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School of Marine Sciences  
Ira C. Darling Marine Center  
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## EDUCATION

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University of Delaware, Graduate College of Marine Studies, Lewes, DE (2008)  
Ph.D. in Marine Biology-Biochemistry  
Graduate Advisor: Timothy E. Targett, Ph.D.

Roger Williams University, Bristol, RI (May 2000)  
Bachelor of Science with honors (Magna cum laude) - Marine Biology  
Minor - Chemistry

Sea Education Association (SEA), Woods Hole, MA (Fall 1998)

## RESEARCH AND LEADERSHIP

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Associate Professor, School of Marine Science, University of Maine (2019 – present)

Assistant Professor, School of Marine Sciences, University of Maine (2014 – 2019)

Marine Biology Graduate Program Coordinator for the School of Marine Sciences  
(September 2018-present)

Assistant Director for Research at Maine Sea Grant (October 2014 – 2018)

Assistant Research Professor, School of Marine Sciences, University of Maine (2010-2014)

Acting Interim Director of the University of Maine's Ira C. Darling Marine Center  
(Summer 2014)

Co-Leader of Research Theme 1: Environmental Carrying Capacities for Coastal  
Seas in NSF's EPSCoR Sustainable Ecological Aquaculture Network (September  
2014 – present)

Environmental Monitoring Director for the University of Maine led DeepCwind  
Consortium and Maine Aqua Ventus Offshore Wind Energy Initiatives (2011-  
present)

Post-doctoral Researcher, Department of Civil and Environmental Engineering, University  
of Delaware (2007-2010): Post-Doc Advisor: Dominic M. Di Toro, Ph.D.

Research Assistant, University of Delaware, Lewes, DE (2001-2008)

PH.D. Dissertation: Behavior of juvenile estuary-dependent fish in relation to the spatial and  
temporal dynamics of diel-cycling hypoxia in an estuarine tributary

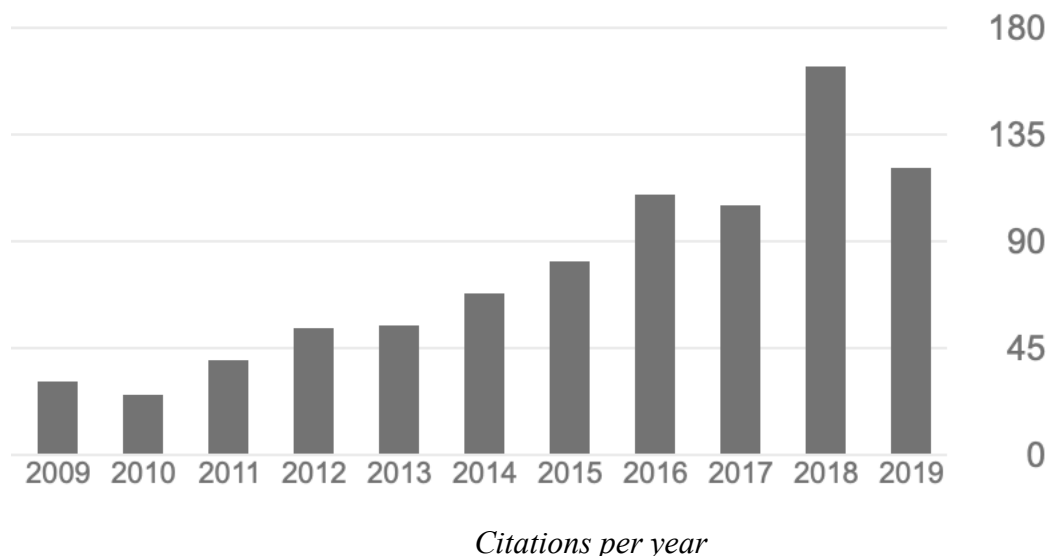
Undergraduate Senior Honors Program, Roger Williams University, Bristol, RI (2000)

Honors Thesis: The effect of temperature and salinity on the optimum growth rate of *Tautoga onitis*

## PUBLICATIONS

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As of 9/12/2019: h-index = 14, i10 index = 18 (source: Google Scholar)



### **Manuscripts in revision, undergoing final edits prior to submission, or in complete draft form:**

- Goode, A. & Brady, D.C. (*in revision*) Evaluating benthic impact of the Gulf of Maine lobster fishery using the swept area seabed impact (SASI) model. *Canadian Journal of Fisheries and Aquatic Sciences*
- Wang, Z., Chai, F., & Brady, D.C. (*in revision*) Development of a New Sediment Flux Model - Application in Chesapeake Bay. *Progress in Oceanography*
- Friedland, K., Thomas, A., Goode, A., Melrose, C., Manning, J., Kohut, J., Morse, R., Miles, T., & Brady, D.C. (*in review*) Disjunctive Regime Shifts in Surface and Bottom Thermal Environments of a Continental Shelf Ecosystem. *Fisheries Oceanography*
- Gray, M.W., Coupland, C., Mayer, L., Testa, J.M., Adams, C., Wang, A. & Brady, D.C. (*in prep*) Effects of oyster aquaculture on acidification in the Damariscotta River Estuary: toward a carbonate carrying capacity. *Frontiers in Marine Science*

### **In press**

- Scherelis, C., Brady, D.C., & Zydlewski, G.B. (2019) Relating fluctuations in fish abundance to dam removal and environmental conditions in the Penobscot River, Maine, using hydroacoustics. *River Research and Applications* doi:10.1002/rra.3560
- Adams, C.M., Mayer, L., Rawson, P., Brady, D.C., & Newell, C. (2019) Detrital protein contribution to oyster nutrition and growth in the Damariscotta estuary, Maine, USA. *Aquaculture Environmental Interactions* doi:10.3354/aei00330

- Oppenheim, N., Wahle, R., Brady, D.C., Goode, A. & Pershing, A. (2019) Forecasting fishery trends in a warming ocean: A modeling framework using early life stages of the American lobster. *Ecological Applications*. doi:[10.1002/eap.2006](https://doi.org/10.1002/eap.2006)
- Goode, A., Brady, D.C., Steneck, R., & Wahle, R. (2019) The brighter side of climate change: Ocean warming crosses a biological threshold to amplify an iconic fishery. *Global Change Biology* doi:10.1111/gcb.14778 Journal Impact Factor: 8.88
- Johnson, T.R., Beard, K., Brady, D.C., Byron, C.J., Cleaver, C., Duffy, K., Keeney, N., Kimble, M., Miller, M., Moeykens, S., Teisl, M., van Walsum, G.P., Yuan, J. (2019) A social-ecological systems framework to guide marine aquaculture research. *Sustainability* 2019, 11, 2522; doi:10.3390/su11092522
- Staples, K. W., Chen, Y., Townsend, D. W. & Brady, D. C. (2019) Spatiotemporal variability in the phenology of the initial intra-annual molt of American lobster (*Homarus americanus* Milne Edwards, 1837) and its relationship with bottom temperatures in a changing Gulf of Maine. *Fisheries Oceanography* doi:10.1111/fog.12425
- Gray, M.W., Chapparo, O., O'Neill, S.P., Couture, T., Moreira, A., & **Brady, D.C.** (in press) Does brooding prepare young for tomorrow's acidic oceans and estuaries? *Special Issue of Journal of Shellfish Research*.
- Bayer, S.R., Wahle, R.A., **Brady, D.C.**, Jumars, P.A., Stokesbury, K.D.E., & Carey, J.D. (2018) Fertilization dynamics in scallop aggregations: reconciling model predictions with field measurements. *Ecosphere*. 9(8), e02359.
- Testa, J.M., **Brady, D.C.**, Murphy, R., & Kemp, W.M. (2018) Nutrient- and climate-induced shifts in the phenology of linked biogeochemical cycles in a temperate estuary. *Frontiers in Marine Science*. 5(114), 1-15 doi:10.3389/fmars.2018.00114.
- Friedland, K.D., Mouw, C.B., Asch, R.G., Ferreira, A.S.A., Henson, S., Hyde, K.J., Morse, R.E., Thomas, A.C., & **Brady, D.C.** (2018) Phenology and time series trends of the dominant seasonal phytoplankton bloom across global scales. *Global Ecology and Biogeography* 27(5), 551-569 doi: 10.1111/geb.12717.
- \*Snyder, J., Boss, E., Weatherbee, R., Thomas, A., **Brady, D.C.**, and Newell, C. (2017) Oyster aquaculture site selection using Landsat 8-derived sea surface temperature, turbidity, and chlorophyll a. *Frontiers in Marine Science* 4(190), 1-11 doi:10.3389/fmars.2017.00190.
- \*Publication Highlighted by NASA: <https://landsat.gsfc.nasa.gov/oyster-prospecting-with-landsat-8/> & <https://earthobservatory.nasa.gov/IOTD/view.php?id=90777&src=i>
- \*Du Clos, K.T., Jones, I.T., Carrier, T.J., **Brady, D.C.**, and Jumars, P.A. (2017) Model-assisted measurements of suspension-feeding flow velocities. *Journal of Experimental Biology* 220: 2096-2107.
- \*Highlighted photo winner in the JEB 2018 Calendar
- Frederick, C., **Brady, D.C.**, & Bricknell, I. (2017) Landing strips: Model development for estimating body surface area of farmed Atlantic salmon (*Salmo salar*). *Aquaculture* 473: 299-302.
- Li, B. <sup>a</sup>, Tanaka, K.R. <sup>a</sup>, Chen, Y., **Brady, D.C.**, & Thomas, A.C. (2017) Assessing the quality of modeled bottom water temperatures from the Finite-Volume Community Ocean Model

(FVCOM) in the Northwest Atlantic Region. *Journal of Marine Systems*. 173: 21-30.  
Journal Impact Factor: 2.499

McHenry, J. <sup>α</sup>, Steneck, R., & **Brady, D.C.** (2017) Abiotic proxies for predictive mapping of near-shore benthic assemblages: Implications for marine spatial planning. *Ecological Applications* 27: 603-618. Journal Impact Factor: 4.393

Brewer, J., Springuel, N., Wilson, J., Alden, R., Morse, D., Schmitt, C., Bartlett, C., Johnson, T., Guenther, C., & **Brady, D.C.** (2016). Engagement in a Public Forum: Knowledge, Action, and Cosmopolitanism. *Antipode*, 49: 273-293. Journal Impact Factor: 1.915

Bayer, S. R. <sup>α</sup>, Wahle, R.A., Jumars, P.A., & **Brady, D.C.** (2016). Measuring scallop fertilization success in the field: chamber design and tests. *Marine Ecology Progress Series* 551:141-154. Journal Impact Factor: 2.619

\*Lasley-Rasher, R., **Brady, D.C.**, Smith, B. & Jumars, P.A. (2015). It takes guts to locate mobile crustacean prey. *Marine Ecology Progress Series*. 538: 1-12. Journal Impact Factor: 2.619

\*Featured Article in *MEPS Volume 538*

Testa, J.M., **Brady, D.C.**, Cornwell, J.C., Owens, M.S., Sanford, L.P., Newell, R.I.E., Newell, C.R., Richardson, J. & Suttles, S.E. (2015) Modeling the impact of floating oyster aquaculture on sediment-water nutrient and oxygen fluxes. *Aquaculture Environment Interactions*, 7: 205-222. Journal Impact Factor: 2.9

Zhang, Q., **Brady, D.C.**, Boynton, W.R., & Ball, W.P. (2015) Long-term trends of nutrients and sediment from the non-tidal Chesapeake watershed: An assessment of progress by river and season. *Journal of the American Water Resources Association*, 51(6): 1534-1555. Journal Impact Factor: 2.1

Grieve C, **Brady D.C.**, & Polet H (2015) Best practices for managing, measuring and mitigating the benthic impacts of fishing - Part 2. *Marine Stewardship Council Science Series* 3: 81 – 120.

Grieve, C., **Brady, D.C.**, and Polet, H. (2014) Best practices for managing, measuring, and mitigating the benthic impact of fishing - Part 1. *Marine Stewardship Council Science Series* 2: 18-88

Testa, J.M., Li, Y., Lee, Y., Li, M., **Brady, D.C.**, Di Toro, D.M., & Kemp, W.M. (2014) Quantifying the effects of nutrient loading on dissolved O<sub>2</sub> cycling and hypoxia in Chesapeake Bay using a coupled hydrodynamic-biogeochemical model. *Journal of Marine Systems*, 139: 139-158. Journal Impact Factor: 2.499

Grieve, C., **Brady, D.C.**, & Polet, H. (2014) Best practices for managing, measuring, and mitigating the benthic impacts of fishing – Part 1. *Marine Stewardship Council Science Series* 2: 18-88. (Cited by the Institute for European Environmental Policy: Allocating fishing opportunities using environmental criteria and being proposed as the guide for determining impact as a criterion for allocating quota)

**Brady, D.C.** & Targett, T.E. (2013) Movement of juvenile weakfish (*Cynoscion regalis*) and spot (*Leiostomus xanthurus*) in relation to diel-cycling hypoxia in an estuarine tributary: Assessment using acoustic telemetry. *Marine Ecology Progress Series*, 491: 199-219. Journal Impact Factor: 2.619

- Brady, D.C.**, Testa, J.M., Di Toro, D.M., Boynton, W.R., & Kemp, W.M. (2013) Sediment Flux Modeling: Application and validation for coastal systems. *Estuarine, Coastal, and Shelf Science* 117: 107-124. Journal Impact Factor: 2.732
- Testa, J.M., **Brady, D.C.**, Di Toro, D.M., Boynton, W.R., Cornwell, J.C., & Kemp, W.M. (2013) Sediment Flux Modeling: Simulating nitrogen, phosphorus, and silica cycles. *Estuarine, Coastal and Shelf Science*, 131: 245-263. Journal Impact Factor: 2.732
- McMahan, M.D. <sup>a</sup>, **Brady, D.C.**, Cowan, D.F., Grabowski, J.H., & Sherwood, G.D. (2013) Using acoustic telemetry to observe the effects of a groundfish predator (Atlantic cod, *Gadus morhua*) on movement of the American lobster (*Homarus americanus*). *Canadian Journal of Fisheries and Aquatic Sciences*, 70: 1625-1634. Journal Impact Factor: 2.798
- Zhang, Q., **Brady, D.C.**, & Ball, W.P. (2013) Long-term seasonal trends of nitrogen, phosphorus, and suspended sediment load from the non-tidal Susquehanna River Basin to Chesapeake Bay. *Science of the Total Environment*, 452-453: 208-221. Journal Impact Factor: 4.900
- Brady, D.C.** & Targett, T.E. (2010) Characterizing the escape response of air-saturation and hypoxia-acclimated juvenile summer flounder (*Paralichthys dentatus*) to diel-cycling hypoxia. *Journal of Fish Biology*, 77(1): 137-152. Journal Impact Factor: 1.702
- Breitburg, D.L., Craig, J.K., Fulford, R.S., Rose, K.A., Boynton, W.R., **Brady, D.C.**, Ciotti, B.J., Diaz, R.J., Friedland, K.D., Hagy, J.D. III, Hart, D.R., Hines, A.H., Houde, E.D., Kolesar, S.E., Nixon, S.W., Rice, J.A., Secor, D.H., & Targett, T.E. (2009) Nutrient enrichment and fisheries exploitation: interactive effects on estuarine living resources and their management. *Hydrobiologia*, 629(1): 31-47. Journal Impact Factor: 2.056
- Tyler, R.M., **Brady, D.C.**, & Targett, T.E. (2009) Temporal and spatial dynamics of diel-cycling dissolved oxygen in estuarine tributaries. *Estuaries and Coasts*. 32(1): 123-145. Journal Impact Factor: 2.659
- Brady, D.C.**, Tuzzolino, D.M., & Targett, T.E. (2009) Behavioral responses of juvenile weakfish, *Cynoscion regalis*, to diel-cycling hypoxia: swimming speed, angular correlation, expected displacement and effects of hypoxia acclimation. *Canadian Journal of Fisheries and Aquatic Sciences*. 66(3): 415-424. Journal Impact Factor: 2.798
- Fennel, K., **Brady, D.C.**, Di Toro, D.M., Fulweiler, R., Gardner, W.S., Giblin, A., McCarthy, M.J., Rao, A., Seitzinger, S., Thouvenot-Korppoo, & Tobias, C. (2009) Modeling denitrification in aquatic sediments. *Biogeochemistry*. 93(1-2): 159-178. Journal Impact Factor: 3.265
- CBEO Project Team: Ball, W.P., **Brady, D.C.**, Brooks, M.T., Burns, R., Cuker, B.E., Di Toro, D.M., Gross, T.F., Kemp, W.M., Murray, L., Murphy, R.R., Perlman, E., Piasecki, M., Testa, J.M., & Zaslavsky, I. (2008) Prototype system for multi-disciplinary shared cyberinfrastructure: Chesapeake Bay Environmental Observatory (CBEO). *Journal of Hydrologic Engineering, ASCE*. 13(10): 960-970. Journal Impact Factor: 1.576

#### Peer Reviewed Reports Targeting Specific Management Actions

- Brady, D.C.**, J.V. DePinto, S.C. Chapra, D.M. Di Toro, M.A.M. Friedrichs, M.W. Gray, T. Jordan, M. Xia. (2018) Scientific and Technical Advisory Committee Chesapeake Bay Water Quality and Sediment Transport Model (WQSTM) Review. STAC Publication Number 18-002, Edgewater, MD. 40 pp.

Ball, W.P., B.D Michael, D.C. Brady, J.L. Martin, S.H. Scott, and P.R. Wilcock (2017) Lower Susquehanna River Reservoir System Model Enhancements Peer Review. CRC Publication No. 17-173, Chesapeake Research Consortium, Edgewater, MD. 59 pp.

**Brady, D.C. & Di Toro, D.M.** (2015) Can TMDL Models Reproduce the Nutrient Loading-Hypoxia Relationship? Water Environmental Research Federation (WERF) Final Report No. U4R09

Fitzpatrick, J., **Brady, D.C.**, De Pinto, J., Di Toro, D.M., Kemp, W.M., Scavia, D. (2015) Scenario-Based Forecasts in Support of Regional Coastal Management: Concepts of Operation. White Paper Prepared for NOAA/NOS National Centers of Coastal Ocean Science

**Brady, D.C.** (Environmental Monitoring Team Lead), and Environmental Monitoring Team (2015). Environmental Monitoring Report for VoltturnUS Deployment in Castine, ME. Final Report Submitted to the United States Department of Energy. 484 p.

**Brady, D.C.** (2014). TMDL Model and Data Evaluation for Delaware's Inland Bays: Modeling Diel-cycling Hypoxia in Delaware's Inland Bays. Report to the Center for the Inland Bays.

Aikman, F., **Brady, D.C.**, Brush, M.J., Burke, P. Cerco, C.F., Fitzpatrick, J.J., He, R., Jacobs, G.A., Kemp, W.M., & Wiggert, J.D. (2014) Modeling approaches for scenario forecasts of Gulf of Mexico hypoxia. *Edited by* D.M. Kidwell, A.J. Lewitus, & E. Turner. White Paper from the Hypoxic Zone Modeling Technical Review Meeting, 17-19 April 2013 at the Mississippi State University Science and Technology Center at NASA's Stennis Space Center in Mississippi, 46 pp.

### **Book Chapters**

Newell, C.R., **Brady, D.C.**, & Richardson, J. (2018) Chapter 24 Farm-scale production models. Chapter in *The G+S Book: Goods and Services of Marine Bivalves*. Springer.

Testa, J. M., Y. Li, Y. J. Lee, D. C. **Brady, D.C.** M. Di Toro, and W. M. Kemp. (2017). Modeling physical and biogeochemical controls on dissolved oxygen in Chesapeake Bay: Lessons learned from simple and complex approaches. *in* D. Justic, K. Rose, R. Hetland, and K. Fennel, editors. Modeling Coastal Hypoxia: Numerical Simulations of Patterns, Controls and Effects of Dissolved Oxygen Dynamics. Springer-Verlag. Pp. 95-118

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### FUNDING HISTORY (PI, Co-I, or author)

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#### **Pending**

Brady, D.C., Mills, K., Belle, S., Vonderweidt, C. Incorporating Environmental Change into Aquaculture Business Planning and Risk Assessment. Letter of Intent Accepted and Submission to follow in November 2019 to the NOAA Saltonstall Kennedy. \$300,000

#### **Funded Grants**

Varahramyan, K., Beard-Tisdale, M.K., Emerson, D., Kinnison, M., Leslie, H. (PI's), Senior Research Personnel: Abedi, A., Brady, D.C., Bruewitz, Cammen, K., Countway, P., Frederich, M., King, W., Lasley-Rasher, R., McGreavy, B., Price, N., Ranco, D., Record, N., Rich, J., Saros, J., Sherwodd, G., Tarbox, B., Wahle, R., Whitney, Wilson, K., and Zegers. Molecule to Ecosystem: Environmental DNA as a Nexus of Coastal Ecosystem Sustainability for Maine

- (Maine-eDNA). Submitted to the National Science Foundation Established Program to Stimulate Competitive Research (EPSCoR) Track I on July 31<sup>st</sup>, 2018 for \$20,000,000
- Brady, D.C., Xue, H., Incze, L. Ji, R. (WHOI), Chen, C. (UMass). Projecting Climate-related Shifts in American Lobster Habitat and Connectivity: Integrated Modeling to Inform Sustainable Management. National Sea Grant, \$400,000 Project Period: 9/1/2019-8/31/2021
- Brady, D.C., Hare, M. (Cornell), Gray, M. (UMCES) Optimizing restoration to promote ecosystem services in New York Harbor using ecosystem models. New York Sea Grant \$233,000 Project Period 1/1/2020-12/31/2022
- Development of a Low Cost Environmental Observing Buoy for Aquaculture Site Prospecting. Leslie, H., Brady, D.C., Davis, C., Pettigrew, N., and Girgis, J. University of Maine System Research Reinvestment Fund funded for \$42,840 from June 1<sup>st</sup>, 2019 – May 31<sup>st</sup>, 2020
- Track 1: Detecting changes in zooplankton following recovery of river herring in the Penobscot. Lasley-Rasher and Brady, D.C. University of Maine System Research Reinvestment Fund funded for \$31,660 from June 1<sup>st</sup>, 2019 – May 31<sup>st</sup>, 2020
- Track 3: Science and Workforce Development for Sustainable Aquaculture in Maine. Leslie, H., Wilson, K., Beal, B., Lasley-Rasher, R., Brady, D.C., Rich, J., Stoll, J., & Willis, T. University of Maine System Research Reinvestment Fund funded for \$30,000 from May 1<sup>st</sup>, 2019 – April 30<sup>th</sup>, 2020
- Track 1: Graduate Support to Enhance Collaborative Research with Maine's Lobster Industry. Brady, D.C., Bouchard, D., Wahle, R., & Billings, C. University of Maine System Research Reinvestment Fund funded for \$31,132 from June 1<sup>st</sup>, 2019 – May 31<sup>st</sup>, 2020
- Retrospective analysis of marine mammal strandings in a region of socio-ecological and environmental change. Cammen, K, **Senior Personnel:** Todd, S., Doughty, L., Brady, D.C., Staudinger, M. NOAA Prescott funded at \$89,556. Project Period 8/31/2018-09/01/2019
- Improving productivity of Casco Bay kelp farms using spatiotemporal analysis of coastal nutrient data. Grebe, G., Brady, D.C., & Byron, C. Submitted to USDA's Northeast Sustainable Agriculture Research & Education Graduate Student Grants Program for \$14,754 September 1<sup>st</sup> 2018-August 31<sup>st</sup> 2019
- New high-resolution satellite-derived water-quality data informs sustainable aquaculture development. Brady, D., Boss, E., Morse, D., Thomas, A. Funded by the National Sea Grant Aquaculture Initiative funded for \$692,200 from September 1<sup>st</sup>, 2018-August 31<sup>st</sup>, 2021
- Optimizing production and products for scallop aquaculture. Brady, D.C. (UMaine) and Morse, D. (Maine Sea Grant). NOAA Saltonstall-Kennedy Grant funded for \$295,380 for project period 9/1/2018-8/31/2020
- OpenWater – A Citizen Science Monitoring System. Kynor, D. (Creare), Boss, E., & Brady, D.C. NOAA Small Business Innovation Research (SBIR) Phase 2 funded at \$400,000 for 5/1/2018-4/30/2020
- A strategy for ocean and coastal acidification (OCA) education and citizen science monitoring in the Northeast. Strong, A. (Hamilton) & Brady, D.C. NOAA Northeast Regional Coastal Ocean Observing System (NERACOOS) for \$17,085 and a project period of 5/15/2018-5/31/2019

- Supporting the Development of Maine's Sea Scallop Aquaculture Industry. Morse, D. & Brady, D.C., Lasley-Rasher, R. University of Maine's Research Reinvestment Fund, funded November 2017 for \$100,000
- Deploying High Throughput Nitrogen Sensors to Guide Policy Development and Science at Portland, Maine's East End. Bohlen, C. (CBEP), Brady, D.C., Strong, A. (UMaine), Brewer, A., Mohlar, R. (Maine DEP), Doan, M. (Friends of Casco Bay), Firmin, S. (Director of Wastewater Services, Portland, ME), & Wilson, K. (USM). Funded by Challenge.gov's Nutrient Sensor Action Challenge for \$10,000 (eligible for \$100,000 prize) from January 1<sup>st</sup>-December 31<sup>st</sup>, 2018
- Highlighting Low-lying Estuary Watershed Areas to Compare Coastal Bacteria Pollution Vulnerability in Maine. Smith, S., Beard, K., McGreavy, B., Jones, S., & Brady, D.C. Funded by the USGS's Maine Water Resources Research Institute for \$40,000 (1/1/2018-12/31/2019)
- Maine Agricultural and Forest Experimental Station (MAFES) Faculty. Aquaculture Site Prospecting: Using Remote Sensing and Ecosystem Models to Identify Future Sustainable Aquaculture Growing Areas. Funded for the USDA National Institutes of Food and Agriculture Accession Number: 1013134. Eligible for research funds and a Research Assistantship Funding through the Hatch Fund.
- Enhancing nutrient and pH monitoring in Casco Bay. Liebman, M., Bohlen, C., Brady, D.C. (Casco Bay Estuary Partnership) EPA Supplemental Funding. Funded at \$30,000
- Low pH in the coastal waters of the Gulf of Maine: What are the sources and vulnerabilities to coastal communities? Townsend, D., Strong, A., Brady, D.C., Mayer, L., Salisbury, J., & Morrison, R. NOAA Regional Vulnerability Assessments for Ocean Acidification. Funded at \$400,000 from September 1<sup>st</sup> 2017-August 31<sup>st</sup> 2020
- Improving Maine's Coastal Infrastructure: Upgrade Decisions through High-Frequency Nutrient Measurements in Casco Bay. Brady, D.C., Strong, A., Bohlen, C., Wilson, K. University of Maine Research Reinvestment Fund – 6/1/2017-5/31/2018 funded at \$100,000
- New England Aqua Ventus 1 - Part II. Dagher, H., Viselli, A., Ward, J.S., Goupee, A., & Brady, D.C. Proposal to the Department of Energy - Project Period 6/1/2016 - 12/31/2020 funded at \$3,700,000 per year
- Dynamics of Ocean and Coastal Acidification in Coastal Maine: Assessing the Potential Risks to Livelihoods. Strong, A., Brady, D.C., & Stancioff, E. Proposal to the University of Maine Research Reinvestment Fund – Project Period Summer 2016 funded at \$5,000
- Enhancing the forecasting value of the American Lobster Settlement Index to Maine's Coastal Economy. Wahle, R., Brady, D.C., & Beal, B. Proposal to the University of Maine Research Reinvestment Fund – Project Period 09/01/2016-08/31/2017 funded at \$100,000
- Modeling estuarine circulation on Maine mudflats to improve shellfish harvesting. Brady, D.C., Beal, B., & McGreavy, B. University of Maine Research Reinvestment Fund – Project Period 09/01/2016-08/31/2018 funded Gabrielle Hillyer for two years (\$20,000 graduate stipend & tuition)
- Incorporating Environmental Variability into Assessment and Management of American Lobster. Chen Y., Jacobson, L. (NOAA), Brady, D.C., Wahle, R. University of Maine Research Reinvestment Fund – Project Period 09/01/2017-08/31/2018 funded Kisei Tanaka for one year (\$20,000 graduate stipend & tuition)



Supporting the Darling Marine Center as a Research and Demonstration Farm for Shellfish and Seaweed Aquaculture in Maine. Leslie, H., Brady, D.C., Davis, C., & Morse, D. NSF EPSCoR Project – Sustainable Ecological Aquaculture Network Research Intensive Farms. Project Period 09/01/2016-08/31/2017 funded at \$7,750

Simulating the transport of bacterial pathogens in Machias Bay, ME. Maine Coastal Program and Maine Department of Marine Resources. Brady, D.C. & Cole, K. 09/01/2016-08/31/2018 funded at \$74,000 (renewed for 9/1/2018-8/31/2019 for an additional \$38,000)

Assessing Casco Bay's nutrient sources, cycles and impacts: Improving Casco Bay loading estimations. Brady, D.C., & Smith, S. Casco Bay Estuary Partnership Fellowship – 9/1/2016-8/31/2017, \$20,000 graduate stipend (Designed the first National Estuary Program Casco Bay Estuary Partnership Fellowship for the University of Maine)

Developing a dynamic ecosystem model: a tool for managers, researchers and fishermen planning for the future of Maine fisheries (and coastal communities). Wilson, K. & Brady, D.C. – Funded by University of Southern Maine MEIF. Project timeline: November 1, 2015 – October 31, 2016 funded at \$100,000

NSF MRI Track1: Acquisition of High Performance Computing to Model Coastal Responses to a Changing Environment. Brady, D.C., Xue, H., Chai, F., Zou, Q., Segee, B., & Cousins, S. NSF Major Research Instrumentation 09/01/2015-08/31/2018 \$266,309

Aquaculture Site Prospecting: Developing Remote Sensing Capabilities for the Aquaculture Community of Maine. Brady, D.C., Boss, E., Thomas, A., Morse, D., and Newell, C. - National Strategic Initiative for National Sea Grant - 09/01/2015-08/31/2017 \$227,208

Characterizing the Penobscot River estuarine transition zone to determine environmental challenges for Atlantic salmon, their prey, and other sea-run species. Brady, D.C. NOAA Cooperative Institute of the North Atlantic Region – 01/01/2015-12/31/2015 \$66,893.

The Development of On-Land, Closed Containment Integrated Multitrophic Sustainable Aquaculture by means of Ecological Diversity. Pryor, T. (Acadia Harvesting), Barrett, A. (Acadia Harvesting), Brady, D.C. (UMaine). Funding Agency: NSF Small Business Innovation Research Phase II. Project Period: 10/1/2014-9/31/2016 funded at \$750,000

FSML Planning for the Future of the Darling Marine Center. Investigators: Perry, M.J., Brady, D.C., Chai, F., Lindsay, S., & Steneck, R. (University of Maine). Funding Agency: National Science Foundation. Project Period: 9/1/2013-9/1/2015 funded at \$24,993

Water Sustainability and Climate Category 3 Collaborative: Impacts of Climate Change on the Phenology of Linked Agriculture-Water Systems. Ball, W.P. (Director), Harmon, C. (JHU – Associate Director), Brady, D.C. (UMaine – Assistant Director), Testa, J.M., Kemp, W.M., Wainger, L. (UMCES), and Ortiz-Bobra, A. (Cornell). Funding Agency: NSF. Project Period: 09/01/2014 – 08/31/2018 funded at \$2,500,000.

Maine EPSCoR: The Nexus of Coastal Marine Social-Environmental Systems. *Part of the Writing Team*. Funding Agency NSF EPSCoR. Project Period: 11/1/2014-10/31/2019 funded at \$20,000,000

Application of a Shallow-water Model for Use in Supporting Chesapeake Bay Management Decision-making. Investigators: Testa, J.M., Li, M. (UMCES), & Brady, D.C. (University of Maine). Funding Agency: Environmental Protection Agency. Project Period: 03/2014-02/2016 funded at \$73,333

The role of wild and farmed fish in modulating infectious pressure of the sea louse (*Lepeophtherius salmonis* Kroyer 1837). Investigators: Bricknell, I. & Brady, D.C. (University of Maine). Funding Agency: NOAA National Sea Grant. Project Period 2013-2015 funded at \$697,826.

TMDL Model and Data Evaluation for Delaware's Inland Bays. Investigator: Brady, D.C. (University of Maine). Funding Agency: Delaware Center for the Inland Bays. Project Period: 2012-2013 funded at \$15,000.

Validating and improving a mechanistic sediment flux modeling framework to simulate a climate and nutrient management driven transition from eutrophication to oligotrophication. Investigators: Brady, D.C. (University of Maine), Di Toro, D.M. (University of Delaware (UD)), Nixon, S. (University of Rhode Island), & Fulweiler, R. (Boston University). Funding Agency: Rhode Island Sea Grant. Project Period: 2011-2012 funded at \$10,000.

Feasibility Study for Operational Regional Coastal Ecosystem Management Models. Investigators: Fitzpatrick, J. (HDR|HydroQual), Di Toro, D.M. (UD), Scavia, D. (University of Michigan), De Pinto, J. (LimnoTech, Inc.), Kemp, W.M. (University of Maryland Center for Environmental Sciences), & Brady, D.C. (University of Maine). Funding Agency: NOAA Center for Sponsored Coastal Ocean Research. Project Period: 2011-2014 funded at \$500,000.

Maine Aqua Ventus I: Floating Offshore Wind Energy. Investigators: Dagher, H. (Advanced Composites Center) & Brady, D.C. (University of Maine). Funding Agency: Department of Energy's Offshore Wind Advanced Technology Demonstration Projects. Project Period: 2013-2014 funded at \$4,000,000.

Developing wildlife monitoring capabilities for weather buoys in the Gulf of Maine. Investigators: Brady, D.C. (University of Maine) & Adams, E. (BioDiversity Research Institute). Funding Agency: Maine Sea Grant. Project Period: 2013-2014 funded at \$5,400

Can TMDL Models Reproduce the Nutrient Loading-Hypoxia Relationship? Investigators: Di Toro, D.M. (UD), Brady, D.C. (University of Maine), & Ball, W.P. (Johns Hopkins University). Funding Agency: Water Environment Research Federation (WERF). Project Period: 2010-2014 funded at \$175,000.

### ***Funded Opportunities Used to Support my Transition to UMaine as Research Faculty***

NASA EPSCoR Research Project: Building and Enhancing a Competitive and Sustainable Remote Sensing Infrastructure for Critical Zone Studies and Cutting Edge Research. Investigators: Mullan, M., Yan, X-H, Sparks, D., Di Toro, D.M., Klemas, V., Jo, Y-H., & Brady, D.C. (UD). Funding Agency: NASA EPSCoR. Project Period: 2008 – 2011 funded at \$749,769 and matched at \$750,124.

Collaborative research: Process Based Statistical Interpolation Methods for Improved Analysis of WATERS Test-bed Observations and Water Quality Models. Investigators: Ball, W.P., Curriero, F. (JHU), Di Toro, D.M., & Brady, D.C. (UD). Funding Agency: National Science Foundation – Environmental Engineering. Project Period 2009 – 2012 funded at \$252,193

CHRP07: Modeling Hypoxia and ecological responses to Climate and Nutrients. Investigators: Kemp, W.M., Li, M., North, E., Boynton, W., Secor, D., (University of Maryland Center for Environmental Studies), Di Toro, D.M., Brady, D.C. (UD), & Fennel, K. (Dalhousie University). Funding Agency: NOAA's Coastal Hypoxia Research Program. Project Period 2007 – 2012 funded at \$2,321,845

A Prototype System for Multi-Disciplinary Shared Cyberinfrastructure – Chesapeake Bay Environmental Observatory (CBEO). Investigators: Gross, T. (Chesapeake Research Consortium), Ball, W.P. (JHU), Di Toro, D.M. (UD), Kemp, W.M. (UMCES), Piasecki, M. (Drexel University), & Burns, R. (JHU). Funding Agency: National Science Foundation - Cyberinfrastructure. Project Period: 2007-2010 funded at \$2,149,906

### ***Selected Unfunded Grants still being pursued***

Rich, J., Brady, D.C., Giblin, A. (WHOI), & Allen, A. (Scripps). Collaborative Research: Large intracellular nitrate pools in photic subtidal sediments: Elucidating controls on pool size and impacts on coastal nitrogen cycle. Submitted to NSF Biological Oceanography for \$1,340,294

Wilson, K., Lasley-Rasher, R.L., Willis, T. (USM), Record, N. (Bigelow), Karp-Boss, L., & Brady, D.C. Detecting top-down vs bottom-up controls on marine plankton: leveraging the restoration of an anadromous mesopredator. Submitted to NSF Biological Oceanography for \$853,604

Brady, D.C., Byron, C., Keeney, N.R., Gelais, A., Costa-Pierce, B., Gower, T., Arciero, M., Quinlan, J. Ginot, T., Bouchard, D., Dwyer M. North Atlantic coastal data infrastructure and food systems forecasting. Letter of Intent to USDA NIFA Food and Agriculture Cyberinformatics Tools (FACT) was encouraged for full proposal submission. Budget is \$1M between public and private partners (UNE/UMaine/Oceanicsdotio/Instrospective Systems) to develop and transfer tools for data-driven decision-making to ocean food industries.

Improving Delivery and Impact of the Aquaculture in Shared Waters Training Program. Johnson, T., Bisson, S., Morse, D., Brady, D., Bartlett, C., Springuel, N., & Leslie, H. Submitted to the National Sea Grant Aquaculture Initiative for \$457,812 in March, 2018

Projecting Climate-related Shifts in American Lobster Habitat and Connectivity: Integrated Modeling to Inform Sustainable Management. (Considered Fundable Contingent upon Additional Funding) Brady, D.C., Wahle, R.A., Steneck, R., Chen, Y., Shank, B., Manderson, J.P., & Xue, H. NOAA- Climate Program Office funding rate proposed: \$1,215,408

Development of a decision support system for sea lice management in salmon aquaculture. Cole, K., Brady, D.C., & Bricknell, I. Submitted to USDA National Institute of Food and Agriculture on May 17<sup>th</sup>, 2018 for \$295,477

Nitrate cycling in subtidal marine sediments exposed to light. Rich, J. & Brady, D.C. Submitted to the National Science Foundation Biological Oceanography in February 2018 for \$801,983

Acquisition of a high-performance computing instrument to support deep learning, modeling/simulation, and visualization for STEM+Art. Turner, R., Koons, P., Segee, B., Senecal, J-S., Xue, H., Abedi, A., Albert, R., Ames, E., Tisdale, M.K., Birkel, S., Boss, E., Brady, D.C., Bult, C.J., Chawathe, S., Comins, N.F., Demers, D., Dickens, P.M., Dimmel, J., Eli, S., Fastook, J., Felice, G.A., Hahmann, T., Hess, S., Hiebeler, D., Karp-Boss, L., Khalil, A., Legaard, K.R., Magri, C., Maxwell, B., Nittel, S., Pettigrew, N., Szakas, J., Vel, S., Wilson, J., Zheng, X., & Zhu, Y. Submitted to NSF Major Research Instrumentation for \$1,458,975 on February 5<sup>th</sup>, 2018

NRT-INFEWS: Innovations in Transdisciplinary Training: A Model for Translating Research into Economic Development. Bolton, J., Anderson, P., Langston, A., Bowden, T., Bricknell, I., Hamlin, H., Huguenard, K., Perry, J., Brady, D.C., Skonberg, D., van Walsum, P., McConnon, J., Kelly, R., & Rickard, L. Submitted to NSF National Research Traineeship Program. Proposed Project Period: 9/1/2017-8/31/2022 for \$2,975,134

Upgrading Nearshore Oceanographic Observing Capacity in the Gulf of Maine. Brady, D.C., Pettigrew, N., Gray, M. Submitted to NSF Oceanographic Instrumentation. Proposed Project Period: 5/1/2017-4/30/2018 for \$291,063

Detecting top-down vs bottom-up controls on marine plankton: leveraging the restoration of an anadromous mesopredator. Wilson, K., Lasley-Rasher, R. (USM), Karp-Boss, L. Brady, D.C., & Record, N. (Bigelow). Submitted to NSF Biological Oceanography for \$245,732 and a proposed project period of 1/1/2018-12/31/2021

The Clamming Capacity Project, to create a learning network focused on strengthening adaptive capacities in Maine's shellfish co-management system. McGreavy, B., Hart, D., & Brady, D.C. Submitted to the Sewall Foundation in January 2018 for \$94,614

Ocean and Coastal Acidification Risk Assessment for Maine's coastal Economies and Ecosystems. Strong, A., & Brady, D.C. Submitted to the University of Maine's Interdisciplinary Undergraduate Research Collaborative November 2017 for \$30,000

Establishment of an Industry and Academic Imaging Microscopy Users Group. Davis, C. (MAIC), Pryor, T. (MSD, LLC), White, M., Mook, W. (Mook Sea Farm), Newell, C. (Pemaquid Oyster Inc.), Barker, S., Fischer, P. (Maine Sea Farm), Maloney, C., Haley, J. (AquaLine LLC), Morse, D. (Maine Sea Grant), Leslie, H., Miller, T., Runge, J., Brady, D.C., Rich, J., Wahle, R. (UMaine) Submitted to the Maine Technology Asset Fund (MTAF) for \$55,000 (December 2017, *not funded*).

Commercializing the aquaculture production of sea scallops (*Placopecten magellanicus*) through the Japanese method of ear-hanging. (*not funded*) Brady, D.C., Morse, D., Anderson, P., Davis, C., Gray, M., Cowperthwaite, H. Submitted to the National Sea Grant Integrated Aquaculture Program for \$879,000

From the seed to harvest: spatfall and reseeding experiments to benefit scallop aquaculture and fishery production. Gray, M., Brady, D.C., & Morse, D. (*not funded*). NOAA Saltonstall-Kennedy preproposal encouraged for full proposal submission (out of 600 submissions): Proposed for \$300,000

NRT-INFEWS: Integrating Renewable Energy, Fisheries, and Aquaculture: Advancing the Scientific Workforce to Sustain Coastal Systems. Zydlewski, G., Bell, K., Johnson, T., Brady, D.C., Greig, H., Lindenfeld, L., Landon, M., Dagher, H., Evans, K., deCharron, A., Smith, S., & Saros, J. Submitted to NSF National Research Traineeship for ~\$3,000,000 and a proposed project period of 7/1/2016-8/31/2021

Development of an integrated GIS-based aquaculture tool for site selection, benthic impacts, ecosystem services and economic yield. Brady, D.C., Morse, D., Mayer, L., & Newell, C. Submitted to National Sea Grant National Strategic Initiatives for \$299,957. Proposed Project Period: 9/1/2016-8/31/2018

Citizen science validating ocean color products for the benefit of estuarine science and Maine communities. Thornton, K., Brady, D.C., Boss, E., Mayer, L., Cole, K., Leslie, H., & Lasley-Rasher, R. (*not funded*) NASA Citizen Science for Earth Systems Program. Proposed Funding Rate \$3,000,000 and proposed project period: 10/21/2016-10/20/2020

The Shellfishing Sustainability Project: Connecting science with decision making for water quality improvement, shellfish management, and pain prevention. Investigators: McGreavy, B., Brady, D.C., Smith, S., Beard, K., Silka, L. (UMaine), Jones, S. (UNH), Fulmer, S. (UMass Lowell),

and Randall, S. (Maine Clammers Association) Funding Agency: Integrating Human Health and Well-being with Ecosystem Service, EPA-G2016-STAR-A1. Proposed Funding Level: \$598,855. Project Period: 9/1/2016-8/31/2019

NRT: The Coastal Fuse Training Program: Preparing the next generation of engaged STEM scientists at the nexus of food, water, and energy. Zydlewski, G., Lindenfeld, L., Bell, K., Brady, D.C., Greig, H., deCharron, A., Saros, J., & Landon, M. Submitted to NSF National Research Traineeship for ~\$3,000,000 and a proposed project period of 1/1/2016-12/31/2021

Using Electric Vehicles to Balance Fluctuations in Offshore Wind Generation: A Realistic Experiment and an Implementation Model for the US East Coast. Dagher, H., Goupee, A., Visellis, A., Brady, D.C., Edgar, R., Thiagarajan, K., Abedi, A., & Libby, C. Submitted to NSF EPSCoR Track II with the University of Delaware (Kempton W.) for \$4,000,000 and a proposed project period of 9/1/2015-8/31/2019

OA2015: Developing Modeling and Observational Systems in Northern New England to Examine the Potential Impact of Ocean and Coastal Acidification on the American Lobster. Brady, D.C., Wahle, R., Mayer, L., Xue, H., Smith, S., Fields, D (Bigelow), Salisbury, J. (UNH), Arnold, S. (Island Institute). Submitted to NOAA Center for sponsored Coastal Ocean Research for \$1,500,000 and a proposed project period of 9/1/2015-8/31/2018

NSF PIRE: Physical and biogeochemical processes controlling eutrophication, hypoxia and acidification in estuarine and shelf waters of the US and China. Investigators: Luther, G., Cai, W.J., Kirchman, D., Veron, D., Yan, X-H, Kukulka, T., Cohen, J., Sharp, J., Oliver, M., Targett, t., Hanson, T., Coyne, K., Chan, C., Targett, N., Archer, C., Trembanis, A. (UDelaware), Dai, M., Jiao, N., Huang, B., Hu, J., Jiang, Y., Shang, S., Gao, K., Kao, S-J., Cheng, P., Zhang, Y., Wang, G., Guo, X., Zhang, W., Liu, Z., Wang, H., Wang, K., Chen, M. (Xiamen U.), & Brady, D.C. Funding Agency: NSF Partnerships in International Research and Education. Project Period: 2015-2020. Proposed Funding Level: ~\$5,000,000

Establishing Unique Multi-scale Experimental and Modeling Capabilities to Accelerate the Development of Ocean Energy. Dagher, H., Thiagarajan, K., Viselli, A., Brady, D.C., & Zheng, X. Submitted to U.S. Department of Energy EPSCoR for \$4,481,771 and a project period of 7/1/2014-6/30/2017

EaSM 2: Collaborative Research: A Multidecadal Perspective Linking Changes in Climate, Extreme Weather, and Watershed Land Use to Water Quality in Chesapeake Bay. Brady, D.C., Ball, W (JHU), Kemp, W.M., Testa, J.M. (UMCES), Di Toro, D.M. (UDelaware). Submitted to NSF Easrt System Modeling for \$5,000,000 and a proposed project period of 9/1/2012-8/31/2017 (This proposal would go on to become our funded NSF Water Sustainability and Climate project).

NSF PIRE: Sustaining dynamic ecosystem services in the coastal oceans of the USA and China. Investigators: Luther, G., Oliver, M., Parsons, G., Targett, N., Yan, X. (UDel with partners at Xiamen University), & Brady, D.C. Funding Agency: NSF Partnerships in International Research and Education. Project Period: 2012-2017. Proposed Funding Level: ~\$5,000,000

Modeling the effect of bivalve aquaculture on nutrient cycling, benthic habitat quality, and carrying capacity. Investigators: Brady, D.C., Mayer, L., & Newell, C. (Pemaquid Oyster and Mussel Company). Funding Agency: Maine Sea Grant. Project Period: 2012-2014. Proposed Funding Level: \$150,000.

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 CONTRIBUTED AND INVITED RESEARCH PRESENTATIONS
 

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**LEADERSHIP:**

Chair of the *Regional Association for Research on the Gulf of Maine* (RARGOM) (2019-present)

Co-developer of **Training for Observations and Research in Coastal Habitats (TORCH)** held on April 10<sup>th</sup>, 2016 and April 27<sup>th</sup>, 2019 at the Darling Marine Center. TORCH is a Citizen Science Training Program that leads citizen scientists across Maine's coastline through hands on training and data analysis led by Kathleen Thornton, our lab technician.

Co-chair of the Coastal and Estuarine Research Federation (CERF) Session: SCI-1407 Managing acidification in estuaries: What drives aragonite saturation state variability with Strong, A. (November 2017)

Steering Committee of the 11<sup>th</sup> International Conference and Workshop on Lobsters, Portland, ME, June 4-9<sup>th</sup> 2017

Chaired a session of the Maine Ocean and Coastal Acidification meeting on Modeling and Monitoring Acidification in June 2016.

Co-chair of the Coastal and Estuarine Research Federation (CERF) Session: SCI-163 Timing is Everything: Phenology in Coastal Marine Ecosystems with Kemp, W.M., & Testa, J.M. (2015)

Leader of the NOAA North Atlantic Regional Team on the 2015 Theme - "Linking freshwater and ocean dynamics towards integrative ecosystem modeling: opportunities and challenges" with Dr. Adrian Jordaan - August 27-28<sup>th</sup> Norrie Point Environmental Center, NY

Co-chair of the Coastal and Estuarine Research Federation (CERF) Session: SCI-039 Synthesis Research in Estuarine and Coastal Science: Focus on Process and Application with Kemp, W.M., Testa, J.M., & Boynton, W.P. (2013)

Conference Organizing and Scientific Committee Member for Sea Lice 2014 in Portland, ME. And Chair of the Sea Lice Modeling Session: The 10<sup>th</sup> International Sea Lice Conference was the first hosted in the U.S. from August 31<sup>st</sup> to September 5<sup>th</sup> 2014

Chair of the Aquaculture Modeling Session at the Northeast Aquaculture Conference and Exposition on January 14-16<sup>th</sup> 2015 in Portland, ME

**MEDIA EXPERIENCE:** January 23<sup>rd</sup>, 2015: Guest on WERU's Coastal Conversations: Ocean Acidification, Maine Public Broadcasting Network Program on Climate

Brady, D.C. Aquaculture in Maine's changing estuaries. Gulf of Maine Research Institute Invited Science Seminar Series. May 9<sup>th</sup>, 2018

Brady, D.C. One if by land, Two if by Sea: Understanding how Maine Estuaries are Changing. Ira C. Darling Marine Center Summer Lecture Series. July 21<sup>st</sup>, 2017

Brady, D.C. Fisheries and Aquaculture in the Changing Gulf of Maine. Maine Upward Bound (1<sup>st</sup> generation college students) June 26<sup>th</sup>, 2017

Brady, D.C. Sustainable Ecological Aquaculture Network Observing in the Bagaduce River estuary. SEANET Public Meeting – Aquaculture and Ecosystem in the Bagaduce River May 18<sup>th</sup>, 2017

- Brady, D.C. Sustainable Ecological Aquaculture Network Observing in the New Meadows River estuary. Aquaculture in the New Meadows – What’s Happening Here? Why here? New Meadows Watershed Partnership May 3<sup>rd</sup>, 2017
- Brady, D.C. Invited Presentation: An introduction to the role of nutrients in coastal acidification. Maine Ocean and Coastal Acidification Partnership Mini-Symposium on OA Remediation Projects and Policy Directions. November 15th, 2016 Augusta Legislative Council Room, ME
- Brady, D.C. Invited Presentation to Board of Trustees: Coastal Waters that Work for All of Us: Trends, Challenges, and Solutions in Water Quality. November 2016, Chewonki, Wiscasset, ME
- Brady, D.C., McGreavy, B, Smith, S., McGill, B., Beard, K., Roy, S. Invited Presentation: Creating a Decision Support Toolbox for Safe Beaches & Shellfish Harvests. October 17th, 2016, Senator George J. Mitchell Center for Sustainability Solutions, Orono, ME
- Brady, D.C. Invited Presentation: Modeling and monitoring the effects of nutrient loading in Maine. Maine Water Environmental Association (MEWEA), September 14-16<sup>th</sup>, 2016, Sugarloaf, ME
- Brady, D.C. One if by land, Two if by sea: Climate driven changes in Maine estuaries. Kennebec Valley Alumni (UMaine) Chapter at Granite Hill Estates in Hallowell, ME on April 19, 2016
- Brady, D.C. Northeastern Association of State Departments of Agriculture (11 commissioners present). The Future of Monitoring and Modeling Aquaculture. June 16<sup>th</sup>, 2016, Walpole, ME
- Brady, D.C. Casco Bay Nutrient Management Focus Group. The potential role of nutrients in causing coastal acidification in Casco Bay. April 6<sup>th</sup>, 2016, Portland, ME
- Brady, D.C., Byron, C., Anderson, P. & Costa-Pierce. The Sustainable Ecological Aquaculture Network (SEANET). Coastal and Estuarine Research Federation meeting in Portland, OR - November 2015
- Brady, D.C. Environmental Effects of Offshore Wind Development. Maine State Science Fair: February 20th, 2015
- Brady, D.C. Northeast Aquaculture Convention and Exposition, Portland, ME January 16<sup>th</sup>, 2015. Contributed Paper: Modeling of Bivalve Aquaculture Spatial Impacts on Sediments (BASIS)
- Brady D.C. 1<sup>st</sup> Annual Maine Aquaculture Research and Development Forum at the Northeast Aquaculture Convention and Exposition, Portland, ME January 14<sup>th</sup>, 2015: Invited Feature: The role of estuarine science in informing the location and dynamics of growing areas
- Brady, D.C. Damariscotta River Association, Damariscotta, ME January 8<sup>th</sup>, 2015: Invited Feature: Damariscotta River Estuary: Where have we been and where are we going?
- Brady, D.C. Maine Department of Environmental Protection, Augusta, ME December 17<sup>th</sup>, 2014: Invited Feature: How Models Influence Environmental Policy Decision-Making: Lessons Learned from Models of Nutrient Loading and Hypoxia

- Brady, D.C. The George J. Mitchell Center for Sustainability Solutions Invited Presenter, Orono, ME September 15<sup>th</sup> 2014: Invited Feature - How Models Influence Environmental Policy Decision-Making: Lessons Learned from Models of Nutrient Loading and Hypoxia
- Brady, D.C. The State of Maine's legislatively Convened Ocean Acidification Panel, August 1<sup>st</sup>, 2014: Invited Paper: The Potential Role of Water Quality Modeling in Coastal Acidification Management
- Brady, D.C. Chesapeake Bay Program Modeling Workgroup April 1<sup>st</sup>, 2014: Invited Presentation: TMDL Models and Hypoxic Volume: A Long-term Modeling Approach
- Brady, D.C. Center for the Inland Bays Science and Technical Advisory Committee, Lewes, DE March 28, 2014: Invited Paper: Water quality Modeling in Delaware's Inland Bays: Where Have We Been and Where Should We Go?
- Brady, D.C. Climate Solutions Expo and Summit, March 15<sup>th</sup>, 2014: Invited Presentation: Climate Implications of Floating Offshore Wind Energy in Maine
- Brady, D.C., Testa, J.M., Sanford, L.P., Cornwell, J.C., Newell, R.I.E., Newell, C., & Richardson, J. Coastal and Estuarine Research Federation Meeting, San Diego, CA, November 3-7 2013 Invited Paper: Sediment flux modeling of Bivalve Aquaculture Spatial Impacts on Sediments (BASIS)
- Brady, D.C. Maine Maritime Academy, Castine, ME, October 21 2013 Invited Seminar: Floating Offshore Wind Energy Development: Monitoring and Permitting Next Generation Technology
- Brady, D.C. Island Institute Energy Conference, Belfast Bay, ME, October 18 2013 Invited Presentation: Floating Offshore Wind Energy Development in Maine: Updates from DeepCwind and Maine Aqua Ventus
- Brady, D.C., Fitzpatrick, J., Scavia, D., DePinto, J., Kemp, W.M., & Di Toro, D.M. Association for the Sciences of Limnology and Oceanography: Aquatic Sciences, New Orleans, February 17-22, 2013. Invited Paper: Feasibility study for operational regional coastal ecosystem management models
- Brady, D.C., Di Toro, D.M., Targett, T.E. & Kemp, W.M. Association for the Sciences of Limnology and Oceanography: Aquatic Sciences, New Orleans, February 17-22, 2013. Contributed Paper: Coupling the spatial and temporal dynamics of hypoxia with juvenile estuary dependent fish behavior
- Brady, D.C. U.S.-Canadian Lobsterman Town Meeting, Portland, ME March 2012. Environmental Effects of Offshore Wind Development: The DeepCwind Case Study
- Brady, D.C., Testa, J., Di Toro, D.M., Boynton, W.R. & Kemp, W.M. Coastal and Estuarine Research Federation Meeting, Daytona, FL, November 2011. Contributed Paper: Estimating organic matter deposition and decay with a long-term sediment flux database and mechanistic model
- Brady, D.C., Testa, J., Di Toro, D.M., & Kemp, W.M. Chesapeake Bay Modeling Symposium, Annapolis, MD, May 2010. Invited Paper: Sediment-Water Oxygen and Nutrient Exchanges in Chesapeake Bay: Insights from Model-Data Comparisons



- CBEQ Project Team: Ball, W.P., Burns, R., Cuker, B.E., Di Toro, D.M., Kemp, W.M., Murray, L., Piasecki, M., Zaslavsky, I., Aguayo, M., Bosch, J., Brady, D.C., Murphy, R.R., Perlman, E., Rodriguez, M., Testa, J.M., & Whitenack, T. American Geophysical Union, San Francisco, CA, December 2009 Contributed Paper: The Design and Application of a Chesapeake Bay Environmental Observatory
- Brady, D.C. & Targett, T.E. Coastal and Estuarine Research Federation, Portland, OR, November 2009. Contributed Paper: Movement of juvenile weakfish (*Cynoscion regalis*) and spot (*Leiostomus xanthurus*) in relation to diel-cycling hypoxia in an estuarine tributary: Assessment using acoustic telemetry
- Brady, D.C., Di Toro, D.M., Kirby, J.T., Xu, L., & Targett, T.E. Estuarine Research Federation Conference, Providence, RI, November 2007. Contributed Paper: Water quality modeling of diel-cycling hypoxia in Delaware's Coastal Bays
- Brady, D.C., Tuzzolino, D.M., & Targett, T.E. 31<sup>st</sup> Annual Larval Fish Conference, St. John's, Newfoundland, Canada, July 2007. Contributed Paper: Laboratory and field evaluation of juvenile weakfish (*Cynoscion regalis*) behavioral responses to diel-cycling hypoxia in estuarine tributaries.
- Brady, D.C. & Di Toro, D.M. Denitrification Modeling Across Terrestrial, Freshwater, and Marine Systems. The Institute of Ecosystems Studies, Millbrook, NY. November 2006. Invited Presentation: Sediment Flux Modeling: Special Emphasis on Denitrification
- Brady, D.C., Tuzzolino, D.M., & Targett, T.E. Tidal Finfish Advisory Council, Delaware Department of Natural Resources & Environmental Control. Dover, DE. November 2006. Invited Presentation. Examining the resource value of benthic habitats affected by low dissolved oxygen to weakfish and summer flounder
- Brady, D.C., Tyler, R.M., & Targett, T.E. 7<sup>th</sup> Annual Shallow Water Science and Management Conference, Atlantic City, NJ. September 2006. Contributed Paper: Spatial and Temporal Variability in Diel-Cycling Hypoxia: Causes and Consequences
- Brady, D.C. Delaware's Center for the Inland Bays Science and Technical Advisory Committee, Lewes, DE. January 2006. Invited Presentation: A How to Guide for Estuary-Dependent Fish Avoiding Hypoxia in Delaware's Inland Bays
- Brady, D.C., Tuzzolino, D.M., & Targett, T.E. Estuarine Research Federation Conference. Norfolk, VA. October 2005. Contributed Paper. Hypoxia-induced searching strategies of juvenile weakfish: How do interacting kineses facilitate hypoxia avoidance and survival?
- Brady, D.C. American Fisheries Society 135<sup>th</sup> Annual Meeting. Anchorage, AK. September 2005. Contributed Paper: Integrating fish behavior and water quality models: Hypoxia-induced searching strategies of juvenile weakfish
- Brady, D.C. Mid-Atlantic Chapter-American Fisheries Society Annual Meeting, Rider University, NJ. 2005. Invited Presentation. Searching for oxygen: Deriving a mechanistic understanding of weakfish behavior during hypoxia

- Brady, D.C. & Targett, T.E. Flatfish Biology Conference. Westbrook, CT. December 2004. Contributed Paper: Behavioral responses of summer flounder and weakfish to declining dissolved oxygen: interspecific and intraspecific comparisons
- Brady, D.C. University of Delaware College of Marine Studies Graduate Student Symposium. Lewes, DE. November 2004. Invited Presentation: Behavioral responses of fishes to declining dissolved oxygen: avoidance and acclimation
- Brady, D.C., & Targett, T.E. VI International Congress on the Biology of Fish. Manaus, Brazil. August 2004: Contributed Paper. Behavioral responses of juvenile estuarine-dependent fishes to declining dissolved oxygen: avoidance, recovery, and acclimation
- Brady, D.C. & Targett, T.E. Tidal Finfish Advisory Council, Delaware Department of Natural Resources & Environmental Control. Dover, DE. June 2004: Invited Presentation. Moving targets: linking water quality to juvenile weakfish and summer flounder
- Brady, D.C. & Stierhoff, K.L. UD College of Marine Studies Ocean Current Lecture Series. Lewes, DE. 2002: Invited Presentation. The stresses on fish and graduate students in and around Delaware Bay

*Selected Co-authored Presentations*

- Stevens, J.R.**, Jech, J.M., Zydlewski, G. & Brady, D.C. (Presentation) Response of Estuarine Fish Biomass to Large-scale Restoration in the Penobscot River, Maine. American Fisheries Society 2019 Reno, NV: September 29-October 3, 2019
- Scherelis, C.**, Zydlewski, G.B., & Brady, D.C. (Presentation) Using side-looking hydroacoustics to study relationships between fish abundance and changing river conditions, including dam removal. The American Fisheries Society Annual Meeting, August 21-25 2017, Kansas City, MO
- Stevens, J.R.**, Saunders, R., Sheehan, T.F., Jech, M., & **Brady, D.C.** Assessing changes in the spatial and temporal distribution of fish in the Penobscot River Estuary. The Coastal and Estuarine Research Federation, Providence, RI, November 5-9, 2017
- Both, A.**, Byron, C.J., Brady, D.C., Costa-Pierce, B., Mayer, L.M., & Parrish, C.C.. Characterizing, sourcing and evaluating detritus for bivalve aquaculture using stable isotopes and fatty acid biomarkers. The Coastal and Estuarine Research Federation, Providence, RI, November 5-9, 2017
- Snyder, J., Boss, E., **Weatherbee, R.**, Brady, D.C., & Newell, C. (Presentation) Oyster site selection using LandSat 8. Third International Ocean Colour Science Meeting. May 15-18 2017, Lisbon, Portugal
- Gray, M.**, Snyder, J., Whittemore, B., Martin, T., Miller, K., Brady, D.C. (Poster) Enhanced aquaculture production through remote sensing, field studies, and industry partnerships. The Association for the Sciences of Limnology & Oceanography. Feb 26 – Mar 3<sup>rd</sup>, 2017, Honolulu, HI
- Coupland, C.** & Brady, D.C. (Contributing Paper) Understanding shellfish growth potential in the Damariscotta River, Maine using a coupled modeling approach. The Association for the Sciences of Limnology & Oceanography. Feb 26 – Mar 3<sup>rd</sup>, 2017, Honolulu, HI

- Rose, J., Balcom, N., Brady, D.C., Bricker, S., Bunswick, S., Chadwick, C., Concepcion, A., DeGuise, S., Getchis, T., Hoeberecht, L., Miller, J., Rose, C., Rubino, M., & Walton, B. Aquaculture Canada. September 2016, St. John's, Newfoundland, Canada
- Bayer, S.R., Wahle, R.A., Brady, D.C. & Jumars, P.A. Building a tool-kit to assess reproductive performance of commercially exploited broadcast spawners inside and outside no-take zones. International Marine Conservation Congress. St John's, Newfoundland, Canada. August 1st, 2016
- Lasley-Rasher, R., Derlath, L., Brady, D.C., Stevens, J., Kocik, J. The dynamic conditions and food web of the Penobscot Estuary (oral presentation) Penobscot Watershed Conference, Lincolnville, ME, April 9th 2016 (app. 300 attendees)
- Lasley-Rasher, R. Brady, D.C., Smith, B., & Jumars, P. Using fish guts to sample elusive prey over large spatial and temporal scales (oral presentation) Benthic Ecology Meeting, Portland, ME, March 16th-18th 2016 (app. 400 attendees)
- Lasley-Rasher, R., Stevens, J., Lipsky, C., Brady, D.C., Jumars, P. American Fisheries Society, August 17<sup>th</sup>-21<sup>st</sup> 2014: Contributed Poster: Exploring the importance of top-down and bottom-up drivers of mysid shrimp distribution in the Penobscot Estuary, Maine
- Bayer, S.R., Wahle, R.A., **Brady, D.C.**, Brooks, D.A. & Jumars, P.A. Association for the Sciences of Limnology and Oceanography: Ocean Sciences, Honolulu, HI, February 23-28 2014 Contributed Poster: Scale of fertilization success in an exploited broadcast spawner: From an individual to an estuary
- Frederick, C., Pietrak, M., Barker, S., Brady, D.C., & Bricknell, I. Sea Lice 2014 August 31<sup>st</sup>-September 5<sup>th</sup>, 2014: Contributed Paper: Where are all the sea lice? A First glance at sentinel fish in Cobscook Bay
- Oppenheim, N.G., Wahle, R.A., & **Brady, D.C.** Association for the Sciences of Limnology and Oceanography: Ocean Sciences, Honolulu, HI, February 23-28 2014 Contributed Poster: Can we forecast the future of the American lobster fishery from a larval settlement index?
- Ball, W.P., Zhang, Q., Brady, D.C., Boynton, W. American Geophysical Union Fall Meeting December 15<sup>th</sup>-19<sup>th</sup> 2014, San Francisco, CA: Contributed Paper: Long-Term Loads of Nutrients and Sediment from Non-Tidal Regions of the Chesapeake Bay Watershed
- Zhang, Q., Brady, D.C., & Ball, W.P., Community Surface Dynamics Modeling System Annual Meeting, Boulder, CO, March 23-25, 2013 Contributed Paper: Long-term Seasonal Trends of Nitrogen, Phosphorus, and Suspended Sediment Load from the Non-tidal Susquehanna River Basin to Chesapeake Bay
- Ball, W.P., Bosch, J.A., Brady, D.C., Di Toro, D.M., Kemp, W.M., Murphy, R.R., & Testa, J.M. Association of Environmental Engineering and Science Professors, Tampa Bay, FL, July 2011. Contributed Paper: Hypoxia in Chesapeake Bay: Mining decades of data for new insights
- Targett, T.E., Brady, D.C., & Stierhoff, K.L. Ecological Impacts on Living Resources Workshop, Stennis Space Center, Bay St. Louis, MS. March 2007. Contributed

paper: Diel-cycling hypoxia in shallow estuarine waters: Impacts on fish growth and movements.

## FELLOWSHIPS AND DISTINCTIONS

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2016 George J. Mitchell Center for Sustainable Solutions Award for “Outstanding contribution toward the development of a solution by a research team” New England Sustainability Cooperative Decision Support Systems Team (B. McGreavy, D. Brady, S. Smith, B. McGill, K. Beard, B. Parmentier, & S. Roy)

Frances Severance Award for Best Thesis or Dissertation in the College of Marine and Earth Studies Marine Biosciences Program, University of Delaware, Lewes, DE, 2008

Center for the Inland Bays Award for demonstrating research excellence that advances the resource management and educational missions of the center, Center for the Inland Bays, Rehoboth, DE, 2008

Best Student Oral Presentation at the Mid-Atlantic Chapter of the American Fisheries Society, Rider University, Lawrenceville, NJ. 2005.

Best Student Oral Presentation in the “Fish Locomotion” Symposium. VI International Congress on the Biology of Fish, Manaus, Brazil. August 2004.

Marian R. Okie Fellowship for academic and research excellence and demonstrated leadership abilities. University of Delaware Graduate College of Marine Studies. 2004 – 2005

Marine Biology/Biochemistry Program Fellow. University of Delaware Graduate College of Marine Studies. 2001-2002.

## TEACHING & EDUCATION EXPERIENCE

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Co-developer and teacher in SMS484 Semester by the Sea: Estuarine Oceanography (passed through curriculum committee and now fulfills a requirement for oceanography for graduate and undergraduate students)

*Master's and Ph.D. Students*: Catherine Coupland (Ph.D., Oceanography), Kevin Du Clos (graduated Ph.D. Oceanography), Jordan Snyder (graduated M.S., Oceanography), Gabrielle Hillyer (dual degree M.S. Marine Policy/Oceanography), Whitley Gray (M.S., Marine Policy), Andrew Goode (Ph.D., Oceanography), Nicholas Keeney (Ph.D., Oceanography), Justin Stevens (M.S., Marine Biology), Ruth Indrick (M.S., Oceanography), Matthew Nixon (iPh.D.)

*Graduate Student Committees*: Dongmei Xie, (Civil and Environmental Engineering), Skylar Bayer (graduated), Jennifer McHenry (graduated), Kevin Staples, Cheyenne Adams, Amalia Harrington, Elise Hartill, Emma Taccardi, Juliana Tavora, and Catherine Fredericks (UMaine's School of Marine Sciences), Brett Gerrard (UMaine's School of Earth and Climate Sciences), and Kisei Tanaka (UMaine's Climate Change Institute), Sarah Fischer (University of Delaware's College of Earth, Ocean, and the Environment), Nicole Basenback (UMCES)

*Post-doc Advisor*: Rachel Lasley-Rasher, Ph.D. (NSF Biological Oceanography Fellowship and currently faculty at the University of Southern Maine), Matthew Gray, Ph.D. (SEANET and currently faculty at the University of Maryland Center for

Environmental Science), Kelly Cole, Ph.D. (NSF New England Sustainability Consortium), and Wei Liu, Ph.D. (SEANET)

*Undergraduate Capstone Project Advisor:* Marina Van der Eb (Behavioral model of Atlantic salmon in relation to sea lice infectious pressure), Brianna Smith (Nutrient, Light, and Productivity Dynamics in the Damariscotta River Estuary), Breanna Whittemore, Chase Main, Ian Wanner, Jessima Ranney, Megan Amico, and Rochelle Gordon (winner of the WJW Potts Memorial Prize in Aquaculture for best undergraduate aquaculture project)

*Undergraduate Summer Interns Advised:* Nick Houseman (URI), Maggie MacMahon (MMA), Kim Kusminsky, Cassandra Leeman (Eckerd), Tania Couture (McGill), Thomas Kiffney (Colby), Struan Coleman (Dartmouth), Alwyn Ecker (Wheaton), Andrew Moreira (Mount Allison)

*Honor's Thesis Advisor:* Bethany Stevens, Teiga Martin, and Katherine Miller

May/June 2011 - 2013: MATLAB for Marine Scientists (2 CR) at the Darling Marine Center at the University of Maine

Fall 2012 and 2013: Developer of and Lecturer in SMS 500: Marine Biology, the University of Maine's 1<sup>st</sup> Graduate Level Marine Biology course and a requirement for graduate students. Continue to guest lecture on modeling in SMS 500 each Fall.

2011-2013: Guest lecturer in the Semester by the Sea Program at the Darling Marine Center at the University of Maine in Human Impacts on the Ocean: "Eutrophication in the Coastal Ocean" & "Environmental Impacts of Offshore Wind", Benthic Ecology: "Movement Ecology", and Estuarine Oceanography: "The role of models in estuarine management"

2010-2012: Adjunct Professor at Husson University, Bangor, ME teaching the laboratory sections of General Biology II and Principles of Chemistry I & II

2005-2009: Guest Lecturer at the University of Delaware in Advanced Water Quality Modeling, Eutrophication and Sediment Flux Modeling & Fish Topics

2005: Guest Lecturer at Delaware State University in Marine Biology: "The Functional Role of Estuaries: Can We Break Them?"

2000: Wildlife Educator, Wildlife Conservation Society, Bronx Zoo. Taught wildlife science to K-12<sup>th</sup> grade.

2000: Education Consultant, Metis Associates, New York, New York, Data analysis particularly concerning program development and evaluation in K-12<sup>th</sup> grade education

Summer 1996 & 1997: Marine Mammal Demonstration Narrator and Assistant Trainer, Wildlife Conservation Society New York Aquarium for Wildlife Conservation. Narrated marine mammal demonstrations (three shows daily for 1400 people) and assisted in care, training and behavioral observations for California sea lions, Atlantic bottle-nosed dolphins, and beluga whales.

UNIVERSITY SERVICE, CONSULTING, & VOLUNTEER OUTREACH

**Environmental Monitoring and Permitting Task Manager** for the DeepCwind Consortium and Maine Aqua Ventus I (2012-present)

- Received Finding of No Significant Impact (FONSI) for Monhegan Island Floating Offshore Wind Test Site (2012) – First permitted project of its kind in the US
- Received Finding of No Significant Impact (FONSI) for the Castine, ME Floating Offshore Wind Test Site (2013) – First floating offshore wind turbine connected to the grid in the US
- Only DOE Offshore Wind Technology funded project to have no environmental monitoring and permitting spending holds

**Proposal and Natural Resource Management Review:**

- Member of the Casco Bay Estuary Management Committee (An EPA National Estuary Program)
- Expert Panel for the Chesapeake Research Consortium's assessment of the Lower Susquehanna River Integrated Sediment & Nutrient Monitoring Program (Exelon Energy - 2017)
- Chair of the Scientific and Technical Advisory Committee Chesapeake Bay Water Quality and Sediment Transport Model (WQSTM) Review (2017-2018)
- Member of the Environmental Effects Panel for the Gulf of Mexico Research Initiative RFP-I (2011), RFP-II (2012), RFP-IV (2015), and RFP-VII (2017) to investigate the impacts of the Deepwater Horizon Oil Spill
- Technical Advisory Committee for Maine Sea Grant's Healthy Beaches Program (2015-present)
- Reviewer for New Jersey, Puerto Rico, and Oregon Sea Grant Full Proposals: July 2013. Reviewer for Maryland Sea Grant 2015. NSF Electronic Proposal Reviewer 2018
- Advisor to the Maine Coastal Mapping Initiative and the Maine Coastal Atlas Project, both run by the State of Maine's Coastal Program: 2013-present
- Member of NOAA's Northern Gulf of Mexico Hypoxia Modeling Technical Review Team: April 17-18, 2013, Stennis Space Center, MS
- Member of the Comprehensive Management Plan team for Delaware's Inland Bays and editor of the State of the Bay report for Delaware's Inland Bays (2011-present)
- Panel Reviewer for Connecticut and New York Sea Grant: Long Island Sound Study Pre-proposals and Full Proposals: 2012
- Panel Reviewer for Virginia Sea Grant Pre-proposals 2011
- Member of the Peer Advisory Panel for the National Oceanic and Atmospheric Association (NOAA) Coastal Hypoxia Research Program. February 2010.

University Committees: Director of the Ira C. Darling Marine Center (Dr. Heather Leslie), Marine Microbial Ecologist (Dr. Jeremy Rich), and Director of the School of Marine Sciences (Dr. David Townsend), Graduate Curriculum Committee (2017-2018), Ira

C. Darling Marine Center Safety Committee (2012-2015) and the Ira C. Darling Steering Committee (2016-present)

Reviewed Manuscripts or Book Chapters for Estuarine and Coastal Shelf Science (named a top reviewer in 2015), Estuaries and Coasts, Marine Ecology Progress Series, Climatic Change, Conservation Physiology, Journal of Marine Systems, Fisheries Oceanography, Journal of the American Water Resources Association, Fishery Bulletin, Journal of Environmental Management, African Journal of Biotechnology, Journal of Experimental Marine Biology and Ecology, Fisheries Research, and Garland Scientific, Hydrobiologia, Journal of Fish Disease, Marine Pollution Bulletin, Restoration Ecology, Elementa: Science of the Anthropocene, Environmental Modelling and Software

Senior Modeling Consultant for Chesapeake Biogeochemical Associates: Philadelphia Water District Project 09/01/2015-08/31/2017

Marine Biology Educator for the University of Maine's College of Natural Sciences, Forestry, and Agriculture Freshman Orientation (Fall 2011-2015) and the Darling Marine Center Dive-In Program for High School Seniors (Summer 2011-2015)

Consultant for the Marine Stewardship Council regarding the environmental effects of fishing gear on habitat (September 2011)

Scientific Advisor for the Hurricane Island Foundation Center for Science and Leadership Field Research Station (2011-present)

Served on the University of Delaware's College of Earth, Ocean, and Environment Search Committee for an Academic Coordinator

Student Representative for the University of Delaware's Graduate College of Marine Studies Academic Council, 2005-2007.

University of Delaware College of Marine Studies Lunch Lecture Series for Research Experience for Undergraduate (REU) interns, "Applying to Graduate School in the Marine Sciences" (Summers 2003-2006).

Marine Biology Educator, Partnership for the Delaware Estuary, Wilmington, DE (2004)

Marine Biology Educator, Mariner Middle School, Milford, DE (2002-2003)

Marine Biology Educator, H.B. DuPont Middle School, Hockessin, DE (2002-2003 & 2006)

Marine Biology Educator, Governor's School for Excellence, Lewes, DE (2001-2004)  
Judge, Sussex County Science Fair (2002)

University of Delaware College of Marine Studies Ocean Currents Lecture Series Lecturer (2002).

## GRADUATE COURSES

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Marine Biology (A-); Marine Biochemistry (A); Coastal Field Biology (A); Statistics in the Marine Sciences (A); Ecology and Evolution of Coral Reefs (A); Genetics of Marine Organisms (A); Marine Inorganic Chemistry (A); Writing Papers in the Marine Sciences (A-); Ichthyology: Systematics, Physiology, & Ecology (A); Introductory PERL for Biologists (A); Advanced Water Quality Modeling (A-); Physiology of Marine Organisms (A); ; Topics in Fish Biology (7 semesters, A's); Benthic

Boundary Layer Seminar (A); Marine Biology-Biochemistry Seminar (2 semesters, A), Eutrophication and Sediment Flux Modeling (A-), Principles of Water Quality Criteria (audited)

GPA: 3.93

#### UNDERGRADUATE COURSES in the SCIENCES

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Biology I & II; Principles of Chemistry I & II; Calculus I & II; Expository Writing; Critical Writing for Science Majors; Marine Zoology; Organic Chemistry I & II; Probability and Statistics; Physics I & II; Introduction to Speech Communication; Scientific Communication; Principles of Oceanography; Practical Oceanographic Research; Nautical Science; Marine Technology; Maritime Studies; Ichthyology; Animal Behavior; Environmental Analysis II; Botany; Evolution; Freshwater/Estuarine Ecology; Herpetology; Marine Phycology; Biochemistry; Ornithology; Instrumental Methods of Analysis; Advanced Chemistry Lab

GPA: 3.71

#### PROFESSIONAL AFFILIATIONS

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American Fisheries Society

Mid-Atlantic Chapter Member (2002-2008)

Mid-Atlantic Chapter Student Representative 2004

Estuaries and Early Life History Sections Member

The Coastal & Estuarine Research Federation

New England Estuarine Research Society

Association for the Sciences of Limnology and Oceanography

#### SKILLS AND CERTIFICATION

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Programming: ArcGIS Editor, FORTRAN, MATLAB®, SQL Server, and VBA

Statistical Packages: SAS, SPSS, Systat, and DTREG

Ecosystem Modeling Experience: ECOPATH: Completed 30 Hours Instructional Time in “Ecosystem Modeling using EcoPath with EcoSim”, March 12-15, 2012

Water Quality Modeling: Row Column AESOP (RCA), Sediment Flux Modeling (SFM), Chesapeake Bay Eutrophication Model (CE-Qual-ICM)

Hydrodynamic Modeling: Estuarine Coastal Ocean Model with Sediment module (ECOMSED), Regional Ocean Modeling System (ROMS), Larval Transport Lagrangian Model (LTRANS – completed 2 day training at Horn Point Laboratory with Dr. Elizabeth North)

Watershed Modeling: Hydrologic Simulation Program – FORTRAN (HSPF)

NAUI Open Water Dive (1999)

USCG Small Boat Operators Certification (2001)

#### REFERENCES

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Dr. Dominic M. Di Toro, Professor, University of Delaware-Department of Civil & Environmental Engineering

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Phone: (302) 831-4092

Dr. Peter Jumars, Professor, University of Maine – School of Marine Sciences

Email: [jumars@maine.edu](mailto:jumars@maine.edu)

Phone: (207) 563-8101

Dr. Timothy E. Targett, Professor, University of Delaware

Email: [ttargett@udel.edu](mailto:ttargett@udel.edu)

Phone: (302) 645-4396

Dr. W.M. Kemp, Professor, University of Maryland Center for Environmental Science

Email: [kemp@umces.edu](mailto:kemp@umces.edu)

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