**Seung Hun Baek** Nationality: USA

Department of Earth & Planetary Sciences, Yale University Tel: (703)-307-4414

210 Whitney Avenue, New Haven, CT 06511 Email: seunghun.baek@yale.edu

**Appointments**

*Postdoctoral Associate*, Yale University 2020-present

*Graduate Research Assistant*, Columbia University 2015-2020

**Education**

*Ph.D., Earth & Environmental Sciences*, Columbia University 2015-2020

*B.A., Environmental Science*, Columbia University 2010-2014

**Fellowships and Awards**

* Richard Foster Flint Postdoctoral Fellowship ($130K), Yale University (2020-2022)
* 1st Place ($500), Expert Scored Poster Presentation, Yale Climate Day (2021)
* Nominee, Schmidt Science Fellows (2019)
* Honorable Mention, National Science Foundation Research Fellowship (2016)
* Dean’s Fellow (5-yr full funding), Columbia University (2015-2020)

**Publications Pending**

14. J.M. Lora, C.B. Skinner, W.D. Rush, **S.H. Baek**. The hydrologic cycle and atmospheric rivers in CESM2 simulations of the Last Glacial Maximum, *submitted*.

13. **S.H. Baek**, Y. Kanzaki, J.M. Lora, N. Planavksy, C. Reinhard, S. Zhang. Impacts of climate on the global capacity for enhanced rock weathering on croplands, *submitted.*

**Peer Reviewed Publications**

12. **S.H. Baek**, J.M. Battalio, J.M. Lora (2023). Atmospheric river variability over the last millennium driven by annular modes, *AGU Advances*, <https://doi.org/10.1029/2022AV000834>.

11. **S.H. Baek**, Y. Kushnir, M. Ting, J.E. Smerdon, J.M. Lora (2022). Regional Signatures of Forced North Atlantic SST Variability: A Limited Role for Aerosols and Greenhouse Gases, *Geophysical Research Letters,* <https://doi.org/10.1029/2022GL097794>.

10. Scholz, S.R., R. Seager, M. Ting, Y. Kushnir, J.E. Smerdon, B.I. Cook, E.R. Cook, **S.H. Baek** (2022). Changing hydroclimate dynamics and the 19th to 20th century wetting trend in the English Channel region of northwest Europe, *Climate Dynamics,*

https://doi.org/10.1007/s00382-021-05977-5.

9. **S.H. Baek**, Y. Kushnir, W.A. Robinson, J.M. Lora, D.E. Lee, M. Ting (2021). An Atmospheric Bridge Between the Subpolar and Tropical Atlantic Regions: A Perplexing Asymmetric Teleconnection, *Geophysical Research Letters*, <https://doi.org/10.1029/2021GL096602>

**Peer Reviewed Publications (continued)**

8. **S.H. Baek** and J.M. Lora (2021). Counterbalancing influences of aerosols and greenhouse gases on atmospheric rivers, *Nature Climate Change,*

https://doi.org/10.1038/s41558-021-01166-8.

7. **Baek, S.H.**, J.E. Smerdon, B.I. Cook, A.P. Williams (2021). US Pacific Coastal Droughts are Predominantly Driven by Internal Atmospheric Variability, *Journal of Climate*, https://doi.org/10.1175/JCLI-D-20-0365.1

6. **Baek, S.H.**, J.E. Smerdon, G. Dobrin, J.G. Naimark, E.R. Cook, B.I. Cook, R. Seager, M.A. Cane (2020). A quantitative hydroclimatic context for the European Great Famine of 1315-1317, *Communications Earth & Environment,*

https://doi.org/10.1038/s43247-020-00016-3

5.Williams, A.P.,E.R. Cook, J.E. Smerdon, B.I. Cook, J.T. Abatzoglou, K. Bolles, **S.H. Baek**, A. Badger, B. Livneh (2020). Large contribution from anthropogenic warming to a developing North American megadrought, *Science*, https://doi.org/10.1126/science.aaz9600

4. **Baek, S.H.**, N.J. Steiger, J.E. Smerdon, R. Seager (2019). Oceanic drivers of spatially widespread droughts in the contiguous US over the Common Era, *Geophysical Research Letters*, <https://doi.org/10.1029/2019GL082838>

3**. Baek, S.H.**, J.E. Smerdon, R. Seager, A. P. Williams, B. I. Cook (2019). Pacific Ocean forcing and atmospheric variability are the dominant causes of spatially widespread droughts in the contiguous United States, *Journal of Geophysical Research – Atmospheres,* <https://doi.org/10.1029/2018JD029219>.

2. Smerdon, J.E., J. Luterbacher, S. Phipps, K.J. Anchukaitis, T.R. Ault, S. Coats, K.M. Cobb, B.I. Cook, C. Colose, T. Felis, A. Gallant, J.H. Jungclaus, B. Konecky, A. LeGrande, S. Lewis, A.S. Lopatka, W. Man, J.S. Mankin, J.T. Maxwell, B.L. Otto-Bliesner, J.W. Partin, D. Singh, N.J. Steiger, S. Stevenson, J.E. Tierney, D. Zanchettin, H. Zhang, A. Atwood, L. Andreu-Hayles, **S.H. Baek**, B. Buckley, E.R. Cook, R. D'Arrigo, S.G. Dee, M. Griffiths, C. Kulkarni, Y. Kushnir, F. Lehner, C. Leland, H.W. Linderholm, A. Okazaki, J. Palmer, E. Piovano, C.C. Raible, M.P. Rao, J. Scheff, G.A. Schmidt, R. Seager, M. Widmann, A.P. Williams, E. Xoplaki (2017), Comparing proxy and model estimates of hydroclimate variability and change over the Common Era, *Climate of the Past*, https://doi.org/10.5194/cp-13-1851-2017.

1. **Baek, S.H.**, J.E. Smerdon, S. Coats, A. P. Williams, B.I. Cook, E.R. Cook, and R. Seager (2017), Precipitation, temperature, and teleconnection signals across the combined North American, Monsoon Asia, and Old World Drought Atlases, *Journal of Climate*, https://doi.org/10.1175/JCLI-D-16-0766.1

**Invited Talks**

2023 *Current Research in Earth, Environmental and Planetary Sciences*, Department of Earth, Environmental and Planetary Sciences, Rice University.

2023 *Seminar,* Schiller Institute for Integrated Science and Society, Boston College

2023 *Seminar,* Department of Earth and Environmental Sciences*,* University of Texas-Arlington

2022 *Seminar,* Department of Earth and Environmental Sciences*,* University of Illinois Chicago.

2021 *Atmosphere Ocean Climate Dynamics Seminar,* Department of Earth and Planetary Sciences, Yale University.

2021 *Departmental Seminar,* Division of Environmental Science and Technology*,* Pohang University of Science and Technology.

2020 *Informal Seminar*, Geophysical Fluid Dynamics Laboratory.

**Conference Presentations**

2022 **Baek, S.H.**, J.M. Battalio, J.M. Lora. Atmospheric river variability over the last millennium driven by annular modes (Oral Presentation). *American Geophysical Union Fall Meeting 2022: Atmospheric Rivers: Processes, Impacts, and Uncertainties*

2022 **Baek, S.H.**, J.M. Battalio, J.M. Lora. Atmospheric river variability over the last millennium driven by annular modes (Oral Presentation). *4th International Atmospheric River Conference 2022*

2022 **Baek, S.H.**, Y. Kushnir, W.A. Robinson, J.M. Lora, D.E. Lee, M. Ting. An Atmospheric Bridge Between the Subpolar and Tropical Atlantic Regions: A Perplexing Asymmetric Teleconnection. (Oral Presentation). *European Geosciences Union General Assembly 2022: The North Atlantic: Natural Variability and Global Change*.

2022 **Baek, S.H.**, Y. Kushnir, W.A. Robinson, J.M. Lora, D.E. Lee, M. Ting. An Atmospheric Bridge Between the Subpolar and Tropical Atlantic Regions: A Perplexing Asymmetric Teleconnection. (Oral Presentation). *US Atlantic Meridional Overturning Circulation Science Team Meeting*.

2022 **Baek, S.H.** and J.M. Lora.Counterbalancing Influences of Aerosols and GHGs on Atmospheric Rivers. (Oral Presentation). *American Meteorological Society: 35th Conference on Climate Variability and Change*.

2021 **Baek, S.H.** and J.M. Lora.Counterbalancing Influences of Aerosols and GHGs on Atmospheric Rivers. (Poster Presentation). *Yale Climate Day*.

2019 **Baek, S.H.,** J.E. Smerdon, M. Ting, Y. Kushnir, R. Seager. Untangling Observed Atlantic Multidecadal Variability (Oral Presentation). *American Geophysical Union Fall Meeting 2019:* *Dynamics of Interbasin Interactions from Seasonal to Centennial Timescales I.*

2019 **Baek, S.H.,** J.E. Smerdon, M. Ting, Y. Kushnir, R. Seager. Untangling Observed Atlantic Multidecadal Variability (Poster Presentation). *US Climate Variability and Predictability Program: The Large Ensembles Workshop*.

2018 **Baek, S.H.**, N.J. Steiger, J.E. Smerdon. Parsing the dominant ocean influences on spatially widespread droughts in the contiguous US over the Common Era (Oral Presentation). *American Geophysical Union Fall Meeting 2018: Climate of the Common Era*.

2017 **Baek, S.H.**, J.E. Smerdon, R. Seager, A.P. Williams, B. I. Cook. Parsing the contributions of ocean forcings and atmospheric variability to spatially widespread droughts in the contiguous United States (Oral Presentation). *American Geophysical Union Fall Meeting 2017: Hydroclimatic Extremes: Droughts*.

2017 **Baek, S.H.**, J.E. Smerdon, S. Coats, A.P. Williams, B.I. Cook, E.R. Cook, R. Seager. Precipitation, temperature, and teleconnection signals across the combined North American, Monsoon Asia, and Old World Drought Atlases (Poster Presentation). *PAGES OSM Open Science Meeting: Large-scale hydroclimate variability and change of the Common Era: Patterns, Impacts, and Processes*.

**Teaching Experience**

2019 Fall *Teaching Assistant,* UN2200 Earth Environmental System: Earth System 2017 Spring *Teaching Assistant*, UN2310 Earth Environmental System: Life System 2016 Fall *Teaching Assistant,* W4008 Introduction to Atmospheric Science

**Journal Refereeing**

*Journal of Climate, Geophysical Research Letters, Journal of Geophysical Research – Atmospheres, Journal of Hydrology: Regional Studies*