

# Rachel L. Storer

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## EDUCATION

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- JULY 2012 Ph.D. Atmospheric Science  
*Colorado State University, Fort Collins, CO*  
Dissertation: Cloud-aerosol interactions: investigating the role of the ice phase  
Advisor: Dr. Sue van den Heever
- JAN 2009 M.S. Atmospheric Science  
*Colorado State University, Fort Collins, CO*  
Thesis: Modeling aerosol effects on convection in differing storm environments  
Advisors: Dr. Graeme Stephens and Dr. Sue van den Heever
- MAY 2006 B.S. Meteorology  
*Pennsylvania State University, University Park, PA*  
Graduated Cum Laude

## RESEARCH EXPERIENCE

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- APRIL 2020 - PRESENT Assistant Researcher IV  
*JIFRESSE, UCLA/NASA Jet Propulsion Laboratory*
- NOV 2017 - APRIL 2020 Research Scientist I  
*Department of Atmospheric Science, Colorado State University*
- JULY 2015 - NOV 2017 Postdoctoral Fellow  
*Department of Atmospheric Science, Colorado State University*  
Advisor: Professor Graeme Stephens  
Simulations and satellite studies of clouds and convection
- MAY 2014 - APRIL 2015 Postdoc Employee  
*Scripps Institution of Oceanography, University of California - San Diego*  
Advisor: Dr. Guang Zhang  
Improving convective parameterization of tropical convection
- DEC 2012 - APRIL 2014 Postdoctoral Research Associate  
*Department of Mathematical Science, University of Wisconsin - Milwaukee*  
Advisor: Professor Vince Larson

AUG 2006 – JULY 2012 Improving the representation of deep convection in single column model simulations  
 Graduate Research Assistant  
*Department of Atmospheric Science, Colorado State University*  
 Advisors: Professors Graeme Stephens and Sue van den Heever  
 Investigated aerosol indirect effects on deep convection

SEP 2007 – JUNE 2012 Weather Observer at Fort Collins Weather Station  
 JULY 2011 Field Campaign Participant  
*Ice in Clouds Experiment - Tropical (ICE-T)* field campaign, St. Croix, VI  
 Worked in a team to provide daily forecasts and present daily forecast discussions  
 Provided preliminary analysis of data from SID-2H probe

SUMMER 2005 Research Experience for Undergraduates  
*Department of Meteorology, Pennsylvania State University*  
 Topic: measuring potential aerosol mass  
 Mentors: Dr. William Brune, and Eunha Kang (Ph.D. candidate)  
 Assisted in instrumentation and lab work

## GRANTS

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- NASA ROSES 2018: CloudSat and CALIPSO Science Team, 2019-2022, Co-Investigator
- NASA ROSES 2018: Advanced Information Systems Technology, Co-Investigator

## PEER REVIEWED PUBLICATIONS

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- Storer, R.L. and D.J. Posselt, 2019: Environmental impacts on the flux of mass through deep convection. *Q. J. R. Meteorol Soc*; 145: 3832-3845.
- Stephens, G.L., S.C. van den Heever, Z.S. Haddad, D.J. Posselt, R.L. Storer, L.D. Grant, O.O. Sy, T.N. Rao, S. Kumar, S. Tanelli, and E. Peral, 2019: A distributed small satellite approach for measuring convective transport in the Earth's atmosphere. *IEEE Transactions*, 10pp.
- Storer, R.L., G.J. Zhang, and X. Song, 2015: Effects of convective microphysics parameterization on large-scale cloud hydrological cycle and radiative budget in tropical and midlatitude convective regions. *J. Clim.*, 28, 9277-9297.
- Storer, R.L., B.M. Griffin, J. Höft, J. K. Weber, E. Raut, V. E. Larson, M. Wang, and P. J. Rasch, 2015: Parameterizing deep convection using the assumed probability density function method. *Geosci. Model Dev.*, 8, 1-19.
- Storer, R.L., S.C. van den Heever, and T.S. L'Ecuyer, 2014: Aerosol induced convective invigoration observed in the tropical east Atlantic. *J. Geophys. Res.*, 119, 3963-3975.
- Storer, R.L., and S.C. van den Heever, 2013: Microphysical processes evident in aerosol forcing of tropical deep convective clouds. *J. Atmos. Sci.*, 70, 430-446.

- Storer, R.L., S.C. van den Heever, and G. L. Stephens, 2010: Modeling aerosol impacts on convective storms in different environments: *J. Atmos. Sci.*, 67, 3904-3915.

## SELECTED CONFERENCE PRESENTATIONS

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- Storer, R.L., K.A. Schiro, and D.J. Posselt, 2020: The influence of moisture on the development of tropical deep convection in high resolution simulations. AMS Annual Meeting, Boston, Massachusetts.
- Storer, R.L., K.A. Schiro, and D.J. Posselt, 2019: Moisture controls on the behavior of simulated deep convection. Poster: AGU Fall Meeting, San Francisco, California.
- van den Heever, S.C., L.D. Grant, G.L. Stephens, Z.S. Haddad, R.L. Storer, O.O. Sy, D.J. Posselt, 2018: The challenges of representing vertical motion in numerical models, Proc. SPIE 10782, Remote Sensing and Modeling of the Atmosphere, Oceans, and Interactions VII, 1078204.
- Storer, R.L., 2018: Clouds in a changing climate (*Invited*), AAPT Winter Meeting, San Diego, California.
- Storer, R.L., D.J. Posselt, and G.L. Stephens, 2017: Water balances of deep convection. GEWEX UTCC PROES Meeting, New York, New York.
- Storer, R.L., G. L. Stephens, and S. C. van den Heever, 2016: Do deep convective water budgets change in a warmer climate? International Conference on Clouds and Precipitation, Manchester, UK.
- Storer, R.L. and S.C. van den Heever, 2011: Examining aerosol indirect effects on tropical deep convection. Poster: AMS Annual Meeting, 3rd Symposium on Aerosol-cloud-climate interactions, Seattle, Washington
- Storer, R.L., S.C. van den Heever, and G.L. Stephens, 2009: Modeling aerosol impacts on convective storms in different environments. Session 7, AMS 13th Conference on Mesoscale Processes, Salt Lake City, Utah.

## TEACHING EXPERIENCE

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JULY 2009, JULY 2010	Trainer for Academic Professionals, Weather and Climate for Teachers <i>Center for Multiscale Modeling of Atmospheric Processes, Colorado State University</i>
FALL 2009	Graduate Teaching Assistant <i>Department of Atmospheric Science, Colorado State University</i> AT 540 Daily Weather Lab
SPRING 2008	Graduate Teaching Assistant, Laboratory Instructor <i>Department of Atmospheric Science, Colorado State University</i> AT 350 Introduction to Weather and Climate AT 351 Introduction to Weather and Climate Lab

## PROFESSIONAL AND OUTREACH ACTIVITIES

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Awards 2011: *Third place student poster award, AMS annual meeting*, 2010: *Herbert Riehl Memorial Award*, 2006: *Colorado State Graduate Fellowship*

Reviewer *Journal of the Atmospheric Sciences, Geophysical Research Letters, Journal of Geophysical Research - Atmospheres, Nature Communications, Nature Geoscience, Quarterly Journal of the Royal Meteorological Society, Atmospheric Chemistry and Physics, Atmosphere, Atmospheric Measurement Techniques,*

Member *American Geophysical Union, American Meteorological Society, Climate Voices, Earth Science Women's Network*

### Panelist

- NASA ROSES, Applied Science Program, 2018
- NASA SMD Independent Product Review, 2018,2020

### Session Cochair

- Atmospheric Convection: Processes, Dynamics, and Links to Weather and Climate, 2019 AGU Fall Meeting
- Convective Clouds: Processes, Dynamics, and Links to Weather and Climate, 2018 AGU Fall Meeting
- Upper Tropospheric Clouds and Convection: Processes, Dynamics, and Feedbacks in Weather and Climate, 2017 AGU Fall Meeting

### Workshops

- Completed the SciFund Challenge outreach 101 course, Fall 2014
- Attended "Defining Your Research Identity" workshop, hosted by the Earth Science Women's Network, Boulder, CO, June 2011

### Public Talks

- "Climate Change in Coastal California", talk at Sierra Club meeting, Temecula, CA, June 2015
- Talk for Earth Day Green Faith event, Foothills United Methodist Church, La Mesa, CA, April 2015
- Part of a group talking about severe weather and storm chasing, Loveland High School, Loveland, CO, May 2010,2011
- Talk for a senior living community about severe weather and storm chasing, Fort Collins, CO, Summer 2010