

CURRICULUM VITAE

James J. Pierson

Horn Point Laboratory

University of Maryland Center for Environmental Science

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I. Education

1996 B.S., University of New Hampshire. Biology: Marine and Freshwater

2002 M.S., University of Washington, Seattle. Biological Oceanography

2006 Ph.D., University of Washington, Seattle. Biological Oceanography

II. Professional Background

1995 – 1996 Laboratory Assistant, University of New Hampshire, Durham, NH

1996 – 1997 Technical Assistant, University of New Hampshire, Durham, NH &
Woods Hole Oceanographic Institute, Woods Hole, MA

1997 – 2000 Marine Research Specialist I-II, University of Rhode Island, Graduate
School of Oceanography, Narragansett, RI

2000 – 2006 Graduate Research Assistant, University of Washington, School of
Oceanography, Seattle, WA

2006 – 2010 Assistant Research Scientist, University of Maryland Center for
Environmental Science, Horn Point Laboratory, Cambridge, MD

2010 – 2015 Assistant Research Professor, University of Maryland Center for
Environmental Science, Horn Point Laboratory, Cambridge, MD

2015 – 2018 Assistant Professor, University of Maryland Center for Environmental
Science, Horn Point Laboratory, Cambridge, MD

2018 – Present Associate Professor with Tenure, University of Maryland Center for
Environmental Science, Horn Point Laboratory, Cambridge, MD

Awards and Special Recognition

III. Research [5 years only for each subsection]

A. Areas of professional expertise

Biological oceanography, zooplankton ecology, specifically:

- Vertical migration and feeding behavior of zooplankton, with special emphasis on planktonic copepods
- Response of zooplankton life histories to environmental and climatic changes
- Combining in situ data with numerical model results to link individuals' behaviors to population dynamics and structure

Broadening participation in geosciences through experiential opportunities.

B. Peer Reviewed Publications

(* = Graduate student advisee, # = Postdoctoral advisee)

Researcher ID: <http://www.researcherid.com/rid/B-7278-2008>

ORCID: <http://orcid.org/0000-0002-5248-5850>

Google Scholar: <http://scholar.google.com/citations?user=s4spRhAAAAAJ&hl=en>

1. Bentley, K., **J. J. Pierson**, and P. M. Glibert. 2021. Physiological Responses of the Copepods *Acartia tonsa* and *Eurytemora carolleeae* to Changes in the Nitrogen:Phosphorus Quality of Their Food. *Nitrogen*. 2(1):62-85. doi: [10.3390/nitrogen2010005](https://doi.org/10.3390/nitrogen2010005)
2. Morison, F., **J. J. Pierson**, A. Oikonomou, and S. Menden-Deuer. 2020. Mesozooplankton grazing minimally impacts phytoplankton abundance during spring in the western North Atlantic. *PeerJ*. e9430. doi: [10.7717/peerj.9430](https://doi.org/10.7717/peerj.9430)
3. * Liu Slater, W., **J. J. Pierson**, M. B. Decker, E. D. Houde, C. Lozano, and J. Seuberling. 2020. Fewer Copepods, Fewer Anchovies, and More Jellyfish: How Does Hypoxia Impact the Chesapeake Bay Zooplankton Community? *Diversity*. 12(1):35. doi:[10.3390/d12010035](https://doi.org/10.3390/d12010035)
4. Hamilton, S., S. Bartell, **J. Pierson**, and D. Murphy. 2020. Factors Controlling Calanoid Copepod Biomass and Distribution in the Upper San Francisco Estuary and Implications for Managing the Imperiled Delta Smelt (*Hypomesus transpacificus*). *Environmental Management*. 1-15. doi:[10.1007/s00267-020-01267-8](https://doi.org/10.1007/s00267-020-01267-8)
5. * Millette, N. C., **J. J. Pierson**, E. North. 2019. Water temperature during winter may control striped bass recruitment during spring by affecting the development time of copepod nauplii. *ICES Journal of Marine Science*. doi:10.1093/icesjms/fsz203
6. Glaspie, C. N., M. Clouse, K. Huebert, S. A. Ludsin, D. M. Mason, **J. J. Pierson**, M. R. Roman, and S. B. Brandt. 2019. Fish diet shifts associated with the northern Gulf of Mexico hypoxic Zone. *Estuaries and Coasts*. doi:10.1007/s12237-019-00626-x
7. Stoecker, D. K., **Pierson, J. J.** 2019. Predation on protozoa: its importance to zooplankton revisited. *Journal of Plankton Research*. doi:10.1093/plankt/fbz027
8. Roman, M. R., Brandt, S. B., Houde, E. D., and **Pierson J. J.** 2019. Interactive Effects of Hypoxia and Temperature on Coastal Pelagic Zooplankton and Fish. *Frontiers in Marine Science*. 6:139. doi:10.3389/fmars.2019.00139
9. Plough L. V., Fitzgerald C., Plummer A., **Pierson J. J.** 2018. Reproductive isolation and morphological divergence between cryptic lineages of the copepod *Acartia tonsa* in Chesapeake Bay. *Marine Ecology Progress Series*. 597:99-113. doi:10.3354/meps12569
10. Franzè, G., **Pierson, J. J.**, Stoecker, D. K. and Lavrentyev, P. J. 2018. Diatom-produced allelochemicals trigger trophic cascades in the planktonic food web. *Limnology and Oceanography*. 63(3): 1093–1108. doi:10.1002/lno.10756
11. **Pierson, J.J.**, W.C.L. Slater, D. Elliott, & M.R. Roman. 2017. Synergistic effects of seasonal deoxygenation and temperature truncate copepod vertical migration and distribution. *Marine Ecology Progress Series*. 575:57-68. doi:10.3354/meps12205
12. * Millette, N.C., **J.J. Pierson**, A. Aceves, & D.K. Stoecker. 2016. Mixotrophy in *Heterocapsa rotundata*: A mechanism for dominating the winter phytoplankton. *Limnology and Oceanography*. doi:10.1002/lno.10470

13. Mayor, E., P. Chigbu, **J. Pierson**, & V.S. Kennedy. 2017. Composition, Abundance, and Life History of Mysids (Crustacea: Mysida) in the Coastal Lagoons of MD, USA. *Estuaries and Coasts*, 40(1): 224-234. doi: 10.1007/s12237-016-0131-z
14. Merz, J., P. S. Bergman, **J. Pierson**, D. Delaney, J. Melgo, & P. Anders. 2016. Long-Term Seasonal Trends in the Prey Community of Delta Smelt (*Hypomesus transpacificus*) Within the Sacramento-San Joaquin Delta, California. *Estuaries and Coasts*. 39(5): 1526–1536. doi: 10.1007/s12237-016-0097-x
15. **Pierson, J. J.**, D. G. Kimmel & M. R. Roman. 2016 Temperature impacts on *Eurytemora* size and vital rates in the upper Chesapeake Bay in winter. *Estuaries and Coasts*. 39(4): 1122–1132. doi: 10.1007/s12237-015-0063-z
16. Millette, N.C., G.E. King, & **J. J. Pierson**. 2015. A note on the survival and feeding of copepod nauplii (*Eurytemora carolleeae*) on the dinoflagellate *Heterocapsa rotundata*. *Journal of Plankton Research*. 37(6): 1095-1099. doi: 10.1093/plankt/fbv090
17. Lavrentyev, P.J., G. Franzè, **J. J. Pierson**, & D. K. Stoecker. 2015. The Effect of Dissolved Polyunsaturated Aldehydes on Microzooplankton Growth Rates in the Chesapeake Bay and Atlantic Coastal Waters. *Marine Drugs*. 13(5): 2834-2856. doi: 10.3390/md13052834
18. Millette, N.C., D. K. Stoecker, & **J. J. Pierson**. 2015. Top-down control of micro-and mesozooplankton on winter dinoflagellate blooms of *Heterocapsa rotundata*. *Aquatic Microbial Ecology*. 76: 15-25. doi: 10.3354/ame01763

Data Sets: Public Access Data Sets Submitted to Federal Repositories

1. Lavrentyev, P., Stoecker, D., **Pierson, J. J.** (2019) PUA (polyunsaturated aldehydes) experiments: Chlorophyll-a concentrations, Virginia Coastal Bays and Bay of Napoli, Mar-July 2015. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2019-07-31. [doi:10.1575/1912/bco-dmo.774017.1](https://doi.org/10.1575/1912/bco-dmo.774017.1)
2. Lavrentyev, P., **Pierson, J. J.**, Stoecker, D. (2019) PUA (polyunsaturated aldehydes) experiments: Experimental Conditions, Virginia Coastal Bays and Bay of Napoli, Mar-July 2015. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2019-07-31. [doi:10.1575/1912/bco-dmo.773979.1](https://doi.org/10.1575/1912/bco-dmo.773979.1)
3. Lavrentyev, P., Pierson, J. J., Stoecker, D. (2019) Microzooplankton biomass estimates from PUA (polyunsaturated aldehydes) experiments, Virginia Coastal Bays and Bay of Napoli, Mar-July 2015. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2019-09-30. [doi:10.1575/1912/bco-dmo.774033.1](https://doi.org/10.1575/1912/bco-dmo.774033.1)
4. Roman, M., D. Kimmel, **J. Pierson**, K. Huebert. 2018. Mesozooplankton sample data from R/V Pelican cruises PE03-NGOMEX, PE04-NGOMEX, PE06-NGOMEX, PE07-NGOMEX, PE09-05 in the Northern Gulf of Mexico from 2003-2008. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2018-11-26. [doi:10.1575/1912/bco-dmo.749705](https://doi.org/10.1575/1912/bco-dmo.749705)
5. Roman, M., B. Boicourt, **J. Pierson**, K. Huebert. 2018. ScanFish Optical Plankton Counter (OPC) data from R/V Pelican cruises PE03-NGOMEX, PE04-NGOMEX, PE06-NGOMEX, PE07-NGOMEX, PE09-05, and PE11-06 in the

- Northern Gulf of Mexico between 2003 and 2010. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2018-11-26. [doi:10.1575/1912/bco-dmo.749700](https://doi.org/10.1575/1912/bco-dmo.749700)
6. Roman, M. & **J. Pierson**. 2017. Species composition via niskin and associated CTD information collected on R/V Hugh R. Sharp (HRS1316, HRS1317) in the Chesapeake Bay from August to September in 2013. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2017-06-28. <http://lod.bco-dmo.org/id/dataset/707526> *Preliminary and in progress*
 7. Roman, M. & **J. Pierson**. 2017. Species composition via MOCNESS and associated CTD information collected on R/V Hugh R. Sharp (HRS1316, HRS1317) in the Chesapeake Bay from August to September in 2013. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2017-06-28. <http://lod.bco-dmo.org/id/dataset/707094> *Preliminary and in progress*
 8. **Pierson, J.** & E. Houde. 2015. Anchovy data of Chesapeake Bay. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2015-07-29. [doi:10.1575/1912/bco-dmo.687979](https://doi.org/10.1575/1912/bco-dmo.687979)
 9. **Pierson, J.** & M.B. Decker. 2015. DeZoZoo Cruise Data. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2014-08-07. [doi:10.1575/1912/bco-dmo.687984](https://doi.org/10.1575/1912/bco-dmo.687984)
 10. **Pierson, J.** 2015a. DeZoZoo CTD Data. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2015-06-29. [doi:10.1575/1912/bco-dmo.687991](https://doi.org/10.1575/1912/bco-dmo.687991)
 11. **Pierson, J.** 2015b. Zooplankton from hypoxic waters of Chesapeake Bay. Biological and Chemical Oceanography Data Management Office (BCO-DMO). Dataset version 2015-08-26. [doi:10.1575/1912/bco-dmo.687996](https://doi.org/10.1575/1912/bco-dmo.687996)
 12. Melle, W., J. A. Runge, E. Head, S. Plourde, C. Castellani, P. Licandro, **J. Pierson**, S. Jonasdottir, C. Johnson, C. Broms, H. Debes, T. Falkenhaus, E. Gaard, A. Gislason, M. R. Heath, B. Niehoff, T. G. Nielsen, P. Pepin, E. K. Stenevik, & G. Chust. 2014. Biogeography of key mesozooplankton species in the North Atlantic, by manual counting methods, and egg production of *Calanus finmarchicus*. *Earth System Science Data Discussions*. 7(1): 225-242. doi.org/10.5194/essdd-7-225-2014

Book Chapters

1. **Pierson, J.J.** 2019. Marine Plankton Communities. *Encyclopedia of Ocean Sciences* Elsevier. <http://doi.org/10.1016/B978-0-12-409548-9.10798-5>
2. Roman, M.R. & **J.J. Pierson**. 2019. Chapter 8.7: Estuarine and Coastal Plankton. In: *Ocean deoxygenation: everyone's problem*. IUCN Report
3. **Pierson, J.J.**, A. Malej, E. Camatti, R. Hood, T. Kogovšek, D. Lučić, V. Tirelli. 2021. Chapter 6: Dynamics of zooplankton and jellyfish in the face of environmental stressors: A comparative analysis of the northern Adriatic and Chesapeake Bay. In: Eds: T. Malone, A. Malej, J. Fanganeli. *Vectors of Change in Coastal Ecosystems: A Comparative Analysis*. AGU Publications

Accepted and Submitted Publications

1. **Pierson, J.J.** & M. Benfield. *In revision*. Estuarine Zooplankton. In: *Estuarine Ecology*. Eds: Day, J., Crump, B., Testa, J., & Dutton, K. *Wiley Publishing*.

C. Research Grants and Contracts

Active

Supporting Emerging Aquatic Scientists (SEAS) Islands Alliance. NSF: \$2,453,821, 11/1/2019 – 10/31/2024

GP-IMPACT: Pathways TO RENEW :Tropical Oceanography Research Experiences for the NExt-Generation Workforce. NSF: \$444,288, 9/1/2016 – 8/31/2019

Predicting, Validating, and Understanding Zooplankton Distributions from Space in an Eddy Rich Ocean. NASA: \$1,038,803, 1/1/2017 – 12/31/2019

Novel Genomic Tools to Assess Fish Diet and Prey Quality in the Choptank River. Maryland Sea Grant: \$139,512, 2/1/2018 – 1/31/2021

Past

Collaborative Research: The effects of diatom-produced polyunsaturated aldehydes on the microbial food web in temperate and polar waters. NSF: \$477,309, 04/01/2014 – 03/31/2017.

COLLABORATIVE RESEARCH: Getting it right. A Strategic Planning Workshop to Develop a Sustainable Pathway for Educating Underrepresented and Underserved Puerto Rican Students in Geosciences. NSF: \$19,580, 05/01/2015 – 04/30/2016.

Biological Mosquito Control by Native Zooplankton. Waterfowl Chesapeake Foundation: \$5,000, 12/1/2017 – 11/30/2018.

Copepod Population Dynamics in Hypoxic Coastal Waters: Physical and Behavioral Regulation of Resupply and Advective Losses. NSF: \$593,303, 03/01/2013 – 02/28/2016.

Integration, Synthesis and Modeling of High Resolution Zooplankton and Pelagic Fish Data for the Northern Gulf of Mexico. National Academy of Sciences: \$504,471, 01/01/2016 – 12/31/ 2017.

A Necklace of Cameras to Illuminate Bioluminescence. Bailey Wildlife Foundation: \$12,795, 06/01/2015 – 06/14/2016.

Rapid Response Sampling of Chesapeake Bay for 2015 Nor'easter and Hurricane Joaquin. Maryland Sea Grant: \$30,000, 10/01/2015 – 09/30/2016.

D. Invited Seminars and Presentations

Invited Seminars

Chesapeake Biological Laboratory, Solomons, MD, November 2015

Presentations

(* = Invited; # = Student or Postdoc advisee lead Author)

Pierson J.J., M. Roman, J. Testa, & D. Elliott. Too Hot to Breathe: The impact of rising temperature and decreased oxygen on zooplankton individuals and populations. Oral Presentation, 6th International ICES/PICES Zooplankton Production Symposium, 2016, Bergen, Norway.

Pierson J.J., M.R. Roman, & D. Elliott. Critical and Lethal Dissolved Oxygen of Copepod Habitat in the NGOMEX Region. Poster Presentation, The 5th Annual NOAA/NGI Gulf Hypoxia Research Coordination Workshop, July 2014, Stennis Space Flight Center, MS.

Pierson J.J., N.J. Nidzicko, M.R. Roman, D. Elliott, & C. Fitzgeralds. The roles of behavior and physics in controlling copepod population dynamics in hypoxic systems. Poster Presentation, Ocean Sciences Meeting 2014, Honolulu, HI.

Workshops Attended

NSF Writing Workshop: The Dissemination of Undergraduate Research Initiatives that Support Diversity and Inclusion in the Geosciences, New York, New York, November 2019

NOAA 5th Annual NOAA/NGI Gulf Hypoxia Research Coordination Workshop, Stennis Space Flight Center, MS, July 2014

E. Symposia Organized/Chaired for Professional Meetings

Session Chair, Aquatic Sciences 2019, “SS041: The Next Generation: Undergraduate Research in Puerto Rico and the US Virgin Islands”

Session Chair, Ocean Sciences 2016, “ME44A: Plankton Grazing and Selectivity in Marine Food Webs Posters”

F. Active Membership in Professional Societies

American Geophysical Union

American Society of Limnology and Oceanography

Coastal and Estuarine Research Federation

The Oceanography Society

IV. Teaching and Training

A. University System of Maryland Courses Taught

MEES 637 (Autumn 2018, 2019, 2021 henceforth autumn odd years): Zooplankton Ecology, 3 credits

MEES 718D (Spring 2020): Issue Study Group: Ocean Deoxygenation, 2 credits (outcome: student led update of Wikipedia page on “ocean deoxygenation”:
https://en.wikipedia.org/wiki/Ocean_deoxygenation)

MEES 608I (Spring 2017): Phytoplankton Blooms, 1 credit seminar

MEES 608M (Spring 2014): Long Term Monitoring Data from Chesapeake Bay, 1 credit seminar

Outside USM:

GESC 300 & GESC 300L Earth System Science, Summer 2018, 2019, 2020 (virtual)
Universidad del Turabo. 4 credit intensive summer undergraduate earth system
science course taught as part of NSF funded *Centro TORTUGA* project. In 2020
course was 3 credits with no lab due to global pandemic

B. Graduate Students Supervised as Major Advisor

1. Degrees Complete
Nicole Millette, Ph.D. 2016
Katherine Liu Slater, Ph.D. 2019
2. Students Currently Supervised
Catherine Fitzgerald (Ph.D. expected 2023)
3. Current Graduate Student Committee Memberships
Shannon Hood (UMCES HPL)
Dani Quil (UMCES CBL)
Nina Santos (UMES CBL)
4. Research Internships Supervised
Sophia Ali (Chesapeake College)
Graham Alston (Chesapeake College)
Stephanie D'Elia (Chesapeake College)
Lauren Ervin (Chesapeake College)
Miles Bateson (Chesapeake College)

V. Outreach and Service

A. Editorship

None.

B. Public Service

Talbot County Public Schools, Gifted and Talented Program, Sixth Graders,
“Collecting Plankton with ROVs”. Collaborative project including Washington
College Center for Environment and Society, NOAA Chesapeake Bay Office
Environmental Literacy, and Assemble. Students learn about plankton ecology
and marine food webs, construct scientific questions about plankton communities
in class, then participate in a field trip to the Horn Point Laboratory where they
design and deploy an Aquabotz ROV to collect plankton to answer their scientific
questions.

Young Scientist’s Sea Chest, <http://www.youngscientistsseachest.org/>, a curriculum
kit for educators developed in conjunction with Assemble, a non-profit design
studio, that includes curricular materials developed by teachers that adhere to the
Next Generation Science Standards. The material focuses on plankton ecology
research to address concepts including food webs, biodiversity, and watershed
ecology, with assessments of student learning included in the material.

Does Science Matter, UMCES Podcast, 2017: <http://www.umces.edu/news/why-does-science-matter-umces-scientists-weigh>

Plankton 101: Training class for shipboard instructors for Maryland Living Classrooms, Baltimore, MD, 2016, 2017

Invited Speaker at Maryland Association for Environmental and Outdoor Education (MAEOE) annual conference, 2016 “Zooplankton and Aquatic Food Webs: Who they are, what they do, and why you should care.”

C. Federal/State/Local Government

NASA Science Panelist

NSF Panelist

State SeaGrant Panelist

ASLO Committee Member, Online Media Library, 2015 – Present

D. International

The Oceanography Society, JEDI Committee, 2020 – Present

E. University System of Maryland

MEES Program Committee, 2015-2016

UMCES Website Redesign Committee, 2015-2017

LMRCSC Research Committee, 2012-Present

MEES Admission Committee, Oceanography AOS, 2011-2015

REU Selection Committee, 2010, 2015

F. UMCES and Laboratory

HPL Education Committee 2010-2012, 2016-Present, Chair 2018-present

HPL Boat Committee 2016-Present (Chair from 2016-2018)

HPL Computer Committee, 2014-2016

HPL Seminar Chair, Autumn 2012, Spring 2015

HPL Library Committee, 2012-2014