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National Oceanic and Atmospheric Administration
Physical Sciences Laboratory
Boulder, CO USA

Education

Ph.D. – Atmospheric Science, University of California-Davis, September 2012
B.S. – Atmospheric Science, University of Wisconsin-Madison, January 2005
B.S. – Applied Mathematics, University of Wisconsin-Madison, January 2005

Appointments

May 2023-present Research Physical Scientist, National Oceanic and Atmospheric Administration (NOAA), Physical Sciences Laboratory, Boulder, Colorado

May 2022-April 2023 Research Scientist III, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder

April. 2018-April 2022 Research Scientist II, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder

Jan. 2016-April 2018 Research Scientist I, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder

Jan. 2014-Dec. 2015 National Science Foundation Atmospheric and Geospace Science Postdoctoral Fellow, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder

Oct. 2013-Dec. 2013 Postdoctoral research associate, Cooperative Institute for Research in the Environmental Sciences (CIRES), University of Colorado – Boulder (Supervisors: Drs. Judith Perlwitz and George Kiladis)

Jan. 2013-Sept. 2013 Postdoctoral research fellow, Colorado State University Department of Atmospheric Science (Supervisor: Prof. Thomas Birner)

Fall 2005-Aug. 2012 Graduate student researcher, University of California-Davis Department of Land, Air, Water Resources - Atmospheric Science Program (Advisor: Prof. Terrence R. Nathan)

Fall 2004 Student researcher (focus: nonlinear dynamics), University of California-Davis Center for Computational Sciences (Advisor: Prof. James P. Crutchfield)

Summer 2003 National Science Foundation research experiences for undergraduates, Santa Fe Institute (Advisor: Prof. James P. Crutchfield)

External activities

2018-2023 **Scientific mentor** – CIRES-CU Boulder (NSF sponsored) Research Experiences for Community College Students summer internship program

Oct. 2017 **Invited lecturer** (2 weeks) – Advanced School on Tropical-Extratropical Interactions on Intra-Seasonal Time Scales, International Centre for Theoretical Physics, Trieste, Italy

Nov. 2017-present **Associate editor** – American Meteorological Society *Monthly Weather Review*

Grants, Fellowships, and Awards

September 2023-present National Oceanic and Atmospheric Administration (NOAA) Weather Program Office Grant (Award #: NOAA-OAR-WPO-2022-2006969): *Characterizing the impact of UFS model error and bias on S2S CONUS forecast skill using a hybrid UFS-machine learning approach*

Dec. 2018-May 2023 National Science Foundation Atmospheric and Geospace Sciences Grant (NSF Award # 1756958): *The influence of climate variability and change on stratospheric intrusions of ozone over North America*

Jan. 2017 Bulletin of the American Meteorological Society Editor's Award

Jan. 2014-Dec. 2015 National Science Foundation Atmospheric and Geospace Sciences Postdoctoral Fellowship. Project title: *A Hierarchical Modeling Approach to Quantifying the Effects of Changes in Ozone and Solar Variability on the Brewer-Dobson Circulation and Tropospheric Climate.*

Summer 2011	Best graduate student presentation award – 18 th American Meteorological Society Conference on Atmospheric and Oceanic Fluid Dynamics in Spokane, WA
Spring 2010	University of California-Davis Henry A. Jastro Graduate Research Scholarship

Publications

- Lawrence, Z. D., Elsbury, D., Butler, A. H., Perlwitz, J., **Albers, J. R.**, Ciasto, L. M., Ray, E. (2023): Evaluation of Processes Related to Stratosphere–Troposphere Coupling in GEFSv12 Subseasonal Hindcasts. *Mon. Weath. Rev.*, 151, 1735-1755, <https://doi.org/10.1175/MWR-D-22-0283.1>
- Breeden, M.L., Hoell, A., **Albers, J. R.**, Slinski, K. (2023): The monthly evolution of precipitation and warm conveyor belts during the central southwest Asia wet season. *Weather Clim. Dynam.* 4, 963-980, <https://doi.org/10.5194/wcd-4-963-2023>
- Elsbury, D., Butler, A. H., **Albers, J. R.**, Breeden, M. L., Langford, A. O. (2023): The response of the North Pacific jet and stratosphere-to-troposphere transport of ozone over western North America to RCP8.5 climate forcing. *Atmos. Chem. Phys.* 23, 5101–5117, <https://doi.org/10.5194/acp-23-5101-2023>
- Breeden, M. L., **Albers, J. R.**, Hoell, A. (2022): Subseasonal precipitation forecasts of opportunity over central southwest Asia. *Weather Clim. Dynam.*, 3, 1183–1197. <https://doi.org/10.5194/wcd-3-1183-2022>
- Albers, J. R.**, Newman, M., Hoell, A., Breeden, M. L., Wang, Y., Lou, J. (2022): The February 2021 Cold Air Outbreak in the United States: a Subseasonal Forecast of Opportunity. *Bull. Amer. Met. Soc.*, 103, 12, E2887-E2904. <https://doi.org/10.1175/BAMS-D-21-0266.1>
- Albers, J. R.**, Butler, A. H., Langford, A. O., Elsbury, D., Breeden, M. L., (2022): Dynamics of ENSO-driven stratosphere-to-troposphere transport of ozone over North America. *Atm. Chem. Phys.*, 22, 13035–13048. <https://doi.org/10.5194/acp-22-13035-2022>
- Breeden, M. L., **Albers, J. R.**, Amy H. Butler, and Matthew Newman, (2022): The spring minimum in subseasonal 2-meter temperature forecast skill over North America. *Mon. Weath. Rev.* 150(10), 2617-2628. <https://doi.org/10.1175/MWR-D-22-0062.1>
- Albers, J. R.**, Butler, A. H., Breeden, M. L., Langford, A. O., Kiladis, G. N., (2021): Subseasonal prediction of springtime Pacific-North American transport using upper-level wind forecasts. *Weather Clim. Dynam.*, 2, 433–452. <https://doi.org/10.5194/wcd-2-433-2021>.
- Breeden, M. L., Butler, A. H., **Albers, J. R.**, Sprenger, M., Langford, A. O., (2021): The Spring Transition of the North Pacific Jet and its Relation to Deep Stratosphere-to-Troposphere Mass Transport over Western North America. *Atmos. Chem. Phys.*, 21, 2781–2794. <https://doi.org/10.5194/acp-21-2781-2021>.
- Albers, J. R.** and Newman, M., (2021): Subseasonal Predictability of the North Atlantic Oscillation. *Environ. Res. Lett.*, 16 (4), 044 024..
- Albers, J. R.**, and M. Newman, (2019): A Priori Identification of Skillful Extratropical Subseasonal Forecasts. *Geophys. Res. Lett.*, **46**, 12527-12536.
- de la Camara, A., T. Birner, **J. R. Albers**, (2019): Are Sudden Stratospheric Warmings Preceded by Anomalous Tropospheric Wave Activity? *J. of Climate* , 32 , 7173-7189
- Mariotti, A., C. Baggett, E. A. Barnes, E. Becker, A. H. Butler, D. C. Collins, P. A. Dirmeyer, L. Ferranti, N. C. Johnson, J. Jones, B. P. Kirtman, A. L. Lang, A. Molod, M. Newman, A. W. Robertson, S. Schubert, D. E. Waliser, and **J. R. Albers**, (2019): Windows of Opportunity for Skillful Forecasts Subseasonal to Seasonal and Beyond *Bull. of the Amer. Met. Society*
- Charlesworth, E. J., T. Birner, **J. R. Albers**, (2019): Ozone Transport-Radiation Feedbacks in the Tropical Tropopause Layer *Geophys. Res. Lett.* , **46**
- Kim, Y. -H., G. N. Kiladis, **J. R. Albers**, J. Dias, M. Fujiwara, J. W. Anstey, I. -S. Song, C. J. Wright, Y. Kawatani, F. Lott, and C. Yoo, (2019): Comparison of equatorial wave activity in the tropical tropopause layer and stratosphere represented in reanalysis. *Atmos. Chem. Phys.*
- Albers, J. R.**, J. Perlwitz, A. H. Butler, T. Birner, G. N. Kiladis, Z. D. Lawrence, G. L. Manney, A. O. Langford, J. Dias (2018): Mechanisms governing interannual variability of stratosphere to troposphere ozone transport. *J. of Geophys. Res.*, **123**, 234-260.
- de la Camara, A., **J. R. Albers**, T. Birner, R. R. Garcia, P. Hitchcock, D. E. Kinnison, A. K. Smith (2017): Sensitivity of sudden stratospheric warmings to previous stratospheric conditions. *J. Atmos. Sci.*, **74**, 2857-2877.
- Birner, T. and **J. R. Albers** (2017): Sudden stratospheric warmings and anomalous upward wave activity flux. *SOLA*, 13A, 8-12, doi:10.2151/sola.13A-002.
- Albers, J. R.**, G. N. Kiladis, T. Birner, and J. Dias (2016): Tropical upper tropospheric potential vorticity intrusions during sudden stratospheric warmings. *Journal of the Atmospheric Sciences*, (73), 2361-2384.
- Albers, J. R.** and T. Birner, (2014): Relative roles of gravity and planetary waves in vortex preconditioning prior to

- sudden stratospheric warmings. *Journal of the Atmospheric Sciences*, **71**, 4028-4054.
- Albers, J. R.** and T. R. Nathan, (2013): Ozone loss and recovery and the preconditioning of upward propagating planetary wave activity. *Journal of the Atmospheric Sciences*, **70**, 3977-3994.
- Albers, J. R.**, J. P. McCormack, and T. R. Nathan, (2013): Ozone and the morphology of the planetary waveguide. *Journal of Geophysical Research*, **118**, 563-576.
- Albers, J. R.**, and T. R. Nathan, (2012): Pathways for communicating the effects of stratospheric ozone to the polar vortex: Role of zonally asymmetric ozone. *Journal of the Atmospheric Sciences*, **69**, 785-801.
- Nathan, T. R., **J. R. Albers**, and E. C. Cordero, (2011): Role of wave–mean flow interaction in sun–climate connections: Historical overview and some new interpretations and results. *J. Atm. Solar-Terr. Physics*, **73**, 1594–1605.

Select Recent Conference Presentations

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| March 2024 | US CLIVAR – Blocking and Extreme Weather in a Changing Climate , (poster) – “Was the blocking event that contributed to the February 2021 cold air outbreak over the central U.S. predictable on subseasonal timescales?” |
| January 2024 | American Geophysical Union Ocean Sciences Conference , (poster) – “Assessing Dynamical and Empirical Model Forecast Skill for Use in Predicting US Coastal Inundation Risk” |
| August 2023 | Western States Water Council and California Department of Water Resources – Improving S2S Precipitation Forecasting , (invited talk) – “A Linear Inverse Model for Improved Week 3-4 CPC Operational Outlooks” |
| January 2023 | American Meteorological Society Annual Meeting , (talk) – “The Effect of Soil Moisture in an Empirical Dynamical Model on Weeks 3-4 Temperature Forecasts Over North America” |
| March 2022 | 2022 US CLIVAR Summit – Hybrid Physics-AI Forecast Models , (invited talk) – “Machine learning for climate prediction and attribution: Use and best practices” |
| June 2021 | Ludwig Maximilian University of Munich , virtual (invited talk) – “Linear inverse modeling: A framework for subseasonal forecasting and the diagnosis of physical sources of forecast skill” |
| July 2021 | WMO World Climate Research Programme Subseasonal-to-seasonal Webinar , virtual (invited talk) – “Subseasonal forecasting and the diagnosis of physical sources of forecast skill” |
| October 2021 | NOAA NCEP Climate Diagnostics and Prediction Workshop , virtual, (talk) – “Was the February 2021 cold air outbreak over the central U.S. a subseasonal forecast of opportunity?” |