

## Current position

January 2019 – present     **Postdoctoral Fellow**  
Center for the Environment, Harvard University  
Department of Earth and Planetary Sciences, Harvard University

## Education

2013 – 2018	<b>UC Berkeley</b> , Berkeley, CA  Advisor: David M. Romps	<b>Ph.D., Earth and Planetary Science</b>
2008 – 2012	<b>Haverford College</b> , Haverford, PA Magna cum laude, Phi Beta Kappa Minor: Philosophy	<b>B.Sc., Physics</b>

## Publications (asterisk denotes equal contribution)

- 2023     **J. T. Seeley** and R.D. Wordsworth, “Moist convection is most vigorous at intermediate atmospheric humidity”, *Planetary Science Journal*, vol. 4, doi:10.3847/PSJ/acb0cb, 2023.
- 2022     D. M. Romps\*, **J. T. Seeley\***, and J. P. Edman “Why the forcing from carbon dioxide scales with the logarithm of its concentration”, *Journal of Climate*, vol. 35, 4027–4047, <https://doi.org/10.1175/JCLI-D-21-0275.1>, 2022.
- 2021     **J. T. Seeley** and R.D. Wordsworth, “Episodic deluges in simulated hothouse climates”, *Nature*, vol. 599, 74–79, doi:10.1038/s41586-021-03919-z, 2021.
- 2021     N. Jeevanjee, **J. T. Seeley**, D. Paynter, and S. Fueglistaler, “An analytical model for spatially varying clear-sky CO<sub>2</sub> forcing”, *Journal of Climate*, doi:10.1175/JCLI-D-19-0756.1, 2021.
- 2021     Y. Chen, D. M. Romps, **J. T. Seeley**, S. Veraverbeke, W. J. Riley, Z. A. Mekonnen, and J. T. Randerson, “Future increases in Arctic lightning and fire risk for permafrost carbon”, *Nature Climate Change*, vol. 11, 404–410, 2021.
- 2020     **J. T. Seeley** and N. Jeevanjee, “H<sub>2</sub>O windows and CO<sub>2</sub> radiator fins: a clear-sky explanation for the peak in ECS”, *Geophysical Research Letters*, vol. 47, e2020GL089609, <https://doi.org/10.1029/2020GL089609>, 2020.
- 2020     **J. T. Seeley**, N. J. Lutsko, and D. Keith, “Designing a radiative antidote to CO<sub>2</sub>”, *Geophysical Research Letters*, vol. 47, e2020GL090876, <https://doi.org/10.1029/2020GL090876>, 2020.

- 2020 N. J. Lutsko, **J. T. Seeley**, and D. Keith, “Estimating impacts and trade-offs in solar geoengineering scenarios with a moist energy balance model”, *Geophysical Research Letters*, vol. 47, doi:10.1029/2020GL087290, 2020.
- 2019 **J. T. Seeley**, N. Jeevanjee, and D. M. Romps, “FAT or FiTT: Are anvil clouds or the tropopause temperature-invariant?”, *Geophysical Research Letters*, vol. 46, doi:10.1029/2018GL080096, 2019.
- 2019 **J. T. Seeley**, N. Jeevanjee, W. L. Langhans, and D. M. Romps, “Formation of tropical anvil clouds by slow evaporation”, *Geophysical Research Letters*, vol. 46, doi:10.1029/2018GL080747, 2019.
- 2016 **J. T. Seeley** and D. M. Romps, “Tropical cloud buoyancy is the same in a world with or without ice”, *Geophysical Research Letters*, vol. 43, doi:10.1002/2016GL068583, 2016.
- 2015 **J. T. Seeley** and D. M. Romps, “Why does tropical convective available potential energy (CAPE) increase with warming?”, *Geophysical Research Letters*, vol. 42, doi:10.1002/2015GL066199, 2015.
- 2015 **J. T. Seeley** and D. M. Romps, “The effect of global warming on severe thunderstorms in the United States”, *Journal of Climate*, vol. 28, 2443–2458, 2015.
- 2015 A. Tranter, S. Sofia, **J. T. Seeley**, M. Kaicher, J. McClean, R. Babbush, P. V. Coveney, F. Mintert, F. Wilhelm, P. J. Love, “The Bravyi-Kitaev transformation: properties and applications”, *International Journal of Quantum Chemistry*, vol. 115, no. 19, 1431–1441, 2015.
- 2014 D.M. Romps, **J. T. Seeley**, D. Volaro, J. Molinari, “Projected increase in lightning strikes in the United States due to global warming”, *Science*, vol. 346, no. 6211, 851–854, 2014.
- 2012 **J. T. Seeley**, M. Richard, P. Love, “The Bravyi-Kitaev transformation for quantum computation of electronic structure”, *Journal of Chemical Physics*, vol. 137, 2012.
- 2012 S. Yuan, M. Kim, **J. T. Seeley**, J.C. Lee, S. Lal, S.L. Cooper, “Inelastic light scattering measurements of a pressure-induced quantum liquid in  $\text{KCuF}_3$ ”, *Physical Review Letters*, vol. 109, 2012.

## Honors

- February 2018 **T. C. Chamberlin Postdoctoral Fellowship (declined)**  
Department of the Geophysical Sciences, University of Chicago
- February 2018 **Bernoulli Postdoctoral Fellowship (declined)**  
Department of Physics, University of Oxford; Center for Space and Habitability, University of Bern

December 2017	<b>Outstanding student paper award (OSPA)</b> American Geophysical Union (AGU) Fall Meeting 2017
June 2017	<b>Best oral presentation by a student</b> 21st Conference on Atmospheric and Oceanic Fluid Dynamics
April 2014	<b>Graduate Research Fellowship</b> National Science Foundation
January 2013	<b>Berkeley Graduate Fellowship</b> University of California, Berkeley
May 2012	<b>Louis B. Green Prize in Physics</b> Haverford College

### **Outreach**

2018	<b>Co-founder, Climate Up Close (CUC)</b> <a href="http://www.climateupclose.org">www.climateupclose.org</a> This outreach organization facilitates face-to-face interactions between climate scientists and the public.
August 2018	<b>CUC tour in Central Pennsylvania</b> 9 events over the course of a week, 500 total attendees
January 2019	<b>CUC tour in Philadelphia, PA</b> 4 events in a weekend, 300 total attendees

### **Oral presentations**

October 25, 2021	“Climate sensitivity and convective dynamics of super-warm atmospheres” Department of Earth, Atmospheric, and Planetary Sciences, MIT Program in Atmospheres, Oceans, and Climate (PAOC) Colloquium
October 21, 2021	“Climate sensitivity and convective dynamics of super-warm atmospheres” Department of Environmental Sciences, University of Virginia Environmental Sciences Seminar Series
October 13, 2021	“Climate sensitivity and convective dynamics of super-warm atmospheres” School of Marine and Atmospheric Sciences, Stony Brook University Topics in Atmospheric and Oceanic Sciences (TAOS) Seminar Series
December 11, 2020	“H <sub>2</sub> O windows and CO <sub>2</sub> radiator fins: a clear-sky explanation for the peak in ECS” American Geophysical Union (AGU) Fall Meeting 2020 Virtual Conference

November 22, 2019	“The physics of climate and global warming” Department of Physics, Hartwick College Oneonta, NY
December 12, 2018	“Formation of tropical anvil clouds by slow evaporation” (invited) American Geophysical Union (AGU) Fall Meeting 2018 Walter E. Washington Convention Center, Washington, D.C.
November 29, 2018	“Why don’t puddles dry on cold days, and what does that have to do with clouds and climate?” (exit seminar) Department of Earth and Planetary Science, UC Berkeley McCone Hall, Berkeley, CA
April 19, 2018	“FiTT or FAT? Anvil clouds and the tropopause in radiative-convective equilibrium” 33rd Conference on Hurricanes and Tropical Meteorology Sawgrass Marriott, Ponte Vedra, FL
January 10, 2018	“Disentangling anvil clouds from the tropopause” (invited) Department of the Geophysical Sciences, University of Chicago Henry Hinds Laboratory, Chicago, IL
December 13, 2017	“On the existence of tropical anvil clouds” American Geophysical Union (AGU) Fall Meeting 2017 Ernest N. Morial Convention Center, New Orleans, LA <b>Winner, “Outstanding Student Paper Award (OSPA)”</b>
June 27, 2017	“A new paradigm for tropical anvil clouds” 21st Conference on Atmospheric and Oceanic Fluid Dynamics Marriott Portland Downtown Waterfront, Portland, OR <b>Winner, “Best oral presentation by a student”</b>
April 18, 2016	“The shape of CAPE: undilute parcel buoyancy in the tropics” 32nd Conference on Hurricanes and Tropical Meteorology The Condado Hilton Plaza, San Juan, PR

## Teaching

Summer 2020	<b>Summer Undergraduate Research Fund supervisor</b> Project title: “The future of lightning in a warming world” (Harvard University) 2 students supervised
Fall 2017, 2018	<b>Graduate Student Reader</b> EPS 7: Climate Change (UC Berkeley)
Spring 2015	<b>Graduate Student Instructor</b> L&S 70b: Global Warming (UC Berkeley)

Fall 2014

**Graduate Student Instructor**

EPS 181: Atmospheric Physics and Dynamics (UC Berkeley)

Fall 2012

**Teaching Assistant**

PHYS 213: Thermal Physics (University of Illinois at Urbana-Champaign)

**Academic references**

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