

Ann M. Tarrant

Senior Scientist, Biology Department
Associate Dean, Academic Programs
Woods Hole Oceanographic Institution

phone: (508) 289-3398
email: atarrant@whoi.edu
website: <https://www2.whoi.edu/site/tarrantlab/>

EDUCATION:

Ph.D. in Oceanography, University of Hawaii at Manoa (2002)

M.S. in Oceanography, University of Hawaii at Manoa (1998)

B.S. in Biology and Marine Science, University of Miami. *Magna cum Laude* (1995)

APPOINTMENTS:

Woods Hole Oceanographic Institution (WHOI), Woods Hole MA

Associate Dean of Graduate Studies, 2021-Present

Senior Scientist, Biology Department, 2020-Present

Associate Scientist, Biology Department, 2011-2020

Assistant Scientist, Biology Department, 2007-2011

NIH Postdoctoral Fellow, 2004-2007

Postdoctoral Scholar/Investigator, 2002-2004

University of Hawaii at Manoa, Oceanography Department, Honolulu, HI

Graduate Assistant, Fellow or Teaching Assistant, 1995-2002

PROFESSIONAL HONORS AND AWARDS:

Antarctic Service Award, 2019

George Thibault Early Career Scientist Award (WHOI), 2014

Richard B. Sellars Innovative Research Award (WHOI), 2011

Ruth L. Kirschstein National Research Service Award (NRSA) from National Institute of Environmental Health Sciences (NIEHS), within the National Institutes of Health (NIH), 2004-2007.

WHOI Postdoctoral Scholarship, 2002-2004

EPA STAR Graduate Fellowship, 2000-2002.

STAR Graduate Research Symposium, University of Hawaii, Department of Oceanography, Best Presentation, 1999.

NDSEG Graduate Research Fellowship, 1996-1999.

NSF Graduate Research Fellowship (awarded 1996, unable to simultaneously accept).

EPA STAR Graduate Fellowship (awarded 1996, unable to simultaneously accept).

F.G. Walton Smith Award (Univ. Miami outstanding marine science undergraduate), 1995.

Phi Beta Kappa, University of Miami Chapter, 1995.

Isaac B. Singer, Full academic scholarship, University of Miami, 1991-1995.

MAJOR RESEARCH INTERESTS:

Cnidarian physiology and stress responses; evolution and diversification of endocrine signaling and circadian regulation in marine animals; zooplankton physiology; molecular regulation of copepod dormancy/diapause.

SELECTED PUBLICATIONS

(* denotes student or postdoc from my laboratory; # denotes equal contributions).

Berger CA*, Ward CP, Karchner SI, Nelson RK, Reddy CM, Hahn ME, **Tarrant AM**. (2022). *Nematostella vectensis* exhibits an enhanced molecular stress response upon co-exposure to highly weathered oil and surface UV radiation. *Marine Environmental Research*. 175: 105569.

Tarrant AM, McNamara-Bordewick N, Blanco-Bercial L, Miccoli A, Maas AE. (2021). Diel metabolic patterns in a migratory oceanic copepod. *Journal of Experimental Marine Biology and Ecology*. 545: 151643. DOI: 10.1016/j.jembe.2021.151643.

Tarrant AM, Eisner LB, Kimmel DG. (2021) Metabolic gene expression and sensitivity to starvation in *Calanus glacialis* in the southeastern Bering Sea. *Marine Ecology Progress Series*. 674: 73-78. DOI:10.3354/meps13820.

Weizman E, Rinsky M, Simon-Blecher N, Lampert-Karako S, Yaron O, **Tarrant AM**, Levy O. (2021) Chromatin dynamics and gene expression response to heat exposure in field-conditioned versus laboratory-cultured *Nematostella vectensis*. *International Journal of Molecular Sciences*. 22: 454. DOI: 10.3390/ijms22147454.

Berger CA*, Steinberg DK, Copley NJ, **Tarrant AM**. (2021) De novo transcriptome assembly of the Southern Ocean copepod *Rhincalanus gigas* sheds light on developmental changes in gene expression. *Marine Genomics*, 58: 100835. DOI: 10.1016/j.margen.2021.100835.

Rivera HE*, Chen C-Y, Gibson MC, **Tarrant AM**. (2021) Plasticity in parental effects confer rapid larval thermal tolerance in *Nematostella vectensis*. *Journal of Experimental Biology*, 224(5): jeb236745. DOI: 10.1242/jeb.236745.

Lenz PH, Roncalli V, Cieslak M, **Tarrant AM**, Castelfranco AM, Hartline DK. (2021) Reproductive vs. diapause programs: transcriptional phenotypes of pre-adult *Calanus finmarchicus*. *Communications Biology* 4(1): 1-13. DOI: 10.1038/s42003-021-01946-0.

Skottene E, **Tarrant AM**, Altin D, Olsen RE, Choquet M, Kvile KØ. (2020) Lipid metabolism in *Calanus finmarchicus* is sensitive to variations in predation risk and food availability. *Scientific Reports* 10:22322, DOI: 10.1038/s41598-020-79165-6.

Tarrant AM. (2020). Small copepods could play a big role in the marine carbon cycle. *BioEssays* 42: e2000267. DOI: 10.1002/bies.202000267.

Maas AE*, Lawson G, Wang ZA, Bergan A, **Tarrant AM**. (2020). Seasonal variation in physiology and shell condition of the pteropod *Limacina retroversa* in the Gulf of Maine relative to life cycle and carbonate chemistry. *Progress in Oceanography* 186:102371. DOI: 10.1016/j.pocean.2020.102371.

Tarrant AM, Helm RR*, Levy O, Rivera HE*. (2019) Environmental entrainment demonstrates natural circadian rhythmicity in the cnidarian *Nematostella vectensis*. *Journal of Experimental Biology* 222: jeb205393. DOI: 10.1242/jeb.205393.

Skottene E*, **Tarrant AM**, Olsen AJ, Altin D, Østensen M-A, Hansen BH, Choquet M, Jenssen BM, Olsen RE. (2019) The β -oxidation pathway is downregulated during diapause termination in *Calanus* copepods. *Scientific Reports* 9:1-13. DOI: 10.1038/s41598-019-53032-5.

Weizman E, Tannenbaum M, **Tarrant AM**, Hakim O, Levy O. (2019) Chromatin dynamics enable transcriptional rhythms in the non-symbiotic cnidarian *Nematostella vectensis*. *PLoS Genetics*. 15(11): e10008397. DOI: 10.1371/journal.pgen.1008397.

Skottene E*. **Tarrant AM**, Olsen AJ, Altin D, Hansen BH, Choquet M, Olsen RE, Jenssen BM. (2019) A crude awakening: Effects of crude oil on lipid metabolism in calanoid copepods terminating diapause. *Biological Bulletin*, 237:90-110. DOI: 10.1086/705234.

Tarrant AM, Nilsson B, Hansen BW. (2019) Molecular physiology of copepods – from biomarkers to transcriptomes and back again. *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics* 30: 230-247. DOI: 10.1016/j.cbd.2019.03.005.

Khalturin K, Billas IML, Chebaro Y, Reitzel AM, **Tarrant AM**, Laudet V, Markov GV. (2018) NR3E receptors in cnidarians: a new family of steroid receptor relatives extends the possible mechanisms for ligand binding. *Journal of Steroid Biochemistry and Molecular Biology*, 184:11-18. DOI: 10.1016/j.jsbmb.2018.06.014.

Reitzel AM*, Macrander J, Mane-Padros D, Fang B, Sladek FM, **Tarrant AM**. (2018) Conservation of DNA and ligand binding properties of retinoid X receptor from the placozoan *Trichoplax adhaerens* to human. *Journal of Steroid Biochemistry and Molecular Biology*, 184, 3-10. DOI: 10.1016/j.jsbmb.2018.02.010.

Maas AE, Blanco Bercial L, Lo A, **Tarrant AM**, Timmins-Schiffman, E. (2018) Variations in copepod proteome and respiration rate in association with diel vertical migration and circadian cycle. *Biological Bulletin*, 235(1):30-42. DOI:10.1086/699219.

Datta MS#, Almada AA##, Baumgartner MF, Mincer TJ, **Tarrant AM**, Polz MF. (2018) Inter-individual variation in copepod microbiomes reveals bacterial networks linked to host physiology. *ISME Journal*. 12: 2103-13. DOI:10.1038/s41396-018-0182-1.

Tarrant AM#, Payton SL#, Reitzel AM, Porter D, Jenny MJ (2018) Ultraviolet radiation significantly enhances the stress response to dispersant and sweet crude oil exposure in *Nematostella vectensis*. *Marine Environmental Research*, 134:96-108. DOI: 10.1016/j.marenvres.2018.01.002.

Baumgartner MF#, **Tarrant AM**#. (2017) Physiology and ecology of diapause in marine copepods. *Annual Review of Marine Science*, 9:387-411. DOI: 10.1146/annurev-marine-010816-060505.

Tarrant AM[#], Baumgartner MF[#], Lysiak NSJ, Altin D, Størseth T, Hansen BH. (2016)
Transcriptional profiling of metabolic transitions during development and diapause preparation
in the copepod *Calanus finmarchicus*. Integrative and Comparative Biology, 56:1157-69. DOI:
10.1093/icb/icw060.

SELECTED SERVICE ACTIVITIES

WHOI Chief People Officer Search Committee (2022)
WHOI Presidential Search Committee (2020)
WHOI High Performance Computing Advisory Committee (2017-2020; Chair 2019-2020)
Biology Department Hiring committee (2016-2020)
Biology Department Faculty search committee co-chair (2016)
Editorial Board Member, Biological Bulletin (2017-2022)
Editorial Board Member, Integrative and Comparative Biology (2016-2019)
Editorial Board Member, Journal of Steroid Biochemistry and Physiology (2012-2019)

PARTICIPATION IN EDUCATIONAL PROGRAMS, MENTORING AND TRAINING:

MIT-WHOI Joint Program in Biological Oceanography

Education Coordinator, Joint Program in Biological Oceanography (2018-2021)
Member, Joint Committee for Biological Oceanography (2012-Present)
Chair, Joint Committee for Biological Oceanography (2016-2018)
Joint Program Admissions Advisory Committee (2008-2010, 2019-2020)

Mentoring and Supervision of Postdoctoral Researchers:

Biology Postdoctoral mentoring committee (2010-2012, 2018-2021)
Yaamini Venkataraman (co-advisor), Postdoctoral Scholar (2021-Present)
Maggie Johnson (advisor), Postdoctoral Scholar (2019-2021)
Rebecca Helm (advisor), Postdoctoral Investigator (2015-2018)
Amy Maas (co-advisor), Postdoctoral Scholar/Investigator (2011-2014)
Adam Reitzel (advisor), Postdoctoral Scholar/Fellow (2007-2012)
Neal Cantin (co-advisor), Postdoctoral Investigator (2008-2010)

Advising of MIT-WHOI PhD Students:

Cory Berger (currently enrolled)
Hanny Rivera (Ph.D. 2018)
Amalia Aruda Almada (Ph.D. 2014)