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EDUCATION:

Ph.D. 2000 Chemical Oceanography, **Columbia University**, New York, NY
M. S. 1996 Geology, **Columbia University**, New York, NY
B. A. 1988 Chemistry, **Bowdoin College**, Brunswick, ME

AREAS OF INTEREST:

- Constraining the carbon budget through atmospheric observations of CO₂, CH₄ and other trace gases
- Upper ocean biogeochemical cycling and export of carbon and nutrients
- Air-sea gas exchange of CO₂
- The role of the Southern Ocean in the future Global Carbon Budget
- Experiential science education

PROFESSIONAL ACTIVITY:

1/2018 – Present **Physical Scientist**, Global Monitoring Division (GMD), National Oceanic and Atmospheric Administration (NOAA), Earth System Research Laboratory (ESRL), Boulder, CO

6/2016 – 1/2018 **Senior Research Scientist**, Cooperative Institute for Research in Earth Sciences (CIRES), University of Colorado, Boulder, CO

6/2010 – 6/2016 **Research Scientist III**, CIRES, University of Colorado, Boulder, CO

4/2005 – 6/2010 **Research Scientist II**, CIRES, University of Colorado, Boulder, CO

4/2002 – 4/2005 **Research Staff Member**, Princeton University, Princeton, NJ

4/2002 – Present **Adjunct Assistant Research Scientist**, Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

9/2000 – 4/2002 **Postdoctoral Research Scientist**, Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

9/2000 – 12/2000 **Lecturer**, Barnard College, New York, NY

9/1994 – 9/2000 **Doctoral Student**, Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY

6/1992 – 7/1994 **Research Assistant**, Woods Hole Oceanographic Institute, Woods Hole, MA.

9/1989 – 1/1992 **Peace Corps Volunteer**, Peace Corps Nepal, Bardia District, Nepal

9/1988 – 6/1989 **Chemistry Teacher**, Proctor Academy, Andover, NH

AWARDS

2015 CIRES Technology Transfer award for AirCore measurements

2012 CIRES Science and Engineering award for AirCore development

2008 NOAA Outstanding Paper Award

2002 **National Research Council Fellowship** (Declined award)

1999 **Bruce Heezen Award**. Awarded for excellence in graduate student research by the Earth and Environmental Science Department, Columbia University.

- 1998 – 2000 **NASA Global Change Fellowship.** Three year fellowship awarded by NASA for graduate student research in global climate change.
- 1997 **The Sarah Langer Prize.** Book award for the student who contributes most to student life.
- 1994 – 1998 **Columbia University Graduate School Fellowship.** Five year fellowship awarded for the study of Chemical Oceanography.

PROFESSIONAL ACTIVITIES

- 2000 – Present Journal reviewer (Nature, Science, AGU Journals, Deep Sea Research)
- 2000 – Present NSF, NOAA, NASA Proposal Review Panel Member
- 2013-2015 NASA Arctic Boreal Vulnerability Experiment (ABOVE)
- 2010 U.S. National Academy of Sciences advisor for “Frontiers in Understanding Climate Change and Polar Ecosystems”
- 2007 IPCC contributing author
- 2003 – 2008 Antarctic Research Vessel Oversight Committee
- 2003 – 2017 NSF, NOAA, NASA Proposal Review Panel Member
- 2000 – 2001 NOAA Carbon Observations Planning Group
- 1997 – 2000 Columbia University Senate Education Committee member

PUBLICATIONS as of Nov 2018 (Total papers = 156, H-index = 56, citations = 14,000)

2018

- Alden, C. B., S. Ghosh, S. Coburn, C. Sweeney, A. Karion, R. Wright, I. Coddington, G. B. Rieker, and K. Prasad (2018), Bootstrap inversion technique for atmospheric trace gas source detection and quantification using long open-path laser measurements, *Atmos. Meas. Tech.*, 11(3), 1565-1582, doi:10.5194/amt-11-1565-2018.
- Alvarez, R. A., D. Zavala-Araiza, D. R. Lyon, D. T. Allen, Z. R. Barkley, A. R. Brandt, K. J. Davis, S. C. Herndon, D. J. Jacob, A. Karion, E. A. Kort, B. K. Lamb, T. Lauvaux, J. D. Maasakkers, A. J. Marchese, M. Omara, S. W. Pacala, J. Peischl, A. L. Robinson, P. B. Shepson, C. Sweeney, A. Townsend-Small, S. C. Wofsy, and S. P. Hamburg (2018), Assessment of methane emissions from the U.S. oil and gas supply chain, *Science*, 361(6398), 186-188, doi:10.1126/science.aar7204.
- Chen, Z., T. J. Griffis, J. M. Baker, D. B. Millet, J. D. Wood, E. J. Dlugokencky, A. E. Andrews, C. Sweeney, C. Hu, and R. K. Kolka (2018), Source Partitioning of Methane Emissions and its Seasonality in the U.S. Midwest, *Journal of Geophysical Research: Biogeosciences*, 123(2), 646-659, doi:doi:10.1002/2017JG004356.
- Coburn, S., C. B. Alden, R. Wright, K. Cossel, E. Baumann, G.-W. Truong, F. Giorgetta, C. Sweeney, N. R. Newbury, K. Prasad, I. Coddington, and G. B. Rieker (2018), Regional trace-gas source attribution using a field-deployed dual frequency comb spectrometer, *Optica*, 5(4), 320-327, doi:10.1364/OPTICA.5.000320.
- Desjardins, R. L., D. E. Worth, E. Pattey, A. VanderZaag, R. Srinivasan, M. Mauder, D. Worthy, C. Sweeney, and S. Metzger (2018), The challenge of reconciling bottom-up agricultural methane emissions inventories with top-down measurements, *Agric. For. Meteorol.*, 248(Supplement C), 48-59, doi: 10.1016/j.agrformet.2017.09.003
- Fay, A. R., N. S. Lovenduski, G. A. McKinley, D. R. Munro, C. Sweeney, A. R. Gray, P. Landschützer, B. B. Stephens, T. Takahashi, and N. Williams (2018), Utilizing the Drake Passage Time-series to understand variability and change in subpolar Southern Ocean pCO₂, *Biogeosciences*, 15, 3841 - 3855, doi:10.5194/bg-15-3841-2018.
- Groot Zwaaftink, C. D., S. Henne, R. L. Thompson, E. J. Dlugokencky, T. Machida, J. D. Paris, M. Sasakawa, A. Segers, C. Sweeney, and A. Stohl (2018), Three-dimensional methane distribution simulated with

- FLEXPART 8-CTM-1.1 constrained with observation data, *Geosci. Model Dev.*, 11(11), 4469-4487, doi:10.5194/gmd-11-4469-2018.
- Hartery, S., R. Commane, J. Lindaas, C. Sweeney, J. Henderson, M. Mountain, N. Steiner, K. McDonald, S. J. Dinardo, C. E. Miller, S. C. Wofsy, and R. Y. W. Chang (2018), Estimating regional-scale methane flux and budgets using CARVE aircraft measurements over Alaska, *Atmos. Chem. Phys.*, 18(1), 185-202, doi:10.5194/acp-18-185-2018.
- Jeong, S.-J., A. A. Bloom, D. Schimel, C. Sweeney, N. C. Parazoo, D. Medvigy, G. Schaepman-Strub, C. Zheng, C. R. Schwalm, D. N. Huntzinger, A. M. Michalak, and C. E. Miller (2018), Accelerating rates of Arctic carbon cycling revealed by long-term atmospheric CO₂ measurements, *Science Advances*, 4(7), doi:10.1126/sciadv.aao1167.
- Miles, N. L., D. K. Martins, S. J. Richardson, C. W. Rella, C. Arata, T. Lauvaux, K. J. Davis, Z. R. Barkley, K. McKain, and C. Sweeney (2018), Calibration and field testing of cavity ring-down laser spectrometers measuring CH₄, CO₂, and δ¹³CH₄ deployed on towers in the Marcellus Shale region, *Atmos. Meas. Tech.*, 11(3), 1273-1295, doi:10.5194/amt-11-1273-2018.
- Müller, J. F., T. Stavrou, M. Bauwens, M. George, D. Hurtmans, P. F. Coheur, C. Clerbaux, and C. Sweeney (2018), Top-Down CO Emissions Based On IASI Observations and Hemispheric Constraints on OH Levels, *Geophys. Res. Lett.*, 45(3), 1621-1629, doi:doi:10.1002/2017GL076697.
- Nevison, C., A. Andrews, K. Thoning, E. Dlugokencky, C. Sweeney, M. Scot, E. Saikawa, J. Benmergui, M. Fischer, M. Mountain, and T. Nehrkorn (2018), Nitrous Oxide Emissions Estimated With the CarbonTracker-Lagrange North American Regional Inversion Framework, *Glob. Biogeochem. Cycle*, 32(3), 463-485, doi:doi:10.1002/2017GB005759.
- Sargent, M., Y. Barrera, T. Nehrkorn, L. R. Hutrya, C. K. Gately, T. Jones, K. McKain, C. Sweeney, J. Hegarty, B. Hardiman, J. A. Wang, and S. C. Wofsy (2018), Anthropogenic and biogenic CO₂ fluxes in the Boston urban region, *Proceedings of the National Academy of Sciences*, 115(29), 7491-7496, doi:10.1073/pnas.1803715115.
- 2017**
- Barkley, Z. R., T. Lauvaux, K. J. Davis, A. Deng, N. L. Miles, S. J. Richardson, Y. Cao, C. Sweeney, A. Karion, M. Smith, E. A. Kort, S. Schwietzke, T. Murphy, G. Cervone, D. Martins, and J. D. Maasackers (2017), Quantifying methane emissions from natural gas production in north-eastern Pennsylvania, *Atmos. Chem. Phys.*, 17(22), 13941-13966. doi: 10.5194/acp-17-13941-2017
- Bruhwiller, L., S. Basu, P. Bergamaschi, P. Bousquet, E. Dlugokencky, S. Houweling, M. Ishizawa, H. S. Kim, R. Locatelli, and S. Maksyutov (2017), US CH₄ emissions from oil and gas production: Have recent large increases been detected?, *Journal of Geophysical Research: Atmospheres*, 122(7), 4070-4083
- Commane, R., J. Lindaas, J. Benmergui, K. A. Luus, R. Y.-W. Chang, B. C. Daube, E. S. Euskirchen, J. M. Henderson, A. Karion, and J. B. Miller (2017), Carbon dioxide sources from Alaska driven by increasing early winter respiration from Arctic tundra, *Proceedings of the National Academy of Sciences*, 201618567
- Conley, S., I. Faloona, S. Mehrotra, M. Suard, D. H. Lenschow, C. Sweeney, S. Herndon, S. Schwietzke, G. Pétron, J. Pifer, E. A. Kort, and R. Schnell (2017), Application of Gauss's theorem to quantify localized surface emissions from airborne measurements of wind and trace gases, *Atmos. Meas. Tech.*, 10(9), 3345-3358. doi: 10.5194/amt-10-3345-2017
- Cox, C. J., R. S. Stone, D. C. Douglas, D. M. Stanitski, G. J. Divoky, G. S. Dutton, C. Sweeney, J. C. George, and D. U. Longenecker Drivers and environmental responses to the changing annual snow cycle of northern Alaska, *Bull. Amer. Meteorol. Soc.*, 0(0), null. doi: 10.1175/bams-d-16-0201.1
- Davis, K. J., A. Deng, T. Lauvaux, N. L. Miles, S. J. Richardson, D. P. Sarmiento, K. R. Gurney, R. M. Hardesty, T. A. Bonin, W. A. Brewer, B. K. Lamb, P. B. Shepson, R. M. Harvey, M. O. Cambaliza, C. Sweeney, J. C. Turnbull, J. Whetstone, A. Karion (2017). The Indianapolis Flux Experiment (INFLUX): A test-bed for developing urban greenhouse gas emission measurements. *Elem Sci Anth.* 2017;5:21. DOI: 10.1525/elementa.188

- Deeter, M. N., Edwards, D. P., Francis, G. L., Gille, J. C., Martínez-Alonso, S., Worden, H. M., & Sweeney, C. (2017). A climate-scale satellite record for carbon monoxide: The MOPITT version 7 product. *Atmospheric Measurement Techniques*, 10(7), 2533-2555. doi:http://dx.doi.org/10.5194/amt-10-2533-2017
- Eveleth, R., N. Cassar, S. C. Doney, D. R. Munro, and C. Sweeney (2017), Biological and physical controls on O₂/Ar, Ar and pCO₂ variability at the Western Antarctic Peninsula and in the Drake Passage, *Deep Sea Research Part II: Topical Studies in Oceanography*, 139, 77-88. doi: 10.1016/j.dsr2.2016.05.002
- Gvakharia, A., E. A. Kort, A. Brandt, J. Peischl, T. B. Ryerson, J. P. Schwarz, M. L. Smith, and C. Sweeney (2017), Methane, Black Carbon, and Ethane Emissions from Natural Gas Flares in the Bakken Shale, North Dakota, *Environ. Sci. Technol.*, 51(9), 5317-5325. doi: 10.1021/acs.est.6b05183
- Heimbürger, A. M. F., R. M. Harvey, P. B. Shepson, B. H. Stirm, C. Gore, J. Turnbull, M. O. L. Cambaliza, O. E. Salmon, A-E. M. Kerlo, T. N. Lavoie, K. J. Davis, T. Lauvaux, A. Karion, C. Sweeney, W. A. Brewer, R. M. Hardesty, K. R. Gurney (2017). Assessing the optimized precision of the aircraft mass balance method for measurement of urban greenhouse gas emission rates through averaging. *Elem Sci Anth.* 2017;5:26. DOI: 10.1525/elementa.134
- Hilton, T. W., M. E. Whelan, A. Zumkehr, S. Kulkarni, J. A. Berry, I. T. Baker, S. A. Montzka, C. Sweeney, B. R. Miller, and J. Elliott Campbell (2017), Peak growing season gross uptake of carbon in North America is largest in the Midwest USA, *Nat. Clim. Chang.*, 7, 450. doi: 10.1038/nclimate3272
- Hu, L., S. A. Montzka, S. J. Lehman, D. S. Godwin, B. R. Miller, A. E. Andrews, K. Thoning, J. B. Miller, C. Sweeney, C. Siso, J. W. Elkins, B. D. Hall, D. J. Mondeel, D. Nance, T. Nehrkorn, M. Mountain, M. L. Fischer, S. C. Biraud, H. Chen, and P. P. Tans (2017), Considerable contribution of the Montreal Protocol to declining greenhouse gas emissions from the United States, *Geophys. Res. Lett.*, 44(15), 8075-8083. doi: 10.1002/2017GL074388
- Kulawik, S. S., C. O'Dell, V. H. Payne, L. Kuai, H. M. Worden, S. C. Biraud, C. Sweeney, B. Stephens, L. T. Iraci, E. L. Yates, and T. Tanaka (2017), Lower-tropospheric CO₂ from near-infrared ACOS-GOSAT observations, *Atmos. Chem. Phys.*, 17(8), 5407-5438. doi: 10.5194/acp-17-5407-2017
- Lan, X., P. Tans, C. Sweeney, A. Andrews, A. Jacobson, M. Crotwell, E. Dlugokencky, J. Kofler, P. Lang, K. Thoning, and S. Wolter (2017), Gradients of Column CO₂ across North America from the NOAA Global Greenhouse Gas Reference Network, *Atmos. Chem. Phys. Discuss.*, 2017, 1-26. doi: 10.5194/acp-2017-293
- Miles, M. L., S. J. Richardson, T. Lauvaux, K. J. Davis, N. V. Balashov, A. Deng, J. C. Turnbull, C. Sweeney, K. R. Gurney, R. Patarasuk, I. Razlivanov, M. O. L. Cambaliza, P. B. Shepson (2017). Quantification of urban atmospheric boundary layer greenhouse gas dry mole fraction enhancements in the dormant season: Results from the Indianapolis Flux Experiment (INFLUX). *Elem Sci Anth.* 2017;5:27. DOI: 10.1525/elementa.127
- Membrive, O., C. Crevoisier, C. Sweeney, F. Danis, A. Hertzog, A. Engel, H. Bönisch, and L. Picon (2017), AirCore-HR: a high-resolution column sampling to enhance the vertical description of CH₄ and CO₂, *Atmos. Meas. Tech.*, 10(6), 2163-2181. doi: 10.5194/amt-10-2163-2017
- Quay, P., R. Sonnerup, D. Munro, and C. Sweeney (2017), Anthropogenic CO₂ accumulation and uptake rates in the Pacific Ocean based on changes in the 13C/12C of dissolved inorganic carbon, *Global Biogeochem. Cycles*, 31, 59–80, doi:10.1002/2016GB005460.
- Richardson SJ, N. L. Miles, K. J. Davis, T. Lauvaux, D. K. Martins, J. C. Turnbull JC, Jocelyn C. Turnbull, K. McKain, C. Sweeney, M. O. L. Cambaliza (2017), Tower measurement network of in-situ CO₂, CH₄, and CO in support of the Indianapolis FLUX (INFLUX) Experiment. *Elem Sci Anth.* 2017;5:59. DOI: 10.1525/elementa.140
- Smith, M. L., A. Gvakharia, E. A. Kort, C. Sweeney, S. A. Conley, I. Faloona, T. Newberger, R. Schnell, S. Schwietzke, and S. Wolter (2017), Airborne Quantification of Methane Emissions over the Four Corners Region, *Environ. Sci. Technol.*, 51(10), 5832-5837. doi: 10.1021/acs.est.6b06107
- Stephens, B. B., Long, M. C., Keeling, R. F., Kort, E. A., Sweeney C. et al. (2017) The O₂/N₂ Ratio and CO₂ Airborne Southern Ocean (ORCAS) Study, *Bull. Amer. Meteorol. Soc.*, 0(0), null. doi: 10.1175/bams-d-16-0206.1

Thorpe, A. K., C. Frankenberg, D. R. Thompson, R. M. Duren, A. D. Aubrey, B. D. Bue, R. O. Green, K. Gerilowski, T. Krings, J. Borchardt, E. A. Kort, C. Sweeney, S. Conley, D. A. Roberts, and P. E. Dennison (2017), Airborne DOAS retrievals of methane, carbon dioxide, and water vapor concentrations at high spatial resolution: application to AVIRIS-NG, *Atmos. Meas. Tech.*, *10*(10), 3833-3850.doi: 10.5194/amt-10-3833-2017

Vimont, I. J., J. C. Turnbull, V.V. Petrenko, P.F. Place, A. Karion, N. L. Miles, S. J. Richardson, K. Gurney, R. Patarasuk, C. Sweeney, B. Vaughn, J. W. C. White, Carbon monoxide isotopic measurements in Indianapolis constrain urban source isotopic signatures and support mobile fossil fuel emissions as the dominant wintertime CO source. *Elem Sci Anth.* 2017;5:63. DOI: 10.1525/elementa.136

2016

Bakker, D. C. E; Pfeil, B., L.S, Camill, N. Metzl, K. M . O'Brien, C. Sweeney et al.(2016), Multi-decade record of high-quality fCO₂ data in version 3 of the Surface Ocean CO₂ Atlas (SOCAT), *Earth System Science Data; Katlenburg-Lindau* 8.2 (2016): 383-413.

Coakley, K. J., J. B. Miller, S. A. Montzka, C. Sweeney, and B. R. Miller (2016), Surrogate gas prediction model as a proxy for $\Delta^{14}C$ -based measurements of fossil fuel CO₂, *Journal of Geophysical Research: Atmospheres*, *121*(12), 7489-7505.doi: 10.1002/2015JD024715

Frankenberg, C., A. K. Thorpe, D. R. Thompson, G. Hulley, E. A. Kort, N. Vance, J. Borchardt, T. Krings, K. Gerilowski, C. Sweeney, S. Conley, B. D. Bue, A. D. Aubrey, S. Hook, and R. O. Green (2016), Airborne methane remote measurements reveal heavy-tail flux distribution in Four Corners region, *Proceedings of the National Academy of Sciences*, *113*(35), 9734-9739.doi: 10.1073/pnas.1605617113

Hardesty, R. M., W. A. Brewer, S. P. Sandberg, A. M. Weickmann, P. B. Shepson, M. Cambaliza, A. Heimbürger, K. J. Davis, T. Lauvaux, N. L. Miles, D. P. Sarmiento, A. J. Deng, B. Gaudet, A. Karion, C. Sweeney, and J. Whetstone (2016), Lidar Characterization of Boundary Layer Transport and Mixing for Estimating Urban-Scale Greenhouse Gas Emissions, *EPJ Web of Conferences*, *119*, 09001

Hu, L., S. A. Montzka, B. R. Miller, A. E. Andrews, J. B. Miller, S. J. Lehman, C. Sweeney, S. M. Miller, K. Thoning, C. Siso, E. L. Atlas, D. R. Blake, J. de Gouw, J. B. Gilman, G. Dutton, J. W. Elkins, B. Hall, H. Chen, M. L. Fischer, M. E. Mountain, T. Nehrkorn, S. C. Biraud, F. L. Moore, and P. Tans (2016), Continued emissions of carbon tetrachloride from the United States nearly two decades after its phaseout for dispersive uses, *Proceedings of the National Academy of Sciences of the United States of America*, *113*(11), 2880-2885.doi: 10.1073/pnas.1522284113

Karion, A., C. Sweeney, J. B. Miller, A. E. Andrews, R. Commane, S. Dinardo, J. M. Henderson, J. Lindaas, J. C. Lin, K. A. Luus, T. Newberger, P. Tans, S. C. Wofsy, S. Wolter, and C. E. Miller (2016), Investigating Alaskan methane and carbon dioxide fluxes using measurements from the CARVE tower, *Atmos. Chem. Phys.*, *16*(8), 5383-5398.doi: 10.5194/acp-16-5383-2016

Kort, E. A., M. L. Smith, L. T. Murray, A. Gvakharia, A. R. Brandt, J. Peischl, T. B. Ryerson, C. Sweeney, and K. Travis (2016), Fugitive emissions from the Bakken shale illustrate role of shale production in global ethane shift, *Geophysical Research Letters*, *43*(9), 4617-4623.doi: 10.1002/2016GL068703

Inoue, M., Morino, I., Uchino, O., Nakatsuru, T., Yoshida, Y., Yokota, T., C. Sweeney, et al. (2016). Bias corrections of GOSAT SWIR XCO₂ and XCH₄ with TCCON data and their evaluation using aircraft measurement data. *Atmospheric Measurement Techniques*, *9*(8), 3491-3512. doi:10.5194/amt-9-3491-2016.

Lauvaux, T., N. L. Miles, A. Deng, S. J. Richardson, M. O. Cambaliza, K. J. Davis, B. Gaudet, K. R. Gurney, J. Huang, D. O'Keefe, Y. Song, A. Karion, T. Oda, R. Patarasuk, I. Razlivanov, D. Sarmiento, P. Shepson, C. Sweeney, J. Turnbull, and K. Wu (2016), High-resolution atmospheric inversion of urban CO₂ emissions during the dormant season of the Indianapolis Flux Experiment (INFLUX), *Journal of Geophysical Research: Atmospheres*, *121*(10), 5213-5236.doi: 10.1002/2015JD024473

Miller, S. M., C. E. Miller, R. Commane, R. Y. W. Chang, S. J. Dinardo, J. M. Henderson, A. Karion, J. Lindaas, J. R. Melton, J. B. Miller, C. Sweeney, S. C. Wofsy, and A. M. Michalak (2016), A multiyear estimate of methane fluxes in Alaska from CARVE atmospheric observations, *Global Biogeochemical Cycles*, *30*(10), 1441-1453.doi: 10.1002/2016GB005419

- Miller, S. M., R. Commane, J. R. Melton, A. E. Andrews, J. Benmergui, E. J. Dlugokencky, G. Janssens-Maenhout, A. M. Michalak, C. Sweeney, and D. E. J. Worthy (2016), Evaluation of wetland methane emissions across North America using atmospheric data and inverse modeling, *Biogeosciences*, 13(4), 1329-1339. doi: 10.5194/bg-13-1329-2016
- Oltmans, S.J., A. Karion, R.C. Schnell, G. Pétron, C. Sweeney, S. Wolter, D. Neff, S.A. Montzka, B.R. Miller, D. Helmig, B.J. Johnson, J. Hueber, S. Conely (2016), O₃, CH₄, CO₂, CO, NO₂, and NMHC aircraft measurements in the Uinta Basin oil and gas region under low and high ozone conditions in winter 2012 and 2013, *Elementa*, doi:12952/journal.elementa.000132
- Peischl, J., A. Karion, C. Sweeney, E. A. Kort, M. L. Smith, A. R. Brandt, T. Yeskoo, K. C. Aikin, S. A. Conley, A. Gvakharia, M. Trainer, S. Wolter, and T. B. Ryerson (2016), Quantifying atmospheric methane emissions from oil and natural gas production in the Bakken shale region of North Dakota, *Journal of Geophysical Research: Atmospheres*, 121(10), 6101-6111. doi: 10.1002/2015JD024631
- Parazoo, N. C., R. Commane, S. C. Wofsy, C. D. Koven, C. Sweeney, D. M. Lawrence, J. Lindaas, R. Y.-W. Chang, and C. E. Miller (2016), Detecting regional patterns of changing CO₂ flux in Alaska, *Proceedings of the National Academy of Sciences*, 113(28), 7733-7738. doi: 10.1073/pnas.1601085113
- Song, H., J. Marshall, D. R. Munro, S. Dutkiewicz, C. Sweeney, D. J. McGillicuddy, and U. Hausmann (2016), Mesoscale modulation of air-sea CO₂ flux in Drake Passage, *Journal of Geophysical Research: Oceans*, 121(9), 6635-6649. doi: 10.1002/2016JC011714
- Sweeney, C., E. Dlugokencky, C. E. Miller, S. Wofsy, A. Karion, S. Dinardo, R. Y. W. Chang, J. B. Miller, L. Bruhwiler, A. M. Crotwell, T. Newberger, K. McKain, R. S. Stone, S. E. Wolter, P. E. Lang, and P. Tans (2016), No significant increase in long-term CH₄ emissions on North Slope of Alaska despite significant increase in air temperature, *Geophysical Research Letters*, 43(12), 6604-6611. doi: 10.1002/2016GL069292
- Tan, Z., Q. Zhuang, D. K. Henze, C. Frankenberg, E. Dlugokencky, C. Sweeney, A. J. Turner, M. Sasakawa, and T. Machida (2016), Inverse modeling of pan-Arctic methane emissions at high spatial resolution: what can we learn from assimilating satellite retrievals and using different process-based wetland and lake biogeochemical models?, *Atmos. Chem. Phys.*, 16(19), 12649-12666. doi: 10.5194/acp-16-12649-2016
- Wiggins, E. B., S. Veraverbeke, J. M. Henderson, A. Karion, J. B. Miller, J. Lindaas, R. Commane, C. Sweeney, K. A. Luus, M. G. Tosca, S. J. Dinardo, S. Wofsy, C. E. Miller, and J. T. Randerson (2016), The influence of daily meteorology on boreal fire emissions and regional trace gas variability, *Journal of Geophysical Research: Biogeosciences*, n/a-n/a. doi: 10.1002/2016JG003434
- Zona, D., B. Gioli, R. Commane, J. Lindaas, S. C. Wofsy, C. E. Miller, S. J. Dinardo, S. Dengel, C. Sweeney, A. Karion, R. Y. W. Chang, J. M. Henderson, P. C. Murphy, J. P. Goodrich, V. Moreaux, A. Liljedahl, J. D. Watts, J. S. Kimball, D. A. Lipson, and W. C. Oechel (2016), Cold season emissions dominate the Arctic tundra methane budget, *Proceedings of the National Academy of Sciences of the United States of America*, 113(1), 40-45. doi: 10.1073/pnas.1516017113

2015

- Ahmadov, R., S. McKeen, M. Trainer, R. Banta, A. Brewer, S. Brown, P. M. Edwards, J. A. de Gouw, G. J. Frost, J. Gilman, D. Helmig, B. Johnson, A. Karion, A. Koss, A. Langford, B. Lerner, J. Olson, S. Oltmans, J. Peischl, G. Petron, Y. Pichugina, J. M. Roberts, T. Ryerson, R. Schnell, C. Senff, C. Sweeney, C. Thompson, P. R. Veres, C. Warneke, R. Wild, E. J. Williams, B. Yuan, and R. Zamora (2015), Understanding high wintertime ozone pollution events in an oil- and natural gas-producing region of the western US, *Atmospheric Chemistry and Physics*, 15(1), 411-429. doi: 10.5194/acp-15-411-2015
- Alexe, M., P. Bergamaschi, A. Segers, R. Detmers, A. Butz, O. Hasekamp, S. Guerlet, R. Parker, H. Boesch, C. Frankenberg, R. A. Scheepmaker, E. Dlugokencky, C. Sweeney, S. C. Wofsy, and E. A. Kort (2015), Inverse modelling of CH₄ emissions for 2010-2011 using different satellite retrieval products from GOSAT and SCIAMACHY, *Atmospheric Chemistry and Physics*, 15(1), 113-133. doi: 10.5194/acp-15-113-2015
- Cambaliza, M. O. L., P. B. Shepson, J. Bogner, D. R. Caulton, B. Stirm, C. Sweeney, S. A. Montzka, K. R. Gurney, K. Spokas, O. E. Salmon, T. N. Lavoie, A. Hendricks, K. Mays, J. Turnbull, B. R. Miller, T. Lauvaux, K. Davis, A. Karion, B. Moser, C. Miller, C. Obermeyer, J. Whetstone, K. Prasad, N. Miles, and S. Richardson (2015), Quantification and source apportionment of the methane emission flux from the city of

Indianapolis, *Elementa-Science of the Anthropocene*, 3, 000037-Article No.: 000037.doi:
10.12952/journal.elementa.000037

- Henderson, J. M., J. Eluszkiewicz, M. E. Mountain, T. Nehrkorn, R. Y. W. Chang, A. Karion, J. B. Miller, C. Sweeney, N. Steiner, S. C. Wofsy, and C. E. Miller (2015), Atmospheric transport simulations in support of the Carbon in Arctic Reservoirs Vulnerability Experiment (CARVE), *Atmospheric Chemistry and Physics*, 15(8), 4093-4116.doi: 10.5194/acp-15-4093-2015
- Hu, L., S. A. Montzka, J. B. Miller, A. E. Andrews, S. J. Lehman, B. R. Miller, K. Thoning, C. Sweeney, H. Chen, D. S. Godwin, K. Masarie, L. Bruhwiler, M. L. Fischer, S. C. Biraud, M. S. Torn, M. Mountain, T. Nehrkorn, J. Eluszkiewicz, S. Miller, R. R. Draxler, A. F. Stein, B. D. Hall, J. W. Elkins, and P. P. Tans (2015), US emissions of HFC-134a derived for 2008-2012 from an extensive flask-air sampling network, *Journal of Geophysical Research-Atmospheres*, 120(2), 801-825.doi: 10.1002/2014jd022617
- Karion, A., C. Sweeney, E. A. Kort, P. B. Shepson, A. Brewer, M. Cambaliza, S. A. Conley, K. Davis, A. Deng, M. Hardesty, S. C. Herndon, T. Lauvaux, T. Lavoie, D. Lyon, T. Newberger, G. Petron, C. Rella, M. Smith, S. Wolter, T. I. Yacovitch, and P. Tans (2015), Aircraft-Based Estimate of Total Methane Emissions from the Barnett Shale Region, *Environmental Science & Technology*, 49(13), 8124-8131.doi: 10.1021/acs.est.5b00217
- Landschutzer, P., N. Gruber, A. Haumann, C. Rodenbeck, D. C. E. Bakker, S. van Heuven, M. Hoppema, N. Metzl, C. Sweeney, T. Takahashi, B. Tilbrook, and R. Wanninkhof (2015), The reinvigoration of the Southern Ocean carbon sink, *Science*, 349(6253), 1221-1224.doi: 10.1126/science.aab2620
- Lavoie, T. N., P. B. Shepson, M. O. L. Cambaliza, B. H. Stirm, A. Karion, C. Sweeney, T. I. Yacovitch, S. C. Herndon, X. Lan, and D. Lyon (2015), Aircraft-Based Measurements of Point Source Methane Emissions in the Barnett Shale Basin, *Environmental Science & Technology*, 49(13), 7904-7913.doi: 10.1021/acs.est.5b00410
- Munro, D. R., N. S. Lovenduski, T. Takahashi, B. B. Stephens, T. Newberger, and C. Sweeney (2015), Recent evidence for a strengthening CO₂ sink in the Southern Ocean from carbonate system measurements in the Drake Passage (2002-2015), *Geophysical Research Letters*, 42(18), 7623-7630.doi: 10.1002/2015gl065194
- Munro, D. R., N. S. Lovenduski, B. B. Stephens, T. Newberger, K. R. Arrigo, T. Takahashi, P. D. Quay, J. Sprintall, N. M. Freeman, and C. Sweeney (2015), Estimates of net community production in the Southern Ocean determined from time series observations (2002-2011) of nutrients, dissolved inorganic carbon, and surface ocean pCO₂ in Drake Passage, *Deep-Sea Research Part II-Topical Studies in Oceanography*, 114, 49-63.doi: 10.1016/j.dsr2.2014.12.014
- Schwarz, JP, JS Holloway, JM Katich, S McKeen, EA Kort, ML Smith, TB Ryerson, C Sweeney and J Peischl (2015), Black Carbon Emissions from the Bakken Oil and Gas Development Region. *Environ. Sci. Technol. Lett.*, 2 (10) 281-285, issn: 2328-8930, ids: CT6NW, doi: [10.1021/acs.estlett.5b00225](https://doi.org/10.1021/acs.estlett.5b00225)
- Smith, M. L., E. A. Kort, A. Karion, C. Sweeney, S. C. Herndon, and T. I. Yacovitch (2015), Airborne Ethane Observations in the Barnett Shale: Quantification of Ethane Flux and Attribution of Methane Emissions, *Environmental Science & Technology*, 49(13), 8158-8166.doi: 10.1021/acs.est.5b00219
- Sweeney, C., A. Karion, S. Wolter, T. Newberger, D. Guenther, J. A. Higgs, A. E. Andrews, P. M. Lang, D. Neff, E. Dlugokencky, J. B. Miller, S. A. Montzka, B. R. Miller, K. A. Masarie, S. C. Biraud, P. C. Novelli, M. Crotwell, A. M. Crotwell, K. Thoning, and P. P. Tans (2015), Seasonal climatology of CO₂ across North America from aircraft measurements in the NOAA/ESRL Global Greenhouse Gas Reference Network, *Journal of Geophysical Research-Atmospheres*, 120(10), 5155-5190.doi: 10.1002/2014jd022591
- Turnbull, J. C., C. Sweeney, A. Karion, T. Newberger, S. J. Lehman, P. P. Tans, K. J. Davis, T. Lauvaux, N. L. Miles, S. J. Richardson, M. O. Cambaliza, P. B. Shepson, K. Gurney, R. Patarasuk, and I. Razlivanov (2015), Toward quantification and source sector identification of fossil fuel CO₂ emissions from an urban area: Results from the INFLUX experiment, *Journal of Geophysical Research-Atmospheres*, 120(1), 292-312.doi: 10.1002/2014jd022555
- Turner, A. J., D. J. Jacob, K. J. Wecht, J. D. Maasackers, E. Lundgren, A. E. Andrews, S. C. Biraud, H. Boesch, K. W. Bowman, N. M. Deutscher, M. K. Dubey, D. W. T. Griffith, F. Hase, A. Kuze, J. Notholt, H. Ohyama, R. Parker, V. H. Payne, R. Sussmann, C. Sweeney, V. A. Velazco, T. Warneke, P. O. Wennberg, and D.

Wunch (2015), Estimating global and North American methane emissions with high spatial resolution using GOSAT satellite data, *Atmospheric Chemistry and Physics*, 15(12), 7049-7069. doi: 10.5194/acp-15-7049-2015

Zavala-Araiza, D, DR Lyon, RA Alvarez, KJ Davis, R Harriss, SC Herndon, A Karion, EA Kort, BK Lamb, X Lan, AJ Marchese, SW Pacala, AL Robinson, PB Shepson, C Sweeney, R Talbot, A Townsend-Small, TI Yacovitch, DJ Zimmerle and SP Hamburg (2015), Reconciling divergent estimates of oil and gas methane emissions. *Proc. Natl. Acad. Sci. U. S. A.*, 112 (51) 15597-15602, issn: 0027-8424, ids: CZ2DT, doi: [10.1073/pnas.1522126112](https://doi.org/10.1073/pnas.1522126112)

2014

Bruhwyler, L, E Dlugokencky, K Masarie, M Ishizawa, A Andrews, J Miller, C Sweeney, P Tans and D Worthy (2014), CarbonTracker-CH₄: an assimilation system for estimating emissions of atmospheric methane. *Atmos. Chem. Phys.*, 14 (16) 8269-8293, issn: 1680-7316, ids: AP3QK, doi: [10.5194/acp-14-8269-2014](https://doi.org/10.5194/acp-14-8269-2014)

Cambaliza, M. O. L., Shepson, P. B., Bogner, J., Caulton, D. R., Stirm, B. H., Sweeney, C., Montzka, S. A., Gurney, K. R., Spokas, K., Salmon, O., Lavoie, T., Hendricks, A., Mays, K. L., Turnbull, J. C., Miller, B. R., Lauvaux, T., Davis, K. J., Karion, A., Moser, B., Miller, C., Obermeyer, C., Whetstone, J., Prasad, K., Crosson, E. R., Miles, N. L., and Richardson, S. J. (2014), Quantification and source apportionment of the methane emission flux from the city of Indianapolis. *Elementa*, 3, doi: [10.12952/journal.elementa.000037](https://doi.org/10.12952/journal.elementa.000037)

Cambaliza, MOL, PB Shepson, DR Caulton, B Stirm, D Samarov, KR Gurney, J Turnbull, KJ Davis, A Possolo, A Karion, C Sweeney, B Moser, A Hendricks, T Lauvaux, K Mays, J Whetstone, J Huang, I Razlivanov, NL Miles and SJ Richardson (2014), Assessment of uncertainties of an aircraft-based mass balance approach for quantifying urban greenhouse gas emissions. *Atmos. Chem. Phys.*, 14 (17) 9029-9050, issn: 1680-7316, ids: AP3QO, doi: [10.5194/acp-14-9029-2014](https://doi.org/10.5194/acp-14-9029-2014)

Caulton, DR, PB Shepson, RL Santoro, JP Sparks, RW Howarth, AR Ingraffea, MOL Cambaliza, C Sweeney, A Karion, KJ Davis, BH Stirm, SA Montzka and BR Miller (2014), Toward a better understanding and quantification of methane emissions from shale gas development. *Proc. Natl. Acad. Sci. U. S. A.*, 111 (17) 6237-6242, issn: 0027-8424, ids: AG1TL, doi: [10.1073/pnas.1316546111](https://doi.org/10.1073/pnas.1316546111), PubMed id: 24733927

Chang, RYW, CE Miller, SJ Dinardo, A Karion, C Sweeney, BC Daube, JM Henderson, ME Mountain, J Eluszkiewicz, JB Miller, LMP Bruhwiler and SC Wofsy (2014), Methane emissions from Alaska in 2012 from CARVE airborne observations. *Proc. Natl. Acad. Sci. U. S. A.*, 111 (47) 16694-16699, issn: 0027-8424, ids: AU5QX, doi: [10.1073/pnas.1412953111](https://doi.org/10.1073/pnas.1412953111), PubMed id: 25385648

Conley, SA, IC Faloon, DH Lenschow, A Karion and C Sweeney (2014), A Low-Cost System for Measuring Horizontal Winds from Single-Engine Aircraft. *J. Atmos. Ocean. Technol.*, 31 (6) 1312-1320, issn: 0739-0572, ids: AI8VJ, doi: [10.1175/JTECH-D-13-00143.1](https://doi.org/10.1175/JTECH-D-13-00143.1)

Deeter, MN, S Martinez-Alonso, DP Edwards, LK Emmons, JC Gille, HM Worden, C Sweeney, JV Pittman, BC Daube and SC Wofsy (2014), The MOPITT Version 6 product: algorithm enhancements and validation. *Atmos. Meas. Tech.*, 7 (11) 3623-3632, issn: 1867-1381, ids: AU7LB, doi: [10.5194/amt-7-3623-2014](https://doi.org/10.5194/amt-7-3623-2014)

Edwards, PM, SS Brown, JM Roberts, R Ahmadov, RM Banta, JA deGouw, WP Dube, RA Field, JH Flynn, JB Gilman, M Graus, D Helmig, A Koss, AO Langford, BL Lefer, BM Lerner, R Li, SM Li, SA McKeen, SM Murphy, DD Parrish, CJ Senff, J Soltis, J Stutz, C Sweeney, CR Thompson, MK Trainer, C Tsai, PR Veres, RA Washenfelder, C Warneke, RJ Wild, CJ Young, B Yuan and R Zamora (2014), High winter ozone pollution from carbonyl photolysis in an oil and gas basin. *Nature*, 514 (7522) 351-+, Art. No. 10.1038/nature13767, issn: 0028-0836, ids: AQ7JH, doi: [10.1038/nature13767](https://doi.org/10.1038/nature13767), PubMed id: 25274311

Inoue, M, I Morino, O Uchino, Y Miyamoto, T Saeki, Y Yoshida, T Yokota, C Sweeney, PP Tans, SC Biraud, T Machida, JV Pittman, EA Kort, T Tanaka, S Kawakami, Y Sawa, K Tsuboi and H Matsueda (2014), Validation of XCH₄ derived from SWIR spectra of GOSAT TANSO-FTS with aircraft measurement data. *Atmos. Meas. Tech.*, 7 (9) 2987-3005, issn: 1867-1381, ids: AQ8WR, doi: [10.5194/amt-7-2987-2014](https://doi.org/10.5194/amt-7-2987-2014)

- Jiang, CL, ST Gille, J Sprintall and C Sweeney (2014), Drake Passage Oceanic pCO₂: Evaluating CMIP5 Coupled Carbon-Climate Models Using in situ Observations. *J. Clim.*, 27 (1) 76-100, issn: 0894-8755, ids: 283VV, [doi: 10.1175/JCLI-D-12-00571.1](https://doi.org/10.1175/JCLI-D-12-00571.1)
- Moore, FL, EA Ray, KH Rosenlof, JW Elkins, P Tans, A Karion and C Sweeney (2014), A Cost-Effective Trace Gas Measurement Program for Long-Term Monitoring of the Stratospheric Circulation. *Bull. Amer. Meteor. Soc.*, 95 (1) 147-155, issn: 0003-0007, ids: AB8NL, [doi: 10.1175/BAMS-D-12-00153.1](https://doi.org/10.1175/BAMS-D-12-00153.1)
- Li, R, C Warneke, M Graus, R Field, F Geiger, PR Veres, J Soltis, SM Li, SM Murphy, C Sweeney, G Petron, JM Roberts and J de Gouw (2014), Measurements of hydrogen sulfide (H₂S) using PTR-MS: calibration, humidity dependence, inter-comparison and results from field studies in an oil and gas production region. *Atmos. Meas. Tech.*, 7 (10) 3597-3610, issn: 1867-1381, ids: AT2AE, [doi: 10.5194/amt-7-3597-2014](https://doi.org/10.5194/amt-7-3597-2014)
- Petron, G, A Karion, C Sweeney, BR Miller, SA Montzka, GJ Frost, M Trainer, P Tans, A Andrews, J Kofler, D Helmig, D Guenther, E Dlugokencky, P Lang, T Newberger, S Wolter, B Hall, P Novelli, A Brewer, S Conley, M Hardesty, R Banta, A White, D Noone, D Wolfe and R Schnell (2014), A new look at methane and nonmethane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin. *J. Geophys. Res. Atmos.*, 119 (11) 6836-6852, issn: 2169-897X, ids: AJ8RK, [doi: 10.1002/2013JD021272](https://doi.org/10.1002/2013JD021272)
- Ray, EA, FL Moore, KH Rosenlof, SM Davis, C Sweeney, P Tans, T Wang, JW Elkins, H Bonisch, A Engel, S Sugawara, T Nakazawa and S Aoki (2014), Improving stratospheric transport trend analysis based on SF₆ and CO₂ measurements. *J. Geophys. Res. Atmos.*, 119 (24) 14110-14128, issn: 2169-897X, ids: AZ8IX, [doi: 10.1002/2014JD021802](https://doi.org/10.1002/2014JD021802)
- Rieker, GB, FR Giorgetta, WC Swann, J Kofler, AM Zolot, LC Sinclair, E Baumann, C Cromer, G Petron, C Sweeney, PP Tans, I Coddington and NR Newbury (2014), Frequency-comb-based remote sensing of greenhouse gases over kilometer air paths. *Optica*, 1 (5) 290-298, issn: 2334-2536, ids: CI6JE, [doi: 10.1364/OPTICA.1.000290](https://doi.org/10.1364/OPTICA.1.000290)
- Santoni, GW, BC Daube, EA Kort, R Jimenez, S Park, JV Pittman, E Gottlieb, B Xiang, MS Zahniser, DD Nelson, JB McManus, J Peischl, TB Ryerson, JS Holloway, AE Andrews, C Sweeney, B Hall, EJ Hintsa, FL Moore, JW Elkins, DF Hurst, BB Stephens, J Bent and SC Wofsy (2014), Evaluation of the airborne quantum cascade laser spectrometer (QCLS) measurements of the carbon and greenhouse gas suite - CO₂, CH₄, N₂O, and CO - during the CalNex and HIPPO campaigns. *Atmos. Meas. Tech.*, 7 (6) 1509-1526, issn: 1867-1381, ids: AM5YB, [doi: 10.5194/amt-7-1509-2014](https://doi.org/10.5194/amt-7-1509-2014)
- Takahashi, T, SC Sutherland, DW Chipman, JG Goddard, C Ho, T Newberger, C Sweeney and DR Munro (2014), Climatological distributions of pH, pCO₂, total CO₂, alkalinity, and CaCO₃ saturation in the global surface ocean, and temporal changes at selected locations. *Mar. Chem.*, 164 95-125, issn: 0304-4203, ids: AO0CY, [doi: 10.1016/j.marchem.2014.06.004](https://doi.org/10.1016/j.marchem.2014.06.004)
- Thompson, RL, PK Patra, K Ishijima, E Saikawa, M Corazza, U Karstens, C Wilson, P Bergamaschi, E Dlugokencky, C Sweeney, RG Prinn, RF Weiss, S O'Doherty, PJ Fraser, LP Steele, PB Krummel, M Saunio, M Chipperfield and P Bousquet (2014), TransCom N₂O model inter-comparison - Part 1: Assessing the influence of transport and surface fluxes on tropospheric N₂O variability. *Atmos. Chem. Phys.*, 14 (8) 4349-4368, issn: 1680-7316, ids: AH2AO, [doi: 10.5194/acp-14-4349-2014](https://doi.org/10.5194/acp-14-4349-2014)
- Yacovitch, TI, SC Herndon, JR Roscioli, C Floerchinger, RM McGovern, M Agnese, G Petron, J Kofler, C Sweeney, A Karion, SA Conley, EA Kort, L Nahle, M Fischer, L Hildebrandt, J Koeth, JB McManus, DD Nelson, MS Zahniser and CE Kolb (2014), Demonstration of an Ethane Spectrometer for Methane Source Identification. *Environ. Sci. Tech.*, 2014 (48) 8028-8034, issn: 0013-936X, ids: AL6FH, isbn: 14, [doi: 10.1021/es501475q](https://doi.org/10.1021/es501475q), [PubMed id: 24945706](https://pubmed.ncbi.nlm.nih.gov/24945706/)

2013

- Bakker, D. C. E., et al. (2013) An update to the Surface Ocean CO₂ Atlas (SOCAT version 2). *Earth System Science Data Discussions*, 6, 465-512, doi:10.5194/essdd-6-465-2013.
- Bergamaschi, P., S. Houweling, A. Segers, M. Krol, C. Frankenberg, R. A. Scheepmaker, E. Dlugokencky, S. C. Wofsy, E. A. Kort, C. Sweeney, T. Schuck, C. Brenninkmeijer, H. Chen, V. Beck, and C. Gerbig (2013), Atmospheric CH₄ in the first decade of the 21st century: Inverse modeling analysis using SCIAMACHY

- satellite retrievals and NOAA surface measurements, *J. Geophys. Res.-Atmos.*, 118(13), 7350-7369. doi: 10.1002/jgrd.50480.
- Chatterjee, A., R. J. Engelen, S. R. Kawa, C. Sweeney, and A. M. Michalak (2013), Background error covariance estimation for atmospheric CO₂ data assimilation, *J. Geophys. Res.-Atmos.*, 118(17), 10140-10154. doi: 10.1002/jgrd.50654
- Graven, H. D., R. F. Keeling, S. C. Piper, P. K. Patra, B. B. Stephens, S. C. Wofsy, L. R. Welp, C. Sweeney, P. P. Tans, J. J. Kelley, B. C. Daube, E. A. Kort, G. W. Santoni, and J. D. Bent (2013), Enhanced Seasonal Exchange of CO₂ by Northern Ecosystems Since 1960, *Science*, 341(6150), 1085-1089. doi: 10.1126/science.1239207.
- Karion, A., C. Sweeney, G. Pétron, G. Frost, R. Michael Hardesty, J. Kofler, B. R. Miller, T. Newberger, S. Wolter, R. Banta, A. Brewer, E. Dlugokencky, P. Lang, S. A. Montzka, R. Schnell, P. Tans, M. Trainer, R. Zamora, and S. Conley (2013), Methane emissions estimate from airborne measurements over a western United States natural gas field, *Geophys. Res. Lett.*, 40(16), 4393-4397. doi: 10.1002/grl.50811.
- Miller, S. M., S. C. Wofsy, A. M. Michalak, E. A. Kort, A. E. Andrews, S. C. Biraud, E. J. Dlugokencky, J. Eluszkiewicz, M. L. Fischer, G. Janssens-Maenhout, B. R. Miller, J. B. Miller, S. A. Montzka, T. Nehrkorn, and C. Sweeney (2013), Anthropogenic emissions of methane in the United States, *Proceedings of the National Academy of Sciences*, 110(50), 20018-20022. doi: 10.1073/pnas.1314392110
- Miyamoto, Y., M. Inoue, I. Morino, O. Uchino, T. Yokota, T. Machida, Y. Sawa, H. Matsueda, C. Sweeney, P. P. Tans, A. E. Andrews, S. C. Biraud, and P. K. Patra (2013), Corrigendum to "Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites" published in *Atmos. Chem. Phys.* 13, 5265-5275, 2013, *Atmos. Chem. Phys.*, 13(18), 9213-9216. doi: 10.5194/acp-13-9213-2013
- Miyamoto, Y., M. Inoue, I. Morino, O. Uchino, T. Yokota, T. Machida, Y. Sawa, H. Matsueda, C. Sweeney, P. P. Tans, A. E. Andrews, and P. K. Patra (2013), Atmospheric column-averaged mole fractions of carbon dioxide at 53 aircraft measurement sites, *Atmos. Chem. Phys.*, 13(10), 5265-5275. doi: 10.5194/acp-13-5265-2013.
- Xiong, X., C. Barnet, E. Maddy, S. C. Wofsy, L. Chen, A. Karion, and C. Sweeney (2013), Detection of methane depletion associated with stratospheric intrusion by atmospheric infrared sounder (AIRS), *Geophys. Res. Lett.*, 40(10), 2455-2459. doi: 10.1002/grl.50476.
- 2012**
- Jeong, S., C. Zhao, A. E. Andrews, E. J. Dlugokencky, C. Sweeney, L. Bianco, J. M. Wilczak, and M. L. Fischer (2012), Seasonal variations in N₂O emissions from central California, *Geophys. Res. Lett.*, 39(16), L16805. doi: 10.1029/2012GL052307.
- Karion, A., C. Sweeney, S. Wolter, T. Newberger, H. Chen, A. Andrews, J. Kofler, D. Neff, and P. Tans. (2012) Long-term greenhouse gas measurements from aircraft. *Atmos. Meas. Tech. Discuss.*, 5, 7341-7382. doi:10.5194/amtd-5-7341-2012
- Biraud, S.C., M. S. Torn, J. R. Smith, C. Sweeney, W. J. Riley, and P. P. Tans. (2012) A multi-year record of airborne CO₂ observations in the US Southern Great Plains, *Atmos. Meas. Tech. Discuss.*, 5, 7187-7222. doi:10.5194/amtd-5-7187-2012
- Chen, H., A. Karion, C. W. Rella, J. Winderlich, C. Gerbig, A. Filges, T. Newberger, C. Sweeney, and P. P. Tans. (2012) Accurate measurements of carbon monoxide in humid air using the cavity ring-down spectroscopy (CRDS) technique. *Atmos. Meas. Tech. Discuss.*, 5, 6493-6517, doi:10.5194/amtd-5-6493-2012
- Rella, C.H., H. Chen, A. E. Andrews, A. Filges, C. Gerbig, J. Hatakka, A. Karion, N. L. Miles, S. J. Richardson, M. Steinbacher, C. Sweeney, B. Wastine, and C. Zellweger (2012) High accuracy measurements of dry mole fractions of carbon dioxide and methane in humid air. *Atmos. Meas. Tech. Discuss.*, 5, 5823-5888. doi:10.5194/amtd-5-5823-2012
- Wanninkhof, R., G. H. Park, T. Takahashi, C. Sweeney, R. Feely, Y. Nojiri, N. Gruber, S. C. Doney, G. A. McKinley, A. Lenton, L. Q. C., C. Heinze, J. Schwinger, H. Graven, and S. Khatiwala (2012), Global Ocean Carbon Uptake: Magnitude, Variability and Trends, *Biogeosciences Discuss.*, 9, 10961-11101. doi: 10.5194/bgd-9-10961-2012

- Cooper, O. R., R. S. Gao, D. Tarasick, T. Leblanc, and C. Sweeney (2012), Long-term ozone trends at rural ozone monitoring sites across the United States, 1990-2010, *J. Geophys. Res.-Atmos.*, 117, doi: 10.1029/2012jd018261
- Turnbull, J. C., D. Guenther, A. Karion, C. Sweeney, E. Anderson, A. E. Andrews, J. Kofler, N. L. Miles, T. Newberger, S. J. Richardson and P. P. Tans (2012). "An integrated flask sample collection system for greenhouse gas measurements." *Atmospheric Measurement Techniques* 5: 2321-2327. doi:10.5194/amtd-5-4077-2012
- Takahashi, T., C. Sweeney, B. Hales, D. W. Chipman, T. Newberger, J. G. Goddard, and R. A. S. Iannuzzi, S.C. (2012), The changing carbon cycle in the Southern Ocean. *Oceanography*, 25(3), 26–37. doi: 10.5670/oceanog.2012.71
- Sprintall, J., T. K. Chereskin, and C. Sweeney (2012), High-Resolution underway upper ocean and surface atmospheric observations in Drake Passage: Synergistic measurements for climate science *Oceanography*, 25(3), 70-81. doi: <http://dx.doi.org/10.5670/oceanog.2012.77>.
- Gourdji, SM, KL Mueller, V Yadav, DN Huntzinger, AE Andrews, M Trudeau, G Petron, T Nehr Korn, J Eluszkiewicz, J Henderson, D Wen, J Lin, M Fischer, C Sweeney and AM Michalak (2012), North American CO₂ exchange: inter-comparison of modeled estimates with results from a fine-scale atmospheric inversion. *Biogeosciences*, 9 (1) 457-475, issn: 1726-4170, ids: 891PL, [doi: 10.5194/bg-9-457-2012](https://doi.org/10.5194/bg-9-457-2012)
- Lenton, A, N Metzl, T Takahashi, M Kuchinke, RJ Matear, T Roy, SC Sutherland, C Sweeney and B Tilbrook (2012), The observed evolution of oceanic pCO₂ and its drivers over the last two decades. *Glob. Biogeochem. Cycle*, 26 , Art. No. GB2021, issn: 0886-6236, ids: 945HJ, [doi: 10.1029/2011GB004095](https://doi.org/10.1029/2011GB004095)
- Miller, J. B., S. J. Lehman, S. A. Montzka, C. Sweeney, B. R. Miller, A. Karion, C. Wolak, E. J. Dlugokencky, J. Southon, J. C. Turnbull, and P. P. Tans (2012), Linking emissions of fossil fuel CO₂ and other anthropogenic trace gases using atmospheric (CO₂)-C-14, *J. Geophys. Res.-Atmos.*, 117. doi: 10.1029/2011jd017048.
- Brooks, B. G. J., A. R. Desai, B. B. Stephens, D. R. Bowling, S. P. Burns, A. S. Watt, S. L. Heck, and C. Sweeney (2012), Assessing filtering of mountaintop CO₂ mole fractions for application to inverse models of biosphere-atmosphere carbon exchange, *Atmos. Chem. Phys.*, 12(4), 2099-2115. doi: 10.5194/acp-12-2099-2012.
- Petron, G., G. Frost, B. R. Miller, A. I. Hirsch, S. A. Montzka, A. Karion, M. Trainer, C. Sweeney, A. E. Andrews, L. Miller, J. Kofler, A. Bar-Ilan, E. J. Dlugokencky, L. Patrick, C. T. Moore, T. B. Ryerson, C. Siso, W. Kolodzey, P. M. Lang, T. Conway, P. Novelli, K. Masarie, B. Hall, D. Guenther, D. Kitzis, J. Miller, D. Welsh, D. Wolfe, W. Neff and P. Tans (2012), Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study. *J. Geophys. Res.-Atmos.* 117 doi: D0430410.1029/2011jd016360
- Lauvaux, T., A. E. Schuh, M. Uliasz, S. Richardson, N. Miles, A. E. Andrews, C. Sweeney, L. I. Diaz, D. Martins, P. B. Shepson and K. J. Davis (2012), Constraining the CO₂ budget of the corn belt: exploring uncertainties from the assumptions in a mesoscale inverse system. *Atm. Chem. and Phys.* 12(1), 337-354 doi: 10.5194/acp-12-337-2012

2011

- Kort, E. A., P. K. Patra, K. Ishijima, B. C. Daube, R. Jimenez, J. Elkins, D. Hurst, F. L. Moore, C. Sweeney and S. C. Wofsy (2011), Tropospheric distribution and variability of N₂O: Evidence for strong tropical emissions. *Geophys. Res. Lett.* 38 doi: L15806 10.1029/2011gl047612
- Pickett-Heaps, C. A., P. J. Rayner, R. M. Law, P. Ciais, P. K. Patra, P. Bousquet, P. Peylin, S. Maksyutov, J. Marshall, C. Rodenbeck, R. L. Langenfelds, L. P. Steele, R. J. Francey, P. Tans and C. Sweeney (2011), Atmospheric CO₂ inversion validation using vertical profile measurements: Analysis of four independent inversion models. *J. Geophys. Res.-Atmos.* 116 doi: D12305 10.1029/2010jd014887
- Turnbull, J. C., A. Karion, M. L. Fischer, I. Faloona, T. Guilderson, S. J. Lehman, B. R. Miller, J. B. Miller, S. Montzka, T. Sherwood, S. Saripalli, C. Sweeney and P. P. Tans (2011), Assessment of fossil fuel carbon

dioxide and other anthropogenic trace gas emissions from airborne measurements over Sacramento, California in spring 2009. 11(2), 705-721 doi: 10.5194/acp-11-705-2011

McNeil, B. I., C. Sweeney and J. A. E. Gibson (2011), Short Note Natural seasonal variability of aragonite saturation state within two Antarctic coastal ocean sites. 23(4), 411-412 doi: 10.1017/s0954102011000204

Basu, S., S. Houweling, W. Peters, C. Sweeney, T. Machida, S. Maksyutov, P. K. Patra, R. Saito, F. Chevallier, Y. Niwa, H. Matsueda and Y. Sawa (2011), The seasonal cycle amplitude of total column CO₂: Factors behind the model-observation mismatch. 116 doi: D23306 10.1029/2011jd016124

2010

Karion, A., C. Sweeney, P. Tans and T. Newberger (2010). "AirCore: An Innovative Atmospheric Sampling System." *Journal of Atmospheric and Oceanic Technology* 27(11): 1839-1853 DOI: 10.1175/2010jtecha1448.1

Crevoisier, C., C. Sweeney, M. Gloor, J. L. Sarmiento and P. P. Tans (2010). Regional US carbon sinks from three-dimensional atmospheric CO₂ sampling. *Proceedings of the National Academy of Sciences of the United States of America* 107(43): 18348-18353 DOI: 10.1073/pnas.0900062107

Kort E.A., A E. Andrews, E Dlugokencky, C Sweeney, A Hirsch, J Eluszkiewicz, T Nehrkorn, S Michalak, B Stephens, C Gerbig, J B. Miller, J Kaplan, S Houweling, B C. Daube, P Tans, and S.C. Wofsy 2010. Atmospheric constraints on 2004 emissions of methane and nitrous oxide in North America from atmospheric measurements and a receptor-oriented modeling framework, *Journal of Integrative Environmental Sciences*, 7:2, 125-13 doi:10.1080/19438151003767483

McNeil, B., A. Tagliabue and C. Sweeney (2010). A multi-decadal delay in the onset of corrosive 'acidified' waters in the Ross Sea of Antarctica due to strong air-sea CO₂ disequilibrium. *Geophysical Research Letters* 37 DOI: L1960710.1029/2010gl044597

Montes-Hugo, M., C. Sweeney, S. C. Doney, H. Ducklow, R. Frouin, D. G. Martinson, S. Stammerjohn and O. Schofield (2010). Seasonal forcing of summer dissolved inorganic carbon and chlorophyll a on the western shelf of the Antarctic Peninsula. *Journal of Geophysical Research-Oceans* 115 DOI: C03024 10.1029/2009jc005267

Oltmans, S. J., A. S. Lefohn, J. M. Harris, D. W. Tarasick, A. M. Thompson, H. Wernli, B. J. Johnson, P. C. Novelli, S. A. Montzka, J. D. Ray, L. C. Patrick, C. Sweeney, A. Jefferson, T. Dann, J. Davies, M. Shapiro and B. N. Holben (2010). Enhanced ozone over western North America from biomass burning in Eurasia during April 2008 as seen in surface and profile observations. *Atmospheric Environment* 44(35): 4497-4509 DOI: 10.1016/j.atmosenv.2010.07.004

Parrish, D. D., K. C. Aikin, S. J. Oltmans, B. J. Johnson, M. Ives and C. Sweeney (2010). Impact of transported background ozone inflow on summertime air quality in a California ozone exceedance area. *Atmospheric Chemistry and Physics* 10(20): 10093-10109 DOI: 10.5194/acp-10-10093-2010

Wunch, D., G. C. Toon, P. O. Wennberg, S. C. Wofsy, B. B. Stephens, M. L. Fischer, O. Uchino, J. B. Abshire, P. Bernath, S. C. Biraud, J. F. L. Blavier, C. Boone, K. P. Bowman, E. V. Browell, T. Campos, B. J. Connor, B. C. Daube, N. M. Deutscher, M. Diao, J. W. Elkins, C. Gerbig, E. Gottlieb, D. W. T. Griffith, D. F. Hurst, R. Jimenez, G. Keppel-Aleks, E. A. Kort, R. Macatangay, T. Machida, H. Matsueda, F. Moore, I. Morino, S. Park, J. Robinson, C. M. Roehl, Y. Sawa, V. Sherlock, C. Sweeney, T. Tanaka and M. A. Zondlo (2010). Calibration of the Total Carbon Column Observing Network using aircraft profile data. *Atmospheric Measurement Techniques* 3(5): 1351-1362 DOI: 10.5194/amt-3-1351-2010

Xiong, X. Z., C. D. Barnet, Q. L. Zhuang, T. Machida, C. Sweeney and P. K. Patra (2010). Mid-upper tropospheric methane in the high Northern Hemisphere: Spaceborne observations by AIRS, aircraft measurements, and model simulations. *Journal of Geophysical Research-Atmospheres* 115 DOI: D19309 10.1029/2009jd013796

Yurganov, L., W. McMillan, C. Wilson, M. Fischer, S. Biraud and C. Sweeney (2010). Carbon monoxide mixing ratios over Oklahoma between 2002 and 2009 retrieved from Atmospheric Emitted Radiance Interferometer spectra. *Atmospheric Measurement Techniques* 3(5): 1319-1331 DOI: 10.5194/amt-3-1319-2010

2009

- Andreas Volz-Thomas, J-P. Cammas, C.A.M. Brenninkmeijer, O. Cooper, C. Sweeney A. Waibel. (2009). Civil Aviation Monitors Air Quality and Climate. *EM Magazine*, October.
- Mays, K. L., P. B. Shepson, B. H. Stirm, A. Karion, C. Sweeney and K. R. Gurney (2009). Aircraft-Based Measurements of the Carbon Footprint of Indianapolis. *Environmental Science & Technology* 43(20): 7816-7823 DOI: 10.1021/es901326b
- Martins, D. K., C. Sweeney, B. H. Stirm, and P. B. Shepson. 2009, Regional surface flux of CO₂ inferred from changes in the advected CO₂ column density, *Agric. For. Meteorol.*, 149(10), 1674-1685. DOI: 10.1016/j.agrformet.2009.05.005
- Gupta, P., D. Noone, J. Galewsky, C. Sweeney and B. H. Vaughn (2009a). A new laser-based, field-deployable analyzer for laboratory-class stable isotope measurements in water. *Geochimica Et Cosmochimica Acta* 73(13): A480-A480
- Gupta, P., D. Noone, J. Galewsky, C. Sweeney, B. H. Vaughn. (2009b). Demonstration of high precision continuous measurements of water isotopologues in laboratory and remote field deployments using WS-CRDS technology. *Rapid Communications in Mass Spectrometry*. 2534-2542. DOI: 10.1002/rcm.4100
- Takahashi, T., S. C. Sutherland, R. Wanninkhof, C. Sweeney, R. A. Feely, D. W. Chipman, B. Hales, G. Friederich, F. Chavez, A. Watson, D. C. E. Bakker, U. Schuster, N. Metzl, H. Yoshikawa-Inoue, M. Ishii, T. Midorikawa, C. Sabine, M. Hoppema, J. Olafsson, T. S. Arnarson, B. Tilbrook, T. Johannessen, A. Olsen, R. Bellerby, H. J. W. de Baar, Y. Nojiri, C. S. Wong, B. Delille (2009). Climatological Mean and Decadal Change in Surface Ocean pCO₂, and Net Sea-air CO₂ Flux over the Global Oceans. *Deep-Sea Research II*, 2009. doi:10.1016/j.dsr2.2008.12.009
- Wanninkhof, R., W. E. Asher, D. T. Ho, C. Sweeney, W. R. McGillis (2009). Advances in Quantifying Air-Sea Gas Exchange and Environmental Forcing. *Annual Review of Marine Sciences* 1. doi:10.1146/annurev.marine.010908.163742

2008

- Campbell, J. E., G. R. Carmichael, T. Chai, M. Mena-Carrasco, Y. Tang, D. R. Blake, N. J. Blake, S. A. Vay, G. J. Collatz, I. Baker, J. A. Berry, S. A. Montzka, C. Sweeney, J. L. Schnoor, and C. O. Stanier. 2008. Photosynthetic Control of Atmospheric Carbonyl Sulfide During the Growing Season. *Science* 322:1085-1088. DOI: 10.1126/science.1164015
- Xiong, X. Z., C. Barnet, E. Maddy, C. Sweeney, X. P. Liu, L. H. Zhou and M. Goldberg (2008). Characterization and validation of methane products from the Atmospheric Infrared Sounder (AIRS). *Journal of Geophysical Research-Biogeosciences* 113. doi:10.1029/2007JG000500.
- Maddy, E. S., C. D. Barnet, M. Goldberg, C. Sweeney and X. Liu (2008). CO₂ retrievals from the Atmospheric Infrared Sounder: Methodology and validation. *Journal of Geophysical Research-Atmospheres* 113(D11) DOI:10.1029/2007.

2007

- Sweeney, C., E. Gloor, A. R. Jacobson, R. M. Key, G. McKinley, J. L. Sarmiento and R. Wanninkhof (2007). Constraining global air-sea gas exchange for CO₂ with recent bomb C-14 measurements. *Global Biogeochemical Cycles* 21 (2). DOI: 10.1029/2006GB002784
- Peters, W., A. R. Jacobson, C. Sweeney, A. E. Andrews, T. J. Conway, K. Masarie, J. B. Miller, L. M. P. Bruhwiler, G. Petron, A. I. Hirsch, D. E. J. Worthy, G. R. van der Werf, J. T. Randerson, P. O. Wennberg, M. C. Krol and P. P. Tans (2007). An atmospheric perspective on North American carbon dioxide exchange: CarbonTracker. *Proceedings of the National Academy of Sciences of the United States of America* 104(48): 18925-18930. DOI: 10.1072/pnas.07089861074
- Yang, Z., R.A. Washenfelder, G. Keppel-Aleks, P.O. Wennberg, N.Y. Krakauer, J.T. Randerson, P.P. Tans and C. Sweeney. (2007). New constraints on Northern Hemisphere growing season net flux. *Geophysical Research Letters*, 34 (12). DOI: 10.1029/2007GL029742

Stephens, B. B., K. R. Gurney, P. P. Tans, C. Sweeney, W. Peters, L. Bruhwiler, P. Ciais, M. Ramonet, P. Bousquet, T. Nakazawa, S. Aoki, T. Machida, G. Inoue, N. Vinnichenko, J. Lloyd, A. Jordan, M. Heimann, O. Shibistova, R. L. Langenfelds, L. P. Steele, R. J. Francey and A. S. Denning (2007). "Weak northern and strong tropical land carbon uptake from vertical profiles of atmospheric CO₂." *Science* 316(5832): 1732-1735. DOI: 10.1126/science.1137004

Montzka, S. A., P. Calvert, B. D. Hall, J. W. Elkins, T. J. Conway, P. P. Tans and C. Sweeney (2007). "On the global distribution, seasonality, and budget of atmospheric carbonyl sulfide (COS) and some similarities to CO₂." *Journal of Geophysical Research-Atmospheres* 112(D9). DOI: 10.1029/2006JD007665

2006

Crevoisier, C., M. Gloor, E. Gloaguen, L. W. Horowitz, J. L. Sarmiento, C. Sweeney, and P. P. Tans, (2006). A direct carbon budgeting approach to infer carbon sources and sinks. Design and synthetic application to complement the NACP observation network. *Tellus B*, 58: 366-375. DOI: 10.1111/j.1600-0889.2006.00214.x

Gnanadesikan, A., Dixon, K.W., Griffies, S.M., Balaji, V., Barreiro, M., Beesley, J.A., Cooke, W.F., Delworth, T.L., Gerdes, R., Harrison, M.J., Held, I.M., Hurlin, W.J., Lee, H.C., Liang, Z., Nong, G., Pacanowski, R.C., Rosati, A., Russell, J., Samuels, B.L., Song, Q., Spelman, M.J., Stouffer, R.J., Sweeney, C., Vecchi, G., Winton, M., Wittenberg, A.T., Zeng, F., Zhang, R., & Dunne, J.P. (2006). GFDL's CM2 global coupled climate models. Part II: The baseline ocean simulation. *Journal of Climate*, 19(5), 675-697

2005

Sweeney, C., A. Gnanadesikan, S. M. Griffies, M. J. Harrison, A. J. Rosati, and B. L. Samuels, 2005. Impacts of Shortwave Penetration Depth on Large-Scale Ocean Circulation and Heat Transport, *Journal of Physical Oceanography*, 35(6): 1103–1119

2003

Sweeney, C. 2003. The annual cycle of surface CO₂ and O₂ in the Ross Sea: A model for gas exchange on the continental shelves of Antarctica. In: *Biogeochemistry of the Ross Sea*, edited by G.R. DiTullio and R.B. Dunbar, Antarctic Research Series, 78: 295-312.

2002

Takahashi, T., S. C. Sutherland, C. Sweeney, A. Poisson, N. Metzl, B. Tilbrook, N. Bates, R. Wanninkhof, R. A. Feely, C. Sabine, J. Olafsson, 2002. Biological and temperature effects on seasonal changes of pCO₂ in global surface ocean. *Deep-Sea Research II*, 49: 1601–1622.

Sweeney, C., T. Takahashi, R. Wanninkhof, A. Gnanadesikan, 2002. Spatial and temporal variability of surface water pCO₂ and sampling strategies. Report prepared for the NOAA Advisory Meeting for Sea-air CO₂ Flux Program, October 8-10, 2000, Boulder, CO.

2000

Sweeney, C., D. A. Hansell, C. A. Carlson, L. A. Codispoti, L. I. Gordon, J. Marra, F. J. Millero, W. O. Smith and T. Takahashi (2000). "Biogeochemical regimes, net community production and carbon export in the Ross Sea, Antarctica." *Deep-Sea Research Part II-Topical Studies in Oceanography* 47(15-16): 3369-3394.

Sweeney, C., W. O. Smith, B. Hales, R. R. Bidigare, C. A. Carlson, L. A. Codispoti, L. I. Gordon, D. A. Hansell, F. J. Millero, M. O. Park and T. Takahashi (2000). "Nutrient and carbon removal ratios and fluxes in the Ross Sea, Antarctica." *Deep-Sea Research Part II-Topical Studies in Oceanography* 47(15-16): 3395-3421.

Gordon, L. I., L. A. Codispoti, J. C. Jennings, F. J. Millero, J. M. Morrison and C. Sweeney (2000). "Seasonal evolution of hydrographic properties in the Ross Sea, Antarctica, 1996-1997." *Deep-Sea Research Part II-Topical Studies in Oceanography* 47(15-16): 3095-3117.

Langdon, C., T. Takahashi, C. Sweeney, D. Chipman, J. Goddard, F. Marubini, H. Aceves, H. Barnett and M. J. Atkinson (2000). "Effect of calcium carbonate saturation state on the calcification rate of an experimental coral reef." *Global Biogeochemical Cycles* 14(2): 639-654.

1999

Sweeney, C., 1999. The Diel Carbon Cycle of the Biosphere II Ocean. *Ecological Engineering* 13: 235-247.

Professional Membership

- Sigma Xi (Columbia University Chapter)
- American Geophysical Union