

Eric M. Leibensperger

Curriculum Vitae

State University of New York College at Plattsburgh
Center for Earth and Environmental Science
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Education

Ph.D. in Applied Physics, School of Engineering and Applied Sciences, Harvard University (2011)
Thesis: Interaction of Air Quality and Climate: Consequences of US Emissions Controls
Advisor: Daniel J. Jacob

S.M. in Applied Physics, School of Engineering and Applied Sciences, Harvard University (2007)

B.A. (Magna Cum Laude) in Chemistry and Physics, Ithaca College (2005)

Positions Held

Associate Professor, State University of New York College at Plattsburgh, Center for Earth and Environmental Science (Fall 2017 - present)

Independent Consultant for Model Development, Harvard University (Summer 2015 - Fall 2016)

Assistant Professor, State University of New York College at Plattsburgh, Center for Earth and Environmental Science (Fall 2012 - Spring 2017)

Postdoctoral Associate, Massachusetts Institute of Technology, Department of Earth, Atmospheric and Planetary Science (Spring 2011 - Fall 2012)
Advisor: R. Alan Plumb **Research Topic:** Stratospheric transport and dynamics

Graduate Research Assistant, Harvard University, School of Engineering and Applied Science (Fall 2005 - Spring 2011)
Advisor: Daniel J. Jacob **Research Topic:** Atmospheric chemistry and climate

Research Assistant, Ithaca College, Department of Physics (Summer 2005)
Advisor: Beth Clark **Research Topic:** Photometric modeling of asteroid Eros 443

Dana Intern/Undergraduate Researcher, Ithaca College, Department of Physics (Summer 2004)
Advisor: Luke Keller **Research Topic:** Composition of protostellar debris disks

Lewis' Education and Research Collaborative Intern, NASA Glenn Research Center (Summer 2003)
Advisor: Michael A. Meador **Research Topic:** Synthesis of polyacenes through photoenolization

Teaching Experience

Assistant/Associate Professor, SUNY Plattsburgh, Center for Earth and Environmental Science

Courses: GEL 291	Oceanography (Fall 2012, 2013)
GEL 391	Phys. Oceanography and Limnology (Fall 2014, 2015, 2016, 2017, 2018)
ENV 206	Environmental Technology (Fall 2016, 2017, 2018; Spring 2018)
ENV/GEL 306	Atmospheric Processes (Fall 2012-2018; Spring 2013-2018)
ENV 340	Environmental Science Seminar (Fall 2012-2015; Spring 2013-2016)
ENV 366	Global Climate Change (Gen. Ed.; Spring 2014; 2016; 2017; 2018)
ENV/GEL 406	Climate Change Science (Spring 2013, 2015, 2017)

Research Mentor: 28 Undergraduate Research Students (2 x Fall 2012; Spring 2013; Fall 2013; Spring 2014; Summer 2014; Fall 2014; 3 x Spring 2015; 4 x Fall 2015; Summer 2016; Fall 2016; Winter 2016; Spring 2017; 2 x Summer 2017; 2 x Fall 2017; Winter 2017-2018; Spring 2018; 4 x Fall 2018)

Curriculum Vitae

Eric M. Leibensperger

Teaching Experience continued

Module Co-author, Science Education Resource Center at Carleton College

Interdisciplinary Teaching about Earth for a Sustainable Future module “Regulating Carbon Emissions to Mitigate Climate Change” with Pinar Batur (Vassar), Robyn Smyth (Bard), Curt Gervich (SUNY Plattsburgh), Gautam Sethi (Bard), and Sandra Penny (Bard) (2014-2017)

Teaching Fellow, Harvard University

Courses: EPS 208 Physics of Climate (Fall 2008); EPS 133 Intro. to Atmospheric Chemistry (Fall 2007); ES 6 Env. Science and Technology (Spring 2008; 2009 [head teaching fellow])

Research Co-Mentor, Harvard University

Summer Research Experience for Undergraduates Student (Summer 2007; 2008)

Teaching Assistant, Ithaca College

Courses: Phys. Chem. I/II; Intro. to Phys. I/II; Exp. Chem. I/II; Princ. of Chem. I/II; Calculus I

Honors and Awards

US EPA Science to Achieve Results (EPA-STAR) Grad. Fellowship (2008–2011)

Harvard University Certificate of Distinction in Teaching (2008)

Sigma Xi (Scientific Research Society; Spring 2005)

Dana Internship Award at Ithaca College, (Summer 2004)

Sigma Pi Sigma (Physics Honor Society; Spring 2004)

Ithaca College First Year Award in Mathematics (Spring 2002)

Grimley Trust Scholarship (2001-2005)

Ithaca College Dean’s Scholarship (2001-2005)

Professional Activities

Academic Peer Reviewer

Journals: Atmos. Chem. and Physics, Atmos. Environ., Climate Dynamics, Climate Research, Climatic Change, Current Pollution Reports (editorial board), Env. Sci. & Tech., Geo. Res. Lett., J. of Climate, J. of Geophys. Res. - Atmos., Nature Geoscience, PNAS, Scientific Reports

Grant Agencies: NASA, NOAA, U.K. Natural Environment Research Council

Professional Memberships

Am. Geophys. Union; Am. Met. Society (full member); SUNY 4E Network of Excellence; VT Weather and Climate Working Group; Clinton County Env. Health & Safety Professional Advisory Committee

Outreach

Scientific Reviewer - Raymond Johnson’s climate change column in the *Press Republican*, 2012 - present

Judge - SUNY Plattsburgh Alumni Battle of the Bands, 2017

Presenter - Lake Champlain United Anglers meeting, “Temperatures in Lake Champlain: Can climate research be of use to anglers?”, 2017

Judge - Champlain Valley Regional Science Fair, 2013-2017

Presenter - Science@30City, “Climate Change: What’s Left to Argue?”, 2016

Presenter - CEES Fridays in the Center Series, “Climate Change is no April Fools’ Joke”, 2016

Presenter - SUNY Plattsburgh College Council. “Overview of Lake Champlain Research”, 2016

Presenter - Plattsburgh Rotary Club, “Overview of Lake Champlain Research”, 2016

Panelist - SUNY Plattsburgh Honors Center National Issues Forum on Climate Change, 2015

Curriculum Vitae

Eric M. Leibensperger

Outreach continued

- Co-organizer - SUNY Plattsburgh's contribution to SUNY-wide forum on extreme weather and climate change (included on-campus events open to public), 2015
- Scientific Reviewer - Climate Literacy and Energy Awareness Network (CLEAN), 2013 - 2016
- Co-organizer - SUNY Plattsburgh 50th Anniversary of the Wilderness Act Celebration, 2014
- Presenter - Earth and Environmental Science Club Lecture Series - "Air!", 2014
- Presenter - Environmental Action Committee Earth Week, "Super Storms!", 2013
- Lecturer - Northeast States for Coordinated Air Use Management, "Short-lived climate forcers", 2012

Peer Reviewed Publications

- Penny, S. M., R. Smyth, G. Sethi, **E. M. Leibensperger**, C. Gervich, and P. Batur (2019) "Multidisciplinary and Topical in the Science Classroom: Regulating Carbon Emissions to Mitigate Climate Change" in *Interdisciplinary Teaching About Earth and the Environment for a Sustainable Future*, Gosselin, D. C., A. E. Egger, and J. Taber (Eds.), Springer.
- Mao, J., A. Carlton, R. C. Cohen, W. H. Brune, J. L. Jimenez, H. O. T. Pye, N. L. Ng, B. McDonald, C. Warneke, J. de Gouw, L. J. Mickley, **E. M. Leibensperger**, R. Mathur, and L. Horowitz (in press) "South-east Atmosphere Studies: Learning from model-observation syntheses" *Atmos. Chem. Phys.*
- Shen, L., L. J. Mickley, and **E. M. Leibensperger** (2017) "The Atlantic Multidecadal Oscillation drives multidecadal variability of summertime surface air quality in the eastern United States" *Geophys. Res. Lett.*, 44, doi: 10.1002/2017GL0759045.
- Cusworth, D. H., L. J. Mickley, **E. M. Leibensperger**, and M. J. Iacono (2017) "Aerosols as a driver of enhanced U.S. surface solar radiation since the early 21st century and resulting hydrological impacts" *Atmos. Chem. Phys.* 17, 13559–13572, doi: 10.5194/acp-17-13559-2017.
- Fiore, A. M., V. Naik, and **E. M. Leibensperger** (2015) "A Summary of the 45th A&WMA Critical Review: Air Quality and Climate Connections" *EM Magazine*, June, 32-35.
- Fiore, A. M., V. Naik, and **E. M. Leibensperger** (2015) "Critical Review: Air quality and connections" *J. Air Waste Manage.*, 65(6), 646-685.
- Oswald, E., L.-A. Dupigny Giroux, **E. M. Leibensperger**, R. Poirot, and J. Merrell (2015) "Climate controls on air quality in the Northeastern U.S.: An examination of summertime ozone statistics during 1993-2012" *Atmos. Environ.*, 112, 278-288.
- Leibensperger, E. M.** and R. A. Plumb (2014) "Effective diffusivity in baroclinic flow" *J. Atmos. Sci.*, 71(3), 972-984.
- Barrett, S. R. H., S. H. L. Yim, C. K. Gilmore, L. T. Murray, S. R. Kuhn, A. P. K. Tai, R. M. Yantosca, D. W. Byun, F. Ngan, X. Li, J. Levy, A. Ashok, J. Koo, H. M. Wong, O. Dessens, S. Balasubramanian, G. G. Fleming, C. Wollersheim, R. Malina, M. N. Pearlson, S. Arunachalam, F. S. Binkowski, **E. M. Leibensperger**, D. J. Jacob, J. I. Hileman, and I. A. Waitz (2012) "Public health, climate and economic impacts of desulfurizing jet fuel" *Environ. Sci. Technol.*, 26, 4275-4282.
- Leibensperger, E. M.**, L. J. Mickley, D. J. Jacob, W.-T. Chen, J. H. Seinfeld, A. Nenes, P. J. Adams, D. G. Streets, N. Kumar, and D. Rind (2012) "Climatic effects of 1950-2050 changes in US anthropogenic aerosols - Part 2: Climate response" *Atmos. Chem. Phys.*, 12, 3349-3362.
- Leibensperger, E. M.**, L. J. Mickley, D. J. Jacob, W.-T. Chen, J. H. Seinfeld, A. Nenes, P. J. Adams, D. G. Streets, N. Kumar, and D. Rind (2012) "Climatic effects of 1950-2050 changes in US anthropogenic aerosols - Part 1: Aerosol trends and radiative forcing" *Atmos. Chem. Phys.*, 12, 3333-3348.

Peer Reviewed Publications continued

- Tai, A. P. K., L. J. Mickley, D. J. Jacob, **E. M. Leibensperger**, L. Zhang, J. A. Fisher, and H.O.T. Pye (2012) "Meteorological modes of variability for fine particulate matter (PM_{2.5}) air quality in the United States: Implications for PM_{2.5} sensitivity to climate change" *Atmos. Chem. Phys.*, 12, 3131-3145.
- Mickley, L. J., **E. M. Leibensperger**, D. J. Jacob, and D. Rind (2012) "Removal of aerosol optical depths over the United States causes large regional warming in a transient 2010-2050 climate simulation" *Atmos. Environ.*, 46, 545-553.
- Wang, Q., D. J. Jacob, J. A. Fisher, J. Mao, **E. M. Leibensperger**, C. C. Carouge, P. Le Sager, Y. Kondo, J. L. Jimenez, M. J. Cubison, and S. J. Doherty (2011) "Sources of carbonaceous aerosols and deposited black carbon in the Arctic in winter-spring: Implications for radiative forcing" *Atmos. Chem. Phys.*, 11, 12453-12473.
- Fisher, J. A., D. J. Jacob, Q. Wang, R. Bahreini, C. C. Carouge, M. J. Cubison, J. E. Dibb, T. Diehl, J. L. Jimenez, **E. M. Leibensperger**, M. B. J. Meinders, H. O. T. Pye, P. K. Quinn, S. Sharma, A. van Donkelaar, and R. M. Yantosca (2011) "Sources, distribution, and acidity of sulfate-ammonium aerosol in the Arctic in winter-spring" *Atmos. Environ.*, 45, 7301-7318.
- Murphy, D. M., J. C. Chow, **E. M. Leibensperger**, W. C. Malm, C. McDade, M. Pitchford, B. A. Schichtel, J. G. Watson, W. H. White (2011) "Decreases in elemental carbon and fine particle mass in the United States" *Atmos. Chem. Phys.*, 11, 4679-4686.
- Leibensperger, E. M.**, L. J. Mickley, D. J. Jacob, and S. R. H. Barrett (2011) "Intercontinental influence of NO_x and CO emissions on particulate matter air quality" *Atmos. Environ.*, 45, 3318-3324.
- Kopacz, M., D. L. Mauzerall, J. Wang, **E. M. Leibensperger**, D. K. Henze, and K. Singh (2011) "Origin and radiative forcing of black carbon transported to the Himalayas and Tibetan Plateau" *Atmos. Chem. Phys.*, 11, 2837-2852.
- Leibensperger, E. M.**, L. J. Mickley, and D. J. Jacob (2008) "Sensitivity of US air quality to mid-latitude cyclone frequency and implications of 1980-2006 climate change" *Atmos. Chem. Phys.*, 8, 7075-7086.
- Wu, S., L. J. Mickley, **E. M. Leibensperger**, D. J. Jacob, D. Rind, D. G. Streets (2008) "Effects of 2000-2050 global change on ozone air quality in the United States" *J. Geophys. Res.*, 113, D06302, doi: 10.1029/2007JD008917.
- Hudman, R. C., D. J. Jacob, S. Turquety, **E. M. Leibensperger**, L. T. Murray, S. Wu, A.B. Gilliland, M. Avery, T. H. Bertram, W. Brune, R. C. Cohen, J. E. Dibb, F. M. Flocke, A. Fried, J. Holloway, J. A. Neuman, R. Orville, A. Perring, X. Ren, G. W. Sachse, H. B. Singh, A. Swanson, and P. J. Wooldridge (2007) "Surface and lightning sources of nitrogen oxides over the United States: magnitudes, chemical evolution, and outflow" *J. Geophys. Res.*, 112, D12S05, doi: 10.1029/2006JD007912.
- Chen, C. H., B. A. Sargent, C. Bohac, K. H. Kim, **E. Leibensperger**, M. Jura, J. Najita, W. J. Forrest, D. M. Watson, G. C. Sloan, and L. D. Keller (2006) "Spitzer IRS Spectroscopy of IRAS-Discovered Debris Disks" *Astrophys. J. Suppl. S.*, 166, 351-377.
- Sloan, G. C., L. D. Keller, W. J. Forrest, **E. Leibensperger**, B. Sargent, A. Li, J. Najita, D. M. Watson, B. R. Brandl, C. H. Chen, J. D. Green, F. Markwick-Kemper, T. L. Herter, P. D'Alessio, P. W. Morris, D. J. Barry, P. Hall, P. C. Meyers, and J. Houck (2005) "Mid-Infrared Spectra of Polycyclic Aromatic Hydrocarbon Emission in Herbig Ae/Be Stars" *Astrophys. J.*, 632, 956-963.

Curriculum Vitae

Eric M. Leibensperger

Select Presentations

- Climate change and intraseasonal variability in Lake Champlain: Application of the SUNY Plattsburgh Data Buoy and Long-term Monitoring Data** Lake Champlain Research Conference (*presented by Mark Malchoff*), University of Vermont, Burlington, VT: January 8, 2018
- Development of a Lake Champlain Anglers' Temperature Database** Lake Champlain Research Conference (*undergraduate Joseph Judge*), University of Vermont, Burlington, VT: January 8, 2018
- Observed and projected temperature change in Lake Champlain** Lake Champlain Research Conference (*undergraduate Vasu Govani*), University of Vermont, Burlington, VT: January 8, 2018
- Regional climate change in the U.S.: Detection, Attribution, and Projection** Duke University, Nicholas School of the Environment, Durham, NC: November 10, 2017
- Observed and projected temperature change in Lake Champlain** CEES Student Research Symposium (*undergraduate Vasu Govani*), Plattsburgh, NY: May 3, 2017
- Calculating the carbon flux within Lake Champlain** CEES Student Research Symposium (*undergraduate Grace DeSantis*), Plattsburgh, NY: May 3, 2017
- Temperatures in Lake Champlain: Can climate research be of use to anglers?** Lake Champlain United Fishing Club, Burlington, VT: March 13, 2017
- Assessing climate change within Lake Champlain (NY, VT, QC)** American Geophysical Union Fall Meeting, San Francisco, CA: December 13, 2016
- Importance of anthropogenic aerosols in climate change attribution** 14th Annual Climate Prediction Applications Science Workshop, Burlington, VT: May 22-24, 2016
- Climate change in Lake Champlain: Modeling future warming** (*undergraduates Conor McCormick and Nicholas Campagna*) CEES Student Research Symposium, Plattsburgh, NY: May 5, 2016
- How well can we model the Ice Storm of 1998? Assessing the accuracy of cloud microphysics schemes** (*student David Bubbins*) CEES Student Research Symposium, Plattsburgh, NY: May 5, 2016
- Anthropogenic aerosols and the evolution of 20th century U.S. climate** Southeast Atmosphere Studies Workshop, NOAA Geophysical Fluid Dynamics Lab./Princeton University, Princeton, NJ: June 9, 2015
- Modeling thermal structure of a small Adirondack lake** (*graduate student Sarah Glancy*) CEES Student Research Symposium, Plattsburgh, NY: May 7, 2015
- Chemical composition of Adirondack snow** (poster by *undergraduates Casey Corrigan and Neil Sedlak*) CEES Student Research Symposium, Plattsburgh, NY: May 7, 2015
- Does air pollution impact U.S. drought?** (oral) Department of Atmospheric and Oceanic Science, McGill University, Montreal, QC: April 14, 2015
- Anthropogenic aerosols and the evolution of U.S. droughts** (oral) American Geophysical Union Fall Meeting, San Francisco, CA: December 19, 2014
- Does air pollution impact drought? Influence of sulfate and BC on U.S. climate** (oral) Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY: December 5, 2014
- Anthropogenic aerosols and the dust bowl** (poster by *undergraduate advisee Evan Cazavilan*) New York State Section of the American Physical Society, Plattsburgh, NY: September 26, 2014
- Speak for the trees: What can be learned from Champlain Valley tree core data** (poster by *undergraduate advisee Ryan Revette*) New York State Section of the American Physical Society, Plattsburgh, NY: September 26, 2014

Curriculum Vitae

Eric M. Leibensperger

Select Presentations continued

Impact of non-CO₂ pollutants on US climate (oral) Vermont Weather and Climate Group, University of Vermont, Burlington, VT: January 16, 2013

Connecting US air pollution to international air quality and climate change (oral) Ithaca College Chemistry Seminar, Ithaca, NY: March 27, 2012

Atmospheric composition and climate change (oral) SUNY Plattsburgh Center for Earth and Environmental Science, Plattsburgh, NY: February 29, 2012

Interactions between air quality and climate (oral) Columbia University SEAS Colloquium in Climate Science, New York, NY: October 6, 2011

Climate effects of US anthropogenic aerosols (oral) MIT Atmospheric Science Seminar Series, Cambridge, MA: September 12, 2011

Interactions between US air quality and climate (oral) MIT Joint Program on the Science and Policy of Global Change, Cambridge, MA: June 10, 2011

Climate effects of US aerosol sources: aerosol trends, radiative forcing, and climate response (oral) 5th International GEOS-Chem Meeting, Harvard University, Cambridge, MA: May 3, 2011

Climate response to 1950-2050 US aerosol trends (poster) International Commission on Atmospheric Chemistry and Global Pollution (CACGP)/International Global Atmospheric Chemistry Conference (IGAC), Halifax, NS, Canada: July 11, 2010

Climate response to changing US aerosol sources (oral) NOAA GFDL, Princeton, NJ: March 31, 2010

Climate response to changing US aerosol sources (oral) NASA GISS, New York, NY: February 12, 2010

Regional climate response to US aerosol sources (oral) American Geophysical Union Fall Meeting, San Francisco, CA: December 19, 2008

Air quality degradation due to greenhouse warming decreasing the frequency of mid-latitude cyclones (poster) EPA Workshop on Consequences of Global Change for Air Quality, Research Triangle Park, NC: February 21, 2007

University Service

- Chair, Soil Science Faculty Search (Fall 2017; Fall 2018)
- SUNY Plattsburgh Faculty Senator (Fall 2015; Fall 2016 - present)
- Member, Feinberg Library Undergraduate Research Award Committee (Fall 2015 - present)
- Ph.D. Committee, Ying Zhou (SUNY-ESF) (Fall 2015 - present)
- Associate, Lake Champlain Research Institute (Fall 2012 - present)
- Chair, Water Quality Modeling, Geology, Soil Science Faculty Search (3 positions) (Spring 2017)
- Aquatic and Terrestrial Ecologist Faculty Searches (Fall 2016 - Spring 2017)
- Member, CEES Curriculum Committee (Fall 2012 - Spring 2017)
- Wetland/Forest Ecologist Faculty Searches (Spring 2016)
- CEES Representative, Freshman Orientation (Summer 2015; 2016)
- Panelist, Honors Center National Issues Forum on Climate Change (Spring 2015)
- Presenter, Museum Docents Meeting, Wilderness Act and the Adirondack Art Walk (Spring 2015)
- Co-organizer, SUNY-wide extreme weather and climate change forum (Fall 2014 - Spring 2015)

Curriculum Vitae

Eric M. Leibensperger

University Service continued

- Co-planner, New York State Section of the American Physical Society Topical Meeting (Summer 2014)
- Co-organizers, SUNY Plattsburgh 50th Anniversary of the Wilderness Act Celebration (Summer 2014)
- Member, *Current Pollution Reports* Editorial Board (Summer 2014 - Summer 2016)
- Co-developer, Environmental Physical Science major (Spring - Fall 2014)
- Member, Center for Earth and Environmental Science Director Nomination Committee (Fall 2013)
- Participant, SUNY Distance Mentored Undergraduate Research (Fall 2012 - Spring 2013)
- Member, Forest/Field Ecologist Faculty Search (Fall 2012 - Spring 2013)
- CEES Representative, SUNY Plattsburgh Open Houses/Accepted Students Events
- Participant, Vermont Climate Change Scenarios Workshop (Fall 2012)