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*Curriculum Vitae*  
Scott B. Capps

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## PROFESSIONAL APPOINTMENTS

### *Principal* (**August 2015–present**)

Atmospheric Data Solutions, LLC (<http://www.atmosdatasolutions.com/>)

- Provide full-service numerical weather modeling solution support for various agencies.
- Support and upgrade SAWTI (<http://www.santaanawildfirethreat.com/>).
- Create and support operational weather analytic programs for utility companies.

### *Senior Science Partner* (**Nov 2009–2015**)

Vertum Partners (<http://www.vertumpartners.com/>)

Dept. of Energy Phase II SBIR/STTR Award Recipient

- Formulate and implement weather and climate solutions for multiple worldwide clients.
- Support implementation of SAWTI.
- Advise, implement and administer high-performance computing infrastructure.

### *Assistant Researcher I* (**Nov. 2012–Sept. 2013**)

*Postdoctoral Researcher* (**Nov. 2009–Nov. 2012**)

Dept. of Atmospheric and Oceanic Sciences, University of California, Los Angeles

Advisor: Dr. Alex Hall (<http://www.atmos.ucla.edu/csrl/>)

- Build a regional dynamically-downscaled multidecadal atmospheric dataset for a future climate change study.
- Design, install, optimize and analyze WRF operational and research simulations across various high-performance computer clusters.
- Use WRF to investigate Santa Ana winds and wildfires, wind energy, climate change.
- Projects: SAWTI<sup>1</sup>, LARC<sup>2</sup>, CIEE<sup>3</sup>; Collaborators: SDG&E, UCI, USFS and JPL.
- Tools: Models (WRF, CESM), Data (MERRA, NARR, SODAR), Languages (Python, NCL, NCO, FORTRAN).

### *Graduate Research Assistant* (**2004–2009**)

Dept. of Earth System Science, University of California, Irvine

Advisor: Dr. Charles S. Zender

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<sup>1</sup><http://www.santaanawildfirethreat.com/>

<sup>2</sup>Los Angeles Regional Climate Change Collaborative for Climate Action and Sustainability

<sup>3</sup>Preliminary Assessment of Offshore Wind Development Impacts on Marine Ecosystems funded by: the California Institute for Energy and Environment

- Devised a wind speed discretization method within a Global Circulation Model.
- Evaluated the climate response to sub-gridscale wind speed variability.
- Quantified global ocean wind power at typical wind turbine hub heights using QuikSCAT.
- Assessed global ocean wind power for various wind turbine characteristics and siting depths.

## PROFESSIONAL PREPARATION

2009	University of California, Irvine	Earth System Science	Ph.D.
2009	University of California, Irvine	Earth System Science	M.S.
1994	Calif. Polytechnic University, Pomona	Finance	B.S.

## RESEARCH INTERESTS

Formulating mesoscale numerical modeling solutions built around WRF.

Historical climate reconstruction.

Weather forecasting using WRF with applications to renewable energy and wildfires.

## HONORS AND AWARDS

UCI School of Physical Sciences ARCS Foundation Scholarship Recipient, 2007–2009.

First Place Poster Presentation Award, AMS Air-Sea Interaction Conference, 2007.

Outstanding Contributions to the Dept. of Earth System Science, 2006.

Deans List, University of California, Irvine, 2001.

## PEER-REVIEWED JOURNAL ARTICLES

1. **Capps, S. B.**, and C. S. Zender (2008), Observed and CAM3 GCM Sea Surface Wind Speed Distributions: Characterization, Comparison, and Bias Reduction, *J. Climate*, Vol. 21, No. 24, 6569–6585, doi:10.1175/2008JCLI2374.1. ([PDF](#))
2. **Capps, S. B.**, and C. S. Zender (2009), Global Ocean Wind Power Sensitivity to Surface Layer Stability, *Geophys. Res. Lett.*, 36, L09801, doi:10.1029/2008GL037063. ([PDF](#))
3. **Capps, S. B.**, and C. S. Zender (2009b), The Estimated Global Ocean Wind Power Potential from QuikSCAT Observations, Accounting for Turbine Characteristics and Siting, *J. Geophys. Res.*, 115, L09102, doi:10.1029/2009JD012679. ([PDF](#))
4. Berg, N., Hall, A., **Capps S. B.**, and Hughes, M. (2013), El Nino-Southern Oscillation Impacts on Winter Winds over Southern California, *Clim. Dyn.*, DOI: 10.1007/s00382-012-1461-6.
5. Jin Y, JT Randerson, N Faivre, **SC Capps**, A Hall, and ML Goulden (2014), Contrasting controls on wildland fires in Southern California during periods with and without Santa Ana winds, *J. Geophys. Res.*, 119(3), 432450. DOI: 10.1002/2013JG002541.

6. **Capps, S. B.** and A. Hall (2014), Sensitivity of Southern California Wind Energy to Turbine Characteristics, *Wind Energy*, 17:141–159, DOI: 10.1002/we.1570.
7. Hsin-Yuan Huang, **Scott B. Capps**, Shao-Ching Huang and Alex Hall (2015), Down-scaling Near-Surface Wind Over Complex Terrain Using a Physically-Based Statistical Modeling Approach, *Clim. Dyn.*, 44(12): 5295–542. DOI: 10.1007/s00382-014-2137-1.
8. Walton D., F. Sun, A. Hall and **Scott B. Capps** (2015), A Hybrid Dynamical-Statistical Downscaling Technique, Part I: Development and Validation of the Technique, *J. Climate*, 28(12): 4597–4617. DOI:10.1175/JCLI-D-14-00196.1 .
9. Berg, N., A. Hall, F. Sun, **Capps, S. B.**, D. Walton, B. Langenbrunner and D. Neelin (2014), 21st-Century Precipitation Changes over the Los Angeles Region, *J. Climate*, 28(2): 4014–21. DOI:10.1175/JCLI-D-14-00316.1.
10. Tom Rolinski, **Scott B. Capps**, Robert G. Fovell, Yang Cao, Brian J. D’Agostino, Steve Vanderburg (2016), The Santa Ana Wildfire Threat Index: Methodology and Operational Implementation, *Wea. Forecasting*, 31, 1881–1897, DOI:10.1175/WAF-D-15-0141.1. URL = <http://dx.doi.org/10.1175/WAF-D-15-0141.1>
11. Rolinski, T., **Scott B. Capps**, and W. Zhuang, (2019): Santa Ana Winds: A Descriptive Climatology. *Wea. Forecasting*, 34, 257–275, DOI:10.1175/WAF-D-18-0160.1. URL = <https://doi.org/10.1175/WAF-D-18-0160.1>

## WHITE PAPERS

1. Fengpeng Sun, Alex Hall, Daniel Walton, **Scott Capps**, Katharine Davis Reich (2013), Mid- and End-of-Century Snowfall in the Los Angeles Region, Available online: <http://c-change.la/wp-content/uploads/2013/06/Snowfall-Final-Report.pdf>.
2. Alex Hall, Fengpeng Sun, Daniel Walton, **Scott Capps**, Xin Qu, Hsin-Yuan Huang, Neil Berg, Alexandre Jousse, Marla Schwartz, Mark Nakamura, Ruth Cerezo-Mota (2013), Mid-century Warming in the Los Angeles Region, Available online: <http://c-change.la/pdf/LARC-web.pdf>.

## EXTENDED ABSTRACTS

1. **Capps, S. B.** and C. S. Zender (2007), Using QuikSCAT-Derived Surface Winds and a GCM to Improve Predicted Wind Speed Variability and Ocean Surface Fluxes, *15th Conference on Air-Sea Interaction* Paper P1.13, August 20–23, Portland, OR. American Meteorological Society

## PRESENTATIONS AT PROFESSIONAL MEETINGS AND WORKSHOPS

1. **Sander Veraverbeke, S. Capps, J. Randerson, S. Hook, Y. Jin, A. Hall, E. Prins** (2013), Interactions between fire weather and biomass burning during Santa Ana events in Southern California Presented by Sander Veraverbeke at the 2013 American Geophysical Union meeting San Francisco, CA

2. **Jin, Y., Faivre, N., Randerson, J., Goulden, M., Capps, S. B., Hall, A.** (2012), Modeling Climate-Wildfire Relations in Mediterranean California Presented by Jin, Y. at the 2012 American Geophysical Union meeting San Francisco, CA
3. **Capps, S. B.** (2011), Future Climate Change and Southern California Presented by S. Capps to the Los Angeles County Metropolitan Transportation Authority Los Angeles, CA, Sept 29, 2011
4. **Capps, S. B.** and C. Whiteman (2010), Vertum Partners Business Plan. Presented by C. Whiteman and S. Capps at the California Clean Innovation Fast Pitch Competition, Los Angeles, CA, May 7, 2010.

## TEACHING EXPERIENCE

- Designed a three week curriculum to cover topics central to meteorology.
- Supplemented learning with in-class demonstrations and analysis of current events.
- Prepared homework, tests and demonstrations.

### *Instructor (January, 2009)*

Introduction to Meteorology, Scott B. Capps  
Grade 10, Waldorf School of Orange County

- Enabled understanding of course concepts through discussion sections and lectures.
- Assisted in test and homework development, preparation and grading.
- Advised and tutored students during regularly scheduled office hours.

### *Teaching Assistant (Winter, 2008)*

The Physical Environment, Dr. William S. Reeburgh  
Dept. of Earth System Science, University of California, Irvine

### *Teaching Assistant (Winter, 2006)*

Climate Change and Policy, Dr. Charles Zender  
Dept. of Earth System Science, University of California, Irvine

### *Teaching Assistant (Fall, 2005)*

The Physical Environment, Dr. James Famiglietti  
Dept. of Earth System Science, University of California, Irvine

## OUTREACH

1. **CLEAN Education** (2010): The Water Resources Game and The American Pika. Presented by S. Capps and M. Tosca at Lincoln Elementary School, November 2010.
2. **CLEAN Education** (2010): The Water Resources Game. Presented by S. Capps, C. Goedhart at the OCWD Children's Water Education Festival, April 2010.
3. Orange County Weather Blog Administrator and Co-Forecaster, (Fall 2007–present) *Sprinklers or not?* (<http://sprinklersornot.com/>).

4. **CLEAN Education** (2009): Southern California Water Sources. Presented by S. Capps, F. Hopkins, M. Anderson to Hicks Canyon Elementary, June 2009.

## **OTHER PROFESSIONAL EXPERIENCE**

*Programmer*, The Impac Companies (**2002–2004**)

Maintained and enhanced company-wide accounting system.

Assisted in the implementation of a loan servicing and origination package.

Database administration.

*Programmer*, Southern Pacific Bank (**1998–2002**)

Designed, built and supported company-wide intranet.

Supported company-wide accounting system.

Built various database intensive applications.

*Credit Associate*, Union Bank of California (**1997–1998**)

Conducted underwriting of small business loans.

## **ENTREPRENEURIAL EXPERIENCE**

*V.P./Co-Founder/Curriculum Developer/Presenter*, CLEAN Education (**2008–2013**)

Addressing **C**limate Change through **L**earning, **E**mpowerment, **A**ction, and **N**etworking.

A non-profit organization founded on the belief that education is the essential foundation for global climate change solutions (<http://www.cleaneeducation.org/>).

## **MEMBERSHIPS**

1. American Meteorological Society (AMS), 2005–present.
2. American Geophysical Union (AGU), 2004–present.