

Erica Goetze

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Education

- 2004 Ph.D. in Oceanography, Scripps Institution of Oceanography, University of California, San Diego.
1995 B.A. in Biology, Wesleyan University, Middletown, Connecticut

Professional History

- 2014 – current Associate Professor, Department of Oceanography, University of Hawaii at Manoa
2008 – 2014 Assistant Professor, Department of Oceanography, University of Hawaii at Manoa *
Graduate faculty, Marine Biology Graduate Program
2005 – 2008 Postdoctoral Scholar and Marie Curie Incoming International Fellow, Danish Institute for Fisheries Research, Charlottenlund, Denmark *
2005 Postdoctoral Research Assistant, The Natural History Museum, London UK
1998 – 2004 Graduate Research Assistant and EPA STAR Fellow, with M. D. Ohman
Scripps Institution of Oceanography, UCSD
(* maternity leave, 9/10 – 11/10, 1/06 – 7/06)

Publications, Refereed

- Gloeckler, K., Choy, C. A., Hannides, C., Close, H., **Goetze, E.**, Popp, B. N., Drazen, J. C. (in review) Amino acid – compound specific stable isotope analysis of micronekton around Hawaii reveals suspended particles are an important nutritional source in the mesopelagic. *Limnology and Oceanography*
- Keul, N., Peijnenburg, K. T. C. A., Andersen, N. Kitidis, V., **Goetze, E.**, Schneider, R. (in revision) Pteropods are excellent recorders of surface temperature and carbonate ion concentration. *Nature Scientific Reports*
- Gerringer, M. E., Linley, T. D., Jamieson, A. J., **Goetze, E.**, Drazen, J. C. (in review) *Pseudoliparis swirei*: A newly-discovered hadal liparid (Scorpaeniformes: Liparidae) from the Mariana Trench. *ZooTaxa*
- Wall-Palmer, D., Burridge, A. K., **Goetze, E.**, Stokvis, F., Janssen, A. W., Mekkes, L., Moreno-Alcántara, M., Bednaršek, N., Kirby, R., Schiøtte, T., Sørensen, M. V., Smart, C. W., Peijnenburg, K. T. C. A. (in review) Global biogeography and genetic diversity of the atlantid heteropods. *Progress in Oceanography*
- Burridge, A. K., van der Hulst, R., **Goetze, E.**, Peijnenburg, K. T. C. A. (in revision) Assessing Species Boundaries in the Open Sea: Applying an Integrative Taxonomic Approach to a Genus of Pelagic Molluscs. *Frontiers in Zoology*
- Sommer*, S A., Van Woudenberg*, L., Lenz, P. H., Cepeda, G., **Goetze, E.** (2017) Vertical gradients in species richness and community composition across the twilight zone in the North Pacific Subtropical Gyre. *Molecular Ecology* in press
- Jungbluth*, M. J., Selph, K. E., Lenz, P. H., **Goetze E.** (2017) Species-specific grazing and significant trophic impacts by two species of copepod nauplii, *Parvocalanus crassirostris* and *Bestiolina similis*. *Marine Ecology Progress Series* 572: 57-76.
- Jungbluth*, M. J., Selph, K. E., Lenz, P. H., **Goetze E.** (2017) Incubation duration effects on copepod naupliar grazing estimates. *Journal of Experimental Marine Biology and Ecology* 494: 54-62.
doi:10.1016/j.jembe.2017.05.005

- Iacchei, M., Butcher^{*}, E., Portner[†], E., **Goetze, E.** (2017) It's about time: Insights into temporal genetic patterns in oceanic zooplankton from biodiversity indices. *Limnology & Oceanography* doi: 10.1002/lno.10538
- Wall-Palmer, D., Burridge, A. K., Peijnenburg, K. T. C. A., **Goetze, E.**, Janssen, A., Kirby, R., Hart, C. B., Smart, C. W. (2016) Evidence for the validity of *Protatlanta sculpta* (Gastropoda: Pterotracheoidea). *Contributions to Zoology* 85 (4): 423-435.
- Burridge, A., Tump, M., Vonk, R., **Goetze, E.**, Peijnenburg, K. T. C. A. (2016) Diversity and distribution of hyperiid amphipods along a latitudinal transect in the Atlantic Ocean. *Progress in Oceanography – AMT special issue*. doi:10.1016/j.pocean.2016.08.003
- Burridge, A. K., **Goetze, E.**, Wall-Palmer, D., Le Double, S., Huisman, J., Peijnenburg, K. T. C. A. (2016) Diversity and abundance of holoplanktonic gastropods and heteropods along a latitudinal diversity gradient across the Atlantic Ocean. *Progress in Oceanography – AMT special issue*. doi:10.1016/j.pocean.2016.10.001
- Goetze, E.**, Hüdelpohl, P., Chang^{*}, C., Iacchei, M., Van Woudenberg^{*}, L., Peijnenburg, K. T. C. A. (2016) Ecological dispersal barrier across the equatorial Atlantic in a migratory planktonic copepod. *Progress in Oceanography – AMT special issue*. doi:10.1016/j.pocean.2016.07.001
- Hirai, J. Tsuda, A., **Goetze, E.**, (2015). Extensive genetic diversity and endemism across the global range of the oceanic copepod *Pleuromamma abdominalis*. *Progress in Oceanography* 138: 77-90. doi:10.1016/j.pocean.2015.09.002
- Goetze, E.**, Andrews, K., Peijnenburg, K. T. C. A., Portner[†], E., Norton^{*}, E. L. (2015) Temporal Stability of Genetic Structure in a Mesopelagic Copepod. *PLoS One* 10(8): e0136087. doi:10.1371/journal.pone.0136087
- Burridge, A., **Goetze, E.**, Raes, N., Huisman, J., Peijnenburg, K. T. C. A. (2015) Global biogeography and evolution of *Cuvierina* pteropods. *BMC Evolutionary Biology* 15: 39. doi:10.1186
- Andrews, K. R., Norton^{*}, E. L., Fernandez-Silva, I., Portner[†], E. **Goetze, E.** (2014) Multilocus evidence for globally-distributed cryptic species and distinct populations across ocean gyres in a mesopelagic copepod. *Molecular Ecology* 23(22): 5462-79. doi: 10.1111/mec.12950.
- Halbert^{*}, K. M. K., **Goetze, E.**, Carlon, D. B. (2013) High cryptic diversity across the global range of the migratory planktonic copepods *Pleuromamma piseki* and *P. gracilis*. *PLoS One* 8(10): e77011. doi:10.1371/journal.pone.0077011
- Jungbluth^{*}, M. J., **Goetze, E.**, Lenz, P. (2013) Measuring copepod naupliar abundance in a subtropical bay using quantitative PCR. *Marine Biology* 160(12): 3125-3141. doi: 10.1007/s00227-013-2300-y.
- Norton^{*}, E. L., **Goetze, E.** (2013) Equatorial dispersal barriers and limited connectivity among oceans in a planktonic copepod. *Limnology & Oceanography* 58: 1581-1596.
- Peijnenburg, K. T. C. A., **Goetze, E.** (2013) High evolutionary potential of marine zooplankton. *Ecology & Evolution* 3(8): 2765-2781. doi: 10.1002/ece3.644 (both authors contributed equally)
- Goetze, E.**, Jungbluth^{*}, M. J. (2013) Acetone preservation for zooplankton molecular studies. *Journal of Plankton Research*. doi: 10.1093/plankt/fbt035
- Fernandez-Silva, I., Whitney, J., Wainwright, B., Andrews, K. R., Ylitalo-Ward, H., Bowen, B. W., Toonen, R. J., **Goetze, E.**, Karl, S. A. (2013) Microsatellites for Next-Generation Ecologists: A Post-Sequencing Bioinformatics Pipeline. *PLOS One* 8(2): e55990. doi:10.1371/journal.pone.0055990
- Bron, J. E., Frisch, D., **Goetze, E.**, Johnson, S. C., Lee, C. E., Wyngaard, G. A. (2011) Observing Copepods through a Genomic Lens. *Frontiers in Zoology* 8: 22.
- Goetze, E.** (2011) Population differentiation in the open sea: Insights from the pelagic copepod *Pleuromamma xiphias*. *Integrative and Comparative Biology* 51: 580-597.

- Holmborn, T., **Goetze, E.**, Pöllupüü, M., Põllumäe, A. (2011) Genetic species identification and low genetic diversity in *Pseudocalanus acuspes* of the Baltic Sea. *Journal of Plankton Research* 33 (3): 507-515.
- Goetze, E.**, Ohman, M. D. (2010) Integrated molecular and morphological biogeography of the calanoid copepod family Eucalanidae. *Deep Sea Research II* 57: 2110-2129.
- Goetze, E.** (2010) Species discovery in marine planktonic invertebrates through global molecular screening. *Molecular Ecology* 19 (5): 952-967.
- Goetze, E.**, Kiørboe, T. (2008) Heterospecific mating and species recognition in the planktonic marine copepods *Temora longicornis* and *Temora stylifera*. *Marine Ecology Progress Series* 370: 185-198.
- Not, F., Latasa, M., Scharek, R., Viprey, M., Karleskind, P., Balagué, V., Ontoria, I., Cumino, A., **Goetze, E.**, Vaultot, D., Massana, R. (2008) Protistan assemblages across the Indian Ocean, with a specific emphasis on the picoeukaryotes. *Deep Sea Research I* 55: 1456-1473.
- Drillet, G., **Goetze, E.**, Jepsen, P. M., Højgaard, J. K., Hansen, B. W. (2008) Strain-specific vital rates in four *Acartia tonsa* cultures, I: Strain origin, genetic differentiation and egg survivorship. *Aquaculture* 280(1-4): 109-116.
- Goetze, E.** (2008) Heterospecific mating and partial prezygotic reproductive isolation in the planktonic marine copepods *Centropages typicus* and *Centropages hamatus*. *Limnology and Oceanography* 53(2): 433-445.
- Goetze, E.** (2006) Elongation factor 1- α in marine copepods (Calanoida: Eucalanidae): Phylogenetic utility and unique intron structure. *Molecular Phylogenetics and Evolution* 40 (3): 880-886.
- Glover, A.G., **Goetze, E.**, Dahlgren, T., Smith, C. R. (2005) Morphology, reproductive biology and genetic structure of the whale-fall and hydrothermal vent specialist, *Bathyporeia guaymasensis* Pettibone 1989 (Annelida: Polynoidae). *Marine Ecology* 26 (3-4): 223-234.
- Goetze, E.** (2005) Global population genetic structure and biogeography of the oceanic copepods, *Eucalanus hyalinus* and *E. spinifer*. *Evolution* 59 (11): 2378-2398.
- Goetze, E.**, Bradford-Grieve, J. (2005) Genetic and morphological description of *Eucalanus spinifer* T. Scott 1894 (Calanoida: Eucalanidae), a circumglobal sister species of *E. hyalinus* s. s. (Claus 1866). *Progress in Oceanography* 65 (1): 55-87.
- Goetze, E.** (2003) Cryptic speciation on the high seas: global phylogenetics of the copepod family Eucalanidae. *Proceedings of the Royal Society London B*. 270 (1531): 2321-2331.
- Mullin, M.M., **Goetze, E.**, Beaulieu, S.E., Lasker, J.M. (2000) Comparisons within and between years resulting in contrasting recruitment of Pacific hake (*Merluccius productus*) in the California Current System. *Canadian Journal of Fisheries and Aquatic Sciences* 57: 1434-1447

* student, postdoc, and † technician co-authors supported on Goetze extramural grants. Last author position (2013 – current) indicates research that was conducted under my mentorship (in my group).

Publications, Non-refereed

- Peijnenburg, K., **Goetze, E.**, Machida, R. (2011) Workshop Report: Advances in genomic and molecular studies of zooplankton. PICES Press Vol. 19 (No. 2): 22-24.
- Bron, J., Frisch, D., **Goetze, E.**, Johnson, S., Lee, C. E., Wyngaard, G. (2009) Copepod Genomics Initiative. White paper for the development of large-scale genomics resources for copepods. Mar 30, 2009. Prepared by Workshop participants of World Association of Copepodologists.
- Goetze, E.** (2004) Speciation in the Open Ocean: the Phylogeography of the Oceanic Copepod Family Eucalanidae. PhD Dissertation, University of California, San Diego, La Jolla, California. 236 pp.

Current research support

Exploration of biodiversity and ecosystem structure on seamounts in the western CCZ

PI: J. Drazen, Co-PIs: C. Smith, E. Goetze, E. Vetter, A. Glover, T. Dahlgren

NOAA Ocean Exploration. \$749,000 (total), awarded June 2017.

Environmental DNA biodiversity surveys across the abyssal seafloor in the CCZ

PI: E. Goetze, Co-PI: C. R. Smith

Pew Charitable Trust. \$137,171, awarded May 2017.

Past research support

EAGER: New molecular methods for studying copepod nauplii in the field

PI: E. Goetze, Co-PIs: P. Lenz, Pacific Biosciences Research Center, K. Selph, Department of Oceanography, UH Manoa. National Science Foundation, Division of Ocean Sciences, Biological Oceanography. \$298,507, 2013 – 2016. NSF OCE-1255697

RAPID: Basin-scale genetics of marine zooplankton

PI: E. Goetze. National Science Foundation, Division of Ocean Sciences, Biological Oceanography. \$199,405, 2013 – 2016. NSF OCE-1338959

R/V Falkor University of Hawaii student cruise – station ALOHA. Schmidt Ocean Institute, 6 shiptime days and technical support at sea (Goetze chief scientist), June 2014.

2014 Atlantic Meridional Transect (AMT) cruise - Three days shiptime

National Science Foundation & USA-UK shiptime barter system. Wire-time for zooplankton sampling in association with NSF grant OCE-1338959. PI: Goetze.

Plankton food web dynamics and storm events in Kaneohe Bay

PI: E. Goetze, AIs: P. Lenz, Pacific Biosciences Research Center, K. Selph, Department of Oceanography, UH Manoa. UH Sea Grant, 2012 – 2014. \$53,636 and graduate assistant support (2 years).

Does habitat specialization drive population genetic structure of oceanic zooplankton?

PI: E. Goetze. National Science Foundation, Division of Ocean Sciences, Biological Oceanography. \$561,994, 2010 – 2014. NSF OCE-1029478

2012 Atlantic Meridional Transect (AMT) cruise – Two shiptime days

National Science Foundation & USA-UK shiptime barter system. Wire-time for zooplankton sampling in association with NSF grant OCE-1029478. PI: Goetze.

Copepod recruitment in Kaneohe Bay following storm events

PI: Petra Lenz, Pacific Biosciences Research Center, UH Manoa. Collaborators: E. Goetze, D. Hartline. UH Sea Grant, \$91,138 and graduate assistant support (3 years), 2009 – 2012.

National Geographic Society, Waitt Grant.

PI: E. Goetze. \$12,000, 2010 – 2011.

Fellowships

Martin Fellowship, Naturalis Biodiversity Center, Leiden, Netherlands, sabbatical, 2016

Marie Curie Incoming International Fellowship (EU), postdoctoral, 2007-2008

Frieda Daum Urey Endowment Fellowship, graduate, 2003

Environmental Protection Agency Science To Achieve Results (STAR) Graduate Fellowship, 1999-2002

Teaching

OCN 627 *Ecology of Pelagic Marine Animals*. Graduate level. Spring 2009, 2010, 2011, 2012, 2014, 2017. Student cruises in 2009, 2011, 2014.

OCN/MET/OEST 310 *Global Environmental Change*. Undergraduate level. Fall 2008, Fall 2009, Spring 2011, Spring 2012

OCN 201 *Science of the Sea*. Undergraduate level, 2 sections. Spring 2013, Spring 2014, Spring 2015, Fall 2016, Spring 2017.

OCN780 *Oceanography Seminar*. Spring 2010.

Mentoring

Postdoctoral mentor for Kimberly Andrews (2012), Katherine Hanson (2013 – 2015), Carolyn Faithfull-Mathisen (2014 – 2016), Matthew Iacchei (2013 – 2014, 2015 – current). Carolyn and Matthew had postdoctoral fellowships (Swedish Research Council, NSF Ocean Sciences).

Graduate advisor for Emily Norton, Oceanography (MS 2013), Michelle Jungbluth, Oceanography (MS 2012, PhD 2016), Lauren Van Woudenberg, Marine Biology (MS 2016).

Undergraduate thesis mentor for Stephanie A. Sommer (2016), Elizabeth Butcher (2014)

Served or Serving on MS and PhD thesis committees for 6 students (Oceanography, Marine Biology, Marine Science – Hawaii Pacific University)

Served or Serving on other graduate student committees for 15 students (Oceanography, Marine Biology)

Mentored 13 additional undergraduate students in research in my laboratory

Served or Serving as academic advisor for 17 GES students

Hosted visiting researchers and students: Georgina Cepeda (Argentina), Patricia Hüdepohl (Germany), Russ Hopcroft (U Alaska), J. Hirai (U Tokyo), A. Burrige (U Amsterdam), KTCA Peijnenburg (U Amsterdam)

Service (selected)

National & International

Session Co-Chair, 13th International Conference on Copepoda, July 2017. Session to honor Janet Grieve, with M. D. Ohman.

Session Co-Chair, Aquatic Sciences meeting Feb 2017. Aquatic genomics, with G. Hoorau & K. T. C. A. Peijnenburg.

Session Co-Chair, Ocean Sciences meeting Feb 2014. Examining genetic connectivity, from unicells to metazoans, using novel and integrated approaches, with T. Rynearson, D. Hogan, B. Walther.

Convener, Workshop on ‘Advances in genomic and molecular studies of zooplankton’, 5th International Zooplankton Production Symposium, March 2011. Workshop report: PICES Press Vol. 19 (No. 2): 22-24.

Steering Committee and DNA Barcoding Committee member, Census of Marine Zooplankton (CMarZ), 2008 – 2010

Executive Council member, World Association of Copepodologists, 2008 – 2011

Departmental, UH Manoa

Search committee, Biological Oceanography faculty position (HOT program lead), 2017

SOEST Open House, designed and coordinated an outreach exhibit on Ocean Drifters (with P. Lenz’s lab), reaching > 5000 school children biannually, 2011, 2013, 2015

Steering committee, Global Environmental Science BS degree program, 2009 – 2017

Oceanography Departmental Personnel Committee (DPC), 2012 – 2013

Departmental PhD exam committee, to oversee restructuring of the examinations in our graduate program (PhD), 2011 – 2012

Search committee, Biological Oceanography faculty position, 2011 – 2013. Plankton ecologist, with an emphasis on phytoplankton, primary production or bio-optics.

Search committee, Oceanography faculty position, 2012. Modeler, in ocean biology or chemistry.

Search committee, Biological Oceanography faculty position, 2010 – 2011. Phytoplankton ecologist.

Graduate curriculum review committee, 2010 – 2011

Undergraduate Summer Research Award Committee, 2009