DR. VAISHALI NAIK

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Research Interests

Chemistry-Climate interactions, Atmosphere-Biosphere interactions, Global Earth System Modeling, and Climate change impacts

Education

University of Illinois at Urbana-Champaign, Illinois 1999-2003
Doctor of Philosophy, Atmospheric Science

University of Illinois at Urbana-Champaign, Illinois 1996-1999
Master of Science, Atmospheric Science

University of Delhi, Delhi, India 1992-1995
Bachelor of Science, Chemistry with Honors

Professional Experience

Physical Scientist
NOAA Geophysical Fluid Dynamics Laboratory (GFDL) 2016-present

Project Scientist 2011-2015
University Corporation for Atmospheric Research (UCAR)/NOAA Geophysical Fluid Dynamics Laboratory (GFDL)

Scientist 2009-2011
High Performance Computing Inc (HPTi)/NOAA GFDL

Research Scientist (part-time) 2008-2009
Atmos Research and Consulting, Lubbock, TX

Associate Research Scholar 2006-2007
Woodrow Wilson School, Princeton University
Program in Atmospheric and Oceanic Sciences, Princeton University

Postdoctoral Research Associate 2003-2006
Woodrow Wilson School, Princeton University

Graduate Research Fellow 2000-2003
Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign

Graduate Research Assistant 1996-2000
Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign

Honors

NASA Graduate Student Fellowship in Earth System Science 2000-2003

Professional Activities

- ***Co-Lead,*** Chapter 7 of the IGAC project - Tropospheric Ozone Assessment Report (TOAR), 2015-present
- ***Member,*** GFDL Early Career Scientist Committee, 2015-present

- ***Contributing Author*** to Chapter 11 (Near-term Climate Change: Projections and Predictability) and Annex II of the Intergovernmental Panel on Climate Change Fifth Assessment Report (IPCC-AR5) Working Group I Climate Change 2013: The Physical Science Basis, 2013.
- ***Expert Reviewer*** for second order draft of the IPCC-AR5 Working Group I, 2012.
- ***Model PI and Analysis Co-Lead*** on hydroxyl and methane lifetime in the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP), in support of the IPCC AR5 (2011-2013).
- ***Member,*** GFDL Computer User's Advisory Board (CUAB), 2010-2013.
- ***Participant*****,** Dissertations Initiative for the Advancement of Climate Change Research (DISCCRS II), March 26–April 2 2006, Pacific Grove, CA.
- ***Co-convener*** of special session in 2005 Joint Assembly, May 23-27, New Orleans, LA.

Journal Referee
Atmospheric Chemistry and Physics, Earth Interactions, Environmental Science & Technology, Geophysical Research Letters, Global Environmental Change, Journal of Geophysical Research, Atmospheric Environment, Nature, Chemosphere, Chemical Society Reviews, and Current Pollution Reports

Proposal Referee
National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), American Association for the Advancement of Science (AAAS) on behalf of Indo-US Science and Technology Forum, Department of Energy (DOE), and Environmental Protection Agency (EPA)

Professional Societies
American Geophysical Union (AGU), Earth System Women's Network (ESWN), Sound Science Initiative of Union of Concerned Scientists

Advising/Teaching

Postdoctoral Scientists
- **Jordan Schnell**, Princeton University (Sep 2016-present)
  Project: Air quality and climate extremes

Doctoral Student Dissertation Committee
- **Maryam-Abdioskouei** (Center for Global and Regional Environmental Research, University of Iowa), 2016-present
- **Jean Guo** (Department of Earth & Environmental Sciences, Columbia University), 2015-present
- **Meredith M. Fry** (Department of Environmental Sciences and Engineering, University of North Carolina), 2010-2013

Graduate Student Interns
- **Maryam-Abdioskouei** (Center for Global and Regional Environmental Research, University of Iowa), CICS Research Internship Fellow, Jun-Aug, 2016

Undergraduate Student Interns
- **Shaun Howe** (Department of Atmospheric Sciences and Meteorology, Cornell University), Jun-Aug 2015
- **Fernanda Ramos-Garces** (University of Puerto Rico at Mayagüez, Puerto Rico), NOAA Center for Atmospheric Sciences (NCAS) Summer Research Fellow, Jun-Aug 2013.
- **Allison Stone**, Department of Geosciences, Princeton University, 2005-2006

- ***Guest lecturer*** for Global Biogeochemical Cycles, a graduate level course in the Department of Atmospheric Sciences

Publications

In-review

Yue, Q., Y. Fang, D. L. Mauzerall, **V. Naik**, L. W. Horowitz, J. Liu, and N. Scovronick, Impacts of global, regional and sectoral black carbon emissions on air quality, premature mortality and glacial deposition, in review, Environ. Sci. & Tech., 2016.

Saikawa, E., H. Kim, M. Zhong, Y. Zhao, G. Janssens-Manehout, J.-I. Kurokawa, Z. Klimont, F. Wagner, **V. Naik,** L. W. Horowitz, and Q. Zhang, Comparison of emissions inventories of anthropogenic air pollutants in China*, Atmos. Chem. Phys. Discuss*., doi:10.5194/acp-2016-888, in review, 2016.

Naik, V., L. W. Horowitz, M. D. Schwarzkopf, and M.-Y Lin, Impact of volcanic aerosols on stratospheric ozone recovery, in review *J. Geophys. Res*., 2016.

Peer-reviewed

Westervelt, D. M., L. W. Horowitz, **V. Naik**, A .P. K. Tai, A. M. Fiore, and D. L. Mauzerall, Quantifying PM2.5-meteorology sensitivities in a global climate model, *Atmos. Environ*, doi:10.1016/j.atmosenv.2016.07.040, 2016.

Silva, R. A., J. J. West, J.-F. Lamarque, D. T. Shindell, W. J. Collins, S. Dalsoren,G. Faluvegi, G. Folberth, L. W. Horowitz, T. Nagashima, **V. Naik**, S. T. Rumbold, K. Sudo, T. Takemura, D. Bergmann, P. J. Cameron-Smith, I. Cionni, R. M. Doherty, V. Eyring, B. Josse, I. A., MacKenzie, D. S. Plummer, M. Righi, D. S. Stevenson, S. Strode, S. Szopa, and G. Zeng, The effect of future ambient air pollution on human premature mortality to 2100 using output from the ACCMIP model ensemble, *Atmos. Chem. Phys*., 16, 9847-9862, doi:10.5194/acp-16-9847-2016, 2016.

Zhang, Y., J. H. Bowden, Z. Adelman, **V. Naik**, L. W. Horowitz, S. Smith, and J. J. West, Co-benefits of global and regional greenhouse gas mitigation on U.S. air quality in 2050, *Atmos. Chem. Phys.*, 16, 9533-9548, doi:10.5194/acp-16-9533-2016, 2016.

Zhong, M., E. Saikawa, Y. Liu, **V. Naik**, L. W. Horowitz, M. Takigawa, Y. Zhao, N.-H. Lin, and E. A. Stone, Air quality modeling with WRF-chemv3.5 in East and South Asia: sensitivity to emissions and evaluations of simulated air quality, *Geosci. Model Dev*., 9, 1201-1218, doi:10.5194/gmd-9-1201-2016, 2016.

Schnell, J. L., M. J. Prather, B. Josse, **V. Naik**, L. W. Horowitz, G. Zeng, D. T. Shindell, and G. Faluvegi, Effect of climate change on surface ozone over North America, Europe, and East Asia, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL068060, 2016.

Paulot, F., P. Ginoux, W. F. Cooke, L. J. Donner, S. Fan, M. Lin, J. Mao, **V. Naik** and L. W. Horowitz, Sensitivity of nitrate aerosols to ammonia emissions and to nitrate chemistry: Implications for present and future nitrate optical depth, *Atmos. Chem. Phys*., 16, 1459-1477, doi:10.5194/acp-16-1459-2016, 2016.

Parrish, D. D., I. E. Galbally, J.-F. Lamarque, **V. Naik**, L.W. Horowitz, D. T. Shindell, S. J. Oltmans, R. Derwent, H. Tanimoto, C. Labuschagne, and M. Cupeiro, Seasonal cycles of O3 in the marine boundary layer: observation and model simulation comparisons, *J. Geophys. Res*., doi: 10.1002/2015JD024101, 2016.

Westervelt, D .M., L. W. Horowitz, **V. Naik**, and D. L. Mauzerall, Radiative forcing and climate response to projected 21st century aerosol decreases, *Atmos. Chem. Phys*., 15, 12681-12703, doi:10.5194/acp-15-12681, 2015.

Schnell, J. L., M. J. Prather, B. Josse, **V. Naik**, L. W. Horowitz, P. Cameron-Smith, D. Bergmann, G. Zeng, D. A. Plummer, K. Sudo, T. Nagashima, D. T. Shindell, G. Faluvegi, and S. A. Strode, Use of North American and European air quality networks to evaluate global chemistry-climate modeling of surface ozone, *Atmos. Chem. Phys.*, 15, 10581-10596, doi:10.5194/acp-15-10581, 2015.

Fiore, A. M., **V. Naik**, and E. M. Leibensperger, Air quality and climate connections, *J. of Air & Waste Management*, 65:6, 645-685, doi: 10.1080/10962247.2015.1040526, 2015.

Rieder, H. E., A. M. Fiore, L. W. Horowitz, and **V. Naik**, Projecting policy-relevant metrics for high summertime ozone pollution events over the Eastern United States due to climate and emission changes during the 21st century, *J. Geophys. Res*., doi: 10.1002/2014JD022303, 2015.

Clifton, O., A. M. Fiore, G. Correa, L. W. Horowitz, and **V. Naik**, 21st Century reversal of the surface ozone seasonal cycle over the northeastern United States, *Geophys. Res. Lett*., doi:10.1002/2014GL061378, 2014.

Fiore, A. M., J. T. Oberman, M. Lin, L. Zhang, O. E. Clifton, D. J. Jacob, **V. Naik**, L. W. Horowitz, and J. P. Pinto, Estimating North American background ozone in U.S. surface air with two independent global models: Variability, uncertainties, and recommendations, *Atmos. Environ*., doi: 10.1016/j.atmosenv.2014.07.045, 2014.

Cooper, O. R., D. D. Parrish, J. Ziemke, N. V. Balashov, M. Cupeiro, I. E. Galbally, S. Gilge, L. W. Horowitz, N. R. Jensen, J.-F. Lamarque, **V. Naik**, S. J. Oltmans, J. Schwab, D. T. Shindell, A. M. Thompson, V. Thouret, Y. Wang, and R. M. Zbinden, Global distribution and trends of tropospheric ozone: An observation-based review, *Elementa*, doi: 10.12952/journal.elementa.000029, 2014.

Parrish, D. D., J.-F. Lamarque, **V. Naik**, L. W. Horowitz, D. T. Shindell, J. Staehelin, R. Derwent, O. R. Cooper, H. Tanimoto, A. Volz-Thomas, S. Gilge, H.-E. Scheel, M. Steinbacher, and M. Frohlich, Long-term changes in lower tropospheric baseline ozone concentrations: comparing chemistry-climate models and observations at northern mid-latitudes, *J. Geophys. Res*., doi: 10.1002/2013JD021435, 2014.

Bollasina, M., Y. Ming, V. Ramaswamy, M. D. Schwarzkopf, and **V. Naik**, Contribution of local and remote anthropogenic aerosols to the 20th century weakening of the South Asian Monsoon, *Geophy. Res. Lett.,* doi: 10.1002/2013GL058183, 2014.

West, J. J., S. J. Smith, R. A. Silva, **V. Naik**, Y. Zhang, Z. Adelman, M. M. Fry, S. Anenberg, L .W. Horowitz, and J.-F. Lamarque, Co-benefits of global greenhouse gas mitigation for future air quality and human health, *Nature Climate Change,* doi:10.1038/nclimate2009, 2013.

Kirschke, S., P. Bousquet, P. Ciais, M. Sunois, P. Bergasmachi, D. Bergmann, L. Bruhwiler, P. Cameron-Smith, J. G. Canadell, S. Castaldi, F. Chevallier, E. Dlugokencky, L. Feng, A. Frasier, M. Heimann, E. L. Hodson, S. Howuweling, B. Josse, J.-F. Lamarque., C. Le Quere, **V. Naik**, P. I. Palmer, I. Pison, D. Plummer, B. Poulter, B. Ringeval, M. Santini, M. Schmidt, D. T. Shindell, R. Spahni, S. A. Strode, K. Sudo, S. Szopa, G. R., van der Werf, A. Voulgarakis, M. van Weele, J. E. Williams, and G. Zeng, Three decades of methane sources and sinks: budgets and variations, *Nature Geoscience*, doi:10.1038/ngeo1955, 2013.

Silva, R. A., J. J. West, Y. Zhang, S. C. Anenberg, J.-F. Lamarque, D. T. Shindell, W. J. Collins, S. B. Dalsøren, G. Faluvegi, L. W. Horowitz, T. Nagashima, **V. Naik**, S. Rumbold, R. Skeie, K. Sudo, T. Takemura, D. Bergmann, P. Cameron-Smith, I. Cionni, R. M. Doherty, V. Eyring, B. Josse, I. A. MacKenzie, D. Plummer, M. Righi, D. S. Stevenson, S. Strode, S. Szopa, and G. Zeng, Global premature mortality due to anthropogenic outdoor air pollution and the contribution of past climate change, *Environ. Res. Lett., 8*, doi:10.1088/1748-9326/8/3/034005, 2013.

Naik, V., L. W. Horowitz, A. M. Fiore, P. Ginoux, J. Mao, A. Aghedo, and H. Levy II, Impact of preindustrial to present day changes in short-lived pollutant emissions on atmospheric composition and climate forcing, *J. Geophys. Res.*, doi: 10.1002/jgrd.50608, 2013.

Fry, M. M., M. D. Schwarzkopf, Z. Adelman, **V. Naik**, W. J. Collins, and J. J. West, Net radiative forcing and air quality responses to regional CO emission reductions, *Atmos. Chem. Phys., 13,* 5381-5399, doi:10.5194/acp-13-5381-2013, 2013.

Naik, V., A. Voulgarakis, A. M. Fiore, L .W. Horowitz, J.-F. Lamarque, M. Lin, M. Prather, P. Young, D. Bergmann, P. J. Cameron-Smith, I. Cionni, W. J. Collins, S. B. Dalsøren, R. Doherty, V. Eyring, G. Faluvegi, G. A. Folberth, B. Josse, Y. H. Lee, I. A. MacKenzie, T. Nagashima, T. P. C. van Noije, D. A. Plummer, M. Righi, S. T. Rumbold, R. Skeie, D. T. Shindell, D. S. Stevenson, S. A. Strode, K. Sudo, S. Szopa, and G. Zeng, Preindustrial to present day changes in tropospheric hydroxyl radical and methane lifetime from the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP), *Atmos. Chem. Phys., 13,* 5277-5298, doi:10.5194/acp-13-5277-2013, 2013.

Nabat, P., S. Somot, M. Mallet, I. Chiapello, J. J. Morcrette, F. Solmon, S. Szopa, F. Dulac, W. Collins, S. Ghan, L. W. Horowitz, J.-F. Lamarque, Y. H. Lee, **V. Naik**, T. Nagashima, D. Shindell, and R. Skeie, A 4-D climatology (1979-2009) of the monthly tropospheric aerosol optical depth distribution over the Mediterranean region from a comparative evaluation and blending of remote sensing and model products, *Atmos. Meas. Tech., 6,* 1287-1314, doi:10.5194/amt-6-1287-2013, 2013.

Bowman, K., D. T. Shindell, H. Worden, J. F. Lamarque, P. J. Young, D. Stevenson, Z. Qu, M. de la Torre, D. Bergmann, P. Cameron-Smith, W. J. Collins, R. Doherty, S. B. Dalsøren, G. Faluvegi, G. Folberth, L. W. Horowitz, B. Josse, Y. H. Lee, I. MacKenzie, G. Myhre, T. Nagashima, **V. Naik**, D. Plummer, S. T. Rumbold, R. B. Skeie, S. Strode, K. Sudo, S. Szopa, A. Voulgarakis, G. Zeng, S. Kulawik, and J. Worden, Observational constraints on ozone radiative forcing from the Atmospheric Chemistry Climate Model Intercomparison Project (ACCMIP), *Atmos. Chem. Phys., 13*, 4057-4072, doi:10.5194/acp-13-4057-2013, 2013.

Stevenson, D. S., P. J. Young, **V. Naik**, J.-F. Lamarque, D. T. Shindell, A. Voulgarakis, R. B. Skeie, S. B. Dalsøren, G. Myhre, T. K. Berntsen, G. A. Folberth, S. T. Rumbold, W. J. Collins, I. A. MacKenzie, R. M. Doherty, G. Zeng, T. P. C. van Noije, A. Strunk, D. Bergmann, P. Cameron-Smith, D. A. Plummer, S. A. Strode, L. Horowitz, Y. H. Lee, S. Szopa, K. Sudo, T. Nagashima, B. Josse, I. Cionni, M. Righi, V. Eyring, A. Conley, K. W. Bowman, O. Wild, and A. Archibald, Tropospheric ozone changes, radiative forcing and attribution to emissions in the Atmospheric Chemistry and Climate Model Inter-comparison Project (ACCMIP), *Atmos. Chem. Phys., 13*, 3063-3085, doi:10.5194/acp-13-3063-2013, 2013.

Shindell, D. T., J.-F. Lamarque, M. Schulz, M. Flanner, C. Jiao, M. Chin, P. Young, Y. H. Lee, L. Rotstayn, G. Milly, G. Faluvegi, Y. Balkanski, W. J. Collins, A. J. Conley, S. Dalsøren, R. Easter, S. Ghan, L. Horowitz, X. Liu, G. Myhre, T. Nagashima, **V. Naik**, S. Rumbold, R. Skeie, K. Sudo, S. Szopa, T. Takemura, A. Voulgarakis, J.-H. Yoon, and F. Lo, Radiative forcing in the ACCMIP historical and future climate simulations, *Atmos. Chem. Phys., 13,* 2939-2974, doi:10.5194/acp-13-2939-2013, 2013.

Lee, Y. H., J.-F. Lamarque, M. G. Flanner, C. Jiao, D. T. Shindell, T. Berntsen, M. M. Bisiaux, J. Cao, W. J. Collins, M. Curran, R. Edwards, G. Faluvegi, S. Ghan, L. W. Horowitz, J. R. McConnell, G. Myhre, T. Nagashima, **V. Naik**, S. T. Rumbold, R. B. Skeie, K. Sudo, T. Takemura, and F. Thevenon, Evaluation of preindustrial to present-day black carbon and its albedo forcing from ACCMIP (Atmospheric Chemistry and Climate Model Intercomparison Project), *Atmos. Chem. Phys., 13*, 2607-2634, doi:10.5194/acp-13-2607-2013, 2013.

Voulgarakis, A., **V. Naik**, J.-F. Lamarque, D. T. Shindell, P. J. Young, M. J. Prather, O. Wild, R. D. Field, D. Bergmann, P. Cameron-Smith, I. Cionni, W. J. Collins, S. B. Dalsøren, R. M. Doherty, V. Eyring, G. Faluvegi, G. A. Folberth, L. W. Horowitz, B. Josse, I. A. McKenzie, T. Nagashima, D. A. Plummer, M. Righi, S. T. Rumbold, D. S. Stevenson, S. A. Strode, K. Sudo, S. Szopa, and G. Zeng, Analysis of present day and future OH and methane lifetime in the ACCMIP simulations, *Atmos. Chem. Phys., 13*, 2563-2587, doi:10.5194/acp-13-2563-2013, 2013.

Young, P. J., A. T. Archibald, K. W. Bowman, J.-F. Lamarque, **V. Naik**, D. S. Stevenson, S. Tilmes, A. Voulgarakis, O. Wild, D. Bergmann, P. Cameron-Smith, I. Cionni, W. J. Collins, S. B. Dalsøren, R. M. Doherty, V. Eyring, G. Faluvegi, L. W. Horowitz, B. Josse, Y. H. Lee, I. A. MacKenzie, T. Nagashima, D. A. Plummer, M. Righi, S. T. Rumbold, R. B. Skeie, D. T. Shindell, S. A. Strode, K. Sudo, S. Szopa, and G. Zeng, Pre-industrial to end 21st century projections of tropospheric ozone from the Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP), *Atmos. Chem. Phys., 13,* 2063-2090, 2013.

Mao, J., L. W. Horowitz, **V. Naik**, S. Fan, J. Liu, and A. M. Fiore, Sensitivity of tropospheric oxidants to wildfires: implications for radiative forcing, *Geophys. Res. Lett*., doi: 10.1002/grl.50210, 2013.

Levy II, H., L. W. Horowitz, M. D. Schwarzkopf, Y. Ming, J.-C. Golaz, **V. Naik**, and V. Ramaswamy, The roles of aerosol direct and indirect effects in past and future climate change, in press, *J. Geophys. Res*., 2013.

Lamarque, J.-F., D. T. Shindell, B. Josse, P. J. Young, I. Cionni, V. Eyring, D. Bergmann, P. Cameron-Smith, W. J. Collins, R. Doherty, S. Dalsoren, G. Faluvegi, G. Folberth, S. J. Ghan, L. W. Horowitz, Y. H.

Lee, I. A. MacKenzie, T. Nagashima, **V. Naik**, D. Plummer, M. Righi, S. T. Rumbold, M. Schulz, R. B. Skeie, D. S. Stevenson, S. Strode, K. Sudo, S. Szopa, A. Voulgarakis, and G. Zeng, The Atmospheric Chemistry and Climate Model Intercomparison Project (ACCMIP): overview and description of models, simulations and climate diagnostics, *Geosci. Model Dev., 6*, 179-206, doi:10.5194/gmd-6-179-2013, 2013.

Fang, Y., **V. Naik**, L. W. Horowitz, and D. L. Mauzerall, Air pollution and associated human mortality: the role of air pollutant emissions, climate change and methane concentration increases during the industrial period, *Atmos. Chem. Phys., 13,* 1377-1394, 2013.

John, J., A. M. Fiore, **V. Naik**, L. W. Horowitz, and J. Dunne, Climate versus emission drivers of methane lifetime from 1860 to 2100, *Atmos. Chem. Phys., 12*, 12021-12036, doi:10.5194/acp-12-12021-2012, 2012.

Lin, M., A. M. Fiore, O. R. Cooper, L. Horowitz, A. O. Langford, H. Levy II, B. J. Johnson, **V. Naik**, S. Oltmans, and C. Senff, Springtime, high surface ozone events over the western United States: Quantifying the role of stratospheric intrusions, *J. Geophys. Res.,* 117, D00V22, DOI:10.1029/2012JD018151*,* 2012.

Fiore, A.M., **V. Naik**, D. Spracklen, A. Steiner, N. Unger, M. Prather, D. Bergmann, P.J. Cameron-Smith, B. Collins, S. Dalsøren, G. Folberth, P. Ginoux, L.W. Horowitz, B. Josse, J.-F. Lamarque, T. Nagashima, F. O'Connor, S. Rumbold, D.T. Shindell, R.B. Skeie, K. Sudo, T. Takemura, and G. Zeng, Global Air Quality in Climate, *Chem. Soc. Rev*, doi:10.1039/c2cs35095e, 2012.

Fry, M.M., **V. Naik**, J.J. West, M.D. Schwarzkopf, A.M. Fiore, et al., The influence of ozone precursor emissions from four world regions on tropospheric composition and radiative climate forcing, *J. Geophy. Res.*, 117, D07306, DOI:10.1029/2011JD017134, 2012.

Lin, M., A. M. Fiore, L. W. Horowitz, O. R. Cooper, **V. Naik**, J. Holloway, B. J. Johnson, A. M. Middlebrook, S. J. Oltmans, I. B. Pollack, T. B. Ryerson, J. X. Warner, C. Wiedinmyer, J. Wilson, and B. Wyman, Transport of Asian ozone pollution into surface air over the western United States in spring, *J. Geophys. Res*., 117, D00V07, doi:10.1029/2011JD016961, 2012.

Rasmussen, D J., A. M. Fiore, **V Naik**, L. W. Horowitz, S. J. McGinnis, and M. G. Schultz, Surface ozone-temperature relationships in the eastern US: A monthly climatology for evaluating chemistry-climate models, *Atmos. Environ.*, 47, DOI:10.1016/j.atmosenv.2011.11.02, 2012.

Donner, L. J., B. Wyman, R. S. Hemler, L. W. Horowitz, Y. Ming, M. Zhao, J.-C. Golaz, P. Ginoux, S.-J. Lin, M. D. Schwarzkopf, J. Austin, G. Alaka, W. F. Cooke, T. L. Delworth, S. M. Freidenreich, C. T. Gordon, S. M. Griffies, I. Held, W. J. Hurlin, S. Klein, T. R. Knutsen, A. Langenhorst, H.-C. Lee, Y. Lin, B. I. Magi, S. Malyshev, P. C. D. Milly, **V. Naik**, M. J. Nath, R. Pincus, J. Ploshay, V. Ramaswamy, C. Seman, E. Shevliakova, J. J. Sirutis, W. F. Stern, R. J. Stouffer, R. J. Wilson, M. Winton, A. T. Wittenberg, F. Zeng, The Dynamical Core, Physical Parameterizations, and Basic Simulation Characteristics of the Atmospheric Component AM3 of the GFDL Global Coupled Model CM3. *J. Climate*, 24, 3484–3519. doi: http://dx.doi.org/10.1175/2011JCLI3955.1, 2011.

Lamarque, J.-F., T. C. Bond, V. Eyring, C. Granier, A. Heil, Z. Klimont, D. Lee, C. Liousse, A. Mieville, B. Owen, M. G. Schultz, D. Shindell, S. J. Smith, E. Stehfest, J. Van Aardenne, O. R. Cooper, M. Kainuma, N. Mahowald, J. R. McConnell, **V. Naik**, K. Riahi, and D. P. van Vuuren, Historical (1850–2000) gridded anthropogenic and biomass burning emissions of reactive gases and aerosols: methodology and application, *Atmos. Chem. Phys. Discuss*., *10,* 7017-7039*,* doi:10.5194/acp-10-7017-2010, 2010.

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West, J. J., **V. Naik**, L. Horowitz, and A. M. Fiore, Effect of regional precursor emission controls on long-range ozone transport – Part 2: Steady-state changes in ozone air quality and impacts on human mortality, *Atmospheric Chemistry and Physics, 9(16),* 6095-6107, 2009.

West, J. J., **V. Naik**, L. Horowitz, and A. M. Fiore, Effect of regional precursor emission controls on long-range ozone transport – Part 1: Short-term changes in ozone air quality, *Atmospheric Chemistry and Physics, 9(16),* 6077-6093, 2009.

Saikawa, E., **V. Naik,** L. W. Horowitz, J. Liu, D. L. Mauzerall, Present and Potential Future Contributions of Sulfate, Black and Organic Carbon Aerosols from China to Global Air Quality, Premature Mortality and Radiative Forcing, *Atmospheric Environment, 4343(17),* 2814-2822, 2009.

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Other Activities

- ***Board Member,*** GFDL Employees Association (GFDLEA), 2016-present
- ***Treasurer,*** GFDL Employees Association (GFDLEA), 2010-2011.
- ***Student Representative***, Department of Atmospheric Sciences, UIUC, 2001-2002.
- ***Student Member***, Department of Atmospheric Sciences, UIUC, Admissions/Recruitment Committee, 2001-2002.