

## Spencer Koncius Clark

219 Sayre Hall, 300 Forrestal Rd, Princeton, NJ 08544  
(703)-380-9690 skclark@princeton.edu [spencerklark](#)

---

### Education

**Princeton University**, Princeton, NJ  
*Ph.D., Atmospheric and Oceanic Sciences* Sept. 2014 - Present  
Advisor: Yi Ming

**Princeton University**, Princeton, NJ  
*M.A., Atmospheric and Oceanic Sciences* Sept. 2016

**Cornell University – College of Engineering**, Ithaca, NY  
*B.S., Engineering Physics; Honors in Research; magna cum laude* May 2014  
Thesis Advisor: Natalie Mahowald

### Research Experience

**Princeton University, Program in Atmospheric and Oceanic Sciences**, Princeton, NJ  
*Research Assistant* May 2015 - Present

- Studied the role of water vapor in the ITCZ response to hemispherically asymmetric perturbations.
- Currently investigating the extent to which monsoon low pressure systems can be simulated in an idealized moist GCM.

**Cornell University, Department of Earth and Atmospheric Sciences**, Ithaca, NY  
*Research Assistant* Jan. 2011 - Mar. 2017

- Characterized the episodicity of forest and grass fires and developed 7 new prescribed emissions cases to test the impact of fire episodicity on fire's aerosol direct and indirect radiative forcings.
- Implemented 8 GCM lightning parameterizations in CAM5, compared their results to LIS/OTD observations, and studied their future projections.

### Teaching Experience

**Cornell University, Department of Applied and Engineering Physics**, Ithaca, NY  
Mathematical Physics II (AEP 4220) Spring 2014  
*Grader*

- Held weekly office hours, wrote official solutions to and graded homework and exam problems.

**Princeton University, Princeton Environmental Institute**, Princeton, NJ  
Modeling the Earth System (ENV367) Fall 2017  
*Assistant in Instruction*

- Modified an existing implementation of a compact Earth System Model ([Gasser et al. 2017](#)), which formed the basis of the course. Modifications were required to make the model more user-friendly, and better suited to be run in an interactive Jupyter notebook.
- Wrote comprehensive [web-based documentation](#) to describe the model as well as its new interface.
- Created lab exercises to help students learn about the features and limitations of the model, and illustrate Earth System Modeling concepts.

### Refereed Publications

**Clark, S. K.**, Ming, Y., Held, I. M., and Philipps, P. J. (2018). "The Role of the Water Vapor Feedback in the ITCZ Response to Hemispherically Asymmetric Forcings." *Journal of Climate*, 31(9), 3659-3678. [↗](#)

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "Parameterization-based uncertainty in future lightning flash density." *Geophysical Research Letters*, 44(6), (2017), 2893-2901. [↗](#)

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "The sensitivity of global climate to the episodicity of fire aerosol emissions." *Journal of Geophysical Research: Atmospheres*, 120(22) (2015), 11589-11607. [↗](#)

## Selected Honors and Awards

Arnold Guyot Teaching Award, <i>Princeton University Department of Geosciences</i>	2018
NDSEG Fellowship, <i>American Society for Engineering Education</i>	2016-2019
Honorable Mention, NSF Graduate Research Fellowship, <i>National Science Foundation</i>	2014, 2015, 2016
Dorothy and Fred Chau Award (Excellence in Undergraduate Research), <i>Cornell AEP</i>	May 2014
Intercollegiate Tennis Association Scholar Athlete, <i>ITA</i>	2012, 2013
Rawlings Cornell Presidential Research Scholar, <i>Cornell</i>	2010-2014

## Professional Experiences

Contributor, <i>Pangeo-data</i> 	November 2016 - Present
Organizer, <i>Princeton AOS Workshop</i>	2016
Participant, <i>Dynamical Core Model Intercomparison Project Workshop</i> 	June 2016

## Software

Contributor to [aospy](#) , [xarray](#) , [cftime](#) , and [dask-jobqueue](#) .

## Service

Assistant mentor to NOAA Hollings Scholar Bridgette Befort (2017).

## Reviewing

Peer-reviewed manuscripts for the following journals: *Nature*, *Nature Climate Change*, *Journal of Geophysical Research – Atmospheres*.

## Presentations

**Clark, S. K.**, Ming, Y. "Investigating synoptic-scale monsoonal disturbances in an idealized moist model." AGU Fall Meeting 2017, New Orleans, LA, December 2017. Poster Presentation.

**Clark, S. K.**, Ming, Y., Held, I. M., and Philipps, P. J. "The role of water vapor in the ITCZ response to hemispherically asymmetric forcings." Dynamics seminar series, Princeton University, Princeton, NJ, November 2017. Oral Presentation.

**Clark, S. K.**, Ming, Y., and Held, I. M. "The role of water vapor in the ITCZ response to hemispherically asymmetric forcings." AGU Fall Meeting, San Francisco, CA, December 2016. Poster Presentation.

Hill, S. A., **Clark, S. K.** "The other 'aospy': automated climate data analysis and management." AOSPy Workshop at Columbia University, New York, NY, November 2016. Oral Presentation.

**Clark, S. K.**, Ming, Y., and Held, I. M. "The role of water vapor in the ITCZ response to hemispherically asymmetric forcings." WCRP Model Hierarchies Workshop, Princeton, NJ, November 2016. Poster Presentation.

**Clark, S. K.**, Ming, Y., and Held, I. M. "The role of water vapor in the ITCZ response to hemispherically asymmetric forcings." Dynamical Core Model Intercomparison Project, Boulder, CO, June 2016. Poster Presentation.

**Clark, S. K.**, Ming, Y., and Held, I. M. "Climate Impacts of Inter-hemispherically Asymmetric Radiative Forcing." AGU Fall Meeting, San Francisco, CA, December 2015. Poster Presentation.

**Clark, S. K.**, Ming, Y., and Held, I. M. "Climate Impacts of Inter-hemispherically Asymmetric Radiative Forcing." Gordon Research Conference, Lewiston, ME, July 2015. Poster Presentation.

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "The implementation and evaluation of five lightning parameterizations in a global climate model." Cornell Applied and Engineering Physics Honors Thesis Presentation, Ithaca, NY, May 2014.

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "The sensitivity of global climate to the episodicity of fire aerosol emissions." SESSA Spring Research Symposium, Ithaca, NY, May 2013. Poster Presentation.

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "Climate Model Responses to Increased Episodicity in Prescribed Fire Aerosol Emissions." CESM Workshop, Breckenridge, CO, June 2012. Poster Presentation.

**Clark, S. K.**, Ward, D. S., and Mahowald, N. M. "Climate Model Responses to Increased Episodicity in Prescribed Fire Aerosol Emissions." SESSA Spring Research Symposium, Ithaca, NY, May 2012. Poster Presentation.

## Activities

Varsity Tennis, Cornell University

Sept. 2010 - May 2014