Curriculum Vitæ

Pierre St-Laurent, he/him/his
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Academic Appointments

Senior research scientist	Virginia Institute of Marine Science (VIMS), USA	2022–Present
Associate research scientist	Virginia Institute of Marine Science (VIMS), USA	2021
Assistant research scientist	Virginia Institute of Marine Science (VIMS), USA	2016–2020
Post-doctoral research associate	Virginia Institute of Marine Science (VIMS), USA	2015
Research professional (SSRP)	Old Dominion University (ODU), USA	2017–2020
Post-doctoral research associate	Old Dominion University (ODU), USA	2010–2016

Academic Background

Ph. D. Oceanography, Université du Québec à Rimouski, Canada 2010
Thesis: Seasonal and interannual variability of freshwaters in Arctic Seas: The case of Hudson Bay
Advisor: F. Straneo, F.J. Saucier (deceased); Examiner: S.J. Déry.

M. Sc. Oceanography, Université du Québec à Rimouski, Canada 2006
Thesis: Generation and propagation of barotropic waves in Foxe Basin, Hudson Strait, and Hudson Bay
Advisor: J.-F. Dumais (retired), Examiner: C.J.R. Garrett (retired).

B. Sc. Physics, Université Laval, Canada 2003

Contributions to Research

First-Authored Refereed Publications

Response of onshore oceanic heat supply to yearly changes in the Amundsen Sea icescape (Antarctica),
St-Laurent, P., S.E. Stammerjohn, T. Maksym,
J. Geophys. Res.: Oceans, 2024, 129(4), e2023JC020467, https://doi.org/10.1029/2023JC020467
Associated dataset: https://doi.org/10.17882/99231

On the sensitivity of coastal hypoxia to its external physical forcings,
St-Laurent, P, M.A.M. Friedrichs,
J. Adv. Model. Earth Syst., 2024, 16(1), e2023MS003845, https://doi.org/10.1029/2023MS003845
Associated dataset: https://doi.org/10.25773/q2kh-rd09

Relative impacts of global changes and regional watershed changes on the inorganic carbon balance of the Chesapeake Bay, St-Laurent, P., M.A.M. Friedrichs, R.G. Najjar, E.H. Shadwick, H. Tian, Y. Yao,
Biogeosciences, 2020, 17(14), 3779-3796, https://doi.org/10.5194/bg-17-3779-2020
Associated dataset: https://doi.org/10.25773/a36n-2e90

Modeling the seasonal cycle of iron and carbon fluxes in the Amundsen Sea Polynya, Antarctica,
St-Laurent, P., P.L. Yager, R.M. Sherrell, H. Oliver, M.S. Dinniman and S.E. Stammerjohn,
J. Geophys. Res.: Oceans, 2019, 124(3), 1544-1565, https://doi.org/10.1029/2018jc014773
Associated dataset: https://doi.org/10.25773/nhrj-yz78

Impacts of atmos. nitrogen deposition on surface waters of the western North Atlantic mitigated by multiple feedbacks,
St-Laurent, P., M.A.M. Friedrichs, R.G. Najjar, D.K. Martins, M. Herrmann, S.K. Miller and J. Wilkin,
J. Geophys. Res.: Oceans, 2017, 122(11), 8406-8426, https://doi.org/10.1002/2017jc013072
Associated dataset: https://doi.org/10.21220/V5KB03

Pathways and supply of dissolved iron in the Amundsen Sea (Antarctica),
St-Laurent, P., P.L. Yager, R.M. Sherrell, S.E. Stammerjohn and M.S. Dinniman,

J. Geophys. Res.: Oceans, 2017, 122(9), 7135-7162, https://doi.org/10.1002/2017jc013162
Associated dataset: https://doi.org/10.26008/1912/bco-dmo.729546.1

Impact of local winter cooling on the melt of Pine Island Glacier, Antarctica,
St-Laurent, P., J.M. Klinck, and M.S. Dinniman,
J. Geophys. Res.: Oceans, 2015, 120(10), 6718-6732, https://doi.org/10.1002/2015jc010709

On the role of coastal troughs in the circulation of warm Circumpolar Deep Water on Antarctic shelves,
St-Laurent, P., J.M. Klinck, and M.S. Dinniman,
J. Phys. Oceanogr, 2013, 43(1), 51-64, https://doi.org/10.1175/jpo-d-11-0237.1

A conceptual model of an Arctic Sea,
St-Laurent, P., F. Straneo, and D.G. Barber,
J. Geophys. Res.: Oceans, 2012, 117(C6), C06010, https://doi.org/10.1029/2011jc007652

What is the fate of the river waters of Hudson Bay?,
St-Laurent, P., F. Straneo, J.-F. Dumais, and D.G. Barber,
J. Mar. Syst., 2011, 88(3), 352-361, https://doi.org/10.1016/j.jmarsys.2011.02.004

On the modification of tides in a seasonally ice-covered sea,
St-Laurent, P., F.J. Saucier, and J.-F. Dumais,
J. Geophys. Res.: Oceans, 2008, 113(C11), C11014, https://doi.org/10.1029/2007jc004614

Preprints of first-authored articles are available at http://nordet.net/

Co-authored Refereed Publications, Published Abstracts & Invited Seminars

See Appendices.

Non-Refereed Publications and Datasets

An atlas for physical and biogeochemical conditions in the Chesapeake Bay, 2024, P. St-Laurent and M.A.M. Friedrichs, SEANOE, https://doi.org/10.17882/99441 (see also http://nordet.net/atlas), 239 downloads in 2024.

Dataset: A numerical simulation of the ocean, sea ice and ice shelves in the Amundsen Sea (Antarctica) over the period 2006-2022 and its associated code and input files, P. St-Laurent, 2023, dataset (size 2.2 terabytes), William & Mary ScholarWorks, https://doi.org/10.25773/bt54-sj65

Documentation for the Back of Envelope Ocean Model, P. St-Laurent, 2023, http://nordet.net/beom.html

Impacts of sea level rise on hypoxia in the Chesapeake Bay: A model intercomparison,
St-Laurent, P., M.A.M. Friedrichs, M. Li, W. Ni, technical report, Virginia Institute of Marine Science, William & Mary, October 2019, 34 pp, https://doi.org/10.25773/42XY-JT30

Ice pumps & Algae (educational booklet), 2017, ISBN 978-0-692-86607-8,
Twarog, C., P. St-Laurent, E.E. Hofmann, D.L. Dickerson and A.H. Brown.

Media Coverage & Feature Articles

VIMS researchers unveil comprehensive climatological atlas of the Chesapeake Bay, VIMS Top Stories, John Wallace, April 23, 2024.

Antarctica's majestic underwater world is trying to adapt to a warmer planet, CNN, Allison Chinchar, May 7, 2022.

'Comet' supercomputer used to simulate environmental changes in Chesapeake Bay,
Press release from the San Diego Supercomputer Center, Aug. 6, 2020,
subsequently covered by newswise.com, newsbreak.com, coastalnewstoday.com, enn.com, xsede.org, hpcwire.com

Exploring the links between melting ice and ecosystems, Research Features magazine, issue 121, p. 14-17, Dec. 2017.

Tidal timing, Research highlight in Nature Geoscience, Sep. 20, 2007, https://doi.org/10.1038/ngeo.2007.13

Professional Service

Service to Federal Agencies and Professional Societies

2025, Panelist, DOE (online panel)
2024, Panelist, DOE (online panel)
2023, Panelist, DOE (online panel)
2023, Site visit, NSF
2020, Panelist, NSF (online panel)
2017, Panelist, NSF, Alexandria VA
2016, Panelist, NSF, Arlington VA
2008–2009, Chair of Rimouski center, Canadian Meteorological & Oceanographic Society (CMOS)

Proposal Reviews

2024 NSF Physical Oceanography Program, NSF AOAS, ASCR Leadership Computing Challenge (DOE)
2023 WHOI Sea Grant Program
2022 NSF Physical Oceanography Program, NSF Antarctic Sciences (2 prop.), NSF P2C2 Program
2021 NSF Antarctic Sciences (2 prop.), National Research and Development Agency of Chile
2019 NSF Physical Oceanography Program, NSF AOAS Program, Chilean Antarctic Institute (INACH)
2018 NSF Physical Oceanography Program (2 prop.)
2017 NSF Physical Oceanography Program
2016 NSF Physical Oceanography Program (2 prop.), NSF Antarctic Ocean and Atmospheric Sciences
2015 NSF Physical Oceanography Program
2014 NSF Physical Oceanography Program, NSF Arctic Natural Sciences Program

Manuscript Reviews

2025 Geoscientific model development
2024 Deep Sea Research I, Communications Earth & Environment (2 reviews)
2023 The Cryosphere, J.Geophys.Res.Oceans
2022 The Cryosphere, Geophys.Res.Lett. (2 manuscripts), Elementa, J.Clim.
2021 Geophys.Res.Lett. (3 manuscripts), Biogeosciences, The Cryosphere
2020 J.Clim., J.Geophys.Res.Oceans, J.Mar.Syst., Biogeosciences
2019 J.Clim., J.Phys.Oceanogr., J.Geophys.Res.Oceans, J.Mar.Syst.
2018 Nature Clim.Change, Geophys.Res.Lett., Ocean Model., J.Geophys.Res.Oceans(3), J.Mar.Syst.(2), J.Phys.Oceanogr.
2017 J.Geophys.Res.Oceans (5 reviews)
2016 Science, Geophys.Res.Lett., Ocean Model., Arctic, J.Geophys.Res.Oceans
2015 J.Phys.Oceanogr., Elementa, J.Geophys.Res.Oceans
2014 Nature Geosci., Geophys.Res.Lett., J.Phys.Oceanogr., J.Atmos.Ocean.Tech., Ocean Sci., Est.Coast.Shelf Sci.
2013 J.Geophys.Res.Oceans
2012 Ocean Model., J.Geophys.Res.Oceans, Oceanography
2011 J.Phys.Oceanogr., Atmosphere–Ocean
2008 Atmosphere–Ocean

Advisory Service

2025 Presentation for the CBP Modeling Workgroup Quarterly Review (Jan.8)
2024 Workshop CBP Climate Change Modeling III: Post-2025 decisions (May 7–9)
2022 Presentation for the CBP Modeling Workgroup Quarterly Review (Oct.5)
2021 Presentation for the CBP Modeling Workgroup Quarterly Review (Jul.7)
2021 Review panel: Habitat suitability model for Eastern Bay (MD) by the Oyster Recovery Partnership (Apr.6)
2020 Presentation for the CBP Modeling Workgroup Quarterly Review (Apr.7)

2019 Presentation for the CBP Modeling Workgroup Quarterly Review (Apr.2)
2019 Presentation for the CBP Modeling Workgroup Quarterly Review (Feb.19)

Data Requests Fulfilled Outside of Collaborations

2025: U.Colorado (J.Moriarty), ODU (S.Baez)
2024: NOAA OR&R Emergency Response Division (A.MacFadyen), NCCOS NOAA (D.Pirhalla,B.Williams), UMCES (G.Nesslage,K.Wade,S.Nehemiah), ODU (P.Sedwick), Colorado School of Mines (T.Snow), UEA (C.Berglund), UVA (E.Kadiyala), VIMS (N.Shunk, R.Dixon, R.Lipcius).
2023: Ramboll (M.Tryon-Petith), USGS (J.Pope), VIMS (R.Lipcius, E.G.Wilkinson)
2021: PMEL/NOAA (A.Sutton), Oyster Recovery Partnership (K.Coleman), VIMS (G.D.Molino, L.Almadovar)

Juried Shows, Exhibitions and Performances

2014, Judge at Tidewater Science and Engineering Fair, Norfolk VA, March 15, 2014.
2012, Judge at St. Pius X School's Annual Science fair, Norfolk VA, March 13, 2012.

Memberships of Professional Societies

Member of the American Meteorological Society (AMS), American Geophysical Union (AGU), European Geophysical Union (EGU), Coastal and Estuarine Research Federation (CERF), Canadian Meteorological and Oceanographic Society (CMOS).

Research Grants (as co- or lead-investigator)

Enhancing resilience, equity, and prediction of the Mid-Atlantic ocean, coast, and estuaries, NOAA NA24NOSX012C0032-T1-01/UDR0000671, Role: Co-PI (Lead PI: M.A.M. Friedrichs, VIMS), 1 Aug. 2024 to 31 Jul. 2025, $150,000.

Evaluating the climate sensitivity of iron supply in the Amundsen Sea with 3-D numerical simulations of the 21st Century, High performance computing allocation for research, NSF ACCESS Discover award EES240130, Role: PI, 28 Oct. 2024 to 27 Oct. 2024, 750,000 ACCESS credits $\Leftrightarrow$ $5,587.50.

Chesapeake Bay Environmental Forecasting System (CBEFS): Routine delivery of ocean acidification products for Chesapeake Bay stakeholders, NOAA OAP, Role: Co-PI (Lead PI: M.A.M. Friedrichs, VIMS), Jul. 1 2024 to June 30 2027, $150,000.

Integrated experimental and modeling assessment of ocean alkalinity enhancement for scalable marine carbon dioxide removal, ARPA-E DE-AR0001830 (SEA-CO2), Role: VIMS Co-PI (Lead PI: Zhaoqing Yang, PNNL), May 2024 to April 2027, $1,018,902.

Forecasting the effects of climate change on Chesapeake Bay fisheries using physiologically informed habitat models, NOAA NCBO NA23NMF4570426, Role: Co-PI (PI: M.C.Fabrizio), Dec. 1 2023 to Nov. 30 2026, $383,479.

Regional MERHAB: Developing a monitoring and forecast system for *Margalefidinium polykrikoides* and *Alexandrium monilatum* in the lower Chesapeake Bay, NOAA NA23NOS4780289, Role: VIMS PI (Lead PI: M.Mulholland, ODU), Sep. 1 2023 to Aug. 31 2028, $1,272,987 to VIMS.

EPA-I-R3-CBP-23-02: Assessing 2035 climate change risks to TMDL in the Rappahannock River using SCHISM, 4H-95317201, Role: Co-PI (PI: J.Shen), Aug. 1, 2023 to July 31 2028, $335,450.

Improvement of parameterized models for munitions mobility and burial, NRL N00173-22-2-C603, Role: Senior personnel (PI: C.T.Friedrichs), 23 Aug. 2022 to 22 Aug. 2027, $94,847.

Collaborative Research: How are estuarine carbon and alkalinity dynamics influenced by macrobiota?, NSF 2148952, Role: Co-PI (PI: E.B.Rivest), Jul. 1 2022 to June 30 2026, $1,448,959.

EPA-R3-CBP-21-08 CBP 2025 Tidal water model for the assessment of 2035 climate change risk to the Chesapeake TMDL, CB-96392201-0, Role: Co-PI (PI: Y.J.Zhang), Dec. 5 2021 to Dec. 4 2027, $1,801,840.

Chesapeake Bay Environmental Forecasting System: Accelerating the transition of HAB and pathogen models from research to operations, NOAA-NOS-IOOS-2021-2006729, Role: Co-PI (lead PI: M.A.M. Friedrichs), Sep. 1, 2021 to Aug. 31, 2025, $892,842.

MARACOOS Chesapeake Bay Environmental Forecast System (CBEFS): Operations and Expansion,

NOAA NA21NOS0120096 / UDR0000079, Role: Co-PI (lead PI: M.A.M. Friedrichs), Aug. 1 2021 to Jul. 31 2025, $513,264.

Summer flounder habitat availability in Chesapeake Bay, NOAA Chesapeake Bay Office (NCBO), Role: Co-PI (lead PI: J. Gartland), August 1, 2021 to March 31, 2022, $35,000.

NSFGEO-NERC: Collaborative Research: Accelerating Thwaites Ecosystem Impacts for the Southern Ocean (ARTEMIS), NSF 1941292, Role: Co-PI (lead PI: P. Yager), August 1, 2021 to July 31, 2025, $157,463.

Antarctic sea ice, fast ice and icebergs: Modulators of ocean–ice shelf interactions (AMICUS), NASA 80NSSC21K0746, Role: Co-PI (lead PI: S. Stammerjohn), Mar. 15, 2021 to Mar. 14, 2026, $97,376.

Integrated Coastal Modeling (ICoM), DOE *via* PNNL, Role: Co-PI (lead PI: M.A.M. Friedrichs), Feb. 10, 2021 to Mar. 31, 2025, $311,264.

Vulnerability of oyster aquaculture and restoration to ocean acidification and other co-stressors in the Chesapeake Bay, NOAA NA20OAR0170473, Role: Co-PI (lead PI: M.A.M. Friedrichs), Sept. 1, 2020 to Aug. 31, 2024, $1,045,160.

ChesROMS OceansMap ecological forecasts, NOAA (through MARACOOS), Role: Co-PI (lead PI: M.A.M. Friedrichs), Jun. 1, 2019 to May 31, 2022, $180,000.

How will sea level rise impact hypoxia in the Chesapeake Bay? A multiple model intercomparison project, United States Environmental Protection Agency (EPA), Role: Co-PI (lead PI: M.A.M. Friedrichs, co-PI: Ming Li, U.Maryland), Oct. 15, 2018 to June 15, 2019, $66,222.

Vulnerability of the largest U.S. estuary to acidification: Implications of declining pH for shellfish hatcheries in the Chesapeake Bay, NOAA NA18OAR0170430, Role: Co-PI (lead PI: M.A.M. Friedrichs), Sep. 1, 2018 to Aug. 31, 2020, $292,000.

Predicted impacts of changing climate and land-use on Chesapeake Bay water quality and biogeochemistry, High performance computing allocation for research, NSF XSEDE 160013, Role: Co-PI (lead PI: M.A.M. Friedrichs), Oct. 1, 2016 to Sept. 30, 2019, $46,437.84 (944,177 SUs and 20,000 GB).

Investigating the role of mesoscale processes and ice dynamics in carbon and iron fluxes in a changing Amundsen Sea (INSPIRE), Collaborative research, NSF PLR–1443657, Role: Lead principal investigator, July 15, 2015 to June 30, 2018, $154,951.

Contributions to Education

Students Supervised

Colin Hawes (Ph.D.), VIMS (W&M), title to be determined, in co-supervision with M.A.M. Friedrichs, 2024–Present.

Alexa Labossière (Ph.D.), VIMS (W&M): Alkalinity in the Chesapeake Bay: Tropical cyclones, macrobiota & carbon dioxide removal, in co-supervision with M.A.M. Friedrichs, 2023–Present.

Fei Da (Ph.D.), VIMS (W&M): "Chesapeake Bay carbonate cycle: Past, present, and future", in co-supervision with M.A.M. Friedrichs, 2018–2023. Fei is now a postdoc at GFDL.

REU intern Sergey Dutt (B.Sc. Physics/Chemistry, Luther College): "Improving hypoxia forecast within the Chesapeake Bay by refining a primary production model", VIMS (W&M), in co-supervision with Horemans/Friedrichs, funded by NSF Award 1950242, summer 2024.

REU intern Jennifer Lin (B.Sc. Computational & Applied Mathematics and Statistics, W&M): "Empirical habitat models for harmful algae blooms in the Chesapeake Bay", VIMS (W&M), in co-supervision with Horemans/Friedrichs, funded by NSF Award 1950242, summer 2023.

REU intern Sarah Hancock (B.Sc. Mathematics & Computer sci., Davidson College): "Particulate organic matter (POM) distributions and dynamics in mid-Chesapeake Bay", VIMS (W&M), funded by NSF Award 1950242, summer 2020.

Postdocs Supervised

Dante M.L. Horemans, VIMS (W&M): "Development of empirical habitat models for harmful algae blooms in the Chesapeake Bay", in co-supervision with M.A.M. Friedrichs, 2022–2024.

Graduate Students Advisory Committee Service

Olivia Szot (M.Sc.), VIMS (W&M): "Physical factors determining the timing and magnitude of Chesapeake Bay hypoxia", Advisor: M.A.M. Friedrichs, 2023–2024.

Colin Hawes (M.Sc.), VIMS (W&M): "Modeling mid-21st century Chesapeake Bay hypoxia: The role of climate change and the ocean, land, and atmospheric boundaries", Advisor: M.A.M. Friedrichs, 2022–2024.

Catherine Czajka (M.Sc.), VIMS (W&M): "Modeling the effects of coastal acidification on oyster growth in the Chesapeake Bay", Advisors: M.A.M. Friedrichs & E.B. Rivest, 2022–2024.

Luke Frankel (M.Sc.), VIMS (W&M): "Quantifying the increased resiliency of Chesapeake Bay to hypoxia during wet years: A benefit of nutrient reductions", Advisor: M.A.M. Friedrichs, 2019–2021. Luke is now a project scientist at FB Environmental Associates (Dover NH).

Fei Da (M.Sc.), VIMS (W&M): "Quantifying the effects of long-term changes in atmospheric nitrogen deposition on the Chesapeake Bay water quality", Advisor: M.A.M. Friedrichs, 2016–2018.

Teaching

Guest instructor:

Fundamentals of Marine Science, Physical Oceanography (MSCI501A), Instructor: Piero Mazzini, VIMS, 2024.
Implementation and analysis of a hydrodynamic coastal model (MS698), Instructor: C.K.Harris, VIMS, 2019, 2022.
Introduction to MATLAB (OEAS 406/506), Instructor: J.M.Klinck, Old Dominion University (ODU), 2018.
Coastal and Estuarine Dynamics (graduate course), Instructor: J.F.Dumais, Université du Québec (UQAR), 2006.

Guest lecturer:

Using ROMS–ECB on William & Mary's High Performance Cluster, VIMS, Oct. 2,9, 2015.
Summer School Program in Oceanography, Université du Québec (UQAR), 2006–2008.

Contributions to broadening participation in STEM

Supervised or co-supervised 3 individals from groups underrepresented in STEM.
Served as primary mentor on 3 publications where the first-author was from groups underrepresented in STEM.
Co-authored 9 publications where the first author was from groups underrepresented in STEM.
Contributed 17 letters of recommendation for individuals from groups underrepresented in STEM.

Field Experience

RVIB N.B. Palmer, 6 weeks, January 2012. Role: CTD profiling and nutrients sampling in the Ross Sea, Antarctica. Project: Processes Regulating Iron Supply at the Mesoscale (PRISM), NSF ANT–0944165. Chief Scientist: D. McGillicuddy (WHOI).

CCGS Pierre Radisson, 2 weeks, September 2006. Role: CTD profiling and mooring deployment in Hudson Bay, Hudson Strait and Foxe Basin, Canada. Project: Climate and productivity of the Canadian Inland Seas (MERICA). Chief Scientist: M. Harvey (DFO-Canada).

R/V Coriolis II, 1 week, May 2005. Role: CTD tow-yow and in-board ADCP collection over the sill of the Saguenay Fjord, Canada. Chief Scientist: Y. Simard (UQAR/DFO-Canada).

Synergistic Activities

Software development: *Back of Envelope Ocean Model*, a free numerical solver for process-oriented studies (e.g., Zhao et al. 2019,2021) and GFD classes: `http://nordet.net/beom.html`

Science outreach: Environmental Studies Program of Virginia Beach City Public Schools, Chesapeake Bay Foundation's Brock Environmental Center, VB VA (March 31, 2022).
Co-authored the educational booklet *Ice pumps & Algae* (Twarog et al., ISBN 978-0-692-86607-8), featuring the scientific results from project NSF OPP-1443657.
Annual Big Blue Camp at ODU, Norfolk VA (June 18-19, 2018; June 26, 2017).
Annual STREAM Expo at St. John the Apostle School, VB VA (May 8, 2018; May 18, 2017).

Serve as jury in local science fairs (see Section *Professional Service*).
Various services to federal agencies and scientific journals (see Section *Professional Service*).

Awards, Certificates and Special Training

Top 10% most downloaded papers 1 year after publication: *Modeling the seasonal cycle of iron…*, JGR, 2020
Outstanding Reviewer, Journal of Marine Systems, Elsevier, 2018
Training Workshop on 4–D Variational Data Assimilation with ROMS, July–Aug. 2019
Advanced Climate Dynamics Course on ice sheet-ocean interactions, Lyngen (Norway), June 2010

Appendix: Co-authored Refereed Publications

Divergent responses of nitrogen-species loadings to future climate change in the Chesapeake Bay watershed,
Bian, Z., S. Pan, R.G. Najjar, M.A.M. Friedrichs, E.E. Hofmann, M. Herrmann, K.E. Hinson, P. St-Laurent, H. Tian,
Journal of hydrology: Regional studies, 56(102060), https://doi.org/10.1016/j.ejrh.2024.102060
Hypoxia influences the extent and dynamics of suitable fish habitat in Chesapeake Bay, USA,
Schonfeld, A.J., G.M. Ralph, J. Gartland, P. St-Laurent, M.A.M. Friedrichs, R.J. Latour,
Marine Ecology Progress Series, 2024, 748, 117–135, https://doi.org/10.3354/meps14706
Influence of rivers, tides, and tidal wetlands on estuarine carbonate system dynamics,
Da, F., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, E.H. Shadwick, E.G. Stets,
Estuaries and Coasts, 2024, 47, 2283–2305, https://doi.org/10.1007/s12237-024-01421-z
Response of hypoxia to future climate change is sensitive to methodological assumptions,
Hinson, K., M.A.M. Friedrichs, R.G. Najjar, Z. Bian, M. Herrmann, P. St-Laurent, H. Tian,
Scientific Reports, 2024, 14(17544), https://doi.org/10.1038/s41598-024-68329-3
Hypoxia forecasting for Chesapeake Bay using artificial intelligence,
Zheng, G., S.S. Uz, P. St-Laurent, M.A.M. Friedrichs, A. Mehta, P.M. DiGiacomo,
Artificial Intelligence for the Earth Systems, 2024, 3(e230054), https://doi.org/10.1175/AIES-D-23-0054.1
Evaluating the skill of statistical species distribution models trained with mechanistic model output,
Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown,
Ecological Modelling, 2024, 491(110692), https://doi.org/10.1016/j.ecolmodel.2024.110692
Impacts and uncertainties of climate-induced changes in watershed inputs on estuarine hypoxia,
Hinson, K.E., M.A.M. Friedrichs, R.G. Najjar, M. Herrmann, Z. Bian, G. Bhatt, P. St-Laurent, H. Tian, G. Shenk,
Biogeosciences, 2023, 20(10), 1937-1961, https://doi.org/10.5194/bg-20-1937-2023
Forecasting *Prorocentrum minimum* blooms in the Chesapeake Bay using empirical habitat models,
Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown,
Front. Mar. Sci., 2023, 10:1127649, https://doi.org/10.3389/fmars.2023.1127649
Sensitivity of the relationship between Antarctic ice shelves and iron supply to projected changes in the atmospheric forcing,
Dinniman, M.S., P. St-Laurent, K.R. Arrigo, E.E. Hofmann, G.L. van Dijken,
J. Geophys. Res.: Oceans, 2023, 128(2), e2022JC019210, https://doi.org/10.1029/2022JC019210
Comparing two ocean biogeochemical models of Chesapeake Bay with and without the sulfur cycle instead highlights the importance of particle sinking, burial, organic matter, nitrification and light attenuation,
Jin, R., M.-A. Pradal, K. Hantsoo, A. Gnanadesikan, P. St-Laurent, C.J. Bjerrum,
Ocean Modelling, 2023, 182, https://doi.org/10.1016/j.ocemod.2023.102175
Constructing a model including the cryptic sulfur cycle in Chesapeake Bay requires judicious choices for key processes and parameters, Jin, R., M.-A. Pradal, K. Hantsoo, A. Gnanadesikan, P. St-Laurent, C.J. Bjerrum,
MethodsX, 2023, 102253, https://doi.org/10.1016/j.mex.2023.102253
Nitrogen reductions have decreased hypoxia in the Chesapeake Bay: Evidence from empirical and numerical modeling,
Frankel, L.T., M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, R.N. Lipcius, G. Bhatt, G.W. Shenk,
Science of the Total Environment, 2022, https://doi.org/10.1016/j.scitotenv.2021.152722
Extent and causes of Chesapeake Bay warming,
Hinson, K., M.A.M. Friedrichs, P. St-Laurent, F. Da, R.G. Najjar,
Journal of the American Water Resources Association, 2022, 58(6), https://doi.org/10.1111/1752-1688.12916
Environmentally-determined production frontiers and lease utilization in Virginia's eastern oyster aquaculture industry,

Beckensteiner, J., A. Scheld, P. St-Laurent, M.A.M. Friedrichs, D. Kaplan,
Aquaculture, 2021, vol.542, art.736883, https://doi.org/10.1016/j.aquaculture.2021.736883

Mechanisms driving decadal changes in the carbonate system of a coastal plain estuary,
Da, F., M.A.M. Friedrichs, P. St-Laurent, E.H. Shadwick, R.G. Najjar, K. Hinson,
J. Geophys. Res.: Oceans, 2021, 126(6), e2021JC017239, https://doi.org/10.1029/2021JC017239

Real-time environmental forecasts of the Chesapeake Bay: Model setup, improvements, and online visualization,
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Appendix: Invited Seminars (excluding seminars at home institution)

Coastal acidification, tropical cyclones, and alkalinity enhancement: A look at select Chesapeake Bay research projects, webinar for the CCPO & ICAR spring 2025 seminar series, host: E.E. Hofmann, 24 Feb. 2025.

A "How To" guide to the digital atlas for physical and biogeochemical conditions in the Chesapeake Bay, webinar to the Mid-Atlantic Coastal Acidification Network (MACAN), hosts: K. Wakefield & J. Reimer-Gill, 5 Sep. 2024, `http://nordet.net/macan2024`

Sensitivity of Chesapeake Bay hypoxia to physical forcings,
Webinar to the Integrated Coastal Modeling (ICoM) group, hosts: R. Hetland and I. Kraucunas, Sep. 21, 2022.

Modeling circulation and biogeochemical cycling in the GP17-ANT region,
Plenary speaker, Workshop for section GP17-ANT of US Geotraces (virtual), host: P. Sedwick, May 6–8, 2020.

Effects of sea level rise on hypoxia in the Chesapeake Bay: A model intercomparison,
Johns Hopkins University, Earth & Planetary Sciences Seminars, Baltimore MD, host: M. Pradal, Oct. 23, 2019.

Modeling the pathways of oceanic heat and glacial meltwater on the continental shelf of the Amundsen Sea, Antarctica,
UC Irvine, Earth System Science Seminars, Irvine CA, host: Eric Rignot, Jan. 15, 2019.

Seasonal and spatial variability of glacial meltwater in the Amundsen Sea: Insight from numerical models,
Lamont-Doherty Earth Observ. (LDEO), Ocean/Climate Phys. Div., Palisades NY, host: Xiaojun Yuan, May 23, 2014.

Appendix: Sessions Chaired at National/International Conferences

Biogeochemical cycling and transport across the land-ocean continuum, R.G. Najjar, M.A.M. Friedrichs, P. St-Laurent, S. Pan, session at the 2019 CERF conference, Mobile AL, November 3-7, 2019.

Appendix: Presentations at Professional Meetings and Published Abstracts

Quantifying the sources of dissolved iron in the Amundsen Sea, Antarctica (2025) Steffen, J., V. Chinni, L. Herbert, S. Stammerjohn, P. St-Laurent, H. Oliver, J. Wellner, T. Yager, T. Conway, R. Sherrell, J. Fitzsimmons, presentation at the Gordon Research Conference in chemical oceanography, Manchester NH, 20–25 July.

Impacts of Antarctic subglacial freshwater from the grounding zone to the open continental shelf (2024) Dinniman, M.S., A. Oroche, P. St-Laurent, W. Sauthoff, M. Siegfried, presentation at the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Shellfish thresholds, aquaculture resilience: Identifying pathways for adaptation to coastal/ocean acidification (2024) Rivest, E.B., B. Katz, D. Wrathall, C. Czajka, P. St-Laurent, M. Brush, S. Blachman, F. Da, M.A.M. Friedrichs, presentation at the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Benthic iron fluxes and cycling in Antarctic coastal sediments adjacent to the retreating West Antarctic Ice Sheet (2024) Herbert, L.C., A. Ohayon, A.P. Lepp, L.E. Miller, J. Fitzsimmons, J. Steffen, J. Wellner, P. St-Laurent, H. Oliver, P.L. Yager, R.M. Sherrell, invited abstract for the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Interannual variability of benthic biomass in a large, coastal plain estuary (2024) Ajayi, S., R.G. Najjar, R. Woodland, E. Rivest, M.A.M. Friedrichs, P. St-Laurent, presentation at the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Impact of tropical storms on the carbonate system of a coastal plain estuary (2024) Labossière, A., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, presentation at the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Forecasting harmful algal blooms in the Chesapeake Bay using empirical habitat models (2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R Hood, C.W. Brown, presentation at the Fall AGU Meeting, Washington (DC), 9–13 December 2024.

Evaluating the prediction skill of correlative estuarine species distribution models trained with mechanistic model output (2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the OceanPredict Symposium 2024 in partnership with IOC-UNESCO and the UN Ocean Decade, Paris (France), 18–22 November 2024.

Integrated surveillance across multiple scales to improve HAB monitoring and detection: Toward an early warning system for HABs in the lower Chesapeake Bay (2024) Mulholland, M.R., E. Hofmann, P. Bernhardt, L. Gibala-Smith, K. Crider, K. Marciniak, M.A.M. Friedrichs, P. St-Laurent, K. Reece, S. Mapes, W. Reay, S. Musick, K. Hudson, M. Ford, S. Tomlinson, presentation at the 12th U.S. Symposium on Harmful Algae, Portland (ME), 27 Oct.–1 Nov.

Unraveling environmental factors controlling harmful algal blooms in the Chesapeake Bay using generalized linear models

(2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the 12th U.S. Symposium on Harmful Algae, Portland (ME), 27 Oct.–1 Nov.

Impacts of Antarctic subglacial freshwater from the grounding zone to the open continental shelf (2024) Dinniman, M., A. Oroche, P. St-Laurent, W. Sauthoff, and M. Siegfried, presentation at the Joint IAPSO/IACS Commission on Ice-Ocean Interactions Online workshop, October, 2024.

Impacts of Antarctic subglacial freshwater from the grounding zone to the open continental shelf (2024) Dinniman, M., A. Oroche, P. St-Laurent, W. Sauthoff, M. Siegfried, presentation at the Cryo2ice Symposium 2024, September, 2024.

The marine icescape as modulator of ocean-ice shelf interactions (2024) Stammerjohn, S., P. St-Laurent, T. Maksym, P.L. Yager, R.M. Sherrell, J. N. Fitzsimmons, P. Medeiros, J. M. Steffen, V. Chinni, L. C. Herbert, H. Oliver, G. Azarias Utsumi, and TARSAN, presentation to the 2024 International Thwaites Glacier Collaboration (ITGC) meeting, Cambridge UK, 16–20 September 2024.

Iron supplies to the Amundsen Sea: Sediment flux and the Dotson Ice Shelf meltwater pump (2024) Sherrell, R.M., V. Chinni1, L.C. Herbert, J. M. Steffen, H. Oliver, A. Ohayon, J.N. Fitzsimmons, R. Bundy, S.E. Stammerjohn, P. St-Laurent, P. Medeiros, J. Wellner, A. Wåhlin, P.L. Yager, presentation at the 2024 International Thwaites Glacier Collaboration (ITGC) meeting, Cambridge UK, 16–20 September 2024.

Optimizing the forecast skill of correlative estuarine species distribution models using mechanistic model outputs (2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the Unifying Innovations in Forecasting Capabilities Workshop (UIFCW24) workshop, Jackson MS, 25 July 2024.

Evaluating the skill of hybrid statistical species distribution models trained with mechanistic model outputs (2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the Advances in Marine Ecosystem Modelling Research (AMEMR) symposium, Plymouth UK, 8–11 July 2024.

Impacts of tropical storms on the alkalinity of two contrasting tidal tributaries in a coastal plain estuary (2024), Labossière, A., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, presentation at the Advances in Marine Ecosystem Modelling Research (AMEMR) symposium, Plymouth UK, 8–11 July 2024.

Modeling mid-21st century Chesapeake Bay hypoxia: the role of climate changes at the ocean, land, and atmospheric boundaries, Hawes, C., M.A.M. Friedrichs, P. St-Laurent, K. Hinson, R.G. Najjar (2024), presentation at the Advances in Marine Ecosystem Modelling Research (AMEMR) symposium, Plymouth UK, 8–11 July 2024.

Relative importance of factors driving hypoxia onset in the Chesapeake Bay (2024), Szot, O., M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, C.K. Harris, presentation at the Advances in Marine Ecosystem Modelling Research (AMEMR) symposium, Plymouth UK, 8–11 July 2024.

An atlas for physical/biogeochemical conditions in the Chesapeake Bay (2024) St-Laurent, P., M.A.M. Friedrichs, presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

Enhanced surveillance to improve HAB monitoring and detection: Toward an early warning system for HABs in the lower Chesapeake Bay (2024) Mulholland, M., E. Hofmann, P. Bernhardt, L. Gibala-Smith, M.A.M. Friedrichs, P. St-Laurent, K. Reece, W. Reay, S. Musick, M. Ford, S. Tomlinson, presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

Unraveling environmental factors controlling harmful algal blooms in the Chesapeake Bay using generalized linear models (2024) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R. Hood, C. Brown, presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

Projected impacts of climate-induced changes in the ocean, land, and atmosphere on mid-21st century Chesapeake Bay hypoxia, Hawes, C., M.A.M. Friedrichs, P. St-Laurent, K. Hinson, R.G. Najjar (2024), presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

Mechanisms impacting changes in patterns of hypoxia onset in the Chesapeake Bay (2024), Szot, O., M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, C.K. Harris, presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

Impacts of tropical storms on the carbonate chemistry of two contrasting tidal tributaries in the Chesapeake Bay (2024), Labossière, A., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, presentation at the 2024 Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, 10–12 June 2024.

How does the oceanic heat supply to ice shelves respond to year-to-year changes in the Amundsen icescape? (2024) St-Laurent, P., S.E. Stammerjohn, T. Maksym, abstract HE23A-01 presented at Ocean Sciences Meeting 2024, 18–23 February 2024, https://doi.org/10.22541/essoar.170983351.16758149/v1

Impacts of Antarctic subglacial freshwater from the grounding zone to the open continental shelf (2024), Dinniman, M.S., P. St-Laurent, W. Sauthoff, M. Siegfried, abstract HE23A-09 presented at Ocean Sciences Meeting 2024, 18–23 February

2024.

Iron sources in the Amundsen Sea: Insights from soluble, colloidal, dissolved and particulate fractions (2024), Chinni, V., L. Herbert, J. Steffen, S.E. Jenness, K. Bu, J.N. Fitzsimmons, R.M. Bundy, H. Oliver, P. St-Laurent, P.L Yager, R.M. Sherrell1, abstract HE53A-08 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Variable benthic fluxes of iron to a coastal Antarctic ecosystem revealed by a coupled modeling-observational approach (Amundsen Sea, West Antarctica) (2024), Herbert, L, P. St-Laurent, J. Steffen, H. Oliver, J.N. Fitzsimmons, R.M. Sherrell, abstract HE53A-06 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

How does colored dissolved organic matter (CDOM) influence the distribution and intensity of hypoxia in coastal oceans? (2024) Jin, R., A. Gnanadesikan, M.-A. S. Pradal, P. St-Laurent, abstract CB34A-1066 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Assessing vulnerability of eastern oyster producers in Chesapeake Bay to ocean acidification and multiple stressors (2024), Katz, B., D.J. Wrathall, S. Blachman, M.J. Brush, T. Cooper-Kolb, C. Czajka, F. Da, K. Hudson, E.B. Rivest, P. St-Laurent, B. Vogt, M.A.M. Friedrichs, abstract CC33A-08 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Controls on the carbonate system of a coastal plain estuary: Rivers, tidal wetlands, and tidal cycles (2024) Friedrichs, M.A.M., F. Da, P. St-Laurent, R. Najjar, E.H. Shadwick, abstract CB44A-1115 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Impact of tropical storms on the carbonate chemistry of two contrasting tidal tributaries in a coastal plain estuary (2024) Labossière, A., M.A.M. Friedrichs, P. St-Laurent, R. Najjar, abstract CB51A-04 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Interacting effects of coastal acidification and climate change co-stressors projected to reduce oyster growth in Chesapeake Bay (2024) Czajka, C., M.A.M. Friedrichs, E.B. Rivest, P. St-Laurent, M.J. Brush, F. Da, abstract CC23A-07 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Relative roles of atmosphere, ocean, and land in modeled climate-induced changes to mid-21st century Chesapeake Bay hypoxia (2024) Hawes, C., M.A.M. Friedrichs, P. St-Laurent, K. Hinson, R. Najjar, abstract CC51A-07 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Drivers of hypoxia onset in Chesapeake Bay (2024), Szot, O., M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, C.K. Harris, abstract CP52A-07 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

Evaluating the prediction skill of statistical coastal species distribution models trained with mechanistic model simulations (2024) Horemans, D.M.L., M.A.M. Friedrichs, P, St-Laurent, R.R. Hood, C.W. Brown, abstract DO12A-03 presented at Ocean Sciences Meeting 2024, 18–23 February 2024.

How does the circulation of the five largest tributaries of the Chesapeake Bay compare? (2023) St-Laurent, P., C.T. Friedrichs, M.A.M. Friedrichs, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Evaluating the impact of hurricanes on carbonate chemistry in the Chesapeake Bay (2023) Labossière, A., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Variability in the timing of hypoxia onset in the Chesapeake Bay (2023) Szot, O.N., M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Relative roles of atmosphere, ocean, and land on future climate-induced changes in Chesapeake Bay hypoxia (2023) Hawes, C., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, M. Herrmann, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Acidification and other climate change stressors projected to impact oyster growth in Chesapeake Bay (2023) Czajka, C., M.A.M. Friedrichs, E.B. Rivest, P. St-Laurent, M. Brush, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Calcite saturation state responses to extreme discharge and climate change: Implications for shellfish aquaculture and restoration (2023) Da, F., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, E.B. Rivest, E.H. Shadwick, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Artificial neural networks for riverine biogeochemistry in a real-time environmental forecast system of Chesapeake Bay (2023) Bever, A.J., M.A.M. Friedrichs, P. St-Laurent, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Quantifying uncertainties in climate projections of Chesapeake Bay hypoxia (2023) Hinson, K., M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, M. Herrmann, H. Tian, Z. Bian, G. Shenk, G. Bhatt, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

Does exposure to coastal acidification correlate with site-specific effects on oyster production? (2023) Rivest, E., B. Katz,

P. St-Laurent, K. Hudson, D. Wrathall, M.A.M. Friedrichs, presentation at the 2023 CERF conference, Portland OR, 12–16 Nov. 2023.

How does the circulation of the five largest tributaries of the Chesapeake Bay compare? (2023) St-Laurent, P., C.T. Friedrichs, M.A.M. Friedrichs, presentation at the Gordon Research Conference on Coastal Ocean Dynamics, Smithfield RI, June 18–23, 2023.

How does the circulation of the five largest tributaries of the Chesapeake Bay compare? (2023) St-Laurent, P., C.T. Friedrichs, M.A.M. Friedrichs, presentation at the 2023 York River and small coastal basins symposium, Gloucester Point VA, 17 May.

Impacts of future climate change on York River carbonate chemistry and oyster growth (2023) Czajka, C., M.A.M. Friedrichs, E.B. Rivest, P. St-Laurent, M. Brush, presentation at the 2023 York River and small coastal basins symposium, Gloucester Point VA, 17 May.

Quantifying impacts of oyster restoration on alkalinity in the lower York River (2023) Labossière, A., M.A.M. Friedrichs, P. St-Laurent, E.B. Rivest, R.G. Najjar, presentation at the 2023 York River and small coastal basins symposium, Gloucester Point VA, 17 May.

Characterization of habitat suitability in Chesapeake Bay: Integrating carbonate chemistry variability and ocean acidification thresholds (2023) Rivest, E.B., P. St-Laurent, F. Da, M.A.M. Friedrichs, presentation at the 2023 York River and small coastal basins symposium, Gloucester Point VA, 17 May.

Forecasting *Prorocentrum minimum* blooms in the Chesapeake Bay using empirical habitat models (2023) Horemans, D.M.L., M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the 2023 Liège Colloquium "Machine learning and data analysis in oceanography", Liège, Belgium, 8–12 May.

S.T.A.R.: Shellfish Thresholds and Aquaculture Resilience (2023) St-Laurent, P., M.A.M. Friedrichs, S.A. Blachman, M.J. Brush, C.R. Czajka, F. Da, K.L. Hudson, B. Katz, E. Rivest, B. Vogt, D.J. Wrathall, presentation at the NOAA ocean acidification community meeting & mini symposium, Scripps Seaside Forum, La Jolla CA, 4–6 Jan.

Impacts of future climate change on Chesapeake Bay carbonate chemistry and oyster growth (2023) Czajka, C., M.A.M. Friedrichs, E.B. Rivest, P. St-Laurent, presentation at the NOAA ocean acidification community meeting & mini symposium, Scripps Seaside Forum, La Jolla CA, 4–6 Jan.

Sensitivity of Chesapeake Bay hypoxia to physical forcings: A regional Earth system modeling perspective (2022) St-Laurent, P., M.A.M. Friedrichs, R.G. Najjar, J. Wilkin, paper GC52J-0262 presented at 2022 Fall Meeting, AGU, 12-16 Dec.

A physical-biogeochemical model of Delaware Bay for climate applications (2022) Najjar, R.G., M. Herrmann, J. Wilkin, A.G. Lopez, P. St-Laurent, M.A.M. Friedrichs, paper GC52J-0258 presented at 2022 Fall Meeting, AGU, 12-16 Dec.

On the relative importance of offshelf/onshelf drivers of variability in mCDW inventory on the Amundsen shelf, Antarctica (2022) St-Laurent, P., S.E. Stammerjohn, T. Maksym, R.M. Sherrell, paper C15D-0621 presented at 2022 Fall Meeting, AGU, 12-16 Dec, `https://doi.org/10.25773/chnp-gd30`

Sea ice, fast ice, and icebergs as modulators of ocean-ice shelf interactions (2022) Stammerjohn, S.E., P. St-Laurent, T. Maksym, P.L. Yager, R.M. Sherrell, paper C41C-03 presented at 2022 Fall Meeting, AGU, 12-16 Dec.

Thwaites Glacier's data-driven dynamics (2022) Schwans, E., B.R. Parizek, R.B. Alley, S. Anandakrishnan, M. Morlighem, P. St-Laurent, paper C45B-07 presented at 2022 Fall Meeting, AGU, 12-16 Dec.

The delivery of colored dissolved organic matter (CDOM) may affect the distribution and intensity of hypoxia in coastal oceans (2022) Jin, R., A. Gnanadesikan, M.S. Pradal, P. St-Laurent, M.A.M. Friedrichs, paper OS52B-0508 presented at 2022 Fall Meeting, AGU, 12-16 Dec.

Predicting harmful algal blooms in the Chesapeake Bay using empirical habitat models, D.M.L. Horemans, M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, 11^{th} U.S. Symposium on Harmful Algae, Albany NY, October 23-28, 2022.

Impacts of future climate change on Chesapeake Bay carbonate chemistry and oyster growth, C. Czajka, M.A.M. Friedrichs, E.B. Rivest, P. St-Laurent, M. Brush, 5^{th} International Symposium on the Ocean in a High CO_2 World, Lima, Peru, Sep. 13–16, 2022.

Effects of the resolution of model inputs on real-time environmental forecasting, A. Bever, P. St-Laurent, M.A.M. Friedrichs, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Controls on the carbonate system of the York River Estuary, F. Da, M.A.M. Friedrichs, P. St-Laurent, E.H. Shadwick, E.B. Rivest, R.G. Najjar, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Variability of the estuarine circulation inside tidal tributaries of the Chesapeake Bay, P. St-Laurent, C.T. Friedrichs, M.A.M. Friedrichs, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Predicting harmful algal blooms in the Chesapeake Bay using empirical habitat models, D.M.L. Horemans, M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Impacts of future climate change on Chesapeake Bay carbonate chemistry and oyster growth, C. Czajka, M.A.M. Friedrichs, E. Rivest, P. St-Laurent, Mark Brush, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

The direct effect of warming dominates future increases in Chesapeake Bay hypoxia, C. Hawes, M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, M. Herrmann, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Nitrogen reductions have decreased hypoxia in the Chesapeake Bay: Evidence from empirical and numerical modeling, L.T. Frankel, M.A.M. Friedrichs, P. St-Laurent, A.J. Bever, R.N. Lipcius, G. Bhatt, G.W. Shenk, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Watershed climate scenario uncertainty and implications for Chesapeake Bay hypoxia, Hinson, K., M.A.M. Friedrichs, R.G. Najjar M. Herrmann, P. St-Laurent, Z. Bian, G. Bhatt, H. Tian, G. Shenk, Chesapeake Community Research Symposium (ChesCRS), Annapolis MD, June 6–8, 2022.

Probabilistic projections of watershed climate impacts on hypoxia in Chesapeake Bay, United States, K. Hinson, M.A.M. Friedrichs, M. Herrmann, R.G. Najjar, P. St-Laurent, presentation at the 53^{rd} International Liège Colloquium on Ocean Dynamics, Liège, Belgium, May 16-20, 2022.

Impacts of future atmospheric climate change on U.S. Chesapeake Bay hypoxia, C. Hawes, M.A.M. Friedrichs, P. St-Laurent, R.G. Najjar, M. Herrmann, presentation at the 53^{rd} International Liège Colloquium on Ocean Dynamics, Liège, Belgium, May 16-20, 2022.

Predicting harmful algal blooms in the Chesapeake Bay using empirical habitat models, D.M.L. Horemans, M.A.M. Friedrichs, P. St-Laurent, R.R. Hood, C.W. Brown, presentation at the Ecological Forecasting Workshop, Woods Hole MA, April 12-14, 2022.

Sensitivity of the relationship between Antarctic ice shelves and iron supply to projected changes in the atmospheric forcing, Dinniman, M.S., P. St-Laurent, K.R. Arrigo, E.E. Hofmann, G.L. van Dijken, abstract EGU22-3041, presentation at the EGU General Assembly 2022, Vienna, Austria, April 3–8, 2022.

Examining the role of mixing in the circulation of the York and Rappahannock estuaries (2022) St-Laurent, P., C.T. Friedrichs, M.A.M. Friedrichs, presentation at the 2022 Ocean Sciences meeting, virtual meeting, February 27 to March 4 2022.

Integrating carbonate chemistry variability and ocean acidification thresholds to characterize habitat suitability for Eastern oysters (2022) Rivest, E.B., P. St-Laurent, F. Da, M.A. M. Friedrichs, presentation at the 2022 Ocean Sciences meeting, virtual meeting, February 27 to March 4 2022.

Sensitivity of the relationship between Antarctic ice shelves and iron supply to projected changes in the atmospheric forcing (2022) Dinniman, M.S., P. St-Laurent, K.R. Arrigo, E.E. Hofmann, G.L. van Dijken, presentation at the 2022 Ocean Sciences meeting, virtual meeting, February 27 to March 4 2022.

Processes driving carbonate system variability in the York River Estuary (2022) Da, F., M.A.M. Friedrichs, P. St-Laurent, E.H. Shadwick, E.B. Rivest, R.G. Najjar, presentation at the the 2022 Ocean Sciences meeting, virtual meeting, February 27 to March 4 2022.

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Climate change-driven terrestrial inputs increases likelihood of hypoxia in a eutrophied estuary (2022) Hinson, K., M.A.M. Friedrichs, M. Herrmann, G. Bhatt, Z. Bian, R.G. Najjar, G. Shenk, P. St-Laurent, Y. Yao, H. Tian, presentation at the 2022 Ocean Sciences meeting, virtual meeting, February 27 to March 4 2022.

Data-driven dynamics on Thwaites Glacier, West Antarctica (2021) Schwans, E., B.R. Parizek, R.B. Alley, M. Morlighem, S. Anandakrishnan, D. Pollard, P. St-Laurent, presentation at the 2021 Fall AGU meeting, New Orleans LA, December 13-17 2021.

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A habitat suitability index for oyster restoration in Maryland (2021) Coleman, K., E. Amrhein, E. Wills, S. Coleman, P. St-Laurent, A. Lopez, H. Ward Slacum, poster presentation at the 151st annual meeting of the American Fisheries Society, Baltimore MD, November 6-10 2021.

Contrasting the estuarine circulation of the York and Rappahannock estuaries (2021) St-Laurent, P., M.A.M. Friedrichs, C.T. Friedrichs, presentation at the 2021 CERF conference (virtual), November 1-11 2021.

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Long-term changes in estuarine carbon cycling: The view from the Chesapeake Bay (2021) Najjar, R.G., M.A.M. Friedrichs, M. Herrmann, S. Pan, E.H. Shadwick, P. St-Laurent, E.G. Stets, H. Tian, Y. Yao, presentation at the 2021 CERF conference (virtual), November 1-11 2021.

Forecasting and reporting of daily hypoxia severity in Chesapeake Bay (2021) Bever, A.J., M.A.M. Friedrichs, P. St-Laurent, D. Malmquist, presentation at the 2021 CERF conference (virtual), November 1-11 2021.

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Glacially derived sediment sources of iron fueling productivity in the Amundsen Sea (2021) Herbert, L.C., A. Lepp, L. Simkins, J. Wellner, S. Severmann, R.M. Sherrell, P. Yager, S. Stammerjohn, P. St-Laurent, presentation at the 2021 WAIS workshop, Sterling VA, September 20-23 2021.

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Quantifying uncertainty in the impact of climate change on hypoxia (2021) Hinson, K.E., M.A.M. Friedrichs, R.G. Najjar, M. Herrmann, G. Shenk, G. Bhatt, Y. Yao, Z. Bian, H. Tian, P. St-Laurent, presentation at the ASLO 2021 Aquatic Sciences Meeting, virtual meeting, June 22-27, 2021.

Re-examining the estuarine circulation of the York River (2021) St-Laurent, P., M.A.M. Friedrichs, C. Friedrichs, presentation at the 2021 York River Symposium hosted by the Chesapeake Bay National Estuarine Research Reserve (CBNERR) of Virginia, virtual meeting, May 13, 2021.

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Recent contribution of airborne gravity data to the modern observation of the cryosphere (2019) Millan, R., E.J. Rignot, J. Mouginot, M. Morlighem, A. Rivera, L. An, P. St-Laurent, A.A. Bjork, P. Dutrieux, presentation at the 2019 AGU Fall Meeting, abstract 487901, San Francisco CA, December 9-13, 2019.

Role of the eastern shear margin in Thwaites Glacier's dynamics (2019) Schwans, E., B.R. Parizek, R.B. Alley, M. Morlighem, P. St-Laurent, R.T. Walker, presentation at the 2019 AGU Fall Meeting, abstract 513156, San Francisco CA, December 9-13, 2019.

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How WAIS meltwater and earlier springtime opening may flip the Amundsen Sea Polynya from carbon sink to source (2019) Yager, P.L., H. Oliver, P. St-Laurent, R.M. Sherrell, S.E. Stammerjohn, presentation at the 2019 WAIS workshop, Julian CA, Oct. 16-18, 2019.

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An integrative approach to modeling species distribution: Combining correlative and mechanistic relationships to predict climate impacts on species (2019) Crear, D., A. Hobday, R. Latour, R. Brill, M.A.M. Friedrichs, P. St-Laurent, K. Weng, presentation at the 2019 Species on the Move conference, Kruger National Park, South Africa, July 22-26, 2019.

How ice sheet-ocean interactions impact the carbon cycle of an Antarctic coastal polynya (2019) Yager, P.L., P. St-Laurent, H. Oliver, R.M. Sherrell, S.E. Stammerjohn and M.S. Dinniman, presentation at the 25th International Symposium on Polar Sciences, Korea Polar Research Institute, Incheon, Republic of Korea, May 13-15, 2019.

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Does light or iron control the Amundsen Sea Polynya phytoplankton bloom? (2018) Oliver, H., P. St-Laurent, R.M. Sherrell, P.L. Yager, presentation at the Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole MA, June 25-28, 2018.

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Carbon Budget of Tidal Wetlands, Estuaries, and Shelf Waters of Eastern North America (2018) Najjar, R.G., M. Herrmann, R. Alexander, E.W. Boyer, D. Burdige, D.E. Butman, W.J. Cai, E.A. Canuel, R.F. Chen, M.A.M. Friedrichs, R.A. Feagin, P.C. Griffith, A. Hinson, J.R. Holmquist, X. Hu, W.M. Kemp, K.D. Kroeger, A. Mannino, S.L. McCallister, W.R. McGillis, M.R. Mulholland, C.H. Pilskaln, J. Salisbury, S.R. Signorini, P. St-Laurent, H. Tian, M. Tzortziou, P. Vlahos, A.Z. Wang, R.C. Zimmerman, presentation at the 2018 Ocean Sciences Meeting, Portland OR, Feb.11-16, 2018.

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