

# Nicola Jane Blake

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Education B.Sc., Chemical Sciences, University of East Anglia, UK, 1982-1985  
M.Sc., Analytical Chemistry, University of East Anglia, UK, 1985-1986  
Ph.D., Atmospheric Chemistry, University of East Anglia, UK, 1986-1990

Employment **2007 - Present**  
University of California Irvine  
Project Scientist  
*2002 - 2007*  
University of California Irvine  
Researcher  
*1993 - 2000*  
University of California Irvine  
Specialist  
*1990 - 1993*  
University of California Irvine  
Postdoctoral Researcher  
*1989 - 1990*  
University of East Anglia, Norwich, UK  
Postdoctoral Researcher

Professional Affiliations and Tasks Member, American Geophysical Union (AGU)  
Active Peer Reviewer for AGU's Journal of Geophysical Research - Atmospheres, AGU's Geophysical Research Letters, Journal of Atmospheric Chemistry and Physics, Atmospheric Environment and Elementa: Science of the Anthropocene.  
Proposal Reviewer for National Science Foundation (NSF), NASA and UK Natural Environment Research Council (NERC).  
Co-Session Chair, AGU Meeting 1997, 1999, 2001, 2004, 2005, 2006, 2013

Awards Science and Engineering Research Council Studentship: 1985-1986  
INCOR Postdoctoral Fellowship: 1992-1994  
NASA Group Achievement Award: 1997, 1999, 2004, 2008, 2013  
AGU Editor's Citation for Excellence in Refereeing: 2013  
Atmospheric Environment "Outstanding Reviewer" Award 2015

- Selected Publications (out of ~100)
1. Blake, D. R., D. F. Hurst, T. W. Smith Jr., W. J. Whipple, T. -Y. Chen, N. J. Blake, and F. S. Rowland, Summertime measurements of selected nonmethane hydrocarbons in the Arctic and Sub-Arctic during the 1988 Arctic Boundary Layer Expedition (ABLE 3A), *J. Geophys. Res.*, *97*, 16,559-16,588, 1992.
  2. Blake, N. J., S. A. Penkett, K. C. Clemitshaw, P. Anwyl, P. Lightman, A. R. W. Marsh, and G. Butcher, Estimates of atmospheric hydroxyl radical concentrations from the observed decay of many reactive hydrocarbons in well-defined urban plumes, *J. Geophys. Res.*, *98*, 2851-2864, 1993.
  3. Penkett, S. A., N. J. Blake, P. Lightman, A. R. W. Marsh, P. Anwyl, and G. Butcher, The seasonal variation of non-methane hydrocarbons in the free troposphere over the North Atlantic Ocean: Possible evidence for extensive reaction of hydrocarbons with the nitrate radical, *J. Geophys. Res.*, *98*, 2865-2885, 1993.
  4. Blake, D. R., T.-Y. Chen, T. W. Smith Jr., O. W. Wingenter, N. J. Blake, E. W. Mayer, and F. S. Rowland, Three dimensional distribution of NMHCs and halocarbons over the northwestern Pacific during the 1991 Pacific Exploratory Mission (PEM-West A), *J. Geophys. Res.*, *101*, 1763-1778, 1996.
  5. Blake, D. R., N. J. Blake, T. W. Smith Jr., O. W. Wingenter, and F. S. Rowland, Nonmethane hydrocarbon and halocarbon distributions during Atlantic Stratocumulus Transition Experiment/Marine Aerosol and Gas Exchange, June 1992, *J. Geophys. Res.*, *101*, 4501-4514, 1996.
  6. Wingenter, O. W., M. K. Kubo, N. J. Blake, T. W. Smith Jr., D. R. Blake, and F. S. Rowland, Hydrocarbon and halocarbon measurements as photochemical and dynamical indicators of atmospheric hydroxyl, atomic chlorine, and vertical mixing obtained during Lagrangian flights, *J. Geophys. Res.*, *101*, 4331-4340, 1996.
  7. Blake, N. J., D. R. Blake, B. C. Sive, T-Y. Chen, J. E. Collins Jr., G. W. Sachse, B. E. Anderson, and F. S. Rowland, Biomass burning emissions and vertical distribution of atmospheric methyl halides and other reduced carbon gases in the South Atlantic region, *J. Geophys. Res.*, *101*, 24,151-24,164, 1996.
  8. Blake, N. J., D. R. Blake, T.-Y. Chen, J. E. Collins Jr. , G. W. Sachse, B. E. Anderson, and F. S. Rowland, Distribution and seasonality of selected hydrocarbons and halocarbons over the western Pacific basin during PEM-West A and PEM-West B, *J. Geophys. Res.*, *102*, 28,315-28,331, 1997.
  9. Jobson, B. T., D. D. Parrish, P. Goldan, W. Kuster, F. C. Fehsenfeld, D. R. Blake, N. J. Blake, and H. Niki, Spatial and temporal variability of nonmethane hydrocarbon mixing ratios and their relation to photochemical lifetime, *J. Geophys. Res.*, *103*, 13,557-13,567, 1998.
  10. Blake, N. J., D. R. Blake, O. W. Wingenter, B. C. Sive, L. M. McKenzie, J. P. Lopez, I. J. Simpson, H. E. Fuelberg, G. W. Sachse, B. E. Anderson, G. L. Gregory, M. A. Carroll, G. M. Albercook, and F. S. Rowland, Influence of southern hemispheric biomass burning on mid-tropospheric distributions of nonmethane hydrocarbons and selected halocarbons over the remote South Pacific, *J. Geophys. Res.*, *104*, 16,213-16,232, 1999.
  11. Blake, N. J., D. R. Blake, O. W. Wingenter, B. C. Sive, G. H. Kang, D. C.

- Thornton, A. R. Bandy, E. Atlas, F. Flocke, J. Harris, and F. S. Rowland, Aircraft measurements of the latitudinal, vertical, and seasonal variations of NMHCs, methyl nitrate, methyl halides, and DMS during the First Aerosol Characterization Experiment (ACE 1), *J. Geophys. Res.*, *104*, 21,803-21,817, 1999. Elliott, Scott; Blake, Donald R.; Blake, Nicola J.; Dubey, Blake, N. J., D. R. Blake, A. L. Swanson, E. Atlas, F. Flocke, and F. S. Rowland, Latitudinal, vertical, and seasonal variations of C<sub>1</sub>-C<sub>4</sub> alkyl nitrates in the troposphere over the Pacific Ocean during PEM-Tropics A and B: Oceanic and continental sources, *J. Geophys. Res.*, *108* No. D2 10.1029/2001JD001444, 2003.
12. Blake, N. J., D. R. Blake, B. C. Sive, A. S. Katzenstein, S. Meinardi, O. W. Wingenter, E. L. Atlas, F. Flocke, B. A. Ridley, and F. S. Rowland, The seasonal evolution of NMHCs and light alkyl nitrates at mid to high northern latitudes during TOPSE, *J. Geophys. Res.*, *108* No. D4, 10.1029/2001JD001467, 2003.
  13. Swanson, A. L., N. J. Blake, E. Atlas, F. Flocke, D. R. Blake, and F. S. Rowland, Seasonality of C<sub>2</sub>-C<sub>4</sub> NMHC and C<sub>1</sub>-C<sub>4</sub> alkyl nitrates on the Arctic ice-sheet at Summit, Greenland, *J. Geophys. Res.*, *108* No. D2, 10.1029/2001JD001445, 2003.
  14. Blake, N. J., D. R. Blake, I. J. Simpson, S. Meinardi, A. L. Swanson, J. P. Lopez, A. S. Katzenstein, B. Barletta, T. Shirai, E. Atlas, G. Sachse, M. Avery, S. Vay, H.E. Fuelberg, C. M. Kiley, K. Kita, F. S. Rowland, NMHCs and Halocarbons in Asian Continental Outflow during TRACE-P: Comparison to PEM-West B, *J. Geophys. Res.*, *108*, 2002JD003367, 2003.
  15. Simpson, I.J., N.J. Blake, E. Atlas, F. Flocke, J.H. Crawford, H.E. Fuelberg, C.M. Kiley, F.S. Rowland, and D.R. Blake, Photochemical production of selected C<sub>2</sub>-C<sub>5</sub> alkyl nitrates in tropospheric air influenced by Asian outflow, *J. Geophys. Res.*, *108*, 2002JD002830, 2003.
  16. Meinardi S., I. J. Simpson, N. J. Blake, D. R. Blake, F. S. Rowland, Dimethyl disulfide (DMDS) and dimethyl sulfide (DMS) emissions from biomass burning in Australia, *Geophys. Res. Lett.*, *30* (9), 1454, doi:10.1029/2003GL016967, 2003.
  17. Blake, N. J., D. Streets, J.-H. Woo, I. Simpson, J. Green, S. Meinardi, K. Kita, E. Atlas, H. Fuelberg, G. Sachse, M. Avery, S. A. Vay, R. Talbot, J. Dibb, A. R. Bandy, D. Thornton, F. S. Rowland, D. Blake, Carbonyl sulfide (OCS) and carbon disulfide (CS<sub>2</sub>): Large scale distributions over the Western Pacific and emissions from Asia during TRACE-P, *J. Geophys. Res.*, *109*, D15S05, doi:10.1029/2003JD004259, 2004.
  18. Simpson, I. J., S. Meinardi, N. J. Blake, F. S. Rowland, and D. R. Blake, Long-term decrease in the global atmospheric burden of tetrachloroethene (C<sub>2</sub>Cl<sub>4</sub>), *Geophys. Res. Lett.*, *31*, L08108, doi:10.1029/2003GL019351, 2004.
  19. Wingenter, Oliver W.; Sive, Barkley C.; Blake, Nicola J.; Blake, Donald R.; Rowland, F. Sherwood, Atomic chlorine concentrations derived from ethane and hydroxyl measurements over the equatorial Pacific Ocean: Implication for dimethyl sulfide and bromine monoxide, *J. Geophys. Res.*, *Vol. 110*, No. D20, 29, 2005.
  20. Simpson, I. J., N. J. Blake, D. R. Blake, S. Meinardi, M. Sulbeck, and F. S. Rowland, Strong evidence for negligible methyl chloroform (CH<sub>3</sub>CCl<sub>3</sub>) emissions from biomass burning, *J. Geophys. Res. Atmospheres*,

- 2007GL029383, 34 (10): Art. No. L10805 MAY 19 2007.
21. Beyersdorf, Andreas J., Nicola J. Blake, Aaron L. Swanson, Simone Meinardi, Jack E. Dibb, Steve Sjostedt, Greg Huey, Barry Lefer, F. Sherwood Rowland, Donald R. Blake, Hydroxyl Concentration Estimates in the Sunlit Snowpack at Summit, Greenland, *Atmospheric Environment*, Volume 41, Issue 24, Pages 5101-5109, 2007.
  22. Swanson AL, Blake N, Blake DR, Rowland FS, Dibb JE, Lefer BL, Atlas E, Are methyl halides produced on all ice surfaces? Observations from snow-laden field sites, *Atmospheric Environment* 41 (24): 5162-5177, 2007.
  23. Beyersdorf, Andreas J., Nicola J. Blake, Aaron L. Swanson, Simone Meinardi, Jack E. Dibb, Steve Sjostedt, Greg Huey, Barry Lefer, F. Sherwood Rowland, Donald R. Blake, Hydroxyl Concentration Estimates in the Sunlit Snowpack at Summit, Greenland, *Atmospheric Environment*, Volume 41, Issue 24, Pages 5101-5109, 2007
  24. 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. Photosynthetic Control of Atmospheric Carbonyl Sulfide During the Growing Season. *Science* 322:1085-1088, 2008.
  25. Blake, N. J., J. E. Campbell, S. A. Vay, H. E. Fuelberg, L. G. Huey, G. Sachse, S. Meinardi, A. Beyersdorf, A. Baker, B. Barletta, J. Midyett, L. Doezema, M. Kamboures, J. McAdams, B. Novak, F. S. Rowland, D. R. Blake, Carbonyl sulfide (OCS): Large-scale distributions over North America during INTEX-NA and relationship to CO<sub>2</sub>, *J. Geophys. Res.*, 113, D09S90, doi:10.1029/2007JD009163, 2008.
  26. Millet, D.B., E.L. Atlas, D.R. Blake, N.J. Blake, G.S. Diskin, J.S. Holloway, S. Meinardi, T.B. Ryerson, and G.W. Sachse, Halocarbon emissions from the United States and Mexico and their global warming potential, *Environ. Sci. Technol.*, 43, 1055-1060, 2009.
  27. Barletta B, Meinardi S, Simpson IJ, E. L. Atlas, A. J. Beyersdorf, A. K. Baker, N. J. Blake, M. Yang, J. R. Midyett, B. J. Novak, R. J. McKeachie, H. E. Fuelberg, G. W. Sachse, M. A. Avery, T. Campos, A. J. Weinheimer, F. S. Rowland, and D. R. Blake, Characterization of volatile organic compounds (VOCs) in Asian and north American pollution plumes during INTEX-B: identification of specific Chinese air mass tracers, *Atmos. Chem. Phys.*, 9, 5371–5388, 2009.
  28. Gorham, K, Blake, NJ, VanCuren, R, et al., Seasonal and diurnal measurements of carbon monoxide and nonmethane hydrocarbons at Mt. Wilson, California: Indirect evidence of atomic Cl in the Los Angeles basin. *Atmospheric environment*, 44(19), 2271-2279, 2010.
  29. Simpson, IJ, NJ Blake, B Barletta, GS Diskin, HE Fuelberg, K Gorham, LG Huey, S Meinardi, FS Rowland, SA Vay, AJ Weinheimer, M Yang, DR Blake, Characterization of trace gases measured over Alberta oil sands mining operations: 76 speciated C<sub>2</sub>–C<sub>10</sub> volatile organic compounds (VOCs), CO<sub>2</sub>, CH<sub>4</sub>, CO, NO, NO<sub>2</sub>, NO<sub>y</sub>, O<sub>3</sub> and SO<sub>2</sub>, *Atmospheric Chemistry and Physics* 10 (23), 11931-11954, 39, 2010.
  30. Simpson, IJ., SK Akagi, B Barletta, NJ Blake, Y Choi, GS Diskin, A Fried, HE

- Fuelberg, S Meinardi, FS Rowland, SA Vay, AJ Weinheimer, PO Wennberg, P Wiebring, A Wisthaler, M Yang, RJ Yokelson, DR Blake, Boreal forest fire emissions in fresh Canadian smoke plumes: C1-C 10 volatile organic compounds (VOCs), CO<sub>2</sub>, CO, NO<sub>2</sub>, NO, HCN and CH<sub>3</sub>CN, *Atmospheric Chemistry and Physics* 11 (13), 6445-6463, 48, 2011.
31. Simpson, I. J., MPS Andersen, S Meinardi, L Bruhwiler, NJ Blake, D Helmig, F. S. Rowland and D. R. Blake, Long-term decline of global atmospheric ethane concentrations and implications for methane, *Nature*, 488 (7412), 490-494, 2012.
  32. Berry, J, A Wolf, JE Campbell, I. Baker, NJ Blake, DR Blake, AS Denning, S R Kawa, SA Montzka, U Seibt, K Stimler, D Yakir, Z Zhu, A coupled model of the global cycles of carbonyl sulfide and CO<sub>2</sub>: A possible new window on the carbon cycle, *Journal of Geophysical Research: Biogeosciences* 118 (2), 842-852, 3, 2013.
  33. Simpson I. J., O. S. Aburizaiza, A. Siddique, B. Barletta, N. J. Blake, A. Gartner, H. Khwaja, S. Meinardi, J. Zeb, and D. R. Blake, Air Quality in Mecca and Surrounding Holy Places in Saudi Arabia During Hajj: Initial Survey, *Environmental Science & Technology*, 48 (15), 8529-8537, 2014.
  34. Schroeder, J. R., L. L. Pan, T. Ryerson, G. Diskin, J. Hair, S. Meinardi, I. Simpson, B. Barletta, N. Blake, and D. R. Blake, Evidence of mixing between polluted convective outflow and stratospheric air in the upper troposphere during DC3, *Journal of Geophysical Research: Atmospheres* 119, no. 19, 11-477, 2014.
  35. Apel, E. C., Hornbrook, R. S., Hills, A. J, Blake, N. J., Barth, M., Crawford, J. H., Homeyer, C. R., Cantrell, C. A., Rutledge, S., Weinheimer, A. J., Fried, A., Blake, D. R., Brune, W., Pollack, I., Peischl, J, Ryerson, T., and Riemer, D. D, Upper tropospheric ozone production from lightning NO<sub>x</sub>-impacted convection: Smoke ingestion case study from the DC3 campaign, *J. Geophys. Res. Atmos.*, 120, doi:[10.1002/2014JD022121](https://doi.org/10.1002/2014JD022121), 2015.
  36. Anderson, D. C., Nicely, J. M., Salawitch, R. J., Canty, T. P., Dickerson, R. R., Hanisco, T. F., Wolfe, G. M., Apel, E. C., Atlas, E., T. Bannan, S. Bauguitte, N. J. Blake, J. F. Bresch, T. L. Campos, L. J. Carpenter, M. D. Cohen, M. Evans, R. P. Fernandez, B. H. Kahn, D. E. Kinnison, S. R. Hall, N. R.P. Harris, R. S. Hornbrook, J-F. Lamarque, M. Le Breton, J. D. Lee, C. Percival, L. Pfister, R. B. Pierce, D. D. Riemer, A. Saiz-Lopez, B. J.B. Stunder, A. M. Thompson, K. Ullmann, A. Vaughan, A. J. Weinheimer, A Pervasive Role for Biomass Burning in Tropical High Ozone/Low Water Structures, *Nature Communications*, in press, 2015.