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CURRENT EMPLOYMENT

Research Physical Scientist, NOAA Chemical Sciences Laboratory, Boulder

EDUCATION

2001	Doctor of Philosophy, Department of Environmental Sciences, University of Virginia, Charlottesville
1997	Master of Science, Department of Environmental Sciences, University of Virginia, Charlottesville
1994	Bachelor of Science with Highest Honors and Distinction, Gillings School of Global Public Health - Major in Environmental Sciences and Engineering, University of North Carolina at Chapel Hill

WORK EXPERIENCE

2024 -	Research Physical Scientist, NOAA Chemical Sciences Laboratory, Boulder
2016- 2024	Senior Research Scientist, Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Boulder/NOAA Chemical Sciences Laboratory, Boulder
2006-2016	Research Scientist III, Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Boulder /NOAA Earth System Research Laboratory, Boulder
2003-2006	Research Scientist II, Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Boulder /NOAA Earth System Research Laboratory, Boulder
2002-2003	Research Scientist I, Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Boulder /NOAA Aeronomy Laboratory, Boulder, Colorado
2001-2002	National Research Council Associate at the NOAA Aeronomy Laboratory, Boulder, Colorado.
1994-2001	Department of Environmental Sciences, University of Virginia, Graduate Student Research Assistant and Teaching Assistant
1994	Argonne National Laboratory, Energy Systems Division, Argonne, IL, Student Internship

RESEARCH INTERESTS

With the goal of conducting scientific research that is highly relevant to public health and policy development, Owen's interests pertain to: trends in U.S. and global air quality; the global tropospheric ozone budget and trends; and the impact of climate change on air quality.

AWARDS

2020	CIRES Outstanding Performance Award, for initiating IGAC's Tropospheric Ozone Assessment Report
2015	2014 Editors' Citation for Excellence in Refereeing for JGR-Atmospheres
2007	NOAA OAR (Office of Atmospheric Research) Outstanding Scientific Paper Award
2007	2006 Editors' Citation for Excellence in Refereeing for JGR-Atmospheres
2001	Maury Environmental Sciences Prize, Department of Environmental Sciences, University of Virginia
2001	Outstanding Student Paper Award, Spring Meeting, American Geophysical Union, Boston

PEER REVIEWED PUBLICATIONS

A total of 128 peer-reviewed publications (24 as first author) with an h-index of 63, as compiled by Web of Science.

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Google Scholar: https://scholar.google.com/citations?user=sfh_cgIAAAAJ&hl=en

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127. Becker, J.S., M. N. DeLang, K.-L. Chang, M. L. Serre, **O. R. Cooper**, M. G. Schultz, S. Schröder, X. Lu, L. Zhang, M. Deushi, B. Josse, C. A. Keller, J.-F. Lamarque, M. Lin, J. Liu, V. Marécal, S. A. Strode, K. Sudo, S. Tilmes, L. Zhang, M. Brauer, J. J. West (2023), Using Regionalized Air Quality Model Performance and Bayesian Maximum Entropy data fusion to map global surface ozone concentration, *Elementa: Science of the Anthropocene, 11(1). DOI: https://doi.org/10.1525/elementa.2022.00025*
126. **Cooper, O. R.**, J. R. Ziemke, and K.-L. Chang (2023): Tropospheric Ozone [in "State of the Climate in 2022"]. Bull. Amer. Meteor. Soc., 104 (9), S76–S78, https://doi.org/10.1175/BAMS-D-23-0090.1
125. Peischl, J., K. C. Aikin, B.C. McDonald, C. Harkins, A. M. Middlebrook, A. O. Langford, **O. R. Cooper**, K.-L. Chang, and S. S. Brown (2023), Quantifying anomalies of air pollutants in 9 U.S. cities during 2020 due to COVID-19 lockdowns and wildfires based on decadal trends, *Elem Sci Anth*, *11*: 1. DOI: https://doi.org/10.1525/elementa.2023.00029
124. Chang, K.-L., **Cooper, O. R**., Rodriguez, G., Iraci, L. T., Yates, E. L., Johnson, M. S., et al. (2023). Diverging ozone trends above western North America: Boundary layer decreases versus free tropospheric increases. *Journal of Geophysical Research: Atmospheres*, 128, e2022JD038090. https://doi.org/10.1029/2022JD038090
123. Malashock, Daniel A., Marissa N. Delang, Jacob S. Becker, Marc L. Serre, J. Jason West, Kai-Lan Chang, **Owen R. Cooper**, Susan C. Anenberg (2022), Global Trends in Ozone Concentration and Attributable Mortality for Urban, Peri-Urban and Rural Areas between 2000 and 2019: A Modelling Study, *The Lancet Planetary Health, Volume 6, Issue 12, Pages E958-E967, https://doi.org/10.1016/S2542-5196(22)00260-1*
122. Fiore, Arlene M., Sarah E. Hancock, Jean-François Lamarque, Gustavo P. Correa, Kai-Lan Chang, Muye Ru, **Owen R. Cooper**, Audrey Gaudel, Lorenzo M. Polvani, Bastien Sauvage and Jerry R. Ziemke (2022), Understanding recent tropospheric ozone trends in the context of large internal variability: A new perspective from chemistry-climate model ensembles, *Environmental Research: Climate, https://doi.org/10.1088/2752-5295/ac9cc2*
121. Wang, H., Lu, X., Jacob, D. J., **Cooper, O. R**., Chang, K.-L., Li, K., Gao, M., Liu, Y., Sheng, B., Wu, K., Wu, T., Zhang, J., Sauvage, B., Nédélec, P., Blot, R., and Fan, S. (2022), Global tropospheric ozone trends, attributions, and radiative impacts in 1995–2017: an integrated analysis using aircraft (IAGOS) observations, ozonesonde, and multi-decadal chemical model simulations, *Atmos. Chem. Phys.*, *22*, 13753–13782, https://doi.org/10.5194/acp-22-13753-2022
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3. **Cooper, O. R**. and J. L. Moody, Meteorological controls on ozone at an elevated eastern U.S. regional background monitoring site, *J. Geophys. Res*, *105*, 6855-6869, 2000.
2. Parrish, D. D., J. S. Holloway, R. Jakoubek, M. Trainer, T. B. Ryerson, G. Hübler, F. C. Fehsenfeld, J. L. Moody and **O. R. Cooper**, Mixing of anthropogenic pollution with stratospheric ozone: A case study from the North Atlantic wintertime troposphere, *J. Geophys. Res*., *105*, 24,363-24,374, 2000.
1. **Cooper, O. R.**, J. L. Moody, J. C. Davenport, S. J. Oltmans, B. J. Johnson, X. Chen, P. B. Shepson, and J. T. Merrill, Influence of springtime weather systems on vertical ozone distributions over three North American sites, *J. Geophys. Res.*, *103*, 22,001-22,013. 1998.

ADDITIONAL PUBLICATIONS

12. WMO Air Quality and Climate Bulletin, No. 3, September 6, 2023; Editors: J. M. Nicely, G. Carmichael, P. Colarco, **O. R. Cooper**, F. Dentener, L. Mona, V.-H. Peuch, R. S. Sokhi, and J. Walker; a publication of the World Meteorological Organization, https://library.wmo.int/idurl/4/62090
11. WMO Air Quality and Climate Bulletin, No. 2, September 2, 2022; Editors: **O. R. Cooper**, G. Carmichael, P. Laj, J. M. Nicely, V.-H. Peuch, R. S. Sokhi, A. Stein and J. Walker; a publication of the World Meteorological Organization, https://library.wmo.int/index.php?lvl=notice_display&id=22124#.Yy8mIkzMLq5
10. Carpenter, L. J., I. J. Simpson and **O. R. Cooper** (2022), Ground-Based Reactive Gas Observations Within The Global Atmosphere Watch (GAW) Network, *Handbook of Air Quality and Climate Change*, edited by H. Akimoto and H. Tanimoto, Springer Verlag, https://doi.org/10.1007/978-981-15-2527-8_8-1
9. WMO Air Quality and Climate Bulletin, No. 1, September 3, 2021; Editors: **O. R. Cooper**, R. S. Sokhi, J. M. Nicely, G. Carmichael, A. Darmenov, P. Laj and J. Liggio; a publication of the World Meteorological Organization, https://library.wmo.int/index.php?lvl=notice_display&id=21942#.YTIzN99MG70
8. NOAA Technical Report OAR CPO-8, Value Assessment of an Atmospheric Composition Capability on the NOAA Next-Generation Geostationary and Extended Orbits (GEO-XO) Missions, Climate Program Office, Silver Spring, MD, October 2020, https://doi.org/10.25923/1s4s-t405
7. **Cooper, O. R.** (2019), Detecting the fingerprints of observed climate change on surface ozone variability, *Science Bulletin*, *64*, 359-360, doi: https://doi.org/10.1016/j.scib.2019.02.013
6. Szykman, J., E. Solazzo, **O. Cooper**, M. Silverman, C. Trepte, M. Newchurch, J.-P. Cammas and A. Volz-Thomas (2012), Profile and remote sensing observation datasets for regional-scale model evaluation under the AQMEII: North American and European perspectives, EM Magazine, July 2012 issue, 22-29.
5. **Cooper, O. R**., R. Derwent, W. Collins, R. Doherty, D. Stevenson, A. Stohl and P. Hess (2010), *Chapter 1 Conceptual Overview of Hemispheric or Intercontinental Transport of Ozone and Particulate Matter*, in Dentener F., T. Keating and H. Akimoto (eds.) Hemispheric Transport of Air Pollution 2010, Part A: Ozone and Particulate Matter, Air Pollution Studies No. 17, United Nations, New York and Geneva, ISSN 1014-4625, ISBN 978-92-1-117043-6.
4. Volz-Thomas, A., J.-P. Cammas, C.A.M. Brenninkmeijer, T. Machida, **O. Cooper**, C. Sweeney, and A. Waibel (2009), Civil Aviation Monitors Air Quality and Climate, EM Magazine, October 2009 issue, 16-19.
3. **Cooper, O. R**., R. Doherty, P. Hess and A. Stohl (2007), *Chapter 2: Conceptual Overview of Hemispheric or Intercontinental Transport Processes*, in Task Force on Hemispheric Transport of Air Pollutants 2007 Interim Report, UNECE Convention on Long-range Transboundary Air Pollution (LRTAP Convention), Geneva.
2. **Cooper O. R.** and D. D. Parrish (2004) Air pollution export from and import to North America: experimental evidence. In: Stohl A. (ed) Intercontinental Transport of Air Pollution, The Handbook of Environmental Chemistry, Vol. 4, Part G. Springer, Berlin Heidelberg New York, chapter 3.

1. **Cooper O. R.** J. L. Moody and A. Stohl, The influence of synoptic scale transport mechanisms on trace gas relationships above the western North Atlantic Ocean, IGACtivities Newsletter of the International Global Atmospheric Chemistry Project, Issue 24, pp.7-9, August 2001.

PRESENTATIONS

2023 **Cooper, O. R**., An update on ever-changing global tropospheric ozone trends, ***Invited seminar speaker***, iLEAPS Global Colloquium Series 2023, July 26, 2023

Cooper, O. R., K.-L. Chang, S. Schröder, N. Selke, J. J. West and M. L. Serre, The global distribution and trends of ozone health-based metrics: New results from the TOAR-II Database, contributed PICO presentation, EGU General Assembly, April 23-28, 2023, Vienna

Cooper, O. R., Tropospheric ozone trends: Current understanding, historical context and future monitoring strategies, Keynote talk, IAGOS User Meeting, 14-16 November, 2023, Brussels, Belgium

2022 Schultz, M. G. and **O. R. Cooper**, The Tropospheric Ozone Assessment Report (TOAR): Exploiting modern IT concepts, from web services to machine learning, for the integration and exploration of global ozone observations, ***Invited Oral Presentation***, iCACGP-IGAC Joint International Atmospheric Chemistry Conference, Manchester, September 11-15, 2022.

2021 **Cooper, O. R**., An update on ever-changing global tropospheric ozone trends, **seminar**, Department of Meteorology and Geophysics, University of Vienna, Austria, March 2, 2021. Virtual presentation due to the Covid-19 pandemic.

Cooper, O. R., K.-L. Chang, M. L. Serre, M. G. Schultz and J. J. West, A collaborative effort to build global ozone exposure maps from a fusion of observations and models, ***Keynote Oral Presentation***, WMO GAW Symposium 2021, June 28 – July 2, 2021 (held virtually).

Cooper, O. R., and R. S. Sokhi, WMO Air Quality and Climate Bulletin 2021 and its relationship with WHO Air Quality Guidelines, ***Invited presentation***, Seminar on Air Quality and Health, MAP-AQ Asian Office Shanghai, November 30, 2021 (held virtually).

Cooper, O. R., K.-L. Chang, I. Petropavlovskikh and P. Effertz, An update on variable and changing global tropospheric ozone trends, ***Poster***, American Geophysical Union Fall Meeting, New Orleans, December, 13-17, 2021 (in person).

2020 **Cooper, O. R**. et al., Multi-Decadal Surface Ozone Trends at Globally Distributed Remote Locations, ***Oral Presentation***, American Meteorological Society's 22nd Conference on Atmospheric Chemistry, AMS 100th Annual Meeting, January 12-16, 2020, Boston, MA.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): Accomplishments, Open Questions and New Frontiers, ***seminar***, Department of Atmospheric Science, Colorado State University, February 6, 2020.

Cooper, O. R., An overview of long-term tropospheric ozone trends, ***Invited Oral Presentation***, Online LOTUS Workshop (Long-term Ozone Trends and Uncertainties in the Stratosphere, in support of the WMO/UNEP 2018 Ozone Assessment), May 28-29, 2020.

Cooper, O. R., Achievements of TOAR-I and Goals of TOAR-II, ***Oral Presentation***, TOAR-II Quickstart Event, held worldwide in virtual format, September 16, 2020.

Cooper, O. R., Achievements of TOAR-I and Goals of TOAR-II, ***Oral Presentation***, WMO GAW Joint Reactive Gases, Aerosols, and Total Atmospheric Deposition SAGs meeting, held worldwide in virtual format, September 24, 2020.

Cooper, O. R., An update on ever-changing global tropospheric ozone trends, ***seminar***, Department of Earth and Planetary Sciences, Harvard University, October 2, 2020. Virtual presentation due to the Covid-19 pandemic.

Cooper, O. R., Benefits to uniformity of atmospheric ozone measurements, ***Invited Oral Presentation***, BIPM Accurate Monitoring of Surface Ozone Virtual Workshop, 5-9 October 2020, held worldwide in virtual format due to the Covid-19 pandemic.

Cooper, O. R., How we know tropospheric ozone is increasing (but not everywhere): New data and statistical approaches, ***Invited virtual seminar***, Data Science of the Natural Environment (DSNE), Lancaster University, UK, October 29, 2020

2019 **Cooper, O. R**., The Tropospheric Ozone Assessment Report (TOAR): Accomplishments, Open Questions and New Frontiers, ***seminar***, Jülich Supercomputing Centre, Forschungszentrum Jülich, Germany, March 25, 2019.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): Accomplishments, Open Questions and New Frontiers, ***seminar***, Institute for Advanced Sustainability Studies, Potsdam, Germany, March 29, 2019.

Cooper, O. **R**., A. Gaudel, K.-L. Chang, M. G. Schultz, S. Schröder, V.Thouret, P. Nédélec, J. R. Ziemke and S. A. Strode, Northern Hemisphere tropospheric ozone increases since the mid-1990s: evidence from IAGOS, remote surface sites and OMI/MLS (2004-2018), 2019 Aura Science Team Meeting, Hilton Pasadena, Pasadena, California, August 27-29, 2019.

2018 **Cooper, O. R**., The Tropospheric Ozone Assessment Report (TOAR): Presenting the world's largest database of ozone health metrics from 9000 monitoring sites worldwide, *poster*, Health Effects Institute, 2018 Annual Conference, Chicago, April 29–May 1.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***seminar***, Dept. of Atmospheric and Oceanic Sciences, Peking University, Beijing, July 2, 2018.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***seminar***, State Key Joint Laboratory of Environmental Simulation and Pollution Control, Peking University, Beijing, July 3, 2018.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***seminar***, Department of Earth System Science, Tsinghua University, Beijing, July 4, 2018.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***seminar***, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, July 5, 2018.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***seminar***, Chinese Academy of Meteorological Science, China Meteorological Administration, Beijing, July 6, 2018.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): Presenting the world's largest database of ozone health metrics from 9000 monitoring sites worldwide, ***oral presentation***, NASA Health and Air Quality Applied Sciences Team (HAQAST4) Meeting, Madison, WI, July 17, 2018.

Cooper, O. **R.,** et al., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Oral Presentation***, 2018 joint 14th iCACGP Quadrennial Symposium/15th IGAC Science Conference, Sept. 25, 2018, Takamatsu, Japan.

2017 **Cooper, O. R**., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, TEMPO Science Team Meeting, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, May 31, 2017.

Cooper, O. R., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Invited talk***, OMI Science Team Meeting, NASA Goddard Space Flight Center, Greenbelt, Maryland, September 14, 2017.

Cooper, O. R., Tropospheric ozone observations across Asia: A synthesis of recent findings and implications for domestic and downwind regions, ***Invited Oral Presentation***, American Geophysical Union Fall Meeting, New Orleans, December, 11-15, 2017.

Cooper, O. R., et al., The Tropospheric Ozone Assessment Report (TOAR): A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Oral Presentation***, American Geophysical Union Fall Meeting, New Orleans, December, 11-15, 2017.

2016 **Cooper, O. R**., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Keynote Talk***, 2016 Quadrennial Ozone Symposium, Edinburgh, Scotland, September 5, 2016.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Invited seminar***, University of Cambridge Centre for Climate Science, U. K., September 2, 2016.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Invited seminar***, Department of Chemistry, University of York, U. K., September 7, 2016.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Department Seminar***, Gillings School of Global Public Health, The University of North Carolina at Chapel Hill, October 13, 2016.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***Invited seminar***, Nicholas School of the Environment, Duke University, October 14, 2016.

Cooper, O. R., IGAC's Tropospheric Ozone Assessment Report (TOAR): Facilitating international research on ozone's impact on public health, vegetation and climate change, ***Invited seminar***, Innovation Center of the Catholic University, Santiago, Chile, March 17.

Cooper, O. R., Ozone pollution in the United States: The success of emissions controls and new challenges from international and stratospheric ozone sources, ***Invited seminar***, Center for Climate and Resilience Research, Santiago, Chile, March 18.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, *poster*, 2016 IGAC Science Conference, Breckenridge, September 26-30.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***invited seminar***, Nanjing University, Nanjing, China, November 21.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***invited seminar***, Shandong University, Jinan, China, November 22.

Cooper, O. R., The Tropospheric Ozone Assessment Report: A community-wide effort to quantify tropospheric ozone in a rapidly changing world, ***invited seminar***, Hong Kong Polytechnic University, Hong Kong, China, November 24.

2015 **Cooper, O. R**., ***Invited*** Participant in the Transboundary Ozone Pollution Conference, Tenaya Lodge, Yosemite National Park, March 31 – April 2, 2015. Sponsored by the San Joaquin Valley Air Pollution Control District with participation from the NASA Air Quality Applied Sciences Team

Cooper, O. R., Global distribution and trends of tropospheric ozone: An observation-based review, ***Invited*** seminar, University of Virginia, Department of Environmental Sciences, October 29, 2015.

Cooper, O. R., Intercontinental pollution transport and its impact on the western United States, ***Invited*** talk, Air Quality Research Subcommittee, Department of Commerce, Washington DC, February 19, 2015.

Cooper, O. R., Update on trends in background ozone concentrations, ***Invited***, Modeling Air Quality from the Global to Local Scale, NCAR Center Green, Boulder, May 11-15, 2015.

Cooper, O. R., TOAR: an overview of the Tropospheric Ozone Assessment Report, ***Invited***, Modeling Air Quality from the Global to Local Scale, NCAR Center Green, Boulder, May 11-15, 2015.

Cooper, O. R., TOAR: an overview of the Tropospheric Ozone Assessment Report, ***Invited***, Chemistry Climate Model Initiative (CCMI) workshop, Rome, Italy, October 7-9, 2015.

Cooper, O. R., TOAR: an overview of the Tropospheric Ozone Assessment Report, and the role of TOLNet, ***Invited***, Second Annual Tropospheric Ozone Lidar Network (TOLNet) Working Group Meeting, NOAA ESRL, Boulder, June 16-18, 2015.

Cooper, O. R., An Overview of IGAC's Tropospheric Ozone Assessment Report (TOAR) and an update on North American ozone trends, *Poster*, SPARC Regional Workshop: Chemical and Physical Processes in the Climate System, 9-10 November 2015, NCAR Foothills Laboratory, Boulder.

2014 **Cooper, O. R**., Global distribution and trends of tropospheric ozone: An observation-based review, ***Invited*** oral presentation, Global Change Seminar Series, School of GeoSciences, University of Edinburgh, Scotland, April 4, 2014.

Cooper, O. R., Global distribution and trends of tropospheric ozone: An observation-based review, ***Invited*** oral presentation, MOZAIC-IAGOS Scientific Symposium on Atmospheric Composition Observation by Commercial Aircraft, Toulouse, France, 12-16 May, 2014.

Cooper, O. R., Global distribution and trends of tropospheric ozone: An observation-based review, ***Invited*** oral presentation, NCAR Advanced Study Program Seminar Series, Boulder, March 19, 2014.

Cooper, O. R., "IPCC AR5 Chapter 2. Observations: Atmosphere & Surface", ***Invited*** oral lecture in the CIRES/ATOC Seminar Series: Reading the IPCC Report, CIRES, University of Colorado, Boulder, September 9, 2014.

Cooper, O. R., Inflow processes over Western North America, ***Invited*** oral presentation, Joint Workshop of AQMEII3 and TF HTAP, U.S. EPA, Research Triangle Park, NC, October 30, 2014.

Cooper, O. R., Global distribution and trends of tropospheric ozone: An observation-based review, Poster, CCMI (Chemistry-Climate Model Initiative) Workshop, Lancaster, UK, 20-22 May, 2014.

Cooper, O. R., An overview of the new Tropospheric Ozone Assessment Report (TOAR), Poster, 13th IGAC Science Conference on Atmospheric Chemistry, Natal, Brazil, 22-26 September, 2014.

Cooper, O. R., Global distribution and trends of tropospheric ozone: An observation-based review, Poster, CIRES Science Rendezvous, University of Colorado, Boulder, May 2, 2014.

2013 **Cooper, O. R**., Long-term ozone trends at rural ozone monitoring sites across the United States, 1990-2010, Chemical Sciences Division Seminar, NOAA ESRL, Boulder, January 16, 2013.

Cooper, O. R., Long-term ozone trends at rural ozone monitoring sites across the United States, 1990-2010, ***Invited*** Oral Presentation, Harvard School of Engineering and Applied Sciences Environmental Science and Engineering Seminar, Harvard University, Cambridge, March 8, 2013.

Cooper, O. R., Inflow processes influencing air quality over Western North America, ***Invited*** oral presentation, Meeting of the Task Force on Hemispheric Transport of Air Pollution, March 20-22, 2013, Geneva, Switzerland.

Cooper, O. R., Global surface ozone trends, a synthesis of recently published findings, oral presentation, IGAC/SPARC Chemistry-Climate Model Initiative (CCMI) 2013 Science Workshop, May 14-16, 2013, NCAR, Boulder.

Cooper, O. R., Global surface ozone trends, a synthesis of recently published findings, oral presentation, NOAA GMD Global Monitoring Annual Conference, May 21-22, 2013, Boulder.

Cooper, O. R., Status of IAGOS in the USA Working Group, ***Invited*** Oral Presentation at the IAGOS Annual Meeting, San Lorenzo del Escorial, Spain, June 12-14, 2013

2012 **Cooper, O. R**., Western US ozone trends, 1990-2010, ***Invited*** Oral Presentation, WESTAR Council & the University of Nevada Conference on Western Ozone Transport, October 10-12, 2012, Reno.

Cooper, O. R., Ozonesonde and aircraft measurements during CalNex, ***Invited*** Oral Presentation, WESTAR Council & the University of Nevada Conference on Western Ozone Transport, October 10-12, 2012, Reno.

Cooper, O. **R**., R. Gao, D. Tarasick, T. Leblanc and C. Sweeney, Long-term ozone trends at rural ozone monitoring sites across the United States, 1990-2010, Poster Presentation, American Geophysical Union Fall Meeting, San Francisco, December 3-7, 2012.

2011 **Cooper, O. R**., A. Volz-Thomas, and J.-P. Cammas, IAGOS in the USA: An opportunity for commercial airlines to monitor air quality and greenhouse gases above the United States, oral presentation, First Annual Aviation Climate Change Research Initiative (ACCRI) Symposium, Atlanta, February 22-24, 2011.

Cooper, O. R., C. Sweeney, A. Volz-Thomas, and J.-P. Cammas, IAGOS in the USA: An opportunity for commercial airlines to monitor air quality and greenhouse gases above the United States, poster presentation, CIRES Science Rendezvous, April 22, 2011, Boulder.

Cooper, O. R., S. J. Oltmans, B. J. Johnson, J. Brioude, W. Angevine, M. Trainer, D. D. Parrish, T. R. Ryerson, I. Pollack, P. D. Cullis, M. A. Ives, D. W. Tarasick, J. Al-Saadi, and I. Stajner, Measurement of Western U.S. Baseline Ozone from the Surface to the Tropopause and Assessment of Downwind Impact Regions, oral presentation, 39th NOAA ESRL Global Monitoring Annual Conference, May 17-18, 2011, Boulder.

Cooper, O. R., A. Volz-Thomas, and J.-P. Cammas, IAGOS in the USA: An opportunity for commercial airlines to monitor air quality and greenhouse gases above the United States, ***Invited*** Oral Presentation, AIAA Hawaii Conferences, The Science Underpinning Aviation Impacts on the Environment, Honolulu, June 28, 2011.

Cooper, O. **R**., IAGOS in the USA: progress report, ***Invited Speaker***, IAGOS-ERI Annual Meeting, Manchester, U.K., September 12 – 14, 2011.

Cooper, O. **R**., Long range transport impacts on ozone air quality in the western United States, ***Invited Seminar Speaker***, Department of Atmospheric and Oceanic Sciences, University of Colorado at Boulder, October 28, 2011.

Cooper, O. R., Long range transport impacts on California's ozone air quality, ***Invited*** Oral Presentation, American Geophysical Union Fall Meeting, San Francisco, 2011.

2010 **Cooper, O. R.**, Increasing springtime ozone mixing ratios in the free troposphere over western North America, Chemical Sciences Division Seminar, NOAA ESRL, Boulder, ***Invited***, Feb 3, 2010.

Cooper, O. R., S. J. Oltmans, B. J. Johnson, M. Trainer, D. D. Parrish, T. R. Ryerson, I. Pollack, Patrick Cullis, M. A. Ives, D. W. Tarasick, J. Al-Saadi, I. Stajner, First multi-site assessment of tropospheric baseline ozone along the U.S. west coast, oral presentation, American Geophysical Union Fall Meeting, San Francisco, 2010.

2009 **Cooper, O. R**., The influence of lightning NOx emissions on the summertime North American upper tropospheric ozone maximum, ***Invited talk*** at the Fourth Conference on the Meteorological Applications of Lightning Data, 89th American Meteorological Society, Annual Meeting, 11–15 January, 2009, Phoenix.

Cooper, O. R., D. D. Parrish, A. Stohl, M. Trainer, P. Nedelec, V. Thouret, J. P. Cammas, S. J. Oltmans, B. J. Johnson, D. Tarasick, T. LeBlanc, I. S. McDermid, D. Jaffe, R. Gao, J. Stith, T. Ryerson, K. Aikin, T. Campos, A. Weinheimer, and M. Proffitt, Increasing mid-tropospheric ozone above western North America during springtime, oral presentation, NOAA/ESRL Global Monitoring Annual Conference, May 13-14, 2009, Boulder.

Cooper, O. R., D. D. Parrish, A. Stohl, M. Trainer, P. Nedelec, V. Thouret, J. P. Cammas, S. J. Oltmans, B. J. Johnson, D. Tarasick, T. LeBlanc, I. S. McDermid, D. Jaffe, R. Gao, J. Stith, T. Ryerson, K. Aikin,

T. Campos, A. Weinheimer, and M. Proffitt, Increasing mid-tropospheric ozone above western North America during springtime, oral presentation, Tropospheric Ozone Changes: Observations, state of understanding, and modeling requirements Workshop at NOAA/ESRL, Boulder, October 14-16, 2009.

2008 **Cooper, O. R**., S. Eckhardt, J. H. Crawford, C. C. Brown, R. C. Cohen, T. H. Bertram, P. Wooldridge, A. Perring, W. H. Brune, X. Ren, D. Brunner, and S. L. Baughcum, The summertime buildup and decay of lightning NOx and aged thunderstorm outflow above North America, oral presentation, American Geophysical Union Fall Meeting, San Francisco, 2008.

2007 **Cooper, O. R.**, Evidence for a recurring eastern North America upper tropospheric ozone maximum during summer, ***Invited Seminar Speaker***, Atmospheric Science Department, The University of Alabama in Huntsville.

Cooper, O. R., Tropospheric Ozone: Global distribution and radiative forcing, speaker at the NOAA ESRL Theme Presentation: Radiative Forcing of Climate by non-CO_2 Atmospheric Gases, NOAA Earth System Research Laboratory, Boulder.

Cooper, O. R., M. Trainer, A. M. Thompson, S. J. Oltmans, D. W. Tarasick, J. C. Witte, A. Stohl, S. Eckhardt, J. Lelieveld, M. J. Newchurch, B. J. Johnson, R. W. Portmann, L. Kalnajs, M. K. Dubey, T. Leblanc, I. S. McDermid, G. Forbes, D. Wolfe, T. Carey-Smith, G. A. Morris, B. Lefer, B. Rappenglück, E. Joseph, F. Schmidlin, J. Meagher, F. C. Fehsenfeld, T. J. Keating, R. A. Van Curen and K. Minschwaner, Evidence for a recurring eastern North America upper tropospheric ozone maximum during summer, oral presentation, American Geophysical Union Fall Meeting, San Francisco, 2007.

Cooper, O. R., A. Stohl, M. Trainer, A. Thompson, J. C. Witte, S. J. Oltmans, G. Morris, K. E. Pickering, J. H. Crawford, G. Chen, R. C. Cohen, T. H. Bertram, P. Wooldridge, A. Perring, W. H. Brune, J. Merrill, J. L. Moody, D. Tarasick, P. Nédélec, G. Forbes, M. J. Newchurch, F. J. Schmidlin, B. J. Johnson, S. Turquety, S. L. Baughcum, X. Ren, F. C. Fehsenfeld, J. F. Meagher, N. Spichtinger, C. C. Brown, S. A. McKeen, I. S. McDermid and T. Leblanc, Large upper tropospheric ozone enhancements above mid-latitude North America during summer: In situ evidence from the IONS and MOZAIC ozone monitoring network, ***invited talk*** at the NOAA Office of Oceanic and Atmospheric Research's Senior Research Council, Chantilly, Virginia, December 4, 2007.

Cooper, O. R., Observational evidence of tropospheric ozone trends in North America: Three contributions from NOAA/ESRL, Joint TFHTAP (Task Force on Hemispheric Transport of Air Pollutants) and WMO (World Meteorological Organization) Workshop on Integrated Observations for Assessing Hemispheric Air Pollution, 24-26 January 2007, World Meteorological Organization Headquarters, Geneva, Switzerland.

2006 **Cooper, O. R**., A. Stohl, M. Trainer, A. Thompson, J. C. Witte, S. J. Oltmans, G. Morris, K. E. Pickering, J. H. Crawford, G. Chen, R. C. Cohen, T. H. Bertram, P. Wooldridge, A. Perring, W. H. Brune, J. Merrill, J. L. Moody, D. Tarasick, P. Nédélec, G. Forbes, M. J. Newchurch, F. J. Schmidlin, B. J. Johnson, S. Turquety, S. L. Baughcum, X. Ren, F. C. Fehsenfeld, J. F. Meagher, N. Spichtinger, C. C. Brown, S. A. McKeen, I. S. McDermid and T. Leblanc, Influence of lightning NO_x on the summertime upper tropospheric ozone enhancement above eastern North America, ***Invited talk***, American Geophysical Union Fall Meeting, San Francisco, 2006.

2005 **Cooper, O. R**., A. Stohl, G. Hübler, E. Y. Hsie, D. D. Parrish, A. F. Tuck, G. N. Kiladis, S. J. Oltmans, B. J. Johnson, M. Shapiro, J. L. Moody and A. S. Lefohn, Direct transport of mid-latitude stratospheric ozone into the lower troposphere and marine boundary layer of the tropical Pacific Ocean, ***Invited talk***, NOAA Aeronomy Lab Seminar Speaker, Feb. 9, 2005.

Cooper, O. R., A. Stohl, G. Hübler, E. Y. Hsie, D. D. Parrish, A. F. Tuck, G. N. Kiladis, S. J. Oltmans, B. J. Johnson, M. Shapiro, J. L. Moody and A. S. Lefohn, oral presentation, Direct transport of mid-latitude stratospheric ozone into the lower troposphere and marine boundary layer of the tropical Pacific Ocean, European Geosciences Union, General Assembly 2005, Vienna.

Cooper, O. R., A. Stohl, G. Hübler, E. Y. Hsie, D. D. Parrish, A. F. Tuck, G. N. Kiladis, S. J. Oltmans, B. J. Johnson, M. Shapiro, J. L. Moody and A. S. Lefohn, oral presentation, Direct transport of mid-latitude stratospheric ozone into the lower troposphere and marine boundary layer of the tropical Pacific Ocean, Joint SPARC/IGAC UTLS Workshop: Processes governing the chemical composition of the mid-latitude UTLS, 18-20 May 2005, Max Planck Institute for Chemistry, Mainz, Germany.

Cooper, O. R., A. Stohl, M. Trainer (presenter), A. Thompson, J. C. Witte, S. J. Oltmans, B. J. Johnson, J. Merrill, J. L. Moody, G. Morris, D. Tarasick, G. Forbes, P. Nédélec, F. C. Fehsenfeld, J. Meagher,

M. J. Newchurch, F. J. Schmidlin, S. Turquety, J. H. Crawford, K. E. Pickering, R. C. Cohen, T. Bertram, P. Wooldridge, and W. H. Brune, oral presentation, Large upper tropospheric ozone enhancements above mid-latitude North America during summer: In situ evidence from the IONS and MOZAIC ozone monitoring network, American Geophysical Union Fall Meeting, San Francisco, 2005.

Cooper, O. R., Anomalous tropospheric ozone events influenced by natural processes: The North American upper tropospheric ozone maximum and stratospheric intrusions above Hawaii, ***invited talk*** to the Oslo Climate Group Distinguished Lecture Series, Oslo, Nov. 15, 2005.

Cooper, O. R., Anomalous tropospheric ozone events influenced by natural processes: The North American upper tropospheric ozone maximum and stratospheric intrusions above Hawaii, ***Invited talk***, Norwegian Institute for Air Research, Kjeller, Nov. 24, 2005.

2004 **Cooper, O. R**., A. Stohl, S. Eckhardt, S. Oltmans, and B. Johnson, Anthropogenic NOx emissions, transport pathways, and their relationship to ozone profiles on the west and east coasts of the United States, ***invited talk***, MOZAIC-III Final Meeting, January 14-16, 2004, Carcassonne, France.

Cooper, O. R., A. Stohl, S. Eckhardt, D. D. Parrish, S. Oltmans, B. Johnson, P. Nédélec, F. J. Schmidlin, M. J. Newchurch, Y. Kondo and K. Kita, poster presentation, A springtime comparison of tropospheric ozone and transport pathways on the east and west coasts of the United States, 2004 IGAC Meeting, Christchurch, New Zealand.

2003 **Cooper, O. R**., Current understanding of vertical and long-range transport through extratropical cyclones, ***invited seminar*** at the EGS-AGU-EUG Joint Assembly, Nice, France.

Cooper, O. R., North American trace gas import and export: The role of mid-latitude cyclones, ***invited seminar***, Harvard University, Cambridge, Massachusetts.

Cooper, O. R., North American trace gas import and export: The role of mid-latitude cyclones, ***invited seminar***, NOAA Climate Monitoring and Diagnostics Laboratory, Boulder, Colorado.

Cooper, O. R., Transport mechanisms controlling North American trace gas import and export, ***invited seminar***, Michigan Technical University, Houghton.

Cooper, O. R. and A. Stohl, FLEXPART particle dispersion modeling and forecasting during NENA-2004, oral presentation at the 2004 Climate and Air Quality Meeting, University of New Hampshire, Durham.

Cooper, O. R., C. Forster, D. Parrish, E. Dunlea, G. Hübler, F. Fehsenfeld, J. Holloway, S. Oltmans, B. Johnson, A. Wimmers, and L. Horowitz, On the life-cycle of a stratospheric intrusion and its dispersion into polluted warm conveyor belts, oral presentation at the Fall meeting of the American Geophysical Union, San Francisco.

2002 **Cooper, O. R**., C. Forster, D. Parrish, M. Trainer, E. Dunlea, T. Ryerson, G. Huebler, F. Fehsenfeld, D. Nicks, J. Holloway, J. Moody, A comparison of airstream trace gas signatures upwind and downwind of North America, oral presentation at AGU Fall Meeting, San Francisco.

Cooper, O. R., A. Stohl, D. Parrish, M. Trainer, S. Oltmans, and B. Johnson, Stratospheric and tropospheric source regions of ozone entering the western United States troposphere, oral presentation at the BMU/UBA – USEPA-EMEP Workshop, Bad Breisig, Germany.

Cooper, O. R., A. Stohl, D. Parrish, M. Trainer, S. Oltmans, and B. Johnson, Stratospheric and tropospheric source regions of ozone entering the western United States troposphere, poster presentation at the Joint CACGP/IGAC International Symposium, Heraklion, Crete.

2001 **Cooper, O. R**., J. L. Moody, D. Parrish, M. Trainer, T. B. Ryerson, J. S. Holloway, G. Hübler, F. C. Fehsenfeld, M. J. Evans, A. Stohl, poster presentation, Trace Gas Composition of Mid-Latitude Cyclones over the Western North Atlantic Ocean: A Conceptual Model, AGU Spring Meeting, Boston.

Cooper, O.R., ***invited seminar***, Trace Gas Composition of Mid-Latitude Cyclones over the Western North Atlantic Ocean: A Conceptual Model, invited seminar at Deutsches Zentrum für Luft- und Raumfahrt, Institut für Physik der Atmosphäre, Oberpfaffenhofen, Germany.

Cooper, O.R., ***invited seminar***, Trace Gas Composition of Mid-Latitude Cyclones over the Western North Atlantic Ocean: A Conceptual Model, invited seminar at Rudjer Boskovic Institute, University of Zagreb, Croatia.

2000 **Cooper, O. R**., Trace gas signatures of the airstreams within North Atlantic cyclones - Case studies from the NARE'97 aircraft intensive, seminar presented at the NOAA Aeronomy Laboratory, Boulder, March.

Cooper, O. R., J. L. Moody, D. D. Parrish, M. Trainer, and S. J. Oltmans, Trace gas

signatures of the transport sectors within a typical North Atlantic cyclone, 80th AMS Annual Meeting, Long Beach, January.

1999 **Cooper, O. R.**, J. L. Moody, A. J. Wimmers, K. P. Higgins, J. T. Merrill, A. I. Prados, R. R. Dickerson, and S. J. Oltmans, Temporal and spatial evolution of a tropopause fold and associated trace gas signatures over the eastern United States and Western North Atlantic Ocean, oral presentation at the 79th AMS Annual Meeting, Dallas, January.

Cooper, O. R., J. L. Moody, D. D. Parrish, M. Trainer, and S. J. Oltmans, Frequency, origin, and chemical composition of stratospheric intrusions over the western North Atlantic Ocean, autumn 1997, (poster) AGU Fall Meeting, San Francisco, December.

1997 **Cooper, O. R.**, Transport of ozone to Big Meadows, Shenandoah National Park, paper presented at Shenandoah National Park Air Quality Meeting, Luray, VA, February.

Cooper, O. R., J. L. Moody, J. C. Davenport, S. J. Oltmans, B. J. Johnson, P. Shepson, and X. Chen, Atmospheric dynamic influence on vertical ozone distributions ahead of and behind cold fronts at three North American sites, *Eos Trans. AGU, 78(46)*, F123.

Cooper, O. R., J. L. Moody, J. C. Davenport, S. J. Oltmans, and B. J. Johnson, The influence of springtime weather systems on vertical ozone distributions over Charlottesville, VA (poster), *Eos Trans. AGU, 78(17)*, S91.

1996 **Cooper, O. R.**, and J. L. Moody, The effects of atmospheric dynamics on ozone mixing ratio at an eastern U.S. mountain site, (poster) XVIII Quadrennial Ozone Symposium, L'Aquila, Italy, September.

1995 **Cooper, O. R.**, K. E. Hyer, M. K. Muller, J. L. Moody, and K. N. Eshleman, The impact of atmospheric dynamics on precipitation chemistry and associated streamwater acidification, (poster) Acid Reign 1995 Conference, Göteburg, Sweden, June.

EDITOR

2014	Guest Editor for *Atmospheric Environment's* Special Issue: Observations and source attribution of ozone in rural regions of the Western United States
2013 - 2016	Associate Editor for *Elementa*, an open access journal sponsored by US universities.
2007 – 2010	co-editor for *Atmospheric Chemistry and Physics*

COMMITTEES AND CONTRIBUTIONS TO ASSESSMENT REPORTS

2023 – present	Dissertation committee member for PhD candidate Hantao Wang, University of North Carolina, Chapel Hill (supervised by Professor Jason West)
2023 - present	Member of the IAGOS (In-Service Aircraft for a Global Observing System) Advisory Board
2023	Contributing author, Third National Plan for Civil Earth Observations, coordinated by the United States Group on Earth Observations (USGEO)
2023	Review Committee for Peter Husar habilitation, Charles University, Prague
2023	Co-convener, Session AS3.18: Trends and impacts of tropospheric ozone, EGU General Assembly, April 23-28, 2023, Vienna
2022	Reviewer for Daniel Malashok PhD Dissertation Defense, George Washington University, advisor Susan Anenberg
2022 – present	Scientific Coordinator of the TOAR-II Community Special Issue
2022 – present	Member of the International Global Atmospheric Chemistry (IGAC) Project Scientific Steering Committee
2021 – present	Member of the CCQM-GAWG Task Group on Ozone Cross-Section Change Management (CCQM is The Consultative Committee for Amount of Substance – Metrology in Chemistry and Biology; GAWG is the Gas Analysis Working Group)
2021	co-Convener of Session A108. Tropospheric Ozone Trends in a Rapidly Changing World, AGU Fall Meeting, New Orleans
2021 - present	Chairperson of the World Meteorological Organization (WMO) Global Atmosphere Watch (GAW) Scientific Advisory Group (SAG) on Reactive Gases
2021	Organizer for IGAC TOAR-II Kick-Off Workshop (2.01), January 2021, held virtually.

2021	Organizer for IGAC TOAR-II Manuscript Scoping Event, Workshop (2.02), November 2021, held virtually
2020- present	Member of the WMO GAW Expert Team on Atmospheric Composition Network Design and Evolution
2020 – 2023	Stakeholder Committee Member of Metrology for climate relevant VOCs (MetClimVOC), an activity of The European Association of National Metrology Institutes (EURAMET)
2020 – 2022	co-Chair of Phase-II of the Tropospheric Ozone Assessment Report (TOAR-II), an official Activity of IGAC.
2019-2020	Expert Reviewer for the First Order Draft (FOD) and the Second Order Draft (SOD) of the Working Group I (WGI) contribution to the IPCC Sixth Assessment Report (AR6), with focus on Chapter 2 (Changing state of the climate system) and Chapter 6 (Short-lived climate forcers).
2019 - 2021	Core Member of the World Meteorological Organization (WMO) Global Atmosphere Watch (GAW) Scientific Advisory Group (SAG) on Reactive Gases
2018 – present	Member of the Atmospheric Science Data Center (ASDC) Distributed Active Archive Center (DAAC) User Working Group, located at NASA Langley Research Center (NASA LaRC)
2018 – 2021	Contributing author on global tropospheric O_3 observations for Chapter 2 (Changing state of the climate system) and Chapter 6 (Short-lived climate forcers) of the Working Group I contribution to the IPCC Sixth Assessment Report (AR6)
2017	co-Convener of Session A084. Quantifying Tropospheric Ozone's Present Day Distribution and Trends from the Perspective of Human Health, Climate and Ecosystem Productivity, AGU Fall Meeting, New Orleans
2016	Organizer for IGAC TOAR Workshop 1.03, January 25-27, 2016, Xijiao Hotel, Beijing, China.
2015	Panel reviewer for the NASA New (Early Career) Investigator Program Arlington, VA, November 12-13, 2015.
2015	Planning Committee, Transboundary Ozone Pollution Conference, Yosemite, California, 2015.
2015	Organizer for IGAC TOAR Workshop 1.02, April 28-30, 2015, AEMET, Madrid, Spain.
2014	Organizer for IGAC TOAR Workshop 1.01, December 10-11, 2014, NOAA ESRL, Boulder.
2014 – 2019	Chair of Phase-I of the Tropospheric Ozone Assessment Report (TOAR), an official Activity of IGAC.
2014	Workshop on "Atmospheric composition change research: the next decade", hosted by the ACCENT Plus Steering Committee to bring together a small number of key international scientists in the field of atmospheric composition change to formulate a forward looking document on the future of the research in the field, Barnsdale, England, April 1-3.
2014	Scientific Steering Committee member for the MOZAIC–IAGOS Scientific Symposium on Atmospheric Composition Observations by Commercial Aircraft: 20th Anniversary, 12 – 15 May 2014, Toulouse, France
2014	Expert Panelist, USDA Forest Service and the Department of the Interior Quadrennial Fire Review, Bureau of Land Management's Colorado State Office.
2012	Panel reviewer for the NASA Modeling, Analysis and Prediction (MAP) program Baltimore, November 27-29, 2012.
2012 – 2013	Contributing author on global tropospheric O_3 trends for the Working Group I contribution to the IPCC Fifth Assessment Report, Climate Change 2013: The Physical Science Basis (AR5)
2012 – 2021	Contributing author on global tropospheric O_3 trends and distribution for the annual "State of the Climate" reports, *Bull.of the American Meteorol. Soc*.
2011 –2012	Expert Reviewer for the Working Group I contribution to the IPCC Fifth Assessment Report, Climate Change 2013: The Physical Science Basis (AR5)
2006 – present	Member of the Task Force on Hemispheric Transport of Air Pollution (TF HTAP). Established by the Executive Body of the UNECE (United Nations Economic Commission for Europe) Convention on Long-Range Transboundary Air Pollution; TF HTAP produces assessment reports on the hemispheric transport of air pollutants.
2005 - 2012	Steering Committee for NCAR's Deep Convective Clouds and Chemistry (DC3) experiment. Head of Climatology committee, and member of Satellite Data Usage committee, and Convection and Plume Forecast committee.

2011	co-Convener of Session A28. Impact of Baseline Ozone and Particulate Matter on Surface Air Quality, AGU Fall meeting, San Francisco
2009	co-Convener of Session AS3.5: Vertical and Long-Range Transport of Trace Gases and Aerosols, EGU General Assembly 2009
2007	co-Convener of Session A32: Transport and Transformation of Air Pollution from Regional to Global Scales, AGU Fall Meeting, San Francisco.

PROFESSIONAL ORGANIZATIONS

1997 - present	American Geophysical Union
1998 - present	American Meteorological Society
2003 – present	European Geophysical Union

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January 16, 2024