CURRICULUM VITAE
Karen Erica Selph

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EDUCATION

San Francisco State University	Biology, emphasis in Marine Biology	B.S. 1985
University of Hawaii at Manoa	Oceanography	M.S. 1992, PhD. 1999
University of Hawaii at Manoa	Oceanography	Post-doctoral Appt. 1998-2002

PROFESSIONAL HISTORY

Full Specialist, School of Ocean & Earth Sciences and Technology (SOEST), Univ. of Hawaii at Manoa (UHM), *Aug 2019 to present*.
Associate Specialist, SOEST, UHM, *Aug 2007-July 2019*.
Associate Graduate Faculty, Dept of Oceanography, SOEST, UHM, *Nov 2004 to present*.
Cooperating Graduate Faculty, Marine Biology, UHM, *March 2013 to present*.
Assistant Specialist, SOEST, UHM, *Dec 2002-July 2007*.
Director, SOEST Flow Cytometry Facility, UHM, *Dec 2002 to present*.
Instructor, Dept of Oceanography, SOEST, UHM, *Fall 2000, 2003/2004 Academic Years through Fall 2013*. Co-teach in OCN 201, 320, 621, 626, 627, and 633.
Technical Manager, SOEST Flow Cytometry Facility, UHM, *July 1998-Dec 2002*.
Post-doctoral Associate, Dept of Oceanography, UHM, *Aug 2001-Dec 2002*.

MANUSCRIPTS

1) Selph, KE (submitted) Enumeration of marine microbial organisms by flow cytometry using near-UV excitation of Hoechst 34580-stained DNA. *Limnol. Oceanogr. Methods*.

2) Bellinger, MR, E Datlof, **KE Selph**, T Gallagher and M. Knope (submitted) A genome resource for the adaptively radiated hexaploidy species *Bidens hawaiensis* assembled from high-fidelity circular consensus sequences. *J. of Heredity.*

3) **Selph, KE**, R Swalethorp, MR Stukel, TB Kelly, AN Knapp, K Fleming, T Hernandez, and MR Landry. 2021. Phytoplankton community composition and biomass in the oligotrophic Gulf of Mexico. *J. Plankton Res.*, doi.org/10.1093/plankt/fbab006.

4) Landry, M. R., **Selph, K. E.,** Stukel, M. R., Swalethorp, R., Kelly, T. B., Beatty, J. and Quackenbush, C. 2021. Microbial food web dynamics in the oceanic Gulf of Mexico. *J. Plankton Res*.

5) Gerard, T., Lamkin, R. T., Kelly, T. B., Knapp, A. N., Laiz-Carrión, R., Malca, E., **Selph, K. E.,** Shiroza, A., Shropshire, T. A., Stukel, M. R., Swalethorp, R., Yingling, N, and Landry, M. R. 2021. Bluefin Larvae in Oligotrophic Ocean Foodwebs, Investigations of Nutrients to Zooplankton: Overview of the BLOOFINZ-Gulf of Mexico study. *J. Plankton Res*.

6) Yingling, N., Kelly, T. B., Shropshire, T. A., Landry, M. R., **Selph, K. E.,** Knapp, A. N., Kranz, S. and Stukel, M. R. 2021. Taxon-specific phytoplankton growth, nutrient utilization, and light limitation in the oligotrophic Gulf of Mexico. *J. Plankton Res*.

7) Stukel, M. R., Gerard, T., Kelly, T. B., Knapp, A. N., Laiz-Carrión, R., Lamkin, J. T., Landry, M. R., *et al*. (including **Selph, K.E.**) 2021. Plankton food webs in the oligotrophic Gulf of Mexico spawning grounds of Atlantic Bluefin tuna. *J. Plankton Res*.

8) Stukel, MR., Kelly, T. B., Landry, M. R., **Selph, K. E.** and Swalethorp, R. 2021. Sinking carbon, nitrogen, and pigment flux within and beneath the euphotic zone in the oligotrophic, open-ocean Gulf of Mexico. *J. Plankton Res*.

9) Kelly, T. B., Knapp, A. N., Landry, M. R., **Selph, K. E.,** Shropshire, T. A., Thomas, R. and Stukel, M. R. 2021. Lateral advection supports nitrogen export in the oligotrophic open-ocean Gulf of Mexico. *Nat. Commun., in review*.

10) Knapp, A. N., Thomas, R., Stukel, M. R., Kelly, T., Landry, M. R., **Selph, K. E.,** Malca, E., Gerard, T. *et al.* 2021. Constraining the sources of nitrogen fueling export production in the Gulf of Mexico using nitrogen isotope budgets. *J. Plankton Res*.

11) Li, Q, K Edwards, C Schvarcz, **KE Selph**, G Steward. 2020. Plasticity in the grazing ecophysiology of *Florenciella* (Dichtyochophyceae), a mixotrophic nanoflagellate that consumes *Prochlorococcus* and other bacteria. *Limnol. Oceanogr.,* 66(1), 47-60, doi.org/10.1002/lno.11585

12) Linacre, L, R Durazo, V Camacho-Ibar, **KE Selph**, R Lara, U Mirabel-Gómez, C Bazán-Guzmán, A Lago-Lestón, E Fernández-Martín, K Sidón-Ceseña. 2019. Picoplankton carbon biomass assessments and distribution of *Prochlorococcus* ecotypes linked to Loop Current Eddies during summer in the southern Gulf of Mexico. *J. Geophys. Res. Oceans*, doi.org/10.1029/2019JC015103.

13) Shih, JL, **KE Selph**, CB Wall, NJ Wallsgrove, MP Lesser, BN Popp. 2019. Trophic ecology of the tropical Pacific sponge *Mycale grandis* inferred from amino acid compound-specific isotopic analyses. *Microbial Ecology*, doi.org/10.1007/s00248-019-01410-x (sharing link: https:rdcu.be/bKNrF)

14) Jiang, M, Measures, CI,, KA Barbeau, MA Charette, ST Gille, M Hatta, M Kahru, BG Mitchell, AC Naveria Garabato, C Reiss, **KE Selph**, M Zhou. 2019. Fe sources and transport from the Antarctic Peninsula shelf to the southern Scotia Sea. *Deep Sea Res. I* 150, doi.org/10.1016/j.dsr.2019.06.006.

15) Stukel, MR, M Decima, MR Landry, **KE Selph**. 2018. Nitrogen and isotope flows through the Costa Rica Dome upwelling ecosystem: The crucial mesozooplankton role in export flux. *Global Biogeochem. Cycles* 32:1815-1832.

16) **Selph, KE**, E Goetze, MJ Jungbluth, PH Lenz, G Kolker. 2018. Microbial food web connections and rates in a subtropical embayment. *Mar. Ecol. Prog. Ser*. 590:19-34.

17) Hatta, M, CI Measures, PJ Lam, DC Ohnemus, ME Auro, MM Grand, **KE Selph**. 2017. The relative roles of Modified Circumpolar Deep Water and benthic sources in supplying iron to the recurrent phytoplankton blooms above Pennell and Mawson Bank, Ross Sea, Antarctica. *J. Mar. Systems* 166:61-72.

18) Jungbluth, MJ, **KE Selph**, PH Lenz, E Goetze. 2017. Incubation duration effects on copepod naupliar grazing estimates. *J. Exp. Mar. Biol. Ecol.* 494:54-62.

19) Jungbluth, MJ, **KE Selph**, PH Lenz, E Goetze. 2017. Species-specific grazing and significant trophic impacts by two species of copepod nauplii, Parvocalanus crassirostris and Bestiolina similis. *Mar. Ecol. Prog. Ser.* 572:57-76.

20) Choi, DH, SM An, S Chun, EC Yang, **KE Selph**, CM Lee, JH Noh. 2016. Dynamic changes in the composition of photosynthetic picoeukaryotes in the northwestern Pacific Ocean revealed by high-throughput tag-sequencing of plastid 16S rRNA genes. *FEMS Microbiol. Ecol.* 92(2) fiv170.

21) Freibott, A., AG Taylor, **KE Selph**, H Liu, W Zhang, MR Landry. 2016. Biomass and composition of protistan grazers and heterotrophic bacteria in the Costa Rica Dome during summer 2010. *J. Plankton Res*. 38:230-243.

22) Goes, JI, HD Rosario Gomes, **KE Selph**, MR Landry. 2016. Biological response of Costa Rica Dome phytoplankton to light, silicic acid and trace metals. *J. Plankton Res*. 38:290-304.

23) Gutierrez-Rodriguez, A., **KE Selph**, MR Landry. 2016. Phytoplankton growth and microzooplankton grazing dynamics across vertical environmental gradients determined by transplant in situ dilution experiments. *J. Plankton Res*. 38:271-289.

24) Landry, MR, **KE Selph**, M Decima, A Gutierrez-Rodriguez, MR Stukel, AG Taylor, AL Pasulka. 2016. Phytoplankton production and grazing balances in the Costa Rica Dome. *J. Plankton Res*. 38:366-379.

25) **Selph, KE**, MR Landry, AG Taylor, A Gutierrez-Rodriguez, MR Stukel, J Wokuluk, A. Pasulka. 2016. Phytoplankton production and taxon-specific growth rates in the Costa Rica Dome. *J. Plankton Res*. 38:199-215.

26) Taylor, AG, MR Landry, A Friebott, **KE Selph**, A Gutierrez-Rodriguez. 2016. Patterns of microbial community biomass, composition and HPLC diagnostic pigments in the Costa Rica upwelling dome. *J. Plankton Res*. 38:183-198.

27) Chappell, PD, J Vedamati, **KE Selph**, HA Cyr, BD Jenkins, MR Landry, JW Moffett. 2015. Preferential depletion of zinc within Costa Rica Upwelling Dome creates conditions for zinc co-limitation of primary production. *J. Plankton Res*. 38:244-255.

28) Choi, DH, **KE Selph**, JH Noh. 2015. Niche partitioning of picocyanobacterial lineages in the oligotrophic northwestern Pacific Ocean. *ALGAE*, 30(3), 223-232.

29) Taylor, AG, MR Landry, **KE Selph**, JJ Wokuluk. 2015. Temporal and spatial patterns of microbial community biomass and composition in the southern California Current Ecosystem. *Deep-Sea Res. II*. 112:117-128.

30) Gutierrez-Rodriguez, A, G Slack, E Daniels, **KE Selph**, B Palenik, MR Landry. 2014. Fine spatial structure of genetically distinct picocyanobacterial populations across environmental gradients in the Costa Rica Dome. *Limnol. and Oceanogr*. 59:705-723.

31) Taniguchi, DAA, MR Landry, PJS Franks, **KE Selph**. 2014. Size-specific growth and grazing rates for picophytoplankton in coastal and oceanic regions of the eastern Pacific. *Mar. Ecol. Prog. Ser.,* 509:87-101.

32) Hatta, M, CI Measures, **KE Selph**, M Zhou, JJ Yang, WT Hiscock. 2013. Iron fluxes from the shelf regions near the South Shetland Islands in the Drake Passage during the austral-winter 2006. *Deep-Sea Res. II,* 90, 89-101.

33) Measures, CI, MT Brown, **KE Selph**, A Apprill, M Zhou. 2013. The influence of shelf processes in delivering dissolved iron to the HNLC waters of the Drake Passage, Antarctica. *Deep-Sea Res. II,* 90, 77-88.

34) **Selph, KE**, A. Apprill, C.I. Measures, M. Hatta, W.T. Hiscock, M.T. Brown. 2013. Phytoplankton distributions in the Shackleton Fracture Zone/Elephant Island region of the Drake Passage in February-March 2004. *Deep-Sea Res. II,* 90, 55-67.

35) Jiang, M, KA Barbeau, **KE Selph**, CI Measures, K Buck, F Azam, BG Mitchell, M Zhou. 2013. The role of organic ligands in the iron cycling and primary productivity in the Antarctic Peninsula: A modeling study. *Deep-Sea Res. II,* 90, 112-133.

36) Stukel, MR, M Decima, **KE Selph**, DAA Taniguchi, MR Landry. 2013. The role of *Synechococcus* in vertical flux in the Costa Rica upwelling dome. *Prog. in Oceanogr.,* 112-113:49-59.

37) Sevadjian, JC, MA McManus, KJ Benoit-Bird, **KE Selph**. 2012. Shoreward advection of phytoplankton and vertical re-distribution of zooplankton by episodic near-bottom water pulses on an insular shelf: Oahu, Hawaii. *Cont. Shelf Res.* 50-51:1-15.

38) Taylor, A.G., R. Goericke, M.R. Landry, **KE Selph**, D.A. Wick, M. J. Roadman. 2012. Sharp gradients in phytoplankton community structure across a frontal zone in the California Current Ecosystem. *J. Plankton Res.,* 34(9), 778-789.

39) Brzezinski, M, S Baines, F Chai, WM Balch, RC Dugdale, JW Krause, MR Landry, A Marchi, CI Measures, DM Nelson, A Parker, **KE Selph**, P Strutton, AG Taylor, BS Twining and C Beucher. 2011. Co-limitation of diatoms by iron and silicic acid in the equatorial Pacific. *Deep-Sea Res. II,* 58, 493-492.

40) Kaupp, LJ, CI Measures, **KE Selph**, FT Mackenzie. 2011. The distribution of dissolved Fe and Al in the upper waters of the eastern equatorial Pacific. *Deep-Sea Res. II*, 58, 296-310.

41) Landry, MR, **KE Selph**, AG Taylor, MR Decima, WM Balch, RR Bidigare. 2011. Phytoplankton growth, grazing and production balances in the HNLC equatorial Pacific. *Deep-Sea Res. II*, 58, 524-535.

42) Landry, MR, **KE Selph**, EJ Yang. 2011. Decoupled phytoplankton growth and microzooplankton grazing in the deep euphotic zone of the HNLC equatorial Pacific. *Mar. Ecol. Prog. Ser.*, 421, 13-24.

43) **Selph, KE**, MR Landry, AG Taylor, EJ Yang, CI Measures, J Yang, MR Stukel, S Christensen, RR Bidigare. 2011. Spatially-resolved taxon-specific phytoplankton production and grazing dynamics in relation to iron distributions in the Equatorial Pacific between 110 and 140°W. *Deep-Sea Res. II*, 58, 358-377.

44) Stukel, M, MR Landry, **KE Selph**. 2011. Nanoplankton mixotrophy in the eastern equatorial Pacific. *Deep-Sea Res. II*, 58, 378-386.

45) Taylor, AG, MR Landry, **KE Selph** and EJ Yang. 2011. Biomass, size structure and depth distributions of the microbial community in the eastern equatorial Pacific. *Deep-Sea Res. II,* 58, 342-357.

46) Buck, K., **KE Selph**, K Barbeau. 2010. Iron-binding ligand production and copper speciation in an incubation experiment of Antarctic Peninsula shelf waters from the Bransfield Strait, Southern Ocean. *Mar. Chem.,*122,148-159.

47) Krause, JW, MA Brzezinski, MR Landry, SB Baines, DM Nelson, **KE Selph**, AG Taylor, BS Twining. 2010. The effects of biogenic silica detritus, zooplankton grazing, and diatom size structure on silicon cycling in the euphotic zone of the eastern equatorial Pacific. *Limnol. Oceanogr.* 55(6), 2608-2622.

48) Brown, SL, MR Landry, **KE Selph**, EJ Yang, YM Rii, RR Bidigare. 2008. Diatoms in the desert. *Deep-Sea Res. II*, 55:1321-1333.

49) Landry, MR, SL Brown, Y Rii, **KE Selph**, RR Bidigare, EJ Yang, MP Simmons. 2008. Depth-stratified phytoplankton dynamics in Cyclone Opal, a subtropical mesoscale eddy. *Deep-Sea Res. II*, 55:1348-1359.

50) Benitez-Nelson, CR and 22 others (inc. **KE Selph)**. 2007. Mesoscale eddies drive increased silica export in the subtropical Pacific Ocean, *Science* 316(5827):1017-1021.

51) Hopkinson, BM, BG Mitchell, RA Reynolds, H Wang, **KE Selph**, CI Measures, CD Hewes, O Holm-Hansen, KA Barbeau. 2007. Iron limitation across chlorophyll gradients in the southern Drake Passage: phytoplankton responses to iron addition and photosynthetic indicators of iron stress. *Limnol. Oceanogr.,* 52(6):2540-2554.

52) **Selph, KE**, J Shacat, and MR Landry. 2005. Microbial community composition and growth rates in the NW Pacific during spring 2002. *Geochem. Geophys. Geosyst.*, 6, Q12M05, doi:10.1029/2005GC000983.

53) Coale, KH and 48 others (including **KE Selph**). 2004. Southern Ocean Iron Enrichment Experiment: Carbon Cycling in High- and Low-Si Waters. *Science* 304(5669):408-414.

54) **Selph, KE**, MR Landry, EA Laws. 2003. Heterotrophic nanoflagellate enhancement of bacterial growth through nutrient remineralization in chemostat culture. *Aq. Microb. Ecol.,* 32, 23-37.

55) Landry, MR, **KE Selph**, SL Brown, MR Abbott, CI Measures, SM Vink, CB Allen, A Calbet, S Christensen, H Nolla. 2002. Seasonal dynamics of phytoplankton in the Antarctic Polar Front region at 170°W. *Deep-Sea Res. II,* 49, 1843-1865.

56) Landry, MR, **KE Selph**, SL Brown, MR Abbott, RM Letelier, S Christensen, RR Bidigare, K Casciotti. 2001. Initiation of the spring phytoplankton increase in the Antarctic Polar Front Zone at 170°W. *J. Geophys. Res.,* 106, 13903-13915.

57) Landry, MR, H Al-Mutairi, **KE Selph**, S Christensen, S Nunnery. 2001. Seasonal patterns of mesozooplankton abundance and biomass at Station ALOHA. *Deep-Sea Res. II*, 48, 2037-2061.

58) **Selph, KE**, MR Landry, CB Allen, A Calbet, S Christensen, RR Bidigare. 2001. Microbial community composition and growth dynamics in the Antarctic Polar Front and seasonal ice zone during late spring 1997. *Deep-Sea Res. II*, 48, 4059-4080.

59) **Selph, KE**. 1999. Application of Two-Stage Chemostats and Flow Cytometry to Study Marine Nanoflagellate Grazing and Digestion. *Dissertation Abstracts International* Part B: Science and Engineering [Diss. Abst. Int. Pt. B - Sci. & Eng.]. Vol. 60, no. 5, p. 2019. Nov.

60) Dobbs, FC, **KE Selph**. 1997. Thermophilic bacterial activity in a deep-sea sediment from the Pacific Ocean. *Aq. Microb. Ecol.,* 13, 209-212.

61) Landry, MR, BC Monger, **KE Selph**. 1993. Time-dependency of microzooplankton grazing and phytoplankton growth in the subarctic Pacific. *Prog. Oceanogr*., 32, 205-222.

62) **Selph, KE**, DM Karl, MR Landry. 1993. Quantification of chemiluminescent DNA probes using the liquid scintillation counter. *Anal. Biochem.,* 210, 394-401.

63) Landry, MR, J Lehner-Fournier, J Sundstrom, V Fagerness, **K Selph**. 1991. Discrimination between living and heat-killed prey by a marine zooflagellate, *Paraphysomonas vestita* (Stokes). *J. Exp. Mar. Biol. Ecol*., 146, 139-151.

OCEANOGRAPHIC EXPEDITIONS

RV Sproul, 7-d cruise, San Diego RT, June 1987.

SUPER (SUb-arctic Pacific Ecosystem Research), *RV Thompson (1)*, 2 - 30-d cruises, May & Aug. 1988

CABS, *RV New Horizon*, 14-d cruise, Los Angeles RT, Jan-Feb 1990.

HOT 15 (Hawaii Ocean Time-series), *RV Kaimalino*, 5-d cruise, March 1990.

EPR (East Pacific Rise), *RV New Horizon*, 30-d cruise, Nov. 1991

JGOFS EQPAC (at Station ALOHA), *RV Moana Wave*, 7-d cruise, July-Aug. 1992.

JGOFS EQPAC (Eq. Pacific), *RV Thompson (2),* benthic leg, 43-d cruise, Nov-Dec. 1992.

HOT (Hawaii Ocean Time-series), ~18 week-long cruises during the years 1993 to ~1998.

JGOFS AESOPS (Antarctic Environment-Southern Ocean Process Study), *RV Revelle*, 2 – 40-d cruises, Nov. – Dec. 1997, Feb. – March 1998.

JOIS (Joint Ocean-Ice Studies), Arctic Ocean, *CCGS Louis S. St-Laurent*, 16-d cruise, Aug. 1997

SOFeX (Southern Ocean Iron Fertilization Experiment), Southern Ocean, *RV Melville*, 45-d cruise, Jan. – Feb. 2002

IOC (Intergovernmental Oceanographic Commission), Osaka, Japan to Honolulu, Hawaii, *RV Melville*, 35-d cruise, May 2002.

Photoheterotrophy Cruise, 4-d cruise, Dec. 2002.

Drake Passage, Punta Arenas, Chile to Palmer Station, Antarctica, *RV Laurence M. Gould*, ~40 d, Feb-March 2004 and ~44 d July-Aug. 2006.

EB04 & EB05 (Biocomplexity, Eastern Equatorial Pacific), December 2004, *RV Revelle*, 30-d cruise & Sept. 2005, 30-d cruise.

Western Pacific Warm Pool (WP2), *RV Kilo Moana*, 40-d cruise, Jan – Feb 2007.

FLUxes and ZInc Experiments (FLUZIE), Costa Rica Dome, *RV Melville*, June – July 2010, 35-d cruise from Puntarenas, Costa Rica RT.

Ross Sea Expedition, Antarctica, Jan-Feb 2011, *RV Nathaniel B. Palmer*, 30-d cruise from McMurdo Station, Antarctica RT.

Falkor Student Cruise, HNL-HNL (Station Aloha), *RV Falkor*, June 12-19, 2014, 8-d cruise.

BLOOFINZ-Gulf of Mexico, *NOAA Ship Nancy Foster*, Key West, FL to Miami, FL, 2 x 28-d cruises, May 2017 & May 2018,

SalpPOOP (Salp Particle ExpOrt and Ocean Production), *RV Tangaroa*, Wellington, NZ RT, 30-d cruise, Oct.-Nov. 2018.

HOT 312 (Station Aloha), *RV Kilo Moana*, 5-d cruise, 10-14 June 2019.