

Scott Dennis Miller

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Professional Preparation

State University of New York at Buffalo	Mechanical Engineering	B.S. 1991
University of California at Irvine	Engineering	M.S. 1994
University of California at Irvine	Engineering	Ph.D. 1998
University of California at Irvine	Earth System Science	Postdoc, 1998-2003

Appointments

2005-Present Research Associate, Atmospheric Sciences Research Center and Adjunct Professor of Atmospheric and Environmental Sciences, SUNY Albany

2003-2005 Assistant Researcher, Earth System Science, UC Irvine

1995 Graduate Teaching Assistant, Mechanical and Aerospace Engineering, UC Irvine

1991-1998 Graduate Research Assistant, Mechanical and Aerospace Engineering, UC Irvine

1989-1990 Engineering Intern, Hebel Corporation, Buffalo, NY

Manuscripts in prep

Miller, S.D., J. Covert, J. Gerardi, G. Hickman (in preparation). Low-power techniques for 3D sonic anemometer measurements in extreme environments - EAGER paper

D. Vandemark, M. Emond, J. Covert, S. Shelito, Miller, S.D. (in preparation). CO₂ buoy lab paper

Miller, S.D., M. Emond, J. Covert, S. Shelito, D. Vandemark (in preparation). CO₂ buoy field paper

Covert, Jason M., S.D. Miller, J. Brotzge, E. Joseph, C. Thorncroft, and others The New York State Mesonet Surface-Atmosphere Flux Network, *J. Atmos. Ocean. Technol.*, in preparation.

Manuscripts in review

Watts, J., T.G. Bell, K. Anderson, J. Prytherch, B.J. Butterworth, B. Else, S.D. Miller, T. Holding, J. Shutler et al. Sea ice concentration data uncertainties show that any relationship between ice and gas transfer velocity remains ambiguous, in review, *Geophysical Research Letters*.

Brotzge camera network "Camera Network for Use in Weather Operations, Research and Education", in review, *Bulletin of the American Meteorological Society*.

Doughty, C.E., J. Keany, B.R. Schweiger, M.L. Goulden, H.R. da Rocha, S.D. Miller, Y. Malhi, I. Oliveras, G.R. Goldsmith, J.B. Fisher. Tropical forests are within critical temperature thresholds, rejected by *Nature*.

Yang, M. et al. (in revision). Global synthesis of air-sea CO₂ transfer velocity estimates from ship-based eddy covariance measurements, *Global Biogeochemical Cycles*.

Watts, J., T.G. Bell, K. Anderson, B.J. Butterworth, S.D. Miller, B. Else, J. Shutler (2022). Sea ice and air-sea CO₂ exchange – a critical review of polar eddy covariance studies, accepted in *Progress in Oceanography*.

Refereed Publications

50. Bond-lamberty, B., et al., (2020), COSORE: A community database for continuous soil respiration and other soil-atmosphere greenhouse gas flux data, *Global Change Biology*, DOI: 10.1111/gcb.15353.
49. Pastorello, G., et al. (2020). The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data. *Scientific Data*, 7(1), 225. <https://doi.org/10.1038/s41597-020-0534-3>
48. Brotzge, J., J. Wang, C. D. Thorncroft, E. Joseph, N. Bain, N. Bassill, N. Farruggio, J. M. Freedman, K. Hemker Jr., D. Johnston, E. Kane, J. Minder, S. McKim, S. D. Miller, P. Naple, S. Perez, J. Schwab, and J. Sicker (2020), A Technical Overview of the New York State Mesonet Standard Network, *J. Atmos. Ocean. Technol.*, 37, pp 1827-1845, DOI: 10.1175/JTECH-D-19-0220.1 .
47. Porter, J.G., W. J. DeBruyn, S. D. Miller, and E. S. Saltzman (2020), Air/sea transfer of highly soluble gases over coastal waters, accepted to *Geophysical Research Letters*,
46. Mahrt, L., S.D. Miller, T.S. Hristov, and J.B. Edson (2018), On estimating the surface wind stress over the sea, *Journal of Physical Oceanography*, 48, 1533-1541, 10.1175/JPO-D-17-0267.1
45. Czikowsky, M.J., S. MacIntyre, E. Tedford, J. Vidal, and S.D. Miller (2018), Effects of wind and buoyancy on carbon dioxide distribution and air-water flux of a small temperate lake, *JGR-Biogeosciences*, 10.1029/2017JG004209.
44. Landwehr, S., S. D. Miller, M. J. Smith, T. G. Bell, E. S. Saltzman, and B. Ward (2018), Using eddy covariance to measure the dependence of air-sea CO₂ exchange rate on friction velocity, *Atmos. Chem. Phys.*, 18(6), 4297–4315, doi:10.5194/acp-18-4297-2018
43. Esters, L., S. Landwehr, G. Sutherland, T. G. Bell, K. H. Christensen, E. S. Saltzman, S. D. Miller, and B. Ward (2017), Parameterizing air-sea gas transfer velocity with dissipation, *J. Geophys. Res. Ocean.*, 122(4), 3041–3056, doi:10.1002/2016JC012088.
42. Bell, T. G., S. Landwehr, S. D. Miller, W. J. de Bruyn, A. H. Callaghan, B. Scanlon, B. Ward, M. Yang, and E. S. Saltzman (2017), Estimation of bubble-mediated air--sea gas exchange from concurrent DMS and CO₂ transfer velocities at intermediate--high wind speeds, *Atmos. Chem. Phys.*, 17(14), 9019–9033, doi:10.5194/acp-17-9019-2017.
41. Martins, L. G. N., S. D. Miller, and O. C. Acevedo (2017), Using Empirical Mode Decomposition to Filter Out Non-turbulent Contributions to Air–Sea Fluxes, *Boundary-Layer Meteorol.*, 163(123), doi:10.1007/s10546-016-0215-0.
40. Butterworth, B. J., and S. D. Miller, 2016a, Air-sea exchange of carbon dioxide in the Southern Ocean and Antarctic marginal ice zone, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL069581.
39. Butterworth, B. J., and S. D. Miller, 2016b: Automated underway eddy covariance system for air-sea momentum, heat, and CO₂ fluxes in the Southern Ocean. *J. Atmos. Ocean. Technol.*, doi:10.1175/JTECH-D-15-0156.1.
38. Bell, T. G., W. De Bruyn, C. a. Marandino, S. D. Miller, C. S. Law, M. J. Smith, and E. S. Saltzman (2015), Dimethylsulfide gas transfer coefficients from algal blooms in the Southern Ocean, *Atmos. Chem. Phys.*, 15(1), 1783–1794, doi:10.5194/acp-15-1783-2015.

37. Landwehr, S., S. D. Miller, M. J. Smith, E. S. Saltzman, and B. Ward (2014), Analysis of the PKT correction for direct CO₂ flux measurements over the ocean, *Atmos. Chem. Phys.*, *14*(7), 3361–3372, doi:10.5194/acp-14-3361-2014.
36. Tedford, E. W., S. MacIntyre, S. D. Miller, and M. J. Czikowsky (2014), Similarity scaling of turbulence in a small temperate lake during fall cooling, *JGR-Oceans*, *119*(8), 4689–4713, doi:10.1002/2014JC010135.
35. Baker, I.T., A.B. Harper, H.R. da Rocha, A.S. Denning, A.C. Araujo, L.S. Borma, H.C. Freitas, M.L. Goulden, A.O. Manzi, **S.D. Miller**, A.D. Nobre, N. Restrepo-Coupe, S.R. Saleska, R. Stockli, C. von Randow, S.C. Wofsy (2014): Surface ecophysiological behavior across vegetation and moisture gradients in tropical South America, *Agricultural and Forest Meteorology*, 182–183, 15 December 2013, 177–188, DOI: 10.1016/j.agrformet.2012.11.015.
34. Edson, J. B., V. Jampana, R. A. Weller, S. P. Bigorre, A. J. Plueddemann, C. W. Fairall, S. D. Miller, L. Mahrt, D. Vickers, and H. Hersbach (2013), On the Exchange of Momentum over the Open Ocean, *J. Phys. Oceanogr.*, *43*(8), 1589–1610, doi:10.1175/JPO-D-12-0173.1.
33. Bell, T.G., W. De Bruyn, S.D. Miller, B. Ward, K. Christensen and E.S. Saltzman. Air/sea DMS gas transfer in the North Atlantic: evidence for wave-induced damping of interfacial gas exchange at high wind speed (2013): *Atmospheric Chemistry and Physics*, *13*, 11073–11087, doi:10.5194/acp-13-11073-2013.
32. Restrepo-Coupe, N., H.R. da Rocha, L.R. Hutyrá, A.C. da Araujo, L.S. Borma, B. Christoffersen, O.M.R. Cabral, P.B. de Camargo, F.L. Cardoso, A.C. Lola da Costa, D.R. Fitzjarrald, M.L. Goulden, B. Kruijt, J.M.F. Maia, Y.S. Malhi, A.O. Manzi, **S.D. Miller**, A.D. Nobre, C.von Randow, L.D.A. Sá, R.K. Sakai, J. Tota, S.C. Wofsy, F.B. Zanchi, S.R. Saleska (2013): What drives the seasonality of photosynthesis across the Amazon basin? A cross-site analysis of eddy flux tower measurements from the Brasil flux network, *Agricultural and Forest Meteorology*, Vol 182–183, 15 December 2013, 128–144, DOI: 10.1016/j.agrformet.2013.04.031.
31. **Miller, S.D.**, M.L. Goulden, L.R. Hutyrá, M. Keller, S.R. Saleska, S.C. Wofsy, A.M.S. Figueira, H.R. da Rocha, P.B. de Camargo (2011): Reduced Impact Logging Minimally Alters Tropical Rainforest Carbon and Energy Exchange, *Proceedings of the National Academy of Sciences*: doi: 10.1073/pnas.1105068108.
30. MacIntyre, S., A. Jonsson, M. Jansson, J. Aberg, D. E. Turney, and **S.D. Miller** (2010): Buoyancy flux, turbulence, and the gas transfer coefficient in a stratified lake *Geophys. Res. Lett.*, *37*, L24604, doi:10.1029/2010GL044164.
29. **Miller, S. D.**, C. Marandino, and E. S. Saltzman (2010): Ship-based measurement of air-sea CO₂ exchange by eddy covariance, *J. Geophys. Res.*, *115*, D02304, doi:10.1029/2009JD012193.
28. Fisher, J.B., Y. Malhi, A.C. de Araújo, D. Bonal, M. Gamo, M.L. Goulden, T. Hirano, A.R. Huete, H. Kondo, T. Kumagai, H.W. Loescher, **S.D. Miller**, et al. (2009): The land-atmosphere water flux in the tropics, *Global Change Biology* **15:11**, 2694–2714 ,doi: 10.1111/j.1365-2486.2008.01813.x.
27. **Miller, S.D.**, C.A. Marandino C.A., W.J. De Bruyn, and E.S. Saltzman (2009): Air-Sea Gas Exchange of CO₂ and DMS in the North Atlantic by Eddy Covariance, *Geophys. Res. Lett.*, *36*, L15816, doi:10.1029/2009GL038907.

26. da Rocha, H.R., A.O. Manzi, O.M. Cabral, **S.D. Miller**, et. al. (2009): Patterns of water and heat flux across a biome gradient from tropical forest to savanna in Brazil. *J. Geophys. Res.*, 114, D20, 10.1029/2007JG000640.
25. Juárez, R.I.N., H. R. da Rocha, A.M.S. Figueira, M.L. Goulden, and **S.D. Miller** (2009): An improved estimate of leaf area index based on the histogram analysis of hemispherical photographs. *Agr. Forest Meteorol.* 149, 6-7: 920-928, doi:10.1016/j.agrformet.2008.11.012.
24. Marandino C.A., W.J.De Bruyn, **S.D. Miller**, and E.S. Saltzman (2008): DMS air/sea flux and gas transfer coefficients from the North Atlantic summertime coccolithophore bloom. *Geophys. Res. Lett.* 35, L23812, doi:10.1029/2008GL036370.
23. Marandino C.A., W.J.De Bruyn, **S.D. Miller**, and E.S. Saltzman (2008): Open ocean DMS air/sea fluxes over the eastern South Pacific Ocean. *Atmos. Chem. Phys. Dis.* 8, 3: 12081-12114, doi:10.5194/acpd-8-12081-2008.
22. Figueira, A. M. e S., **S. D. Miller**, C. A. D de Sousa, M. C. Menton, A. R. Maia, H. R. da Rocha, and M. L. Goulden (2008): Effects of selective logging on tropical forest tree growth, *J. Geophys. Res.*, 113, G00B05, doi:10.1029/2007JG000577.
21. Baker, I. T., L. Prihodko, A. S. Denning, M. Goulden, **S.D. Miller**, and H. R. da Rocha (2008), Seasonal drought stress in the Amazon: Reconciling models and observations, *J. Geophys. Res.*, 113, G00B01, doi:10.1029/2007JG000644.
20. **Miller, S.D.**, T.S. Hristov, J.B. Edson, and C.A. Friehe (2008): Platform Motion Effects on Measurements of Turbulence and Air-Sea Exchange Over the Open Ocean, *J. Atmos. Ocean. Tech.* **25**(9), 1683–1694, doi:10.1175/2008JTECHO547.1.
19. Marandino C.A., W.J.De Bruyn, **S.D. Miller**, and E.S. Saltzman (2007): Eddy correlation measurements of the air/sea flux of Dimethylsulfide Over the North Pacific Ocean. *J. Geophys. Res.-Atmos.* **112**, doi:10.1029/2006JD007293.
18. **Miller, S.D.**, M.L. Goulden, H.R. da Rocha (2007): The Effect of canopy gaps on subcanopy ventilation and scalar fluxes in a tropical forest, *Agr. Forest Meteorol.* **142**:25-34, doi:10.1016/j.agrformet.2006.10.008.
17. Goulden, M. L., M. Litvak, and **S.D. Miller** (2007): Factors that control Typha marsh evapotranspiration, *Aquatic Botany*, 86(2), 97-106, doi:10.1016/j.aquabot.2006.09.005.
16. Bruno, R.D., H.R. da Rocha, H. Freitas, M. Goulden, and **S.D. Miller** (2006): Soil moisture dynamics in an eastern Amazonian tropical forest. *Hydrol. Process.* **20**:2477-2489, DOI: 10.1002/hyp.6211.
15. Doughty, C.E., M.L. Goulden, **S.D. Miller**, H.R. da Rocha (2006): Circadian rhythms constrain leaf and canopy gas exchange in an Amazonian forest, *Geophys. Res. Lett.* **33**, doi:10.1029/2006GL026750.
14. Goulden, M.L., **S.D. Miller**, and H.R. da Rocha (2006): Nocturnal cold air drainage and pooling in a tropical forest, *J. Geophys. Res.-Atmos.* **111**, D08S04, doi:10.1029/2005JD006037.
13. Marandino, C.A., W.J. De Bruyn, **S.D. Miller**, M.J. Prather, and E.S. Saltzman (2005): Oceanic uptake and the global atmospheric acetone budget. *Geophys. Res. Lett.* **32**, L15806, doi:10.1029/2005GL023285.
12. **Miller, S.D.**, M.L. Goulden, et al. (2004): Biometric and micrometeorological measurements of tropical forest carbon balance. *Ecol. Appl.* **14**(4):S114 –S126, doi:10.1890/02-6005.

11. Goulden, M.L., **S.D. Miller**, M.C. Menton, H.R. da Rocha, and H.C. Freitas (2004): Diel and seasonal patterns of tropical forest CO₂ exchange. *Ecol. Appl.* **14**(4):S42 –S54, doi:10.1890/02-6008.
10. Rocha, H.R., M.L. Goulden, **S.D. Miller**, et al. (2004): Seasonality of water and heat fluxes over a tropical forest in eastern Amazonia. *Ecol. Appl.* **14**(4): S22 –S32, doi:10.1890/02-6001.
9. Keller, M., A. Alencar, G.P. Asner et al. (2004): Ecological research in the Large-scale Biosphere-Atmosphere experiment in Amazonia: early results. *Ecol. Appl.*, **14**(4):S3-16, doi:10.1890/03-6003.
8. Saleska, S.R., **Miller, S.D.**, Matross, D.M., Goulden, M.L., Wofsy, S., Rocha, H.R., Camargo, P.B., Crill, P., Daube, B.C., Freitas, H.C., Hutyrá, L., Keller, M., Kirchhoff, V., Menton, M., Munger, J.W., Hammond Pyle, E., Rice, A.H., and Silva, H. (2003): Carbon in Amazon Forests: Unexpected Seasonal Fluxes and Disturbance-Induced Losses. *Science* **302**:1554-1557, DOI: 10.1126/science.1091165.
7. Hristov, T.S., **S.D. Miller**, C.A. Friehe (2003): Wind and ocean surface waves: dynamics of coupling. *Nature*, March 7, 2003, doi:10.1038/nature01382.
6. Litvak, M., **S.D. Miller**, S. Wofsy, and M. Goulden (2002): Effect of stand age on whole ecosystem CO₂ exchange in Canadian boreal forest. *J. Geophys. Res.-Atmos.* **108** (D3): 8225, doi:10.1029/2001JD000854.
5. Grachev, A.A., C.W. Fairall, J.E. Hare, J.B. Edson, and **S.D. Miller** (2003): Wind stress vector over waves. *J. Phys. Oceanogr.* **33**(11):2408–2429, doi:10.1175/1520-0485(2003)033<2408:WSVOOW>2.0.CO;2.
4. Hristov, TS, **S.D. Miller**, and C.A. Friehe (2000): Linear time-invariant compensation of cup anemometer and vane inertia. *Bound-Lay Meteorol.* **97**(N2):293-307, DOI: 10.1023/A:1002742508203.
3. Shirer, H., G. Young, R. Wells, A. Rogers, J. Rishel, R. Mason, L. Suciú, N. Winstead, H. Henderson, D. Rinker, J. Rohrbach, J. Edson, C. Friehe, S. Wetzel, **S.D. Miller**, T. Hristov (1999): Identifying coherent structures in the marine atmospheric boundary layer, in Air-Sea Exchange: Physics, Chemistry and Dynamics, ed. G.L. Geernaert, Kluwer Academic Publishers, London, Chapter 18, pp 507-539.
2. Hristov, T., C. Friehe, and **S.D. Miller**, 1998: Wave-coherent fields in air flow over ocean waves: Identification of cooperative behavior buried in turbulence. *Phys. Rev. Lett.* **81**(23):5245-5248, 10.1103/PhysRevLett.81.5245.
1. **Miller, S.D.**, C.A. Friehe, T.S. Hristov, and J.B. Edson, 1997: Wind and turbulence profiles in the surface layer over ocean waves. Wind-Over-Wave Couplings-Perspectives and Prospects, Chapter 10, Oxford University Press.

Research Highlights

- 2013 SUNY Albany web highlight on Adirondack Lake study, <http://www.albany.edu/news/43240.php?WT.eml=nc>.
- 2012 Brown, A., “Selective Logging”, Research Highlight, *Nature Climate Change* **2**, 23, doi:10.1038/nclimate1361.
- 2011 MIT Scope interview, November 22.
- 2011 SUNY Albany press release for Proceedings of the National Academy of Sciences “Reduced Impact Logging minimally impacts tropical forest carbon and energy exchange”

- 2011 RF SUNY interview/article on Southern Ocean gas exchange project
2010 Miller, S.D., Air-sea Gas Exchange of CO₂ and DMS in the North Atlantic by Eddy Covariance, SOLAS (Surface Ocean Lower Atmosphere Study) Newsletter, 10, pp. 16

Published Datasets

9. Goulden, M.L. S.D. Miller and H.R. da Rocha (2010): LBA-ECO CD-04 Soil Moisture Data, km 83 Tower Site, Tapajos National Forest, Brazil. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/979
8. Miller, S.D., M.L. Goulden, H.R. da Rocha (2010): LBA-ECO CD-04 CO₂ and Heat Flux, km 83 Gap Tower Site, Tapajos National Forest. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/978
7. Miller, S.D., C.A. Marandino C.A., W.J.De Bruyn, and E.S. Saltzman (2009): Air-Sea Gas Exchange of CO₂ and DMS in the North Atlantic by Eddy Covariance, *Geophys. Res. Lett*, 36, L15816, doi:10.1029/2009GL038907 (supplemental online material).
6. Miller, S., M. Goulden, and H.R. da Rocha (2009): LBA-ECO CD-04 CO₂ Profiles, km 83 Tower Site, Tapajos National Forest. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/947
5. Miller, S., M. Goulden, and H.R. da Rocha (2009): LBA-ECO CD-04 Meteorological and Flux Data, km 83 Tower Site, Tapajos National Forest. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi: 10.3334/ORNLDAAAC/946
4. Figueira, A.M.S., S.D. Miller, C.A.D. de Sousa, M.C. Menton, A.R. Maia, H.R. da Rocha, and M.L. Goulden (2011): LBA-ECO CD-04 Dendrometry, km 83 Tower Site, Tapajos National Forest, Brazil. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/989
3. Menton, M.C., A.M.S. Figueira, C.A.D. de Sousa, S.D. Miller, H.R. da Rocha, and M.L. Goulden (2011): LBA-ECO CD-04 Biomass Survey, km 83 Tower Site, Tapajos Nat a set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/990
2. Figueira, A.M.S., C.A.D. de Sousa, M.C. Menton, R.N. Juarez, H.R. da Rocha, S.D. Miller, and M.L. Goulden (2011): LBA-ECO CD-04 Leaf Litter Data, km 83 Tower Site, Tapajos National Forest, Brazil. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/991
1. Figueira, A.M.S., de Sousa, C.A.D., Menton, M.C., Juarez, R.N., da Rocha, H.R., Miller, S.D., and Goul den, M.L (2010): Leaf Area Index, km 83 Tower Site, Tapajos National Forest, Brazil. Data set. Available on-line [<http://daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAAC/992

Teaching

- 2022 ATM505: Atmospheric Physics 2, Boundary Layer Module, graduate.
- 2020 ATM529: Atmosphere-Ocean Interaction, fall semester, graduate.
- 2020 ATM505: Atmospheric Physics 2, Boundary Layer Module, graduate.
- 2017 ATM529: Atmosphere-Ocean Interaction, fall semester, graduate.
- 2016 ATM528: Boundary Layer Meteorology, spring semester, graduate, co-taught with D. Fitzjarrald.
- 2014 ATM529: Atmosphere-Ocean Interaction, spring semester, graduate.

Supported Research

- 11: Flux-Lidar Buoy for Offshore Wind Monitoring and Prediction, PI (co-PI Jeff Freedman), US Department of Energy, \$252K, Jan 2021-Dec 2021.
- 10: Combining Low-Cost AQ Sensors with NYS Mesonet for Fine-Scale Monitoring in NYC, PI (co-PIs Sarah Lu, Aynul Bari), \$544K, Nov 2020-Oct 2023.
- 9. EAGER: Robust, Low-power Strategies for Unattended Micrometeorological Buoy Deployments in Extreme Environments, PI, NSF Physical Oceanography, \$163K, Aug 2018-Jul 2019.
- 8. Collaborative Research: A new system for air-sea CO₂ flux measurements from moored and unmanned surface platforms, PI, NSF OTIC, \$323K, Sept 2017-Aug 2020.
- 7. Integrating Meteorology, Biogeochemistry, Surface Tension, and Surface Layer Turbulence to Study Carbon Dioxide Fluxes from an Adirondack Lake, co-PI Dave Kieber (SUNY ESF), SUNY RF Research Collaboration Fund, \$100K, Jan 2014-Jan 2016.
- 6. Measuring Greenhouse Gas Fluxes from Lakes and Reservoirs in Amazonia, Brazil Science Without Borders Program (PI-Julio Tota, Federal University of Western Para - UFOPA, Brazil), \$200K, Nov 2012-Nov 2015.
- 5. Air-Sea Fluxes of Momentum, Heat, and Carbon Dioxide at High Wind Speeds in the Southern Ocean, Principle Investigator, NSF Office of Polar Programs, \$496K, Jun 2011-Jun 2014
- 4. Collaborative Research: Arctic to the Amazon: Physical Processes Controlling Gas Exchange from Freshwater Ecosystems, co-Principle Investigator, NSF Division of Environmental Biology, \$330K, Sep 2009-Sep 2012 (PI: Sally MacIntyre, UC Santa Barbara)
- 3. Collaborative Research: Air/sea Gas Exchange Studies of CO₂, DMS, and Acetone by Eddy Correlation, Principle Investigator, NSF Atmospheric Chemistry, \$274K, Jul 2009-Jul 2012 (Co-PIs: Eric Saltzman, UC Irvine, Warren DeBruyn, Chapman University)
- 2. Effects of Selective Logging on Carbon Dioxide and Energy Exchange in Tapajos National Forest, Principle Investigator, NASA, \$179K, 2006-2009 (co-PIs: Mike Goulden, UC Irvine, Humberto da Rocha, University of Sao Paulo)
- 1. Direct Measurements of CO₂, DMS, and Acetone over the Ocean, Principle Investigator, NSF Atmospheric Chemistry, 2004-2008. \$473K, (co-PI: Eric Saltzman, UC Irvine)

Journal and Proposal Reviewer

- 2021 Atmospheric Chemistry and Physics
- 2020 Global Biogeochemical Cycles, JGR-Atmospheres
- 2016 Journal of Geophysical Research – Oceans, NSF (2)
- 2015 Journal of Atmospheric and Oceanic Technology, Journal of Physical Oceanography, Geophysical Research Letters, NSF (2), Israel Science Foundation

- 2014 Geophysical Research Letters, NSF (2)
- 2013 Agricultural and Forest Meteorology, Journal of Geophysical Research-Biosciences, Journal of Atmospheric and Oceanic Technology (3) , NSF (3)
- 2012 Agricultural and Forest Meteorology, Boundary Layer Meteorology, EOS (2), Forest Research, NSF
- 2011 Agricultural and Forest Meteorology (2), Environmental Science and Technology, Global Change Biology, JGR-Oceans (2)
- 2010 Agricultural and Forest Meteorology (2), Boundary Layer Meteorology, Global Change Biology, JGR-Atmospheres, JGR-Biogeosciences, JGR-Oceans, NSF (2), NSERC-Canada, Tellus-B
- 2009 Agricultural and Forest Meteorology (2), Global Change Biology, Geophysical Research Letters, JGR-Atmospheres, International Geosphere Biosphere Program, NASA
- 2008 Agricultural and Forest Meteorology, JGR-Atmospheres, J. of Atmospheric and Oceanic Technology, LBA-ECO Conference: Amazon in Perspective, DOE-NICCR, NSF
- 2007 JGR-Atmospheres, J. of Atmospheric and Oceanic Technology, DOE-NICCR, NASA
- 2006 Agricultural and Forest Meteorology (2), Global Change Biology, NSF (3), NASA (2)
- 2005 Journal of Hydrometeorology, NSF (2)
- 2004 Ecological Applications, Global Biogeochemical Cycles
- 2003 Global Biogeochemical Cycles, Journal of Atmospheric and Oceanic Technology
- 2002 Global Change Biology, Bioneotropa

University Service

- 2020- ASRC Communications & Outreach Committee
- 2019- NYS Mesonet Science Advisory Committee co-chair (with Justin Minder)
- 2019 Job Search Committee for J. Ruggiero
- 2018 Job Search Committee for J. Schwab
- 2017 Job Search Committee for C. Lott (Chair)
- 2015 Job Search Committee for J. MacMillan
- 2019 Girls, Inc. Provided lab demonstration for visiting students from Girls Inc.
- 2014-present NYS Mesonet: Flux Site Lead (chair)
- 2014 NYS Mesonet: Site Standards and Survey Committee (chair), Instrumentation Committee, Data and Products Committee, Enhanced Site Committee
- 2014 ASRC Web Site Committee
- 2014 Graduate Program Committee
- 2013/4 Search Committee, ASRC faculty (2 positions)
- 2013 Contributed to SUNY Empire Innovation Program proposal for ASRC director startup funds.
- 2013 Tenure reference for faculty and professional staff evaluations
- 2013 Graduate Program Committee
- 2013 Graduate Admissions Committee, ASRC/DAES
- 2012/3 Search Committee, DAES faculty (2 positions)
- 2012/3 Search Committee, ASRC faculty (2 positions)
- 2012 Search Committee co-Chair, ASRC Director
- 2012 Search Committee Chair, Whiteface Mountain Observatory Supervisor P. Casson
- 2012 Graduate Student Admission Committee

Synergistic Activities

- 2012 Session Chair, “Air-sea Flux Measurements”, AMS 18th Conference on Air-Sea Interaction
- 2009-2018: Advisory Group Member: The National Ecological Observatory Network (NEON) Fundamental Instrument Unit
- 2009 NASA panel member, Washington, DC
- 2008-12 Editorial Board Member: Agricultural and Forest Meteorology
- 2008 Matlab software for motion correction of 3-D winds measured from moving platforms provided to several groups in U.S. and international
- 2008 Session Chair, LBA-ECO Conference: Amazon in Perspective, Manaus, Brazil
- 2006 NASA panel member, Washington, DC
- 2004 WESTGEC panel member, Davis, CA

Outreach Activities and Professional Development

- 2015-present Capstone Project Advisor for NYSED approved Pre-Engineering Program at Shaker High School, NY
- 2016 Judge for Junior Science and Humanities Symposium (JSHS) finals, Physical Sciences
- 2013 Judge for Junior Science and Humanities Symposium (JSHS) finals, Physical Sciences
- 2012 Falconer Lecture, “Measuring the Carbon Cycle of a Small Adirondack Lake”, public lecture at Whiteface Mountain Field Station (given by Matt Czikowsky)
- 2012 Judge for Sub-Regional Junior Science and Humanities Symposium (JSHS) for Eastern New York, Physical Sciences
- 2011 BLOOMCRUISE: North Atlantic research blog (<http://bloomcruise.blogspot.com>)
- 2011 presenter at Capital Region Chapter of the American Meteorological Society Career Night & Fair
- 2010 HALOCAST: Eastern Pacific research blog (<http://ocean.tamu.edu/research/research-cruises/687-chile>)
- 2009 AAAS/NSF Workshop – Communicating Science, Tools for Scientists and Engineers, Cornell University
- 2009 Science Research in the High School Program, SUNY Albany
- 2004 Physical Sciences Mentoring Program, UC Irvine – served as a mentor for female minority undergraduate physics student

Field Campaigns

- 2021 New York City Metropolitan Area Low-Cost Air Quality Monitoring Network
- 2021 Lake George, Seneca Lake, Lake Oneida, lake-atmosphere flux package development using lab pontoon boat
- 2015 Curua Una Reservoir, Para, Brazil (Jan 20-Apr 20): developed and deployed solar powered buoy to measure air-water CO₂ flux and pCO₂.
- 2014 Cranberry Lake, New York (Aug 11-22): lake-atmosphere gas exchange, collaborative between ASRC, SUNY ESF, Columbia University
- 2013 Research Vessel Ice Breaker (RVIB) Nathaniel B. Palmer: Jun 22-29, 2013 equipment repairs and 6-day cruise from Punta Arenas to Valparaiso, Chile; November 19-26 equipment repair, Punta Arenas, Chile
- 2012 Research Vessel Ice Breaker (RVIB) Nathaniel B. Palmer, Dec 20-Jan 1, 2013 setup for unattended research cruises in Antarctic

- 2012 SOAP: Southern Ocean, February 12-March 7, New Zealand, R/V Tangaroa
- 2011 BLOOMCRUISE: North Atlantic Ocean, June 24-July 18, Woods Hole to Woods Hole, 25 days, R/V Knorr, Chief Scientist
- 2010 Lake Pleasant, New York (Sep 15-Oct 15): lake-atmosphere gas exchange
- 2010 HALOCAST: Eastern Pacific Ocean, March 20-April 18, Porto Montt, Chile to Seattle, Washington, 27 days, R/V Thompson
- 2009 Piseco Lake, New York (Sep 1-4, Oct 2-6, Nov 4-6): lake-atmosphere gas exchange
- 2009 Seneca Lake, New York (July 15-26): lake-atmosphere gas exchange
- 2007 North Atlantic Ocean, Reykjavik, Iceland to Woods Hole, Massachusetts, R/V Knorr, Jul 17-26, Chief Scientist
- 2007 North Atlantic Ocean, Bridgetown, Barbados to Reykjavik, Iceland, R/V Knorr, May 29-Jun 10, Chief Scientist
- 2007 North Atlantic Ocean, Woods Hole, Massachusetts to Bridgetown, Barbados, R/V Knorr, Apr 15-21, Chief Scientist
- 2006 Eastern Pacific Ocean, Manzanillo, Mexico to Puntas Arenas, Chile, R/V Knorr, Jan 2-21, Chief Scientist
- 2004 Santarem, Para, Brazil, Tapajos and Amazon Rivers - Air-water gas exchange measurements from Amazonian riverboat
- 2000/04 Tapajos National Forest, Para, Brazil. Large Scale Biosphere-Atmosphere Experiment in Amazonia (LBA), forest-atmosphere exchange measurements
- 1998-2002 Boreal Forest, Manitoba, Canada
- 1995 Marine Boundary Layers Experiment II, R/P FLIP, 50 km off Monterey, CA, 30 days
- 1994 Marine Boundary Layers Experiment, R/P FLIP, off San Diego, CA, 10 days

Oral Conference Presentations and Invited Seminars

- 2015 Southern Ocean Observing System (SOOS) Air-Sea Fluxes Workshop, “Automated underway eddy covariance system for air-sea momentum, heat and CO₂ fluxes in the Southern Ocean”, Frascati, Italy, invited.
- 2013 AGU Fall Meeting, San Francisco, “Physical controls on carbon flux from a temperate lake during autumn cooling”.
- 2013 State University of Amazonia (UEA), Manaus, Brazil, “Lake-atmosphere carbon exchange.
- 2013 Federal University of Western Para (UFOPA), Santarem, Brazil, “Lake-atmosphere carbon exchange.
- 2012 AMS 18th Conference on Air-Sea Interaction, "North Atlantic Air-sea CO₂ and Dimethylsulfide Exchange Measured by Eddy Covariance".
- 2012 SUNY Albany, “Field Studies of Air-Sea Gas Exchange”, Dept. of Atmospheric and Environmental Sciences seminar.
- 2011 Texas A&M University, “Measurement of air-sea CO₂ exchange by eddy covariance”
- 2010 NOAA HighWings Project meeting, “Air-sea CO₂ flux methodology”
- 2010 SUNY Stony Brook, SOMAS, “Measurement of air-sea CO₂ exchange by eddy covariance”
- 2009 8th International Carbon Dioxide Conference, Jena, Germany
- 2009 IFM-GEOMAR, Kiel, Germany: “Direct CO₂ and DMS Flux Measurements in the North Atlantic”.
- 2009 SUNY Albany, ATM 210, undergraduate demonstration of micrometeorological sensors.

- 2008 AGU Fall meeting, San Francisco, “Simultaneous Eddy Covariance CO₂ and DMS Flux Measurements in the North Atlantic”
- 2008 Amazon in Perspective: Integrated Science for a Sustainable Future, Manaus, Brazil, “The Effects of Selective Logging on Tropical Forest Carbon Cycling”.
- 2008 University of Connecticut, Groton, “Direct CO₂ and DMS Flux Measurements in the North Atlantic”
- 2008 SUNY Albany ATM 210 Weather Workshop, overview of research program
- 2007 12th LBA-ECO Science Conference, Salvador, Bahia, Brazil: “The Effects of Selective Logging on Tropical Forest Carbon Cycling”
- 2007 SUNY Albany, Atmospheric Sciences Research Center: “Effects of selective logging on carbon cycling in a tropical rainforest”
- 2006 11th LBA-ECO Science Conference, Brasilia, Brazil: “The Effects of Selective Logging on Tropical Forest-Atmosphere Exchange”
- 2005 10th LBA-ECO Science Conference, Sao Paulo, Brazil. “Boat-Based Eddy Covariance Measurements of CO₂ and H₂O Exchange Over Amazon and Tapajos Rivers and Lakes”
- 2005 Atmospheric Sciences Research Center, SUNY Albany: “Using Micrometeorological Techniques to Address Questions of Carbon Balance in the Amazon”
- 2004 AGU Fall meeting, San Francisco, “Boat-Based Eddy Covariance Measurements of CO₂ and H₂O Exchange Over Amazon and Tapajos Rivers and Lakes”
- 2004 9th LBA-ECO Science Conference, Brasilia, Brazil: “Carbon Dioxide Exchange of a Tropical Rainforest Before and After Selective Logging”
- 2003 9th LBA-ECO Science Conference, Fortaleza, Brazil: “Micrometeorology, CO₂ and H₂O Exchange of a Tropical Rainforest Before and After Selective Logging”
- 2003 Carbon Cycling in Tropical and Boreal Forests (in portugues), invited seminar, Federal University of Para (UFPA), Santarem, Para, Brazil
- 2003 UC Irvine, Earth System Science (department seminar): “Measuring the Effect of Selective Logging on Forest-Atmosphere Exchange”
- 2002 AGU Fall meeting: “Micrometeorology of a Tropical Rainforest Before and After Selective Logging”
- 2002 LBA meeting, Manaus, Brazil: “Tower- and Biometry-Based Measurements of Tropical Forest Carbon Balance”
- 2002 FLUXNET Synthesis Workshop, Orvieto, Italy: “Disturbance Effects on Ecosystem Carbon Balance in Tropical and Boreal Forests, invited seminar”
- 2002 AmeriFlux Workshop on Standardization of Flux Analysis and Diagnostics, Corvallis, Oregon, “Flux correction for cross contamination (Webb, Pearman, Leuning Correction)”
- 2002 University of Sao Paulo, Department of Atmospheric Sciences, Brazil: “Carbon Cycling in Tropical and Boreal Forests”
- 2001 LBA meeting, Atlanta, GA: “Measuring the Effect of Tropical Logging on Forest-Atmosphere Exchange”
- 2001 UC Irvine, Department of Earth System Science, “Measuring the Effect of Selective Logging on Forest-Atmosphere Exchange”
- 2001 LBA-ECO Science Steering Committee, Palmas, Tocantins, Brazil, “Measuring the effect of selective logging on tropical forest-atmosphere exchange
- 2000 AGU Fall meeting, San Francisco, CA: “Measuring the effect of tropical logging on forest-atmosphere exchange”

- 2000 SUNY Albany, Atmospheric Sciences Research Center. "Wind and Turbulence profiles over ocean waves"
- 1999 American Meteorological Society, Dallas, Texas, "The wave-induced wind field above deep ocean waves"
- 1997 12th Symposium on Boundary Layers and Turbulence, American Meteorological Society, Vancouver, British Columbia, "Wind and turbulence profiles in the surface layer over the ocean"
- 1996 Ocean Sciences Meeting, San Diego, CA, Special Section on Marine Boundary Layers, "Wind profile and turbulence over ocean waves"
- 1996 Marine Boundary Layers Meeting (Office of Naval Research), Scripps Institution of Oceanography, San Diego, CA, "Wave effects on turbulence in the marine boundary layer"
- 1995 American Physical Society, Irvine, CA, "Profiles of wind speed and Reynolds stress over the open ocean"
- 1995 Marine Boundary Layers Meeting (Office of Naval Research), Irvine, CA, "Flux-profile measurements from R/P FLIP during MBL II"

Poster Presentations (first author only)

- 2020 AMS Meeting, CO₂ flux buoy
- 2012 SOLAS Open Science Conference, Seattle, Washington, " Air-sea CO₂ exchange across a broad latitude range in the eastern Pacific by eddy covariance".
- 2009 SOLAS Open Science Conference, Barcelona, Spain, "Air-sea Gas Exchange of CO₂ and DMS in the North Atlantic by Eddy Covariance"
- 2006 Development of an Eddy Covariance System for Air-Sea Carbon Dioxide Exchange, AGU Fall meeting, San Francisco
- 2006 Boat-Based Eddy Covariance Measurements of CO₂ Exchange Over Amazon and Tapajos Rivers and Lakes, Brasilia, Brazil
- 2006 The Effect of Canopy Gaps on Subcanopy Ventilation and Scalar Fluxes above a Tropical Forest, Baltimore, MD, NASA Carbon Meeting
- 2004 Micrometeorology, CO₂ and H₂O Exchange of a Tropical Rainforest Before and After Selective Logging, AGU Fall meeting, San Francisco
- 2003 Ameriflux, Boulder, CO₂: "Flux tower studies in boreal and tropical forests and a freshwater marsh"
- 2002 AGU Fall meeting, San Francisco, "Micrometeorology of a Tropical Rainforest Before and After Selective Logging"
- 2001 IGBP Global Change Open Science, Amsterdam, Netherlands, "Measuring the Effect of Tropical Logging on Forest-Atmosphere Exchange"
- 2001 Measuring the Effect of Selective Logging on Forest-Atmosphere Exchange, AGU Fall meeting, San Francisco
- 2001 Measuring the Effect of Tropical Logging on Forest-Atmosphere Exchange, Global Change Open Science Conference, Amsterdam, Netherlands
- 2000 LBA-Ecology Open Meeting, Belem, Para, Brazil, "Measuring the effect of tropical logging on forest-atmosphere exchange"
- 1995 3rd International Symposium on Air-Water Gas Transfer, Heidelberg, Germany, "Profiles of wind speed and Reynolds stress over the open ocean"

Collaborators

Porter, Jack	UC Irvine	jporter@aqmd.gov	2020
Saltzman, Eric	UC Irvine	esaltzma@uci.edu	2020
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Bassill, Nick	SUNY Albany	nbassill@albany.edu	2020
Farruggio, Nick	SUNY Albany	nfarruggio@albany.edu	2020
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Pastorello, Gilberto	Lawrence Berkeley National Lab	gzpastorello@lbl.gov	2020
Bond-Lamberty	Pacific Northwest Research Lab	bondlamberty@pnnl.gov	2020
Czikowsky, Matt	n/a	mjczikowsky@gmail.com	2018
MacIntyre, Sally	UC Santa Barbara	sally.macintyre@ucsb.edu	2018
Tedford, Edward	University British Columbia	ttedford@eoas.ubc.ca	2018
Vidal, Javier	UC Santa Barbara	javiervidal@ugr.es	2018
Mahrt, Larry	Pacific Northwest Research Lab	example@example.com	2018
Hristov, Tihomir S	Johns Hopkins University	Tihomir.Hristov@jhu.edu	2018
Edson, James B	Woods Hole Oceanographic	jedson@whoi.edu	2018
Martins, Luis	Federal University Santa Maria, Brazil	lgnm.sm@gmail.com	2017
Acevedo, Otavio	Federal University Santa Maria, Brazil	otavio@ufsm.br	2017
Bell, Tom	Plymouth Marine Lab	tbe@pml.ac.uk	2017
Landwehr, Sebastian	National University Ireland Galway	S.LANDWEHR1@nuigalway.ie	2017
deBruyn, Warren	Chapman University	debruyn@chapman.edu	2017
Callaghan, Adrian	UC San Diego	callaghan.adrian@gmail.com	2017
Scanlon, Brian	National University Ireland Galway	b.scanlon1@nuigalway.ie	2017
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Yang, Mingxi	Plymouth Marine Lab	miya@pml.ac.uk	2017
Esters, Lonnie	National University Ireland Galway	leonie.esters@geo.uu.se	2017
Christensen, Kai	Norwegian Meteorological Institute	kai.h.christensen@met.no	2017
Sutherland, Greg	National University Ireland Galway	graig.sutherland@gmail.com	2017
Smith, Murry	NIWA	Murray.Smith@niwa.co.nz	2017
Butterworth, Brian	University of Calgary	brian.butterworth@ucalgary.ca	2016

Graduate and Postdoctoral Advisors

Carl Friehe, Department of Mechanical Engineering, UC Irvine (Ph.D. Advisor)

Michael Goulden, Department of Earth System Science, UC Irvine (Postdoctoral Advisor)

Postdoctoral Researchers

2009-13 Matt Czikowsky, SUNY Albany
2011 Fabricio Cruz De Oliveira, University of Sao Paulo, Brazil, R/V Knorr N. Atlantic
cruise

Exam Committees

2018-present Yanna Chen (Everette Joseph)
2019-present Chin An Lin (Sara Lu)
2019-present Hsiao-Chun (Everette Joseph)
2019-21 Wei Ting (Sarah Lu)

Graduate Students

2016-2019 Jason Covert, SUNY Albany
2012-2016 Brian Butterworth, SUNY Albany
2013 Luis Gustavo Martins, Federal University of Santa Maria, Brazil, 1 year
2012 Lauren Slawsky, SUNY Albany
2011/12 Sebastian Landwehr, National University of Ireland Galway, 6 months
2011 Cristina Schultz, INPE – Brazilian Space Institute, R/V Knorr N. Atlantic cruise
2008 Marta Llopart, University of Sao Paulo, Brazil, June-Nov, 5 months
2006 Michela Figueira, CENA, Piracicaba, Sao Paulo, Brazil, 9 months

Undergraduate Students

2021 Patrick McMillan, Environmental Sciences, Hobart-William Smith College
2021 Elena Neimeyer, Environmental Sciences, SUNY Albany
2014 Nick Carll, Atmospheric and Environmental Sciences, SUNY Albany
2014 Zach Szumloz, Atmospheric and Environmental Sciences, SUNY Albany
2014 Deborah McGlynn, Atmospheric and Environmental Sciences, SUNY Albany
2014 Jesse Coull, Mechanical Engineering, Union College
2014 Alex Gallagher, Atmospheric and Environmental Sciences, SUNY Albany
2014 Alexis Drumm, Atmospheric and Environmental Sciences, SUNY Albany
2014 Steven Perez, Atmospheric and Environmental Sciences, SUNY Albany
2014 Nick Farruggio, Atmospheric and Environmental Sciences, SUNY Albany
2011-2012 Chris Sager, Atmospheric and Environmental Sciences, SUNY Albany
2011 Brett Stacy, Humboldt State University, California, R/V Knorr N. Atlantic cruise
2011 Ryan Kennedy, Bristol Community College, MA, R/V Knorr N. Atlantic cruise
2010 Lori Cornell, Environmental Science and Geology, SUNY Albany
2009 Mark Ellinwod, Atmospheric and Environmental Sciences, SUNY Albany