CURRICULUM VITAE

Jeremy T. Mathis
Oceanographer – NOAA PMEL

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EDUCATION

- B.S. Chemical Engineering, May 2003, McNeese State University
- Ph.D. Marine Chemistry, November 2006, University of Miami-RSMAS
  Advisor – Professor Dennis A. Hansell
  Dissertation Title: Cycle and Fate of Carbon as Part of the Western Arctic Shelf Basin Interactions Project

PROFESSIONAL EXPERIENCE

- Oceanographer – NOAA Pacific Marine Environmental Lab, 6/12 – Present
- Director – UAF Ocean Acidification Research Center, 6/10 – Present
- Adjunct Professor – School of Fisheries and Ocean Sciences, 6/12 – Present
- Associated Faculty – UAF, Department of Chemistry and Biochemistry, 06/10 – 8/2012
- Assistant Professor – School Fisheries and Ocean Sciences, 09/07 – 8/2012
- Postdoctoral Scientist – University of Miami, Marine Physical Chemistry Lab (Millero), 12/06 – 8/07.
- Research Assistant – University of Miami, Marine Biogeochemistry Lab (Hansell), 06/03 – 11/06.
- Chemical Engineer (co-op Program) - CITGO Petroleum, Lake Charles, LA, 05/00 – 09/02

RESEARCH INTERESTS

My current research focuses on constraining CO_2 fluxes and ocean acidification in coastal regions, particularly at high latitudes. I do this by using a variety of platforms including the collection of discrete DIC, TA, pH and pCO_2 measurements from ships as well as data collected from moorings, gliders and floats. I am interested in the specific mechanisms that control the sources of anthropogenic CO_2 in the ocean and how the intrusion of this CO_2 affects biogeochemical cycles and marine ecosystems.
I am currently a member of the steering group for the North American Carbon Program and leading the NACP subgroup for the Arctic Ocean and the Bering Sea as well as serving on the Arctic Icebreaker Coordinating Committee (AICC). I am also serving a three-year term on The Ocean Carbon and Biogeochemistry (OCB) scientific steering committee as well as co-chairing the ocean acidification sub-committee.

Peer-Reviewed Publications (*denotes student or post doc first author)

1. **Mathis, J.T.,** Hansell, D.A., Bates, N.R. (2005) Strong hydrographic controls on spatial and seasonal variability of dissolved organic carbon in the Chukchi Sea (Deep-Sea Research II, 52, 3245-3258).
2. Bates, N.R., Moran, S.B., Hansell, D.A., **Mathis, J.M.** (2006). An increasing CO_2 sink in the Arctic Ocean due to sea-ice loss? (Geophys. Res. Letters., 33, L23609).
3. Lepore, K., Moran, S.B., Grebmeier, J. M., Cooper, L.W., Lalande, C., Maslowski, W., Hill, V., Bates, N.R., Hansell, D.A., **Mathis, J.T.,** Kelly, R.P (2006). Seasonal and interannual changes in POC export and deposition in the Chukchi Sea. (Journal of Geophysical Research, Oceans, 112, C10024, doi 10.1029/2006JC003555).
4. **Mathis, J.T.**, Pickart, R.S., Hansell, D.A., Kadko, D., Bates, N.R. (2007a). Eddy transport of organic carbon and nutrients from the Chukchi Shelf: Impact on the upper halocline of the western Arctic Ocean. (J. of Geophys. Res. 112, C05011, doi: 10.1029/2006JC003899).

5. **Mathis, J.T.,** Hansell, D.A. Kadko, D., Bates, N.R., Cooper, L.W (2007b). Determining net dissolved organic carbon production in the hydrographically complex western Arctic Ocean. (Limnol. Oceanogr., 52(5), 1789–1799).
6. Kadko, D., Pickart, R.S., **Mathis, J.T**., (2008) Age Characteristics of a Shelf-Break Eddy in the Western Arctic and Implications for Shelf-Basin Exchange. (Journal of Geophysical Research, Vol. 113, C02018).
7. **Mathis, J.T.,** Bates, N.R., Hansell, D.A., Babila, T. (2008). Interannual Variability of Net Community Production Over the Northeast Chukchi Sea Shelf. Deep Sea Research II, doi:10.1016/j.dsr2.2008.10.017.
8. Llinas, L., Pickart, R.S., **Mathis, J.T.**, Smith, S.L., (2008). Zooplankton inside an Arctic Ocean cold-core eddy: Probable origin and date. Deep Sea Research II, doi: 10.1016/j.dsr2.2008.10.020.
9. Bates, N. R., **J. T. Mathis**, and L. W. Cooper (2009), Ocean acidification and biologically induced seasonality of carbonate mineral saturation states in the western Arctic Ocean, J. Geophys. Res., 114, C11007, doi:10.1029/2008JC004862.
10. Bates, N. R**.** and **Mathis, J. T.** (2009). The Arctic Ocean marine carbon cycle: evaluation of air-sea CO2 exchanges, ocean acidification impacts and potential feedbacks. Biogeosciences, 6, 2433–2459.
11. Fabry, V.J., McClintock, J.B., **Mathis, J.T.**, Grebmeier, J.M., (2009) Ocean Acidification at High Latitudes: The Bellwether. Oceanography, Vol. 22, Num. 4.
12. **Mathis, J.T**., Cross, J.N., Bates, N.R., Lomas, M.L., Moran, S.B., Mordy, C.W., Stabeno, P., (2010). Seasonal Distribution of Dissolved Inorganic Carbon and Net Community Production on the Bering Sea Shelf (Biogeosciences, 7, 1769–1787, doi:10.5194/bg-7-1769-2010).
13. **Mathis, J.T**., Cross, J.N., Bates, N.R., (2011). Coupling Primary Production and Terrestrial Runoff to Ocean Acidification and Carbonate Mineral Suppression in the Eastern Bering Sea J. Geophys. Res., 116, C02030, doi:10.1029/2010JC006453, 2011.
14. Bates, N.R., **Mathis, J.T.,** Jefferies, M.A., (2011). Air-Sea CO2 fluxes on the Bering Sea Shelf. Biogeosciences, 8, 1237-1253.
15. Bates, N.R., Cai, W-J., **Mathis, J.T**., (2011). The Ocean Carbon Cycle in the Western Arctic Ocean: Distributions and Air-Sea Fluxes of Carbon Dioxide. Oceanography 24(3):186–201, http://dx.doi.org/10.5670/oceanog.2011.71.
16. **Mathis, J.T.,** Cross, J.N., Bates, N.R., (2011). The Role of Ocean Acidification in Systemic Carbonate Mineral Suppression in the Bering Sea. Geophys. Res. Lett., 38, L19602, doi:10.1029/2011GL048884.
17. **Mathis, J.T.** (2011). The Extent and Controls on Ocean Acidification the Western Arctic Ocean and Adjacent Continental Shelf Seas [in Arctic Report Card2011], http://www.arctic.noaa.gov/reportcard
18. **Mathis, J.T**. (2012) [The Arctic] Ocean acidification [in "State of the Climate in 2011"]. Bull. Amer. Meteor. Soc., 93 (7), S145–S147.
19. *Cross, J. N., **Mathis, J.T.,** Bates, N.R., (2012) Hydrographic Controls on Net Community Production and Total Organic Carbon Distributions in the Eastern Bering Sea. Deep Sea Research II, doi:10.1016/j.dsr2.2012.02.003.
20. Moran, S.B., Lomas, M.L., Kelly, R.P., Iken, K., Gradinger, R., **Mathis, J.T**., and Propokenko, M., (2012). Sea-ice control of lower trophic carbon partitioning in the eastern Bering Sea. Deep Sea Research II,.doi:10.1016/j.dsr2.2012.02.011.
21. Lomas, M.W., Moran, S.B., Casey, J.R., Bell, D.W., Tiahlo, M.,, Whitefield, J., Kelly, R.P., **Mathis, J.T**., Cokelet, E.D., (2012). Spatial and seasonal variability of primary production in the Eastern Bering Sea shelf. Deep Sea Research II, doi:10.1016/j.dsr2.2012.02.010.
22. **Mathis, J.T.,** Byrne, R.H., McNeil, C.L., Pickart, R.P., Juranek, L., Liu, S., Ma, J., Easley, R.A., Elliot, M.W., Cross, J.N., Reisdorph, S. C., Morison, J., Lichendorph, T., Feely, R.A., 2012. Storm-Induced Upwelling of High pCO2 Waters onto the Continental Shelf of the Western Arctic Ocean and Implications for Carbonate Mineral Saturation States. Geophys. Res. Lett. Vol. 39, L07606,

doi:10.1029/2012GL051574.

23. Arrigo, K.R., Perovich, D.K., Pickart, R.S., Brown, Z.W., Dijken,G.L., Lowry, K.E., Mills, MM., Palmer, M.A., Balch, W.M., Bahr, F., Bates, N.R., Benitez-Nelson, C., Bowler, B., Brownlee, E., Ehn, J. K., Frey, K.E., Garley, R., Laney, S.R., Lubelczyk, L., **Mathis, J.T.**, Atsushi, A., Mitchell, B.G., Kent Moore, G.W., Ortega-Reteurta, E., Pal, S., Polashenski, C.M., Reynolds, R.A., Scheiber, B., Sosik, H.M., Stephens, M., Swift, J.H., (2012). Massive Phytoplankton Blooms Under Arctic Sea Ice. Science, Vol. 336, doi: 10.1126/science.1215065.

Manuscripts accepted, in review, or in preparation

24. **Mathis, J.T**., Evans, W., Sabine, C.L., Juranek, L.W., Stockwell, D.A., Shake, K. L., Wiengartner, T.J., Feely, R.L., The Physical and Biological Controls on CO_2 Fluxes and Carbonate Mineral Saturation States in the Northern Gulf of Alaska (Accepted – Continental Shelf Research).
25. **Mathis, J.T.,** Grebmeier, J.M., Hansell, D.A., Hopcroft, R.R., Kirchman, D.L., Lee, S.H., Moran, S.B., Bates, N.R., VanLaningham, S., Cross, J.N., Cai, W.J., Carbon Biogeochemistry of the Western Arctic: Primary Production, Carbon Export and the Controls on Ocean Acidification In *Biogeochemistry of the Pacific Arctic Region* (Eds. Grebmeier, Maslowski, Zhao). Springer (Accepted).
26. Cai, W.J., Bates, N.R., Guo, L., Anderson, L.G., **Mathis, J.T.,** Wanninkhof, R., Chen, L., Carbon Fluxes Across Boundaries in the Pacific Sector of the Arctic Ocean in a Changing Environment. In *Biogeochemistry of the Pacific Arctic Region* (Eds. Grebmeier, Maslowski, Zhao). Springer (Accepted).
27. *Cross, J.N., and **Mathis, J.T.**, The Effect of a Coccolithophore Bloom on the Carbonate System of the Eastern Bering Sea Shelf in 2009 (Submitted - Continental Shelf Research, In Prep.)
28. **Mathis, J.T**. and Questel, J.M., The Impacts of Primary Production and Respiration on the Marine Carbonate System in the Western Arctic: Implications for CO2 Fluxes and Ocean Acidification. (In Review– Continental Shelf Research)
29. Day, R.H., Weingartner, T.J., Hopcroft, R.R., Aerts, L.A., Blanchard, A.L., Gall, A.E., Gallaway, B.J., Hannay, D.E., Holladay, B.A., **Mathis, J.T.,** Norcross, B.L., Questel, J.M., Wisdom, S.S. The offshore northeastern Chukchi Sea, Alaska: a complex high-latitude ecosystem. (In Review– Continental Shelf Research)
30. Pickart, R.S., Spall, M.A., **Mathis, J.T.,** Dynamics of Upwelling in the Alaskan Beaufort Sea and Associated Shelf-Basin Fluxes. (Deep Sea Research – In Review).
31. Hurst, T., **Mathis, J.T**., Fernandez, E. The Response of Age 1+ Pollock (Theragra chalcogramma) to Projected Increases in Ocean Acidification Using Physiological Biomarkers (In Prep. - Fish. Oceanography.)
32. Evans, W., **Mathis, J.T**., Winsor, P., Whitledge, T., Statscewich, H.. A regression modeling approach for studying carbonate saturation states on the northern Gulf of Alaska shelf. (Journal of Geophysical Research – Submitted)
33. Evans, W. and **Mathis, J.T**. Synthesis of Gulf of Alaska coastal sea-air CO2 fluxes. (In prep - Journal of Geophysical Research).
34. Schuster, U., McKinley, G.A., Bates, N.R., Chevallier, F., Doney, S., Fay, A., González-Dávila, M., Gruber, N., Jones, S., Landschützer, P., Lefèvre, N., Manizza, M., **Mathis, J.T**., Metzl, N., Olsen, A., Rios, A., Santana-Casiano, J.M.. Atlantic and Arctic Air-Sea CO2 Fluxes, 1990-2009 (Biogeosciences – Submitted).
35. Orchowska, M.I., Bates, N.R., Garley, R., **Mathis, J.T**., Present day vulnerability of the western Arctic seafloor to seasonal ocean acidification (In prep. – Biogeosciences).

Other Publications and Reports

1. **Mathis, J.T.** and D.A. Hansell (2004). *The Organic Carbon Cycle in the Arctic Ocean* by R. Stein and R.W. Macdonald (eds.) Springer. Book Review - Marine Chemistry 91, 253-254.

2. Mordy, C., Whitledge, T., Feely, R., **Mathis, J**., Shull, D., Devol, A., (2009). The Second PICES North Pacific Ecosystem Status Report (NPESR-II): Bering Sea Chemistry.
3. Mölders, N., Porter, S.E., Tran, T.T., Cahill, C.F**., Mathis, J.T**., Newby, G. B., The effect of unregulated ship emissions for aerosol and sulfur dioxide concentrations in southwestern Alaska. Inland Northwest Research Alliance Chapter.
4. **Mathis, J.T**., Cross, J.N., Bates, N.R., Lomas, M.L., Moran, S.B., Stabeno, P., (2010). Seasonal Distribution of Dissolved Inorganic Carbon and Net Community Production on the Bering Sea Shelf (Biogeosciences Discuss., 7, 251–300, 2010).
5. Frey, K.E**., Mathis, J.T.,** Wegner, C., (2010). Arctic in Rapid Transition (ART): An International, Interdisciplinary Science Program for the Arctic Ocean Integrating Past, Present, and Future. Workshop Report, Eos, Vol. 91, No. 16.
6. **Mathis, J.T.** and Bates, N.R., (2010). The Marine Carbon Cycle of the Arctic Ocean: Some Thoughts About The Controls on Air-Sea CO2 Exchanges and Response to Ocean Acidification. Ocean Carbon and Biogeochemistry Newsletter, Vol. 3, Num. 2, Spring/Summer 2010.
7. Bates, N.R., **Mathis, J.T**., Jefferies, M.A., (2010). Air-Sea CO_2 fluxes on the Bering Sea Shelf. (Biogeosciences Discuss., 7, 1–44, 2010).
8. Mundy, P.R., Allen, D.M., Boldt, J.L., Bond, N.A., Dressel, S., Farley Jr., E.V., Hanselman, D.H., Heifetz, J., Hopcroft, R.R., Janout, M.A., Ladd, C., Lam, R.C., Livingston, P.A., Lunsford, C.R., **Mathis, J.T.,** Mueter, F.J., Rooper, C.N., Sarkar, N., Shotwell, S.A.K., Sturdevant, M.V., Thomas, A.C., Weingartner, T.J., Woodby, D. 2010. Status and trends of the Alaska Current Region, 2003-2008, pp. 142-195 In, S.M. McKinnell and M.J. Dagg [Eds.] Marine Ecosystems of the North Pacific Ocean, 2003-2008. PICES Special Publication 4, 393 p.

Selected Abstracts

1. **Mathis, J.T.,** Swift, J.H., Hansell, D.A. SBI data comparison for 2002-2003: Temperature, salinity, dissolved oxygen, and silicate at repeated sections in the western Arctic, ASLO/TOS Ocean Sciences Meeting, Honolulu, Hawaii, February 2004.
2. **Mathis, J.T.,** Hansell, D.A., Kadko, D., Bates, N.R., Pickart, R.S. Eddy Transport of Carbon from the Chukchi Sea Into The Western Arctic Ocean, ASLO Conference, Santiago de Compostela, Spain, June 2005.
3. **Mathis, J.T.,** Hansell, D.A., Bates, N.R., Byrne, D.A., Beal, L.M., Duncombe Rae, C. Carbon in the Agulhas Current and Ring System: Transport Between Major Ocean Basins. ASLO/TOS Ocean Sciences Meeting, Honolulu, Hawaii, February 2006.
4. **Mathis, J.T.,** Hansell, D.A., Kadko, D., Bates, N.R. Eddy Transport of Carbon in the Western Arctic Ocean and the Biogeochemical Preconditioning Necessary for Shelf-Basin Exchange. ASLO/TOS Ocean Sciences Meeting, Honolulu, Hawaii, February 2006. – INVITED
5. Kadko, D., Pickart, R.S., **Mathis, J.T.**, Weingartner, T.J. Age Characteristics of a Shelf-Break Eddy in the Western Arctic and Implications for Shelf-Basin Exchange. ASLO/TOS Ocean Sciences Meeting, Honolulu, Hawaii, February 2006.
6. **Mathis, J.T.** Carbon Biogeochemistry in the Western Arctic and Inferences on an Ice-Free Arctic Ocean. Alaska Marine Science Symposium, January, 2008. – INVITED
7. **Mathis, J.T.,** Bates, N.R, Hansell, D.A. Net Community Production and the Biological Pump in the Western Arctic Ocean. ASLO/TOS Ocean Sciences Meeting, Orlando FL, March 2008.
8. **Mathis, J.T.,** Net Community Production and the Biological Pump in the Western Arctic Ocean. SCAR/IASC Conference, St. Petersburg, Russia, July 2008. – INVITED
9. **Mathis, J.T.,** Increased CO2 Uptake in the Arctic Ocean: Sea Ice Loss and Ocean Acidification. Ocean in a High CO2 World Workshop, Monaco, October, 2008.
10. **Mathis, J.T.,** Coastal Carbon Budgets in the Arctic Ocean and Bering Sea: Synthesis Activities and Data Gaps. Ocean Carbon Biogeochemistry Meeting, Woods Hole

Oceanographic Institute, July, 2009 – INVITED

11. Bates, N.R., **Mathis, J.T.,** Feedbacks on the Marine Carbon Cycle, Air-Sea CO2 Fluxes and Ocean Acidification Impacts in the Arctic Ocean. Ocean Sciences Meeting, Portland, 2010.
12. Cross, J.N., **Mathis, J.T.,** Bates, N.R., Moran, B., Lomas, M.W., Stanbeno, P.J., Seasonal distribution and Controls on Dissolved Inorganic Carbon and Net Community Production on the eastern Bering Sea Shelf. Ocean Sciences Meeting, Portland, 2010.
13. **Mathis, J.T**., Bates, N.R., Coupling Primary Production and Terrestrial Runoff to Ocean Acidification and Carbonate Mineral Suppression in the Eastern Bering Sea. Ocean Sciences Meeting, Portland, 2010.
14. Shake, K.L., **Mathis, J.T**., Juranek, L.W., Feely, R.A., Seasonal Variability of Dissolved Inorganic Carbon Concentrations and Carbonate Mineral Saturation States in the Northern Gulf of Alaska. Ocean Sciences Meeting, Portland, 2010.
15. Pickart, R.S., Spall, M.A., Torres, D.J., Moore, K., **Mathis, J.T**., Moore, S.E., Upwelling in the Alaskan Beaufort Sea: Forcing, Dynamics, Cross-stream fluxes, and Biological Implications. Ocean Sciences Meeting, Portland, 2010.
16. Moran, B., Lomas, M.W., Kelly, R.P., Iken, K., Gradinger, R., **Mathis, J.T**., Carbon cycling within the lower trophic levels of the Southeastern Bering Sea: primary production and particulate organic carbon export. Ocean Sciences Meeting, Portland, 2010.
17. Frey, K.E., **Mathis, J.T**., Michel, C., Nikolopoulos, A., O'Regan, M., Reigstad, M., Wegner, C., The Arctic in Rapid Transition (ART) Initiative: Integrating Priorities of Arctic Marine Science Over the Next Decade, State of the Arctic Meeting, Miami, FL, 2010.
18. **Mathis, J.T.,** Cross, J.N., Bates, N.R., Coupling Primary Production and Terrestrial Runoff to Ocean Acidification and Carbonate Mineral Suppression in the Eastern Bering Sea. IPY Science Conference, Oslo Norway, June 2010. – INVITED
19. **Mathis, J.T**., Carbon Biogeochemistry in the western Arctic Ocean: Fluxes, Sensitivities, and Uncertainties. IPY Science Conference, Oslo Norway, June 2010.
20. Bates, N.R. and **Mathis, J.T.,** Carbon Cycle Dynamics, Ocean Acidification Impacts, And Feedbacks In The Arctic Ocean. IPY Science Conference, Oslo Norway, June 2010.
21. **Mathis, J.T.,** Evidence of Systemic Seasonal Aragonite Undersaturation in the Continental Shelf Seas of Alaska. Ocean Carbon Biogeochemistry Meeting, Scripps Institute of Oceanography, July 2010 – INVITED
22. Fernandez, E.R., **Mathis, J.T**., Hurst, T.P., The response of juvenile walleye pollock (Theragra chalcogramma) to projected increases in ocean acidification. Alaska Fisheries Society Meeting, Juneau, AK 2010.
23. **Mathis, J.T.**, Ocean Acidification in High Latitude Seas. Impacts of Ocean Acidification: The Other CO2 Crisis. Geological Society of America Annual Meeting. Denver, CO, November, 2010. – INVITED
24. Descoteaux, R., Iken, K., Hardy, S., **Mathis, J.T**., Effects of ocean acidification on larval development in Alaska Tanner crabs (Chionoecetes bairdi). Alaska Marine Science Symposium, Anchorage, AK. January, 2011.
25. **Mathis, J.T**., Ocean Acidification and Evidence of Systemic Seasonal Aragonite Undersaturation in the High Latitude Seas. Intergovernmental Panel on Climate Change (IPCC) Ocean Acidification Meeting, Okinawa, Japan. January, 2011.
26. Alin, S., Benway, H., Cai, W., Coble, P., Griffith, P., Lohrenz, S., **Mathis, J.T**., McLKinley, G., Najjar, R., The North American Carbon Program (NACP) Coastal Interim Synthesis Activity: Carbon and Nutrient Exchanges and Transformations at the Land-Ocean Continuum. 2011 AmeriFlux Science Meeting & 3rd NACP All-Investigators Meeting, New Orleans, LA. February, 2011.
27. Spall, M.A., Pickart, R.S., **Mathis, J.T.,** Dynamics of wind-forced upwelling in the Alaskan Beaufort Sea and associated shelf-basin fluxes. AMS - 11th Conference on Polar Meteorology and Oceanography, May, 2011.
28. Descoteaux, R.; Hardy, S. M.; Iken, K.; **Mathis, J. T**.; EFFECTS OF OCEAN ACIDIFICATION ON

LARVAL DEVELOPMENT IN ALASKAN CRABS. Ocean Sciences, Salt Lake City, UT, February, 2012.

29. Evans, W.; **Mathis, J. T**.; Winsor, P.; Whitledge, T. E.; Statscewich, H.; A REGRESSION MODELING APPROACH FOR STUDYING CARBONATE SATURATION STATES ON THE NORTHERN GULF OF ALASKA SHELF. Ocean Sciences, Salt Lake City, UT, February, 2012.
30. **Mathis, J. T**.; Cross, J. N.; Bates, N. R.; OCEAN ACIDIFICATION AND THE SUPPRESSION AND UNDERSATURATION OF CARBONATE MINERAL SATURATION STATES IN THE PACIFIC-ARCTIC REGION .Ocean Sciences, Salt Lake City, UT, February, 2012.
31. Monacci, N.; **Mathis, J. T.;** Evans, W.; Bates, N. R.; Sabine, C. L.; Juranek, L. W.; Takahashi, T.; CONSTRAINING CO2 BUDGETS IN THE CONTINENTAL SHELF SEAS OF ALASKA: NEW INSIGHTS FROM MOORINGS AND OCEAN TIME-SERIES. Ocean Sciences, Salt Lake City, UT, February, 2012.
32. Reisdorph, S. C.; **Mathis, J. T.;** Monacci, N. M.; Danielson, S.; Sharman, L.; THE IMPACTS OF CLIMATE INDUCED DEGLACIATION ON OCEAN ACIDIFICATION IN GLACIER BAY, ALASKA: INSIGHTS FROM A NEW OCEAN TIME-SERIES. Ocean Sciences, Salt Lake City, UT, February, 2012.
    Cross, J. N.; Mathis, J. T.; Bates, N. R.; CARBONATE MINERAL SUPPRESSION AND OCEAN ACIDIFICATION IN THE EASTERN BERING SEA. Ocean Sciences, Salt Lake City, UT, February, 2012.
33. Hales, B.; Alin, S.; cai, W. J.; Coble, P.; Lohrenz, S.; **Mathis, J**.; Mckinley, G.; Najjar, R.; CARBON CYCLING IN OCEAN MARGINS: A TUTORIAL. Ocean Sciences, Salt Lake City, UT, February, 2012.

Funded Grants (only the amount directed to Mathis is shown)

1. **NSF (ARC)** - Determining the Present and Future Ocean Carbon Dynamics in the Chukchi Sea and Pan- Arctic Ocean. **($102,500, co-PI**)
2. **NSF (ARC)** - Storm climate of the western Arctic and its impact on shelf-basin exchange **($25,000, co-PI**)
3. **Minerals Management Service (MMS)** - Biogeochemical Assessment of the North Aleutian Basin Ecosystem: Current Status and Vulnerability to Climate Change **($756,721, PI)**
4. **Pollock Conservation Consortium (PCCRC)** - Present and Future Impacts of Ocean Acidification on Juvenile Walleye Pollock Metabolic Processes and Growth Rates **($56,793, PI)**
5. **NSF (ARC)** - An Interdisciplinary Monitoring Mooring in the Western Arctic Boundary Current: Climatic forcing and ecosystem response **($195,417, co-PI)**
6. **NSF (ARC)** – Collaborative Workshop: Arctic Rapid Climate Change (Hosted in Fairbanks) **($38,161, PI**)
7. **NASA** - Investigation of the Controls and Feedbacks on the Biogeochemical Cycling of on the Arctic Pacific Shelves **($181,715, co-PI)**
8. **Alaska Ocean Observing System (AOOS) –** Assessment of Carbonate Parameters and Ocean Acidification in the Northern Gulf of Alaska **($48,000, PI**)
9. **NOAA (Through CIFAR)** – Moored Observations of Ocean Acidification in the Bering Sea **($315,000, PI)**
10. **North Pacific Research Board (NPRB)** - Moored Observations of Ocean Acidification in the Northern Gulf of Alaska including Resurrection Bay and Prince William Sound (**$190,487, PI**)
11. **Fairweather, LLC** – Assessment and Monitoring of Ocean Acidification at the Chukchi Sea Oil and Gas Lease Locations 2010 **($94,525, PI**)
12. **Department of Environmental Conservation (DEC)** – Monitoring and Assessment of Ocean Acidification and Carbon Biogeochemistry on the near-shore Chukchi Sea shelf (**$80,115, PI**)
13. **NSF (OPP)** - Collaborative Research: Observation and Prediction of Ocean Acidification in the Western Arctic Ocean - Impacts of Physical and Biogeochemical Processes on Carbonate Mineral

States **($564,369, PI**)

14. **NASA** – North American Carbon Program: Developing an interim coastal carbon synthesis for North America **($46,050, co-PI**).
15. **National Parks Service** - Assess Ocean Acidification as a Major Manifestation of Climate Change in Glacier Bay (**$338,750, PI)**.
16. **NSF (OPP)** - Collaborative Research: Pacific-Arctic Carbon Synthesis - Transformations, Fluxes, and Budgets (**$325,034, PI**).
17. **Fairweather, LLC** Assessment and Monitoring of Ocean Acidification at the Chukchi Sea Oil and Gas Lease Locations 2011 **($920,358, PI**)
18. **AOOS** - Monitoring and Assessment of Ocean Acidification in the Northern Gulf of Alaska – Seward Line Time Series Project **($475,000, PI**)
19. **NOAA (through ACCAP)** - Alaska Center for Climate Assessment and Policy (ACCAP): Interactive Climate Science for Alaska **($201,536, co-PI**)

Field Experience

1. SBI Survey Cruise – July/August 2003 – Western Arctic Ocean
2. SBI Process Cruise - May/June 2004 – Western Arctic Ocean
3. SBI Process Cruise – July/August 2004 – Western Arctic Ocean
4. SBI Mooring Recovery Cruise – September 2004 – Western Arctic Ocean
5. Agulhas Retroflection Cruise – April 2005 – Southwestern Indian Ocean
6. CLIVAR Cruise – April 2007 – Indian Ocean
7. BEST Process Cruises – April/May 2008 – Eastern Bering Sea
8. GAK Survey Cruise (chief scientist) – May 2010 – Northern Gulf of Alaska
9. GAK Survey Cruise (chief scientist) - September 2011 – Northern Gulf of Alaska
10. NSF Ocean Acidification Cruise (co-chief scientists) – October 2012 – Western Arctic Ocean

Courses Taught

1. MSL 111 - Introduction to the Oceans (undergraduate)
2. MSL 660 – Chemical Oceanography (graduate)
3. MSL 621 – Polar Marine Science (graduate)

Postdoctoral Supervision

1. Wiley Evans – August 2011 – Present
2. Claudine Hauri – June 2012 – Present

Graduate Student Committees

1. Jessica Cross – PhD Chemical Oceanography (chair)
2. Kristen Shake – MS Chemical Oceanography (chair)
3. Stacey Reisdorph – MS Chemical Oceanography (chair)
4. Fletcher Sewall – PhD Fisheries Oceanography (chair)
5. Elena Fernandez – MS Fisheries Oceanography (member)
6. Jennifer Questel – PhD Biological Oceanography (member)
7. Michael Kong – PhD Chemical Oceanography (member)
8. Katherine Trahanovsky– PhD Chemical Oceanography (member)
9. Raphaelle Descoteaux – MS Marine Biology (member)
10. Jonathan Whitefield - PhD Oceanography (member)

Undergraduate and High School Mentoring and Supervision

1. Tali Babila, Senior Undergraduate Thesis (Marine Science) – University of Miami, 2005 – 2006
2. Kristen Shake – Flint Hills Undergraduate Research Project – UAF, 2008-2009.
3. Laura Weingartner – High School Research Assistant - June 2009 – August 2011.

4. Amy Rath – Independent research credit, Seward Line Cruise, spring 2010
5. Laura Weingartner - Independent research credit, NASA Arctic Cruise, spring 2011
6. Victoria Luu – Undergraduate Internship

Departmental and University Service

1. SFOS Outcome Assessment Committee (member). September, 2007 – May, 2010
2. SFOS Curriculum Council Committee (member). September, 2008 – Present
3. SFOS Comprehensive Exam Committee (member). September, 2008 – Present
4. SFOS Search Committee (chair) – Marine Biogeochemistry Faculty Hire (2008/09)
5. UAF Search Committee – SFOS Dean Hire (2010/11)
6. Director – UAF Ocean Acidification Research Center, 06/10 – Present

National and International Service

1. Journal Article Reviews (Nature, Deep Sea Research II, Marine Chemistry, Limnology and Oceanography, Global Biogeochemical Cycles, Journal of Geophysical Research, Continental Shelf Research)
2. Proposal Reviews (NSF, NASA, NOAA, and GURU)
3. NSF Proposal Panel (OPP, 2007; Chemical Oceanography, 2010)
4. NASA Proposal Panel (ROSES, 2010)
5. International Conference on Arctic Research Planning (ICARP) Committee (member)
6. Arctic Icebreaker Coordinating Committee (member), September 2009 – Present
7. North American Carbon Program (chair – Arctic Ocean and Bering Sea sub-group).
8. North American Carbon Program Steering Group (member)
9. Session Chair (Arctic Carbon Biogeochemistry), Oceans Science Meeting, Feb., 2010
10. Session co-Chair (Coastal Carbon Cycle), Ocean Sciences Meeting, Feb., 2010
11. Arctic In Rapid Transition (ART) Science and Implementation Working Group
12. Session co-Chair (Ecosystem Change in the Pacific Arctic in Relation to the Pan-Arctic System), IPY Science Conference, Oslo Norway, June 2010.
13. The Ocean Carbon and Biogeochemistry (OCB) Science Steering Committee, January 2011 – Present
14. The OCB Ocean Acidification sub-Committee, March 2011 – Present

Professional Memberships

1. America Geophysical Union (AGU)
2. American Society of Limnology and Oceanography (ASLO)
3. Sigma Xi
4. Explorers' Club

Community Service

1. Rotary International
2. Habitat for Humanity (Louisiana, Florida, and Alaska)

Awards Received

1. Rosenstiel Fellowship – graduate study endowment for outstanding undergraduate achievement.
2. Mary Roche Fellowship - $10,000 endowment for outstanding research at sea.
3. ASLO Student Paper Award – 2006 Ocean Sciences Meeting, Honolulu, HI.
4. F.G. Walton Smith Prize, University of Miami - RSMAS, (November 23, 2007). The award is given annually for the outstanding Ph.D. dissertation.
5. Outstanding Undergraduate Teaching Award – Fall, 2008.
6. Outstanding Undergraduate Teaching Award – Spring, 2009.
7. Alaskan Ocean Leadership Award – 2010.