

## MICHAEL S. DINNIMAN

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**Present Title and Address:** Research Scientist  
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**Degrees:** B.A. w/ High-Distinction (Astronomy-Physics), University of Virginia, 1987  
M.S. (Meteorology), University of Maryland, 1996

**Research Interests:** *Numerical modeling of ocean and ice physical processes in oceanic and coastal regions, modeling of coupling between physical and biological processes in marine environments*

### **Professional Experience:**

<i>June 1987 - June 1988</i>	Research Assistant, Department of Astronomy, University of Arizona
<i>Aug. 1988 - Mar. 1993</i>	Systems Analyst, Hughes Training Incorporated
<i>Mar. 1993 - Aug. 1994</i>	Systems Analyst, Cambridge Research Associates
<i>Sep. 1994 - Aug. 1996</i>	Research Assistant, Department of Meteorology, University of Maryland
<i>Sept. 1996 - Oct. 1998</i>	Senior Scientist, Raytheon STX
<i>Nov. 1998 - present</i>	Research Scientist, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University

**Professional and Honorary Societies:** American Geophysical Union  
American Meteorological Society

### **Reviewed Publications:**

(<https://scholar.google.com/citations?user=kyuXeF8AAAAJ&hl=en>)

- Gwyther, D.E., K. Kushara, X.S. Asay-Davis, M.S. Dinniman, and B.K. Galton-Fenzi, 2020. Vertical processes and resolution impact ice shelf basal melting: A multi-model study, *Ocean Modelling*, 147, 101569, doi:10.1016/j.ocemod.2020.101569.
- Brearley, J.A., C. Moffatt, H.J. Venables, M.P. Meredith, and M.S. Dinniman, 2019. The role of eddies and topography in the export of shelf waters from the West Antarctic Peninsula shelf. *Journal of Geophysical Research*, 124, 7718-7742, doi:10.1029/2018JC014679.
- Mack, S.L., M.S. Dinniman, J.M. Klinck, D.J. McGillicuddy, Jr., and L. Padman, 2019. Modeling ocean eddies on Antarctica's cold water continental shelves and their effects on ice shelf basal melting. *Journal of Geophysical Research*, 124, 5067-5084, doi:10.1029/2018JC014688.

- Piñones, A., E.E. Hofmann, D.P. Costa, K. Goetz, J.M. Burns, F. Roquet, M.S. Dinniman and J.M. Klinck, 2019. Hydrographic variability along the inner and mid-shelf region of the western Ross Sea obtained using instrumented seals. *Progress in Oceanography*, 174, 131-142, doi:10.1016/j.pocean.2019.01.003.
- St-Laurent, P., P.L. Yager, R.M. Sherrell, H. Oliver, M.S. Dinniman, and S.E. Stammerjohn, 2019. Modeling the seasonal cycle of iron and carbon fluxes in the Amundsen Sea Polynya, Antarctica. *Journal of Geophysical Research*, 124, 1544-1565, doi:10.1029/2018JC014773.
- Greer, A.T., A.M. Shiller, E.E. Hofmann, J.D. Wiggert, S.J. Warner, S.M. Parra, C. Pan, J.W. Book, D. Joung, S. Dykstra, J.W. Krause, B. Dzwonkowski, I.M. Soto, M.K. Cambazoglu, A.L. Deary, C. Briseno-Avena, A.D. Boyette, J.A. Kastler, V. Sanial, L. Hode, U. Nwankwo, L.M. Chiaverano, S.J. O'Brien, P.J. Fitzpatrick, Y.H. Lau, M.S. Dinniman, K.M. Martin, P. Ho, A.K. Mojziz, S.D. Howden, F.J. Hernandez, I. Church, T.N. Miles, S. Sponaugle, J.N. Moum, R.A. Arnone, R.K. Cowen, G.A. Jacobs, O. Schofield, and W.M. Graham, 2018. Functioning of coastal river-dominated ecosystems and implications for oil spill response: From observations to mechanisms and models. *Oceanography*, 31(3), 90-103, doi:10.5670/oceanog.2018.302.
- Dinniman, M.S., Klinck, J.M., Hofmann, E.E. and Smith, W.O. Jr., 2018. Effects of projected changes in wind, atmospheric temperature, and freshwater inflow on the Ross Sea. *Journal of Climate*, 31, 1619-1635, doi:10.1175/JCLI-D-17-0351.1.
- Davis, L.B., E.E. Hofmann, J.M. Klinck, A. Piñones, and M.S. Dinniman, 2017. Distributions of krill and Antarctic silverfish and correlations with environmental variables in the western Ross Sea, Antarctica. *Marine Ecology Progress Series*, 584, 45-65, doi:10.3354/meps12347.
- Ashford, J., M. Dinniman, and C. Brooks, 2017. Opinion Paper - Physical-biological interactions influencing large toothfish over the Ross Sea shelf. *Antarctic Science*, 29, 487-494, doi:10.1017/S0954102017000359.
- St-Laurent, P., P.L. Yager, R.M. Sherrell, S.E. Stammerjohn, and M.S. Dinniman, 2017. Pathways and supply of dissolved iron in the Amundsen Sea (Antarctica). *Journal of Geophysical Research*, 122, 7135-7162, doi:10.1002/2017JC013162.
- Kaufman, D.E., M.A.M. Friedrichs, W.O. Smith, Jr., E.E. Hofmann, M.S. Dinniman, and J.C.P. Hemmings, 2017. Climate change impacts on southern Ross Sea phytoplankton composition, productivity and export. *Journal of Geophysical Research*, 122, 2339-2359, doi:10.1002/2016JC012514.
- Li, Y., D.J. McGillicuddy, M.S. Dinniman, and J.M. Klinck, 2017. Processes regarding formation of low-salinity high-biomass lenses near the edge of the Ross Ice Shelf. *Journal of Marine Systems*, 166, 108-119, doi:10.1016/j.jmarsys.2016.07.002.
- Mack, S.L., M.S. Dinniman, D.J. McGillicuddy, Jr., P.N. Sedwick and J.M. Klinck, 2017. Dissolved iron transport pathways in the Ross Sea: Influence of tides and mesoscale eddies in a regional ocean model. *Journal of Marine Systems*, 166, 73-86, doi:10.1016/j.jmarsys.2016.10.008.
- Casatagno, P., P. Falco, M.S. Dinniman, G. Spezie and G. Budillon, 2017. Temporal variability of the Circumpolar Deep Water inflow onto the Ross Sea continental shelf. *Journal of Marine Systems*, 166, 37-49, doi:10.1016/j.jmarsys.2016.05.006.
- Dinniman, M.S., X.S. Asay-Davis, B.K. Galton-Fenzi, P.R. Holland, A. Jenkins and R. Timmermann, 2016. Modeling ice shelf/ocean interaction in Antarctica: A review. *Oceanography*, 29(4), 144-153, doi:10.5670/oceanog.2016.106.

- Gwyther, D.E., E.A. Cougnon, B.K. Galton-Fenzi, J.L. Roberts, J.R. Hunter and M.S. Dinniman, 2016. Modelling the response of ice shelf basal melting to different ocean cavity environmental regimes. *Annals of Glaciology*, 57(73), 131-144, doi:10.1017/aog.2016.31.
- Graham, J.A., M.S. Dinniman, and J.M. Klinck, 2016. Impact of model resolution for on-shelf heat transport along the West Antarctic Peninsula. *Journal of Geophysical Research*, 121, 7880-7897, doi:10.1002/2016JC011875.
- Piñones, A., E.E. Hofmann, M.S. Dinniman and L.B. Davis, 2016. Transport and fate of Euphausiids in the Ross Sea, *Polar Biology*, 39, 177-187, doi:10.1007/s00300-015-1798-5.
- Gwyther, D.E., B.K. Galton-Fenzi, M.S. Dinniman, J.L. Roberts and J.R. Hunter, 2015. An investigation of the impact of basal roughness on melting and freezing in ice shelf-ocean models, *Ocean Modelling*, 95, 38-52, doi:10.1016/j.ocemod.2015.09.004.
- St-Laurent, P., J.M. Klinck and M.S. Dinniman, 2015. Impact of local winter cooling on the melt of Pine Island Glacier, Antarctica, *Journal of Geophysical Research*, 120, 6718-6732, doi:10.1002/2015JC010709.
- McGillicuddy, D.J., P.N. Sedwick, M.S. Dinniman, K.R. Arrigo, T.S. Bibby, B.J.W. Greenan, E.E. Hofmann, J.M. Klinck, W.O. Smith, Jr., S.L. Mack, C.M. Marsay, B.M. Sohst and G.L. van Dijken, 2015. Iron supply and demand in an Antarctic shelf ecosystem, *Geophysical Research Letters*, 42, 8088-8097, doi:10.1002/2015GL065727.
- Kustka, A., J.T. Kohut, A.E. White, P.J. Lam, A.J. Milligan, M.S. Dinniman, S. Mack, E. Hunter, M.R. Hiscock, W.O. Smith, Jr. and C.I. Measures, 2015. The roles of MCDW and deep water iron supply in sustaining a recurrent phytoplankton bloom on central Pennell Bank (Ross Sea), *Deep-Sea Research Part I*, 105, 171-185, doi:10.1016/j.dsr.2015.08.012.
- Dinniman, M.S., J.M. Klinck, L-S Bai, D.H. Bromwich, K.M. Hines and D.M. Holland, 2015. The effect of atmospheric forcing resolution on delivery of ocean heat to the Antarctic floating ice shelves, *Journal of Climate*, 28, 6076-6085, doi:10.1175/JCLI-D-14-00374.1
- Queste, B.Y., K.J. Heywood, W.O. Smith, Jr., D.E. Kaufman, T.D. Jickells and M.S. Dinniman, 2015. Dissolved oxygen dynamics during a phytoplankton bloom in the Ross Sea polynya, *Antarctic Science*, 27, 362-372, doi:10.1017/S0954102014000881.
- Marsay, C.M., P.N. Sedwick, M.S. Dinniman, P.M. Barrett, S.L. Mack and D.J. McGillicuddy, 2014. Estimating the benthic efflux of dissolved iron on the Ross Sea continental shelf, *Geophysical Research Letters*, 41, 7576-7583, doi:10.1002/2014GL061684.
- Smith, Jr., W.O., K.T. Goetz, D.E. Kaufman, B.Y. Queste, V. Asper, D.P. Costa, M.S. Dinniman, M.A.M. Friedrichs, E.E. Hofmann, K.J. Heywood, J.T. Kohut and C.M. Lee, 2014. Multi-platform, multi-disciplinary investigations of the Ross Sea, Antarctica, *Oceanography*, 27(2), 180-185, doi:10.5670/oceanog.2014.36.
- Smith, Jr., W.O., M.S. Dinniman, E.E. Hoffman and J.M. Klinck, 2014. The effects of changing winds and temperatures on the oceanography of the Ross Sea in the 21st century, *Geophysical Research Letters*, 41, 1624-1631, doi:10.1002/2014gl059311.
- Smith, Jr., W.O., D.G. Ainley, K.R. Arrigo and M.S. Dinniman, 2014. The oceanography and ecology of the Ross Sea, *Annual Review of Marine Science*, 6, 469-487, doi:10.1146/annurev-marine-010213-135114.
- Stern, A.A., M.S. Dinniman, V. Zagorodnov, S.W. Tyler and D.M. Holland, 2013. Intrusion of warm surface water beneath the McMurdo Ice Shelf, Antarctica, *Journal of Geophysical Research*, 118, 7036-7048, doi:10.1002/2013JC008842.
- Piñones, A., E.E. Hofmann, K.L. Daly, M.S. Dinniman and J.M. Klinck, 2013. Modeling environmental controls on the transport and fate of early life stages of Antarctic krill

- (*Euphausia superba*) on the western Antarctic Peninsula continental shelf, *Deep-Sea Research I*, 82, 17-31, doi:10.1016/j.dsr.2013.08.001.
- Piñones, A., E.E. Hofmann, K.L. Daly, M.S. Dinniman and J.M. Klinck, 2013. Modeling the remote and local connectivity of Antarctic krill populations along the western Antarctic Peninsula, *Marine Ecology Progress Series*, 481, 69-92, doi:10.3354/meps10256.
- St-Laurent, P., J.M. Klinck and M.S. Dinniman, 2013. On the Role of Coastal Troughs in the Circulation of Warm Circumpolar Deep Water on Antarctic Shelves, *Journal of Physical Oceanography*, 43, 51-64, doi:10.1175/JPO-D-11-0237.1.
- Ashford, J., M. Dinniman, C. Brooks, A.H. Andrews, E. Hofmann, G. Cailliet, C. Jones and N. Ramanna, 2012. Does large-scale circulation structure life history connectivity in Antarctic toothfish (*Dissostichus mawsoni*)? *Canadian Journal of Fisheries and Aquatic Sciences*, 69(12), 1903-1919, doi:10.1139/f2012-111.
- Dinniman, M.S., J.M. Klinck and E.E. Hofmann, 2012. Sensitivity of Circumpolar Deep Water transport and ice shelf basal melt along the west Antarctic Peninsula to changes in the winds, *Journal of Climate*, 25, 4799-4816, doi:10.1175/JCLI-D-11-00307.1.
- Mueller, R.D., L. Padman, M.S. Dinniman, S.Y. Erofeeva, H.A. Fricker, M.A. King, 2012. Impact of tide-topography interactions on basal melting of Larsen C Ice Shelf, Antarctica, *Journal of Geophysical Research*, 117, C05005, doi:10.1029/2011JC007263.
- Padman, L., D.P. Costa, M.S. Dinniman, H.A. Fricker, M.E. Goebel, L.A. Huckstadt, A. Humbert, I. Joughin, J.T.M. Lenaerts, S.R.M. Ligtenberg, T. Scambos and M.R. van den Broeke, 2012. Oceanic controls on the mass balance of Wilkins Ice Shelf, Antarctica, *Journal of Geophysical Research*, 117, C01010, doi:10.1029/2011JC007301.
- Dinniman, M.S., J.M. Klinck and W.O. Smith, Jr., 2011. A model study of Circumpolar Deep Water on the West Antarctic Peninsula and Ross Sea continental shelves, *Deep-Sea Research II*, 58, 1508-1523, doi:10.1016/j.dsr2.2010.11.013.
- Piñones, M.A., E.E. Hofmann, M.S. Dinniman and J.M. Klinck, 2011. Lagrangian simulation of transport pathways and residence times along the western Antarctic Peninsula, *Deep-Sea Research II*, 58, 1524-1539, doi:10.1016/j.dsr2.2010.07.001.
- Smith, Jr., W.O., M.S. Dinniman, S. Tozzi, G.R. DiTullio, O. Mangoni, M. Modigh and V. Saggiomo, 2010. Phytoplankton photosynthetic pigments in the Ross Sea: Patterns and relationships among functional groups, *Journal of Marine Systems*, 82, 177-185, doi:10.1016/j.jmarsys.2010.04.014.
- Klinck, J.M. and M.S. Dinniman, 2010. Exchange across the shelf break at high southern latitudes, *Ocean Science*, 6, 513-524, doi:10.5194/os-6-513-2010.
- Costa, D.P., J.M. Klinck, E.E. Hofmann, M.S. Dinniman and J.M. Burns, 2008. Upper ocean variability in west Antarctic Peninsula continental shelf waters as measured using instrumented seals, *Deep-Sea Res. II*, 55, 323-337, doi:10.1016/j.dsr2.2007.11.003.
- Crouch, J.R., Y. Shen, J.A. Austin and M.S. Dinniman, 2008. An educational interactive numerical model of the Chesapeake Bay, *Computers and Geosciences*, 34, doi:10.1016/j.cageo.2007.03.017.
- Dinniman, M.S., J.M. Klinck and W.O. Smith, Jr., 2007. Influence of Sea Ice Cover and Icebergs on Circulation and Water Mass Formation in a Numerical Circulation Model of the Ross Sea, Antarctica, *Journal of Geophysical Research*, 112, C11013, doi:10.1029/2006JC004036.

- Smith, Jr., W.O., A.R. Shields, G. Catalano, J.A. Peloquin, S. Tozzi, M.S. Dinniman and V.A. Asper, 2006. Interannual Variations in Nutrients, Net Community Production, and Biogeochemical Cycles in the Ross Sea, *Deep-Sea Research II*, 53, 815-833.
- Dinniman, M.S. and J.M. Klinck, 2004. A model study of circulation and cross shelf exchange on the west Antarctic Peninsula continental shelf, *Deep-Sea Research II*, 51, 2003-2022.
- Dinniman, M.S., J.M. Klinck and W.O. Smith, Jr., 2003. Cross shelf exchange in a model of the Ross Sea circulation and biogeochemistry, *Deep-Sea Research II*, 50, 3103-3120.
- Smith, W.O., Jr., M.S. Dinniman, J.M. Klinck and E.E. Hofmann, 2003. Biogeochemical climatologies in the Ross Sea, Antarctica: Seasonal patterns of nutrients and biomass, *Deep-Sea Research II*, 50, 3083-3101.
- Allen, S.E., M.S. Dinniman, J.M. Klinck, D.D. Gorby, A.J. Hewett and B.M. Hickey, 2003. On Vertical Advection Truncation Errors in Terrain-Following Numerical Models: Comparison to a Laboratory Model for Upwelling over Submarine Canyons, *Journal of Geophysical Research*, 108, doi:10.1029/2001JC000978.
- Dinniman, M.S. and J.M. Klinck, 2002. The Influence of Open versus Periodic Alongshore Boundaries on Circulation near Submarine Canyons, *Journal of Atmospheric and Oceanic Technology*, 19, 1722-1737.
- Dinniman, M.S. and M.M. Rienecker, 1999. Frontogenesis in the North Pacific Oceanic Frontal Zones - A Numerical Simulation, *Journal of Physical Oceanography*, 29, 537-559.

**Presentations Last Five Years (\*denotes invited):**

- Dinniman, M.S., C. Bouchard, M.K. Cambazoglu, and J. Wiggert. The impact of diurnal winds on exchange through barrier island passes into the Mississippi Sound. CERF 2019 25th Biennial Conference, November 2019.
- Wiggert, J., C. Bouchard, M. Dinniman, M.K. Cambazoglu, S. O'Brien, P. Fitzpatrick, S. Milroy, and E. Hofmann. Influence of Tidal Inlet Exchange on the Marine Ecosystem and Biogeochemistry of the Mississippi Bight. CERF 2019 25th Biennial Conference, November 2019.
- Cambazoglu, M.K., S. O'Brien, J. Wiggert, M.S. Dinniman, and T.N. Miles. Seasonal sediment transport in estuarine waters of Mississippi Sound and shelf waters of Mississippi Bight. CERF 2019 25th Biennial Conference, November 2019.
- Kohut, J., H. Statscewich, M. Oliver, E. Fredj, J. Klinck, M. Dinniman, W. Fraser, K. Bernard, and P. Winsor. Project SWARM: The application of an integrated polar ocean observing system to map the physical mechanisms driving food web focusing in an Antarctic biological hotspot. Oceans 2019 Seattle Conference, October 2019.
- Riverman, K., D. Sutherland, R. Obermeyer, B. Aguiar-Gonzalez, C. Moffat, M. Dinniman, and J. Klinck. Grounding zone depth modulates oceanic control on glacier terminus retreat along the west Antarctic Peninsula. FRISP Workshop 2019, September 2019.
- Dinniman, M., P. St-Laurent, K. Arrigo, E. Hofmann, and G. van Dijken. Direct and indirect contributions of ice shelves to micronutrient supply to the surface waters around Antarctica. FRISP Workshop 2019, September 2019.
- Salmon, E., E.E. Hofmann, M.S. Dinniman, W. Smith. Modelling Southern Ocean primary productivity change with climatic change. 2019 IMBER Open Science Conference, June 2019.

- Brearley, J.A., C. Moffat, H.J. Venables, M.P. Meredith, and M.S. Dinniman. Meander-Driven Export of Shelf Water in the West Antarctic. AMS 15<sup>th</sup> Conference on Polar Meteorology and Oceanography, May 2019.
- Sherrell, R.M., P. Yager, H. Oliver, P. St-Laurent, M. Dinniman, S. Stammerjohn, and M. Lagerstrom. Iron sources to the Amundsen Sea: Glacial ice melt may not be the main input. KOPRI 25th International Symposium on Polar Sciences, May 2019.
- Yager, P.L., P. St-Laurent, H. Oliver, R.M. Sherrell, S.E. Stammerjohn, and M.S. Dinniman. How ice-sheet-ocean interactions impact the Carbon Cycle of an Antarctic coastal polynya. KOPRI 25th International Symposium on Polar Sciences, May 2019.
- Dinniman\*, M. Ocean Melting of Antarctic Ice Shelves: Why do we care (besides sea level rise)? Invited seminar, Global Modeling and Assimilation Office, NASA Goddard Space Flight Center, March 2019.
- M.S. Dinniman, J.D. Wiggert, and M.K. Cambazoglu. The impact of diurnal winds on exchange through barrier island passes into the Mississippi Sound. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 2019.
- S.J. O'Brien, S.L. Dykstra, S.M. Parra, B. Dzwonkowski, J.W. Book, C. Pan, M.S. Dinniman, P.J. Fitzpatrick, Y.H. Lau, M.K. Cambazoglu, and E. Hofmann. Suspended Sediment Transport in Mississippi Bight During Two Cold Front Events in Spring 2016. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 2019.
- Cambazoglu, M.K., J. Wiggert, S. O'Brien, T. Miles, A. Greer, M. Dinniman, and P. Fitzpatrick. Impact of wave forcing on sediment resuspension and transport in the Mississippi Sound and Bight. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 2019.
- Howden, S.D., L. Hode, M.K. Cambazoglu, J. Wiggert, K. Martin, M. Dinniman, B. Dzwonkowski, and S. Parra. Connectivity of the Gulf of Mexico to the Mississippi Sound. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 2019.
- Hofmann, E.E., M.S. Dinniman, M.K. Cambazoglu, and J.D. Wiggert. Approaches and Challenges to Modeling Transport and Exchanges in the Northern Gulf of Mexico. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference, February 2019.
- Wiggert, J.D., C. Pan, M.S. Dinniman, Y. Lau, P.J. Fitzpatrick, S.J. O'Brien, C. Bouchard, M.K. Cambazoglu, and E.E. Hofmann. Impact of Diurnal Sea Breeze on Planktonic Dynamics and Hypoxia Onset in the Mississippi Bight. 2018 Fall AGU Meeting, December 2018.
- Riverman, K.L., D.A. Sutherland, R. Obermeyer, B. Aguiar-González, C.F. Moffat, M.S. Dinniman, and J.M. Klinck. Grounding zone depth modulates oceanic control on glacier terminus retreat along the west Antarctic Peninsula. 2018 Fall AGU Meeting, December 2018.
- Dinniman, M.S., P. St-Laurent, K.R. Arrigo, E.E. Hofmann, and G. van Dijken. Direct and Indirect Contributions to Micronutrient Supply to the Open Surface Waters around Antarctica. 2018 Fall AGU Meeting, December 2018.
- Aguiar-González, B., C.F. Moffat, M.S. Dinniman, J.M. Klinck, D.A. Sutherland, D.P. Costa, E.W. Domack, C. Gordo-Rojas, A. Marrero-Diaz, and A. Rodriguez-Santana. Variability and Pathways of Along-Shelf Exchange in the West Antarctic Peninsula. 2018 Fall AGU Meeting, December 2018.
- Barthel, A., C. Veneziani, N.M. Urban, M.S. Dinniman, and C.M. Little. Towards Quantifying Multi-model Uncertainty in Antarctic Basal Melt Rate using High-resolution Regional Ocean Modeling. 2018 Fall AGU Meeting, December 2018.

- Yager, P.L., P. St-Laurent, H. Oliver, R.M. Sherrell, S.E. Stammerjohn, and M.S. Dinniman. High-resolution numerical ocean model illustrates how ice-sheet ocean interactions impact the biological pump of an Antarctic coastal polynya. 2018 Fall AGU Meeting, December 2018.
- Dinniman\*, M. Ocean Melting of Antarctic Ice Shelves: Why do we care (besides sea level rise)? Invited seminar, Division of Oceanography, Istituto Nazionale di Oceanografia e Geofisica Sperimentale, November 2018.
- Barthel A., N. Urban, M. Veneziani, M. Dinniman, and C. Little. Towards quantifying multi-model uncertainty in Antarctic basal melt rate. FRISP workshop 2018, September 2018.
- Corney, S., J. Melbourne-Thomas, R. Trebilco, M. Sumner, A. Constable, and M. Dinniman. Data Management for model output: what are the issues? 2018 SCAR/IASC Open Science Conference, June 2018.
- Sedwick, P., S. Ackley, M. Dinniman, B. Loose, C. O'Hara, B. Sohst, and S. Stammerjohn. PIPERS: Fall-winter observations of dissolved iron in the Ross Sea Polynyas. 2018 SCAR/IASC Open Science Conference, June 2018.
- Brearley, A., M. Meredith, H. Venables, C. Moffat, and M. Dinniman. Meander-driven export of shelf waters in the West Antarctic. 2018 SCAR/IASC Open Science Conference, June 2018.
- Moffat, C., M. Dinniman, J. Klinck, B. Aguiar-González, D. Sutherland, and J. Graham. Variability of ocean properties along the west Antarctic Peninsula shelf. 2018 SCAR/IASC Open Science Conference, June 2018.
- Dinniman, M., P. St-Laurent, K. Arrigo, E. Hofmann, J. Klinck, R. Sherrell, S. Stammerjohn, and P. Yager. Ice shelf meltwater pump contribution to vertical exchange around Antarctica. 2018 SCAR/IASC Open Science Conference. June 2018
- Castelao, R.M., P.M. Medeiros, J. Klinck, and M. Dinniman. Particulate organic carbon export off the Antarctic Peninsula by nonlinear mesoscale eddies. 2018 ASLO Summer Meeting, June 2018.
- Sherrell, R.M., P.L. Yager, P. St-Laurent, M.S. Dinniman, S.E. Stammerjohn, M. Lagerstrom, and K.M. Harazin. High iron in outflow waters from the Dotson Ice Shelf cavity, Amundsen Sea, West Antarctica: is glacial meltwater really the source? 2018 Ocean Sciences Meeting, February 2018.
- Dinniman, M.S., P. St-Laurent, K.R. Arrigo, E.E. Hofmann, J.M. Klinck, R.M. Sherrell, S.E. Stammerjohn, and P.L. Yager. The ice shelf meltwater pump contribution to vertical exchange over the open shelf in the Amundsen Sea and elsewhere around Antarctica. 2018 Ocean Sciences Meeting, February 2018.
- Aguiar-González, B., C.F. Moffat, M.S. Dinniman, J.M. Klinck, D. Sutherland, E.W. Domack, and D.P. Costa. On the warm water pathways and seasonal cycle of subsurface shelf waters forcing glacier retreat in the west Antarctic Peninsula. 2018 Ocean Sciences Meeting, February 2018.
- Riverman, K.L., D. Sutherland, D. Carroll, C.F. Moffat, B. Aguiar-González, M.S. Dinniman, J.M. Klinck, and E.W. Domack. Dipping their toes in the water: ocean controls on glacier terminus and ice shelf locations along the west Antarctic Peninsula. 2018 Ocean Sciences Meeting, February 2018.
- Moffat, C.F., M.S. Dinniman, J.M. Klinck, B. Aguiar-González, D.A. Sutherland, and J.A. Graham. Eddies, submarine troughs, and the heat budget of the West Antarctic Peninsular continental shelf. 2018 Ocean Sciences Meeting, February 2018.

- Kaufman, D.E., M.A.M. Friedrichs, W.O. Smith, E.E. Hofmann, M.S. Dinniman, and J.C.P. Hemmings. Data assimilative biogeochemical modeling with glider observations: Examining future Ross Sea phytoplankton changes. 2018 Ocean Sciences Meeting, February 2018.
- Sedwick, P., S.F. Ackely, M.S. Dinniman, B. Loose, C. O'Hara, B.M. Sohst, and S.E. Stammerjohn. Observations of winter convective processes in the Ross Sea polynyas: Implications for the vertical resupply of dissolved iron. 2018 Ocean Sciences Meeting, February 2018.
- Brearley, J.A., H.J. Venables, M.P. Meredith, C.F. Moffat, and M.S. Dinniman. Meander driven export of Antarctic shelf waters in the West Antarctic. 2018 Ocean Sciences Meeting, February 2018.
- Mack, S.L., M. Dinniman, J.M. Klinck, D.J. McGillicuddy, and L. Padman. Resolving eddies in regional ocean models of Antarctic shelf seas. 2018 Ocean Sciences Meeting, February 2018.
- Wiggert, J.D., C. Pan, M. Dinniman, Y. Lau, P.J. Fitzpatrick, S.J. O'Brien, C. Bouchard, L.M. Quas, T.N. Miles, M.K. Cambazoglu, S.L. Dykstra, B. Dzwonkowski, G.A. Jacobs, I. Church, and E.E. Hofmann. Controls on phytoplankton dynamics in the Mississippi Bight by estuarine-shelf exchange processes. 2018 Ocean Sciences Meeting, February 2018.
- Hofmann, E.E., E. Salmon, M.S. Dinniman, and W. Smith. Evaluation of iron sources and sea ice variability in the Ross Sea and implications for primary production. 2018 Ocean Sciences Meeting, February 2018.
- Pan, C., M. Dinniman, P. Fitzgerald, Y.H. Lau, M.K. Cambazoglu, S.M. Parra, E. Hofmann, B. Dzwonkowski, S. Warner, S. O'Brien, S. Dykstra, and J. Wiggert. Exploring the circulation dynamics of Mississippi Sound and Bight using the CONCORDE synthesis model. Fall AGU, December 2017.
- Wiggert, J., C. Pan, M. Dinniman, Y. Lau, P. Fitzgerald, S. O'Brien, C. Bouchard, L. Quas, T. Miles, M.K. Cambazoglu, S. Dykstra, B. Dzwonkowski, G. Jacobs, I. Church, and E. Hofmann. Impacts of suspended sediment and estuarine-shelf exchange pathways on shelf ecosystem dynamics in the northern Gulf of Mexico. Fall AGU, December 2017.
- Yager, P., P. St-Laurent, R. Sherrell, M. Dinniman, and S. Stammerjohn. "Meltwater pump" mechanism directly links the extreme Amundsen Sea phytoplankton bloom to the melting ice shelf. 24th Annual WAIS Workshop, October 2017.
- Mack, S., M. Dinniman, and J. Klinck. How well do we resolve eddies in regional ocean models? 24th Annual WAIS Workshop, October 2017.
- Kaufman, D.E., M.A.M. Friedrichs, W.O. Smith, E.E. Hofmann, M.S. Dinniman, and J.C.P. Hemmings. Combining bio-optical glider observations and biogeochemical modeling to assess Ross Sea phytoplankton changes in the 21st Century. IMBER IMBIZO 5 meeting, October 2017.
- Willison, J.A., R. He, M.S. Dinniman, and X. Yuan. Developing a Coupled Modeling Framework to Investigate Antarctic Bottom Water Formation in Prydz Bay. 21st Conference on Atmospheric and Oceanic Fluid Dynamics, June 2017.
- Kaufman, D.E., M.A.M. Friedrichs, W.O. Smith Jr., E.E. Hofmann, M.S. Dinniman, and J.C.P. Hemmings. Combining bio-optical glider observations and biogeochemical modeling to examine potential Ross Sea phytoplankton changes in the 21st Century. 2017 OCB Summer Science Workshop, June 2017.
- Wiggert, J.D., C. Pan, M. Dinniman, Y. Lau, P. Fitzpatrick, S.J. O'Brien, T. Miles, M.K. Cambazoglu, S.L. Dykstra, B. Dzwonkowski, G. Jacobs, and E. Hofmann. Impact of



- circulation, transport, and exchange variability in the Northern Gulf of Mexico on shelf ecosystem dynamics. 2017 OCB Summer Science Workshop, June 2017.
- Dinniman, M., J. Klinck and L. Padman. Transport pathways and consequences for Antarctic ice shelf basal meltwater. 31<sup>st</sup> Forum for Research into Ice Shelf Processes (FRISP) workshop, June 2017.
- St-Laurent, P. and M.S. Dinniman. Ice shelf melt-driven circulation of the deep layers in the Amundsen Sea, Antarctica. 31<sup>st</sup> Forum for Research into Ice Shelf Processes (FRISP) workshop, June 2017.
- Moffat, C., M. Dinniman, B. Aguiar-Gonzalez, D. Sutherland, and J. Klinck. The influence of the open ocean on the wAP shelf hydrographic properties: pathways, gradients, and unanswered questions. West Antarctic Peninsula Southern Ocean Observing System (SOOS) Working Group Workshop, May 2017.
- Moffat, C., M. Dinniman, B. Aguiar-Gonzalez, D. Sutherland, and J. Klinck. The role of large submarine troughs on the circulation and property balances of the wAP shelf. The Future of Marine Biogeochemistry Research off the West Antarctic Peninsula meeting, May 2017.
- Klinck, J.M., M.S. Dinniman, E.E. Hofmann, and W.O. Smith, Jr. Effects of projected changes in wind, atmospheric temperature and freshwater inflow on the Ross Sea. Southern Ocean Workshop, April 2017.
- Dinniman\*, M., E. Hofmann, J. Klinck, S. Mack, and P. St-Laurent. How the cryosphere may affect iron supply to Antarctic phytoplankton blooms. Southern Ocean Workshop, April 2017.
- Yager, P.L., P. St-Laurent, R.M. Sherrell, H. Oliver, M. Dinniman, E. Hofmann, and S.E. Stammerjohn. Melting ice sheet enhances coastal biological productivity. ASLO 2017 Meeting, February 2017.
- Pan, C., M.S. Dinniman, P.J. Fitzpatrick, Y. Lau, E.E. Hofmann, and J.D. Wiggert. Impact of high resolution forcing on circulation variability within a regional model of the Mississippi Sound and Bight. Gulf of Mexico Oil Spill and Ecosystem Science Conference 2017, February 2017.
- Wiggert, J.D., M.S. Dinniman, P.J. Fitzpatrick, Y. Lau, C. Pan, and E.E. Hofmann. Circulation, transport and exchange variability in the northern Gulf of Mexico continental shelf. Gulf of Mexico Oil Spill and Ecosystem Science Conference 2017, February 2017.
- Padman, L., F. Paolo, J. Feldman, M.S. Dinniman, H.A. Fricker, S.L. Howard, A. Levermann, and S. Springer. Sensitivity of Ross Ice Shelf, Antarctica, to Changing Climate. 14th Conference on Polar Meteorology and Oceanography, January 2017.
- Dinniman, M., J. Klinck and L. Padman. Transport pathways and consequences for Antarctic ice shelf basal meltwater. 2016 ROMS Asia-Pacific Workshop, October 2016.
- Gwyther, D.E., K. Kushara, B.K. Galton-Fenzi and M.S. Dinniman. Modelling regional ice shelf/ocean interaction with ROMS. 2016 ROMS Asia-Pacific Workshop, October 2016.
- Kumar, R., K. Hedstrom, M. Dinniman and D. Holland. Coupling ROMS-CICE for Polar COAWST model. 2016 ROMS Asia-Pacific Workshop, October 2016.
- St-Laurent, P., M.S. Dinniman, R.M. Sherrell, S.E. Stammerjohn and P.L. Yager. Variability of physical parameters influencing the bloom of the most productive Antarctic coastal polynya (Amundsen Sea Polynya). West Antarctic Ice Sheet Initiative Workshop 2016, October 2016.
- Yager, P., P. St-Laurent, R. Sherrell, H. Oliver, M. Dinniman and S. Stammerjohn. Melting ice enhances coastal biological production. West Antarctic Ice Sheet Initiative Workshop 2016, October 2016.

- Dinniman, M., J. Klinck and L. Padman. Transport pathways and consequences for Antarctic ice-shelf basal meltwater. International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, July 2016.
- St-Laurent, P., M. Dinniman, P. Yager, R. Sherrell and S. Stammerjohn. Simulating the upward transport of sediment-derived iron associated with the overturning circulation in ice-shelf cavities of the Amundsen Sea, Antarctica. International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, July, 2016.
- Dinniman, M. and J. Klinck. Antarctic polynyas: A coupled process requiring high model resolution in the ocean and atmosphere. International Workshop on Coupled Modeling of Polar Environments, June 2016.
- Dinniman\*, M., J. Klinck and L. Padman. Modeling transport of ice shelf basal meltwater around Antarctica. Climate and Cryosphere's Rising Seas on a Warming Earth II Workshop, May 2016.
- Mu, L., P. Yager, P. St-Laurent, M. Dinniman, H. Oliver, S. Stammerjohn, R. Sherrell and E. Hofmann. Investigating the Role of Mesoscale Processes and Ice Dynamics in Carbon and Iron Fluxes in a Changing Amundsen Sea (INSPIRE). 2016 Ocean Sciences Meeting, February, 2016.
- Davis, L., E. Hofmann, J. Klinck, M. Dinniman, and M. Pinones. Comparison of *Euphausia superba*, *Euphausia crystallorophias*, *Pleuragramma antarcticum* and Environmental Distributions in the Western Ross Sea. 2016 Ocean Sciences Meeting, February 2016.
- St-Laurent, P., M. Dinniman, E. Hofmann, R. Sherrell, S. Stammerjohn, P. Yager and E. Randall-Goodwin. Transport pathways of nutrients in the Amundsen Sea, Antarctica. 2016 Ocean Sciences Meeting, February 2016.
- Mack, S., M. Dinniman, J. Klinck, P. Sedwick and D. McGillicuddy. Iron transport pathways in the Ross Sea: Physical processes affecting the supply of dFe in a regional ocean model. 2016 Ocean Sciences Meeting, February 2016.
- McGillicuddy, D., P. Sedwick, M. Dinniman, K. Arrigo, T. Bibby, B. Greenan, E. Hofmann, J. Klinck, W. Smith, S. Mack, C. Marsay, B. Sohst and G. vanDijken. Iron Supply and Demand in an Antarctic Shelf Ecosystem. 2016 Ocean Sciences Meeting, February 2016.
- Li, Y., D.J. McGillicuddy, Jr., M. Dinniman and J.M. Klinck, Processes regulating formation of low-salinity, high-biomass lenses along the edge of the Ross Ice Shelf. 2016 Ocean Sciences Meeting, February 2016.
- Dinniman, M.S., J. Klinck and L. Padman. Transport of ice shelf basal meltwater around Antarctica. 2016 Ocean Sciences Meeting, February 2016.
- Springer, S., L. Padman and M. Dinniman. Satellite studies of interactions between Antarctic Circumpolar Current eddies and sea ice. 2015 Fall AGU Meeting, December 2015.
- Cuoto, N., O. Schofield, M. Dinniman and J. Graham. Modeling the intrusion pathways of Upper Circumpolar Deep Water to a biologically productive canyon. 2015 LTER ASM, September 2015.
- Graham, J., J. Klinck and M. Dinniman. Modelling on-shelf ocean heat transport along the West Antarctic Peninsula. International Glaciological Society 2015 Meeting, August 2015.
- Gwyther, D., E. Cougnon, B. Galton-Fenzi, M. Dinniman, J. Roberts and J. Hunter. Using idealised models to explore uncertainties in ice shelf-ocean interaction. International Glaciological Society 2015 Meeting, August 2015.
- Mack, S., M. Dinniman and J. Klinck. Effect of tides and eddies on Ross Ice Shelf basal melt from a regional ocean model. 26th IUGG General Assembly, June 2015.

Dinniman\*, M. Ocean melting of Antarctic ice shelves: Why do we care and the tricky business of modeling how it might change. Invited Seminar, University of Arizona Department of Geosciences, May 2015.

Dinniman\*, M. The Length Scale of Physical Processes on the Antarctic Continental Shelves and Implications of this for Modeling Biogeochemical Cycles. Southern Ocean Dynamics and Biogeochemistry Workshop, February 2015.

Klinck, J., M. Dinniman, D. Bromwich, D. Holland. Effect of Atmospheric Forcing Resolution on Delivery of Ocean Heat to the Antarctic Floating Ice Shelves. 2014 Fall AGU Meeting, December 2014.

**Other Professional Service:**

**Panel Reviewer for:** National Oceanic and Atmospheric Administration  
National Science Foundation (x3)

**Reviewer for:** National Oceanic and Atmospheric Administration  
National Science Foundation  
Australian Antarctic Division  
European Research Council  
Israeli Ministry of Science  
Italian Antarctic Programme  
New Zealand Antarctic Research Institute  
Royal Society of New Zealand  
U.K. Natural Environment Research Council

**Journal Reviewer (~ 11 reviews/yr over last 5 years):**

*Annals of Glaciology*  
*Antarctic Science*  
*Continental Shelf Research*  
*Deep-Sea Research I*  
*Deep-Sea Research II*  
*Earth and Planetary Science Letters*  
*Estuarine, Coastal and Shelf Science*  
*Geophysical Research Letters*  
*Geoscientific Model Development*  
*Journal of Geophysical Research*  
*Journal of Great Lakes Research*  
*Journal of Marine Systems*  
*Journal of Physical Oceanography*  
*Limnology and Oceanography*  
*Marine and Freshwater Research*  
*Nature*  
*Nature Geosciences*  
*Nature Communications*  
*Oceanography*  
*Ocean Dynamics*

*Ocean Modelling*  
*Ocean Science*  
*Philosophical Transactions of the Royal Society A*  
*Polar Research*  
*Progress in Oceanography*

***Other Activities:*** Development of an educational interactive numerical model of the Chesapeake Bay currently in use at the Virginia Aquarium  
Member WCRP Climate and Cryosphere Marine Ice Sheet-Ocean Model Intercomparison Project