

Eric P. Salathé Jr.

Senior Research Scientist
JISAO Climate Impacts Group
University of Washington

A. Education

1987: B.A. with Honors in Physics, Swarthmore College

1994: Ph.D. in Geology and Geophysics, Yale University (Dissertation Title: The Interaction of Upper-Tropospheric Water Vapor and the Earth's Radiation Field; Advisor: Prof. Ronald B. Smith)

B. Positions Held

September 1990 to September 1993: NASA Global Change Research Fellow, Yale University.

October 1993 to June 1995: National Research Council Associate, NASA Goddard Laboratory for Atmospheres.

July 1995 to July 1999: Research Associate, Department of Atmospheric Sciences, University of Washington.

August 1999 to present: Senior Research Scientist and Principal for Climate Scenarios, JISAO/CSES Climate Impacts Group, University of Washington.

July 2005 to present: Affiliate faculty, Department of Atmospheric Sciences, University of Washington.

C. Field Experience

1989: Participated in the Experiment on Rapidly Intensifying Cyclones over the Atlantic (ERICA) as part of the NCAR Sabreliner aircraft research staff

1991: Participated in the Chemical Layering Project in Champaign, IL and Edmonton, Alberta. Research Scientist on ten Sabreliner aircraft flights.

D. Publications

Submitted for publication:

V Dulière, Y Zhang, EP Salathé 2009: Changes in 20th century extreme temperature and precipitation over the western United States from regional climate model simulations and observations. Submitted to *Climatic Change*.

Y. Zhang, V Dulière, Salathé Jr, E.P., Y. Qian, L.R. Leung 2009. ENSO Anomalies over the Western United States: Present and Future Patterns in Regional Climate Simulations. Submitted to *J Climate*.

V Dulière, Y Zhang, P Mote, EP Salathé 2009: Extreme precipitation and temperature over the U.S. Pacific Northwest : A comparison between observations, reanalysis data and regional models. Submitted to *J. Climate*.

Bauman, Y and EP Salathé, 2009: Climate change impacts on dairy production in the Pacific Northwest. Submitted to *Climatic Change Letters*.

Mote, P.W., E.P. Salathé Jr., 2009. Future climate in the Pacific Northwest. Submitted to *Climatic Change*.

Salathé Jr, E.P., Y. Zhang, L.R. Leung, Y. Qian, 2009. Regional Climate Model Projections for the State of Washington. Submitted to *Climatic Change*.

In press:

Chen, J., J. Avise, A. Guenther, C. Wiedinmyer, E. Salathé, R. Jackson, and B. Lamb, 2009: Future land use and land cover influences on regional biogenic emissions and air quality in the United States. *Atmospheric Environment*, in press.

Weaver, C.P. *et al.*: A Preliminary Synthesis of Modeled Climate Change Impacts on U.S. Regional Ozone Concentrations. *Bull. Am. Meteorol. Soc.*, in press.

Zhang, Y, V Dulière, P Mote, E.P. Salathé Jr., 2009: Evaluation of WRF and HadRM Mesoscale Climate Simulations over the United States Pacific Northwest. *J. Climate*, in press.

Published:

Avise, J., J. Chen, B. Lamb, C. Wiedinmyer, A. Guenther, E. Salathé, and C. Mass, 2009: Attribution of projected changes in US ozone and PM2.5 concentrations to global changes. *Atmos. Chem. Phys.*, **9**, 1111-1124.

Chen, J., J. Avise, B. Lamb, E. Salathé, C. Mass, A. Guenther, C. Wiedinmyer, J.-F. Lamarque, S. O'Neill, D. McKenzie, and N. Larkin, 2009: The effects of global changes upon regional ozone pollution in the United States. *Atmos. Chem. Phys.*, **9**, 1125-1141.

E. P. Salathé Jr, P. Zahn, R. Steed, and C.F. Mass. 2008. A high-resolution climate model for the United States pacific northwest: Mesoscale feedbacks and local responses to climate change. *J. Climate*, **21**, 5708-5726.

P. Mote, A. Hamlet, and E. Salathé, 2008: Has spring snowpack declined in the Washington Cascades? *Hydrol. Earth Syst. Sci.*, **4**, 2073-2110.

E. P. Salathé Jr, P W Mote, M W Wiley, 2007: Considerations for selecting downscaling methods for integrated assessments of climate change impacts. *Int. J. of Climatology*, **27**, 1611-1621.

E. P. Salathé Jr, 2006: Influences of a shift in North Pacific storm tracks on Western US regional climate under global warming. *Geophys. Res. Lett.*, **33**, L19820, doi:10.1029/2006GL026882.

E. P. Salathé Jr. 2004: Methods for selecting and downscaling simulations of future global climate with application to hydrologic modeling. *International Journal of Climatology*, **25**, 419-436.

E. P. Salathé Jr., 2003: The effect of various precipitation downscaling methods on the simulation of streamflow in a rainshadow river basin, *Int. J. of Climatology*, **23**, 887-901.

M. Widmann, C. S. Bretherton, and E. P. Salathé, 2003: Statistical precipitation downscaling over the northwestern United States using numerically simulated precipitation as a predictor. *J. Climate*. **16**, 799-816

L. Garand, et al., 2001: Radiance and Jacobian intercomparison of radiative transfer models applied to HIRS and AMSU channels, *J. Geophys. Res.*, **106**, 24,017-24,031

Contributing author, SPARC Assessment of Upper Tropospheric and Stratospheric Water Vapour. Edited by D. Kley, J.M. Russell, and C. Phillips. 2000.

- Contributing author, The IPCC Scientific Assessment. Report of Working Group I of the Intergovernmental Panel on Climate Change (IPCC). 2000.
- B. Soden, et al., 2000: An intercomparison of radiation codes for retrieving upper-tropospheric humidity in the 6.3-micron band: a report from the 1st GVaP Workshop, *Bull. Amer. Meteorol. Soc.*, **81**, 797-808.
- E. P. Salathé Jr. and D L Hartmann, 1999: Subsidence and upper-tropospheric drying along trajectories in a general circulation model, *J. Climate*, **12**.
- E. P. Salathé and D. L. Hartmann, 1997: A trajectory analysis of tropical upper-tropospheric moisture and convection. *J. Climate*, **10**, 2533-2547.
- E. P. Salathé Jr. and R. B. Smith, 1996: Comparison of 6.7-micron radiances computed from aircraft soundings and observed from GOES-VAS. *J. Geophys. Res.*, **101**, 21,303-21,310
- E. P. Salathé Jr., D. Chesters, Y. Sud 1995: Evaluation of upper-tropospheric moisture climatology in a GCM using TOVS radiance observations. *J. Climate*, **8**, 2404
- E. P. Salathé Jr. and D. Chesters, 1995: Variability of moisture in the upper troposphere, as inferred from TOVS satellite observations and ECMWF model analyses. *J. Climate*, **8**, 120.
- E. P. Salathé Jr. and R. B. Smith, 1992: In situ observations of temperature microstructure above and below the tropopause. *J. Atmos. Sci.*, **49**, 2032-2036.
- E. P. Salathé Jr. et al., 1990: The foot as a shock absorber. *J. Biomechanics*. **23**, 655
- E. P. Salathé Jr. et al., 1989: An application of beam theory to determine the stress and deformation of long bones. *J. Biomechanics*. **22**, 189.
- E. P. Salathé Jr. et al., 1986: A biomechanical model of the foot. *J. Biomechanics*. **19**, 989.
- E. P. Salathé and E. P. Salathé Jr., 1986: Transcapillary exchange during arteriolar vasomotion. *Microvascular Research*. **11**, 115.
- Recent technical reports:*
- Mote, P.W., E. P. Salathé Jr (In review). Possible future climate. Chapter 5 in A. K. Snover, E.L. Miles, and the Climate Impacts Group, Rhythms of Change: An Integrated Assessment of Climate Impacts on the Pacific Northwest, Cambridge, Massachusetts: MIT Press.
- Mote, P.W., E.P. Salathé Jr., 2009. Future climate in the Pacific Northwest. Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate.
- Salathé Jr, E.P., Y. Zhang, L.R. Leung, Y. Qian, 2009. Regional Climate Model Projections for the State of Washington. Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate.
- Mote, P.W., E.P. Salathé, and C. Peacock. 2006. Energy-relevant Impacts of Climate Change in the Pacific Northwest. Report prepared for Portland General Electric by the Climate Impacts Group, University of Washington, Seattle. 19 pp.
- Mote, P.W., E.P. Salathé, and C. Peacock. 2005. Scenarios of Future Climate for the Pacific Northwest. A report prepared for King County (Washington)'s October 27, 2005 climate change conference "The Future Ain't What It Used to Be: Preparing for Climate Disruption". Climate Impacts Group, University of Washington, Seattle.

E. Funded research

Current:

Modeling the Effects of Climate Change and Variability on the Pacific Northwest: Mesoscale Processes and Climate Impacts. NSF Climate Dynamics. \$393,778, Jan 2007 – Dec 2010. (PI: Salathé)

Ensemble Analyses of the Impact and Uncertainties of Global Change on Regional Air Quality in the U.S. EPA STAR. \$313,256. Feb 2006 – Jan 2010. (UW PI: Salathé)

Confronting Climate Change Health Risks in the Pacific Northwest, CDC (PI: Richard Fenske)

Distributed computing project: Pacific Northwest regional climate change. Microsoft Research. \$172,926. (PI: Philip Mote, Co-PI: Salathé). Nov 2007-April 2009.

Ensemble Analyses of the Impact and Uncertainties of Global Change on Regional Air Quality in the U.S. NCAR Climate Simulation Laboratory. 164,000 GAU, December 2007 – May 2009.

Integrating mesoscale downscaling with hydrologic and process models in the Pacific Northwest. NOAA Climate Dynamics and Environmental Prediction (CDEP). \$225,000. (PI: Miles, Co-PI: Salathé)

Pending:

CMG collaborative research: Statistical analysis of a multi-thousand ensemble of regional climate projections, NSF Collaborations in Mathematics and Geosciences, \$776,405 (PI: Salathé)

CMG Research: Uncertainty Assessment of Regional Climate Change Projections, NSF Collaborations in Mathematics and Geosciences, \$996,891 (PI: C Mass, coPI: Salathé)

F. Teaching and outreach

Designed new core course in University of Washington Program on the Environment to be taught beginning Winter 2010. Course title: Environmental Studies: Methods of Data Collection and Analysis

5-6 lectures per year to stakeholder groups and public audiences on climate change and climate impacts.

G. Graduate students and post-docs

Current Post-docs:

Valérie Dulière
Yongxin Zhang

Current Graduate Students:

Richard Steed
Michael Warner
Adam Skalenakis
Chakrit Chotomonsak

Past Graduate Students:

Patrick Zahn (M.S., now at Sonoma Technology Inc.)

H. Contact information

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