

CURRICULUM VITAE - CASSIE GURBISZ, PHD

St. Mary's College of Maryland | Environmental Studies Program
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EDUCATION

- 2016 Ph.D. Marine, Marine, Estuarine and Environmental Science University of Maryland Center for Environmental Science (UMCES) Horn Point Laboratory (HPL)
- 2005 B.S. Environmental Science and Studio Art Dickinson College

RESEARCH INTERESTS

Estuarine ecosystem ecology, submerged aquatic vegetation, biogeochemistry, biophysical interactions, undergraduate research and education

EMPLOYMENT

- 2017-present Assistant Professor of Environmental Studies, St. Mary's College of Maryland, St. Mary's City, MD
- 2016-2017 Postdoctoral Fellow, National Socio-Environmental Synthesis Center (SESYNC), Annapolis, MD
- 2010-2016 Graduate Research Assistant, UMCES HPL, Cambridge, MD
- 2007-2010 Program Manager and Ocean Science Educator, UMCES HPL and the National Science Foundation (NSF) Centers for Ocean Science Education Excellence (COSEE), Cambridge, MD
- 2005-2007 Environmental Educator and Karen Noonan Environmental Education Center Manager, Chesapeake Bay Foundation, Annapolis, MD and Crocheron, MD

PEER-REVIEWED PUBLICATIONS

- 2023 Hensel, M. J. S., Patrick, C. J., Orth, R. J., Wilcox, D. J., Dennison, W. C., **Gurbisz, C.**, Hannam, M. P., Landry, J. B., Moore, K. A., Murphy, R. R., Testa, J. M., Weller, D. E., & Lefcheck, J. S. (2023). Rise of *Ruppia* in Chesapeake Bay: Climate change–driven turnover of foundation species creates new threats and management opportunities. *Proceedings of the National Academy of Sciences*, 120(23), e2220678120. <https://doi.org/10.1073/pnas.2220678120>

- 2022 Gruber, R.K., **C. Gurbisz**, J. Borum, W.M. Kemp. Chapter 5: Estuarine Seagrasses in *Estuarine Ecology*, Third Edition ed. B.C. Crump, J.M. Testa, K.H. Dunton. p 106-125. Wiley & Sons: USA. ISBN: 978-1-119-53465-5
- 2022 Orth, R.J., W.C. Dennison, D.J. Wilcox, R.A. Batiuk, J.B. Landry, **C. Gurbisz**, J. Keisman, M. Hamman, J.S. Lefcheck, R.R. Murphy, K.A. Moore, C.J. Patrick, J.M. Testa, D.E. Weller, M.F. Merritt, P. Hobaugh. Data synthesis for environmental management: A case study of Chesapeake Bay. *Journal of Environmental Management* 321: <https://doi.org/10.1016/j.jenvman.2022.115901>
- 2022 Orth, R.J., W. C. Dennison, **C. Gurbisz**, M. Hannam, J. Keisman, J.B. Landry, J.S. Lefcheck, K.A. Moore, R.R. Murphy, C.J. Patrick, J. Testa, D.E. Weller, D.J. Wilcox, R.A. Batik. Long-term annual aerial surveys of submersed aquatic vegetation (SAV) support science, management, and restoration. *Estuaries and Coasts* 45: 1012-1027 <https://doi.org/10.1007/s12237-019-00651-w>
- 2020 Su, J., W. Cai, J. Brodeur, B. Chen, N. Hussain, Y. Yao, C. Ni, J. Testa, M. Li, X. Xie, W. Ni, M. Scaboo, Y. Xu, J. Cornwell, **C. Gurbisz**, M.S. Owens, G.G. Waldbusser, M. Dai, W.M. Kemp. Chesapeake Bay acidification buffered by spatially decoupled carbonate mineral cycling. *Nature Geoscience* 13: 441-447 <https://doi.org/10.1038/s41561-020-0584-3>
- 2018 Lefcheck, J.S., R.J. Orth, W.C. Dennison, D.J. Wilcox, R.R. Murphy, J. Keisman, **C. Gurbisz**, M. Hannam, J.B. Landry, K.A. Moore, C.J. Patrick, J. Testa, D.W. Weller, R.A. Batiuk. Long-term nutrient reductions lead to the unprecedented recovery of a temperate coastal region. *Proceedings of the National Academy of Sciences* 115(14): 358-3662 <https://doi.org/10.1073/pnas.1715798115>
- 2017 Orth, R.J., W.C. Dennison, J.S. Lefcheck, **C. Gurbisz**, M. Hannam, J. Keisman, J.B. Landry, K.A. Moore, R.R. Murphy, C.J. Patrick, J. Testa, D.E. Weller, D.J. Wilcox. Submersed aquatic vegetation in Chesapeake Bay: Sentinel species in a changing world. *BioScience* 67(8): 698-712 <https://doi.org/10.1093/biosci/bix058>
- 2017 **Gurbisz, C.**, W.M. Kemp, J. Cornwell, L. Sanford, M. Owens, D. Hinkle. Interactive effects of physical and biogeochemical feedback processes in a large submersed plant bed. *Estuaries and Coasts*. 40(6): 1626-1641 <https://doi.org/10.1007/s12237-017-0249-7>
- 2017 Wainger, L., D. Secor, **C. Gurbisz**, P. Glibert, W.M. Kemp, E. Houde, J. Richkus, M. Barber. Resilience indicators support valuation of estuarine ecosystem restoration under climate change. *Environmental Health and Sustainability*. 3(4): 1-19 <https://doi.org/10.1002/ehs2.1268>
- 2016 **Gurbisz, C.**, W.M. Kemp, L. Sanford, R.J. Orth. Mechanisms of storm-related loss and resilience in a large submersed plant bed. *Estuaries and Coasts*. 39(4): 951-966 <https://doi.org/10.1007/s12237-016-0074-4>
- 2014 **Gurbisz, C.** and W.M. Kemp. Unexpected resurgence of a large submersed plant bed in upper Chesapeake Bay: Analysis of time series data. *Limnology and Oceanography*. 59(2): 482-494 <https://doi.org/10.4319/lo.2014.59.2.0482>

- 2012 Murray, L. and **C. Gurbisz**. Learning science through research. *Journal of Information Technology and Application in Education*. 1(3): 105-107
- 2012 Murray, L., **C. Gurbisz**, D. Gibson, J. Woerner, T. Carruthers. Collaborative partnerships help bridge the gap between science and education. *Eos, Transactions American Geophysical Union*. 94(49): 510-511
- 2011 **Gurbisz, C.**, Murray, L., Hinkle, D., Crump, B. Invisible world: Exploring microscopic life. *Green Teacher*. 92: 28-30
- 2010 Testa, J., **C. Gurbisz**, L. Murray, L. Gray, J. Bosch, C. Burrell, and W.M. Kemp. Investigating dead zones in aquatic ecosystems: Surfacing a mystery of the deep. *The Science Teacher*. 77(2): 27-32
- 2009 Ksiazek, K., K. McGlathery, L. Reynolds, A. Schwartzchild, C. Wilkerson, T. Carruthers, **C. Gurbisz**, J. Woerner, L. Murray. Learning about coastal trends: What is the story with seagrasses? *Science Activities*. 47(2): 27-31

TECHNICAL PUBLICATIONS

- 2021 Jasinski, D., **C. Gurbisz**, L. Huey, B. Landry. Small-scale SAV restoration in Chesapeake Bay: A Guide to the Restoration of Submerged Aquatic Vegetation (SAV) in Chesapeake Bay and its Tidal Tributaries. Approved by the CBP SAV Workgroup in October 2021. Available at chesapeakebay.net

GRANTS AND CONTRACTS

- 2023 Maryland Department of Natural Resources, “Oyster spat recruitment study 2022” \$8,340 Principal Investigator/subcontract to St. Mary’s River Watershed Association (SMRWA), 4/15/2023-1/31/2024
- 2022 National Science Foundation, “Collaborative research: How are estuarine carbon and alkalinity dynamics influenced by macrobiota?” \$161,821 co-PI, 7/1/2022-6/29/2025
- 2022 Maryland Department of Natural Resources, “Oyster spat recruitment study 2022” \$8,520 Principal Investigator/subcontract to St. Mary’s River Watershed Association (SMRWA), 4/15/2022-1/31/2023
- 2022 Maryland Sea Grant, “Causes of benthic cyanobacteria overgrowth in submersed aquatic vegetation (SAV) beds in Chesapeake Bay: Potential consequences for ecosystem resilience” \$39,149 co-PI, 2/1/2022-1/31/2024
- 2021 Maryland Department of Natural Resources, “Oyster spat recruitment study 2021” \$7,471 Principal Investigator/subcontract to SMRWA, 4/15/2021-1/31/2022
- 2020 Chesapeake Bay Trust (via subcontract from GreenFin Studio), “Development of technical guidance manual and outreach materials for small-scale submerged

- aquatic vegetation restoration in Chesapeake Bay and its tidal tributaries” \$8,431
3/1/2020 – 1/31/2022
- 2020 Maryland Sea Grant, “Effects of oyster aquaculture on submersed aquatic vegetation (SAV) habitat” \$71,025 Principal Investigator, 2/1/2020 – 1/31/2022
- 2020 Maryland Department of Natural Resources, “Oyster spat recruitment study 2020” \$7,242 Principal Investigator/subcontract to SMRWA, 4/1/2020 – 12/30/2020
- 2020 Ferry Cove Shellfish, “Ferry Cove Project: Baseline environmental monitoring” \$19,073 Principal Investigator, 7/25/2020- 12/31/2020
- 2019 Maryland Department of Natural Resources, “Oyster spat recruitment study 2019” \$5,000 Principal Investigator/subcontract to SMRWA, 5/28/2019 – 11/31/2019
- 2018 Maryland Sea Grant, “Response of SAV beds in upper Chesapeake Bay to the 2018 Susquehanna River flood” \$1,843 Co-PI, 8/2018-8/2019
- 2018 Maryland Sea Grant, “Quantifying nutrient sequestration in Chesapeake Bay submersed aquatic vegetation (SAV) beds” \$37,038. Principal Investigator, 2/2018-2/2020

HONORS AND AWARDS

- 2021-present *Pandion haliaetus* Professorship in Environmental Studies and Marine Science, awarded for serving “as an exemplar of the teacher-scholar model”
- 2019 The National Academies of Sciences Cozzarelli Prize, awarded in recognition of the co-authored paper, Lefcheck et al. 2018, for “scientific excellence and originality”
- 2019 SMCM Office of Sponsored Research “Go-Getter Award” in recognition of early-career externally-funded research awards

SELECTED PRESENTATIONS

Invited talks and panels

- 2021 Submerged aquatic vegetation recovery dynamics in Chesapeake Bay: Surprise resurgence and unexpected interactions. University of Maryland Center for Environmental Science Appalachian Laboratory Visiting Scholar Virtual Seminar Series. 28 October 2021.
- 2020 SAV-aquaculture interactions in Chesapeake Bay. US EPA Chesapeake Bay Program Goal Implementation Team Chairs Meeting. 3 June 2020

- 2018 Status and Trends of Submersed Aquatic Vegetation (SAV) in Chesapeake Bay: A Synthesis. Chesapeake Bay Modeling Symposium SAV Recovery Panel. 13 June, Annapolis, MD
- 2018 Coastal restoration and resilience: Case studies of salt marsh and submersed aquatic vegetation ecosystem dynamics. University of Maryland Center for Environmental Science Chesapeake Biological Laboratory, 25 April, Solomons, MD

Contributed conference presentations

- 2022 Trajectories of nutrient flows and ecosystem trophic status in a low-salinity freshwater submerged aquatic vegetation bed. World Seagrass Conference, 9 Aug 2022, Annapolis, MD
- 2021 SAV-Aquaculture interactions in Chesapeake Bay, Maryland. Coastal and Estuarine Research Federation, 9 Nov 2021, remote conference.
- 2021 Activities for teaching estuarine ecosystem simulation modeling. Coastal and Estuarine Research Federation, 4 Nov 2021, remote conference.
- 2020 SAV-aquaculture interactions in Chesapeake Bay, Maryland. Chesapeake Community Research Symposium, 9 Jun 2020, remote conference.
- 2019 How much does recovering submersed aquatic vegetation modulate estuarine nutrient and carbon flows? Coastal and Estuarine Research Federation, 4 Nov, Mobile, AL
- 2018 Landscape-scale marsh dynamics in an Atlantic barrier island system. Ecological Society of America, 7 Aug, New Orleans, LA
- 2017 Inflection points in Chesapeake Bay submersed aquatic vegetation research: Recent progress and future potential. Coastal and Estuarine Research Federation, 1 Nov, Providence, RI

Student presentations

- 2019 Bolton, M., C. Palinkas, **C. Gurbisz**. Quantifying nutrient sequestration in Chesapeake Bay submersed aquatic vegetation (SAV) beds. Atlantic Estuarine Research Society, Woodbridge, VA
- 2019 Newton, K., **C. Gurbisz**. Interannual Variability of Marsh Area in Three Locations of the Chesapeake Bay. Atlantic Estuarine Research Society, Woodbridge, VA
- 2019 Powell, D., **C. Gurbisz**. Do no harm: Noninvasive analyses of wetland plants in a Maryland Estuary. Atlantic Estuarine Research Society, Woodbridge, VA

Conference symposia chaired/organized

2023	Session co-chair, "High-impact practices in coastal science education," Coastal and Estuarine Research Federation Conference, Portland, OR
2022	Session co-chair, "Ecosystem ecology: Advances in understanding seagrass and submersed aquatic vegetation ecosystem functioning," World Seagrass Conference, Annapolis, MD
2021	Scientific Program Committee/Film Festival Co-Chair, Coastal and Estuarine Research Federation biennial meeting, remote conference
2019	Scientific Program Committee/Film Festival Co-Chair, Coastal and Estuarine Research Federation biennial meeting, Mobile, AL

TEACHING

Code	Course name	Credits	Semesters
ENST 100	Environment and Society	4	FA 2020 (2 sections), SP 2019, FA 2018, SP 2018, FA 2017
ENST 250	Introduction to Environmental Science w/lab	4	FA 2022, FA 2019, SP 2019, SP 2018
ENST 222	Environmental Data Science with lab	4	SP 2022, SP 2023
ENST 295/ CORE 102	Climate Change by the Numbers	4	SP 2018
ENST 393	Coastal Ecosystem Management w/ lab	4	SP 2022, SP 2018, FA 2018
ENST 395	Field Research Methods	4	FA 2019
ENST 490	Junior Environmental Seminar	4	FA 2022, FA 2021 (2 sections), FA 2017
ENST 493/ 494	St. Mary's Project (Senior Research)	8	AY 2022, 2021, 2020, 2019, 2018
ENST 495	Capstone Environmental Seminar	4	SP 2020, SP 2021
ENST 493/497	Independent Study/Directed Research		SP 2021, SP 2020, FA 2020, SP 2019, FA 2019, SP 2018

SERVICE TO THE PROFESSION

Regional committees and workgroups

2020-2022	Ecological Effects of Sea Level Rise Management Transition Advisory Group, MD Department of Natural Resources
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2016-present Submersed Aquatic Vegetation Sentinel Site Monitoring Steering Committee, US EPA Chesapeake Bay Program

2010-present Submerged Aquatic Vegetation Workgroup, US EPA Chesapeake Bay Program

2016-present Submersed Aquatic Vegetation Synthesis Group, US EPA Chesapeake Bay Program

Professional society leadership

2018-2021 Treasurer and Executive Board Member, Atlantic Estuarine Research Society

Manuscript reviewer for Marine Ecology Progress Series, Restoration Ecology, Ecological Applications, Estuaries and Coasts, Hydrobiologia, Gulf and Caribbean Research

Grant proposal reviewer for Hudson River Foundation, US EPA Chesapeake Bay Program, Delaware Sea Grant

CAMPUS SERVICE

Committees and governance

2022 Research vessel coordinator

2021-present Faculty Senator

2020-present Marine Science Program Steering Committee

2020-2022 Assessment Implementation Team

2020-present Faculty Development Grant Committee

2020-2021 Applied Data Science Program Steering Committee

2019 CORE 102 development and pilot team

Faculty searches

2022 Visiting Assistant Professor of Environmental Studies

2022 Open Rank Professor of Marine Science - Physical Oceanography

2021 Assistant Professor of Biology - Coastal Ecology

2020 Assistant Professor of Sociology

2019 Visiting Assistant Professor of Environmental Studies

2019 Visiting Assistant Professor of Sociology

Departmental service

2019-2020 Environmental Speaker Series Coordinator

2019 Department Outreach Intern supervisor

2017-present Lab equipment purchasing and organization

RESEARCH PRESS COVERAGE

2022 YaleEnvironment360 "How using nature's tools is helping to clean up urban rivers" (Aug 11)

- 2020 National Geographic News “In the Chesapeake Bay, saving seagrasses can fight ocean acidification” (Jun 2)
- 2020 Chesapeake Bay Journal “Chesapeake’s grasses hit hard by head, high flows in 2019” (Jul 20)
- 2019 Chesapeake Bay Journal “Scientists fear steep loss of Bay grasses lies ahead” (Aug 21)
- 2019 Chesapeake Bay Journal “Scientists waiting to see if record 2018 rainfall dampens Bay recovery” (Jan 7)
- 2018 Chesapeake Bay Journal “Washed away? Torrential rains threaten Bay restoration gains” (Sep 4)
- 2018 Baltimore Sun, “As another surge of stormwater and pollution flows through Conowingo Dam, scientists worry about impact on oysters, grasses” (cover story, Aug 16)
- 2018 Coverage of co-authored PNAS paper on National Public Radio, The Conversation, The Washington Post, Environmental Monitor, The Star Democrat, Grist, and others (March 5-6)