

CURRICULUM VITAE

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EDUCATION

Stanford University,	Atmospheric Science	Ph.D.	1994
Stanford University,	Environmental Engineering	M.S.	1988
University of California, Berkeley,	Chemistry	B.S.	1987

PROFESSIONAL EXPERIENCE

2004-present Research Scientist, University of Colorado, Boulder, INSTAAR
2003-2009 Visiting Scientist, National Center for Atmospheric Research, Boulder
2001-2003 Project Scientist, Scripps Institution of Oceanography, La Jolla, CA
2000-2003 Lecturer, University of California, San Diego, Chemistry Dept.
1999 Environmental Consultant, ICF Kaiser, Inc., Washington, D.C.
1994-1998 Postdoctoral Investigator, NOAA Aeronomy Lab., Boulder, CO
1992-1994 Graduate Researcher, National Center for Atmospheric Research, Boulder

RESEARCH INTERESTS

Global biogeochemical cycles of nitrogen, carbon and oxygen and their impact on atmospheric trace gases, including nitrous oxide, carbon dioxide and atmospheric potential oxygen.

ACADEMIC AWARDS

NOAA Postdoctoral Fellowship in Global and Climate Change (1994-1996)
NCAR Advanced Study Program, Graduate Fellowship (1991-1994)
National Science Foundation, Graduate Fellowship (1987-1988 and 1989-1991)

OTHER PROFESSIONAL ACTIVITIES

Expert reviewer for IPCC 5th Assessment Report.

Keynote speaker at 2011 Biotechnology Conference at the University of North Carolina, Charlotte.

Member of the SafeMinds Environmental Committee since 2011 and Executive Board Member since 2013

Chair of IPCC subgroup on indirect nitrous oxide emissions from agriculture that developed and revised a methodology for national greenhouse gas emission inventories (1996, 2000).

PUBLICATIONS

First author refereed papers

- Nevison, C.D., R.F. Weiss, and D.J. Erickson III, Global Oceanic Nitrous Oxide Emissions, *J. Geophys. Res.*, *100*, 15,809-15,820, 1995.
- Nevison, C.D., G. Esser, and E.A. Holland, A Global Model of Changing N₂O Emissions from Natural and Perturbed Soils, *Climatic Change*, *32*, 327-378, 1996.
- Nevison, C.D., S. Solomon, and J.M. Russell III, Nighttime Formation of N₂O₅ Inferred from HALOE Sunset/Sunrise NO_x Ratios, *J. Geophys. Res.*, *101*, 6741-6748, 1996.
- Nevison, C.D., S. Solomon, R.R. Garcia, D.W. Fahey, E.R. Keim, M. Loewenstein, J.R. Podolske, R.S. Gao, R.C. Wamsley, S.G. Donnelly, and L.A. DelNegro, The Influence of Antarctic Denitrification on Two-Dimensional Model NO_y/N₂O Correlations in the Lower Stratosphere, *J. Geophys. Res.*, *102*, 13,183-13,192, 1997.
- Nevison, C.D., S. Solomon, R.R. Garcia, Model Overestimates of NO_y in the Upper Stratosphere, *Geophys. Res. Lett.*, *24*, 803-806, 1997.
- Nevison, C.D., and E.A. Holland, A Re-examination of the Impact of Anthropogenically Fixed Nitrogen on Atmospheric N₂O and the Stratospheric O₃ Layer, *J. Geophys. Res.*, *102*, 25,519-25,537, 1997.
- Nevison, C.D., S. Solomon, and R.S. Gao, Buffering Interactions in the Modeled Response of Stratospheric O₃ to Increased NO_x and HO_x, *J. Geophys. Res.*, *104*, 3741-3754, 1999.
- Nevison, C.D., V. Gupta, and L.F. Klinger, Self-sustained Temperature Oscillations on Daisyworld, *Tellus*, *51*, 806-814, 1999.
- Nevison, C.D., E.R. Keim, S. Solomon, D.W. Fahey, R.S. Gao, J.W. Elkins, C.R. Webster, and M. Loewenstein, Constraints on N₂O sinks Inferred from Observed Tracer Correlations in the Lower Stratosphere, *Global Biogeochemical Cycles*, *13*, 737-742, 1999.

- Nevison, C.D., Review of the IPCC methodology for estimating nitrous oxide emissions associated with agricultural leaching and runoff, *Chemosphere – Global Change Science* 2, 493-500, 2000.
- Nevison, C.D., J.H. Butler and J.W. Elkins, Global Distribution of N₂O and the ΔN₂O/AOU Yield in the Subsurface Ocean, *Global Biogeochemical Cycles*, 17(4), 1119, 2003.
- Nevison, C.D., T.J. Lueker and R.F. Weiss, Quantifying the nitrous oxide source from coastal upwelling, *Global Biogeochemical Cycles*, 18(1), 1018, 2004.
- Nevison, C.D., D.E. Kinnison, and R.F. Weiss, Stratospheric influences on the tropospheric seasonal cycles of nitrous oxide and chlorofluorocarbons, *Geophys. Res. Lett.*, 31(20), L20104, 2004.
- Nevison, C.D., R.F. Keeling, R.F. Weiss, B.N. Popp, X. Jin, P.J. Fraser, L.W. Porter and P.G. Hess, Southern Ocean ventilation inferred from seasonal cycles of atmospheric N₂O and O₂/N₂ at Cape Grim, Tasmania, *Tellus*, 57B, 218-229, 2005.
- Nevison, C.D., N. Mahowald, R.F. Weiss, and R.G. Prinn, Interannual and seasonal variability in atmospheric N₂O, *Global Biogeochemical Cycles*, 21, GB3017, doi:10.1029/2006GB002755, 2007.
- Nevison, C.D., N. Mahowald, S. Doney, I. Lima, G. van der Werf, J. Randerson, D. Baker, P. Kasibhatla, G. McKinley, Contribution of ocean, fossil fuel, land biosphere and biomass burning carbon fluxes to seasonal and interannual variability in atmospheric CO₂, *J. Geophys. Res.*, 113, G01010, doi:10.1029/2007JG000408, 2008.
- Nevison, C. D., Mahowald, N. M., Doney, S. C., Lima, I. D., and Cassar, N.: Impact of variable air-sea O₂ and CO₂ fluxes on atmospheric potential oxygen (APO) and land-ocean carbon sink partitioning, *Biogeosciences*, 5, 875-889, 2008.
- Nevison, C.D. E. Dlugokencky, G. Dutton, J.W. Elkins, P. Fraser, B. Hall, P.B. Krummel, R.L. Langenfelds, S. O’Doherty, R.G. Prinn, L.P. Steele, R.F. Weiss, Exploring causes of interannual variability in the seasonal cycles of tropospheric nitrous oxide, *Atmospheric Chemistry and Physics*, 11, doi:10.5194/acp-11-1-2011, 1-18, 2011.
- Nevison, C. D., R. F. Keeling, M. Kahru, M. Manizza, B. G. Mitchell, and N. Cassar, Estimating net community production in the Southern Ocean based on atmospheric potential oxygen and satellite ocean color data, *Global Biogeochem. Cycles*, 26, GB1020, doi:10.1029/2011GB004040, 2012.
- Nevison, C.D., D.F. Baker, and K.R. Gurney, A methodology for estimating seasonal cycles of atmospheric CO₂ resulting from terrestrial net ecosystem exchange (NEE) fluxes using the Transcom T3L2 pulse-response functions, *Geosci. Model Dev. Discuss.*, 5, 2789-2809, 2012, www.geosci-model-dev-discuss.net/5/2789/2012/ doi:10.5194/gmdd-5-2789-2012, 2012.

Co-authored refereed papers

- Fahey, D.W., S.G. Donnelly, E.R. Keim, R.S. Gao, E.L. Woodbridge, R.C. Wamsley, S.G. Donnelly, L.A. DelNegro, E.L. Woodbridge, M.H. Proffitt, K.H. Rosenlof, M.K.W. Ko, D.K. Weisenstein, C.J. Scott, C. Nevison, and S.Solomon, and K.R.

- Chan, In situ Observations of NO_y , O_3 , and the NO_y/O_3 Ratio in the Lower Stratosphere, *Geophys. Res. Lett.*, 23, 1653-1656, 1996.
- Keim, E.R., M. Loewenstein, J.R. Podolske, D.W. Fahey, R.S. Gao, E.L. Woodbridge, R.C. Wamsley, S.G. Donnelly, L.A. DelNegro, C.D. Nevison, S. Solomon, C.K. Clark, M.K.W. Ko, D. Weisenstein, and K.R. Chan, Measurements of the $\text{NO}_y - \text{N}_2\text{O}$ correlation in the lower stratosphere: Latitudinal and seasonal changes and model comparisons, *J. Geophys Res*, 102, 13,193-13,212, 1997.
- Mosier A., C. Kroeze, C. Nevison, O. Oenema, S. Seitzinger, and O. van Cleemput, Closing the global atmospheric N_2O budget: Nitrous oxide emissions through the agricultural nitrogen cycle, *Nutrient Cycling in Agroecosystems*, 52, 225-248, 1998.
- Lueker, T.J., S.J. Walker, M.K. Vollmer, R.F. Keeling, C.D. Nevison and R.F. Weiss, Coastal upwelling air-sea fluxes revealed in atmospheric observations of O_2/N_2 , CO_2 and N_2O , *Geophys. Res. Letters*, 30, No. 6, 1292, 2003.
- Randerson, J.T., F.M. Hoffmann, P.E. Thornton, N.M. Mahowald, K. Lindsay, Y.H. Lee, C.D. Nevison, S.C. Doney, G. Bonan, R. Stoeckli, C. Covey, S.W. Running and I. Fung, Systematic assessment of terrestrial biogeochemistry in coupled climate-carbon models, *Global Change Biology*, doi: 10.1111/j.1365-2486.2009.01912.x, 2009.
- Suntharalingam, P., E. Buitenhuis, C. LeQuere, F. Dentener, C. Nevison, J. Butler, H.W. Bange, and G. Forster, Quantifying the impact of anthropogenic nitrogen deposition on oceanic nitrous oxide, *Geophys. Res. Lett.*, 39, 7, doi:10.1029/2011GL050778, 2012.
- Manizza, M., R. F. Keeling, and C. D. Nevison, On the processes controlling the seasonal cycles of the air-sea fluxes of O_2 and N_2O : A modeling study, *Tellus-B*, 64, 18429, <http://dx.doi.org/10.3402/tellusb.v64i0.18429>, 2012.

Unrefereed papers:

- Mosier, A.R., C. Kroeze, K. Paustian, C. Nevison, O. Oenema, S. Seitzinger, O. van Cleemput, IPCC Guidelines. IPCC Guidelines for National Greenhouse Gas Inventories Reference Manual. Chapter 4. Agriculture. Section 4.5. Greenhouse Gas Emissions from Agricultural Soils. pp. 4.82-4.134. OECD/IPCC, Paris, France, 1997.
- WMO (World Meteorological Organization), Scientific Assessment of Ozone Depletion: 1998, Global Ozone Research and Monitoring Project - Report No. 44, Geneva, in press, 1998. Contributor to Chapter 6 "Upper Stratospheric Processes."
- Nevison, C.D., Background Papers - IPCC Expert Meetings on Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories, "Indirect N_2O Emissions from Agriculture," pp. 381-397, IPCC/NGGIP/IGES, Tokyo, Japan, 2000.
- Holland, E. A., J. Lee-Taylor, C. Nevison, & J. Sulzman, Global N Cycle: Fluxes and N_2O Mixing Ratios Originating from Human Activity, Data set. Available on-line [<http://www.daac.ornl.gov>] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A., 2005