

RONALD CARL COHEN

Department of Chemistry,
Department of Earth and Planetary Science,
University of California, Berkeley
E-mail: rccohen@berkeley.edu

Latimer Hall
Berkeley, California, USA 94720
Phone: (510) 642-2735

- 2007-** **Professor**, Departments of Chemistry and of Earth and Planetary Science, University of California at Berkeley **Associate/Assistant Professor, 1995-2007**
- 2017-2019** **Associate Dean for Research Administration, CHAMPS, UC Berkeley**
- 2015-2016** **Miller Professor, UC Berkeley**
- 2015-2016** **Adjunct Professor, Gwangju Institute of Science and Technology, Korea**
- 2007-2015** **Vice Chair, Department of Chemistry, UC Berkeley**
- 2006-2016** **Director, Berkeley Atmospheric Sciences Center**
- 2005-2006** **Vice Chair, Department of Chemistry, UC Berkeley**
- 1996-** **Faculty Scientist, Lawrence Berkeley National Laboratory, Energy and Environment Technologies Division**
- 2006-2007** **Visiting Professor, Max Planck Institute for Chemistry, Division of Biogeochemistry, Mainz, Germany**
- 1991-1996** **Postdoctoral Fellow, Research Associate Dept. of Chemistry, Harvard University**

Education:

Ph.D. Department of Chemistry, University of California, Berkeley, 1991
BA with High Honors, Wesleyan University, Middletown, Connecticut, June 1985

Selected Awards & Honors

Johnston Lecturer, UC Berkeley 2018.
Fellow of American Association for the Advancement of Science, 2017.
The Berkeley Atmospheric CO₂ Observation Network was one of three “Climate Data in Action” efforts recognized in the Obama administration’s Climate Data Initiative in summer 2014.
Champion of Science: Educator, (Chabot Space and Science Center) 2013,
Fellow, American Geophysical Union, 2012

Memberships:

American Association for the Advancement of Science, American Chemical Society, American Geophysical Union, American Meteorological Society, European Geophysical Union

Research Experience: After a PhD in spectroscopic study of small molecular clusters, Cohen’s began a career in Atmospheric science as a postdoctoral fellow and research associate with Jim Anderson at Harvard University where he studied the photochemistry of the stratosphere (1991-1996). He joined the UC Berkeley faculty in 1995 developing a program of in situ observations and modeling aimed at the study of the role nitrogen oxide photochemistry at urban, regional and global scales as it affects ozone and aerosol. Cohen and his students have established the prominent role of organic nitrates in the atmospheric chemistry of rural and remote locations. They have championed the benefits of high spatial resolution in the analysis of space based remote sensing of NO₂, providing the highest resolution version of observations from the OMI instrument on a publically available website <https://behr.cchem.berkeley.edu/>. Other areas of interest include biosphere-atmosphere exchange, the role of temperature as a control over surface ozone and aerosol, the chemical nature of cloud droplet growth and data assimilation applied to highly reactive chemicals. In his newest research project, he is leading an effort to build analytical instruments and models for observing and interpreting urban

greenhouse gas emissions with unprecedented spatial resolution: www.beacon.berkeley.edu. BEACO₂N is also one element of a multifaceted education and outreach effort that aims to bring a diverse cohort into the Atmospheric Science pipeline and emphasizes connections to high schools and community colleges with large populations of students who are underrepresented in our field.

Cohen has published ~280 papers, with ~14,000 citations, h-index 70 (ISI). He has mentored 49 MS and PhD students and 12 postdocs.

Selected Recent Publications, #'s from complete CV

X. Liu, I. Fung, A. Mizzi, J. Anderson, and R.C. Cohen, *Near-surface wind extraction from future geostationary satellite observations of the NO₂ column*, submitted July 2020.

C.M. Nussbaumer and R.C. Cohen, *The temperature dependence of PM_{2.5} in the Los Angeles Basin*, submitted June 2020

275. A.J. Turner, P. Köhler, T.S. Magney, C. Frankenberg, I. Fung, and R.C. Cohen, *A double peak in the seasonality of California's photosynthesis as observed from space*, *Biogeosciences*, 17, 405–422, <https://doi.org/10.5194/bg-17-405-2020>, 2020.

274. Romer Present, P. S., Zare, A., and Cohen, R. C.: *The changing role of organic nitrates in the removal and transport of NO_x*, *Atmos. Chem. Phys.*, <https://doi.org/10.5194/acp-2019-471>, in press 2020.

271. J.L. Laughner, and R.C. Cohen, *Direct observation of changing NO_x lifetime in North American cities*, *Science* 366, 6466, 723-727 DOI: 10.1126/science.aax6832, 2019.

266. A.A. Frossard, M.S. Long, W.C. Keene, P. Duplessis, J. D. Kinsey, J. R. Maben, D.J. Kieber, R. Y.-W. Chang, S.R. Beaupré, R.C. Cohen, Xi Lu, J. Bisgrove, Y. Zhu, *Marine Aerosol Production via Detrainment of Bubble Plumes Generated in Natural Seawater with a Forced-Air Venturi*, *J. Geophys. Res.* <https://doi.org/10.1029/2019JD030299>, 2019.

250. A.A. Shusterman, J. Kim, K.J. Lieschke, C. Newman, P.J. Wooldridge, R.C. Cohen, *Observing local CO₂ sources using low-cost, near-surface urban monitors*, *Atmos. Chem. Phys.* 18, 13773-13785, 2018.

242. J. Kim, A.A. Shusterman, K.J. Lieschke, C. Newman, and R.C. Cohen, *The BERkeley Atmospheric CO₂ Observation Network: field calibration and evaluation of low-cost air quality sensors*, *Atmos. Meas. Tech.*, 11, 1937-1946, 2018.

236. A.A. Frossard, W. Li, V. Gérard, B. Nozière, R.C. Cohen, *Surfactants Enhance Growth of Individual Water Droplets*, *Aerosol Science and Technology*, doi.org/10.1080/02786826.2018.1424315 2018.

232. X. Liu, I. Fung, A. Mizzi, J. Anderson, and R.C. Cohen, *Assimilation of satellite NO₂ observations at high spatial resolution using OSSEs*, *Atmos. Chem. Phys.*, 17, 7067-7081, 2017.

225. A.A. Shusterman, Teige, V. E., Turner, A. J., Newman, C., Kim, J., and R.C. Cohen, *The BERkeley Atmospheric CO₂ Observation Network: initial evaluation*, *Atmos. Chem. Phys.*, 16, 13449-13463, 2016.

210. S.E. Pusede, A.L. Steiner, R.C. Cohen, *Temperature and recent trends in the chemistry of continental surface ozone*, *Chem. Rev.* 10.1021/cr5006815, 2015.

190. A.K. Mebust and R.C. Cohen, *Observations of a seasonal cycle in NO_x emissions from fires in the African savanna*, *Geophys. Res. Lett.* **40**, 1451-1455, 2013.

183. A.E. Perring, S.E. Pusede and R.C. Cohen, *An Observational Perspective on the Atmospheric Impacts of RONO₂ on Ozone and Secondary Organic Aerosol*, *Chemical Reviews*, **113**, 5848–5870, 2013.

179. A.W. Rollins, et al., *Evidence for NO_x control over nighttime SOA formation*, *Science*, **337**, 1210, 2012.

175. S.E. Pusede and R.C. Cohen, *On the observed response of O₃ to NO_x and VOC reductions in San Joaquin Valley California 1995-present*, *Atmos. Chem. Phys.* **12**, 8323-8339, 2012.