

Rachel Schwartz Clemesha

Climate, Atmospheric Science and Physical Oceanography (CASPO) Division
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Education

Scripps Institution of Oceanography, University of California, San Diego
PhD in Oceanography, 2015
Dissertation: California Coastal Low Clouds: Variability and Influences across Climate to Weather and Continental to Local Scales

Scripps Institution of Oceanography, University of California, San Diego
MS in Earth Sciences, 2010
Thesis: Oxidized Organic Functional Groups in Aerosol Particles from Forest Emissions Measured at Mid-Mountain and High-Elevation Mountain Sites in Whistler, BC

University of California, San Diego
BS in Chemistry, 2008
Cum Laude, Degree Awarded with GPA of 3.78

Freie University, Berlin, Germany
University of California Education Abroad Program, Fall Semester, 2006

Research Interests

California coastal clouds and climate; weather-climate connections; air-sea interactions; weather extremes and impacts; statistical data analysis and modeling; climate-ecology connections, human adaptation to and management decisions for climate change

Appointments

2015 – Current: **Postdoctoral Scholar**, Scripps Institution of Oceanography, Climate, Atmospheric Science and Physical Oceanography (CASPO) Division

2016: **Lecturer**, University of San Diego, Environmental and Ocean Sciences, MARS 220 Introduction to Atmospheric and Ocean Sciences

2011- 2015: **Graduate Researcher & NASA Earth and Space Science Fellow**, Scripps Institution of Oceanography, University of California, San Diego

Winter 2014: **Teaching Assistant**, University of California, San Diego, SIO 20 The Atmosphere

Summer 2012: **Independent Contractor**, Green Power Labs Inc. and San Diego Gas & Electric

Summer 2011: **Student Research Intern**, San Diego Gas & Electric, Distribution Operations Division

2010: **Science Intern**, Climate Law Institute, Center for Biological Diversity, San Francisco, CA

2008 – 2010: **Graduate Researcher**, Scripps Institution of Oceanography, Atmospheric Aerosol Group

2007 – 2008: **Undergraduate Researcher**, Scripps Institution of Oceanography, Atmospheric Aerosol Group

Peer-Reviewed Publications

- 2017. **Clemesha, R. E. S.**, A. Gershunov, S. F. Iacobellis, and D. R. Cayan, Daily variability of California coastal low cloudiness: A balancing act between stability and subsidence, *Geophys. Res. Lett.*, doi:10.1002/2017GL073075.
- 2016. **Clemesha, R. E. S.**, A. Gershunov, S. F. Iacobellis, A. P. Williams, and D. R. Cayan, The northward march of summer low cloudiness along the California coast, *Geophys. Res. Lett.*, 43(3), 1287–1295, doi:10.1002/2015GL067081.
- 2015. Williams, A. P., **R. E. Schwartz**, S. Iacobellis, R. Seager, B. I. Cook, C. J. Still, G. Husak, and J. Michaelsen, Urbanization causes increased cloud base height and decreased fog in coastal Southern California, *Geophys. Res. Lett.*, 42(5), 1527–1536, doi:10.1002/2015GL063266.
- 2014. **Schwartz, R. E.**, A. Gershunov, S. F. Iacobellis, and D. R. Cayan, North American west coast summer low cloudiness: Broadscale variability associated with sea surface temperature, *Geophys. Res. Lett.*, doi:10.1002/2014GL059825.
- 2013. Gershunov, A., B. Rajagopalan, J. Overpeck, K. Guirguis, D. Cayan, M. Hughes, M. Dettinger, C. Castro, **R. E. Schwartz**, M. Anderson, A. J. Ray, J. Barsugli, T. Cavazos, and M. Alexander, Chapter 7: Future Climate: Projected Extremes. In: Garfin, G., Jardine, A., Merideth, R., Black, M., & LeRoy, S. (Eds.), *Assessment of Climate Change in the Southwest United States: a Report Prepared for the National Climate Assessment. A report by the Southwest Climate Alliance.* Washington, DC: Island Press.
- 2011. Guirguis, K., A. Gershunov, **R. Schwartz**, and S. Bennett, Recent warm and cold daily winter temperature extremes in the Northern Hemisphere, *Geophys. Res. Lett.*, 38(17), 2–7, doi:10.1029/2011GL048762.
- 2011. Leaitch, W. R. ... **R. E. Schwartz** ... et al., Temperature response of the submicron organic aerosol from temperate forests, *Atmos. Environ.*, doi:10.1016/j.atmosenv.2011.08.047.
- 2011. Takahama, S., **R. E. Schwartz**, L. M. Russell, A. M. MacDonald, S. Sharma, and W. R. Leaitch, Organic functional groups in aerosol particles from burning and non-burning forest emissions at a high-elevation mountain site, *Atmos. Chem. Phys.*, doi:10.5194/acp-11-6367-2011.
- 2010. **Schwartz, R. E.** et al., Biogenic oxidized organic functional groups in aerosol particles from a mountain forest site and their similarities to laboratory chamber products, *Atmos. Chem. Phys.*, doi:10.5194/acp-10-5075-2010.
- Under Review. Simonis, A. E., M. A. Roch, B. Baily, J. Barlow, **R. E. S. Clemesha**, S. Iacobellis, J. A. Hildebrand, and S. Baumann-Pickering, Lunar cycles affect common dolphin (*Delphinus delphis*) foraging in the Southern California Bight, *Marine Ecology Progress Series*
- Submitted. **Clemesha, R. E. S.**, K. Guriguis, A. Gershunov, I. J. Small, and A. Tardy, California heat waves: their spatial evolution, variation, and coastal modulation by low clouds, *Climate Dynamics*
- In prep. Baguskas S. A., **R. E. S. Clemesha**, M. E. Loik, Coastal fog enhances crop water use efficiency in a California agricultural system. *Agriculture and Forest Meteorology*
- In prep. Guirguis, K., A. Gershunov, T. Shulgina, **R. E. S. Clemesha**, and F. Martin Ralph, Flavors of Atmospheric Rivers making landfall in Northern California

Other Publications

- 2014. **Schwartz, R. E.**, Voyager: Can May Gray be Predicted?, Explorations Now, e-magazine Publications from Scripps Institution of Oceanography, UC San Diego, available at <https://scripps.ucsd.edu/news/voyager-can-may-gray-be-predicted>
- 2014. **Schwartz, R. E.**, Guest Blogger: Rachel Schwartz shares about coastclouds.com, Observe Your World, NASA, available at, <http://myNASAdata.larc.nasa.gov/oyw/guest-blogger-rachel-schwartz-shares-about-postcoastclouds-com/>

Radio

- 2016. KVMR 89.5 FM, June Gloom
- 2014. KPCC 89.3 "Southern California Public Radio"
<http://www.scpr.org/news/2014/06/11/44654/why-does-june-gloom-typically-come-just-this-time/>

Awards

- 2015 American Meteorological Society (AMS) local chapter certificate of appreciation for coastal weather research contributions to the meteorological community
- 2013 & 2014 SIO Department Graduate Student Excellence Travel Award
- 2014 Outstanding Student Paper Award, American Geophysical Union
- received for an oral presentation, awarded to top 3 – 5 % of presenters in section (atmospheric sciences)
- 2014 UCSD Graduate Student Association Travel Grant
- 2012 – 2015 NASA Earth and Space Science Fellowship
- 2010 Honorable Mention National Science Foundation Graduate Research Fellowship
- 2008-2009 Regents Fellowship, University of California, San Diego
- 2007-2008 Chancellor's Research Scholarship, University of California, San Diego

Selected Presentations

- 2017 Coastal and Ocean Climate Applications (COCA) Project Stakeholder Research Meeting, Scripps Institution of Oceanography, San Diego
- 2015 Seminar, Centro de Investigación Científica y de Educación Superior de Ensenada, CICESE, Ensenada, Baja California, Mexico
- 2015 American Meteorological Society (AMS) local chapter, San Diego
- 2014 American Geophysical Union (AGU) Fall Meeting, San Francisco
- 2014 Research Meeting, San Diego Gas and Electric (SDG&E)
- 2014 Research Meeting, National Weather Service (NWS) San Diego
- 2014 Scripps Student Symposium, La Jolla, CA
- 2013 American Geophysical Union (AGU) Fall Meeting, San Francisco
- 2013 Marine Weather Workshop, National Weather Service (NWS) San Diego
- 2012 American Geophysical Union (AGU) Fall Meeting, San Francisco
- 2012 Scripps Partnership for Hazards and Environmental Applied Research (SPHEAR) Stakeholder Research Meeting at Scripps Institution of Oceanography, San Diego
- 2011 Scripps Partnership for Hazards and Environmental Applied Research (SPHEAR) Stakeholder Research Meeting at Chesapeake Energy, Chicago
- 2011 Extreme Weather Workshop: Forecasting Extremes in the Extended/Medium Range at Scripps Institution of Oceanography, San Diego
- 2010 Informal Symposia on Kinetic and Photochemical Processes in the Atmosphere at University of California, San Diego
- 2009 Informal Symposia on Kinetic and Photochemical Processes in the Atmosphere at University of California, Riverside
- 2008 Scripps Institution of Oceanography Science Showcase
- 2007 Undergraduate Research Conference at University of California, San Diego

Teaching and Mentoring

- 2016 Lecturer, University of San Diego, Environmental and Ocean Sciences, MARS 220
Introduction to Atmospheric and Ocean Sciences
- 2014 The College Classroom, Center for Teaching Development, UCSD, San Diego - Center for the Integration of Research, Teaching and Learning (CIRTL) Associate level
- 2013 – 2015 Scripps Peer Mentor
- 2014 Teaching Assistant, University of California, San Diego, SIO 20 The Atmosphere