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School of Marine Science and Policy
College of Earth, Ocean, and Environment
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EDUCATION

1991-1996 Ph.D. Biology, University of California, Santa Barbara
1982-1987 B.A. Biology, St. Olaf College

PROFESSIONAL APPOINTMENTS

2012-Pres. Director, School of Marine Science and Policy, University of Delaware
2012-Pres. Professor, School of Marine Science and Policy, University of Delaware
2007-2012 Professor, California Polytechnic State University
2004-2012 Director, Center for Coastal Marine Science
2003-2007 Associate Professor, California Polytechnic State University
2000-2004 Adjunct Professor, UC Santa Barbara
1998-2003 Assistant Professor, California Polytechnic State University
1996-1997 Postdoctoral Associate, Rutgers University

AWARDS, HONORS and CERTIFICATIONS

HeritageDaily Top 10 Archaeological Discoveries in 2017 (2017); SERDP Best Project Award (2016); Explorers Club Fellow (2014); Fulbright Distinguished Arctic Chair (2011); Senior Fellow, California Council on Science and Technology (2008); Distinguished Scholarship Award, Cal Poly State University (2007); Editors' Citation for Excellence in Refereeing, American Geophysical Union (2005); Frontiers Scientist, National Academy of Science (2002); Earth Systems Scholar, NASA (2004); National Research Distinction Award, Cal Poly State University (2002); Presidential Early Career Award for Scientists and Engineers (2002); Young Investigator Award, Office of Naval Research (2000); New Investigator Program Award, NASA (1999); Scientific Committee for Antarctic Research Fellowship, NSF (1998); DIALOG II Scientist, ONR/NSF/NOAA (1997); Graduate Dissertation Fellowship, UCSB (1995); Instructional Improvement Grant, UCSB (1994, 1995); University of California Research Diver Certificate (1992); Research Fellowship, EMBRAPA (1990); Departmental Distinction, Biology, St. Olaf College (1987); Antarctic Service Medal, U.S. Navy (1986); Antarctic Service Medal, National Science Foundation (1986); National Sea Grant Fellow, University of Maryland (1985).

PROFESSIONAL DEVELOPMENT ACTIVITIES

PUBLICATIONS (h-index = 34; i10-index=79)

(Students underlined)

2018

Johnsen, G., Norli, M., **Moline, M.** et al. (2018) Polar Biol 41: 1197. doi:10.1007/s00300-018-2278-5.

2017

Benoit-Bird, K. J., **Moline, M. A.** and Southall, B. L. 2017. Prey in oceanic sound scattering layers organize to get a little help from their friends. Limnol. Oceanogr. 62: 2788–2798. doi:10.1002/lno.10606.

Terrill, E.J., **M.A. Moline**, P.J. Scannon, E. Gallimore, T. Schramek, A. Nager, R. Hess, M. Cimino, P.L. Colin, A. Pietruszka, and M.R. Anderson. 2017. Project Recover: Extending the applications of unmanned platforms and autonomy to support underwater MIA searches. Oceanography 30(2):150–159, https://doi.org/10.5670/oceanog.2017.237.

Shulman, I., **Moline, M.A.**, Anderson, S. et al. 2017. A study case of bioluminescence potential dynamics in the Delaware Bay with observations and modeling. Ocean Dynamics 67: 383. https://doi.org/10.1007/s10236-017-1045-4.

Pawlak, G., **M. A. Moline**, E. J. Terrill, and P. L. Colin *(*2017*),* Hydrodynamic influences on acoustical and optical backscatter in a fringing reef environment, J. Geophys. Res. Oceans, 122, 322–335, *doi:*10.1002/2016JC012497.

2016

Cronin HA, Cohen JH, Berge J, Johnsen G, Moline MA. 2016. Bioluminescence as an ecological factor during high Arctic polar night. Scientific Reports. 6:36374. doi:10.1038/srep36374.

Benoit-Bird, K, J., B.L. Southhall and **M.A Moline**. 2016. Using acoustics to examine odontocete foraging ecology: Predator-prey dynamics in the mesopelagicThe Journal of the Acoustical Society of America **140**, 3130 (2016); doi: http://dx.doi.org/10.1121/1.4969801

Benoit-Bird, K, J., B.L. Southhall and **M.A Moline**. Predator-guided sampling reveals biotic structure in the bathypelagic. Proc. Royal Society B, 283: 20152457. http://dx.doi.org/10.1098/rspb.2015.2457.

Cimino, M.A., **Moline, M.A.**, Fraser WR, Patterson-Fraser DL, Oliver MJ. 2015. Climate-driven sympatry may not lead to foraging competition between congeneric top-predators. Scientific Reports, 6. doi:10.1038/srep18820.

Moline, M. A. and Kelly Benoit-Bird. 2016. Sensor Fusion and Autonomy as a Powerful Combination for Biological Assessment in the Marine Environment. Robotics, *5*(1), doi:10.3390/robotics5010004.

2015

Moline, M. A., Kelly Benoit-Bird, David O'Gorman, Ian C. Robbins. 2015 Integration of Scientific Echo Sounders with an Adaptable Autonomous Vehicle to Extend Our Understanding of Animals from the Surface to the Bathypelagic. J Atmos Oceanic Tech. 32: 2173–2186. doi:10.1175/JTECH-D-15-0035.1.

Nilssen, I., Ø. Ødegård, A. J. Sørensen, G. Johnsen, **M. A. Moline** and J. Berge. 2015. Integrated Environmental Mapping and Monitoring, a methodological approach to optimize knowledge gathering and sampling strategy. Mar. Poll. Bull. 96: 374–383. doi:10.1016/j.marpolbul.2015.04.045.

Berge, J., M. Daase, P. E. Renaud, W. G. Ambrose Jr., G. Darnis, K. S. Last, E. Leu, J. H. Cohen, G. Johnsen, **M. A. Moline**, F. Cottier, Ø. Varpe, N. Shunatova, P. Bałazy, N. Morata, J-C. Massabuau, S. Falk-Petersen, K. Kosobokova, C.J.M. Hoppe, J. M. Węsławski, P. Kukliński, J. Legeżyńska, D. Nikishina, M. Cusa, M. Kędra, M. Włodarska-Kowalczuk, D. Vogedes, L. Camus, D. Tran, E. Michaud, T.M. Gabrielsen, A. Granovitch, A. Gonchar, R. Krapp, T.A. Callesen. 2015. Unexpected Levels of Biological Activity during the Polar Night Offer New Perspectives on a Warming Arctic. Current Biology 25: 2555-2561. DOI:/10.1016/j.cub.2015.08.024.

Cohen JH, Berge J, **Moline MA**, Sørensen AJ, Last K, Falk-Petersen S, et al. (2015) Is Ambient Light during the High Arctic Polar Night Sufficient to Act as a Visual Cue for Zooplankton? PLoS ONE 10(6): e0126247. doi:10.1371/journal.pone.0126247

Berge, J., P. E. Renaud, G. Darnis, F. Cottier, K. Last, T. M. Gabrielsen, G. Johnsen, L. Seuthe, J. Marcin Weslawski, E. Leu, **M. A. Moline**, J. Nahrgang, J. E. Søreide, Ø. Varpe, O. J. Lønne, M. Daase, S. Falk-Petersen. 2015. In the dark: A review of ecosystem processes during the Arctic polar night. Progress in Oceanography, 139: 258-271. DOI:/10.1016/j.pocean.2015.08.005.

2014

Jarosz, E., H. W. Wijesekera, W. J. Teague, **M. A. Moline**, and D. B. Fribance. 2014. Observations on stratified flow over a bank at low Froude Numbers. J. Geophys. Res., DOI: 10.1002/2014JC009934.

Johnsen, G., M. Candeloro, J. Berge, and **M. A. Moline**. 2014. Glowing in the dark - discriminating patterns of bioluminescence from different taxa during the Arctic polar night. Polar Biology, 37: 707-713.

Hovland, E. K., K. Hancke, M. O. Alver, K. Drinkwater, J. Høkedal, G. Johnsen, **M. A. Moline** and E. Sakshaug. 2014. Measured and modelled optical impact of an Emiliania huxleyi bloom in the frontal region of the Barents Sea. Journal of Marine Systems, 130: 228–240, doi:10.1016/j.jmarsys.2012.07.002.

Hancke, K., E. K. Hovland, Z. Volent, R. Pettersen, G. Johnsen, **M. A. Moline** and E. Sakshaug. 2014. Optical properties of CDOM across the Polar Front in the Barents Sea: Origin, distribution and significance. Journal of Marine Systems, 130: 219–227, doi: 10.1016/j.jmarsys.2012.06.006.

2013

Schofield, O., S. Glenn, and M. A. Moline. 2013. The Robot Ocean Network. American Scientist, 101: 434-441.

Kim, S-Y, B.D. Cornuelle, E. J. Terrill, B Jones, L Washburn, **M. A. Moline**, J. D. Paduan, N. Garfield, J. L. Largier, G. Crawford, and P. M. Kosro. 2013. Poleward propagating subinertial alongshore surface currents off the U.S. West Coast. J. Geophys. Res., doi:10.1002/jgrc.20400.

Moline, M.A., M.J. Oliver, C. Orrico, R. Zaneveld and I. Shulman. 2013. Oceanic bioluminescence. J. Watson and O. Zielinski (Eds) Subsea Optics and Imaging. Woodhead Publishing, Cambridge, 134-170. DOI 10.1533/9780857093523.

Johnsen, G., Z. Volent, H. Dierssen, R. Pettersen, M.v. Ardelan, F. Søreide, P. Fearns, M. Ludvigsen and **M. A. Moline**. 2013. Underwater hyperspectral imagery to create biogeochemical maps of seafloor properties. J. Watson and O. Zielinski (Eds) Subsea Optics and Imaging. Woodhead Publishing, Cambridge, 508-535. DOI 10.1533/9780857093523.

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Schofield, O., **M. A. Moli**ne, B. Cahilla, T. Frazer, **M. Oliver**, J. Reinfelder, S. Glenn, and R. Chant. 2013. Phytoplankton productivity in a turbid buoyant coastal plume. Continental Shelf Research, DOI: 10.1016/j.csr.2013.02.005.

Farrara, J. D., Y. Chao, Z. Li, X. Wang, X. Jin, H. Zhang, P. Li, Q. Vu, P. Q. Olsson, G. C. Schoch, M. Halverson, **M. A. Moline**, C. Ohlmann, M. Johnson, J. C. McWilliams and F. A. Colas. 2013. A data-assimilative ocean forecasting system for the Prince William Sound and an evaluation of its performance during sound Predictions 2009. Continental Shelf Research, DOI:10.1016/j.csr.2012.11.008.

Oliver, M. J., A. Irwin, **M. A. Moline**, W. Fraser, D. Patterson, O. Schofield and J. Kohut. 2013. Adelie Penguin Foraging Location Predicted by Tidal Regime Switching. PLOS ONE 8: 1-9.

Schofield, O., Glenn, S. M., **Moline, M. A.**, Oliver, M., Irwin, A., Chao, Y., Arrott. M. 2013. Ocean Observatories and Information: Building a Global Ocean Observing Network. In: Orcutt, J. (Ed) Earth System Monitoring: Encyclopedia of Sustainability Science and Technology. Springer Science, New York. DOI 10.1007/978-1-4614-5684-1_14.

Xydes A., **M. A. Moline**, C. G. Lowe, T. J. Farrugia and C.M. Clark. 2013. Behavioral Characterization and Particle Filter Localization of a Shovelnose Guitarfish. Journal of Ocean Engineering, 61: 1-11.

2012

Oliver, M. J., **M.A. Moline**, I. Robbins, W. Fraser, D. Patterson, and O. Schofield. 2012. Oceanography, 25:120–121.

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Clark, C. M., A. Xydes, K. Hall, F. Schreiber, J. Klemme, **M.A. Moline**, J. Lehr, K Hancke. 2012. Volumetric Oxygen Quantity Estimation of a Marine Environment with an Autonomous Underwater Vehicle. J. Field Robotics, DOI: 10.1002/rob.21421.

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Johnsen, G., M. A. Moline, L. H. Pettersson, J. L. Pinckney, D. V. Pozdnyakov, E. S. Egeland and O. M. Schofield. 2011. Optical monitoring of phytoplankton bloom pigment signatures. S Roy, C. Llewellyn, E.S. Egeland, and G. Johnsen (Eds) Phytoplankton Pigments. Cambridge University Press, Cambridge.

Berge, J., Båtnes, A. S., Johnsen, G., Blackwell, S. M, and **M. A. Moline**. 2011. Bioluminescence in the High Arctic during the Polar Night. Marine Biology. 159: 231-237. doi 10.1007/s00227-011-1798-0.

Kim, S.Y., E. J. Terrill, B. D. Cornuelle, B. Jones, L.Washburn, **M. A. Moline**, J. D. Paduan, N. Garfield, J. L. Largier, G. Crawford, and P. M. Kosro. 2011. Mapping the U.S. West Coast surface circulation: A multi-year analysis of high-frequency radar observations. J. Geophys. Res., 116, C03011. doi:10.1029/2010JC006669.

Shulman, I., **M. A. Moline**, B. Penta, S. Anderson, M. Oliver and S.H.D. Haddock. 2011. Observed and modeled bio-optical, bioluminescent and physical properties during an upwelling event. J. Geophys. Res., 116, C01018. doi:10.1029/2010JC006525.

2010

Schofield, O., S. Glenn, J. Orcutt, M. Arrott, M. Mesinger, A. Gangopadhyay, W. Brown, R. Signell, **M. Moline**, Y. Chao, S. Chen, D. Thompson, A. Balasuriya, P. Lermusiaux, and M. Oliver. 2010. Automated sensor networks to advance ocean science. EOS Trans., 91: 345-356.

Schofield, O., H.M. Ducklow, D.G. Martinson, M.P. Meredith, **M. A. Moline**, and W.R. Fraser. 2010. How Do Polar Marine Ecosystems Respond to Rapid Climate Change? Science, 328: 1520-1523. DOI: 10.1126/science.1185779.

Chang, G., M. S. Twardowski, Y. You, **M. A. Moline**, P. Zhai, S. Freeman, M. Slivkoff, F. Nencioli, and G. Kattawar. 2010 Effects of optical variability on the prediction of underwater visibility. Applied Optics, 49 (15):2784-2796.

Benoit-Bird, K. J., **M. A. Moline**, O. M. Schofield, I. C. Robbins, and C. M. Waluk. 2010. Zooplankton avoidance of a profiled open-path fluorometer. J. Plank. Res., doi:10.1093/plankt/fbq053.

Haddock, S., **M. A. Moline** and J. F. Case. 2010. Bioluminescence in the sea. Annual Review of Marine Science, 2: 293-343.

Benoit-Bird, K. J., **M. A. Moline**, C. M. Waluk, and I. C. Robbins. 2010. Integrated measurements of acoustical and optical thin layers I: Vertical scales of association. Continental Shelf Research, 30 (1): 17-28.doi:10.1016/j.csr.2009.08.001.

Moline, M. A., K. J. Benoit-Bird, I. C. Robbins, M. Schroth-Miller, C. M. Waluk, B. Zelenke. 2010. Integrated measurements of acoustical and optical thin layers II: Horizontal length scales. Continental Shelf Research, 30 (1): 29-38.doi:10.1016/j.csr.2009.08.004.

Sullivan, J.M., M.A. McManus, O.M. Cheriton, K.J. Benoit-Bird, L. Goodman, Z. Wang, J.P. Ryan, M. Stacey, D. Van Holiday, C. Greenlaw, **M.A. Moline**, and M. McFarland. 2010. Layered organization in the coastal ocean: An introduction to planktonic thin layers and the LOCO project. Continental Shelf Research, 30 (1): 1-6.

Orrico, C.M.**, M.A. Moline**, A.H. Barnard, I. Robbins, B. Zelenke, W. Strubhar, J. Koegler, C. Moore. 2010. Long-term use and servicing requirements of the commercial Underwater Bioluminescence Assessment Tool (U-BAT): A new tool for monitoring ecosystem dynamics in coastal environments. MTS/IEEE OCEANS 2009. 1-7.

2009

Moline, M. A., and O. M. Schofield. 2009. Remote real-time video-enabled docking for underwater autonomous platforms. J. Atmos. Oceanic. Technol. 26 (12): 2665–2672, doi: 10.1175/2009JTECHO666.1.

Moline, M. A., S. M. Blackwell, J. F. Case, S. H. D. Haddock, C.M. Herren, C.M. Orrico, E. Terrill. 2009. Bioluminescence to reveal structure and interaction of coastal planktonic communities. Deep-Sea Res. Part II. 56: 232-245, doi:10.1016/j.dsr2.2008.08.002.

Chao, Y., L. Zhijin, J. Farrara, J. C. McWilliams, J. Bellingham, X. Capet, F. Chavez, J-K Choi, R. Davis, J. Doyle, D. Fratantoni, P. Marchesiello, **M. A. Moline**, J. Paduan and S. Ramp. 2009. Development, Implementation and Evaluation of a Data-Assimilative Ocean Forecasting System off the Central California Coast. Deep-Sea Res. Part II. 56: 100-126, doi:10.1016/j.dsr2.2008.08.011.

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Moline, M.A., T.K. Frazer, R. Chant, S. Glenn, C.A. Jacoby, J.R. Reinfelder, J. Yost, M. Zhou, and O. Schofield. 2008. Biological Responses in a Dynamic Buoyant River Plume. Oceanography, 21 (4): 70-89.

Chant, R.J., J. Wilkin, W. Zhang, B.-J. Choi, E. Hunter, R. Castelao, S. Glenn, J. Jurisa, O. Schofield, R. Houghton, J. Kohut, T.K. Frazer, and **M.A. Moline**. 2008. Dispersal of the Hudson River Plume in the New York Bight: Synthesis of Observational and Numerical Studies During LaTTE. Oceanography, 21 (4): 148-161.

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2007

Moline, M. A., M. J. Oliver, C. D. Mobley, L. Sundman, T. Bensky, T. Bergmann, W. P. Bissett, J. Case, E. H. Raymond, and O. M. E. Schofield . 2007. Bioluminescence in a complex coastal environment: 1. Temporal dynamics of nighttime water-leaving radiance, *J. Geophys. Res.*, 112, C11016, doi:10.1029/2007JC004138.

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the field-going and sample poor biologist? In: *Real Time Coastal Observing systems for Marine Ecosystems Dynamics and Harmful Algal Blooms: Theory, Instrumentation and Modeling.* Babin, M., Rosler, C. and Cullen, J. J. (Eds). Intergovernmental Oceanographic Commission of UNESCO, Paris, Monographs on Oceanographic Methodology 12: 85-108.

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2005

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Prézelin, B. B., N. P. Boucher, **M. A. Moline**, E. Stephens, K. Seydel and K. Scheppe 1992. Palmer LTER: Spatial variability in phytoplankton distribution and surface photosynthetic potential within the far field grid, November 1991. Antarctic Journal of the United States 27(5):242-245.

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Putt, M., R. B. Rivkin and **M. A. Moline** 1986. Diel periodicities of photosynthesis in Antarctic phytoplankton: species specific response. Antarctic Journal of the United States 21(5):185-186.

PRESENTATIONS

Invited Talks

Moline, M. A. Search for the Missing. (**Invited**) Coast Day, Lewes, DE, 2018.

Moline, M. A.; Benoit-Bird, K. J.; Southall, B.; Deep Mapping of Teuthivorous Whales and Their Prey. (**Invited**) SERDP Review, Washington DC, 2017.

Moline, M. A. Search for Heroes. (**Invited**) Air Mobility Command Museum, Dover, DE, 2016.

Moline, M. A. Life in the Polar Night. (**Invited**) Keynote Fulbright Lecture, Newark, DE, 2016.

Moline, M. A.; Benoit-Bird, K. J.; Southall, B.; Deep Mapping of Teuthivorous Whales and Their Prey. (**Invited**) SERDP Review, Washington DC, 2016.

Moline, M. A. Ocean Use and Sustainability. (**Invited**) Trans-Atlantic Science Week (US/Norway/Canada), Boston, October 2015.

Moline, M. A. Search for Heroes. (**Invited**) Currents Lecture Series, Lewes, DE, July, 2015.

Moline, M. A.; Benoit-Bird, K. J.; Southall, B.; Deep Mapping of Teuthivorous Whales and Their Prey. (**Invited**) SERDP Review, Washington DC, May, 2015.

Moline, M. A. Sampling in Polar Regions. (**Invited**) University Centre in Svalbard, Norway. January 2015.

Moline, M. A. Applications of Autonomous Underwater Vehicles. (**Invited**) University Centre in Svalbard, Norway. January 2015.

Moline, M. A. Benefit of Fulbright Program in Arctic Science. (**Invited**) Trans-Atlantic Science Week (US/Norway/Canada), Toronto, Canada. October 2014.

Moline, M. A. UD Wind Power Program. (**Invited**) AMOS - Norwegian University of Science and Technology (NTNU), Trondheim, Norway. September 2014.

Moline, M. A. Oceanic Bioluminescence. (**Invited**) University Centre in Svalbard, Norway. January 2014.

Moline, M. A. A Career in Oceanography. University of Maryland, Horn Point Laboratories, Cambridge, MD. June 2013.

Moline, M. A. Global Ocean Challenges and the Future of Marine Science. Osher Lecture Series, Rehoboth, DE. February 2013.

Moline, M. A. Global Ocean Challenges and the Future of Marine Science. Currents Lecture, Lewes, DE. August 2012.

Moline, M. A., J. Berge and G. Johnsen. (**Invited**) Presence and distribution of wintertime bioluminescence in the Arctic Ocean. Trondheim Biological Station, Trondheim, Norway. November 2012.

Moline, M. A., J. Berge and G. Johnsen. Presence and distribution of wintertime bioluminescence in the Arctic Ocean. US Embassy, Oslo, Norway. February 2012.

Moline, M. A., J. Berge and G. Johnsen. Presence and distribution of wintertime bioluminescence in the Arctic Ocean. University Centre in Svalbard, Longyearbyen, Norway. November 2011.

Moline, M. A., J. Berge and G. Johnsen. Presence and distribution of wintertime bioluminescence in the Arctic Ocean. University Centre in Svalbard, Longyearbyen, Norway. November 2011.

Moline, M. A., 2008. Transforming Ocean Science: Advanced Robotics for Sampling Marine Environments. Distinguished Scholar Program, California Polytechnic State University**,** San Luis Obispo, CA.

Moline, M. A., 2007. REMUS AUVs in Coastal Waters. Advanced Physics Laboratory. University of Washington, Seattle, WA.

Moline, M. A., 2007. Autonomous Underwater Vehicles for California Coastal Water. California Ocean Protection Council, Moss Landing, CA.

Moline, M. A., 2007. Real-Time Water Quality Monitoring in the Morro Bay Estuary. National Estuary Program. Morro Bay, CA.

Moline, M. A., 2006. Real-Time Water Quality Monitoring in the Morro Bay Estuary. National Estuary Program. State of the Bay Conference. Morro Bay, CA.

Moline, M. A., 2006. REMUS AUVs in Coastal Oceanography. Autonomous Underwater Vehicles (AUVs) for Scientific Applications. Woods Hole, MA.

Moline, M. A., 2006. REMUS AUVs in Coastal Oceanography. National Undersea Research Program/National Institute for Underwater Science and Technology AUV Workshop. Moss Landing, CA.

Moline, M. A., O. M. E. Schofield and G. Kirkpatrick. 2004. Nested Autonomous Platforms for Mapping Harmful Algal Blooms. ACT – ALPS workshop. Portland, ME.

Schofield, O., **Moline, M. A.**, Bissett, W. P., Haidvogel, D., Glenn, S. M. 2002. Evolution of LEO into a shelf-wide observatory. Ocean Sciences Meeting Honolulu, HI.

Moline, M. A. 2002. Adaptive Sampling of Phytoplankton Responses to Episodic Physical Forces in the Nearshore Coastal Ocean: Characterizing the Significance of Convergences in Upwelling Eddies. NASA PECASE awards ceremony. Washington D.C.

Moline, M. A. 2001. Mechanisms for structuring coastal phytoplankton assemblages in polar marine environments. Gordon Research Conference – Polar Marine Science. Ventura, CA.

Moline, M. A., W. P. Bisset, S. Glenn, D. Haidvogel and O. Schofield. 2000. An operational multi-scale real-time long-term ecosystem observatory (LEO-15) for the coastal ocean. Ocean Optics XV. Monaco.

Moline, M. A., T. Bergmann, S. Glenn, J. Grzymski and O. Schofield. 1999. Characterizing the variability in the inherent and apparent optical properties during the LEO-15 1998 coastal predictive skill experiments. American Society of Limnology and Oceanography, Santa Fe, NM.

Moline, M. A. 1998. Photosynthesis in the open ocean. Cuesta College. San Luis Obispo, CA.

Moline, **M. A.**, H. Claustre, T. K. Frazer, J. Grzymski, O. Schofield and M. Vernet. 1998. Changes in phytoplankton assemblages along the Antarctic Peninsula and potential implication for the Antarctic food web. New Zealand Natural Sciences 23:129. Seventh SCAR Biology Symposium Antarctic Communities, Christchurch, New Zealand.

Moline, M. A. 1997. Utility of *in situ* spectral optical properties to discriminate phytoplankton and dissolved organic matter in diverse water masses. Institute of Marine and Coastal Sciences, Rutgers University.

Moline, M. A. 1997. Temporal dynamics and regulation of coastal Antarctic phytoplankton communities. DIALOG II Symposium. Bermuda Biological Station.

Moline, M. A. 1997. Temporal dynamics and regulation of coastal Antarctic phytoplankton communities. Dept. of Biological Science, California Polytechnic State University.

Moline, M. A. 1996. PALMER LTER: Temporal dynamics and regulation of coastal phytoplankton communities in Spring and Summer 1991-1994. Institute of Marine and Coastal Sciences, Rutgers University.

Contributed Presentations **(Students underlined)**

Shulman, I.; **Moline, M. A.;** Penta, B.; Anderson, S.; Sakalaukus, P.; Messié, M.; Rowley, C.; Ladner, S.: MODELING AND OBSERVATIONAL STUDIES OF PHYSICAL, BIO-OPTICAL AND BIOLUMINESCENCE POTENTIAL PROPERTIES. ASLO Aquatic Science Meeting, March, 2017.

Cimino, MA, **MA Moline**, W Fraser, D Patterson-Fraser, MJ Oliver. Climate-driven Sympatry does not Lead to Foraging Competition Between Adélie and Gentoo Penguins. AGU Fall Meeting, 2016.

Cohen, J, B Jørgen, **MA Moline**, G Johnsen. Elevated Ambient Light and Temperature Constrain Light Perception in Arctic Krill. AGU Fall Meeting, 2016.

Shulman, I, B Penta, **MA Moline**, S Anderson, M Messié, P Sakalaukus, MJ Oliver. Impact of physical-biological interactions on spatio-temporal distribution of bioluminescence potential. AGU Fall Meeting, 2016.

Benoit-Bird, K.J., **Moline, M.A.**, Southall, B. "Using acoustics to examine odontocete foraging ecology: Predator- Prey Dynamics in the Mesopelagic", Joint Meeting of the Acoustical Societies of America and Japan, Nov 20-Dec 3, 2016.

Oliver M, M Cimino, A Irwin, W Fraser, J Kohut, O Schofield, and **MA Moline**. Satellite Driven Studies of Climate\Mediated Changes in Antarctic Food Webs. NASA Biodiversity and Ecological Forecasting Team Meeting, MD, June, 2015.

Benoit-Bird, K., P. Arranz, P.r Tyack and **M. A. Moline**; Brandon Southall. Predator-prey dynamics in the mesopelagic: Odontocete foraging ecology and anti-predator behavior of prey. 21st Biennial Society for Marine Mammalogy Conference on the Biology of Marine Mammals. San Francisco, CA, Dec, 2015.

Benoit-Bird, K., B. Southall, **M. A. Moline**, P. Arranz, and P. Tyack. Predator-prey dynamics: Micronekton schooling inside the deep scattering layer in response to foraging Risso's dolphins, ICES Marine Ecosystem Acoustics Symposium, Nantes, France, May 25-28, 2015.

Moline, M.A. Linking Intelligence and Underwater Searches. ONR Review San Diego. September, 2014.

Benoit-Bird, K. J.; **Moline, M. A.**; Southall, B.; Deep Mapping of Teuthivorous Whales and Their Prey. SERDP Review, Washington DC, May, 2014.

Benoit-Bird, K. J.; **Moline, M. A.**; Southall, B.; DEEP-DIVING AUTONMOUS UNDERWATER VEHICLE PROVIDES INSIGHTS INTO SCATTERING LAYER DYNAMICS. Acoustical Society of America, Providence, RI, May, 2014.

Benoit-Bird, K. J.; **Moline, M. A.**; Southall, B.; THE WAY TO A WHALE'S HABITAT IS THROUGH HIS STOMACH: A DEEP-DIVING, SQUID-HUNTING AUV PROVIDES INSIGHTS INTO TEUTHIVOROUS WHALE BEHAVIOR. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 13026)

Berge, J.; Øystein, V.; **Moline, M.**; Renaud, P.; Falk-Petersen, S.; RETENTION OF ICE-ASSOCIATED AMPHIPODS: POSSIBLE CONSEQUENCES FOR AN ICE-FREE ARCTIC OCEAN. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 13143)

Washburn, L.; Ohlmann, C.; Ellis, D.; Schofield, O.; **Moline, M.**; OBSERVATIONS OF POLEWARD FLOWS AROUND THE BIO-GEOGRAPHIC BOUNDARY AT PT. CONCEPTION, CA USING OCEAN OBSERVING SYSTEM TECHNOLOGIES. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 13299)

Ellis, D. P.; Washburn, L.; Ohlmann, C.; **Moline, M.**; Schofield, O.; EVALUATING THE PERFORMANCE OF UNDERWATER GLIDERS AS VIRTUAL MOORINGS OFF PT. SAL, CALIFORNIA. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 13310)

Oliver, M. J.; Irwin, A.; **Moline, M. A.**; Fraser, W.; Patterson, D.; ADÉLIE PENGUIN FORAGING LOCATION PREDICTED BY TIDAL REGIME SWITCHING IN A CHANGING CLIMATE. Ocean Sciences Meeting, Honolulu, HI. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 13614)

Pawlak, G.; **Moline, M. A.**; Terrill, E.; Colin, P. L.; RELATING HYDRODYNAMICS WITH ACOUSTICAL AND OPTICAL CHARACTERISTICS FOR A FRINGING REEF: NGADARAK REEF, PALAU. Ocean Sciences Meeting, Honolulu, HI. 2014 (Abstract ID: 15217)

Moline, M.A. Hydrodynamic Flow in and Around the Palauan Archipelago. ONR Review San Diego. October, 2013.

Pawlak, G. and **M. A. Moline**. Hydrodynamic controls on acoustical and optical properties in tropical reefs. ONR – Review. Denver, CO. September 2012.

Moline, M. A., J. Berge and G. Johnsen. Presence and distribution of wintertime bioluminescence in the Arctic Ocean. Ocean Optics XXI, Glasgow, Scotland. October, 2012.

Collins, P., **M. A. Moline**, P. Colin and E. Terrill. Optical classification of tropical benthic habitats using an unmanned underwater vehicle. Ocean Optics XXI, Glasgow, Scotland. October, 2012.

Washburn, L, Aragon, D, Haldeman, C, Ohlmann, C, Gotschalk, C, Couto, N, Miles, T N, Robbins, I, Schofield, O, **Moline, M A**, and Kerfoot, J. (2012) OBSERVING POLEWARD RELAXATION FLOWS ALONG THE CENTRAL CALIFORNIA COAST USING GLIDERS AS VIRTUAL MOORINGS. OS21A-1674. 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 Dec.

Sung Yong Kim; Jones, B.; Washburn, L.; Moline, M.A.; Paduan, J.D.; Garfield, N.; Largier, J.; Crawford, G.; Kosro, P.M., "Sustained observations of mesoscale and sub-mesoscale surface circulation off the U.S. West Coast," *OCEANS, 2012 - Yeosu* , vol., no., pp.1,6, 21-24 May 2012. doi: 10.1109/OCEANS-Yeosu.2012.6263380

Weston, J., **M. Moline**, D. Wendt, L. Hibler, J. Penvenne, I. Robbins, and B. Zelenke. 2010. Coupling of Water Quality Data and a Circulation Model to Interpret Nitrate Sources and Distribution within Morro Bay Estuary, California. Ocean Sciences Meeting. Portland, OR. GO35C-17

Orrico, C., **M. Moline**, A H Barnard, I Robbins, B C Zelenke, J Koegler, W Strubhar, J R Zaneveld, C Moore. 2010. Using bioluminescence and water optical properties as a tool for monitoring ecosystem dynamics in coastal environments. Ocean Sciences Meeting, Portland, OR. BO14A-04

Chang, G., M S Twardowski, S Freeman, Y You, **M. Moline**, C Jones, D Hansen, P Zhai, A H Barnard, G W Kattawar. 2010. Optical Variability and the Prediction of Underwater Visibility. Ocean Sciences Meeting, Portland, OR. IT15M-01

Hibler, L.F., **M. Moline**, A. R. Maxwell, J. Weston and D. E. Wendt. 2010. Tidal Circulation Modeling in Morro Bay, California. Ocean Sciences Meeting, Portland, OR. PO15E-16

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Orrico, C. M., T. Bergmann, W. P. Bissett, **M. A. Moline** and O. M. Schofield. 2002. Deconvolution of Spectral Measurements to Derive Optically Active Constituents in Turbid Coastal Waters. ASLO/AGU Ocean Sciences Meeting, Honolulu, HI.

Pearson, J. A., S. M. Blackwell, N. Doughty, **M. A. Moline**, M. J. Oliver and C. M. Orrico. 2002. Optical estimation of Phytoplankton and Sediment Transport in Morro Bay Estuary. ASLO/AGU Ocean Sciences Meeting, Honolulu, HI.

Blackwell, S. M., J. F. Case, S. Glenn, **M. A. Moline**, M. Purcell and C. J. von Alt. 2002. Development of an AUV to Measure Bioluminescence in the Coastal Ocean. ASLO/AGU Ocean Sciences Meeting, Honolulu, HI.

Kohler, D. D., W. P. Bissett, C. O. Davis, J. Bowles, D. Dye, J. Britt, J. Bailey, R. Steward, O.M. Schofield, **M. A. Moline**, S. Glenn and C. Orrico.2002. Characterization and Calibration of a Hyperspectral Coastal Ocean Remote Sensing Instrument. ASLO/AGU Ocean Sciences Meeting, Honolulu, HI.

Kirkpatrick, G. J., M. J. Oliver, B. A. Berg, C. Orrico, **M. A. Moline**, S. E. Lohrenz and O. M. Schofield. 2002. Continuous, Real-Time Determination Of Hyperspectral Absorption Of Colored Dissolved Organic Material. ASLO/AGU Ocean Sciences Meeting, Honolulu, HI.

Crowley, M., A. Kahl, K. Prasad, R. Arnone, T. Bergmann, O. Schofield, *S. Ladner* and **M.A. Moline**. 2001. Comparisons of SeaWiFS, MODIS, Oceansat, FY1-C, and PHILLS to In Situ Measurements in the Coastal Ocean. American Geophysical Union, San Francisco, CA.

Schofield, O., S. Glenn, D. Haidvogel, **M. A. Moline** and W. P. Bissett. 2001. Development of a Shelf-Wide Ocean Observatory in the Mid-Atlantic Bight. . American Geophysical Union, San Francisco, CA.

Schofield, O., W. P. Bissett, D. Haidvogel, **M. A. Moline** and S. Glenn. 2001. Using the long-term ecosystem observatory for rapid environmental assessment in coastal waters. The Oceanography Society Meeting, Miami, FL.

Moline, M. A., H. Claustre, T. Frazer, O. Schofield and M. Vernet. 2001. Shift in the Antarctic Peninsula food web in response to regional warming. Gordon Conference, Ventura, CA.

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Moline, M. A., R. Arnone, M. Oliver, C. Orrico, T. Bergmann, S. Glenn and O. Schofield. 2000. Variability in spectral backscatter estimated from satellites and its relation to *in situ* measurements in optically complex coastal waters. Oceans from Space. Venice, Italy.

Tozzi, S., O. Schofield, **M. A. Moline,** T. Bergmann, R. Arnone. 2000. Variabiltiy in measured and modeled remote sensing for coastal waters at LEO-15. Oceans from Space. Venice, Italy.

Moline, M. A., J. Case, E. Heine, C. Herren and O Schofield. 2000. Spatial and temporal variability of bioluminescence potential in coastal regions. 11th International Symposium on Bioluminescence and Chemiluminescence. Asilomar, CA.

Moline, M. A., J. Case, E. Heine, C. Herren and O Schofield. 2000. High-resolution temporal sampling of nearshore vertical structure of bioluminescence. 11th International Symposium on Bioluminescence and Chemiluminescence. Asilomar, CA.

Grzymski, J., J. Bernhard, P. Falkowski, **M. A. Moline** and O. Schofield. 2000. A modern analog of early eukaryogenesis in the Santa Barbara Basin. Gordon Research Conference. Narragansett, RI.

Moline, M. A., O. Schofield, S. Glenn, M. Crowley, M. Demarest, R. Arnone and W. P. Bissett. 2000. Assesment of phytoplankton dynamics at the Long-Term Ecosystem Observatory (LEO-15) using in water optics and remote sensing. American Society of Limnology and Oceanography, Copenhagen, Denmark.

Demarest, M., **M. A. Moline**, C. Kitts and A. Schaffner. 2000. Marine prokaryote diversity and spatial scale of community heterogeneity across surface waters of the Pacific Ocean. American Society of Limnology and Oceanography, Copenhagen, Denmark.

Schofield, O., W. P. Bissett, S. Glenn, D. Haidvogel, **M. A. Moline**, and A. Weidemann.2000. Adaptive sampling in the coastal ocean at the Long Term Ecosystem Observatory. Marine Technology Society. Stennis Space Center, MS.

Schofield, O., **M. A. Moline**, W. P. Bissett and S. Glenn. 2000. Melding physics and biology: The opportunity of coupled observation model systems. American Institute of Biological Sciences (AIBS) & ONR San Diego, CA.

Moline, M. A., J. Case, C. Herren, O. Schofield, S. Glenn and W. P. Bissett. 2000. Bioluminescence exercises at LEO-15: Summer 1999. American Institute of Biological Sciences (AIBS) & ONR San Diego, CA.

Bissett, W. P., O. Schofield and **M. A. Moline**. 2000. Integrating bioluminescence into nowcast/forecast systems. American Institute of Biological Sciences (AIBS) & ONR San Diego, CA.

Tozzi, S., O. Schofield, J. Grzymski, T. Bergmann, **M. A. Moline** and D. Peterson. 2000. Variability of the spectral signatures of coastal waters measured and modeled for the LEO-15 site. ASLO/AGU Ocean Sciences Meeting. San Antonio, TX.

Grzymski, J., J. T. Cullen, E. L. Peters, S. M. Glenn, R. M. Sherrell, O. M. Schofield. 2000. Relationship between light attenuation and suspended particulate material during nearshore coastal upwelling. ASLO/AGU Ocean Sciences Meeting. San Antonio, TX.

Bergmann, T., J. Grzymski, O. Schofield, **M. A. Moline** and T. Newton. 2000. Characterizing the variability in the inherent and apparent optical properties during the LEO-15 1999 coastal predictive skill experiment. ASLO/AGU Ocean Sciences Meeting. San Antonio, TX.

Moline, M. A., C. Orrico, T. Newton, O. Schofield, J. Grzymski, T. Bergmann and S. Tozzi. 2000. Phytoplankton community dynamics in the coastal waters of the LEO-15 site. ASLO/AGU Ocean Sciences Meeting. San Antonio, TX.

Schofield, O., S. Glenn and **M. A. Moline**. 1999. Integrated ocean observatories for the coastal ocean. Joint National Academy of Sciences/JASMTEC meeting. Tskuba, Japan.

Moline, **M. A.**, H. Claustre, T. K. Frazer, J. Grzymski, O. Schofield and M. Vernet. 1999. Changes in phytoplankton assemblages and potential implication for the Antarctic food web. Gordon Research Conference. Ventura, CA.

Grzymski, J., T. Bergmann, O. Schofield and **M. A. Moline.** 1999. Deconvolving the inherent optical properties for nearshore coastal waters during upwelling at LEO-15. American Society of Limnology and Oceanography, Santa Fe, NM.

Moline, M. A., Bergmann, T., Glenn, S., Gryzmski, J., Schofield, O. 1999. Evolution in the inherent and apparent optical properties during an episodic upwelling event at the LEO-15 1998 Coastal Predictive Skill experiments. American Society of Limnology and Oceanography, Santa Fe, NM.

Schofield, O., **M. A. Moline**, R. Steward and G. Kirkpatrick. 1999. Fluorescence-based deconvolution of the bulk inherent optical properties during a *Gymnodinium breve* bloom in the Gulf of Mexico. American Society of Limnology and Oceanography, Santa Fe, NM.

Schofield, O., T. Bergmann, J. Gryzmski, **M. A. Moline** and S. Glenn. 1998. Spectral fluorescence emission and inherent optical properties during upwelling events off the coast of New Jersey. Ocean Optics XIV 3: 83-89, Maui, HI.

Kirkpatrick, G. J., O. Schofield, D. F. Millie and **M. A. Moline**. 1998. Optical discrimination of a phytoplankton species in natural mixed populations. SPIE Ocean Optics XIV 3: 60-67, Maui, HI.

Schofield, O., S. Glenn, G. Kirkpatrick, D. F. Millie and **M. A. Moline**. 1998. Design strategies for forcasting systems for harmful algal blooms. J. Phycol. 34:126. Phycological Society of America, 34:52. Flagstaff, AZ.

Schofield, O., **M. A. Moline**, G. A. Vargo, R. Steward and G. Kirkpatrick. 1998. Spectral inherent optical and fluorescence properties of natural populations of the toxic dinoflagellate, *Gymnodinium breve*, in the Gulf of Mexico. EOS Trans. AGU 79(1):161. Ocean Sciences Meeting, San Diego, CA.

Moline, **M. A.**, H. Claustre, T. K. Frazer, J. Grzymski, K. L. Haberman and O. Schofield.1998. Changes in phytoplankton assemblages in response to glacial melting along the Antarctic Peninsula: Alteration in the food web due to regional warming? EOS Trans. AGU 79(1):45. Ocean Sciences Meeting, San Diego, CA.

Bergmann, T., O. Schofield, **M. A. Moline**, J. Grzymski, M. Crowley and S. Glenn. 1998. Impact of upwelling on nearshore inherent and apparent optical properties in the Mid-Atlantic Bight. EOS Trans. AGU 79(1):120. Ocean Sciences Meeting, San Diego, CA.

Grzymski, J., R. V. Jovine, **M. A. Moline** and O. Schofield. 1998. Interaction of light and temperature on the photo-physiology of *Alexandrium fundyense* (CA28): Possible importance in the initiation of dinoflagellate blooms? EOS Trans. AGU 79(1):121. Ocean Sciences Meeting, San Diego, CA.

Prézelin, B. B., C. Mengelt, **M. A. Moline** and E. Hofmann. 1997. Preliminary findings on the mesoscale relationship(s) between mixed layer depth, proxy measures of vertical nutrient flux and phytoplankton community composition in waters west of Palmer Peninsula. American Society of Limnology and Oceanography, Santa Fe, NM.

Moline, M. A., B. B. Prézelin. 1997. Southern Ocean: Fraction of total water column biomass and primary productivity within the upper optical attenuation length. American Society of Limnology and Oceanography, Santa Fe, NM.

Moline, M. A., O. Schofield, J. Grzymski, and R. V. M. Jovine. 1997. Impact of temperature on photoinhibition of photosynthesis in the red-tide dinoflagellate Alexandrium fundyense (Ca28). American Society of Limnology and Oceanography, Santa Fe, NM.

Grzymski, J., O. Schofield and **M. A. Moline**. 1997. An ultraviolet action spectra for photosystem II activity in marine phytoplankton. American Society of Limnology and Oceanography, Santa Fe, NM.

Claustre, H., **Moline, M. A.**, B. B. Prézelin. 1996. Estimation of the water column light utilization index in coastal waters of the Southern Ocean. EOS Trans. AGU 76:138. Ocean Sciences Meeting, San Diego, CA.

Schofield, O., **Moline, M. A.**, B. B. Prézelin. 1996. Variability in the quantum yields for photosynthetic activity in coastal Antarctic phytoplankton and the impact on bio-optical productivity models. EOS Trans. AGU 76:188. Ocean Sciences Meeting, San Diego, CA.

Moline, M. A., B. B. Prézelin. 1996. PALMER LTER 1991-1994 - Evidence for physical forcing of interannual variation in Antarctic coastal productivity. EOS Trans. AGU 76:188. Ocean Sciences Meeting, San Diego, CA.

Moline, M. A., B. B. Prézelin. 1996. Stable interannual successional patterns of phytoplankton communities in physically dynamic coastal waters of the Southern Ocean. J. Phyco 32: 33. Phycological Society of America, Santa Cruz, CA.

Moline, M. A., B. B. Prézelin. 1996. PALMER LTER: Temporal dynamics and regulation of coastal phytoplankton communities in Spring and Summer 1991-1994. International Symposium on Environmental Research in the Antarctic. National Institute of Polar Research, Tokyo, Japan.

Claustre, H., **M. A. Moline** and B. B. Prézelin. 1996. The water column photosynthetic cross section for Antarctic coastal waters : dependance on incident irradiance, chlorophyll content and taxonomic composition. SPIE Ocean optics XIII 2963: 846-849, Halifax, Nova Scotia, Canada.

Moline, M. A., B. B. Prézelin and O. Schofield. 1995. Spatial and temporal relationships of photosynthetic parameters to inorganic nutrients and pigmentation in Antarctic phytoplankton. ASLO Reno, NV. p. 37.

Schofield, O., **Moline, M. A.** and B. B. Prézelin. 1995. Photoacclimation in a coastal phytoplankton bloom and impact on the radiation utilization efficiency for carbon fixation. ASLO Reno, NV. p. 50.

Moline, M. A., O. Schofield and B. B. Prézelin. 1994. Palmer LTER '91-'92: Temporal dynamics of coastal Antarctic phytoplankton: physical / chemical / biological linkages through a summer diatom bloom. EOS Trans. AGU 75:217. Ocean Sciences Meeting, San Diego, CA.

Moline, M. A., B. B. Prézelin, O. Schofield and R. C. Smith. 1994. Palmer LTER '91-'92: Temporal dynamics of coastal antarctic phytoplankton: physical / chemical / biological linkages through a summer diatom bloom. Sixth SCAR Biology Symposium Antarctic Communities, Venice, Italy. p. 189.

Moline, M. A., E. Peele and T. R. Fisher. 1990. DOC and macrophytes on the Amazon Floodplain. ASLO New Orleans, LO.

Fisher, T. R., R. D. Doyle, **M. A. Moline** and D. L. Engle. 1889. Ecology of periphyton on the Amazon Floodplain. Symp. Floodplain Rivers, Baton Rouge, LO.

Harrell, R. and **M. A. Moline**. 1988. Plasma corticosteriod and chloride dynamics of striped bass as indicators of stress when comparing two capture techniques. J. World Aqu. Soc. 19:35. 19th Annual World Aquaculture Soc. Honolulu, HI.

Fisher, T. R., L. Alves, R. Doyle, **M. A. Moline**, E. Peele and L. E. Smith-Morrill. 1988. Periphyton on the Amazon Floodplain. EOS Trans. AGU 69:1129. ASLO San Francisco, CA.

Smith-Morrill, L., E. Peele, **M. A. Moline** and T. R. Fisher. 1988. The effect of sedimentary particles on N and P dynamics in an Amazon Floodplain lake. EOS Trans. AGU 69:1129. ASLO San Francisco, CA.

Fisher, W. and **M. A. Moline**. 1987. Annual variation of estuarine and oceanic oyster *Crassostrea virginica* Gmelin hemocyte capacity. AERS St. Michaels, MD.1

GRANTS AND CONTRACTS

External *(Moline's components only)*

Philanthropic Donations ($1,372,000 awarded)

2017: Bent Prop Project: Returning US MIAs from Past Wars. PI M.A. Moline ($70,000).
2016: Project RECOVER: Returning US MIAs from Past Wars. PI M.A. Moline ($1,202,000).
2015: Bent Prop Project: Returning US MIAs from Past Wars. PI M.A. Moline ($100,000).

Research Grants ($18,337,978 awarded)

Department of Defense – Search off West Coast of Italy. PI M.A. Moline ($100,000).
Department of Defense – Search off Kuwait. PI M.A. Moline ($150,000).
Department of Defense – Rapid Innovation Fund, 2017-2019. Technology Testbed for Finding and Characterizing Long-Term Underwater Aircraft Wreckage. PIs E. Terrill and M.A. Moline ($497,000).
National Oceanic and Atmospheric Administration – Office of Exploration and Research, 2017-2019. Submerged Cultural Resource Survey of the Kiska Island National Historic Landmark Maritime Battlefield. PIs E. Terrill, A. Pietruszka and M.A. Moline ($466,000).
Department of Defense- Office of Naval Research, 2015-2018. Linking Deep-water Prey Fields with Odontocete Population Structure and Behavior. PI Moline, Benoit-Bird ($246,000).
National Science Foundation, 2015. Training Chief Scientists for Shipboard Research. PI M.A. Moline ($89,000).
Department of Defense- Office of Naval Research, 2015-2017. Supplement: Challenges in Sensing and Prediction of Oceanic Bioluminescence. PI Moline ($562,859).
Department of Defense- Office of Naval Research, 2014-2016. Challenges in Sensing and Prediction of Oceanic Bioluminescence. PI Moline ($171,000).
Department of Defense-SERDP, 2011-2016. Systematic mapping of teuthivorous whale prey fields. PI Benoit-Bird, Moline ($369,274).
National Science Foundation, 2009-2015. The propagating response of the inner shelf to wind relaxations in a coastal upwelling system. PI Washburn, Moline, Schofield ($498,477).
Department of Defense- Office of Naval Research, 2012-2015. Project RECOVER: Research and Education Combining Oceanography, Vehicle Engineering, and Reconnaissance. PI Terrill, Moline ($20,000).
Department of Defense-Office of Naval Research, 2010-2014. Resolving complex flows over Seamounts in the Gulf of Mexico. PI Moline ($259,960).
Department of Defense-Office of Naval Research, 2010-2014. Resolving complex flows in a reef/island environment. PI Moline ($369,274).
Department of Defense-Office of Naval Research, 2011-2013. Hydrodynamic controls on acoustical and optical water properties in tropical reefs. PI Pawlak, Moline ($72,089).
National Science Foundation, 2009-2013. Shark Tracking with Multiple Autonomous Underwater Vehicles. PI Clark and Moline ($32,314).
National Science Foundation, 2009-2013. Real Time Characterization of Adelie Penguin Foraging Environment using an AUV. PI Moline ($290,000).
National Oceanic and Atmospheric Administration, 2009-2010. Shelf to shoreline observation development - Ocean surface current mapping (SCM) component. PI Moline ($125,000).
National Science Foundation, 2009-2010. Ice-edge AUV mapping and navigation experiments in the Arctic. PI Clark and Moline ($19,963).
Department of Defense-Office of Naval Research, 2009-2010. Variability of Near Surface Optical Properties in High Sea State Conditions. PI Moline ($94,106).
Oil Spill Recovery Institute, 2009-2010. Autonomous Underwater Vehicle Support for Ocean Modeling in Prince William Sound. PI Moline ($57,085).

Department of Defense-Office of Naval Research, 2009-2011. Dynamic Modeling of Marine Bioluminescence and Night Time Leaving Radiance. PI Moline ($76,146).

CA State Water Resources Control Board, 2007-2010. Fecal Source Tracking at Pismo Beach. PI Kitts, Moline, Black ($660,368).

National Oceanic and Atmospheric Administration, 2008-2010.CeNCOOS: Long-Term Monitoring of Environmental Conditions in Support of Protected Marine Area Management in Central and Northern California. PI Moline ($75,001).

David and Lucile Packard Foundation, 2008-2011. Achieving Management and Conservation Goals through the Application of Ecosystems-based Management on the Central Coast of California. PI Wendt, Moline, Tomanek ($1,500,000).

Department of Defense-Office of Naval Research, 2008-2010. UUV Operations to Characterize Circulation and Morphology of Tidal Flats: Predicting the Dynamics of Muddy Coastal Environments. PI Moline ($287,065) .

Department of Defense-Office of Naval Research, DURIP. 2007-2009. A high-endurance autonomous underwater vehicle for observation networks, model assimilation and prediction. PI Moline ($455,000).

Department of Defense-Office of Naval Research, 2007-2010. Use of UUVs to Evaluate and Improve Model Performance within a Tidally-dominated bay. PI Moline ($670,435).

National Aeronautics and Space Administration – Jet Propulsion Laboratory. 2007-2009 "Demonstration of direct measurements of ocean surface currents: A next generation oceanographic satellite mission concept" PIs Benjamin Holt, Ernesto Rodriquez, Delwyn Moller and Mark Moline ($50,000).

Department of Defense, Major University Research Initiative program (MURI) 2006-2011. "Rapid environmental assessment using an integrated coastal ocean observation and modeling system" PIs Schofield, O, Glenn, S. M., Fennel, K., Wilkin, J., McGillicuddy, D., He, R., Gawarkiewicz, G., Moline, M. A. ($610,089).

Department of Defense-Office of Naval Research, STTR. 2006-2009. "An Underwater Bioluminescence Assessment Tool (UBAT)" PIs Andrew Barnard, James Case, Mark Moline ($75,000).

David and Lucile Packard Foundation-California Coastal Conservancy-Morro Bay National Estuary (EPA)-Resources Legacy Foundation Fund. 2005-2008. Elucidating the Nexus of Science and Society in the Morro Bay Ecosystem" PIs Dean Wendt, Lars Tomanek, Royden Nakamura, Mark Moline ($593,584).

Department of Defense-Office of Naval Research, Optics and Biology Section. 2006-2009. "Bioluminescence Potential in the Transition Zone to Very Shallow Water" PI Mark Moline ($365,126).

Department of Defense-Office of Naval Research, Optics and Biology Section. 2005-2006 "BIOPS: A Bioluminescence and Inherent Optical Properties Sensor for Bulk-Phase Biological Assessment" PIs Andrew Barnard, James Case, Mark Moline ($288,788).

California Coastal Conservancy, Coastal Ocean Current Mapping Program. 2005-2009. "Equipment Purchase for the Coastal Ocean Circulation Monitoring Program for Northern and Central California" PIs Newell Garfield, Mark Moline ($2,800,000).

California Coastal Conservancy, Coastal Ocean Current Mapping Program. 2005-2009. "A Coastal Ocean Circulation Monitoring Program for Northern and Central California" PIs Newell Garfield, Mark Moline ($450,770).

California Coastal Conservancy, Coastal Ocean Current Mapping Program. 2005-2008. "The Southern California Coastal Current Observing System (Radar Component)" PIs Eric Terrill, Mark Moline ($113,914).

California Coastal Conservancy, Coastal Ocean Current Mapping Program. 2005-2008. "The Southern California Coastal Current Observing System (Transition Component)" PIs Eric Terrill, Mark Moline ($82,075).

National Science Foundation, (ASE)-(DMC+INT+SIM). 2005-2009. ITR: COLLABORATIVE RESEARCH:: Designing the Next Generation CI to Operate Interactive Ocean Observatories. PIs John Orcutt, Mark Abbott, Alan Chave, John Delaney, Ed Lazowska, Mark Moline, Larry Smarr ($200,000).

Department of Defense-Office of Naval Research. 2005. "Littoral Sensors for Naval Special Forces" PIs Jim Hynes, John Penveene, Mark Moline ($20,000).

National Science Foundation. 2004-2007. "SST: An autonomous underwater blue laser system for fine-scale distributions of chlorophyll fluorescence lifetimes and yields." PIs Mark Moline and Thomas Bensky ($620,171).

National Oceanic and Atmospheric Administration. 2004-2005. "SCCOOS: Shelf to Shoreline Observatory Development" PIs Eric Terrill, Mark Moline ($173,505).

National Science Foundation Coastal Ocean Processes Program. 2003-2008. "COLLABORATIVE RESEARCH: Lagrangian studies of the transport, transformation, and biological impact of nutrients and contaminant metals in an buoyant plume. Robert Chant, Scott Glenn, Oscar Schofield, John Reinfelder, John Wilkins, Mark Moline, Robert Chen, Thomas Frazer, Mung Zuo, Paul Bissett ($397,242).

Department of Defense-Office of Naval Research, Optics and Biology Section. 2003-2006. "Quantification of Littoral Bioluminescence Structure and Induced Water Leaving Radiance." PI Mark Moline ($254,122).

National Oceanic and Atmospheric Administration. 2003-2005. "Distributed Detection and Adaptive 3-D Mapping of Harmful Algal Blooms Incorporating Autonomous Underwater Vehicles." PIs Gary Kirkpatrick, Oscar Schofield, Scott Glenn, Mark Moline, Clayton Jones ($70,000).

National Oceanic and Atmospheric Administration. 2002-2005. "Validation of Hyperspectral Remote Sensing along the Central California Coast and Development of a Coastal Marine Information System" PI Mark Moline ($1,059,611).

California Regional Water Quality Control Board. 2002-2005. "Continuous Real-Time Monitoring of Environmental Threats to Water Quality in San Luis Obispo Bay, CA" PI Mark Moline ($107,500).

National Science Foundation Engineering Development Award 2002-2003. "Development of Nested, Autonomous Phytoplankton Monitoring Technology" Gary Kirkpatrick, Oscar Schofield, Scott Glenn, Mark Moline, Clayton Jones ($81,305).

National Aeronautics and Space Administration – Presidential Early Career Award for Scientists and Engineers (PECASE). 2002-2004. "Adaptive sampling of phytoplankton responses to episodic physical forcing in the nearshore coastal ocean: Characterizing the significance of convergences in upwelling eddies." PI Mark Moline ($200,000).

Department of Defense-Office of Naval Research, Ocean Optics Section 2002 to 2003 "Renewal of Hyperspectral remote sensing of the coastal ocean: Adaptive sampling and forecasting of nearshore in situ optical properties" PIs Oscar Schofield, Scott Glenn, Dale Haidvogel, Frederick Grassle, Paul Bissett, Mark Moline ($110,266).

Department of Defense-Office of Naval Research –Young Investigator Award. 2000-2003. "High-resolution structure of bioluminescence potential in the nearshore coastal waters." PI Mark Moline ($458,422).

National Ocean Partnership Program (NOPP) 2000 to 2002 "Renewal of Multi-scale model-driven sampling with autonomous systems at a national littoral laboratory" PIs Scott Glenn, Oscar Schofield, Frederick Grassle, Dale Haidvogel, Edward Levine, Donald Barrick, Belinda Lipa, Mark Moline ($20,000).

National Aeronautics and Space Administration. 2001. "Dynamic Small-Scale Structure and Remote Sensing in the Coastal Ocean using NASA's Hyperspectral AVIRIS sensor." PI Mark Moline and Curtis Davis ($22,000).

California Department of Health. 2000-2003 "The Morro Bay genetic fingerprint study." PIs Chris Kitts and Mark Moline ($250,000).

National Aeronautics and Space Administration and Department of Defense-Office of Naval Research-Ocean Optics Section. 2000. Round robin pigment calibration exercise" PI Mark Moline ($1,500).

Environmental Protection Agency – Morro Bay National Estuary Program. 2000. "Eelgrass as an indicator species in Morro Bay Estuary" PI Mark Moline ($22,000).

Department of Defense-Office of Naval Research, Biology and Chemistry Section. 2000. "Zooplankton and Phytoplankton Contributors to Bioluminescence in Monterey Bay: Measurement and predictability across a near-shore coastal front." PI Mark Moline ($23,189).

Department of Defense-Office of Naval Research, Biology and Chemistry Section 1999-2001. "High-resolution temporal sampling of the nearshore vertical structure of bioluminescence.) PI Mark Moline and James Case ($170,373).

Department of Defense-Office of Naval Research, Ocean Optics Section 1999-2001 "Hyperspectral remote sensing of the coastal ocean: Adaptive sampling and forecasting of nearshore in situ optical properties" PIs Oscar Schofield, Scott Glenn, Dale Haidvogel, Frederick Grassle, Paul Bissett, Mark Moline, Chris von Alt ($256,602).

National Aeronautics and Space Administration – New Investigator Program. 1998-2001. "Adaptive sampling of phytoplankton responses to episodic physical forcing in the nearshore coastal ocean: Characterizing the significance of convergences in upwelling eddies." PI Mark Moline ($293,638).

National Science Foundation – Office of Polar Programs. 1998. Travel Grant for Gordon Conference. PI Mark Moline ($500).

National Science Foundation – Office of Polar Programs. 1998. "Travel Grant for the 7th Scientific Committee on Antarctic Research Symposium in Christchurch, New Zealand." PI Mark Moline ($1,500).

Department of Defense-Office of Naval Research, Models and Prediction Section. 1998. "Coastal Ocean Modeling and Observation Program: Real-Time Adaptive Sampling" PIs Scott Glenn, Dale Haidvogel, Oscar Schofield – Subcontract to Mark Moline ($23,000).

Teaching Grants *($116,419 awarded)*

National Science Foundation-Ocean Sciences. 2007-2008. Publication of Special Edition of Limnology and Oceanography. PI Mark Moline ($80,000).

Pacific Gas and Electric. 1998. Student work study program at the marine facility at Diablo Canyon. PIs Mark Moline ($10,000).

Pacific Gas and Electric. 1998. Student work study program at the marine facility at Diablo Canyon. PIs Mark Moline ($26,419).

Infrastructure Grants *($425,700 awarded)*

University of Delaware, UNIDEL Foundation. 2015-2016. "Equipment for the R/V Joanne Daiber." PI Targett and Moline ($225,000).

National Science Foundation-Facilities. 2002-2006. "Construction of a Seawater System for California Polytechnic State University's Marine Education and Research Center" PI Mark Moline and Nikki Adams ($200,000).

Pacific Gas and Electric. 1999. Community Grant for Aquarium Display. PI Mark Moline ($5,700).

Internal *($1,420,793 awarded)*

University of Delaware, UNIDEL Foundation. 2015-2017. "Rapid Prototyping and Data Fusion Technology." PI Targett, Moline, Trembanis, Oliver ($529,000).

University of Delaware, UNIDEL Foundation. 2012-2014. "Enhancement of Underwater Robotics Capacity." PI Mark Moline ($750,000).

California Polytechnic State University, California Central Coast Research Partnership. 2005-2006. "High Bandwidth Imagery and Data Fusion Geospatial Infrastructure." PI Mark Moline ($89,500).

California Polytechnic State University, California Central Coast Research Partnership. 2002-2004. "Access to the Central Coast's Marine Environment Through A Real-time/Archived Data Interface." PI Mark Moline ($25,131).

California Polytechnic State University-State Faculty Support Grant. 2001. "Bacterial community structure in marine environments" PIs Mark Moline and Chris Kitts ($5,000).

California Polytechnic State University-State Faculty Support Grant. 2000. "Bacterial community structure in marine environments" PIs Dr. Chris Kitts and Mark Moline ($4,861).

California Polytechnic Foundation-University Services Summer Grant. 2000. "Bioluminescence Biotechnology" PI Mark Moline ($5,000).

California Polytechnic Foundation. 1998. "Travel Grant for the 7th Scientific Committee on Antarctic Research Symposium in Christchurch, New Zealand" PI Mark Moline ($2,000).

California Polytechnic State University, Research and Development Committee. 1998. Faculty Development Grant. PI Mark Moline ($4,301).

California Polytechnic State University, Research and Development Committee. 1998. "Coastal Research" PI Mark Moline ($2,000).

California Polytechnic State University, Research and Development Committee. 1998. "Course, Curriculum and Laboratory Improvement grant writing" PI Mark Moline ($4,000).

Society Memberships

American Society of Limnology and Oceanography, Phycological Society of America, The Oceanography Society, Alliance for Marine Remote Sensing Association, Project Kaleidoscope Faculty for the 21st Century

Professional Service

2014-Present UD Representative, University National Oceanographic Laboratory

2006-Present Senior Fellow, California Council on Science and Technology
2010 Delegate, 1st US Science Delegation to Viet Nam
2007-2009 Associate Editor, AGU Journal of Geophysical Research - Oceans
2006 Chair, NSF - NURP Committee on ALPS development
2003-2007 Executive Steering Committee, NSF Ocean Observatories Imitative

Field Expeditions *(Only expeditions > 1 week, over 140 1-3 day expeditions)*

2018 R/V Norseman II, Kiska Island, AK Underwater Survey.
Federated States of Micronesia (2 weeks). Underwater Survey.
2017 Papua New Guinea (6 weeks). MIA search efforts
Fiji (2 weeks). MIA search efforts
Greece (3 weeks). MIA search efforts
2016 Palau (3 weeks). MIA search efforts
Scotland (2 weeks). MIA search efforts
Marianas Islands (2 weeks). MIA search efforts
Solomon Islands (3 weeks). MIA search efforts
2015 Palau (4 weeks). MIA search efforts
Svalbard, Norway (4 weeks). Polar night studies
R/V Sharp, Tongue of the Ocean, Bahamas (3 weeks). Mapping whale prey
R/V Sharp, Mid-Atlantic Shelf (1 weeks). NSF – Chief Scientist Training Cruise
2014 Palau (4 weeks). Hydrodynamics in coral reef systems and STEM search efforts
Svalbard, Norway (4 weeks). Polar night studies
Cayman Islands (1 week). Coral reef ecosystems
2013 R/V New Horizon, Southern California Coast (2 weeks). Mapping whale prey
Central California Coast (2 weeks). Hydrodynamic flows
R/V Sharp, Mid-Atlantic Shelf (1 week). Evaluation of artificial reefs
Palau (2 weeks). Hydrodynamics in coral reef systems and STEM search efforts
2012 Cayman Islands (1 week). Coral reef ecosystems
Palau (2 weeks). Sampling of hydrodynamics in coral reef systems
2011 Longyearbyen, Spitzbergen (6 months). Fulbright Arctic Chair. Climate impacts on Arctic biology
Ningaloo Reef, Western Australia (2 weeks). Mapping coral and seagrass communities
Palau (3 weeks). Sampling of hydrodynamics in coral reef systems
Palmer Station, Antarctica (6 weeks). Penguin foraging habitats
2010 Vietnam (1 week). Evaluation of oceanographic capacity
Monterey Bay (3 weeks). Adaptive sampling with autonomous platforms
M/V Jan Mayen Greenland Sea (3 weeks). Sea ice biology and mapping
Norway (2 weeks). Underwater robotics
Palau (2 weeks). Autonomous vehicle sampling of coral reef systems
Svalbard, Norway (4 weeks). Polar night studies
2009 R/V Kilo Moana Hawaiian Islands (1 week). Autonomous platforms
R/V Knorr Hawaiian Island (1 week). Adaptive sampling with autonomous platforms
Svalbard, Norway (4 weeks). Climate change research
2008 Monterey Bay (6 weeks). Adaptive sampling with autonomous platforms
Svalbard, Norway (6 weeks). Light and primary production
2007 Svalbard, Norway (4 weeks). Climate change research

R/V Sharp, North Atlantic (2 weeks) Ocean optics

2006 Penobscot River Mouth, Maine (1 week) CDOM distributions in near shore waters
San Pedro Bay, California (4 weeks) Near shore distributions of biological material
Monterey Bay (1 week) GOES-R glider deployments
Monterey Bay (4 weeks) Adaptive sampling with autonomous platforms
Monterey Bay (2 weeks) Layered organization in the coastal ocean
Sequim Bay (1 week) Near shore dynamics/Dye tracking
R/V Oceanus Mid-Atlantic Bight (2 weeks) Lagrangian transport and transformation experiment

2005 Sequim Bay (1 week) Near shore dynamics/Bathymetry
R/V Oceanus Mid-Atlantic Bight (2 weeks) Lagrangian transport and transformation experiment
Southern California Bight (1 week) Autonomous vehicle operations – Internal tides/wastewater outfalls
West Florida Shelf (2 weeks) Autonomous vehicle operations for detecting the presence of red-tide

2004 R/V Connecticut Mid-Atlantic Bight (1 week) Lagrangian transport and transformation experiment (Chief Scientist)
West Florida Shelf (2 weeks) Autonomous vehicle operations for detecting the presence of red-tide

2003 Monterey Bay (2 weeks) Autonomous oceanographic sampling networks II
West Florida Shelf (2 weeks) Autonomous vehicle operations for detecting the presence of red-tide

2002 Monterey Bay (1 week) Autonomous oceanographic sampling networks II

2001 R.V. Walford, Mid-Atlantic Bight (4 weeks) Hyperspectral Remote Sensing

2000 R.V. Walford, Mid-Atlantic Bight (6 Weeks) Hyperspectral Remote Sensing
R/V Shane Rae, Monterey Bay (2 weeks) Bioluminescence distributions in the coastal ocean

1999 R/V Walford, Mid-Atlantic Bight Coastal Predictive Skill Experiments off New Jersey (4 weeks) Impact of upwelling coastal optical properties

1998 R/V Caleta, Mid-Atlantic Bight (6 weeks) Coastal predictive skill experiments

1997 R/V Caleta, Mid-Atlantic Bight (6 weeks) Coastal predictive skill experiments
OSV Anderson, West Florida Shelf (2 weeks) Physiology of natural populations of toxic *Gymnodinium breve* red-tides

1994 R/V Polar Duke, Bellinghausen Sea (8 weeks) Long-term ecosystem research

1993 Palmer Station, Antarctica (16 weeks) Long-term ecosystem research
R/V Polar Duke, Bellinghausen Sea (14 weeks) Impact of Antarctic ozone hole of phytoplankton physiology
R/V Polar Duke, Bellinghausen Sea (4 weeks) Long-term ecosystem research

1992 Palmer Station, Antarctica (36 weeks) Long-term ecosystem research
R/V Polar Duke, Bellinghausen Sea (4 weeks) Long-term ecosystem research

1991 Palmer Station, Antarctica (36 weeks) Long-term ecosystem research

1990 R/V Polar Duke, Bellinghausen Sea (12 weeks) Impact of Antarctic ozone hole of spring phytoplankton blooms
Amazon River Basin, Brazil (20 weeks) Floodplain Ecology

1989 Amazon River Basin, Brazil (36 weeks) Floodplain Ecology

1988 Amazon River Basin, Brazil (16 weeks) Floodplain Ecology

1986 Lizard Island, Australia (4 weeks) Crown of thorns starfish ecology
1985 McMurdo Station, Antarctica (20 weeks) Phytoplankton physiology and ecology
R/V Cape Hatteras, Sargasso Sea (2 weeks) Phytoplankton physiology and ecology.
R/V Warfield, Chesapeake Bay (1 week) Phytoplankton physiology and ecology.

Consulting

2008-2016 Development of a Tactical Bioluminescence Sensor for Wetlabs Inc.
2006-2007 CDOM Distributions in Near Shore Waters for Wetlabs Inc.
2005-2006 Tidal Dynamics in Shallow Near Shore Environments for Battelle, Sequim Bay, Washington
2003-2005 Time Series Sampling Approaches for Tenera Environmental, San Luis Obispo, California
2000 Thermal Effects of the Morro Bay Power Plant for Coastal Alliance, Morro Bay, California
1999-2000 Thermal Effects of Diablo Canyon Nuclear Power Plant for Tenera Environmental, San Luis Obispo, California
1997 Optical characterization of the Suwannee River, Florida for Dr. Tom Frazer, University of Florida, Gainesville Florida

TEACHING

Courses Taught

MAST 100	Marine Biology Colloquium Lecture	F'12, F'13, F'14, F'15, F'17, F'18
MAST 410	Scientific Diving	W'14
MAST 443	Field Studies of Coral Reef Environments	W'14
MAST 467	AAUS Certification	W'14
BIO 328	Marine Biology	W'98, F'98, F'99, F'00, F'01, W'06
BIO 342	Computer Applications in Biology	F'98, S'99, S'00
BIO 465	Communicating Biology	W'99
BIO 570	Selected Topics in Biology	F'03
BIO 590	Graduate Seminar	F'98, F'99, S'02
BIO 461	Senior Project-Proposal Writing	F'07, W'08, F'09, S'11
BOT 328	Phycology	S'98, S'99, S'00, S'01, W'05, W'08, S'10
SCM 330	Ocean Discovery Through Technology	W'05, W'06, W'08, S'10, S'11

Curriculum Development

2012 Course Development MAST 410 – Scientific Diving
2012 Course Development MAST 443 – Field Studies of Coral Reef Environments
2012 Course Development MAST 467 – AAUS Certification
2004 Course Development SCM 330 Ocean Discovery Through Technology (GE Area F – Technology)
2003 Course Development SCM 330x Ocean Discovery Through Technology (GE Area F – Technology)
2002 Courses Development (w/ D. Kiel and F. Villablanca) (BIO 391, 392, 393, 394) Field Spring
1999 Major Course Revision BIO 328 Marine Biology
1998 Course Development BIO 465 Communicating Biology
1998 Major Course Revision BOT 437 Phycology

Post-Doctoral Advisor

Andrew Pietruszka, PhD Underwater Forensics and Archeology (2015-2016)
Andrea Baker, PhD Oligonucleotide primers for the Detection of Bioluminescence (2007)

Graduate Advisor

Jason Button, A Characterization of a Newly Discovered Mesophotic Coarl Reef in Palau (2015-2017).
Heather Cronin (co-advisor), Behavioral response of zooplankton to bioluminescence (2013-2015).
Anniken Lydon, Gene flow between populations of Laminaria digitata along Spitzbergen and mainland Norway (2008-2015).
James Kelley, Increasing Lipid Production in Freshwater Algae (2009-2013)
Sam Rankin, Coexisting Phytoplankton Community with Toxic Algal Species Along the California Coast (2008-2012).
Johanna Weston, Nitrogen Budgets in a Coastal Estuary (2008-2012)
Marc Tognazinni, Residence Times on Structuring Phytoplankton Communities (2003-2009)
Jenn Yost, Phytoplankton Community Structure and Dynamics Within a Buoyant River Plume (2005-2007)
Jessica Connolly, Exploring the Evolutionary Implications of Diatom (Bacillariophyceae) Genome Size Variation (2003-2006)
Noah Doughty, Spatial and Temporal Variations in Zostera marina Response to Environemental Change: An Assessment of a Possible Bioindicator in Morro Bay Estuary (2000-2006)
Michael Sauer, Airbourne Hyperspectral Remote Sensing of Salt marsh Vegetation in Morro Bay Estuary, California (2002-2006)
Erika Heine, Mechanisms Structuring Bioluminescence in Near-Shore Waters (1999-2005)
Ian Robbins, Improved Monitoring of HABs using Autonomous Underwater Vehicles (AUVs) (2002-2005)
Shelley Blackwell, A New Platform for Studying Bioluminescence in the Coastal Ocean (2000-2002)
Cristina Orrico, *In Situ* Classification of Phytoplankton in Optically Complex Coastal Waters (2000-2002)
Matthew Oliver, Estimation of Phytoplankton Production in Dynamic Coastal Waters: An Integrated Physical, Bio-optical and Physiological Approach. (1999-2001)
Mark Demarest, Bacterial community Heterogeneity Along Surface Waters of the Pacific Ocean (1998-2000)

Graduate Thesis Committee Member

Mathew Breece, Demographics and habitat use of Atlantic Sturgeon. (PhD awarded 2017)
Megan Cimino, Climate drivers for the distribution of Adelie Penguins. (PhD awarded 2016)
Andrew Collins, Spatial and Temporal Controls on the Inorganic Carbon System of the Western Arctic Ocean in 2014. (M.S. awarded 2016)
Erlend Hovland, Optical properties and distribution of coccolithophorids in the Barents Sea. Graduated (PhD awarded 2012).
Carolyn Ewers, Photophysiology of *Zostera marina* in Morro Bay, CA. (MS awarded 2013)

Sarah Gravem, SEX AND MICROHABITAT INFLUENCE THE ALLOCATION OF MYCOSPORINE-LIKE AMINO ACIDS TO TISSUES IN THE PURPLE SEA URCHIN, *STRONGYLOCENTROTUS PURPURATUS* (M.S. awarded 2009)

John Becker, An Automated Ocean Profiler for the California Polytechnic State University Center for Coastal Marine Science (M.S. awarded 2005)

Collin Johnson, Does Dissolved Organic Matter (DOM) Matter? Assessing the Realized Energetic and Ecological Benefit of DOM Transport to the Marine Bryozoan *Bugula neritina* (M.S. awarded 2005)

Cowell, Stephanie, Environmental Factors Influencing Marine Bacterial Community Structure in the Western Pacific Ocean (M.S. awarded 2003)

John Kerfoot, Effect of UV Radiation on Dinoflagellate Physiology in Coastal Regions. (M.S. awarded 2003)

Dan Dugan, Crab ecology on oil platforms. (M.S. awarded 2001)

Undergraduate Senior/Honors Thesis Advisor

Michael McGullough, A Fan of Fungus: An Ecological Survey of *Gorgonia ventalina* and *G.flabellum* around Little Cayman.

Mellisa Accolla, Fibropapillomas in the Hawaiian green Sea Turtle (*Chelonia mydas*)

Carol Boland, Phytoplankton Time Series in San Luis Obispo Bay.

Katie Brown, Phytoplankton distributions in the South Pacific.

Debbie Calson, Phytoplankton distributions in the South Pacific.

Melinda Chambers, Analyses of Elephant Seal Vocalizations and Behavior.

Megan Cimino, Phytoplankton Community Structure Along the Antarctic Peninsula

Gery Cox, Temporal Settlement Patterns of Marine Invertebrates in Morro Bay

Avery Cromwel, Calibration of HF RADAR Systems

Jennifer Cummings, Bacterial Communities along the Eastern Pacific

Rich Davidson, Sedimentation Patterns in Estero Bay.

Annette Felice, Phytoplankton Distributions in San Luis Obispo Bay

Carie Fitzgerald, Biological Responses to Dynamic Physical and Chemical Environments in Tidepools: A Web-Based Approach.

Heather Garcia, Techniques in Microbial Diversity

Moritz Gavin, Biological Responses to Dynamic Physical and Chemical Environments in Tidepools: A Web-Based Approach.

Drew Grey, ROV Deployments in San Luis Obispo Bay

Rebecca Hogan, Coral Reef Fish Behavior of Hawaii

Angela Holbrook, Phytoplankton distributions in the South Pacific.

Tyler Holland, Phytoplankton distributions in the South Pacific.

Rietta Holman, Phytoplankton Identification and Growth

Jeff Jones, Bacterial Communities in the Caribbean.

Amy Langston, Bioluminescence in Coastal Systems

Kevin Lew, Development of a Web-based Phycology Key.

James Madison, Time Series of Remote Sensing Reflectance

Jennifer Masters, Bacterial Communities along the Eastern Pacific.

Robyn Matteson, Phytoplankton distributions in the South Pacific.

Kaylene McFarland, Elephant Seal Mating Preferences and Behavior.

Allison Millhollen, Phytoplankton Assemblages in the North Pacific

Daryl Mitani, Development of a Laboratory Manual For Marine Biology.

Bret Moore, Temporal Dynamics of Phytoplankton in Estero Bay.
Erin Moore, Microbial Diversity along the Central Coast.
Daniel Muhr, Development of a Web-based Phycology Key.
Meghan Murphy, Phytoplankton Distributions along the California Coast
Melissa Naylor, Microbial Diversity along the Central Coast.
Kelly Newton, Identification and Dynamics of Net Phytoplankton in the Pacific Ocean.
Taylor Newton, Phytoplankton Pigmentation and Remote Sensing in the Pacific Ocean.
Wendy Nicholas, Phytoplankton Assemblages in the North Pacific
Matt Oliver, Behavior of the Octopus *Vugarus* in the Rocky Intertidal.
Jessica Pearson, Temporal Dynamics in Estuary-Ocean Exchange: Sedimentation and Productivity
Nova Perrill, Remote Sensing of the Pacific Ocean
Erika Peters, Particulate Organic Carbon Sources in Coastal Regions.
Shelley Peters, Marine Educational Materials for Grades 5 & 6 at Diablo Canyon Marine Biology Laboratory
Dwight Peterson, 3-D Visualization of Oceanographic Databases.
Anne Pimentel, Identification and Dynamics of Net Phytoplankton in the Pacific Ocean.
Caitrin Phillips, AUV Deployments in Huntington Beach
Ryan Roe, Ecology and Population Dynamics of Stingray Populations off Hunington Beach, California.
Jeff Sevajian, Nearshore Ocean Currents Measured with an AUV
Jill Shook, Female-Female Pinniped Communication
Dorinda Shoemaker, Coastal Bioluminescence
Jennifer Spahr, Bacterial Communities along the Eastern Pacific.
Chelsea Talmadge, Temporal Dynamics of Phytoplankton in Estero Bay.
Erika Tillman, Development of a Web-based Phycology Key.
Tim Tringali, Techniques in Microbial Diversity
Jared Varonin, Temporal Dynamics of Zooplankton and Invertebrate Larvae in Estero Bay.
Charles Villafana, Distribution and Temporal Patterns in Elephant Seal Colonization of Piedras Blancas
John Wakeman, Dentistry Research Internship.
Stacie Wellman, Algal Infestation
Brian Wenzel, Beach Site Fidelity in the Northern Elephant Seal, *Mirounga angustirostris*
Eric Wilkins, Temporal Settlement Patterns of Marine Invertebrates in Morro Bay