# JÉRÔME PINTI

Gulf of Maine Research Institute, Portland, Maine 04101, USA

***I am a marine ecologist and biological oceanographer. I investigate how the marine environment impacts animal ecology, from zooplankton to top predators, with the goal to better manage marine resources.***

**Keywords**: Behavioral ecology, Movement Ecology, Migrations, Conservation Ecology, Predator-Prey Interactions, Zooplankton, Carbon pump

## WORK & RESEARCH EXPERIENCE

**Senior Researcher** 2024 - present
*Gulf of Maine Research Institute (USA)*

- Head of the Biological Oceanography lab

**Post-doctoral researcher** 2021-2024 (3 years)
*Ocean Exploration, Remote Sensing, and Biogeography Laboratory, University of Delaware (USA)*

- Movement ecology of top predators at different scales. Use of tracking data, satellite products and geophysical ocean circulation models.
- Field work: Coastal shark fishing (long lines, rod and reels, gillnets) and tagging; Glider (SLOCUM) preparation, deployment, and piloting
- Supervisors: Prof. Matthew Oliver (moliver@udel.edu) and Prof. Aaron Carlisle (carlisle@udel.edu)

**Post-doctoral researcher** 2020-2021 (6 months)
*Centre for Ocean Life, DTU Aqua (Denmark)*

- Supervisors: Prof. André W. Visser (awv@aqua.dtu.dk) and Prof. Thomas Kiørboe (tk@aqua.dtu.dk)

**Research Assistant** 2016-2017 (14 months)
*Section for Oceans and Arctic, DTU Aqua (Denmark)*

- Supervisor: Prof. Patrizio Mariani (pat@aqua.dtu.dk)

## EDUCATION

**PhD, Centre for Ocean Life, DTU (Denmark)** 2017 - 2020

- Thesis: **Diel vertical migrations: structure and function of pelagic ecosystems**
- Supervisors: Prof. André W. Visser (awv@aqua.dtu.dk) and Prof. Thomas Kiørboe (tk@aqua.dtu.dk)
- Field work: scientific survey of the mesopelagic zone between Cape-Verde and Norway on board R/V Kronprins Haakon (1 month)
- External stay: visiting scientist at the UCSB (University of California Santa Barbara), hosted by David A. Siegel (david.siegel@ucsb.edu) and Timothy DeVries (tdevries@geol.ucsb.edu) (6 weeks)

**MSc in Aquatic Science and Technology, DTU (Denmark)** 2015-2017

- Majored in Marine Ecology
- Thesis: **Modelling navigation routes in long-distance ocean migrants** (highest possible grade)
- Supervisors: Prof. Patrizio Mariani (pat@aqua.dtu.dk) and Prof. Uffe H. Thygesen (uhth@dtu.dk)

**MSc in General Engineering, École Centrale Paris (France)** 2012-2017

- French *Grande École* (in the top 2 of engineering programs according to national rankings)
- Selected to pursue a double-degree at DTU (MSc in Aquatic Science and Technology)

**Preparatory classes MPSI - MP*, Lycée Masséna, Nice (France)** 2010-2012

## SCIENTIFIC PUBLICATIONS

### Peer-reviewed publications

** indicates supervised undergraduate students, ** indicates advised graduate students.*

13. Berzaghi F., **Pinti J.**, Maury O., Aumont O., Cosimano T., Wisz M.S. (2025) Global distribution and valuation of the biological carbon pump. Nature Climate Change 15: 385-392.
12. Wiernicki C.**, Curtis T.H., Block B.A., Shivji M.S., Vaudo J.J., Wetherbee B.M., Holland K.N., **Pinti J.**, Oliver M., Carlisle A. (2025) Considerations for using sharks as ocean observing platforms. ICES Journal of Marine Science 82(2): fsaf011.
11. **Pinti J.**, Huntley H., Shatley M., Carlisle A., Oliver M. (2024) The interplay between animal location accuracy and the decorrelation length scale of environmental variables when investigating environmental selection in marine organisms. Marine Ecology Progress Series 732: 1-14.
10. **Pinti J.**, Jonasdottir S.H., Record N.R., Visser A.W. (2023) The global contribution of seasonally migrating copepods to the biological carbon pump. Limnology and Oceanography, 68(5): 1147-1160.
9. **Pinti J.**, DeVries T., Norin T., Serra-Pompei C., Proud R., Siegel D.A., Kiørboe T., Petrik C.M., Andersen K.H., Brierley A., Visser A.W. (2023) Model estimates of metazoans' contributions to the biological carbon pump Biogeosciences 20: 997-1009.
   > Highlight article in Biogeosciences
8. **Pinti J.**, Shatley M., Carlisle A.B., Block B.A., Oliver M.J. (2022) Using pseudo-absence models to test for environmental selection in marine movement ecology: the importance of sample size and selection strength. Movement Ecology 10(60): 1-17.
7. Serra-Pompei C., Ward B., **Pinti J.**, Visser A.W., Kiørboe T., Andersen K.H. (2022) Linking plankton size spectra and community composition to carbon export and its efficiency. Global Biogeochemical Cycles, e2021GB007275.
6. **Pinti J.**, Visser A.W., Serra-Pompei C., Andersen K.H., Ohman M.D., Kiørboe T. (2022) Fear and loathing in the pelagic: how the seascape of fear impacts the biological carbon pump. Limnology and Oceanography, 67(6): 1238-1256.
   > Public summary available here

5. **Pinti J.**, Andersen K.H., Visser A.W. (2021) Co-adaptive behaviour of interacting populations in a habitat selection game significantly impacts ecosystem functions. Journal of Theoretical Biology, 523(110663).
   > Public summary available here

4. **Pinti J.**, Celani A., Thygesen U.H., Mariani P. (2020) Optimal navigation and behavioural traits in oceanic migrations. Theoretical Ecology, 13: 583-593.
   > Public summary available here

3. **Pinti J.**, Kiørboe T., Thygesen U.H., Visser A.W. (2019) Trophic interactions drive the emergence of diel vertical migration patterns: a game-theoretic model of copepod communities. Proceedings of the Royal Society B, 286(1911).
   > Public summary available here and here

2. **Pinti J.**, Visser A.W. (2019) Predator-prey games in multiple habitats reveal mixed strategies in diel vertical migration. The American Naturalist, 193(3).
   > Public summary available here

1. Su Y., Lenau T.A., Gundersen E., Kirkensgaard J.J.K., Maibohm C., **Pinti J.**, Ellegaard M. (2018) The UV filtering potential of drop-casted layers of frustules of three diatom species. Scientific Reports, 8(959).

### Ongoing work

*Only projects for which there is a manuscript are listed.*

**Pinti J.**, Shatley M., Huntley H., Oliver M. Global multi-scale Eulerian and Lagrangian oceanic environmental variables for the period 2000-2009 (data paper, preprint available at ESS Open Archive).

**Pinti J.**, Carlisle A., Huntley H., Shatley M., Block B., Oliver M. What oceanographic scales drive highly mobile marine predator distributions? (under review in *Scientific Reports*).

**Pinti J.**, Briner R.*, Carulli M.*, Clifford T.*, Elizardo A.*, Hankinson S.*, Reifstack M.* Relationship between relative eye growth rate and vertical habitat of fishes (under review in *Journal of Fish Biology*).

Marsaly B., **Pinti J.**, Hale E., Carlisle A.B. Fine-scale behavior of a benthic predator: first insights into the ecology of a Squatinid revealed by tri-axial biologging *(in prep)*.

## CONFERENCES & OUTREACH

### Conference presentations

22. **Pinti J.**, Wiernicki C., Oliver M. (September 2024) Fake animals: using underwater gliders to foster the development of animal biologging technologies. "Underwater Glider User Group (UG2) meeting", Ann Arbor, Michigan, USA (poster)

21. **Pinti J.** (July 2024) Scales of Selection of Eulerian and Lagrangian Environmental Parameters for Three Pelagic Sharks. "Joint Meeting of Ichthyologists and Herpetologists", Pittsburgh, Pennsylvania, USA (oral)

20. **Pinti J.** (April 2024) The global contribution of diel and seasonal vertical migrants to the biological carbon pump. Joint US Clivar-OCB workshop "Pathways Connecting Climate Changes to the Deep Ocean", Lewes, Delaware, USA (poster)

19. **Pinti J.**, Jonasdottir S.H., Record N.R., Visser A.W. (February 2024). Carbon sequestration by seasonally migrating copepods. Ocean Sciences Meeting 2024, New Orleans, Louisiana, USA (oral)

18. **Pinti J.**, Shatley M., Huntley H.S., Carlisle A., Block B.A., Oliver M.J. (February 2024) Scale of Lagrangian features and marine predator movements. Ocean Sciences Meeting 2024, New Orleans, Louisiana, USA (poster)

17. **Pinti J.** (November 2023) The global contribution of mesopelagic fish and other metazoans to the biological carbon pump. Meeting of the Mid-Atlantic Chapter of the American Fisheries Society, Wilmington, Delaware, USA (oral)

16. **Pinti J.**, Shatley M., Huntley H.S., Carlisle A., Block B.A., Oliver M.J. (November 2023) Marine predators' selection for Lagrangian features. Meeting of the Mid-Atlantic Chapter of the American Fisheries Society, Wilmington, Delaware, USA (poster)

15. **Pinti J.**, Huntley H.S., Shatley M., Carlisle A., Block B.A., Oliver M.J. (June 2023) Marine predators' traits and their selection for Lagrangian Coherent Structures. International Conference on Fish Telemetry, Sete, France (poster)

14. **Pinti J.**, Huntley H.S., Shatley M., Carlisle A., Block B.A., Oliver M.J. (June 2023) Lagrangian features as predictors of marine predators' distribution. ASLO Aquatic Sciences Meeting 2023, Palma de Mallorca, Spain (oral)

13. **Pinti J.**, Shatley M., Carlisle A., Huntley H.S., Oliver M.J. (May 2023) Environmental selection in marine organisms: spatial scaling considerations. 2023 NASA Carbon Cycle & Ecosystems Joint Workshop, College Park, Maryland, USA (poster)

12. **Pinti J.**, DeVries T., Norin T., Serra-Pompei C., Proud R., Siegel D.A., Kiørboe T., Petrik C.M., Andersen K.H., Brierley A.S., Record N.R., Jónasdóttir S.H., Visser A.W. (May 2023) The global contribution of diel and seasonal vertical migrants to the biological carbon pump. 2023 NASA Carbon Cycle & Ecosystems Joint Workshop, College Park, Maryland, USA (poster)

11. **Pinti J.**, Shatley M., Carlisle A., Block B., Oliver M.J. (December 2022) Remote sensing and marine animal tags: how much data is needed to detect environmental selection in marine predators? AGU Fall Meeting, Chicago, Illinois, USA (oral)

10. **Pinti J.** (November 2022) How much data is needed to detect environmental selection in marine predators? Meeting of the Mid-Atlantic Chapter of the American Fisheries Society, Asbury Park, New Jersey, USA (oral)

9. **Pinti J.**, Shatley M., Carlisle A., Block B., Oliver M.J. (October 2022) The importance of sample size and selection strength when investigating environmental selection in sharks and other marine predators. Sharks International 2022, Valencia, Spain (poster)

8. **Pinti J.** (September 2022) Improving geolocation of tagged animals by including diffuse attenuation coefficient in geolocation algorithms. NASA Biodiversity and Ecological Forecasting team meeting, College Park, Maryland, USA (poster)

7. **Pinti J.** (May 2022) Scaling of environmental selection in pelagic species, and other ecological questions. Rutgers-UD joint seminar, Rutgers University, New Brunswick, New Jersey, USA (oral)

6. **Pinti J.**, DeVries T., Norin T., Serra-Pompei C., Proud R., Siegel D.A., Kiørboe T., Petrik C.M., Andersen K.H., Brierley A.S., Visser A.W. (September 2021) Active carbon transport of mesopelagic fish and other important functional groups. ICES Annual Science Conference, Virtual (oral)

5. **Pinti J.**, Kiørboe T., Norin T., Visser A.W. (February 2020) Game theory: a method to mechanistically model optimal diel vertical migration behaviours of mesopelagic organisms. Ocean Sciences Meeting 2020, San Diego, California, USA (poster)

4. **Pinti J.**, Kiørboe T., Thygesen, U.H., Visser A.W. (August 2019) Trait-based modelling of multitrophic diel vertical migrations and active carbon transport. $4^{th}$ international workshop on trait-

based approaches to ocean life, Buckinghamshire, UK (poster)

3. **Pinti J.**, Kiørboe T., Visser A.W. (September 2018) Multi trophic diel vertical migrations and active carbon transport. ICES Annual Science Conference, Hamburg, Germany (oral)

2. **Pinti J.**, Celani A., Thygesen U.H., Mariani P. (December 2017) Modelling navigation routes in long-distance ocean migrants. $2^{nd}$ Moving2Gather conference, Montpellier, France (oral)

1. **Pinti J.**, Celani A., Thygesen U.H., Mariani P. (September 2017) Behavioural traits define migration routes in long-distance marine migrants. $6^{th}$ Bio-logging science symposium, Lake Constance, Germany (poster)

## Invited talks

14. The global contribution of seasonally migrating copepods to the biological carbon pump (03/28/2025) Author Spotlight Session at ASLO 2025 Aquatic Sciences Meeting, Charlotte, North Carolina, USA (oral)

13. Marine animal movement: underlying drivers and impacts on ecosystem functions (09/04/2024) Seminar at Horn Point Laboratory, University of Maryland Center for Environmental Sciences, Cambridge, Maryland, USA

12. Marine animal movement: underlying drivers and impacts on ecosystem functions (04/15/2024) Rutgers University Center for Ocean Observing Leadership seminar, New Brunswick, New Jersey, USA

11. Understanding the distribution of pelagic organisms, and their consequences for ecosystem functions (02/15/2024) Seminar at the Gulf of Maine Research Institute, Portland, Maine, USA

10. Anti predatory behaviors and the biological carbon pump: the importance of vertical migrations (08/06/2023) Seminar at the Institut de Ciènces del Mar (virtual), Barcelona, Spain

9. Anti predatory behaviors and the biological carbon pump: the importance of vertical migrations (14/04/2023) School of Marine Science and Policy Seminar, University of Delaware, Lewes, Delaware, USA

8. Using pseudo-absence models to test for environmental selection in marine movement ecology: the importance of sample size and selection strength (21/07/2022) Block lab seminar (virtual), Stanford University, USA

7. Diel vertical migration, biological carbon pump, and scaling of environmental selection in marine predators (02/02/2022) Block lab seminar (virtual), Stanford University, USA

6. Diel vertical migration and the biological carbon pump: the importance of metazoans (27/01/22) Marseille Institute of Oceanography (virtual) seminar, France

5. Diel vertical migration of marine organisms and the biological carbon pump (29/04/21) EGU Virtual conference

4. Metazoans, migrations, and the ocean's biological carbon pump (28/04/21) JETZON Virtual meeting

3. Diel vertical migrations: zooplankton, fish and carbon export (10/07/2020) Graduate School of Oceanography virtual seminar, University of Rhode Island, USA

2. Diel vertical migrations and game theory (01/13/2020) University of California in Santa Barbara, California USA

1. Can trait-based ecosystemic modelling explain the variability of diel vertical migration? (05/24/2018) Young researcher seminar, University Centre in Svalbard, Norway

### Communication and outreach

Popular science lectures for high school kids as part of international science festivals, and for visiting high school students (themes: The mesopelagic zone and its wonders; Where do marine animals go, and how can we follow them?)

Personal website with short descriptions of my research interests, projects and articles (https://jeromepinti.weebly.com/)

Social media: X (Twitter), LinkedIn, ResearchGate, ORCID

## TEACHING & MENTORING EXPERIENCE

**Mentoring experience**
*Committee member for 1 MS student, 8 undergraduate students supervised, and informal supervision of several graduate students*

- Erin Anderson, MS Marine Science, University of New England (11/2024-present)
- Alexia Elizardo, junior student, REU (06-08/2023)
- Trinity Clifford, junior student, summer scholar intern (05-08/2023)
- Kaia Klotzbuecher, junior student, student in Residence at the University of Delaware (02-05/2023)
- Morgan Nolan, junior student, student in Residence at the University of Delaware (02-05/2023)
- Maddie Reifstack, sophomore student, REU (06-08/2022)
- Samuel Hankinson, junior student, REU (06-08/2022)
- Mia Carulli, junior student, summer intern (05-08/2022)
- Renea Briner, junior student, student in Residence at the University of Delaware (02-05/2022)

**Teaching: Guest lectures** 2025
*Graduate- and undergraduate-level courses, University of New England*

- Marine Science Center Seminar (02/11/2025)
- Plankton (03/11/2025)

**Teaching: Biological Oceanography** 2022 (4 months)
*Graduate-level course, University of Delaware*

**Teaching assistant and guest lecturer: Mathematical Biology** 2018 (4 months)
*Master course, Technical University of Denmark* *Course leader: Ken H. Andersen*

**Teaching assistant: Ecology** 2018 (2 months)
*Bachelor course, Technical University of Denmark* *Course leader: Thomas Kiørboe*

## GRANTS AND FUNDS

*Four research grants, one two-year post-doctoral grant (∼$191,000, granted but declined), one 3-year PhD grant (€62,000, granted but declined), and 7 travel grants totalling approximately $6,500 to attend various conferences and workshops*

- "NERACOOS: A responsive ocean observing system for the changing Northeast region" (2025) NOAA IOOS, subaward from NERACOOS ($18,692)
- "Movement and behavior of Atlantic Angel Sharks in the Delaware Bay and Beyond" (2024) American Museum of Natural History Lerner-Gray ($3,200)
- "Improving marine geolocation algorithms by including data sensed by MODIS-Aqua, Suomi-NPP VIIRS, and JPSS-1" (2022) NASA EPSCoR seed grant 2022-2023 ($20,502)
- "Improving geolocation estimates of tagged animals in the Delaware Bay and Mid-Atlantic Region by including diffuse attenuation in geolocation algorithms" (2022) Delaware Sea Grant ($9,998)
- 2-year DFF international postdoctoral grant (2021): "Mako sharks in the North Atlantic: multi scale movements, global change and future dynamics" (Offered but declined, 1,310,000 DKK, which is $\sim$ $191,000)
- Support awarded for the Ocean Sciences Meeting (2025) by PSECCO ($500)
- Early Career Travel Grant Award to attend the Ocean Sciences Meeting (2025) by ASLO ($400)
- Support awarded for the Ocean Sciences Meeting (2020) by the Otto Mønsteds fund (€1000)
- Support awarded for the $4^{th}$ international workshop on trait-based approaches to ocean life (2019) by the Otto Mønsteds fund (€400) and by the EuroMarine network (€220)
- EuroMarine individual fellowship programme (2018), to attend a course on life-history adaptations to seasonality in Svalbard, Norway (€500)
- FILAMO student support to attend a one-week FILAMO workshop on movement ecology of marine organisms (2018) in South Africa (all costs covered)
- Support awarded for the ICES annual science conference (2018) by the Otto Mønsteds fund (€500)
- 3-year PhD grant from GAIA doctoral school (2017), University of Montpellier, France (Offered but declined, about €62,000)

## COMMUNITY SERVICE, TECHNICAL SKILLS & CERTIFICATIONS

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| **Community service** | Technical Advisor to the American ICCAT Advisory Committee for 2023-2026<br>Member of the American Elasmobranch Society and of the American Fisheries Society |
| **Reviews** | Reviewer for Frontiers in Marine Sciences, Limnology & Oceanography, Advanced Science, Ecosystems, Marine Ecology Progress Series, Animal Biotelemetry, The American Naturalist, Movement Ecology, Global Biogeochemical Cycles<br>Reviewer for NSF & NASA |
| **Computer Languages** | MATLAB, R, Maple, Comsol |

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|---|---|
| **Languages** | English, French: fluent<br>Spanish, Italian: intermediate/advanced (reference CEFR B2-C1) |
| **Certifications** | Delaware Boating License<br>CMAS level 2, PADI Advanced Open Water<br>Dry suit certified diver<br>Sea survival training<br>CPR and first aid certified – American Heart Association HeartSaver |