

Clare Singer
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1200 E. California Blvd., MC C1-221
Pasadena, CA 91125

Education

- **California Institute of Technology** Pasadena, CA
Department of Environmental Science and Engineering
– M.S. June 2020; Ph.D. expected June 2023
October 2018 - Present
- **University of Chicago** Chicago, IL
BA Physics, BS Mathematics
September 2014 - June 2018

Research Experience

- **Caltech, Department of Environmental Science & Engineering** Pasadena, CA
Advisor: Dr. Tapio Schneider
– I work on cloud feedbacks, understanding how cloud dynamics and interactions with aerosols and radiation are important for climate, using high-resolution simulations and pencil-and-paper theory.
October 2018 - Present
- **University of Chicago, Department of the Geophysical Sciences** Chicago, IL
Advisor: Dr. Liz Moyer
– Helped test, calibrate, and operate the Chicago Water Isotope Spectrometer (ChiWIS) that flew in the StratoClim campaign in July/August 2017 over the Asian monsoon. Processed and analyzed data from the StratoClim campaign.
January 2017 - Present

Selected Publications

1. **C.E. Singer**, I. Lopez-Gomez, X. Zhang, T. Schneider, “Top-of-atmosphere albedo bias from neglecting three-dimensional cloud radiative effects.” *Journal of Atmospheric Science*, In Review.
2. **C.E. Singer**, B. Clouser, E.J. Moyer, et al., “Intercomparison of UTLS water vapor measurements over the Asian Summer Monsoon.” *Atmospheric Measurement Techniques*, In Prep.
3. S. Khaykin, E.J. Moyer, M. Krämer, B. Clouser, **C.E. Singer**, et al., “Persistence of moist plumes from overshooting convection in the Asian monsoon anticyclone.” *Atmospheric Chemistry and Physics*, In Prep.
4. B. Clouser, **C.E. Singer**, E.J. Moyer, et al. “Isotopic composition of water vapor in the Asian Summer Monsoon.” *Atmospheric Chemistry and Physics*, In Prep..
5. Y. Ming, N.G. Loeb, P. Lin, Z. Shen, V. Naik, **C.E. Singer**, et al., “Assessing the influence of COVID19 on the shortwave radiative fluxes over the East Asian Marginal Seas.” *Geophysical Research Letters*, e2020GL091699, 2020.
6. R. Bernstein, **C.E. Singer**, S.P. Singh, C. Mao, C.J. Arnusch, “UV initiated surface grafting on polyethersulfone ultrafiltration membranes via ink-jet printing assisted modification.” *Journal of Membrane Science*, **548** (2018).
7. K.A. Murphy, N. Reiser, D. Chosky, **C.E. Singer**, H.M. Jaeger, “Freestanding loadbearing structures with Z-shaped particles.” *Granular Matter*, **18**, 26 (2016).

Selected Awards, Fellowships, and Honors

Richard H. Jahns Teaching Award	2021
NSF Graduate Research Fellowship	2018-2021
John Haeseler Lewis Prize (top graduating physics major)	2018
Barry M. Goldwater Scholarship	2017
David W. Grainger Fellowship (top rising senior in physics)	2017
Astronaut Scholarship	2017
Phi Beta Kappa (top 2% by GPA)	2017

Outreach and Leadership Activities

- **Caltech Women in GPS** Pasadena, CA
President (2021-2022); Vice President (2019-2021) *2019 - Present*
 - Manages and oversees club activities – including journal club discussions, workshops, and social events – communicates with faculty, and recruiting new members.
- **Caltech Diversity and Inclusion Ambassador** Pasadena, CA
Completed CDIA advocacy project in 2020-2021 academic year *2020 - Present*
 - My advocacy project involves establishing a data-driven framework through which invited seminar speaker's demographics can be tracked over time and used to assess departmental progress towards diversity targets
- **Caltech Title IX Student Leadership Team** Pasadena, CA
Giving Voice script writer (2019-2020); Title IX Council member (2019-2020) *2019 - 2021*
 - My work on the Student Advisory Council and with Giving Voice creates awareness around Title IX issues and provides resources for students, staff, and faculty.

Technical Skills

- **Programming Languages:** Python, IDL, L^AT_EX(advanced); Julia, Bash, MatLab, SLURM (intermediate); C++, Java, Mathematica (beginner).
- **Software Knowledge:** Microsoft Office, Jupyter, Git (advanced); ImageJ, Affinity Designer, Autodesk Inventor, Adobe Illustrator and Photoshop (beginner).