

David.D.Parrish, LLC

Consultant for all atmospheric chemistry issues related to air quality and climate change

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PROFESSIONAL EXPERIENCE

Visiting professor, Institute for Environmental and Climate Research, Jinan University, Guangzhou, China 2018-present
Professional Researcher, Air Quality Research Center, University of California, Davis 2016-present
Person of Interest, Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado 2014-present
Program Lead, Tropospheric Chemistry Group of the Chemical Sciences Division/National Oceanic and Atmospheric Administration (NOAA)/Earth System Research Laboratory 2009-2014
Research Chemist, NOAA 1987-2014 (part-time: 1978-1987)
Department Chair, Department of Chemistry, Metropolitan State College (Denver) 1986-1987
Professor, Department of Chemistry, Metropolitan State College (Denver) and University of Illinois at Chicago 1973-1987
Postdoctoral Research Fellow, Harvard University, Department of Chemistry 1970-1973

EDUCATION

Ph.D. in physical chemistry, University of California, Berkeley, California - 1970
B.S. degree in chemistry, Colorado College, Colorado Springs, Colorado - 1966

FIELD STUDY COORDINATOR

California Air Quality and Climate Study (CalNex 2010)
Intercontinental Transport and Chemical Transformation (ITCT 2002, ICARTT 2004)
North Atlantic Regional Experiment (NARE 1991, 1993, 1996, 1997)

SCIENTIFIC ASSESSMENTS AND COMMITTEE MEMBERSHIPS

Non-member consultant to support CASAC's review of PM and ozone NAAQS - 2019-present
"Examination of Texas Ozone Design Values in the Widest Possible Temporal and Spatial Context" - Author of report to Houston 8-hour Ozone SIP Coalition (2018)
"Examination of Northeast U.S. Ozone Concentrations in the Widest Possible Temporal and Spatial Context" - Author of report to Northeast States for Coordinated Air Use Management, Inc. (NESCAUM) (2017)
"Science Synthesis Report: Atmospheric Impacts of Oil and Gas Development in Texas" - Lead Author of report to Texas Commission on Environmental Quality (2017)
Science Review Group for Bureau of Ocean Energy Management funded Air Quality Modeling in the Gulf of Mexico Region - Member 2014-present
"Synthesis of Policy Relevant Findings from the CalNex 2010 Field Study" - Lead Author of report to California Air Resources Board (2014)

Independent Technical Advisory Committee of the Texas Air Quality Research Program
– Member 2010-2015
IGAC Assessment on Impacts of Mega-cities on Air Quality and Climate - Coordinating
Chapter lead author for 2011 Report
Task Force on Hemispheric Transport of Air Pollutants (HTAP) - Coordinating Chapter
lead author for 2010 Report
International Global Atmospheric Chemistry (IGAC) Program, Scientific Steering
Committee - 2003-2007
Texas Air Quality Study (TexAQS) Rapid Science Synthesis Team Coordinator – 2006-
2007
NARSTO Emission Inventory Assessment, Steering Committee – 2004-2005 – Author
Chapter 7
NARSTO Tropospheric Ozone Assessment – 2000 - Coauthored two critical review
papers

JOURNAL EDITORIAL BOARDS

Atmospheric Environment - 2009-2015
Journal of Atmospheric Chemistry - 2009-2016

GUEST EDITOR

Atmospheric Chemistry and Physics, CAREBEIJING special issue, 2012
Journal Geophysical Research-Atmospheres, **109**(D23), 2004; **111**(D23), 2006;
112(D10), 2007; **115**(D7), 2010
Atmospheric Environment, **29**(21), 1995; **30**(12), 1996

AWARDS

Fellow - American Geophysical Union: 2014
Colorado Governor's Award for High-Impact Research for science team involved with
research on impacts of oil and gas activities on the atmosphere- October, 2014.
Colorado Governor's Award for High-Impact Research for science team involved with
the Deepwater Horizon oil spill flights by the NOAA P-3 aircraft - October, 2012.
OAR Outstanding Scientific Paper Award: 2000, 2003, 2005, 2014
Department of Commerce Silver Medal Award: 2004

PROFESSIONAL SOCIETIES

American Geophysical Union
American Association for the Advancement of Science

PUBLICATIONS

More than 230 peer-reviewed publications (List available [here](#)).
h-index: 75

SELECTED INVITED PRESENTATIONS (2010-2019)

*"Zonal Similarity of Seasonal Cycles and Long-term Changes of Baseline Ozone at
Northern Mid-latitudes"* **11th International Symposium on Environmental
Geochemistry** in Beijing China - 7-10 August 2019.
*"Observational-based Assessment of Contributions to Southwest U.S. Maximum
Ozone Concentrations"* **ESRL/GMD Annual Meeting** in Boulder CO - 21-22 May
2019.
*"5 Decades of Air Quality Improvement in Los Angeles: Perspectives for Developing
Cities"* Keynote talk at **Establishment Meeting of the Expert Committee on
Ozone Pollution Control** in Chengdu China - 28 March 2019.
"Limits on Ozone Air Quality Improvement in the U.S." Seminar at **The Hong Kong
Polytechnic University**, Hong Kong, 5 December 2018.

- "A fresh look at dirty air: 40 years of effort to reach the U.S. ozone NAAQS" **ESRL/CSD Seminar** in Boulder CO - 16 August 2017.
- "A distressing hypothesis: Current models cannot provide consistent and quantitatively accurate U.S. background ozone design values" at the **Background Ozone Scientific Assessment Workshop** in Denver CO - 28-29 March 2017
- "Ozone Design Values in Southern California's Air Basins: Temporal Evolution and U.S. Background Contribution" at the **American Geophysical Union Fall Meeting** in San Francisco CA - 12-16 December 2016.
- "Air Quality Impacts of Shale Oil and Gas Production in Texas" at the **TAMEST Shale Task Force comprehensive review of the scientific research and related findings on the impacts of shale oil and gas production in Texas** in Austin TX - 5 October 2016.
- "Air Quality Improvement in Los Angeles - Perspectives for Developing Cities" at the **2016 Peak Forum of Volatile Organic Compounds** in Shijiazhuang, Hebei, China - 20-21 August 2016.
- "Some intriguing aspects of tropospheric ozone in urban to remote regions" at the colloquium **Ozone Research – Quo Vadis?** in Zurich, Switzerland - 4 May 2016
- "Impact of Transported Background Ozone on Western U.S. Air Quality" **California Desert Air Working Group 2015 Conference** in Big Bear Lake CA - 18-19 November 2015
- "Tropospheric Ozone: Seasonal Cycles and Trends as Tests for Chemistry Climate Models" **Institute for Arctic and Alpine Research Seminar** in Boulder CO - 5 October 2015.
- "Comparison of Seasonal Cycles of Tropospheric Ozone from Chemistry-Climate Models (CCMs) with Measurements" **Meteorology And Climate - Modeling for Air Quality (MAC-MAQ) Meeting** in Sacramento CA - 16-18 September 2015.
- "Lessons Learned from Los Angeles: 5 Decades of Efforts, but Air Still Not as Clean as Needed" at the **19th ETH Conference on Combustion Generated Nanoparticles** in Zürich, Switzerland - 28 June - 1 July 2015.
- "Comparison of seasonal cycles of tropospheric ozone from three Chemistry-Climate Models (CCMs) with measurements" **ESRL/GMD Annual Meeting** in Boulder CO - 19-20 May 2015.
- "Quantitative Comparisons Between Measurements and Chemistry Climate Models, plus Other Challenges for Photochemical Models" **Harvard University Atmospheric Sciences Seminar** on 24 April 2015.
- "Baseline Contributions to Surface Ozone in California's Central Valley" at the **Transboundary Ozone Pollution Conference** in Yosemite CA - 31 May - 2 April 2015.
- "Baseline Ozone in Western North America: Measurements and Models" at the **Transboundary Ozone Pollution Conference** in Yosemite CA - 31 May - 2 April 2015.
- "How Complete Is Our Knowledge of Tropospheric Ozone? (at Least as it is Currently Incorporated into Chemistry-Climate Models)" at the **American Geophysical Union Fall Meeting** in San Francisco CA - 14-19 December 2014.
- "Air Pollution in Developing Mega-Cities - Something Old, Something New - Lessons from Los Angeles" **California Air Resources Board Chair's Lecture Series** in Sacramento CA - August 7, 2014
- "Systematic Comparison Of Long-Term Tropospheric Ozone Changes Between Observations And Models" at the **IGAC/SPARC Chemistry-Climate Model Initiative (CCMI) Workshop** in Lancaster, England - 20-22 May 2014.
- "Air Pollution in Developing Mega-cities: Something Old, Something New" **College of Environmental Sciences and Engineering, Peking University Seminar** in Beijing, China - 10 April 2014.

- “Air Pollution in Developing Mega-cities: Something Old, Something New”* at the **Monsoon Asia Integrated Regional Study (MAIRS) Open Science Conference** in Beijing, China - 7-10 April 2014.
- “Long-Term Baseline Ozone Changes: Disagreement between 3 ACCMIP/CMIP5 Models and Observations”* at the **American Geophysical Union Fall Meeting** in San Francisco CA - 9-13 December 2013.
- “Long-term changes in lower tropospheric baseline ozone concentrations: Comparing chemistry-climate models and observations at northern mid-latitudes”* **ESRL/CSD Seminar** in Boulder CO - 16 October 2013.
- “Urban Air Quality Trends in a Global Context”* at the **RISUD International Workshop on Regional Air Quality - Linking Science to Policy** in Hong Kong, China - 15 June 2013.
- “Decadal Trends of VOC Toxics in the Los Angeles Urban Area”* at the **CRC Mobile Source Air Toxics Workshop** in Sacramento CA - 4-6 February 2013.
- “Ozone in the Anthropocene: Lessons from urban to remote measurements at northern mid-latitudes”* Keynote speech at the **The 12th International Global Atmospheric Chemistry (IGAC) Science Conference: Atmospheric Chemistry in the Anthropocene** in Beijing, China - 17-21 September 2012.
- “Megacity air quality: the view from satellites and other platforms”* at the meeting entitled **Towards an Integrated Observing System for South America: Air Quality Assessment and Forecasting in Mega Cities** in Santiago, Chile - 9-12 January 2012.
- “Early Results from the CalNex 2010 Field Study”* at the **CENRS Air Quality Research Subcommittee** in Washington DC - 13 October 2011.
- “Urban air quality trends in a global context”* at the **Final Symposium of the EU FP7 project MEGAPOLI “Megacities: Emissions, urban, regional and Global Atmospheric POLLution and climate effects, and Integrated tools for assessment and mitigation”** in Paris, France - 26-28 September 2011.
- “Transported Background Ozone: Impact on Air Quality at U.S. West Coast”* at the **Workshop on Policy Relevant Ozone Background Ozone Concentrations in the United States** in Austin TX - 30 March 2011.
- “Past, present and future evolution of urban air quality in developed and developing cities of the world ”* at The **Mainland China-Taiwan-Pacific Rim Conference on Climate and Air Quality** in Kona HI - 14-19 March 2011.
- “Past, present and future evolution of urban air quality in developed and developing cities of the world”* at the **2nd Xiamen International Forum on Urban Environment** in Xiamen, China - 10-12 December 2010.
- “Understanding Historical Ozone Trends at Northern Mid-Latitudes”* at the **19th International Emission Inventory Conference “Emission Inventories – Informing Emerging Issues”** in San Antonio TX - 28-30 September 2010.
- “Comparing Chemical Transport Model Results with Measurements: Some Illuminating Approaches”* **NCAR/NESL Atmospheric Chemistry Division Seminar** in Boulder CO - 26 April 2010.