

WHOI Biology: Papers Published 2011-2012

Anderson, D.M., A.D. Cembella, and G.M. Hallegraeff. 2012. Progress in understanding harmful algal blooms: Paradigm shifts and new technologies for research, monitoring and management. *Annu. Rev. Mar. Sci.* 4: 143-76.

Anderson, D.M., B.A. Keafer, D.J. McGillicuddy, Jr., A.R. Solow, and J.L. Kleindinst. 2012. Improving the accuracy and utility of harmful algal bloom forecasting systems. *Biological and Geological Perspectives of Dinoflagellates*, The Micropalaeontological Society, Special Publications. Geological Society, London.

Anderson, D.M., T.J. Alpermann, A.D. Cembella, Y. Collos, E. Masseret, and M. Montresor. 2012. The globally distributed genus *Alexandrium*: Multifaceted roles in marine ecosystems and impacts on human health. *Harmful Algae* 14: 10-35.

Arrigo, K. R., D. K. Perovich, R. S. Pickart, Z. W. Brown, G. L. van Dijken, K. E. Lowry, M. M. Mills, M. A. Palmer, W. B. Balch, F. Bahr, N. R. Bates, C. Benitez-Nelson, B. Bowler, E. Brownlee, J. K. Ehn., K. E. Frey, R. Garley, **S. R. Laney**, L. Lubelczyk, J. Mathis, A. Matsuoka, B. G. Mitchell, G. W. K. Moore, E. Ortega-Retuerta1, S. Pal, C. M. Polashenski, R. A. Reynolds, B. Schieber, H. M. **Sosik**, M. Stephens, J. H. Swift. 2012. Massive phytoplankton blooms under Arctic sea ice. *Science* 336, 1408, doi:10.1126/science.1215065.

Asher, EC, J.W.H. **Dacey**, M.M. Mills, K.R. Arrigo, & P.D. Tortell. 2011. High concentrations and turnover rates of DMS, DMSP and DMSO in Antarctic Sea Ice. *Geophysical Research Letters* 38 doi:10.1029/2011GL049712

Barbraud C. Rolland V. **Jenouvrier** S. Nevoux M. Delord K. and Weimerskirch H. 2012. Southern Ocean seabirds, climate change and fisheries: a review. *Marine Ecology Progress Series*, 454: 285–307

Barkataki, S., **Aluru, N.**, Li, M., Lin, L., Christie, H., Vijayan, M.M., Leatherland, J.F. **2012**. Cortisol modulation of 17 β -estradiol secretion by rainbow trout ovarian follicles is associated with changes in StAR and P450scc gene expression. *Journal of Fish Biology* 80: 741-751.

Beaulieu, S., S. Mitarai, and H. Watanabe (2012, submitted) MarVeL Workshop catalyzes new international collaborations for studies of connectivity between deep-sea vents. *InterRidge News*.

Beaulieu, S.E., S. Mills, **L. Mullineaux**, F. Pradillon, H. Watanabe, and S. Kojima. 2011. International study of larval dispersal and population connectivity at hydrothermal vents in the southern Mariana Trough. *InterRidge News* 20: 50-54.

Berumen, M. L., G. Almany, S. Planes, G. P. Jones, and S. R. **Thorold**. 2012. Persistence of self-recruitment and patterns of larval connectivity in a marine protected area network. *Ecol. Evol.* 2: 444-452. DOI: 10.1002/ece3.208.

Bors, E.K., A.A. Rowden, E.W. Maas, M. Clark, and **T.M. Shank**. Patterns of genetic connectivity in the deep-water New Zealand region: implications for management of benthic ecosystems. *PLoS One (in press)*.

Bricelj, V.M., A.-G. Haubois, M.R. Sengco, R. Pierce, J. Culter, and **D.M. Anderson**. 2012. Trophic transfer of brevetoxins to the benthic macrofaunal community during a bloom of the harmful dinoflagellate *Karenia brevis* in Sarasota Bay, Florida. *Harmful Algae* 16: 27-34.

Bullard, SG, **Carman**, MR, Rocha, RM, Dijkstra, JA, Goodwin, A. 2011. Abundance and diversity of ascidians in southern Gulf of Chiriquí, Pacific Panama: *Aquatic Invasions* 6: 381-390

Buston, P.M., G.P. Jones, S. Planes, and S. R. **Thorold**. 2012. Probability of successful larval dispersal declines fivefold over 1 km in a coral reef fish. *Proc. R. Soc. B.* 279: 1883-1888.

Callard GV. **Tarrant AM**, Novillo A, Yacci P, Ciaccia L, Vajda S, Chuang G-Y, Kozakov D, Greytak SR, Sawyer S, Hoover C, Kotter K. 2011. Evolutionary origins of the estrogen signaling system: insights from amphioxus. *Journal of Steroid Biochemistry and Molecular Biology*. 127(3-5):176-88.

Carman, MR, Bullard, SG, Rocha, RM, Lambert, G, Dijkstra, JA, Roper, JJ, Goodwin, A, Baker, EM, Carman, MM. 2011. Ascidians at the Pacific and Atlantic entrances to the Panama Canal: *Aquatic Invasions* 6: 371-380

Cassoff R, McLellan W, Barco S, Touhey Moore K, **Moore** M. 2011. Lethal entanglement in baleen whales. *Diseases of Aquatic Organisms* 96: 175- 185 - Feature Article

Caswell, H. 2011. Matrix models and sensitivity analysis of populations classified by age and stage: a vec-permutation matrix approach. *Theoretical Ecology* 5:403-417.

Caswell, H. 2011. Perturbation analysis of continuous-time absorbing Markov chains. *Numerical Linear Algebra with Applications* 18:901-917.

Caswell, H. and E. Shyu. 2012. Sensitivity analysis of periodic matrix population models. *Theoretical Population Biology*. (in press; available online April 2012)

Caswell, H., M.G. **Neubert** and C.M. Hunter. 2011. Demography and dispersal: invasion speeds and sensitivity analysis in periodic and stochastic environments. *Theoretical Ecology* 4:407-421.

Chan, C.X., M.B. Soares, M.F. Bonaldo, J.H. Wisecaver, J.D. Hackett, **D.M. Anderson**, D.L. Erdner, and D. Bhattacharya. 2012. Analysis of *Alexandrium tamarense* (Dinophyceae) genes reveals the complex evolutionary history of a microbial eukaryote. *J. Phycol.* 47. (in press).

Christensen-Dalsgaard, J, C Brandt, K Willis, CB Christensen, D **Ketten**, P Edds-Walton, R R. Fay, PT Madsen, CE Carr. 2012. Specialisation for underwater hearing by the tympanic middle ear of the turtle, *Trachemys scripta elegans*. *Proc. Royal Soc. Biol. Sci.* vol. 279, Issue 1739, pp. 2816-2824.

Crespo, B.G., B.A. Keafer, D.K. Ralston, H. Lind, D. Farber, and **D.M. Anderson**. 2011. Dynamics of *Alexandrium fundyense* blooms and shellfish toxicity in the Nauset Marsh System of Cape Cod (Massachusetts, USA). *Harmful Algae* 12: 26-38.

Dennison S, Fahlman A, **Moore** M. 2012. The use of diagnostic imaging for identifying abnormal gas accumulations in cetaceans and pinnipeds. *Frontiers in Physiology* 0.3389/fphys.2012.00181

Dennison S, **Moore** M, Fahlman A, Moore K, Sharp S, Harry C, Hoppe J, Niemeyer M, Lentell B, Wells R. 2012. Bubbles in live stranded dolphins. *Proceedings Royal Society B* 279:1396-1404 doi: 10.1098/rspb.2011.1754

Descamps S, **Jenouvrier S**, Gilchrist H.G. and Forbes M.R. 2012. Avian cholera, a threat to the viability of an arctic seabird colony? *PLoS ONE* 7(2): e29659. doi:10.1371/journal.pone.0029659.

Dixson, D. L., G. P. Jones, P. L. Munday, M. S. Pratchett, M. Srinivasan, S. Planes and S. R. **Thorold**. 2011. Terrestrial chemical cues help coral reef fish larvae locate settlement habitat surrounding islands. *Ecol. Evol.* 1: 586-595 doi: 10.1002/ece3.53

Dorrington T, Zanette J, Zacchi FL, **Stegeman JJ**, Bainy AC. 2012. Basal and 3-methylcholanthrene-induced expression of cytochrome P450 1A, 1B and 1C genes in the Brazilian guppy, *Poecilia vivipara*. *Aquatic Toxicology*, 124-125C:106-113. PMID: 22940225

Dyhrman, Sonya T and Sheean T. Haley (2011) ARSENATE RESISTANCE IN THE MARINE DIAZOTROPH *CROCOSPHAERA WATSONII*. *Frontiers in Microbiology* 2:214. doi:10.3389/fmicb.2011.00214.

Dyhrman, Sonya T., Bethany D. Jenkins, Tatiana A. Rynearson, Mak A. Saito, Melissa L. Mercier, Harriet Alexander, LeAnn P. Whitney, Andrea Drzewianowski, Vladimir V. Bulygin, Erin M. Bertrand, Zhijin Wu, Claudia Benitez-Nelson, and Abigail Heithoff. THE TRANSCRIPTOME AND PROTEOME OF THE DIATOM *THALASSIOSIRA PSEUDONANA* REVEAL A DIVERSE PHOSPHORUS STRESS RESPONSE. *Public Library of Science (PLoS) One* 7:e3376. doi:10.1371/journal.pone.0033768

Erdner, D.L., M. Richlen, L.A.R. McCauley, and **D.M. Anderson**. 2011. Diversity and dynamics of a widespread bloom of the toxic dinoflagellate *Alexandrium fundyense*. *PLoS One* 6(7): e22965. doi:10.1371/journal.pone.0022965.

Fahlman A, Loring S, Ferrigno M, Moore C, Early G, Niermeyer M, Lentell B, Wenzel F, Joy R, **Moore M**. 2011. Static inflation and deflation pressure-volume curves in excised lungs of marine mammals J. Experimental Biology 214:3822-3828

Farmahin R, Manning GE, Crump D, Wu D, Mundy LJ, Jones SP, **Hahn ME, Karchner** SI, Giesy JP, Bursian SJ, Zwiernik MJ, Fredricks TB, Kennedy SW. 2012. Amino Acid Sequence of the Ligand Binding Domain of the Aryl Hydrocarbon Receptor 1 (AHR1) Predicts Sensitivity of Wild Birds to Effects of Dioxin-like Compounds. *Toxicological Sciences*: in press. (doi: 10.1093/toxsci/kfs259)

Farmahin R, Wu D, Crump D, Herve JC, Jones SP, **Hahn ME, Karchner** SI, Giesy JP, Bursian SJ, Zwiernik MJ, Kennedy SW. 2012. Sequence and In Vitro Function of Chicken, Ring-Necked Pheasant, and Japanese Quail AHR1 Predict In Vivo Sensitivity to Dioxins. *Environmental Science & Technology* 46: 2967-2975.

Ferreira, Roger Stacke, José Maria Monserrat, Josencleir Luís Ribas Ferreira, Ana Cristina Kalb, John **Stegeman**, Afonso Celso Dias Bainy & Juliano Zanette. Biomarkers of Organic Contamination in the South American Fish *Poecilia vivipara* and *Jenynsia multidentata*. *Journal of Toxicology and Environmental Health, Part A*, **75**: 1023-1034.

First, M.R. Park, N.Y., Berrang, M.E., Meinersmann, R.J., Bernhard, J.M., **Gast, R.J.** and J.T. Hollibaugh. Ciliate ingestion and digestion: Flow cytometric measurements and regrowth of a digestion-resistant *Campylobacter jejuni*. 2012. *Journal of Eukaryotic Microbiology* 59:12-19.

Fishman, J, J. Al-Saadi, P. Bontempi, K. Chance, F. Chavez, M. Chin, P. Coble, C. Davis; P. DiGiacomo, D Edwards, J. Goes, J. Herman, C. Hu, L. T. Iraci; D Jacob, C. Jordan, S. R. Kawa; R. Key, X. Liu, S. Lohrenz; A. Mannino; V. Natraj, D. Neil, J. Neu, M. Newchurch, K. Pickering, J. Salisbury, H. **Sosik**, M, Tzortziou, J. Wang, M. Wang. Progress Report on NASA's GEO-CAPE Mission: Fulfilling the Mandate and Meeting the Challenges of the Nation's Next Generation of Atmospheric Composition and Coastal Ecosystem Measurements. *Bulletin of the American Meteorological Society*.10.1175/BAMS-D-11-00201.1

Foote, K., M. Hastings, **D.R. Ketten**, Y-T Lin, J. Reidenberg, and K. Rye. 2012. Sonarinduced pressure fields in a post-mortem common dolphin. *Journal of the Acoustical Society of America*, vol.13, Issue 2, p.1595-1604.

Fornari DJ, Beaulieu SE, Holden JF, **Mullineaux LS**, Tolstoy M. 2012. Introduction to the special issue: From RIDGE to Ridge 2000. *Oceanography* 25:12-17

Fornari, D.J., K.L. Von Damm, J.G. Bryce, J.P. Cowen, V. Ferrini, A. Fundis, M.D. Lilley, G.W. Luther III, L.S. **Mullineaux**, M.R. Perfit, M.F. Meana-Prado, K.H. Rubin, W.E. Seyfried Jr., **T.M. Shank**, S.A. Soule, M. Tolstoy, and S.M. White. 2012. The East Pacific Rise

between 9°N and 10°N: Twenty-five years of integrated, multidisciplinary oceanic spreading center studies. *Oceanography* 25(1):18–43.

Fornari, D.J., S.E. Beaulieu, J.F. Holden, L.S. Mullineaux, and M. Tolstoy (2012) Introduction to the Special Issue: From RIDGE to Ridge 2000. *Oceanography* 25(1): 12–17, <http://dx.doi.org/10.5670/oceanog.2012.01>.

Gardebrecht A., S. Markert, S. M. Sievert, H. Felbeck, A. Thürmer, D. Albrecht, A. Wollherr, J. Kabisch, N. Le Bris, R. Lehmann, R. Daniel, H. Liesegang, M. Hecker, T. Schweder. 2012. Comparative proteogenomics reveals physiological homogeneity among endosymbionts of the deep-sea vent tubeworms *Riftia pachyptila* and *Tevnia jerichonana*. *ISME Journal* 6: 766-776.

Goldstone HM, Tokunaga S, Schlezinger JJ, Goldstone JV, Stegeman JJ. 2012. EZR1: a novel family of highly expressed retroelements induced by TCDD and regulated by a NF-κB-like factor in embryos of zebrafish (*Danio rerio*). *Zebrafish*. 9:15-25.

Goldstone JV, Stegeman JJ. 2012. Methodological approaches to cytochrome P450 profiling in embryos. *Methods in Molecular Biology*, 889:265-75.

Greene C. H., coauthors, R. Ji, coauthors, 2012. Remote Climate Forcing of Regime Shifts in Northwest Atlantic Shelf. *Oceanography*. 25(3):208–213.

Hackett, J.D., J.H. Wisecaver, M.L. Brosnahan, D.M. Kulis, D.M. Anderson, D. Bhattacharya, and F.G. Plumley. 2012. Independent evolution of saxitoxin synthesis in cyanobacteria and dinoflagellates. *Mol. Biol. and Evol.*

Hahn ME, Karchner SI. 2012. Chapter 27. Structural and Functional Diversification of AHRs during Metazoan Evolution. In: Pohjanvirta R, editor. *The Ah receptor in Biology and Toxicology*: John Wiley & Sons, Inc.

Hahn ME. 2011. Mechanistic Research in Aquatic Toxicology: Perspectives and Future Directions. *Aquatic Toxicology* 105: 67-71.

Hannington, M., Jamieson, J., Monecke, T., Petersen, S., and **Beaulieu, S.** (2011) The abundance of seafloor massive sulfide deposits. *Geology* 39: 1155-1158, doi:10.1130/G32468.1.

Harrison, H. B., D. H. Williamson, R. D. Evans, G. R. Almany, S. R. Thorrold, G. R. Russ, K. A. Feldheim, L. van Herwerden, S. Planes, M. Srinivasan, M. L. Berumen, and G. P. Jones. 2012. Larval export from marine reserves benefits fish and fisheries. *Curr. Biol.* 22: 1023-1028. DOI 10.1016/j.cub.2012.04.008.

Herrera, S., T.M. Shank, and J.A. Sánchez. Spatial and temporal patterns of genetic variation in the widespread antitropical deep-sea coral *Paragorgia arborea*. *Molecular Ecology* (in press).

Herrmann, Maria, R.G. Najjar, A.R. Neeley, M. Vila-Costa, J.W.H. Dacey, G.R. DiTullio, D.J. Kieber, R.P. Kiene, P.A. Matrai, R. Simó, M. Vernet. 2012. Diagnostic modeling of dimethylsulfide production in coastal water west of the Antarctic Peninsula. *Continental Shelf Research*, 32: 96–109.

Hooker SK, Fahlman A, Moore MJ, Aguilar de Soto N, Bernaldo de Quiros Y, Brubakk AO, Costa DP, Costidis AM, Dennison S, Falke KJ, Fernandez A, Ferrigno M, Fitz-Clarke JR, Garner MM, Houser DS, Jepson PD, Ketten DR, Kvadsheim PH, Madsen PT, Pollock NW, Rotstein DS, Rowles TK, Simmons SE, Van Bonn W, Weathersby PK, Weise MJ, Williams TM, Tyack PL. 2012. Deadly diving? Physiological and behavioural management of decompression stress in diving mammals. *Proceedings of the Royal Society B: Biological Sciences* 279:1041-1050

J.B. **Kellner**, J.S. Sanchirico, A. Hastings, and P.J. Mumby. 2011. Optimizing for Multiple Species and Multiple Objectives: Tradeoffs Inherent in Ecosystem-Based Fisheries Management. *Conservation Letters*.

Janik, V M., S. L. King, **L. S. Sayigh**, and R. S. Wells. 2012. Identifying signature whistles from recordings of groups of unrestrained bottlenose dolphins (*Tursiops truncatus*). *Marine Mammal Science*. DOI: 10.1111/j.1748-7692.2011.00549.x

Jenny MJ, **Aluru N**, **Hahn ME**. 2012. Effects of Short-Term Exposure to 2,3,7,8-Tetrachlorodibenzo-p-dioxin on MicroRNA Expression in Zebrafish Embryos. *Toxicol Appl Pharmacol* 264: 262-273.

Jenouvrier, S., M. Holland, J. Strœve, C. Barbraud, H. Weimerskirch, M. Serreze, and H. **Caswell**. 2012. Effects of climate change on an emperor penguin population: analysis of coupled demographic and climate models. *Global Change Biology* 18:2756-2770.

Ji, R. 2011. *Calanus finmarchicus* diapause initiation: new view from traditional life history based model. *Marine Ecology Progress Series*. 440:105-114.

Ji, R., **Ashjian, C.J.**, Campbell, R.G., Chen, C., Gao, G., **Davis, C.S.**, Cowles, G.W., Beardsley, R.C. Life history and biogeography of *Calanus* copepods in the Arctic Ocean: An individual-based modeling study. *Progress in Oceanography*, 96: 40-56.

Ji, R., C. Stegert, C. **Davis**. 2012. Sensitivity of copepod populations to bottom-up and top-down forcing: a modeling study in the Gulf of Maine region. *Journal of Plankton Research*, in press.

Jönsson ME, Kubota A, Timme Laragy A, Woodin B, **Stegeman JJ**. Ahr2-dependance of PCB126 effects on the swimbladder in relation to expression of CYP1 and cox-2 genes in developing zebrafish. *Toxicology and Applied Pharmacology* 2012 Oct 1. pii: S0041-008X(12)00429-2. doi: 10.1016/j.taap.2012.09.023. (in press).

Jönsson ME, Woodin BR, **Stegeman JJ**, Brunström B. 2011. Cytochrome p450 1 genes in birds: evolutionary relationships and transcription profiles in chicken and Japanese quail embryos. *PLoS One*. 2011;6(12):e28257. PMID: 22164255

Ketten, D.R. 2012. Underwater Hearing Impacts: Causes, Severity, and Types of Hearing Loss in Marine Species. *Proceedings of Ocean Acoustics*, 12 pp. in press.

Ketten, D.R. 2012. Marine Mammal Auditory System Noise Impacts: Evidence and Incidence. In: The Effects of Noise on Aquatic Life, A. Popper and A. Hawkins (eds). *Advances in Experimental Medicine and Biology*, vol. 730, pp. 207-212.

Ketten, D.R., J. Simmons, H. Riquimaroux, S. Cramer, J. Arruda. 2012. Critical Cranial and Cochlear Structures in Echolocators. *Proceedings of the 11th European Conference on Underwater Acoustics*. 5 pp. in press, *Journal of the Acoustical Society of America*.

Ketten, D.R., T.A. **Mooney**, S. Cramer, J. Arruda. 2012. Evidence of hearing loss in marine mammals via Auditory Evoked Potentials (AEP), Otoacoustic Emissions (OAE), and Computerized Tomography (CT). *Proceedings of the 11th European Conference on Underwater Acoustics*. 5 pp. in press, *Journal of the Acoustical Society of America*

Klepac, P. and H. **Caswell**. 2011. The stage-structured epidemic: a multi-state matrix population model approach. *Theoretical Ecology* 4:301-319.

Kot, M., M. A. Lewis and M. G. **Neubert**. 2012. Integrodifference equations. Pgs. 381-384 in, *Encyclopedia of Theoretical Ecology*, A. Hastings and L. Gross, Eds. University of California Press, Berkeley, CA.

- Krause-Nehring, J., T. Brey, and S. R. Thorrold. 2012. Centennial records of lead contamination in northern Atlantic bivalves (*Arctica islandica*). *Mar. Pollution Bull.* 64: 233-240.
- Laney, S. R., R. J. Olson, and H. M. Sosik. 2012. Diatoms favor their younger daughters. *Limnol. Oceanogr.* 57, 1572-1578.
- Lavelle JW, Thurnherr AM, Mullineaux LS, McGillicuddy DJ, Ledwell JR. 2012. The prediction, verification and significance of flank jets at mid-ocean ridges. *Oceanography* 25:277-283
- Laycock, M.V., D.M. Anderson, J. Naar, A. Goodman, D.J. Easy, M.A. Donovan, A. Li, M.A. Quilliam, E. Al Jamali, and R. Alshihi. 2012. Laboratory desalination experiments with some algal toxins. *Desalination* 293: 1-6.
- Lemaire, Benjamin; Debier, Cathy; Buc Calderon, Pedro; Thome, Jean Pierre; Stegeman, John; Mork, Jarle; Rees, Jean-François. 2012. Precision-cut liver slices to investigate responsiveness of deep-sea fish to contaminants at high pressure. *Environmental Science and Technology*, 46: 10310-10316.
- Levine, Naomi M., V.A. Varaljay, D.A. Toole, J.W.H. Dacey, S.C. Doney, & M.A. Moran. 2012. Environmental, Biochemical, and Genetic Drivers of DMSP Degradation and DMS Production in the Sargasso Sea, *Environmental Microbiology*, 14, 1210–1223, 2012.
- Llopiz JK (2012) Latitudinal and taxonomic patterns in the feeding dynamics of fish larvae: A literature synthesis. *Journal of Marine Systems*
- Luther, G.W. III, A. Gartman, M. Yücel, A.S. Madison, T.S. Moore, H.A. Nees, D.B. Nuzzio, A. Sen, R.A. Lutz, T.M. Shank, and C.R. Fisher. 2012. Chemistry, temperature, and faunal distributions at diffuse-flow hydrothermal vents: Comparison of two geologically distinct ridge systems. *Oceanography* 25(1):234–245.
- Mass, A.M., D. R. Ketten, D. K. Odell, A. Ya. 2012. Supin Ganglion Cell Distribution and Retinal Resolution in the Florida Manatee, *Trichechus Manatus Latirostris*. On line: DOI: 10.1002/ar.21470. *The Anatomical Record: Advances in Integrative Anatomy and Evolutionary Biology*, vol. 295 (1): 177–186.
- McDowell, J. *Ecological Risk assessment under FIFRA and ESA*, National Research Council
- McGillicuddy, Jr., D.J., D.W. Townsend, R. He, B.A. Keafer, J.L. Kleindinst, Y. Li, J.P. Manning, D.G. Mountain, M.A. Thomas, and D.M. Anderson. 2011. Suppression of the 2010 *Alexandrium fundyense* bloom by changes in physical, biological, and chemical properties of the Gulf of Maine. *Limnol. & Oceanogr.* 56(6): 2411-2426
- McMahon, K. W., M. L. Berumen, and S. R. Thorrold. 2012. Linking habitat mosaics and juvenile fish migration in a coral reef seascape. *Proc. Natl. Acad. Sci.* 109: 15372-15376.
- Miller CA, Reeb D, Best PB, Knowlton AR, Brown MW, Moore MJ (2011) Blubber thickness in right whales *Eubalaena glacialis* and *Eubalaena australis* related with reproduction, life history status and prey abundance. *Marine Ecology Progress Series* 438:267-283
- Miller, C.A., P.B. Best, W.L. Perryman, M.F. Baumgartner, and M.J. Moore. 2012. Body shape changes associated with reproductive status, nutritive condition and growth in right whales *Eubalaena glacialis* and *Eubalaena australis*. *Marine Ecology Progress Series* 459:135-156.
- Moberg, E.A. and H.M. Sosik. 2012. Distance maps to estimate cell volume from two-dimensional plankton images. *Limnology and Oceanography: Methods*. 10: 278–288.
- Mooney, TA, Hanlon, RT, Christensen-Dalsgaard, J, Madsen, PT, Ketten, DR, Nachtigall, PE (2010). 2012.“The potential for sound sensitivity in cephalopods.” In: The Effects of Noise on

Aquatic Life, A. Popper and A. Hawkins (eds). Advances in Experimental Medicine and Biology, vol.730, pp. 125-128.

Mooney, TA, Hanlon, RT, Christensen-Dalsgaard, J, Madsen, PT, Ketten, DR, Nachtigall, PE. 2012. "The potential for sound sensitivity in cephalopods." in: The Effects of Noise on Aquatic Life (eds). Popper, A, Hawkins A. Springer Science+Business Media, LLC, New York. pg 125-128.

Mooney, TA, Li, SH, **Ketten**, DK, Wang, K, and Wang D. 2011. Auditory temporal resolution and evoked responses to pulsed sounds for the Yangtze finless porpoises (*Neophocaena phocaenoides asiaeorientalis*). *Journal of Comparative Physiology A*. 197:1149–1158.

Mooney, TA, Yamato, M, ** and Branstetter, BK. 2012. Hearing in cetaceans: From natural history to experimental biology. 63: 197-246. *Advances in Marine Biology*. (invited review)

Moore M, Andrews RD, Austin T, Bailey J, Costidis AM, George C, Jackson K, Landry S, Ligon A, McLellan WA, Morin D, Pitchford D, Rotstein D, Rowles T, Slay C, Smith J, Walsh M. 2012. Rope trauma, sedation, disentanglement, and monitoring tag associated lesions in a terminally entangled North Atlantic right whale (*Eubalaena glacialis*). *Marine Mammal Science* DOI: 10.1111/j.1748-7692.2012.00591.

Moore MJ, van der Hoop JM. 2012. The Painful Side of Trap and Fixed Net Fisheries: Chronic Entanglement of Large Whales *Journal of Marine Biology* doi:10.1155/2012/230653

Moore, M., Welfare of whales bycaught in fishing gear or struck by vessels. *Animal Welfare*

Morris, JA, **Carman**, MR. 2012. Fragment reattachment, reproductive status, and health indicators of the invasive colonial tunicate *Didemnum vexillum* with implications for dispersal: *Biological Invasions* DOI 10.1007/s10530-012-0219-8

Muhlfeld, C. C., S. R. **Thorold**, T. E. McMahon, and B. Marotz. 2012. Estimating trout movements in a river network using strontium isoscapes. *Can. J. Fish. Aquat. Sci.* 69: 906-915.

Nelson, D. R., **Goldstone** J. V., **Stegeman** J. J. The cytochrome P450 genesis locus: The origin and evolution of animal cytochrome P450s. *Proceedings of the Royal Society –B Biological Sciences*

Newhall, A.E., Y-T. Lin, J.F. Lynch, M.F. **Baumgartner**, and G.G. Gawarkiewicz. 2012. An acoustic normal mode approach for long distance passive localization of vocalizing sei whales. *Journal of the Acoustical Society of America* 131:1814-1825.

Orsi W, Edgcomb V, Faria J, Foissner W, Fowle W, Hohmann T, Suarez S, , **Taylor** C, Taylor GT, Vdacny P, Epstein S. (2012). Class Cariacotrichea, a novel ciliate taxon from the anoxic Cariaco Basin, Venezuela. *International Journal of Systematic and Evolutionary Microbiology*.62:1425-1433.

Parente TE, Rebelo MF, da-Silva ML, Woodin BR, **Goldstone** JV, Bisch PM, Paumgarten FJ, **Stegeman** JJ. 2011. Structural features of cytochrome P450 1A associated with the absence of EROD activity in liver of the loricariid catfish *Pterygoplichthys* sp. *Gene*, 489:111-118.

Peck MA, KB Huebert, **JK Llopiz** (In press) Marine fish larvae and their prey: extrinsic and intrinsic factors driving match-mismatch dynamics. *Advances in Ecological Research*

Piera, J., L. Campbell, H.M. **Sosik**, L, Harred, R.J. **Olson**, Torrecilla, E.1, and Ballabrera, J. Do we need photonic-based instruments to characterize multiscale processes in marine environments? *Proceedings of Ocean Optics XXII*. p. 1-10.

Pontbriand, C.W., S.A. Soule, R.A. Sohn, S.E. Humphris, C. Kunz, H. Singh, Ko-ichi Nakamura, M.Jakobssen, and **T.M. Shank**. Effusive and explosive volcanism on the ultraslow-spreading Gakkel Ridge, 85°E. *Geochemistry, Geophysics, and Geosystems* (in press).

Reed T. **Jenouvrier** S. Visser M. 2012 Phenological mismatch strongly affects individual fitness but not population demography in a woodland passerine. *Journal of Animal Ecology*. In press.

Reeves R, Rosa C, George JC, Sheffield G, **Moore** M. 2012. Implications of Arctic industrial growth and strategies to mitigate future vessel and fishing gear impacts on bowhead whales. *Marine Policy* 36.2:454-462

Resing, J.A., R. Embley, K.H. Rubin, J. Lupton, E. Baker, T. Baumberger, N.J. Buck, D. Butterfield, D. Caress, D. Clague, J. Cowen, R. Davis, R. Dziak, J. Huber, N. Keller, M.D. Lilley, S. Merle, P. Michael, A-L Reysenbach, **T.M. Shank**, A. Soule, H. Thomas, and S. Walker. 2011. An active submarine boninite eruption at West Mata Volcano in the NE Lau Basin. *Nature Geoscience* 4:799-806.

Richardson J, Wood A, Neil A, Nowacek D, **Moore** M Changes in large whale distribution, relative abundance, and species composition around South Georgia from opportunistic sightings: 1992-2011. *Endangered Species Research*

Richlen, M.L., D.L. Erdner, L.A.R. McCauley, K. Libera, and **D.M. Anderson**. 2012. Extensive genetic diversity and rapid population succession during blooms of *Alexandrium fundyense* (Dinophyceae) in an isolated salt pond on Cape Cod, MA, USA. *Ecol. and Evol.* DOI: 10.1002/ece3.373.

Rogers, A.D., P. A. Tyler, D.P. Connelly, J. T. Copley, R. James, R. D. Larter, K. Linse, R. A. Mills, A. Naveira-Garabato, R.D. Pancost, D.A. Pearce, N.V.C. Polunin, **T.M. Shank**, C. R. German, B. Alker, A. Aquilina, S. A. Bennett, A. Clarke, R.J.J. Dinley, A.G.C. Graham, D.R.H. Green, J.A. Hawkes, L. Hepburn, A. Hilario, V.A.I. Huvenne, L. Marsh, E. Ramirez-Llodra, W.D.K. Reid, C.N. Roterman, C.J. Sweeting, S. Thatje, K. Zwirglmaier. 2012. The discovery of deep-sea hydrothermal vent communities in the Southern Ocean and implications for biogeography. *PLoS Biology* 10(1): e1001234. doi:10.1371/journal.pbio.1001234.

Roy, A. S., A. J. Frisch, C. Syms, S. R. **Thorold**, and G. P. Jones. 2012. Retention of a transgenerational marker (¹³⁷Barium) in tissues of adult female anemonefish and assessment of physiological stress. *Environ. Biol. Fishes* DOI 10.1007/s10641-012-0029-y.

Ruttenberg, Kathleen and **Sonya T. Dyhrman** DISSOLVED ORGANIC PHOSPHORUS PRODUCTION DURING SIMULATED PHYTOPLANKTON BLOOMS IN A COASTAL UPWELLING SYSTEM. *Frontiers in Microbiology* 3:274. doi: 10.3389/fmicb.2012.00274

Saenz-Agudelo, P., G. P. Jones, S. R. **Thorold** and S. Planes. 2012. Patterns and persistence of larval retention and connectivity in a marine fish metapopulation. *Mol. Ecol.* doi: 10.1111/j.1365-294X.2012.05726.x

Saito, M.A., V.V. Bulygin, D.M. Moran, C. **Taylor**, C. Scholin. 2011. Examination of microbial proteome preservation techniques applicable to autonomous environmental sample collection. *Frontiers in Aquatic Microbiology*. 2:1-10.

Sanders, R.W. and **R.J. Gast**. Bacterivory by phototrophic picoplankton and nanoplankton in Arctic waters. Special thematic issue on Polar and Alpine Microbiology in FEMS Microbiology Ecology. (the special issue has been delayed – our paper was accepted in 2011)

Sayigh, LS. 2012. Review of “The Dusky Dolphin, Master Acrobat of Different Shores”, edited by Bernd and Melany Würsig. *Quarterly Review of Biology*, 87:273-4.

Sayigh, LS., N. Quick, G. Hastie and P. Tyack. 2012. Repeated calls of short-finned pilot whales, *Globicephala macrorhynchus*. Marine Mammal Science. DOI: 10.1111/j.1748-7692.2012.00577.

Shank, T.M. Seamount genetics: enabling the understanding of biodiversity, connectivity, evolution, and endemism. In: *Deep-sea cobalt-rich ferromanganese crust deposits and distribution patterns of seamount fauna (in press)*.

Sievert, S. M., and C. Vetriani. 2012. Chemoautotrophuc at deep-sea vents: Past, Present, and Future. Oceanography Magazine 25(1): 218-233.

Silva, M.A., L. Steiner, I. Cascão, M. João Cruz, R. Prieto, T. Cole, P.K. Hamilton, and M.F. Baumgartner. 2012. Winter sighting of a known western North Atlantic right whale in the Azores. Journal of Cetacean Research and Management 12:65–69.

Song, X. Z. Lai, **R. Ji**, C. Chen, L. Huang, J. Yin, Y. Wang, S. Lian, X. Zhu, 2012. Summertime primary production in northwest South China Sea: Interaction of coastal eddy, upwelling and biological processes. *Continental Shelf Research*, in press, online access: doi:10.1016/j.csr.2012.07.016

Sosik, H.M. and J. Futrelle. Informatics solutions for large ocean optics datasets. Proceedings of Ocean Optics XXII. p. 1-7.

Spaet, J. L. Y., S. R. **Thorold** and M. L. Berumen, 2012. A review of elasmobranch research in the Red Sea. *J. Fish Biol.* DOI: 10.1111/j.1095-8649.2011.03178.x

Stefels, Jacqueline, G. Carnat, J.W.H. **Dacey**, T. Goossens, J.T.M. Elzenga, & J-L. Tison. 2012. The analysis of dimethylsulfide and dimethylsulphoniopropionate in sea ice: dry-crushing and melting using stable isotope additions. *Marine Chemistry*. 128-129 34–43.

Stegert, C. **R. Ji**, N. Li, C. **Davis**. 2012. Processes controlling seasonality and spatial distribution of *Centropages typicus*: A modeling study in the Gulf of Maine/Georges Bank region. *Journal of Plankton Research*. 34(1): 18-35.

Steinberg, M.K., M.R. First, E.J. Lemieux, L.A. Drake, B.N. Nelson, D.M. Kulis, **D.M. Anderson**, N.A. Welschmeyer, and P.R. Herring. Comparison of techniques used to count single-celled visible phytoplankton. *J. Appl. Phycol.*

Stocks, K., N. Jacobson-Stout and **T.M. Shank**. Information management strategies for deep-sea biological research. In: *Biological Sampling in the Deep Sea*. Eds. M. Clark and M. Consalvey. Wiley-Blackwell, Oxford (*in press*).

Strasser, C.A., M.G. **Neubert**, H. **Caswell**, and C.M. Hunter. 2012. Contributions of high and low quality patches to a metapopulation with stochastic disturbance. 5:167-179. *Theoretical Ecology* 5:167-179I.

Strobel, SM and **Mooney, TA**. 2012. Detection of low frequency tones and whale predator sounds by American sand lance *Ammodytes americanus*. 2012. *Journal of Fish Biology*. DOI: 10.1111/j.1095-8649.2012.03423.x. (published online)

Svirsky, M. A., M B Fitzgerald, A Neuman, E Sagi, C-T Tan, D R **Ketten**, and B Martin. 2012. Current and planned cochlear implant research at New York University Laboratory for Translational Auditory Research, *Journal of the American Academy of Audiology*, vol.23, Issue 6, New York, p.422-437.

Tanner, S. E., P. Reis-Santos, R. P. Vasconcelos, S. Franca, S. R. **Thorold**, and H. N. Cabral. 2012. Otolith geochemistry discriminates estuarine nursery areas of *Solea solea* and *Solea senegalensis* through time. *Mar. Ecol. Prog. Ser.* 452: 193-203.

Tanner, S. E., R. P. Vasconcelos, H. N. Cabral, and S. R. **Thorold**. 2012. Testing an otolith geochemistry approach to determine population structure and movements of European hake in the northeast Atlantic Ocean and Mediterranean Sea. *Fish. Res.* 125-126: 198-205.

Tarrant AM, Franks DG, Verslycke T. 2012. Gene expression in American lobster (*Homarus americanus*) with epizootic shell disease. *Journal of Shellfish Research*. 31(2) 505-513.

Taylor JKD, Mandelman JW, McLellan WA, **Moore MJ**, Skomal GB, Rotstein DS, Kraus SD. 2012. Shark predation on North Atlantic right whales (*Eubalaena glacialis*) in the southeastern United States calving ground. *Marine Mammal Science*:

Taylor, N.G., M.K. McAllister, G.L. **Lawson**, T. Carruthers, and B.A. Block. 2011. Atlantic Bluefin Tuna: A Novel Multistock Spatial Model for Assessing Population Biomass. *PLoS ONE* 6(12): e27693.

Thompson, C., M. Hare, S. **Gallager**. 2012. Semi-automated image analysis for the identification of bivalve larvae from a Cape Cod Estuary. *L&O Methods* 10:538-554.

Thompson,C., S.**Gallager** and R.York. 2012. Species-specific growth of bivalve larvae in relation to biological and physical conditions in Waquoit Bay, MA. In press. *Marine Ecology Progress Series*.

Timme-Laragy AR, **Karchner SI**, Franks DG, Jenny MJ, Harbeitner RC, **Goldstone JV**, McArthur AG, **Hahn ME**. 2012. Nrf2b: a novel zebrafish paralog of the oxidant-responsive transcription factor NF-E2-related factor 2 (NRF2). *Journal of Biological Chemistry* 287: 4609-4627.

Timme-Laragy AR, **Karchner SI**, **Hahn ME**. 2012. Gene Knockdown by Morpholino-Modified Oligonucleotides in the Zebrafish (*Danio rerio*) Model: Applications for Developmental Toxicology. *Methods in Molecular Biology* 889: 51-71.

Tubelli, A., A. Zosuls, D. **Ketten**, M. Yamato, and D. Mountain. 2012. A prediction of the minke whale (*Balaenoptera acutorostrata*) middle-ear transfer function. 10 pp. in press, *Journal of the Acoustical Society of America*.

Tubelli, A., A. Zosuls, D. R. **Ketten** and D. C. Mountain. 2012. Prediction of a Mysticete Audiogram via Finite Element Analysis of the Middle Ear. In: *The Effects of Noise on Aquatic Life*, A. Popper and A. Hawkins (eds). *Advances in Experimental Medicine and Biology*, vol.730, pp. 57-60.

Upton, S. A., B. D. Walther, S. R. **Thorold**, and J. E. Olney. 2012. Use of a natural isotopic signature in otoliths to evaluate scale-based age determination for American shad. *Mar. Coast. Fish. Dynam. Manag. Ecosys. Sci.* 4: 346-357.

van der Hoop J, **Moore M**, Barco S, Cole T, Daoust P-Y, Henry A, McAlpine D, McLellan W, Wimmer T, Solow A. 2012. Assessment of human impact mitigation: spatial and temporal analysis of large whale mortality in the Northwest Atlantic. *Conservation Biology* <http://dx.doi.org/10.1111/j.1523-1739.2012.01934.x>

Van Dover C.L., C.R Smith CR, J. Ardrion, S. Arnaud, Y. Beaudoin, J. Bezaury, G. Boland, D. Billett, M. Carr G. Cherkashov, A. Cook, F. DeLeo, D. Dunn, C.R. Fisher, L. Godet, K. Gjerde, P. Halpin, L. Levin, M. Lodge, L. Menot, K. Miller, D. Milton, L. Naudts, C. Nugent, L. Pendleton, S. Plouviez, A. Rowden, R. Santos, **T.M. Shank**, S. Smith, C. Tao, A. Tawake, A. Thurnherr, T. Treude. 2012. Environmental management of deep-sea chemosynthetic ecosystems: Justification of and considerations for a spatially-based approach. Kingston, Jamaica: International Seabed Authority (Technical Study: #9).

Van Dover, C.L·, C.R. Smith, J. Ardrion, D. Dunn, K. Gjerde, L. Levin, S. Arnaud-Haond, Y. Beaudoin, J.Bezaury, G. Boland, D. Billett, M. Carr, G. Cherkashov, A. Cook, F. DeLeo, C.R.

Fisher, L. Godet, P. Halpin, M. Lodge, L. Menot, K. Miller, L. Naudts, C. Nugent, L. Pendleton, S. Plouviez, A.A. Rowden, R.S. Santos, **T.M. Shank**, S. Smith, C. Tao, A. Tawake, A. Thurnherr and T. Treude. 2012. Designating networks of chemosynthetic ecosystem reserves in the deep sea. *Marine Policy* 36: 378-381).

Van Mooy, Benjamin A.S., Laura R. Hmelo, Laura E. Sofen, Shawn R. Campagna, Amanda L. May, **Sonya T. Dyhrman**, Abigail Heithoff, Eric A. Webb, Lily Momper, and Tracy J. Mincer (2012) QUORUM SENSING CONTROL OF PHOSPHORUS ACQUISITION IN *TRICHODESMIUM* CONSORTIA. *ISME Journal* 6:422-429.

Vigness-Raposa, K.J., G. Scowcroft, J. H. Miller, D.R. **Ketten**. 2012. Discovery Of Sound In The Sea: An On-Line Resource. In: The Effects of Noise on Aquatic Life, A. Popper and A. Hawkins (eds). *Advances in Experimental Medicine and Biology*, vol.730, pp. 135-138

White, H.K., P. Yuan Hsing, W. Cho, **T.M. Shank**, E. Cordes, A.M. Quattrini, R. K. Nelson, R. Camilli, A.Demopoulos, C.R. German, J.M. Brooks, H.H. Roberts, W. Shedd, C.M. Reddy, and C.R. Fisher. Reply to Boehm and Carragher: Multiple lines of evidence link deep-water coral damage to Deepwater Horizon oil spill. *Proc. Nat'l Acad. Sci. (letter)*

White, H.K., P. Yuan Hsing, W. Cho, **T.M. Shank**, E. Cordes, A.M. Quattrini, R. K. Nelson, R. Camilli, A.Demopoulos, C.R. German, J.M. Brooks, H.H. Roberts, W. Shedd, C.M. Reddy, and C.R. Fisher. Impact of the Deepwater Horizon oil spill on a deep-water coral community in the Gulf of Mexico. 2012. *Proc. Nat'l Acad. Sci.* doi: 10.1073/pnas.1118029109.

Whittaker, K. A., D. R. Rignanese, **R.J. Olson**, T.A. Rynearson. 2012. Genetic and physiological diversity among isolates of the marine diatom *Thalassiosira rotula* collected from the Atlantic and Pacific Oceans. *BMC Evolutionary Biology* (in press).

Wurch, Louie L., Erin M. Bertrand, Benjamin A. S. Van Mooy, Mak Saito, and **Sonya T. Dyhrman** (2011) PROTEOME CHANGES DRIVEN BY PHOSPHORUS DEFICIENCY AND RECOVERY IN THE BROWN TIDE-FORMING ALGA *AUREOCOCCUS ANOPHAGEFFERENS*. *PLoS One* 6: e28949. doi:10.1371/journal.pone.0028949

Xu, J., A.Y.T. Ho, L. He, K. Yin, C. Hung, N. Choi, P.K.S. Lam, R.S.S. Wu, **D.M. Anderson**, and P.J. Harrison. 2012. Effects of inorganic and organic nitrogen and phosphorus on the growth and toxicity of two *Alexandrium* species from Hong Kong. *Harmful Algae* 16: 89-97.

Yamato, M., **Ketten D. R.**, Arruda J. J., Cramer S. R., and Moore K. 2012. The auditory anatomy of the minke whale (*Balaenoptera acutorostrata*): a potential fatty sound reception pathway in a baleen whale, *The Anatomical Record*, 04/2012, Wiley Online Library, p.1-8.

Zosuls, A., S. O. Newburg, D. R. **Ketten** and D. C. Mountain. 2012. Reverse Engineering the Cetacean Ear to Extract Audiograms. In: The Effects of Noise on Aquatic Life, A. Popper and A. Hawkins (eds). *Advances in Experimental Medicine and Biology*, Volume 730, pp.61-64.

