,547
Jones, R	Anammox Research Assistant: 2019-2020	9/24/2019	10/1/2019	9/30/2020	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	11,697
Jones, R	An Ecological Study of Hunting Creek - 2020-2022	6/3/2020	7/1/2020	6/30/2022	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	61,861
Jones, R	An Ecological Study of Hunting Creek 2021-2022	8/2/2021	7/1/2021	6/30/2022	Alexandria Renewal Enterprises		Awarded	Revision	89,291	50,896	140,187

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Jones, R	An Ecological Study of Hunting Creek: 2022-2023	4/27/2022	7/1/2022	6/30/2023	Alexandria Renewal Enterprises		Awarded	Renewal	98,050	57,752	155,802
Jones, R	City of Fairfax Monitoring Program: 2016/17	7/7/2016	7/1/2016	6/30/2017	City of Fairfax		Awarded	Revision	0	0	4,309
Jones, R	City of Fairfax/Monitoring Program 2017-18	9/27/2017	9/1/2017	12/31/2018	City of Fairfax		Awarded	Renewal	0	0	4,357
Jones, R	City of Fairfax Monitoring Program 2018/19	11/16/2018	12/1/2018	11/30/2019	City of Fairfax		Awarded	Revision	0	0	4,855
Jones, R	City of Fairfax Monitoring Program 2019-20	11/18/2019	12/1/2019	11/30/2020	City of Fairfax		Awarded	Revision	0	0	5,054
Jones, R	City of Fairfax Wet Weather Monitoring Program 2020	2/28/2020	3/1/2020	12/31/2020	City of Fairfax		Awarded	New	0	0	7,100
Jones, R	City of Fairfax Stream Monitoring Program: 2021-22	6/21/2021	7/1/2021	6/30/2022	City of Fairfax		Awarded	Renewal	3,167	1,865	5,032
Jones, R	An Ecological Study of Gunston Cove: 2016-17	7/29/2016	7/1/2016	6/30/2017	County of Fairfax		Awarded	Revision	0	0	67,561
Jones, R	An Ecological Study of Gunston Cove: 2017-18	6/28/2017	7/1/2017	6/30/2018	County of Fairfax		Awarded	Renewal	0	0	71,090
Jones, R	An Ecological Study of Gunston Cove: 2018-19	6/20/2018	7/1/2018	6/30/2019	County of Fairfax		Awarded	Renewal	0	0	68,604
Jones, R	An Ecological Study of Gunston Cove: 2019-20	6/17/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	85,122
Jones, R	Ammonia Analysis of Gunston Cove Samples 2019-2020	6/27/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	8,236
Jones, R	An Ecological Study of Gunston Cove: 2019-20	8/15/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	3,458
Jones, R	An Ecological Study of Gunston Cove: 2020-21	7/10/2020	7/1/2020	6/30/2021	County of Fairfax		Awarded	Renewal	59,283	29,582	88,865
Jones, R	An Ecological Study of Gunston Cove: 2021-2022	6/24/2021	7/1/2021	6/30/2022	County of Fairfax		Awarded	Renewal	61,800	30,838	92,638
Jones, R	Deploy River Mile Markers for Occoquan River Trail	4/9/2018	4/1/2018	7/31/2018	Northern Virginia Regional Park Authority		Awarded	New	0	0	3,793
Jones, R	An Ecological Study of Gunston Cove: 2022-23	5/17/2022	7/1/2022	6/30/2023	Fairfax County Dept of Public Works		Pending Sponsor	Renewal	64,759	32,315	97,074
Jones, R	City of Fairfax Stream Monitoring Program: 2022-23	5/17/2022	7/1/2022	6/30/2023	City of Fairfax		Pending Sponsor	Renewal	4,088	2,408	6,496
Salerno, Jennifer	Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across Multiple Coral Species on the Florida Reef Tract.	11/6/2019	11/30/2019	6/30/2020	Florida Department of Environmental Protection		Awarded	New	0	0	93,908
Salerno, Jennifer	Genomic Testing & Analysis - Mazur	5/17/2021	4/30/2021	7/30/2021	The Smithsonian Institution		Awarded	New	8,957	896	9,853
Salerno, Jennifer	FP506_Salerno_Sims Ruth Turner Student Fellow_SOFT	10/17/2022	9/30/2022	9/29/2023	Ruth D. Turner Foundation		Awarded	New	6,500	0	6,500
Sklarew, D.	Corporate Sustainability Innovation Research	1/1/2016	1/1/2016	12/31/2018	Charter Communications		Awarded	New			271,846
Sklarew, D.	Transparency Index Environmental, Social & Governance Impact Research	1/1/2021	1/1/2021	12/31/2022	Transparency.Global		Awarded	New			20,000
Smith, Cynthia	KidWind Program	1/14/2016	1/11/2016	8/25/2016	James Madison University	Dominion Resources Inc	Awarded	New	0	0	3,153
Smith, Cynthia	Visualizing Watershed Connections	3/1/2016	6/15/2016	6/15/2017	Dominion Resources Inc		Awarded	New	0	0	49,515
Smith, Cynthia	FCPS Watershed Education AY2016-17	4/20/2017	7/1/2016	6/30/2017	Fairfax County Public Schools		Awarded	Revision	0	0	52,000
Smith, Cynthia	Visualizing Watershed Connections: The Inaugural Exhibit at Mason's New Potomac Science Center	5/16/2016	9/1/2016	9/1/2017	Fairfax County Water Authority		Awarded	New	0	0	10,000
Smith, Cynthia	FCPS Watershed Education 222783	8/7/2017	7/1/2017	6/30/2018	Fairfax County Public Schools		Awarded	New	0	0	58,500

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Smith, Cynthia	FCPS Watershed Education Program	7/19/2018	8/15/2018	6/30/2019	Fairfax County Public Schools		Awarded	Renewal	0	0	58,000
Smith, Cynthia	FCPS Watershed Education AY 2019-20	8/2/2019	8/15/2019	6/30/2020	Fairfax County Public Schools		Awarded	New	0	0	58,500
Smith, Cynthia	PSC Landscape CSI	11/1/2019	12/1/2019	9/1/2020	Landscape Architecture Foundation		Awarded	New	0	0	5,600
Smith, Cynthia	A Community Approach to Reducing Single-Use Plastic Beverage Bottles	2/7/2020	9/1/2020	8/31/2022	National Oceanic & Atmospheric Administration (NOAA)		Awarded	New	0	0	149,999
Smith, Cynthia	FCPS Watershed Education	6/29/2021	8/15/2021	6/30/2022	Fairfax County Public Schools		Awarded	New	57,749	751	58,500
Smith, Cynthia	Invasive Spp Management - Wetland Stream Mitigation	5/27/2021	1/1/2022	12/31/2024	College of William and Mary		Awarded	New	41,525	11,669	53,194
Smith, Cynthia	FP339_Smith_FCPS Watershed Programs	9/13/2022	8/15/2022	6/30/2023	Fairfax County Public Schools		Awarded	New	59,970	780	60,750
Van Aken, Benoit	EAGER: Effects of Environmental Contaminants on the Lignocellulosic Biomass in Switchgrass Plants	6/26/2018	2/1/2017	3/31/2019	National Science Foundation (NSF)		Awarded	New	0	0	84,962
Van Aken, Benoit	Semi-Volatile PCBs: Sources, Exposures, Toxicities	1/17/2019	4/1/2019	3/31/2020	University Of Iowa	US Department of Health and Human Services (DHHS)	Awarded	Revision	0	0	24,833
van der Ham, Joris	George Mason University Fish and Wildlife Adaptation Fellowship Program	9/18/2018	1/1/2019	12/31/2022	US Geological Survey		Awarded	New	0	0	149,815
van der Ham, Joris	USGS/Adaptation Fellowship	9/11/2020	1/1/2021	12/31/2021	US Geological Survey		Awarded	Revision	21,233	3,716	24,949
De Mutsert, Kim	EwE work MRDM PR10	1/29/2016	2/1/2016	6/30/2016	The Water Institute of the Gulf		Not Funded	New	0	0	8,332
De Mutsert, Kim	Impacts of nutrient loading and hypoxia on fisheries sustainability in the Northwestern Gulf of Mexico	9/20/2016	6/1/2017	5/31/2020	University Of South Florida	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	266,127
De Mutsert, Kim	Spatial and Temporal Connectivity across a Restoration Continuum in the Mississippi River Delta; Northern Gulf of Mexico	9/20/2016	6/1/2017	5/31/2020	Louisiana Universities Marine Consortium	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	296,443
De Mutsert, Kim	Modeling effects on fishes of restored marshes	6/21/2017	1/1/2018	12/31/2020	St. Mary's University	The National Academies of Sciences	Not Funded	New	0	0	22,999
De Mutsert, Kim	Fecundity of Alewife and Blueback Herring Spawning in Potomac River Tributaries	8/30/2017	1/1/2018	12/31/2018	Atlantic States Marine Fisheries Commission		Not Funded	New	0	0	40,000
De Mutsert, Kim	Collaborative Research: Investigation of the potential impacts of future environmental changes on the northwestern Gulf of Mexico ecosystem using a multi-model approach	8/14/2017	3/1/2018	2/28/2021	National Science Foundation (NSF)		Not Funded	New	0	0	180,000

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De Mutsert, Kim	Long-Term Environmental and Anthropogenic Impacts on Fish and Fisheries in the Northern Gulf of Mexico	10/6/2017	9/1/2018	8/31/2020	US Department of Commerce (US DOC)		Not Funded	New	0	0	0
De Mutsert, Kim	Effects of watershed connectivity on the distribution of anadromous and invasive species in the Potomac River	11/16/2017	9/1/2018	8/31/2020	Virginia Institute of Marine Science		Not Funded	New	0	0	80,000
De Mutsert, Kim	NAS Gulf Research Program Early-Career Research Fellowship	2/21/2018	9/1/2018	8/31/2020	The National Academies of Sciences		Not Funded	New	0	0	76,000
De Mutsert, Kim	Mid-Barataria Diversion simulations	8/28/2018	9/1/2018	12/31/2018	The Water Institute of the Gulf		Not Funded	New	0	0	60,000
De Mutsert, Kim	Future Scenarios for the Global Ocean - Forecasting change and management options for marine biodiversity and ecosystem services under cumulative human and environmental impacts	3/9/2018	10/1/2018	9/30/2021	National Science Foundation (NSF)		Not Funded	New	0	0	0
De Mutsert, Kim	Refining an ecosystem model to improve our understanding of the long-term benefits and impacts of Mississippi River sediment diversions	10/16/2018	9/1/2019	8/31/2022	University of Central Florida	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	66,000
De Mutsert, Kim	Forecasting coupled socio-ecological systems under environmental changes in the northwestern Gulf of Mexico	10/30/2018	9/1/2019	8/31/2024	University Of South Florida	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	427,000
De Mutsert, Kim	Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species in northern Virginia portion of the Potomac River	11/16/2018	9/1/2019	12/31/2020	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	80,000
De Mutsert, Kim	Focused CoPe: National Capital Region CoPe Hub - Environmental Change Impacts on Community Flood Risk and Resilience	9/9/2020	8/1/2021	7/31/2026	National Science Foundation (NSF)		Not Funded	New	3,883,069	1,116,931	5,000,000
De Mutsert, Kim	National Capital Region CoPe Hub: Environmental Change Impacts on Community Flood Risk and Resilience	8/6/2020	9/1/2021	8/31/2026	National Science Foundation (NSF)		Not Funded	New	0	0	0
Foster, Gregory	Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	9/5/2019	10/1/2019	12/31/2019	Alexandria Renewal Enterprises		Not Funded	Revision	0	0	12,992
Foster, Gregory	Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	3/18/2020	4/1/2020	3/31/2023	Alexandria Renewal Enterprises		Not Funded	Revision	0	0	279,313
Fowler, Amy	Collaborative Research: Trade-offs in biotic and abiotic selective pressures on host adaptation	7/21/2016	4/1/2017	3/31/2020	East Carolina University	National Science Foundation (NSF)	Not Funded	New	0	0	274,435
Fowler, Amy	Latitudinal differences in blue crab size may impact bycatch reduction devices for excluding endangered terrapins	1/30/2017	7/1/2017	6/30/2019	South Carolina Department of Natural Resources	US Department of the Interior (US DOI)	Not Funded	New	0	0	78,144
Fowler, Amy	Biological invasions and host adaptation in North Carolina estuaries	4/3/2017	10/1/2017	9/30/2018	East Carolina University		Not Funded	New	0	0	4,211
Fowler, Amy	Collaborative Research: Biotic and abiotic tradeoffs shape the ecology and evolution of a marine host across space and time	2/13/2017	1/1/2018	12/31/2020	National Science Foundation (NSF)		Not Funded	New	0	0	316,132
Fowler, Amy	Field and laboratory testing of eradication methods for freshwater invasive snails	8/15/2017	4/1/2018	3/31/2020	National Fish and Wildlife Foundation		Not Funded	New	0	0	80,875
Fowler, Amy	Bioaccumulation of antidepressants in an upper Potomac River foodweb	3/22/2018	6/1/2018	5/30/2019	Virginia Tech	Virginia Tech	Not Funded	New	0	0	5,000
Fowler, Amy	Modeling, translocation, and fate of pharmaceutical chemicals and personal care products in the food web of the tidal freshwater Potomac River using Ecosim, Ecotracer and KABAM	1/18/2018	6/30/2018	6/29/2019	Jeffress Memorial Trust		Not Funded	New	0	0	100,000

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Fowler, Amy	Presence and Risk of Pharmaceuticals and Personal Care Product in the Tidal Freshwater Potomac River Food Web	11/16/2017	9/1/2018	8/31/2019	Virginia Institute of Marine Science		Not Funded	New	0	0	39,995
Fowler, Amy	Collaborative Research: Diversity gradients mediated by ecotypic variation in a marine ecosystem engineer	2/15/2018	3/1/2019	2/28/2022	National Science Foundation (NSF)		Not Funded	New	0	0	391,004
Fowler, Amy	REU Site: FRESH (Freshwater Research in Environmental Science and Health)	8/22/2018	3/1/2019	2/28/2022	National Science Foundation (NSF)		Not Funded	New	0	0	288,584
Fowler, Amy	Collaborative Research: Scaling from genotype to landscape: community diversity mediated by ecotypic variation in an invasive marine ecosystem engineer	2/14/2019	3/1/2020	2/28/2023	National Science Foundation (NSF)		Not Funded	New	0	0	309,990
Fowler, Amy	REU Site: FRESH (Freshwater Research in Environmental Science and Hydrochemistry)	8/28/2019	3/1/2020	2/28/2023	National Science Foundation (NSF)		Not Funded	New	0	0	396,590
Fowler, Amy	Worm Wrangler: Does a predatory polychaete influence invertebrate communities on anchored algae?	4/3/2020	1/1/2021	12/31/2021	State Of Maryland		Not Funded	New	0	0	12,043
Fowler, Amy	Collaborative Research: Community diversity consequences of life cycle complexity in dominant coastal foundation species	2/17/2020	3/1/2021	2/29/2024	National Science Foundation (NSF)		Not Funded	New	0	0	353,439
Fowler, Amy	REU Site: FRESH (Freshwater Research in Environmental Science and Habitats)	8/26/2020	3/1/2021	2/28/2024	National Science Foundation (NSF)		Not Funded	New	392,041	22,307	414,348
Fowler, Amy	Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	1/15/2021	3/1/2021	2/28/2022	Washington Biologists' Field Club		Not Funded	New	4,800	0	4,800
Fowler, Amy	Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	2/10/2021	5/1/2021	4/30/2022	INVASIVESNET		Not Funded	New	1,204	0	1,204
Fowler, Amy	Seaplane Invasive Species Risk Analysis	6/2/2021	7/1/2021	6/30/2023	US Department of the Interior (US DOI)		Not Funded	New	94,261	45,472	139,733
Fowler, Amy	Active Biomonitoring for Emerging Contaminants using the invasive Asian clam <i>Corbicula fluminea</i> in the Potomac River	5/17/2021	7/1/2021	6/30/2023	Fairfax County Water Authority		Not Funded	New	4,805	0	4,805
Fowler, Amy	Collaborative Research: BEE: testing the effects of host-parasite coevolutionary history on ecological and evolutionary tradeoffs in wild populations	11/20/2020	12/1/2021	11/30/2024	National Science Foundation (NSF)		Not Funded	New	247,211	131,596	378,807
Glaberman, Scott	Protecting the critically endangered Kemp's ridley sea turtle from extinction through in situ monitoring	6/28/2019	11/1/2019	10/30/2022	The Mohamed bin Zayed Species Conservation Fund		Not Funded	New	0	0	16,063
Glaberman, Scott	Assessment of cyanobacterial algal emergence and toxicity in the northern Virginia portion of the Potomac River	12/16/2020	9/1/2021	8/31/2023	Virginia Institute of Marine Science		Not Funded	New	80,000	0	80,000
Glaberman, Scott	PFAS Mixtures Ecotoxicity	12/18/2020	6/1/2022	5/1/2025	Jacobs Project Management Co	US Department of Defense (US DOD)	Not Funded	New	0	0	0
Jones, R	The impact of a mainline anammox process on the bacterial community of receiving waters	7/18/2016	5/25/2017	5/24/2019	Water Environment Research Foundation		Not Funded	New	0	0	0
Jones, R	Kristen Reck VASG Graduate Fellowship	11/28/2016	6/1/2017	5/31/2019	Water Environment Research Foundation		Not Funded	New	0	0	80,000
Jones, R	Early Detection and Management of Water Chestnut	5/1/2018	9/1/2018	8/30/2020	Mid-Atlantic Panel on Aquatic Invasive Species (MAPAIS)		Not Funded	New	0	0	14,497

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Jones, R	Preliminary Proposal: LTER: Capital Area Ecological Study	12/4/2019	6/1/2021	5/31/2027	National Science Foundation (NSF)		Not Funded	New	0	0	0
Salerno, Jennifer	Characterizing microorganisms associated with deep-sea Lophelia pertusa corals from oil-impacted and unimpacted shipwreck sites in the Gulf of Mexico	2/1/2016	7/1/2016	12/1/2016	Padi Foundation		Not Funded	New	0	0	5,360
Salerno, Jennifer	Benthic trophic dynamics surrounding historic deep-water shipwrecks	9/27/2016	6/1/2017	5/31/2020	The University of Southern Mississippi	National Oceanic & Atmospheric	Not Funded	New	0	0	50,963
Salerno, Jennifer	Microbes as biological indicators of coral health and disease: using laser capture microdissection and whole genome sequencing to isolate and identify intracellular microorganisms in	3/7/2019	10/15/2019	4/14/2020	National Fish and Wildlife Foundation		Not Funded	New	0	0	80,000
Salerno, Jennifer	The role of microbes in coral reef resiliency	2/28/2020	5/1/2020	4/30/2022	The Central Caribbean Marine Institute		Not Funded	New	0	0	0
Salerno, Jennifer	MTM 2: Islands under the sea: Ecological and evolutionary theory of deep benthic microbiomes	2/27/2020	10/1/2020	9/30/2023	The University of Southern Mississippi	National Science Foundation (NSF)	Not Funded	New	0	0	173,378
Salerno, Jennifer	Thriving in the Deep: Deep-sea coral microbiome diversity, function, and co-evolution	1/14/2020	10/5/2020	10/4/2022	National Science Foundation (NSF)		Not Funded	New	0	0	0
Salerno, Jennifer	Continuation of Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across Multiple Coral Species on Florida's Coral Reef	11/13/2020	11/30/2020	6/30/2021	Florida Department of Environmental Protection		Not Funded	Renewal	74,799	11,220	86,019
Salerno, Jennifer	Continuation of Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across Multiple Coral Species on Florida's Coral Reef	12/4/2020	11/30/2020	6/30/2021	Florida Department of Environmental Protection		Not Funded	Renewal	58,748	8,812	67,560
Salerno, Jennifer	Uncovering deep-sea coral microbiome biogeography, functional diversity, and co-evolution in the U.S. EEZ	7/8/2020	9/1/2021	9/1/2023	National Oceanic & Atmospheric Administration (NOAA)		Not Funded	New	0	0	0
Salerno, Jennifer	Canyon Corridors: Exploring Biological Diversity and Connectivity in Washington Canyon	10/22/2020	9/1/2021	8/31/2023	National Oceanic & Atmospheric Administration (NOAA)		Not Funded	New	694,155	55,845	750,000
Salerno, Jennifer	Physical and Biological Processes Influencing Pathways, Transport, Degradation, and Fate of Debris along a Salinity Gradient in an Urban River	2/8/2021	9/1/2021	8/31/2024	National Oceanic & Atmospheric Administration (NOAA)		Not Funded	New	235,842	113,402	349,244
Smith, Cynthia	Paddler's Guide to the Potomac River	9/30/2016	4/1/2017	3/31/2018	Chesapeake Bay Restoration Fund Advisory Committee		Not Funded	New	0	0	10,783
Smith, Cynthia	GMU-PEREC Rising Tides: Engaging the Potomac Community in Place-Based Resilience Education	12/18/2017	10/2/2018	10/1/2022	US Department of Commerce (US DOC)		Not Funded	New	0	0	0
Smith, Cynthia	PWC EcoPark Planning	6/28/2019	6/21/2019	9/30/2020	Prince William County		Not Funded	New	0	0	62,320
Smith, Cynthia	Enviro Ed for VA teachers	12/3/2019	8/1/2020	7/31/2021	Old Dominion University	Environmental Protection Agency (EPA)	Not Funded	New	0	0	5,000
Van Aken, Benoit	Does global warming impact plant resistance to toxic stress?	7/25/2018	1/1/2019	12/31/2022	US Department of Agriculture (USDA)		Not Funded	New	0	0	485,684
Van Aken, Benoit	Effect of Herbicide Safeners on the Metabolism of Xenobiotic Pollutants by Plants	7/27/2018	1/1/2019	12/31/2022	US Department of Agriculture (USDA)		Not Funded	New	0	0	429,370
Van Aken, Benoit	Epigenetic Regulation of the Plant Response to Environmental Contaminants: Implications for bioethanol production	5/24/2018	6/1/2019	5/31/2021	US Department of Agriculture (USDA)		Not Funded	New	0	0	150,000



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Van Aken, Benoit	Microplastics and Associated Pollutants in Submersed Aquatic Vegetation in the Chesapeake Bay Area	11/16/2018	9/1/2019	8/31/2021	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	80,000
Van Aken, Benoit	Contribution of Submersed Aquatic Vegetation (SAV) to the Fate and Transport of Microplastics in the Chesapeake Bay Area	12/14/2018	1/1/2020	12/31/2021	National Oceanic & Atmospheric Administration (NOAA)		Not Funded	New	0	0	350,000
Van Aken, Benoit	URoL: Epigenetics 1: Epigenetic Biomarkers for Environmental Risk Assessment	2/1/2019	1/1/2020	12/31/2022	National Science Foundation (NSF)		Not Funded	New	0	0	499,985
Van Aken, Benoit	Concealed Biological Systems: Use of Bacteria, Plants, and 2D Materials for Safe Air	11/7/2019	7/1/2020	6/30/2022	Temple University of the Commonwealth	Defense Advanced Research Projects Agency (DARPA)	Not Funded	New	0	0	0
Van Aken, Benoit	Regulation of the Arabidopsis Response to Polychlorinated Biphenyls at the Genomic, Transcriptomic, and Epigenetic Level	12/18/2019	9/1/2020	8/31/2023	National Science Foundation (NSF)		Not Funded	New	0	0	0
Van Aken, Benoit	Regulation of the Arabidopsis response to Xenobiotics at the Genomic, Transcriptomic, and Epigenetic level	2/5/2020	9/1/2020	8/31/2023	National Science Foundation (NSF)		Not Funded	New	0	0	500,000
Van Aken, Benoit	Effect of Vegetation on the Biodegradation of Microplastics in soil	4/8/2020	1/1/2021	12/31/2024	US Department of Agriculture (USDA)		Not Funded	New	0	0	499,990
Van Aken, Benoit	Next-generation Nano-bioremediation: Application of Nanotechnology, Microbial ecology, and Machine Learning in Bioremediation	4/16/2020	1/15/2021	1/14/2026	Temple University of the Commonwealth	US Department of Health and Human Services (DHHS)	Not Funded	New	0	0	0
Van Aken, Benoit	Green Chemistry for Recycling Batteries: A Circular Economy	2/19/2020	5/1/2021	4/30/2022	Temple University of the Commonwealth	US Department of Defense (US DOD)	Not Funded	New	0	0	102,778
Van Aken, Benoit	Implication of plant growth promoting rhizobacteria (PGPR) in herbicide resistance	7/13/2021	7/1/2022	6/30/2027	US Department of Agriculture (USDA)		Not Funded	New	563,287	206,563	769,850
van der Ham, Joris	Kenk's Amphipod Survey	3/29/2016	6/1/2016	5/31/2018	US Department of the Army		Not Funded	New	0	0	30,728
Foster, Gregory	Past, Present and Expected Future of Blue Green Toxins in the Tidal Freshwater Potomac River as Investigated using the <u>Holocene Sedimentary Record</u>	11/19/2021	9/1/2022	8/31/2023	Virginia Sea Grant		Pending Sponsor Review	New	39,047	0	39,047
Fowler, Amy	Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	1/21/2022	7/1/2022	6/30/2023	Washington Biologists' Field Club		Pending Sponsor Review	New	4,800	0	4,800
Fowler, Amy	Collaboration to tackle the spread of invasive species under changing environmental conditions	3/9/2022	8/8/2022	8/7/2023	US Department of State (US DOS)		Pending Sponsor Review	New	0	0	0
Fowler, Amy	Active Biomonitoring for Per- and Polyfluoroalkyl Substances in the Occoquan River Watershed, Virginia, using the invasive Asian clam <i>Corbicula fluminea</i>	4/6/2022	9/1/2022	8/31/2023	Virginia Tech		Pending Sponsor Review	New	5,051	0	5,051
Fowler, Amy	Fowler_ECU_Subaward_7/21/2022	7/21/2022	1/1/2023	12/31/2023	East Carolina University	US Fish & Wildlife	Pending Sponsor Review	New	6,293	3,707	10,000
Glaberman, Scott	Critical Review and Validation of an Immune Response Assay for Amphibians	6/16/2022	7/4/2022	7/3/2023	US Geological Survey		Pending Sponsor Review	New	25,532	4,468	30,000

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Glaberman, Scott	Toxic cyanobacteria as an emerging ecological and public health threat in Virginia	11/19/2021	9/1/2022	8/31/2024	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Pending Sponsor Review	New	79,580	0	79,580
Huff, Thomas	Poly- and Perfluoroalkyl Substance (PFAS) Fate and Transport in the Tidal Freshwater Potomac River Embayments Aquatic Food Web Near Alexandria and Lorton, Virginia	4/6/2022	9/1/2022	8/31/2023	Virginia Tech		Pending Sponsor Review	New	7,866	0	7,866
Nelson, Thomas	Nelson-UNH-10_25_22	10/25/2022	4/1/2023	9/30/2024	University of New Hampshire		Pending Sponsor Review	New	100,611	47,780	148,391
Salerno, Jennifer	Bacterioplankton Dynamics Along a Tidal Fresh-Estuarine Continuum and Implications for Ecosystem Vulnerability in a Changing Climate	12/9/2021	8/1/2022	7/31/2024	National Oceanic & Atmospheric Administration (NOAA)		Pending Sponsor Review	New	89,255	0	89,255
Salerno, Jennifer	The Soil Mycobiome as a Measure of Health in Forests with Varied Interference	6/10/2022	8/22/2022	8/21/2024	National Park Service		Pending Sponsor Review	New	55,887	8,268	64,155
Sklarew, Jennifer	Engaging Fisheries Communities in the Offshore Wind Development Process	11/19/2021	9/1/2022	5/1/2024	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Pending Sponsor Review	New	58,143	0	58,143
Sklarew, Jennifer	Lawn Management: Pollinator Gardens as an Alternative to Grass Monoculture	11/19/2021	9/1/2022	12/1/2023	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Pending Sponsor Review	New	46,548	0	46,548
Smith, Cynthia	Model Use in Policy Development	11/19/2021	9/1/2022	6/1/2023	Virginia Institute of Marine Science		Pending Sponsor Review	New	36,889	0	36,889
Van Aken, Benoit	Sample preparation and sequencing strategies for multi-pathogen concentration and detection of bacterial, viral and fungal pathogens from wastewater	3/7/2022	7/1/2022	12/31/2023	American Type Culture Collection (ATCC)		Pending Sponsor Review	New	163,175	86,825	250,000

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NGOMEX 2016: User-driven tools to predict and assess effects of reduced nutrients and hypoxia on living resources in the Gulf of Mexico	2016	1/22/2016	9/1/2016	8/31/2019	National Oceanic & Atmospheric Administration (NOAA)		Awarded	New	0	0	899,996
Ecological Study of Hunting Creek - 2016	2016	3/21/2016	3/15/2016	3/14/2017	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	146,791
Ecological Study of Hunting Creek: Research Assistantship	2016	5/24/2016	5/26/2016	8/26/2016	Alexandria Renewal Enterprises		Awarded	Revision	0	0	4,271
City of Fairfax Monitoring Program: 2016/17	2016	7/7/2016	7/1/2016	6/30/2017	City of Fairfax		Awarded	Revision	0	0	4,309
An Ecological Study of Gunston Cove: 2016-17	2016	7/29/2016	7/1/2016	6/30/2017	County of Fairfax		Awarded	Revision	0	0	67,561
Ecological Study of Hunting Creek: Research Assistantship	2016	8/17/2016	8/25/2016	5/24/2017	Alexandria Renewal Enterprises		Awarded	Revision	0	0	7,829
Corporate Sustainability Innovation Research	2016	1/1/2016	1/1/2016	12/31/2018	Charter Communications		Awarded	New			271,846
KidWind Program	2016	1/14/2016	1/11/2016	8/25/2016	James Madison University	Dominion Resources Inc	Awarded	New	0	0	3,153
Visualizing Watershed Connections	2016	3/1/2016	6/15/2016	6/15/2017	Dominion Resources Inc		Awarded	New	0	0	49,515
FCPS Watershed Education AY2016-17	2016	4/20/2017	7/1/2016	6/30/2017	Fairfax County Public Schools		Awarded	Revision	0	0	52,000
Visualizing Watershed Connections: The Inaugural Exhibit at Mason's New Potomac Science Center	2016	5/16/2016	9/1/2016	9/1/2017	Fairfax County Water Authority		Awarded	New	0	0	10,000
Applied Ecosystem Modeling to Support Marine Resource Management and Restoration in the Gulf of Mexico	2017	9/20/2016	6/1/2017	5/31/2020	University Of Florida	National Oceanic & Atmospheric Administration (NOAA)	Awarded	New	0	0	87,223
PEREC Undergraduate Science and Outreach Summer Project: Assessment of ecosystem health in the tidal freshwater Potomac environment	2017	11/21/2016	5/29/2017	8/29/2017	Virginia Institute of Marine Science		Awarded	New	0	0	5,000
An Ecological Study of Hunting Creek - 2017	2017	4/10/2017	3/15/2017	3/14/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	167,481
An Ecological Study of Gunston Cove: 2017-18	2017	6/28/2017	7/1/2017	6/30/2018	County of Fairfax		Awarded	Renewal	0	0	71,090
Annimox Research Assistant	2017	8/11/2017	8/25/2017	8/24/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	10,706
City of Fairfax/Monitoring Program 2017-18	2017	9/27/2017	9/1/2017	12/31/2018	City of Fairfax		Awarded	Renewal	0	0	4,357

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FCPS Watershed Education 222783	2017	8/7/2017	7/1/2017	6/30/2018	Fairfax County Public Schools		Awarded	New	0	0	58,500
EAGER: Effects of Environmental Contaminants on the Lignocellulosic Biomass in Switchgrass Plants	2017	6/26/2018	2/1/2017	3/31/2019	National Science Foundation (NSF)		Awarded	New	0	0	84,962
Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	2018	4/26/2018	4/1/2018	9/30/2019	Alexandria Renewal Enterprises		Awarded	New	0	0	94,707
Field surveys and comparative parasitology of freshwater native and invasive snails in Virginia and Maryland	2018	1/11/2018	3/1/2018	2/28/2019	Washington Biologists' Field Club		Awarded	New	0	0	4,641
Impacts of two functionally distinct invaders on facilitation and community succession	2018	5/1/2018	9/1/2018	8/31/2019	State Of Maryland	US Department of the Interior (US DOI)	Awarded	New	0	0	13,722
Deploy River Mile Markers for Occoquan River Trail	2018	4/9/2018	4/1/2018	7/31/2018	Northern Virginia Regional Park Authority		Awarded	New	0	0	3,793
An Ecological Study of Hunting Creek - 2018	2018	4/26/2018	4/1/2018	9/30/2018	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	218,853
An Ecological Study of Gunston Cove: 2018-19	2018	6/20/2018	7/1/2018	6/30/2019	County of Fairfax		Awarded	Renewal	0	0	68,604
Annimox Assistant 2018-19	2018	9/25/2018	10/1/2018	9/30/2019	Alexandria Renewal		Awarded	Renewal	0	0	10,837
City of Fairfax Monitoring Program 2018/19	2018	11/16/2018	12/1/2018	11/30/2019	City of Fairfax		Awarded	Revision	0	0	4,855
FCPS Watershed Education Program	2018	7/19/2018	8/15/2018	6/30/2019	Fairfax County Public Schools		Awarded	Renewal	0	0	58,000
Assessment of fish passage use and success in facilitating	2019	12/14/2018	1/1/2019	3/15/2020	Virginia Institute of Marine	National Oceanic &	Awarded	New	0	0	4,984
Assessment of fish passage use and success in facilitating	2019	7/22/2019	4/22/2019	5/30/2020	Friends of Accotink Creek		Awarded	New	0	0	732
Gulf Research Program Early-Career Research Fellowship	2019	2/20/2019	9/1/2019	8/31/2021	Institute of Medicine of the		Awarded	New	0	0	76,000
Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species	2019	9/23/2019	10/1/2019	9/30/2020	Virginia Institute of Marine Science		Awarded	New	0	0	5,000
Combined Sewer Overflow Monitoring in Alexandria, Virginia	2019	1/16/2019	1/1/2019	12/31/2022	Alexandria Renewal		Awarded	New	0	0	164,429
An Ecological Study of Hunting Creek: 2018-19 supplement	2019	2/12/2019	2/1/2019	9/30/2019	Alexandria Renewal Enterprises		Awarded	Revision	0	0	7,675
An Ecological Study of Gunston Cove: 2019-20	2019	6/17/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	85,122
Ammonia Analysis of Gunston Cove Samples 2019-2020	2019	6/27/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	8,236
An Ecological Study of Gunston Cove: 2019-20	2019	8/15/2019	7/1/2019	6/30/2020	County of Fairfax		Awarded	Revision	0	0	3,458
An Ecological Study of Hunting Creek- 2019 Continuation	2019	9/6/2019	10/1/2019	12/31/2019	Alexandria Renewal		Awarded	Revision	0	0	23,547
Anammox Research Assistant: 2019-2020	2019	9/24/2019	10/1/2019	9/30/2020	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	11,697
City of Fairfax Monitoring Program 2019-20	2019	11/18/2019	12/1/2019	11/30/2020	City of Fairfax		Awarded	Revision	0	0	5,054
Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across Multiple Coral	2019	11/6/2019	11/30/2019	6/30/2020	Florida Department of Environmental Protection		Awarded	New	0	0	93,908
FCPS Watershed Education AY 2019-20	2019	8/2/2019	8/15/2019	6/30/2020	Fairfax County Public		Awarded	New	0	0	58,500

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PSC Landscape CSI	2019	11/1/2019	12/1/2019	9/1/2020	Landscape Architecture		Awarded	New	0	0	5,600
Semi-Volatile PCBs: Sources, Exposures, Toxicities	2019	1/17/2019	4/1/2019	3/31/2020	University Of Iowa	US Department of Health	Awarded	Revision	0	0	24,833
George Mason University Fish and Wildlife Adaptation Fellowship Program	2019	9/18/2018	1/1/2019	12/31/2022	US Geological Survey		Awarded	New	0	0	149,815
NGOMEX synergistic activities and special issue	2020	2/26/2020	4/1/2020	8/31/2021	National Oceanic & Atmospheric Administration		Awarded	New	0	0	60,483
Development of passive sampling methodologies for	2020	3/5/2019	5/1/2020	1/31/2021	State Of Maryland	US Department of	Awarded	New	0	0	79,438
Survey of Micropollutants in Fluvial Sediments and Water	2020	5/29/2020	7/1/2020	6/30/2022	Alexandria Renewal		Awarded	Renewal	0	0	186,849
Rapid Assessment Survey for Introduced Marine Organisms along the Mid-Atlantic (New Jersey to Virginia)	2020	3/31/2020	9/1/2020	8/31/2022	State Of Maryland		Awarded	New	0	0	14,130
Next-generation effects-based monitoring of contaminants	2020	12/2/2019	3/1/2020	2/28/2021	University of the District of	US Geological Survey	Awarded	New	0	0	10,000
Collaborative Research: Determining the role of ER stress in	2020	4/1/2020	9/1/2020	8/31/2023	National Science Foundation		Awarded	New	0	0	366,365
Collaborative Research: Determining the role of ER stress in	2020	12/17/2020	9/1/2020	8/31/2023	National Science Foundation		Awarded	Revision	28,301	16,132	44,433
City of Fairfax Wet Weather Monitoring Program 2020	2020	2/28/2020	3/1/2020	12/31/2020	City of Fairfax		Awarded	New	0	0	7,100
An Ecological Study of Hunting Creek - 2020-2022	2020	6/3/2020	7/1/2020	6/30/2022	Alexandria Renewal Enterprises		Awarded	Renewal	0	0	61,861
An Ecological Study of Gunston Cove: 2020-21	2020	7/10/2020	7/1/2020	6/30/2021	County of Fairfax		Awarded	Renewal	59,283	29,582	88,865
A Community Approach to Reducing Single-Use Plastic Beverage Bottles	2020	2/7/2020	9/1/2020	8/31/2022	National Oceanic & Atmospheric Administration (NOAA)		Awarded	New	0	0	149,999
Survey of Micropollutants in Fluvial Sediments and Water	2021	7/30/2021	7/1/2021	6/30/2022	Alexandria Renewal		Awarded	Revision	58,633	33,421	92,054
Is there a lesser of two evils? Castrating parasites of an	2021	1/15/2021	3/1/2021	2/28/2022	Washington Biologists' Field		Awarded	New	2,769	0	2,769
Developing a Nematode High-Throughput Toxicity System	2021	8/20/2021	9/15/2021	9/14/2022	Bayer AG		Awarded	New	11,715	0	11,715
An Ecological Study of Gunston Cove: 2021-2022	2021	6/24/2021	7/1/2021	6/30/2022	County of Fairfax		Awarded	Renewal	61,800	30,838	92,638
City of Fairfax Stream Monitoring Program: 2021-22	2021	6/21/2021	7/1/2021	6/30/2022	City of Fairfax		Awarded	Renewal	3,167	1,865	5,032
An Ecological Study of Hunting Creek 2021-2022	2021	8/2/2021	7/1/2021	6/30/2022	Alexandria Renewal Enterprises		Awarded	Revision	89,291	50,896	140,187
Genomic Testing & Analysis - Mazur	2021	5/17/2021	4/30/2021	7/30/2021	The Smithsonian Institution		Awarded	New	8,957	896	9,853
Transparency Index for Environmental, Social, & Governance Impact Research	2021	1/1/2021	1/1/2021	12/31/2022	Transparency.Global		Awarded	New			11,360
FCPS Watershed Education	2021	6/29/2021	8/15/2021	6/30/2022	Fairfax County Public Schools		Awarded	New	57,749	751	58,500
USGS/Adaptation Fellowship	2021	9/11/2020	1/1/2021	12/31/2021	US Geological Survey		Awarded	Revision	21,233	3,716	24,949
Presence, Principal Sources, and Ecological Risk of PFAS in the Tidal Freshwater Potomac River Along with Comparisons	2022	2/18/2022	7/1/2022	6/30/2024	Alexandria Renewal Enterprises		Awarded	Renewal	214,266	98,298	312,564

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Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from	2022	3/30/2021	1/31/2022	1/30/2023	Virginia Academy of Science		Awarded	New	1,248	0	1,248
Marine Bioinvasions of the Mid-Atlantic Coast: Rapid	2022	4/27/2022	7/1/2022	6/1/2023	State Of Maryland	National Oceanic &	Awarded	New	2,500	0	2,500
Fowler_VA_Seagrant_SOFT	2022	7/28/2022	7/31/2022	7/30/2023	Virginia Sea Grant	National Oceanic & Atmospheric	Awarded	New	2,500	0	2,500
Fowler_DE_Seagrant_SOFT	2022	7/28/2022	7/31/2022	7/30/2023	University of Delaware		Award Notification	New	2,500	0	2,500
An Ecological Study of Hunting Creek: 2022-2023	2022	4/27/2022	7/1/2022	6/30/2023	Alexandria Renewal Enterprises		Awarded	Renewal	98,050	57,752	155,802
An Ecological Study of Gunston Cove: 2022-23	2022	5/17/2022	7/1/2022	6/30/2023	Fairfax County Dept of Public Works		Pending Sponsor	Renewal	64,759	32,315	97,074
City of Fairfax Stream Monitoring Program: 2022-23	2022	5/17/2022	7/1/2022	6/30/2023	City of Fairfax		Pending Sponsor	Renewal	4,088	2,408	6,496
Invasive Spp Management - Wetland Stream Mitigation	2022	5/27/2021	1/1/2022	12/31/2024	College of William and Mary		Awarded	New	41,525	11,669	53,194
FP339_Smith_FCPS Watershed Programs	2022	9/13/2022	8/15/2022	6/30/2023	Fairfax County Public Schools		Awarded	New	59,970	780	60,750
FP506_Salerno_Sims Ruth Turner Student Fellow_SOFT	2022	10/17/2022	9/30/2022	9/29/2023	Ruth D. Turner Foundation		Awarded	New	6,500	0	6,500
EwE work MRDM PR10	2016	1/29/2016	2/1/2016	6/30/2016	The Water Institute of the Gulf		Not Funded	New	0	0	8,332
Characterizing microorganisms associated with deep-sea Lophelia pertusa corals from oil-impacted and unimpacted	2016	2/1/2016	7/1/2016	12/1/2016	Padi Foundation		Not Funded	New	0	0	5,360
Kenk's Amphipod Survey	2016	3/29/2016	6/1/2016	5/31/2018	US Department of the Army		Not Funded	New	0	0	30,728
Impacts of nutrient loading and hypoxia on fisheries sustainability in the Northwestern Gulf of Mexico	2017	9/20/2016	6/1/2017	5/31/2020	University Of South Florida	National Oceanic & Atmospheric	Not Funded	New	0	0	266,127
Spatial and Temporal Connectivity across a Restoration Continuum in the Mississippi River Delta; Northern Gulf of	2017	9/20/2016	6/1/2017	5/31/2020	Louisiana Universities Marine Consortium	National Oceanic & Atmospheric	Not Funded	New	0	0	296,443
Collaborative Research: Trade-offs in biotic and abiotic selective pressures on host adaptation	2017	7/21/2016	4/1/2017	3/31/2020	East Carolina University	National Science Foundation (NSF)	Not Funded	New	0	0	274,435
Latitudinal differences in blue crab size may impact bycatch reduction devices for excluding endangered terrapins	2017	1/30/2017	7/1/2017	6/30/2019	South Carolina Department of Natural Resources	US Department of the Interior (US DOI)	Not Funded	New	0	0	78,144
Biological invasions and host adaptation in North Carolina estuaries	2017	4/3/2017	10/1/2017	9/30/2018	East Carolina University		Not Funded	New	0	0	4,211
Microbial stowaways: Exploring the influence of shipwrecks on microbial biogeography, dispersal, and natural selection	2017	1/8/2016	1/1/2017	12/31/2018	National Oceanic & Atmospheric Administration		Not Funded	New	0	0	359,380
The impact of a mainline anammox process on the bacterial community of receiving waters	2017	7/18/2016	5/25/2017	5/24/2019	Water Environment Research Foundation		Not Funded	New	0	0	0
Kristen Reck VASG Graduate Fellowship	2017	11/28/2016	6/1/2017	5/31/2019	Water Environment Research Foundation		Not Funded	New	0	0	80,000

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Benthic trophic dynamics surrounding historic deep-water shipwrecks	2017	9/27/2016	6/1/2017	5/31/2020	The University of Southern Mississippi	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	50,963
Paddler's Guide to the Potomac River	2017	9/30/2016	4/1/2017	3/31/2018	Chesapeake Bay Restoration Fund Advisory Committee		Not Funded	New	0	0	10,783
Modeling effects on fishes of restored marshes	2018	6/21/2017	1/1/2018	12/31/2020	St. Mary's University	The National Academies of Sciences	Not Funded	New	0	0	22,999
Fecundity of Alewife and Blueback Herring Spawning in Potomac River Tributaries	2018	8/30/2017	1/1/2018	12/31/2018	Atlantic States Marine Fisheries Commission		Not Funded	New	0	0	40,000
Collaborative Research: Investigation of the potential impacts of future environmental changes on the	2018	8/14/2017	3/1/2018	2/28/2021	National Science Foundation (NSF)		Not Funded	New	0	0	180,000
Long-Term Environmental and Anthropogenic Impacts on Fish and Fisheries in the Northern Gulf of Mexico	2018	10/6/2017	9/1/2018	8/31/2020	US Department of Commerce (US DOC)		Not Funded	New	0	0	0
Effects of watershed connectivity on the distribution of anadromous and invasive species in the Potomac River	2018	11/16/2017	9/1/2018	8/31/2020	Virginia Institute of Marine Science		Not Funded	New	0	0	80,000
NAS Gulf Research Program Early-Career Research Fellowship	2018	2/21/2018	9/1/2018	8/31/2020	The National Academies of Sciences		Not Funded	New	0	0	76,000
Mid-Barataria Diversion simulations	2018	8/28/2018	9/1/2018	12/31/2018	The Water Institute of the Gulf		Not Funded	New	0	0	60,000
Future Scenarios for the Global Ocean - Forecasting change and management options for marine biodiversity and	2018	3/9/2018	10/1/2018	9/30/2021	National Science Foundation (NSF)		Not Funded	New	0	0	0
Collaborative Research: Biotic and abiotic tradeoffs shape the ecology and evolution of a marine host across space and	2018	2/13/2017	1/1/2018	12/31/2020	National Science Foundation (NSF)		Not Funded	New	0	0	316,132
Field and laboratory testing of eradication methods for freshwater invasive snails	2018	8/15/2017	4/1/2018	3/31/2020	National Fish and Wildlife Foundation		Not Funded	New	0	0	80,875
Bioaccumulation of antidepressants in an upper Potomac River foodweb	2018	3/22/2018	6/1/2018	5/30/2019	Virginia Tech	Virginia Tech	Not Funded	New	0	0	5,000
Modeling, translocation, and fate of pharmaceutical chemicals and personal care products in the food web of the tidal freshwater Potomac River using Ecosim, Ecotracer and	2018	1/18/2018	6/30/2018	6/29/2019	Jeffress Memorial Trust		Not Funded	New	0	0	100,000
Presence and Risk of Pharmaceuticals and Personal Care Product in the Tidal Freshwater Potomac River Food Web	2018	11/16/2017	9/1/2018	8/31/2019	Virginia Institute of Marine Science		Not Funded	New	0	0	39,995
Early Detection and Management of Water Chestnut	2018	5/1/2018	9/1/2018	8/30/2020	Mid-Atlantic Panel on Aquatic Invasive Species		Not Funded	New	0	0	14,497
GMU-PEREC Rising Tides: Engaging the Potomac Community in Place-Based Resilience Education	2018	12/18/2017	10/2/2018	10/1/2022	US Department of Commerce (US DOC)		Not Funded	New	0	0	0
Refining an ecosystem model to improve our understanding of the long-term benefits and impacts of Mississippi River sediment diversions	2019	10/16/2018	9/1/2019	8/31/2022	University of Central Florida	National Oceanic & Atmospheric Administration (NOAA)	Not Funded	New	0	0	66,000
Forecasting coupled socio-ecological systems under environmental changes in the northwestern Gulf of Mexico	2019	10/30/2018	9/1/2019	8/31/2024	University Of South Florida	National Oceanic & Atmospheric	Not Funded	New	0	0	427,000

**PEREC Research Proposals: Funded, Unfunded, and Pending by Start Year**

Proposal Short Title	Start Year	Proposal Submit to Sponsor Date	Proposal Project Start Date	Proposal Project End Date	Proposal Sponsor Name	Proposal Prime Sponsor Name	Proposal State	Proposal Application Type	Proposal Direct Cost	Proposal Indirect Cost	Proposal Amt Requested
Assessment of fish passage use and success in facilitating movement of regionally vulnerable and invasive fish species	2019	11/16/2018	9/1/2019	12/31/2020	Virginia Institute of Marine Science	National Oceanic & Atmospheric	Not Funded	New	0	0	80,000
Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	2019	9/5/2019	10/1/2019	12/31/2019	Alexandria Renewal Enterprises		Not Funded	Revision	0	0	12,992
Collaborative Research: Diversity gradients mediated by ecotypic variation in a marine ecosystem engineer	2019	2/15/2018	3/1/2019	2/28/2022	National Science Foundation (NSF)		Not Funded	New	0	0	391,004
REU Site: FRESH (Freshwater Research in Environmental Science and Health)	2019	8/22/2018	3/1/2019	2/28/2022	National Science Foundation (NSF)		Not Funded	New	0	0	288,584
Protecting the critically endangered Kemp's ridley sea turtle from extinction through in situ monitoring	2019	6/28/2019	11/1/2019	10/30/2022	The Mohamed bin Zayed Species Conservation Fund		Not Funded	New	0	0	16,063
Microbes as biological indicators of coral health and disease: using laser capture microdissection and whole genome	2019	3/7/2019	10/15/2019	4/14/2020	National Fish and Wildlife Foundation		Not Funded	New	0	0	80,000
PWC EcoPark Planning	2019	6/28/2019	6/21/2019	9/30/2020	Prince William County		Not Funded	New	0	0	62,320
Does global warming impact plant resistance to toxic stress?	2019	7/25/2018	1/1/2019	12/31/2022	US Department of Agriculture (USDA)		Not Funded	New	0	0	485,684
Effect of Herbicide Safeners on the Metabolism of Xenobiotic Pollutants by Plants	2019	7/27/2018	1/1/2019	12/31/2022	US Department of Agriculture (USDA)		Not Funded	New	0	0	429,370
Epigenetic Regulation of the Plant Response to Environmental Contaminants: Implications for bioethanol	2019	5/24/2018	6/1/2019	5/31/2021	US Department of Agriculture (USDA)		Not Funded	New	0	0	150,000
Microplastics and Associated Pollutants in Submersed Aquatic Vegetation in the Chesapeake Bay Area	2019	11/16/2018	9/1/2019	8/31/2021	Virginia Institute of Marine Science	National Oceanic & Atmospheric	Not Funded	New	0	0	80,000
Survey of Micropollutants in Fluvial Sediments and Water from Hunting Creek and the Freshwater Tidal Potomac River	2020	3/18/2020	4/1/2020	3/31/2023	Alexandria Renewal Enterprises		Not Funded	Revision	0	0	279,313
Collaborative Research: Scaling from genotype to landscape: community diversity mediated by ecotypic variation in an	2020	2/14/2019	3/1/2020	2/28/2023	National Science Foundation (NSF)		Not Funded	New	0	0	309,990
REU Site: FRESH (Freshwater Research in Environmental Science and Hydrochemistry)	2020	8/28/2019	3/1/2020	2/28/2023	National Science Foundation (NSF)		Not Funded	New	0	0	396,590
Alex Renew Hunting Creek 2020-22	2020	3/16/2020	3/15/2020	3/14/2023	Alexandria Renewal Enterprises		Not Funded	Renewal	0	0	422,781
The role of microbes in coral reef resiliency	2020	2/28/2020	5/1/2020	4/30/2022	The Central Caribbean Marine Institute		Not Funded	New	0	0	0
MTM 2: Islands under the sea: Ecological and evolutionary theory of deep benthic microbiomes	2020	2/27/2020	10/1/2020	9/30/2023	The University of Southern Mississippi	National Science Foundation (NSF)	Not Funded	New	0	0	173,378
Thriving in the Deep: Deep-sea coral microbiome diversity, function, and co-evolution	2020	1/14/2020	10/5/2020	10/4/2022	National Science Foundation (NSF)		Not Funded	New	0	0	0



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Continuation of Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across	2020	11/13/2020	11/30/2020	6/30/2021	Florida Department of Environmental Protection		Not Funded	Renewal	74,799	11,220	86,019
Continuation of Microscopic and Microbial Insights into the Stony Coral Tissue Loss Disease (SCTLD) Outbreak Across Multiple Coral Species on Florida's Coral Reef	2020	12/4/2020	11/30/2020	6/30/2021	Florida Department of Environmental Protection		Not Funded	Renewal	58,748	8,812	67,560
Enviro Ed for VA teachers	2020	12/3/2019	8/1/2020	7/31/2021	Old Dominion University	Environmental Protection Agency (EPA)	Not Funded	New	0	0	5,000
Contribution of Submersed Aquatic Vegetation (SAV) to the Fate and Transport of Microplastics in the Chesapeake Bay	2020	12/14/2018	1/1/2020	12/31/2021	National Oceanic & Atmospheric Administration		Not Funded	New	0	0	350,000
UROL: Epigenetics 1: Epigenetic Biomarkers for Environmental Risk Assessment	2020	2/1/2019	1/1/2020	12/31/2022	National Science Foundation (NSF)		Not Funded	New	0	0	499,985
Concealed Biological Systems: Use of Bacteria, Plants, and 2D Materials for Safe Air	2020	11/7/2019	7/1/2020	6/30/2022	Temple University of the Commonwealth	Defense Advanced Research Projects Agency (DARPA)	Not Funded	New	0	0	0
Regulation of the Arabidopsis Response to Polychlorinated Biphenyls at the Genomic, Transcriptomic, and Epigenetic Level	2020	12/18/2019	9/1/2020	8/31/2023	National Science Foundation (NSF)		Not Funded	New	0	0	0
Regulation of the Arabidopsis response to Xenobiotics at the Genomic, Transcriptomic, and Epigenetic level	2020	2/5/2020	9/1/2020	8/31/2023	National Science Foundation (NSF)		Not Funded	New	0	0	500,000
Focused CoPe: National Capital Region CoPe Hub - Environmental Change Impacts on Community Flood Risk and Resilience	2021	9/9/2020	8/1/2021	7/31/2026	National Science Foundation (NSF)		Not Funded	New	3,883,069	1,116,931	5,000,000
National Capital Region CoPe Hub: Environmental Change Impacts on Community Flood Risk and Resilience	2021	8/6/2020	9/1/2021	8/31/2026	National Science Foundation (NSF)		Not Funded	New	0	0	0
Worm Wrangler: Does a predatory polychaete influence invertebrate communities on anchored algae?	2021	4/3/2020	1/1/2021	12/31/2021	State Of Maryland		Not Funded	New	0	0	12,043
Collaborative Research: Community diversity consequences of life cycle complexity in dominant coastal foundation	2021	2/17/2020	3/1/2021	2/29/2024	National Science Foundation (NSF)		Not Funded	New	0	0	353,439
REU Site: FRESH (Freshwater Research in Environmental Science and Habitats)	2021	8/26/2020	3/1/2021	2/28/2024	National Science Foundation (NSF)		Not Funded	New	392,041	22,307	414,348
Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from	2021	1/15/2021	3/1/2021	2/28/2022	Washington Biologists' Field Club		Not Funded	New	4,800	0	4,800
Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	2021	2/10/2021	5/1/2021	4/30/2022	INVASIVESNET		Not Funded	New	1,204	0	1,204
Seaplane Invasive Species Risk Analysis	2021	6/2/2021	7/1/2021	6/30/2023	US Department of the Interior (US DOI)		Not Funded	New	94,261	45,472	139,733
Active Biomonitoring for Emerging Contaminants using the invasive Asian clam Corbicula fluminea in the Potomac River	2021	5/17/2021	7/1/2021	6/30/2023	Fairfax County Water Authority		Not Funded	New	4,805	0	4,805
Collaborative Research: BEE: testing the effects of host-parasite coevolutionary history on ecological and	2021	11/20/2020	12/1/2021	11/30/2024	National Science Foundation (NSF)		Not Funded	New	247,211	131,596	378,807

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Assessment of cyanobacterial algal emergence and toxicity in the northern Virginia portion of the Potomac River	2021	12/16/2020	9/1/2021	8/31/2023	Virginia Institute of Marine Science		Not Funded	New	80,000	0	80,000
Preliminary Proposal: LTER: Capital Area Ecological Study	2021	12/4/2019	6/1/2021	5/31/2027	National Science Foundation (NSF)		Not Funded	New	0	0	0
Uncovering deep-sea coral microbiome biogeography, functional diversity, and co-evolution in the U.S. EEZ	2021	7/8/2020	9/1/2021	9/1/2023	National Oceanic & Atmospheric Administration (NOAA)		Not Funded	New	0	0	0
Canyon Corridors: Exploring Biological Diversity and Connectivity in Washington Canyon	2021	10/22/2020	9/1/2021	8/31/2023	National Oceanic & Atmospheric Administration		Not Funded	New	694,155	55,845	750,000
Physical and Biological Processes Influencing Pathways, Transport, Degradation, and Fate of Debris along a Salinity	2021	2/8/2021	9/1/2021	8/31/2024	National Oceanic & Atmospheric Administration		Not Funded	New	235,842	113,402	349,244
Effect of Vegetation on the Biodegradation of Microplastics in soil	2021	4/8/2020	1/1/2021	12/31/2024	US Department of Agriculture (USDA)		Not Funded	New	0	0	499,990
Next-generation Nano-bioremediation: Application of Nanotechnology, Microbial ecology, and Machine Learning in Bioremediation	2021	4/16/2020	1/15/2021	1/14/2026	Temple University of the Commonwealth	US Department of Health and Human Services (DHHS)	Not Funded	New	0	0	0
Green Chemistry for Recycling Batteries: A Circular Economy	2021	2/19/2020	5/1/2021	4/30/2022	Temple University of the Commonwealth	US Department of Defense (US DOD)	Not Funded	New	0	0	102,778
PFAS Mixtures Ecotoxicity	2022	12/18/2020	6/1/2022	5/1/2025	Jacobs Project Management Co	US Department of Defense (US DOD)	Not Funded	New	0	0	0
Implication of plant growth promoting rhizobacteria (PGPR) in herbicide resistance	2022	7/13/2021	7/1/2022	6/30/2027	US Department of Agriculture (USDA)		Not Funded	New	563,287	206,563	769,850
Past, Present and Expected Future of Blue Green Toxins in the Tidal Freshwater Potomac River as Investigated using the Holocene Sedimentary Record	2022	11/19/2021	9/1/2022	8/31/2023	Virginia Sea Grant		Pending Sponsor Review	New	39,047	0	39,047
Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia	2022	1/21/2022	7/1/2022	6/30/2023	Washington Biologists' Field Club		Pending Sponsor Review	New	4,800	0	4,800
Collaboration to tackle the spread of invasive species under changing environmental conditions	2022	3/9/2022	8/8/2022	8/7/2023	US Department of State (US DOS)		Pending Sponsor Review	New	0	0	0
Active Biomonitoring for Per- and Polyfluoroalkyl Substances in the Occoquan River Watershed, Virginia, using the invasive Asian clam <i>Corbicula fluminea</i>	2022	4/6/2022	9/1/2022	8/31/2023	Virginia Tech		Pending Sponsor Review	New	5,051	0	5,051
Fowler_ECU_Subaward_7/21/2022	2023	7/21/2022	1/1/2023	12/31/2023	East Carolina University	US Fish & Wildlife	Pending Sponsor Review	New	6,293	3,707	10,000
Critical Review and Validation of an Immune Response Assay for Amphibians	2022	6/16/2022	7/4/2022	7/3/2023	US Geological Survey		Pending Sponsor Review	New	25,532	4,468	30,000
Toxic cyanobacteria as an emerging ecological and public health threat in Virginia	2022	11/19/2021	9/1/2022	8/31/2024	Virginia Institute of Marine Science	National Oceanic & Atmospheric Administration (NOAA)	Pending Sponsor Review	New	79,580	0	79,580

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Poly- and Perfluoroalkyl Substance (PFAS) Fate and Transport in the Tidal Freshwater Potomac River Embayments Aquatic Food Web Near Alexandria and Lorton, Nelson-UNH-10_25_22	2022	4/6/2022	9/1/2022	8/31/2023	Virginia Tech		Pending Sponsor Review	New	7,866	0	7,866
	2023	10/25/2022	4/1/2023	9/30/2024	University of New Hampshire		Pending Sponsor Review	New	100,611	47,780	148,391
Bacterioplankton Dynamics Along a Tidal Fresh-Estuarine Continuum and Implications for Ecosystem Vulnerability in a Changing Climate	2022	12/9/2021	8/1/2022	7/31/2024	National Oceanic & Atmospheric Administration (NOAA)		Pending Sponsor Review	New	89,255	0	89,255
The Soil Mycobiome as a Measure of Health in Forests with Varied Interference	2022	6/10/2022	8/22/2022	8/21/2024	National Park Service		Pending Sponsor Review	New	55,887	8,268	64,155
Model Use in Policy Development	2022	11/19/2021	9/1/2022	6/1/2023	Virginia Institute of Marine Science		Pending Sponsor Review	New	36,889	0	36,889
Sample preparation and sequencing strategies for multi-pathogen concentration and detection of bacterial, viral and fungal pathogens from wastewater	2022	3/7/2022	7/1/2022	12/31/2023	American Type Culture Collection (ATCC)		Pending Sponsor Review	New	163,175	86,825	250,000

**Potomac Environmental Research and Education Center  
Educational Activities 2017-2022**

**Students Formally Mentored**

**Undergraduate Students**

Kim DeMutsert

Katie Russell (2020)  
Christa Poulos (2019)  
Jeremy Williams (2019)  
Christopher Martin (2018)  
Brian Kim (2018)  
Jessica Anang (2017)  
Samantha Alexander (2017)

Greg Foster

Lisa McNulty (2017/2018 URSP/OSCAR)  
Tovga Haji (2017/2018/2019 URSP/OSCAR)  
Dan Cairnie (URSP/OSCAR 2017)  
Sharon Becker (URSP/OSCAR 2017)  
James Licato (ASSIP)  
Stephen Blair (2022)

Amy Fowler

Michael Rollins\* (2017)  
Jesse Wong (2017)  
Lauren Atol-Patton (2017-18)  
William Dries (2017)  
Adam Grocholl (2018)  
Emiliano Gonzalez Santin (2018)  
Alexander Glenn\* (2018)  
Emily Bohr\* (2018)  
Hyejoo Ro (2018)  
Allison Assur (2018)  
Wilfredo Defredo (2019)  
Ridhima Bhatima (2019)  
Grace Loonam\* (2019-2021)  
Anna Van Dreser (2019)  
Sydney Frazier (2019)  
Daria Maslyukova (2020-2021)  
Eran O'Keefe (2020-2021)  
Lindsey Cox (2020)  
Bryce Bossuot (2020)  
Mounia Hammadi (2021)

Tyler Shedd (2021)  
 Zoe Powers (2021)  
 Gregory Kobayashi (2021)  
 Keith Keel (2020-2021)  
 Liam Palmer (2021)  
 Katheryn Hout (2021)  
 Cathryn Mcvicker (2021)  
 Shel Johnson (2021)  
 Helene Pinto (2021)  
 Kelly Grantz (2021)

Scott Glaberman  
 Kelly Pardo (2022)  
 Kennedy Ream (2020-2022)  
 Monica Zaky\* (2020)  
 Marck Derco\*, (2020)  
 Maria Rumyant\* (2020)  
 Cameron Dow\* (2019)

Reid Nelson  
 Kiah Gallaher (2022)

Jennifer Salerno  
 Rachel Haley (2021-2022)  
 Teagan Corpening (2022)  
 Andrew Friedman (2020)  
 Liam Palmer (2020-2021)  
 Adam Murray (2020-2022)  
 Morgan Cahill (2019-20)  
 Thomas Hutchinson\* (2019-2022)  
 Benjamin Nachman (2020) (PGF fellow)  
 Lauren Agyepon (2019-2020) (PGF fellow)  
 Omar Alami (2017)  
 Valerie Nguyen (2017)

Dann Sklarew  
 Guerrero, Adrianna. 2022-2023. (ISE assistant)  
 Watanabe, Natsuki. 2022. (EVPP 395)  
 Grand Pré, Suzanne. 2021. (EVPP 395)  
 Bourg, Ashley. 2019. (EVPP 395)  
 Davies, Brian. 2019. (EVPP 396)  
 Nortz, Heather. 2017\*, 2019 (EVPP 396) Video: <https://youtu.be/Ryug8p-Z0-o>  
 Nguyen, Han\*. 2019.  
 Rhoades, Ben\*. 2019. Video: <https://youtu.be/FnBI1jaGYig>  
 Hock, Dana. 2017. (EVPP 396)  
 Taylor, Christophe. 2016. (EVPP 396)

Cindy Smith

## **Graduate Students**

Kim DeMutsert

### **Ph.D. Students**

Adrian Dahood (2017)

Treda Grayson (2019)

Peter Jacobs (2020)

### **M.S. Students**

Samantha Alexander (2020)

Casey Pehrson (2020)

Jessamine Melton (2019)

Christopher Bodner (2019)

Greg Foster

### **Ph.D. Students**

Golala Arya (2017)

Arion Leahigh (2019)

Elizabeth Lang (2019)

Carol Ajjan (2020)

Hadijatu Kamara

Allison Burgess

Matthew Badia

Cooper Burgin

Carissa Hunter

Batool Murtadha

### **MS Students**

Stephanie Gordon

June Kang

Miguel Rivers

Brittany Harris

Amy Fowler

### **Ph.D. Students**

Daya Hall-Stratton

Lauren Koban

Alexander Mott

Darby Pochtar

### **M.S. Students**

Christina Seay

Sarah Greenberg

Julia Czarnecki

Scott Glaberman

### **Ph.D. Students**

Samantha Mohny

Robert Posont

### **M.S. Students**

Cheyenne Hawkins

Lauren Hawley  
R. Christian Jones  
Ph.D. Students  
Richard Groover  
Natalie Hall  
Suzee Poudel  
Kristyn DeMarco  
M.S. Students  
Larin Isdell  
Kristen Reck  
Morgan Collier  
Emily Vorek  
Jackie Davis  
Courtney Bridges  
Samantha Mohnery  
Randy McBride  
Ph.D. Students  
Joao Silverira-Meyers  
M.S. Students  
Catherine Ipsan  
Sherry Young  
Elizabeth Tedder  
Jennifer Salerno  
Ph.D. Students  
Alexis Berger  
Jordan Sims  
M.S. Students  
Elizabeth Rush  
Kim Magalona  
Valerie Nguyen  
Dann Sklarew  
Ph.D. Students  
Ross Bair  
Rupal Mangukiya  
Adam Carpenter  
Christopher Bodner  
Doreen Peters  
M.S. Students  
William Harper  
Carolyn Metcalf  
Sarah Roth  
Charlotte Joannidis  
Christophe Poole  
Jazmin Golden

Sarah Roth  
Cindy Smith  
Ph.D. Students  
Chelsea Gray  
Bria Briant  
M.S. Students  
Charlotte Joannidis  
Kay Pontarelli  
Ryan McIntyre  
Matthew Sheik  
Karl Froscheiser  
Hannah Wood  
Kate Ritzel  
Benoit Van Aken  
Ph.D. Students  
Brandi Williams  
Eva-Maria Rudler  
Ayesha Karamat  
Aaron Newborn  
Fanella Zamcho  
M.S. Students  
Alison Gomeiz  
Steven Chan

**Post-Docs**

Randy McBride  
Dr. Chris Seminack

**Students Financially Supported**

**Undergraduate Students**

See Undergraduate Mentor List above. Most of those students were supported in some way.

**Graduate Students**

Kim DeMutsert  
C.J. Schlick (2016-2019)  
Beverly Bachman (2016-2021)  
Sammy Alexander (2016-2020)  
Amanda Sills (2016)  
Casey Pehrson (2016-2017)  
Sarah Marriott (2019-2020)  
Jessie Melton (2017-2018)  
Rachel Kelmartin (2017-2022)  
Chris Bodner (2018-2019)



Chris Martin (2019-  
 Tanya Ramseyer (2019-  
 Brian Kim (2019-  
 Phillip Latasa (2019-  
 Diana Belman (2019-  
 Jeremy Williams (2019-  
 Greg Foster  
 Tabitha King (2016-2018)  
 Maziar Nourizadeh (2017)  
 Lisa McAnulty (2017)  
 Michael Cagle (2017-2018)  
 Amy Fowler  
 Julia Czarnecki (2017-2018)  
 Alex Mott (2018-2020)  
 Daria Malyukova (2019-2020)  
 Daya Stratton-Hall (2020-2022)  
 Scott Glaberman  
 Lauren Hawley (2021-2022)  
 Cheyenne Hawkins (2021-2022)  
 Samantha Mohny (2021-2022)  
 R. Christian Jones  
 Chelsea Gray (2016-2022)  
 Larin Isdell (2016)  
 Kristen Reck (2016-2018)  
 Chelsea Saber (2016)  
 Sam Mohny (2019-2022)  
 Morgen Collier (2017)  
 Jackie Davis (2020)  
 Reid Nelson  
 Breanna Hart (2021)  
 Jennifer Salerno  
 Alexis Berger (2020-2022)  
 Cindy Smith  
 Average of 25 part-timers/semester delivering 45 full day Watershed Education  
 Programs annually (2017 – 2022)  
 R. McIntyre, H. Wood, L. Stedelbauer. Invasive Wetland Plant Mapping.  
 C. Gray: Oversee her PEREC social media, website, blogging, and video creation  
 (2016-2022)  
 M. Earl: Oversee Potomac Science Center Landscape Architect Foundation case  
 study (2019 – 2020)  
 R. LeBlanc, E. Striano, freelance science writers, deliver relevant EcoPark content  
 monthly: (2017 – 2018)  
 Kristen Reck: developing AP Environmental Science curriculum focused around  
 landfill data (2017)

Benoit Van Aken

Steven Chan (2018-20

Adam Schwoerer (2017)

Aaron Newborn (2020-

Fanella Zamcho (2020-

Ayesha Karamat (2020-

Alison Gomeiz (2020-

#### **Post-Docs**

Kim DeMutsert

Dr. Alex van Plantinga

Randy McBride

Dr. Chris Seminack

#### **High School Student Mentoring**

Reid Nelson

Sarah Cho, Aspiring Scientist Summer Internship Program (2022)

Smrithii Ramesh, Aspiring Scientist Summer Internship Program (2022)

#### **On-campus educational activities sponsored (e.g., lecture series, conferences)**

Amy Fowler

Summer 2017, 2018, 2019, 2020: Led summer seminar series for undergrads, grad, faculty, and staff at the PSC

Summer 2017, 2018, 2019, 2020: Weekly educational and professional workshops for 26 students as part of the OSCAR Summer Team Impact grants

Seminar Chair, 2022 summer seminar series at the Potomac Science Center focused on all aspects of water (science, art, and culture), and open to the public. See the speakers here: <https://ise.gmu.edu/water-watershed-and-aquatic-teams-for-education-and-research-at-mason/>

KIM

#### **Community-based educational activities sponsored**

Jennifer Salerno

2022 College of William and Mary iGEM team, Invited to meet with them to discuss their synthetic biology project and provide recommendations on methodology and application of results.

2021 Fairfax High School Science Honor Society. Invited to speak to 100 students about scientific research and career paths.

2019 McKinley Elementary School, Arlington, VA. Spoke to six 5th grade classes (125 students) about coral reef science and conservation.

2019 Jefferson Houston Elementary School, Alexandria, VA. Spoke to a kindergarten class of 20 students about coral reef science and conservation.

2018 Northwestern University's Weekend Enrichment Program at the Center for Talent Development.

2018 McKinley Elementary School, Arlington, VA. Spoke to six 5th grade classes about coral reef science and conservation.

2017 Virginia delegation organizer, Blue Vision Summit Healthy Oceans Hill Day, Washington, DC.

2017 Northwestern University's Weekend Enrichment Program at the Center for Talent Development

2021 Volunteer Question Grader, Chesapeake Bay Bowl, George Mason University (online), February 27

2020 Science Fair Project Advisor, Lake Braddock Secondary Students, Project evaluating the efficiency of the bacteria *Rhizobium leguminosarum* in soybean plant growth under different environmental conditions.

2019 Volunteer, Chesapeake Bay Bowl, Potomac Science Center, George Mason University, Woodbridge, VA.

2019 Volunteer Science Fair Judge for Microbiology, Fairfax High School, Fairfax, VA.

2018 Consultant for First Lego League (FLL) team (Flaming WizBots) from Floris Elementary, Fairfax, VA (6 students in 6th grade worked on a method to culture algae in space).

2018 Meet the Scientist Volunteer, USA Science and Engineering Festival, Washington, DC.

2017 Volunteer Science Fair Judge for Microbiology, Fairfax High School, Fairfax, VA.

Scott Glaberman

2021-2022) STEAM Night Volunteer Presenter, Laurel Ridge Elementary School, Fairfax, VA.

### **Honors and Awards for Teaching**

Amy Fowler

2022 Favorite Professor of a Peter N. Stearns Provost Scholar Athlete – GMU Provost's Office

2021 George Mason University OSCAR Mentoring Excellence Award

2019 Nominated for a 2020 George Mason University Teaching Excellence Award

Greg Foster

2017 Teacher of Distinction Award

2018 OSCAR Mentoring Excellence Award

Cindy Smith

High school students trained in my NOAA Marine Debris Prevention project won the President's Environmental Youth Award Administered by EPA for #plasticfreePWC

George Mason University Teaching Excellence Award with special recognition for High-impact Teaching

Mason Seeds of Change Outstanding Partnership Award – GMU Arboretum Team

Mason Prince Wm Conservation Alliance Wildlife Champion - creating outdoor education programs and talented visual storytelling which inspires people to take a closer look at nature.

Prince William County VA Green Community Award - Directorship of enviro-stewardship activities

Seeds of Change Outstanding Community Partnership – In Collaboration with NoVA Outside

Nominated: Seeds of Change Engaged Faculty Award; Teaching Excellence Award  
Prince Wm Chamber of Commerce Innovative Partnership of the Year – w/ PWC Solid Waste Division

Nominated: Career Connection Faculty Award, GMU

Jack Wood Town Gown Relations - Watershed Education Program partners Fairfax Co Schools & Parks

Finalist: Teaching Excellence Award

Virginia Mathematics and Science Coalition - 'STEM Programs that Work' w/ Prince Wm Schools

Business Partnership of the Year Award - GMU-PEREC w/ Prince William County Schools

'Partners in Conservation' Award - National Park Service

## **Training and Dissemination Activities**

### **Workshops, in service presentations, campus- or community-based presentations or trainings**

Amy Fowler and Cindy Smith funded by VA Dept of Ed, 1 day in the field workshop for local K-12 teachers on invasive species in Virginia

### **Media presentations, interviews and press releases**

2022 Hunger-free campuses invest in Virginia. Testimony to Virginia House of Delegates, Education Committee, Higher Education Subcommittee.

2022 A theory of change for hunger-free campuses. Briefing for staff of Commonwealth of Virginia Delegate Danica Roem, Fairfax, VA.

2022 Photo of the Week. VA Legislators Visit PSC. Friday Edition: Around Mason.

2022 Community approach to reducing single-use plastic beverage bottles wins EPA award, <https://www.gmu.edu/news/2022-08/community-approach-reducing-single-use-plastic-beverage-bottles-wins-epa-award>

2022 ESP welcomes back their newly-minted 2021 COVES Fellows.

<https://science.gmu.edu/news/esp-welcomes-back-their-newly-minted-2021-coves-fellows>

2022 Protecting Sharks Isn't Controversial at All. <https://science.gmu.edu/news/protecting-sharks-isnt-controversial-all>

2201. Sklarew, D. "Kelso's Krew" gathers to celebrate Don Kelso. Mason Spirit, Fall 2021, p. 53.

2020 Senior's pursuit of a degree heats up. <https://www.gmu.edu/news/2020-11/seniors-pursuit-degree-heats>

2019 Student Story: REU Internship at the Gulf of Maine Research Institute.

<https://science.gmu.edu/news/student-story-reu-internship-gulf-maine-research-institute>

2018 Dr. Cynthia Smith and a pollinator garden...in a landfill.

<https://science.gmu.edu/news/local-news-dr-cynthia-smith-and-pollinator-gardenin-landfill>

Cindy Smith

2022. Hinton, J. (reporter) May 19, 2022. Are the cicadas coming back to the DMV? Brood X stragglers could emerge this year. WJLA News- TV and radio <https://www.msn.com/en->

[us/news/us/are-the-cicadas-coming-back-to-the-dmv-brood-x-stragglers-could-emerge-this-year/ar-AAXroa8](https://www.wjla.com/news/local/90-degree-days-cicadas-dc-area)

2021 Hinton, J. (reporter) May 21, 2021. With 90-degree days, cicadas will take over the DC area. ABC7 News. <https://wjla.com/news/local/90-degree-days-cicadas-dc-area>

2021 Muzyk, C. (reported) May 27, 2021. Where are the cicadas? Turns out, Prince William mostly missed Brood X. Prince William Times. [https://www.princewilliamtimes.com/news/where-are-the-cicadas/article\\_bad761e2-beff-11eb-830f-4bd4c47b948a.html](https://www.princewilliamtimes.com/news/where-are-the-cicadas/article_bad761e2-beff-11eb-830f-4bd4c47b948a.html)

2021 C. Wenks. (reporter) May 30, 2021. Cicada Olympics engages curiosity and competition. InsideNoVa. [https://www.insidenova.com/headlines/cicada-olympics-engages-curiosity-and-competition/article\\_9c10bda8-c0fd-11eb-bb92-4bdaa830d6d6.html](https://www.insidenova.com/headlines/cicada-olympics-engages-curiosity-and-competition/article_9c10bda8-c0fd-11eb-bb92-4bdaa830d6d6.html)

Dann Sklarew

2022. Auger, B. Mason's 10th annual Day of Service partners with the Patriot Pantry to address student food insecurity. The George, Sept. 7. URL: <https://www.gmu.edu/news/2022-09/masons-10th-annual-day-service-partners-patriot-pantry-address-student-food-insecurity>

2022 Persky, A. S. Seed funding promotes Mason sustainability projects. The George, April 21. URL: <https://www.gmu.edu/news/2022-04/seed-funding-promotes-mason-sustainability-projects>

2021 Hollis, J. Mason community invited to join Climate Action Plan Town Hall to be held on Friday. The George, Nov. 17. URL: <https://www2.gmu.edu/news/2021-11/mason-community-invited-join-climate-action-plan-town-hall-be-held-friday>

2021 Rich, C. 2021. Environmental science class puts sustainability in action. The George, May 7. URL: <https://www2.gmu.edu/news/2021-05/environmental-science-class-puts-sustainability-action>

2017 McLean, B. 2017. Mason earns international gold status for sustainability report. News at Mason, Dec. URL: <https://www2.gmu.edu/news/493181>

2017 Worker, A. 2017. County pursues environmental goals. Fairfax Connection, July 27, p. 3.

2017 Rogers, A. 2017. Where cars park, green roof grows. Mason Spirit, Summer, p. 8. URL:

<https://spirit.gmu.edu/2017/08/where-cars-park-green-roof-grows-video>

2017 Dobrović, K. and A.K. Smith. 2017. Make a difference. URL: <https://youtu.be/k-Fdsrkz-N0>

Kim DeMutsert

De Mutsert, K. (2021). "Identifying Effective Strategies to Protect Louisiana's Precious Wetlands." Scientia, Earth and Environment, Editors Pick, Engineering and Tech. July 14, 2021. <https://doi.org/10.33548/SCIENTIA699>

Walker, N. J., L. Lee, K. Rootes-Murdy, C. Dolloff, V. Prasad, K. de Mutsert and A. A. Aguirre. (2017).

"Stock assessment, prioritization of habitat, conservation priorities, and cultural significance of the American eel (*Anguilla rostrata*) in the Chesapeake Bay Watershed." FISH Magazine. Hull, UK, Institute of Fisheries Management: 3.

"A Crude Awakening in the Gulf of Mexico" By Michelle Nijhuis for Smithsonian Magazine, September 2010. Reported story on the Deepwater Horizon Oil Spill for which De Mutsert was interviewed and took the reporters into the field. <https://www.smithsonianmag.com/science-nature/a-crude-awakening-in-the-gulf-of-mexico-55166740/>

"After the Oil" By Amanda Mascarelli for Nature, Vol. 467. September 2010. Reported story on the Deepwater Horizon Oil Spill for which De Mutsert was interviewed and took the reporters into the field. <https://www.nature.com/articles/467022a.pdf?origin=ppub>

Amy Fowler

- 2022 GMU “Feature” ad campaign. Video about Fowler research: Zombie crab research and their effects on the Chesapeake Bay. <https://www.youtube.com/watch?v=2c54i1xPCxM>
- 2022 With Good Reason podcast. Podcast in which Fowler is interviewed: Attack of the zombie crabs. <https://www.withgoodreasonradio.org/episode/attack-of-the-zombie-crabs/>
- 2020 GMU Mason Impact video. Video on Fowler-led Summer Team Impact Project: Ecotoxicology of Microplastics in the Potomac River Watershed. <https://www.youtube.com/watch?v=HYjnW7Y0ET0>.
- 2019 Gross Science video, Anna Rothschild. Video based on interview with Fowler: The castrating zombie parasite. <https://www.youtube.com/watch?v=rQdfBfqHnLs&t=1s>
- 2019 GMU Potomac Environmental Research and Education Center video. Video of Fowler explaining her research to Virginia legislators: Zombie crabs. <https://www.facebook.com/PercecGMU/videos/2183509528372078>.
- 2017 GMU Potomac Environmental Research and Education Center video. Video on Fowler-led Summer Team Impact Project: Micropollutants in the Potomac River. <https://www.youtube.com/watch?v=cTpO-M2q4o8>.
- 2021 GMU News story and interview. Story on Fowler-led laboratory research: The invasion of the body snatchers...in the Chesapeake Bay. <https://www.gmu.edu/news/2021-10/invasion-body-snatchersin-chesapeake-bay>.
- 2021 *Hakai* Magazine feature article. Story by Peter Andrey Smith about Fowler-led field and laboratory research: Hitchhiking with Bloodworms. <https://hakaimagazine.com/features/hitchhiking-with-bloodworms/>
- 2021 *The Atlantic* reprinted the *Hakai* Magazine feature article. Story by Peter Andrey Smith about Fowler-led field and laboratory research: Big Bait Knows It Has A Problem. <https://www.theatlantic.com/science/archive/2021/05/bait-worm-invasive-species/618961/>
- 2020 *Hook, Line & Science* feature article. Story by Scott Baker and Sara Mirabilio with summary compiled by Fowler: What Should We Do with Unused Marine Bloodworms and Packing Material? <https://ncseagrant.ncsu.edu/hooklinescience/2020/06/08/what-should-we-do-with-unused-marine-bloodworms-and-packing-material/>

Jen Salerno

- 2020 Summer Team Impact Project 2020: Ecotoxicology of Microplastics in the Potomac River Watershed
- 2020 Summer OSCAR Program. “Oil spills are bad for shipwrecks.” October 18, 2018. *Hakai* Magazine

## **Translational Activities**

### **Partnerships with industry, government or other institutions to promote translation of scholarly work**

R. Christian Jones

Fairfax County Department of Public Works and Environmental Services  
Alexandria Renew Enterprises

Cindy Smith

Greater Prince William Trails Coalition – Members- Nat’l Park Service, Fish and Wildlife Service, regional and county parks, VDOT, Parks, Rec and Tourism  
VSELA – VA Science Ed Leadership Assoc.

NAEYC Early Childhood Science Education  
 VRUEC - VA Resource Use Education Council  
 Mid-Atlantic Marine Debris Action Plan  
 Virginia Turfgrass Council Legislative Committee and Environmental Institute  
 VA Plastic Pollution Prevention Network  
 Pr. Wm County Solid Waste Advisory Group – Educational Team 2014 – 2022  
 Chesapeake Bay Education Workgroup 2016 – 2022  
 Prince Wm County Business Industry Gov’t LEEP environmental leaders’ group 2013 – 2019  
 VA Tech, Virginia Water Resources Research Center, Water Educator Team 2017 – 2018  
 Board of Directors: Grace Children’s Learning Center (preK– K), Manassas VA 2000 – 2013

Dann Sklarew

2017 – 2022 Sustainability advisor, International Advisory Board for Student Affairs,  
 Universidad de Monterrey, Mexico.  
 2021 – 2022 Co-author of and lead academic advocate for Virginia Hunger-Free Campus Grant Program  
 legislation (2022 House Bill 629) and contributor to SNAP access bill (2022 HB 582)

## Potomac Environmental Research and Education Center Research and Scholarly Activity 2017-2022

### Publications (PEREC Faculty in Bold)

#### Peer-Reviewed Journal Articles

- Wassick A, Hughes M, Baeza A, **Fowler AE**, Wilber D. 2017. Reproductive characteristics of the marine green porcelain crab (*Petrolisthes armatus* Gibbes, 1850) in its introduced range favor further range expansion. *Aquatic Invasions* 12(4): 469-485.
- Wassick A, Baeza A, **Fowler AE**, Hughes M, Wilber D. 2017. Spacing and movement in the green porcelain crab *Petrolisthes armatus*: evidence for male competition and mate guarding. *Marine and Freshwater Behaviour and Physiology* 50(2): 165-177. DOI: 10.1080/10236244.2017.1347020
- DeMutsert, K.**, A. Sills\*, C.J.C. Schlick, and **R.C. Jones**. 2017. Successes of restoration and its effects on the fish community in a freshwater tidal embayment of the Potomac River, USA. *Water* 9(6): 421. doi: 10.3390/w9060421.
- Graziano, A.P.\* and **R.C. Jones**. 2017. Diel and seasonal patterns in continuously monitored water quality at fixed sites in two adjacent embayments of the tidal freshwater Potomac River. *Water* 9 (8): 624. Open access. <https://doi.org/10.3390/w9080624>.
- Arya G\*, Tadayon S, Sadighian J, Jones J, **de Mutsert K**, Huff TB, **Foster GD**. 2017 Pharmaceutical chemicals, steroids and xenoestrogens in water, sediments and fish from the tidal freshwater Potomac River (Virginia, USA). *J Environ Sci Health A Tox Hazard Subst Environ Eng*. Jun 7;52(7):686-696. PubMed PMID: 28448746.
- De Mutsert, K.**, Lewis, K., Milroy, S., Buszowski, J., Steenbeek, J. 2017. Using ecosystem modeling to evaluate trade-offs in coastal management: Effects of large-scale river diversions on fish and fisheries. *Ecological Modelling* 360, 14–26. <https://doi.org/10.1016/j.ecolmodel.2017.06.029>
- Gruss, A., Rose, K. A., Simons, J., Ainsworth, C. H., Babcock, E. A., Chagaris, D. D., **De Mutsert, K.**, Froeschke, J., Himchak, P., Kaplan, I. C., others. 2017. Recommendations on the use of ecosystem modeling for informing ecosystem-based fisheries management and restoration outcomes in the Gulf of Mexico. *Marine and Coastal Fisheries*, 9(1), 281--295. Journal impact factor: 1.663. (5%) <https://doi.org/10.1080/19425120.2017.1330786>. Earned AFS Best Paper Award.
- De Mutsert, K.**, Sills, A.\* , Schlick, C.\* , **Jones, R. C.** 2017. Successes of restoration and its effect on the fish community in a freshwater tidal embayment of the Potomac River, USA. *Water*, 9(6), 421. Journal impact factor: 2.056. (90%) <https://doi.org/10.3390/w9060421>
- Vasslides, J. M., **De Mutsert, K.**, Christensen, V., Townsend, H..2017. Using the Ecopath with Ecosim modeling approach to understand the effects of watershed-based management actions in coastal ecosystems. *Coastal Management*, 45(1), 44--55. <https://doi.org/10.1080/08920753.2017.1237241>
- Forsström T, Vesakoski O, Riipinen K\*\*, **Fowler AE**. 2018. Post-invasion demography and persistence of a novel functional group in an estuarine system. *Biological Invasions* 20(11): 3331-3345.



- Frischer ME, **Fowler AE**, Brunson JF, Walker AN, Powell SA, Price AR, Bulski K, Frede RL, Lee RF. 2018. Pathology, effects, and transmission of black gill in commercial penaeid shrimp from the South Atlantic Bight. *Journal of Shellfish Research* 37(1): 149-158.
- Wieland R, **Fowler AE**, Miller AW. 2018. Naked in trays: How the trade in live marine baitworms could decrease species invasions. *Management of Biological Invasions* 9(2) 79-84.
- Carlton JT, **Fowler AE**. 2018. Ocean rafting and marine debris: A broader vector menu requires a greater appetite for invasion biology research support. *Aquatic Invasions* 13(1): 4-6.
- Arendt MD, Schwenter JA, Dingle J, Evans CA, Waldrop E, Czwartacki B, **Fowler AE**, Whitaker JD. 2018. "A "BRD" in the hand worthy of four in the trap: Validation of optimal bycatch reduction device (BRD) size to maximize blue crab (*Callinectes sapidus*) entry and diamondback terrapin (*Malaclemys terrapin*) exclusion through theoretical modeling and application. *North American Journal of Fisheries Management* 38(2): 411-423.
- Gooding EL\*, **Fowler AE**, Knott D, Dillon RT Jr, Brown T\*, Kendrick MR, Kingsley-Smith P. 2018. Life history and phenological characteristics of invasive Island apple snails, *Pomacea maculata* (Perry, 1810), in stormwater retention ponds in coastal South Carolina, USA. *Journal of Shellfish Research* 37(1): 229-238.
- Sklarew, D.** and J. Sklarew. 2018. Integrated water-energy policy for sustainable development. *Foresight and STI Governance* 12(4): 10-19. URL: <https://foresight-journal.hse.ru/en/2018-12-4/229685190.html>
- Seminack, C.T.\* and **McBride, R.A.**, 2018. A life-cycle model for wave-dominated tidal inlets along passive margin coasts of North America. *Geomorphology*, v. 304. pp. 141-158. <https://doi.org/10.1016/j.geomorph.2017.12.038>
- Hamdan, L.J., **Salerno, J.L.**, Joye, S.B., and Damour, M. 2018. The impact of the Deepwater Horizon blowout on historic shipwreck-associated sediment microbiomes in the northern Gulf of Mexico. *Scientific Reports*, 8, Article number: 9057. doi: <https://doi.org/10.1038/s41598-018-27350-z>
- Salerno, J.L.**, Little, B., Lee, J., and L.J. Hamdan. 2018 Exposure to crude oil and chemical dispersant may impact marine microbial biofilm composition and steel corrosion. *Frontiers in Marine Science* 5, doi: <https://doi.org/10.3389/fmars.2018.00196>
- Foster G**, Walls C\*, McEachern\*, Huff T, **McBride R**. 2018. Sedimentary profiles of pollution marker chemicals along a large tributary of Chesapeake Bay (mid-Atlantic USA). *Journal of Soils and Sediments* 19(3):1511-1526. Available from: <http://link.springer.com/10.1007/s11368-018-2157-2> DOI: 10.1007/s11368-018-2157-2
- Kolker, A. S., Dausman, A. M., Allison, M. A., Brown, G. L., Chu, P. Y., **De Mutsert, K.**, Fitzpatrick, C., Henkel, JR, Justic, D., Kleiss, B. 2018. Rethinking the river. *EOS* 99. *Journal Impact Factor* 1.183. (10%) <https://doi.org/10.1029/2018EO101169>.
- Cushman EL, **Fowler AE**, Robinson JD, Walsh R, Darden TL. 2019. Population structure and genetic diversity of spawning Atlantic horseshoe crabs along the South Carolina coast. *Journal of Shellfish Research* 38(3): 655-663.
- Krueger-Hadfield S, Blakeslee AMH, **Fowler AE**. 2019. Incorporating ploidy diversity into ecological and community genetics. *Journal of Phycology* 55(6): 1198-1207.
- Mack K, Podolsky R, Shervette V, **Fowler AE**, Wilber D. 2019. Spatial and temporal associations between native crabs and the invasive green porcelain crab, *Petrolisthes armatus*, throughout its northernmost invaded range. *Estuaries and Coasts* 42(2): 537-547.

- Liversage K, Kotta J, Aps R, Fetissov M, Nurkse K, Orav-Kotta H, Rätsep M, Forsström T, **Fowler AE**, Lehtiniemi M, Normant-Saremba M, Puntila-Dodd R, Arula T, Hubel K, Ojaveer H. 2019. Knowledge to decision in dynamic seas: Methods to incorporate non-indigenous species into cumulative impact assessments for Maritime Spatial Planning. *Science of the Total Environment* 658: 1452-1464.
- Puntila-Dodd R, Loisa O, Riipinen K\*\*, **Fowler AE**. 2019. A taste for aliens: Contribution of a novel prey item to native fishes' diet. *Biological Invasions* 21(9): 2907-2917.
- Seminack, C.T.\* and **McBride, R.A.**, 2019. New perspectives on the geomorphic, sedimentologic, and stratigraphic signatures of former wave-dominated tidal inlets: Assateague Island, Maryland, USA. *Journal of Sedimentary Research*, 89(4), pp. 312-334.  
<https://doi.org/10.2110/jsr.2019.14>
- Mugge, R. L., Brock, M. L., **Salerno, J. L.**, Damour, M., Church, R. A., Lee, J. S., & Hamdan, L. J. 2019. Deep-Sea Biofilms, Historic Shipwreck Preservation and the Deepwater Horizon Spill. *Frontiers in Marine Science*, 6. <https://doi.org/10.3389/fmars.2019.00048>
- \*Li X, **Van Aken B**, Mckenzie E, Zhang H, Abboud B, Davenport W. 2019. Evaluating the environmental impact of selected chemical de-icers. *Transportation Safety and Environment*, 1(3), 220–229. <https://doi.org/10.1093/tse/tdz015>
- \*Yu H, Khan AU, Subramanian S, Dorothy Vesper D, **Van Aken B**. 2019. Microbial communities in Chesapeake & Ohio Canal National Historical Park and their function as indicators of water quality. *Geomicrobiology J.* DOI: 10.1080/01490451.2019.1612969
- Van Aken B** (2019). Response to the note to editor: Comments on "transcriptomic response of *Arabidopsis thaliana* exposed to hydroxylated polychlorinated biphenyls (OH-PCBs)". *Int. J. Phytorem.*, DOI: 10.1080/15226514.2019.1645090
- \*Subramanian S, Tehrani R, **Van Aken B**. 2019. Hydroxylated PCBs Affect *Arabidopsis thaliana* via Inhibition of the Brassinosteroid Synthesis. *Int. J. Phytorem.*  
[doi.org/10.1080/15226514.2018.1523872](https://doi.org/10.1080/15226514.2018.1523872)
- Jankowski MD, **Glaberman S**, Kimball DB, McCabe KJ, Fair JM. 2019. Sialic Acid Quantity and Glycosidic Linkage on Avian Erythrocytes. 2019. *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*, 238, 110336.
- Glaberman S**, Kiwiet J\*, Aubee CB. 2019. Evaluating the role of amphibians as surrogates for fish in ecological risk assessment. *Chemosphere* 235:952-958.
- Quesada V,...**Glaberman S**, et al. 2019. Giant tortoise genomes provide insights into longevity and cancer resistance mechanisms. *Nature Ecology and Evolution*.
- Adebola, T.\*, **De Mutsert, K.**. 2019. Comparative network analyses for Nigerian coastal waters using two Ecopath models developed for the years 1985 and 2000. *Fisheries Research*, 213, 33--41. Journal impact factor: 1.903. (40%) <https://doi.org/10.1016/j.fishres.2018.12.028>.
- Schlick, C.J.C.\*, **De Mutsert, K.** 2019. Growth of adult river herring that spawn in tributaries of the Potomac River in northern Virginia. *Fishery Bulletin*, 117. Journal impact factor: 1.135. (35%) DOI: 10.7755/FB.117.1-2.7 <https://spo.nmfs.noaa.gov/content/fishery-bulletin/growth-adult-river-herring-spawn-tributaries-potomac-river-northern>
- Adebola, T.\*, **De Mutsert, K.** 2019. Investigating Fishing Impacts in Nigerian Coastal Waters Using Marine Trophic Index Analyses. *Marine and Coastal Fisheries*, 11(4), 287--294.  
<https://doi.org/10.1002/mcf2.10077>.

- Chagaris, D., Sagarese, S., Farmer, N., Mahmoudi, B., **De Mutsert, K.**, VanderKooy, S., Patterson, III, W. F., Kilgour, M., Schueller, A., Ahrens, R., others 2019. Management challenges are opportunities for fisheries ecosystem models in the Gulf of Mexico. *Marine Policy*, 101, 1--7. Journal impact factor: 2.610. (10%) <https://doi.org/10.1016/j.marpol.2018.11.033>.
- Adebola, T., **De Mutsert, K.** 2019. Spatial simulation of redistribution of fishing effort in Nigerian coastal waters using Ecospace. *Ecosphere*, 10(3), e02623. <https://doi.org/10.1002/ecs2.2623>
- Dahood, A., Watters, G. M., **De Mutsert, K.** 2019. Using sea-ice to calibrate a dynamic trophic model for the Western Antarctic Peninsula. *PloS one*, 14(4), e0214814. <https://doi.org/10.1371/journal.pone.0214814>.
- Tepolt CK, Blakeslee AMH, **Fowler AE**, Darling JA, Torchin ME, Miller AW, Ruiz GM. 2020. Strong genetic structure in a widespread estuarine crab: A test of potential versus realized dispersal. *Journal of Biogeography* 47: 2432-2542.
- Carlton JT, Blakeslee AMH, **Fowler AE**. 2020. Accidental associates are not symbionts: The absence of a non-parasitic endosymbiotic community inside the common periwinkle *Littorina littorea* (Mollusca: Gastropoda). *Marine Biology* 167: 97.
- Fowler AE**, Blakeslee AMH, Bortolus A, Dias J, Schwindt E, Tepolt CK. 2020. Tenth International Conference on Marine Bioinvasions (ICMB-X): Celebrating current research and innovations while bringing recognition to pressing issues and lingering questions. *Aquatic Invasions* 15: 1-10.
- Fowler AE**, Blakeslee AMH, Canning-Clode J, Repetto M\*\*, Ruiz GM, Miller AW. 2020. A baitbox for all seasons: Temporal shifts in a vector's propagule supply characteristics and implications for invasion ecology. *Marine Ecology Progress Series* 641: 13-24.
- Gooding EL\*\*, Kendrick MR, Brunson JF, Kingsley-Smith PR, **Fowler AE**, Frischer ME, Byers JE. 2020. Black gill increases the susceptibility of white shrimp, *Penaeus setiferus* (Linnaeus, 1767), to common estuarine predators. *Journal of Experimental Marine Biology and Ecology* 524: 151284.
- Hamilton K\*, Burnett L, Burnett K, Kalisperis R, **Fowler AE**. 2020. Physiological impacts of time in holding ponds, biomedical bleeding, and recovery on the Atlantic horseshoe crab, *Limulus polyphemus*. *Comparative Biochemistry and Physiology, Part A* 239: 110554.
- Tepolt CK, Darling JA, Blakeslee AMH, **Fowler AE**, Torchin ME, Miller AW, Ruiz GM. 2020. Recent introductions reveal differential susceptibility to parasitism across a coevolutionary mosaic. *Evolutionary Applications* 13: 545-558.
- Nelson, T. R.**, C. J. Michel, M. P. Gary, B. M. Lehman, N. J. Demetras, J. J. Hammen, M. J. Horn. 2020. Effects of artificial lighting at night (ALAN) on predator density and salmonid predation. *Transactions of the American Fisheries Society* <https://doi.org/10.1002/tafs.10286>.
- Nelson, T. R.**, and S. P. Powers. 2020. Estimates of Red Drum Mortality via Acoustic Telemetry. *Marine and Coastal Fisheries* 12(1):78-97.
- Nelson, T. R.**, and S. P. Powers. 2020. Elemental concentrations of water and otoliths as salinity proxies in a northern Gulf of Mexico estuary. *Estuaries and Coasts* doi:10.1007/s12237-019-00686-z
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- Jones, R.C., K. deMutsert, B. Van Aken, and A. Fowler.** 2022. An Ecological Study of Hunting Creek – 2021. Final Report. 188 pp. <https://perec.science.gmu.edu/wp-content/uploads/2022/04/HC-2021-Full-Report-Final.pdf>
- Jones, R.C., T.R. Nelson, and A. Fowler.** 2022. An Ecological Study of Gunston Cove: 2021. Final Report. 179 pp. <https://perec.science.gmu.edu/wp-content/uploads/2022/09/GC-2021-Final-Report.pdf>
- Sklarew, D.** 2022. Climate Neutrality Task Force. George Mason University Climate Action Plan, Phase 1: Vision. Mason: Fairfax, VA. 126 pp. (under review; D. Sklarew, lead faculty co-author)
- Sklarew, D.** 2022. Transparency: Key to Transforming Environmental, Social, and Governance (ESG) to Benefit All. Transparency Global: Boca Raton, FL. URL: <https://transparency.global/research/transparency-key-to-transforming-esg-to-benefit-all>

## Conference Presentations

### Poster presentations

- Huff, T., Z. Kassahun, T. King\*, J. Raisigel, **R.C. Jones**, and **G. Foster**. 2017. Pharmaceutical trace organic pollutants in surface water from the tidal freshwater Potomac River: Tandem strong-anion and strong-cation exchange cartridge extractions. American Chemical Society National Fall Meeting, Environmental Chemistry Division, Washington, DC.
- Golala, A\*, **K. De Mutsert**, **R.C. Jones**, T. Huff, and **G. Foster**. 2017. Pharmaceutical chemicals, steroids and xenoestrogens in fish and sediments from the tidal freshwater Potomac River. American Chemical Society National Fall Meeting, Environmental Chemistry Division, Washington, DC.
- Leahigh, A.\*, **RC Jones**, T. Huff and **G. Foster**. 2018. Presence And Spatial Distribution of PPCPs in Water and Sediments From The Tidal Freshwater Potomac River: Evaluation of Two Embayments. American Geophysical Union (AGU) Annual Fall Meeting, Washington, DC.
- Jones, R.C.** and **A. Fowler**. 2018. Benthic Macroinvertebrate Communities in the Tidal Freshwater Potomac River: Synthesis of Data and Index of Biotic Integrity Initiative". Atlantic Estuarine Research Society. Fall Meeting. Rehoboth Beach, Delaware.
- Salerno, J.L.**, \*R. Mugge, B. Little, J. Lee, and L.J. Hamdan. 2018. Impacts of crude oil and dispersant on marine microbial biofilms: Implications for the preservation of historic Gulf of Mexico shipwrecks. Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference, New Orleans, LA.
- Lang, E.\*, **G. Foster**, T. Huff, **R. McBride**, and D. Velinsky. 2018. Legacy Pesticides in Riverine Marsh Sediment Cores from the Tidal Freshwater Potomac River. American Geophysical Union (AGU) Annual Fall Meeting, Washington, DC.
- Leahigh, A.\*, L. McAnulty\*, C. Pham, **R.C. Jones**, **K. DeMutsert** and **G. Foster**. 2018, Presence of Pharmaceutical and Personal Care Products (PPCPs) in Water, Sediments and Fish in The Tidal

- Freshwater Potomac River and Its Tributaries. American Chemical Society National Fall Meeting, Environmental Chemistry Division, Boston, MA.
- McAnulty, L. \*, T. Huff, and **G. Foster**. 2019. Presence and risk assessment of antidepressants in tidal freshwater Potomac River water, sediments, and fish. American Chemical Society National Fall Meeting, Environmental Chemistry Division, San Diego, CA.
- Haji, T. \*, T. Huff, and **G. Foster**. 2019. LC-MS/MS analysis of UV-filter and paraben micropollutants in Potomac River sediments. American Chemical Society National Fall Meeting, Environmental Chemistry Division, San Diego, CA.
- Nguyen, H., Rhoades, B. \*, E. Wigode, **G. Foster** and **D. Sklarew**. 2019. Microplastics' composition and role as vectors for persistent organic pollutants (POPs). OSCAR Summer Celebration of Student Scholarship and Impact, Fairfax, VA.
- Peters, D. \*, **D. Sklarew**, and **G. Foster**. 2019. Microplastic abundance highest near urban areas. Mid-Atlantic Marine Debris Summit, Arlington, VA.
- Rhoades, B. \*, H. Nguyen, E. Wigode, **D. Sklarew**, and **G. Foster**. 2019. Microplastics in the tidal freshwater Potomac River. OSCAR Summer Celebration of Student Scholarship and Impact, Fairfax, VA.
- Salerno, J.L.**, T. Hutchinson\*, and K. Layagala. 2021. Succession of Microbial Biofilms on Post-consumer Microplastics in a Tidal River, World Microbe Forum.
- Badia, M. \* and **G. Foster**. 2022. Bird Feathers as a Method of Reconstructing Historical Exposure to Per- and Polyfluoroalkyl Substances (PFAS). Society of Environmental Toxicology and Chemical 43rd North American National Meeting, Pittsburgh, PA.
- Mohney, S. \*, **S. Glaberman**, and **R.C. Jones**. 2022. Toxic Benthic Cyanobacteria as an Emerging Ecological and Public Health Threat in Virginia. Society for Environmental Contamination and Toxicology, Fall 2022 Meeting.
- Hupp, B.N.**, and J.S. Fehrenbacher. 2022. To be crusted or not to be crusted: Differences in trace element geochemistry between shells of living and dead planktic foraminifera. American Geophysical Union Fall Meeting.
- Hupp, B.N.**, and J.S. Fehrenbacher. 2022. To be crusted or not to be crusted: Differences in trace element geochemistry between shells of living and dead planktic foraminifera. Geological Society of America Annual Meeting.
- Salerno, J.L.**, J.A. Sims, Z.E. Combs\*, E. Peters. 2022. Investigation Of The Potential Role Of The Endolithic Microbiome In Stony Coral Tissue Loss Disease. ASM Microbe meeting, Washington D.C.
- Salerno, J.L.**, T. Hutchinson\*, and K. Layagala, K. 2022. Establishment of microbial biofilms on microplastics in a tidal freshwater river. 18th International Symposium on Microbial Ecology, Lausanne, Switzerland.

### Platform Paper Presentations

- Fowler, A.** 2017. Using the baitbox vector to uncover temporal patterns of successful and unsuccessful introductions. 39th Annual Southeastern Phycological Colloquy, Wilmington, NC..
- Fowler, A.** 2017. A baitbox for all seasons: year-round transfer of a community of live marine organisms. International Benthic Ecology Meeting, Myrtle Beach, SC.

- Fowler, A.** 2017. Physiological impacts of the biomedical bleeding process on Atlantic horseshoe crabs in South Carolina. American Fisheries Society Tidewater Meeting, Virginia Beach, VA.
- Sklarew, D.** 2017. Makers as social entrepreneurs for sustainable development. Mason Makers' Seminar.
- Wood, E.T. and **R.A. McBride**. 2017. Reconstruction of paleo-inlet dynamics using sedimentologic analyses, geomorphic features, and benthic foraminiferal assemblages: former ephemeral inlets of Cedar Island, Virginia, USA. American Geophysical Union annual meeting. New Orleans, LA, December.
- Seminack, C.T., **R. A. McBride**, and L.M. Petruny. 2017. Chronostratigraphic analysis of geomorphic features within the former Sinepuxent Inlet: A wave-dominated tidal inlet along Assateague Island, MD, USA. American Geophysical Union annual meeting, New Orleans, LA, December.
- Pitts A., G. Kysar-Mattietti, **R.A. McBride**, C. Di Celma, and E. Tondi. 2017. Geology field camp in Italy: A new international field experience in geologic mapping and geologic hazards. Geological Society of America (GSA) Annual Meeting, Seattle, WA.
- Wood, E.T. and **R.A. McBride**. 2017. Holocene benthic foraminiferal assemblages of tidal-inlet deposits along Cedar Island, VA, USA: insights into storm impacts, breach dynamics, and inlet evolution. Geological Society of America (GSA) Annual Meeting, Seattle, WA.
- Seminack, C.T.\* and **R.A. McBride**. 2017. A life-cycle model for wave-dominated tidal inlets along the North American Atlantic coast: primary factors influencing inlet evolution. Southeastern Geological Society of America (GSA) meeting, Richmond, VA.
- Van Aken, B.,** S. Subramanian. 2017. Transcriptomic response of *Arabidopsis thaliana* using whole-genome expression microarrays. 14th International Phytotechnologies Conference, Montreal, Canada.
- Van Aken, B.,** S. Subramanian, J.L. Schnoor. 2017. Differential response of *Arabidopsis thaliana* to polychlorinated biphenyls (PCBs) and their hydroxylated metabolites (OH-PCBs). 253rd ACS National Meeting, April 1 - 4, San Francisco, CA. Abstract ENVR 164.
- Fowler, A.** 2018. A synthesis of the marine live bait trade as a vector for species invasions. Oral presentation. American Fisheries Society Tidewater Meeting, Beaufort, NC.
- Fowler, A.** 2018. A synthesis of the marine live bait trade as a vector for species invasions. Oral presentation. International Benthic Ecology Meeting, Corpus Christi, TX.
- Fowler, A.** 2018. A synthesis of the marine live bait trade as a vector for species invasions. International Conference on Marine Bioinvasions, Puerto Madryn, Argentina.
- Sklarew, D.,** C.A. Nanni, M. Villanova, R. Mores, A. Weisman and R. Mangukiya\*. 2018. Campus action research advances Sustainable Development Goals. 2018 AASHE Conference & Expo, Pittsburgh, PA.
- Sklarew, D.** 2018. Sustainable development by makers' social entrepreneurship. Mason Makers' Seminar, Fairfax, VA.
- Lang, E., **G.D. Foster, R.A. McBride**, R.A. and D. Velinsky. 2018. Legacy pesticides in riverine marsh sediment cores from the tidal freshwater Potomac River. American Geophysical Union (AGU) National Meeting, Washington D.C.
- Lang, E., **G.D. Foster**, T.B. Huff, **R.A. McBride**, and D. Velinsky. 2018. Pesticide profiles in marsh sediment cores obtained from the tidal Potomac River. 256th American Chemical Society (ACS) National Meeting & Exposition, Boston, MA.

- Subramanian S., R. Tehrani, and **B. Van Aken**. 2018. Hydroxylated polychlorinated biphenyls (OHPCBs) inhibit brassinosteroid synthesis in *Arabidopsis*. 15th International Phytotechnology Conference, Novi Sad, Serbia.
- De Mutsert, K.** 2018. Using ecosystem modeling to evaluate trade-offs in coastal management: effects of large-scale river diversions on fish and fisheries. Keynote speaker at the third workshop of the Network of Experts for Redeveloping Models of the European Marine Environment (MEME): Innovative modelling in support of Marine Strategy Framework Directive (MSFD) implementation. European Commission Joint Research Centre. Brussels, Belgium. (Invited)
- De Mutsert, K.** 2018. Finding beauty in an urban estuary. Keynote speaker at the 70th anniversary of the Atlantic Estuarine Research Society (AERS) meeting. Rehoboth Beach, DE. (Invited)
- Feldman, I. and **D. Sklarew**. 2019. Teaching to the SDGs: experience and resources for business and sustainability curricula. AASHE 2019 – Co-Creating a Sustainable Economy, Spokane, WA.
- Sklarew, D.** 2019. Of plastic nurdles and hungry dolphins in the tidal Potomac River. AERS Spring Meeting, Woodbridge, VA, Apr. 4-6.
- Leahigh, A.\* and **G. Foster**. 2019. Occurrence of Opioids in Water and Sediment Samples from the Potomac River Bays and Estuaries. Platform Presentation At The American Chemical Society National Spring Meeting, Environmental Chemistry Division, Orlando, FL.
- Leahigh, A.\* and **G. Foster**. 2019. Occurrence of Opioids in Water and Sediments from the Tidal Freshwater Potomac River. Atlantic Estuarine Research Society Spring Meeting, Woodbridge, VA.
- Lang, E.\*, **G.D. Foster**, T. Huff, **R. McBride** and D. Velinsky. 2019. Legacy pesticides in riverine marsh sediment cores from the tidal freshwater, oligohaline, and mesohaline zones of the Potomac River. American Chemical Society National Spring Meeting, Environmental Chemistry Division, Orlando, FL.
- Lang, E.\*, **G.D. Foster**, T. Huff, **R. McBride** and D. Velinsky. 2019. Legacy pesticides in riverine marsh sediment cores from the tidal freshwater Potomac River. Atlantic Estuarine Research Society Spring Meeting, Woodbridge, VA.
- Ajjan, C. and **G. Foster**. 2019. Sorption of ciprofloxacin to perfluorinated compounds determined through fluorescence quenching. American Chemical Society National Spring Meeting, Environmental Chemistry Division, Orlando, FL.
- Foster, G.**, A. Leahigh\*, and T. Huff. 2019. Diffusional Fluxes of Pharmaceutical and Personal Care Products Across the Sediment-Water Interface in the Urban Tidal Freshwater Potomac River (Washington, DC). American Geophysical Union (AGU), San Francisco.
- Pitts, A., R.A. **McBride**, **D. Jablonska**, C. DiCelma, and E. Tondi. 2019. Geology field camp in Italy: Apennine Mountains, Vesuvius, and Rome. Geological Society of America (GSA) Annual Meeting, Phoenix, AZ, September.
- Young, S.L., B.A. Klinger, and **R.A. McBride**. 2019. Possible effects of the Loop Current on intensity and rapid intensification of Hurricanes in the Gulf of Mexico. American Association of Geographers National Meeting, Washington D.C.
- Banka D., T. Hutchinson, **B. Van Aken**, **J. Salerno**, and S. Chan\*. 2019. Rainfall Influences on Microbial Community Dynamics in an Urban Watershed. Journal of Student-Scientists' Research, George Mason University.

- Subramanian S, R. Tehrani, **B. Van Aken**. 2019. Understanding the Toxicity of OH-PCBs in *Arabidopsis*: A Transcriptomic Analysis. 252nd ACS National Meeting, Orlando, FL.
- Glaberman S**. 2019. Multispecies sensitivity comparison of nematodes to metals. SETAC North America Annual Meeting, Toronto, Canada. (Invited).
- De Mutsert, K**. 2019. Using a coupled ecosystem modelling approach to evaluate effects of reductions in nutrients and hypoxia on living marine resources. Keynote speaker at the fourth workshop of the Network of Experts for Redeveloping Models of the European Marine Environment (MEME): Innovative modelling in support of Marine Strategy Framework Directive (MSFD) implementation. European Commission Joint Research Centre. Ispra, Italy. (Invited)
- Hansen, B., W. Dripps, S. Raghaven, and **D. Sklarew**. 2020. Integration of the SDGs across curricular/co-curricular programs: shared best practices. Global Conference on Sustainability in Higher Education.
- Zamcho F.\*, A. Newborn\*, S. Subramanian, R. Tehrani, and **B. Van Aken**. 2020. Hydroxylation of PCBs increases their toxicity for *Arabidopsis* through downregulation of xenobiotic response genes and inhibition of brassinosteroid signalling. World Summit Plant Biology, Washington, DC. DOI: 10.46678/PB.20
- Gomez, A.\*, Y. Sun, Z. Wang, and **B. Van Aken**. 2021. Metagenomic analysis of microbial communities in aerobic granules for wastewater treatment. ACS Spring 2021 Meeting.
- Karamat, A.\* and **B. Van Aken**. 2021. Toxicity and metabolism of short-chain per- and polyfluoroalkyl substances (PFAS) in the model plant *Arabidopsis thaliana*. ACS Spring 2021 Meeting.
- Zamcho, F.\*, A. Newborn\*, **B. Van Aken**. 2021. Effects of the environmental contaminant chlortetracycline on the lignocellulosic biomass of *Arabidopsis thaliana*. ACS Spring 2021 Meeting.
- Murtadha, B., S. Yan, U. Ghosh, and **G. Foster**. 2021. Micro-Solid Phase Extraction Method for Analyzing PFAS in Water. Platform Presentation at Environmental Chemistry of Emerging Contaminants Symposium (ECEC21), Champaign, IL.
- Bulls S.B.\*, M. Vazquez, Y. Chiari, V.J. Lynch, and **S. Glaberman**. 2021. Approaches for assess aging-related cellular phenotypes in turtles. SICB Annual Meeting.
- Bejarano A., J.R. Wheeler, R. Puglisi, J. Wolf, **S. Glaberman**, L. Lagadic, Z. Gao, C. Mitchell, F. Sewell, M. Embry. 2021. Control performance of amphibian metamorphosis assays with *Xenopus laevis*. SETAC Latin American Biennial Meeting.
- Wheeler, J.R., R. Puglisi, J. Wolf, A. Bejarano, **S. Glaberman**, L. Lagadic, Z. Gao, C. Mitchell, F. Sewell, Embry M. 2021. Control performance of amphibian metamorphosis assays with *Xenopus laevis*. SETAC Europe Annual Meeting.
- Rosales, S.M.\*, A. Clark, A. Bellantuono, A. April, B. Weiler, C. Kellogg, D. Iwanowicz, E. Muller, G. Cook, J. DelCampo, **J. Salerno**, J. Evans, J. Meyer, J. Stewart, L. Huebner, M. Martinelli, and W. Schill. 2021. Multi-research group response to understand the microbiome of Stony Coral Tissue Loss Disease (SCTLD). 14th International Coral Reef Symposium.
- Glaberman S**. 2021. Integrating High-throughput Toxicity Data into Pesticide Ecological Risk Assessment. SETAC North America Annual Meeting (Virtual). Chosen as live discussion talk.
- Glaberman S.**, Blackwell. 2021. Applying High-Throughput Toxicity Data to Improve Pesticide Ecological Risk Assessment. SETAC North America Annual Meeting. (Invited)

- Fowler, A.** 2022. Population genetics and demography of non-indigenous populations of freshwater Japanese mystery snails in Virginia and Washington, D.C. International Benthic Ecology Meeting, Portsmouth, NH.
- Chrisp, J., M. Angelina, D. Sackett, **R. Nelson**, and T. Farmer. 2022. Exploring Southern Flounder Contingent Diversity, Contribution to Fisheries, and Correlations with Growth and Condition using Natural Tracers of Habitat Use. Gulf States Marine Fisheries Commission Floundering Around Symposium. Baton Rouge, Louisiana.
- Feyrer, F., R. Perry, J. Clause, M. Young, B. Huntsman, V. Larwood, E. Enos, M. Henderson, C. Dick, W. Larson, Y. Shi, C. Michel, and **T. R. Nelson** 2022. Quantifying the importance of predation by piscivorous fishes on juvenile Chinook Salmon survival in the Sacramento San Joaquin Delta. Interagency Ecological Program 2022 Workshop.
- Foster, G.**, U. Ghosh, S. Yan, and B. Murtadh. 2022. Development of novel functionalized polymeric thin films for equilibrium passive sampling of PFAS compounds in surface and groundwater (ER-20-C2-1336). SERDP & ESTCP PFAS Project Meeting, Long Beach, CA.
- Puglisi R., J.R. Wheeler, A.C. Bejarano, J. Wolf, **S. Glaberman**, L. Lagadic, Z. Gao, C.A. Mitchell, F. Sewell, M. Embry. 2022. Control Performance of Amphibian Metamorphosis Assays with *Xenopus laevis*. SETAC North America Annual Meeting, Pittsburgh, Pennsylvania.
- Williams, B.B., A. Newborn\*, **J.L. Salerno**, P. Gillevet, D. Farris, and **B. Van Aken**. 2022. Wastewater-based epidemiology to monitor the spread of SARS-CoV-2 RNA. Presented at the National Organization of Black Chemists or Chemical Engineers National Conference, Orlando, FL
- McCue, L., Hagarty, A., Nowzari, C., Raz, A., Riggi, M., Rosenberg, J., Shishika, D., **Smith, C.**, Nelson, J., 2022. "Work-in-Progress: Development of a new hands-on STEM program for biologically inspired maritime robotics," Ocean and Marine Engineering Division, American Society of Engineering Education Annual Conference, Minneapolis, MN.
- Glaberman S., G. Foster**, and C. Hawkins\*. 2022. Potential risks of pharmaceuticals and personal care products in an urban tributary of the Potomac River. SETAC North America Annual Meeting, Pittsburgh, USA.

### Session Organizer

- Glaberman, S.** 2017. Platform Session Co-Chair: 21st Century Approaches to Toxicity Extrapolation. SETAC 38th Annual North America Conference, Minneapolis, Minnesota.
- Glaberman, S.** 2018. Platform Session Co-Chair: Novel Approaches for Understanding Diversity in Species Sensitivity to Chemicals. SETAC 39th Annual North America Conference, Sacramento, California.
- Glaberman, S.** 2018. Platform Session Co-Chair: Incorporating amphibians and reptiles into ecological risk assessment: data needs, understanding exposure, and the use of surrogate species. SETAC Europe 28th Annual Meeting, Rome, Italy with John Elliot.
- Glaberman, S.** 2019. Platform Session Co-Chair: Approaches for Understanding Diversity in Species Sensitivity to Chemicals. SETAC 40th Annual North America Conference, Toronto, Canada
- Glaberman, S.** 2020. Live Session Organizer: Toxicity and Risk Assessments for the 21st Century: New Challenges, New Tools. SETAC-North America 41st Annual Meeting SciCon2.



**Glaberman, S.** 2020. Platform Session Co-Chair: Development and application of emerging biologically based methods for assessing toxicity in threatened and endangered species. SETAC-North America 41st Annual Meeting SciCon2.

**Glaberman, S.** 2021. Platform Session Organizer and Co-Chair: Novel Approaches for Understanding Diversity in Species Sensitivity to Chemicals. SETAC 42nd Annual North America Conference, Portland, Oregon.

### **Invited talks**

**Smith, C.** and P. Hutchison. 2017. Project Learning Tree VA Dept. of Forestry teacher training, Manassas, VA. 85 participants.

**Smith, C.** 2017. Tangible Actions Inspire. Keep Prince William Beautiful Environmental Leadership Youth Academy.

**Salerno, J.M.** 2017 NOAA Sea Grant Legislative Fellow Alumni Panel, Silver Spring, MD.

**Fowler, A.** 2017. A baitbox for all seasons: Live marine baitworm trade and wormweed and vectors for non-indigenous species. Mid-Atlantic Panel on Aquatic Invasive Species, Annapolis, MD.

**De Mutsert, K.** 2017. Modeling a coastal environment with human elements. Keynote speaker at CSDMS annual meeting 2017: Modeling Coupled Earth and Human Systems – The Dynamic Duo. Boulder, Colorado, USA.

**De Mutsert, K.** 2017. Fish community response to water quality improvements in Gunston Cove, a tidal freshwater embayment of the Potomac River. Fairfax County's Environmental Quality Advisory Council meeting. Fairfax, VA.

**Sklarew, D.** 2017. Integrating land pollution into watershed management – lessons from North America. Ji'nan, China land contamination and remediation delegation, Reston, VA.

**Sklarew, D.** 2017. Water governance and integrated management in the United States of America. China National Development and Reform Commission – river management innovation in the US, Woodbridge, VA.

**Sklarew, D.** 2017. Sustaining our coastal ecosystems' health. Component of "Mason research: building resilient Earth systems" briefing for staff of United States Senator Tim Kaine, Fairfax, VA.

**Sklarew, D.** 2017. Think globally, act neighborly to realize Fairfax County's environmental vision. Fairfax County Chairman Sharon Bulova's Environmental Showcase, Fairfax, VA.

**Sklarew, D.** 2017. Campus-based initiatives for sustainable development. X Assembly of the International Advisory Board for Student Affairs, Universidad de Monterrey, Monterrey, Mexico.

**Sklarew, D.** 2017. Social entrepreneurship for sustainable development. IREX Corporate Sustainability Leadership Program, webinar simulcast to Kiev, Ukraine and three locations in Russia,

**Smith, C.** 2018. Basic Botany, hands-on training for Master Gardeners. Merrifield Garden Center, Fairfax, VA. 185 participants.

**Salerno, J.M.** 2018. Chasing Corals Film Screening and Discussion, Society for Conservation Biology 2018 International Conservation Marketing and Engagement Congress, Arlington, VA.

**Salerno, J.M.** 2018 Invited Speaker on Science Diplomacy, Science Policy Course, Dr. Jessica Rosenberg, George Mason University, Fairfax, VA.

- Fowler, A.** 2018. Aquatic Invertebrate Ecology: Applied Fisheries and Invasions. Washington Youth Summit on the Environment, Fairfax, VA.
- Foster, G.** 2018. Presence of Opioids in the Aquatic Environment. Chesapeake Bay Commission, Potomac Science Center, Woodbridge, VA. Salerno, J.M. 2019. Invited Speaker, National Park Service Center for Urban Ecology, Washington, DC.
- De Mutsert, K.** 2018. Successes of restoration and its effects on the fish community in a freshwater tidal embayment of the Potomac River, USA. Seminar at the Maryland Department of the Environment. Nov 7, 2018, Baltimore, MD.
- De Mutsert, K.** 2018. User-driven tools to predict and assess effects of reduced nutrients and hypoxia on living resources. Fisheries Monitoring Workgroup workshop. May 16, 2018, Stennis Space Center, MS.
- De Mutsert, K.** 2018. Fish studies in the Potomac River watershed. Tidal Potomac River Research Symposium. George Mason University, Fairfax, VA.
- Sklarew, D.** 2018. Water governance and integrated management in the United States of America. For People's Republic of China Office of National Flood Control, Drought Prevention and Resistance, Fairfax, VA.
- Sklarew, D.** 2018. Key environmental auditing features for communities and corporations: Sustainability, materiality, transparency and adaptability. For Guiyang, China Training Program on Building Intelligent Community and Governance Innovation in the Sharing Economy, Fairfax, VA.
- Sklarew, D.** 2018. Water as means and metaphor for resilience. S-CAR Resilience Roundtable, Lorton, VA.
- Sklarew, D.** 2018. Social entrepreneurship for nature. WYSE, Fairfax, VA.
- Sklarew, D.** 2018. Foresight on emerging trends for sustainability in higher education. Sustainability Curriculum Consortium Faculty Conference 2018, Pittsburgh, VA.
- Sklarew, D.** 2018. Managing America's rivers for people and nature. For Changchun Municipal Committee of C.P.C., China study tour, Fairfax, VA.
- Sklarew, D.** 2018. A framework for more sustainable food systems. Mason Sustainable Food Forum, Fairfax, VA.
- Sklarew, D.** 2018. Town and gown partnerships: solving sustainability issues together. American Public Works Association Center for Sustainability and APWA Mid-Atlantic Chapter, Woodbridge, VA. (w/K. Baja, A. De Soto, E. Forbes and M. Rodrigues)
- Salerno, J.M.** 2019. Invited Speaker, Margaret A. Davidson Coastal Career Development Workshop, Potomac Science Center, George Mason University, Woodbridge, VA.
- Fowler, A.** 2019. Impacts of two functionally distinct invaders on facilitation and community succession. Joint Meeting Northeast and Mid-Atlantic Panels on Aquatic Invasive Species, Albany, NY.
- Fowler, A.** 2019. Aquatic Invertebrate Ecology: Applied Fisheries and Invasions. Washington Youth Summit on the Environment, Fairfax, VA.
- Smith, C.** 2019. Chesapeake Bay Environmental Literacy Leadership Summit: Ensuring Equity in Environmental Education. Partnered with Deputy Secretary of Natural Resources in Governor's office and VA Dept of Education to share best practices. Potomac Science Center. George Mason University. <https://tinyurl.com/y2l75ddr>

- Smith, C.** 2019. Translation of complex environmental issues (i.e., storm flow, sedimentation, nutrient run off, pharmaceuticals, microplastics wastewater) into non-partisan, observable phenomena. Prince William Conservation Alliance: A full-day county-wide stormwater and riparian buffer bus tour for 18 Prince William County candidates and elected officials.
- De Mutsert, K.** 2019. Using ecosystem modeling to evaluate trade-offs in coastal management: effects of large-scale river diversions on fish and fisheries. Keynote speaker at the EwE 35 years conference – Making Ecosystem-Based Management Operational. December 2019, St. Petersburg, FL.
- De Mutsert, K.** 2019. Using ecosystem modeling to evaluate trade-offs in coastal management: effects of large-scale river diversions on fish and fisheries. Seminar, Department of Biology, George Mason University, Fairfax, VA.
- De Mutsert, K.** 2019. River herring monitoring in Potomac River tributaries. River Herring Workshop, Smithsonian Environmental Research Center, Annapolis, MD.
- Coastal microplastics pollution: common problems, shared solutions. Training Program on Coastal Conservancy (sponsored by the Zhejiang Dept. of Natural Resources), Fairfax, VA, Nov. 4, 2019. CN
- Sklarew, D.** 2019. Ecological inspiration for sustainability innovation. WYSE, Fairfax, VA, June 26, 2019. (w/J. Sklarew)
- Sklarew, D.** 2019. Connecting marine debris to climate change and other ecological concerns. Mid-Atlantic Marine Debris Summit, Arlington, VA, June 17-19, 2019.
- Sklarew, D.** 2019. Advancing urban sustainability in theory and practice since the 1990s. Planning Theory [URBS 300] course, California State University Northridge, Northridge, CA, Apr. 16, 2019.
- Sklarew, D.** 2019. Teaching to the SDGs through sustainability action research and sustainable business curricula. Sustainable Human and Environmental Systems (SHES) Roundtable webinars, Sustainability Curriculum Consortium, Mar. 20, 2019. URL: <http://tinyurl.com/teach2sdgs201903>
- Fowler, A.** 2020. A synthesis of the marine live bait trade as a vector for species invasions. North American Invasive Species Management Association Annual Conference.
- Fowler, A.** 2020. Naked in trays: How the trade in live marine baitworms could decrease species invasions. North American Invasive Species Management Association Annual Conference.
- Fowler, A.** 2020. Marine Invasions and Parasites: The Enemy Escape Hypothesis. University of Maryland Institute of Marine and Environmental Technology, Baltimore, MD.
- Fowler, A.** 2020. A baitbox for all seasons: Live marine baitworm trade and wormweed and vectors for non-indigenous species. United States Geological Survey, Leetown Science Center, Kearneysville, WV.
- Salerno, J.M.** 2020. Spartans for Science and Policy Exploring Careers in Science Policy Panel University of North Carolina at Greensboro.
- Salerno, J.M.** 2020. Invited Plenary Speaker, Global Coral Reef Week International Symposium.
- Salerno, J.M.** 2020. NOAA Knauss Alumni Virtual Panel: Routes Back to Academia, NOAA Sea Grant National Office.
- Smith, C.** 2020. Vermicomposting in the Classroom. Prince William County Schools Energy & Sustainability Coordinators Webinar.
- Smith, C.** 2020. The fate of pesticides in the environment: What happens after the application? Virginia Turfgrass Council pesticide recertification Training VA, MD, NC. 250 participants.

- Sklarew, D.** 2020. Rapid global climate change: threat and/or opportunity? Dialog & Difference Project, Fairfax, VA.
- Sklarew, D.** 2020. What can we do about climate change? (panel discussion) UNICEF George Mason, Fairfax, VA.
- Sklarew, D.** 2020. Rapid global climate change: threat and/or opportunity? Dialog & Difference Project, Fairfax, VA.
- Sklarew, D.** 2020. What can we do about climate change? (panel discussion) UNICEF George Mason, Fairfax, VA.
- Sklarew, D.** 2020. Teaching business and sustainability through alignment with the SDGs. Sustainability Literacy: Faculty, Staff, and Students as Agents of Change (international symposium), Charleston, SC, Feb. 12-13, 2020. (w/I. Feldman)
- Foster, G.** 2021. Sediment-Water Dynamics of Emerging Contaminants in The Tidal Freshwater Potomac River. Invited seminar at American University, October 2021.
- Salerno, J.M.** 2021. Thankful for Science, George Mason University.
- Salerno, J.M.** 2021 Microbes and the Stories they Tell: Microorganisms as Sentinels of Organism Health and Ecosystem Function, Mason Science Series, George Mason University.
- Salerno, J.M.** 2021. ScienceConnect Research Spotlight Faculty Panel. George Mason University.
- Salerno, J.M.** 2021. Alumni Career Paths Speaker. University of Hawaii, Hawaii Institute of Marine Biology.
- Salerno, J.M.** 2021. NOAA Sea Grant Knauss Fellow Speed Networking event.
- Nelson, J.R.** 2021. Riverine fish density, predator-prey interactions, and their relationships with artificial light at night. Environmental Science and Policy Department, George Mason University.
- Smith, C.** 2021. Inspiring Sustainable Actions, Prince William County Schools Sustainability Summit.
- Smith, C.** 2021. Leadership Prince William Environment and Parks Day.
- Smith, C.** 2021. A Community Approach to Reducing Single-Use Plastic Beverage Bottles. Mid-Atlantic Marine Debris Summit. Speaker and panelist.
- Smith, C.** 2021. Connecting Sustainability Partners. Superintendent's Advisory Council on Sustainability Collaboration with Prince William County Sub-Committee.
- Sklarew, D.** 2021. Campus climate action: from commitment to impact. Mason Sustainability Council, Fairfax, VA.
- Sklarew, D.** 2021. Climate Action Plan town hall #1. Mason, Fairfax, VA, Nov. 19, 2021. (w/G. Farley and L. Nichols)
- Sklarew, D.** 2021. Seeking good science champs (like YOU!) for climate action. "Thankful for Science," Mason College of Science (COS) Learning Community, Fairfax, VA, Nov. 17, 2021.
- Sklarew, D.** 2021. Sustainability and climate action planning: empowering our champions. Metropolitan Washington Council of Governments' Air & Climate Policy Advisory Committee, Washington, DC, Nov. 15, 2021. (w/G. Farley)
- Sklarew, D.** 2021. Planning for sustainable operations. Mason Sustainability Council, Fairfax, VA, July 1, 2021.
- Sklarew, D.** 2021. Think ethically, serve professionally. 2021 STGlobal Conference, online.
- Fowler, A.** 2022. Ecological and management implications of invasions in coastal ecosystems. Coastal Carolina University, Department of Marine Science, Conway, SC.

- Nelson, J.R.** 2022 University of Maryland Department of Environmental Science and Technology seminar: Impacts of artificial light at night on predator-prey interactions and juvenile salmon survival
- Nelson, J.R.** 2022 A Guide to the Potomac's Spring Life. Professors and Pints. Washington, DC.
- Salerno, J.M.** 2022. Life and Death on Coral Reefs: Microbes as Messengers of Coral Health and Disease. Galileo's Science Café.
- Smith, C.** 2022. What happens inside the Potomac Science Center? Leadership Prince William. Environment Day.
- Smith, C.** 2022.VTC Environmental Institute promoted EPS degree to >1000 people in Southside Richmond, VA.
- Smith, C.** 2022. Guest speaker, INTS 249 Digital literacy, with Madeleine Thompson, student. interviewed me on how to educate public on agricultural pollution. Oct. 26
- Smith, C.** 2022. Streamside walk with PW Master Naturalists leadership team, Cedar Creek. Oct. 23
- Smith, C.** 2022. What goes on in the Potomac Science Center? Woodbridge Potomac Community Civic Association.
- Smith, C.** 2022. Hosted 60 Belmont Elementary Teachers at PSC. Gave short tour, update on PSC capabilities. Oct. 10.
- Smith, C.** 2022. VDOE full day Invasive Species program for K12 teachers and their children at Leesylvania State Park.
- Smith, C.** 2022 Hosted boat and lab tours for VA Deputy Sectary of the Environment, VMRC Commissioner.
- Smith, C.** 2022. MWEE training, Accotink Creek Park, GMU Field Interpreters and Fairfax County Public Schools Roving Naturalists. 35 participants.
- Smith, C.** 2022. Belmont Elementary Science Leads on K-5 program development at PSC.
- Smith, C.** 2022. Prince William County Schools. Environmental Literacy Partners meet with Superintendent McDade.
- Smith, C.** 2022. What is the PEREC? Northern VA Nursery and Landscapers Association.
- Smith, C.** 2022. Collectively Building Biodiversity. Prince William Wildflower Society.
- Smith, C.** 2022. Partnering with Environmental Groups: Lessons from the Field, Mid-Atlantic Turfgrass Expo. Fredericksburg, VA.
- Sklarew, D.** 2022. Climate is life. Thursdays for Tomorrow (climate action) rally. Mason, Fairfax, VA.
- Sklarew, D.** 2022. No more hunger on Virginia's college campuses. 17 Rooms U. from Concept to Action panel at Future Earth's Sustainability Research and Innovation Congress, Pretoria, South Africa.
- Sklarew, D.** 2022. A just climate: integrating climate justice into Mason's climate action plans. Climate Action Plan town hall #5. Mason, Fairfax, VA.

## Videos

- Smith, C.** 2022. A 10-part Marine Debris Prevention and Ecological Impacts. Scripted and coordinated with GMU TV and community partners, featuring Mason students. IMPACT: > 1000 views. Videos used in Mason courses, are embedded in a Prince Wm High School Teacher/Student training Canvas course, and featured in our national Teacher Tool Kit for

NOAA Marine Debris Prevention. View playlist:

<https://www.youtube.com/playlist?list=PL5tNnDPjd5LvQvRSrFo3jfUU28aGScWHu>

**Smith, C.** 2022. A 4-part series with GMU-TV on Prince William County Landfill and related STEM careers. IMPACT: >1000 views. Used in Mason courses, shown at county meetings, and K12 Environmental Science courses across Virginia

<https://www.youtube.com/playlist?list=PL5tNnDPjd5Lt4DjjJ5k8ORE35ZGt78RC>

**Smith, C.** and C. Grey\*. Supervised creation of PEREC video collection, with grad student Chelsea Gray: 8 research videos, 10 undergrad OSCAR research videos: See Playlist:

[https://www.youtube.com/channel/UC17Cneih\\_BXaxgsCyMie-dQ](https://www.youtube.com/channel/UC17Cneih_BXaxgsCyMie-dQ)

## External Partners

Fairfax County Department of Public Works and Environmental Services

- Gunston Cove Study since 1984

Alexandria Renew Enterprises

- Hunting Creek Study since 2013

- Legacy pesticides, pharmaceutical, and PFAS residues in Hunting Creek

City of Fairfax

- Quarterly monitoring program

Collaborations resulting in research and training funds

- Virginia Sea Grant

- Maryland Sea Grant

- Delaware Sea Grant

Research collaborations resulting in publications

- Smithsonian Environmental Research Center

- Woods Hole Oceanographic Institute

- East Carolina University

## Awards

Champion Award, Fairfax County Department of Public Works and Environmental Services.

Partnering category: leadership and community outreach in support of DPWES projects. For Gunston Cove study. Awarded December 2013.

Environmental Excellence Award, Fairfax County. Awarded to PEREC. Recognizing Gunston Cove study and other activities in support of improving the environment of Fairfax County. To be awarded Sept 2014.