

DAVID P. SCHNEIDER

National Center for Atmospheric Research
& University of Colorado

www.climatemoon.com
david@climatemoon.com

EDUCATION

- 2005 Ph.D. Earth & Space Sciences, **University of Washington**
2002 M.S. Earth & Environmental Sciences, **University of Pennsylvania**
1999 B.A. Geology, **Carleton College**

PROFESSIONAL ACCOMPLISHMENTS

- Awarded over \$3.5 Million in research funding from competitive federal grants
- Created the internationally recognized *Climate Data Guide* website, over 200,000 users per year and 4600 subscribers
- Authored over 33 peer-reviewed publications in the scientific literature, including in *Nature* and *Science*
- Completed wide-ranging professional training in areas including science communication, web development, and diversity & inclusion

SCIENTIFIC POSITIONS

2020-present	Research Scientist III, Cooperative Institute for Research in Environmental Sciences, University of Colorado - Boulder
2016 - present	Project Scientist II, National Center for Atmospheric Research
2011 - 2016	Project Scientist I, National Center for Atmospheric Research
2009 - 2011	Research Scientist I, Cooperative Institute for Research in Environmental Sciences, University of Colorado - Boulder
2009 – 2011	Visiting Scientist, National Center for Atmospheric Research
2007 – 2009	Postdoctoral Fellow, National Center for Atmospheric Research
2006 – 2007	Research Associate, Cooperative Institute for Research in Environmental Sciences, University of Colorado - Boulder
2005 – 2006	Visiting Fellow, Antarctic Climate and Ecosystems Cooperative Research Center, Hobart, Tasmania, Australia
2001 – 2006	Research Assistant, University of Washington
2000 – 2001	Research Assistant, University of Pennsylvania

CORE SKILLS

- Manage & analyze datasets 100s of TB in size using a combination of netCDF operators, shell scripts, Linux, NCAR Command Language, Matlab
- Superb writing & analytical skills reflected in scientific publications, grant proposals, and websites
- Apply statistical techniques including regression, compositing, empirical orthogonal functions, spectral analysis

- Conduct global-scale climate model experiments with the Community Earth System Model (CESM) on world-class supercomputers
- Website development in Drupal and WordPress
- Create metadata for climate datasets conforming to ISO19115 and schema.org
- Synthesize the strengths and limitations of dozens of observational climate data sets and publish them on *Climate Data Guide*
- Lead and organize numerous outdoor recreation experiences with youth & peers

GRANT FUNDING

2017	<i>Collaborative Research: Uncertainty in Antarctic climate change projections and the role of sea ice, clouds and ocean structure</i> , \$268K, National Science Foundation, Office of Polar Programs
2014	<i>Collaborative Research: Reconstruction and Understanding of Antarctic Circulation Variability and Trends since 1905</i> , \$330K, National Science Foundation, Office of Polar Programs
2013	<i>An Informed Guide to Climate Data Sets with Relevance to Earth System Model Evaluation</i> , National Science Foundation
2011	<i>Collaborative Research: Decoding & Predicting Antarctic Surface Melt Dynamics with Observations, Regional Atmospheric Modeling and GCMS</i> , \$46K, National Science Foundation, Office of Polar Programs
2010	<i>Stable isotopes in water and snow: Measurements, data systems and scientific applications</i> , \$3K, University of Colorado Undergraduate Research Opportunities Program
2010	<i>Closing the isotope hydrology at Summit: Measurements of Source Regions, Precipitation and Post-Deposition</i> , \$1.8M, National Science Foundation, Office of Polar Programs
2009	<i>Applying ice cores, instrumental records and climate modeling towards a mechanistic understanding of Antarctic climate variability on interannual to multidecadal timescales</i> , \$495K, National Science Foundation, Office of Polar Programs
2007	<i>Reconstruction of global and Southern Hemisphere variability and regional connectivity from a synthesis of ice core isotope records with process modeling</i> , \$356K, National Oceanic and Atmospheric Administration, Paleoclimatology Program
2007	<i>An ice core and tree-ring based reconstruction of the Southern Annular Mode</i> , \$10K, British Research Council
2005	<i>Developing high-resolution ice core proxies of the Southern Annular Mode</i> \$10K, Scientific Committee on Antarctic Research visiting fellowship
2008 – 2010	Numerous competitive travel grants received to present research at national and international meetings (inc. Norway, Beijing, London, Alaska)

MENTORING & DIVERSITY

2019	Writing Mentor, Anthony Wilson, NCAR Significant Opportunities in Atmospheric Research (SOARs) Program
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- 2019 M.S. thesis committee member, Matthew Gentry, University of Colorado
- 2018 Participant, UCAR/NCAR Diversity and Inclusion Training (UNEION). Eight hours of classroom sessions and eight hours of readings focused on four themes in the context of the scientific/academic workplace: Privilege and Identity; Gender; Race; and Bystander Intervention.
- 2013 Science Mentor, An Ordonez, NCAR Significant Opportunities in Atmospheric Research (SOARs) Program
- 2012 Science Mentor, Andrea Thomer, Data Curation Education in Research Centers program
- 2011 Science Mentor, RETI summer institute for high school teachers
- 2011 Science advisor to 3 undergraduate students, Undergraduate Research Opportunities Program, University of Colorado
- 2007 – present Certified trip leader, steering committee member, webmaster for Boulder Valley Inspiring Connections Outdoors (volunteer-led outdoor adventure trips for underprivileged youth)

SERVICE

- 2014 – present Committee member, Data Stewardship Engineering Team at National Center for Atmospheric Research
- 2010 – present Proposal reviewer, National Science Foundation
- 2018 – 2019 Editor, *Antarctic Science*
- 2017 Session convener, *Weather and Climate Modeling in the Polar Regions*, American Meteorological Society Annual Meeting, Seattle
- 2016 Invited participant, National Academy of Sciences Antarctic Sea Ice workshop
- 2014 – 2017 Invited participant, WCRP Polar Climate Predictability Initiative 1 – past polar climate variations
- 2013 – 2017 Invited participant, World Climate Research Program Polar Climate Predictability Initiative 6 – jets and the non-zonal circulation in the Southern Hemisphere
- 2013 – 2018 Invited participant in Scientific Committee on Antarctic Research, Antarctic Climate of the 21st Century Research Program
- 2012 – 2019 Reviewer for NCAR Advanced Study Program postdoctoral candidates
- 2012 Session convener, *Observational Needs for Polar Climate Modeling*, American Geophysical Union Annual Meeting, San Francisco
- 2011 Panel reviewer, National Science Foundation
- 2005 – present Peer reviewer: *Annals of Glaciology*, *Antarctic Science*, *Area*, *Bulletin of the American Meteorological Society*, *Climate Dynamics*, *Deep Sea Research*, *Environmental Research Letters*, *Geophysical Research Letters*, *IEEE Transactions on*

Geoscience and Remote Sensing, Journal of Climate, Journal of Geophysical Research, Nature Communications, Nature Geoscience, Quaternary Science Reviews, Science

1997 – 2005 Teaching assistant for a total of 7 geology courses at Carleton College, University of Pennsylvania, and University of Washington

PROFESSIONAL DEVELOPMENT

2012 Participant, “Drupal for Web Developers” course at University Corporation for Atmospheric Research

2012 Participant, “Drupal for Content Contributors” course at University Corporation for Atmospheric Research

2010 Participant, “Communicating Science” program sponsored by National Science Foundation and American Association for Advancement of Science

2008 Participant, “New Generation Polar Researchers Symposium,” a competitive enrollment 7-day research and career development workshop focusing on public outreach, interdisciplinary collaborations and grant writing skills

2008 Participant, “Modeling of Arctic Climate, Summer School,” a two-week course in climate modeling and Arctic field studies in Alaska

2005 Participant, “American Meteorological Society Summer Policy Colloquium,” a 10-day course in science policy in Washington, D.C.

2003 – 2005 Completed two courses in science journalism at the University of Washington, publishing five general audience magazine articles

INVITED TALKS

2019 *Navigating the climate data universe with the Climate Data Guide*, NCAR Day of Science and Discovery, Boulder, CO

2018 *Links between the Antarctic and lower latitudes*, Summer School on the Polar Climate System, Hohai University, Nanjing, China

2017 *The Climate Data Guide...and more!*, Great Antarctic Climate Hackathon, Scripps Institution of Oceanography, La Jolla, CA

2017 *Structural Uncertainty in Southern Ocean Simulations*, 22nd Annual CESM Workshop, Boulder, CO

2017 *The relative roles of structural uncertainty and internal variability in Antarctic climate change projections*, Understanding the causes and consequences of polar amplification, Aspen Global Change Institute, Aspen, CO

2016 *The role of tropical teleconnections in recent Antarctic climate change*, The National Academies of Sciences Antarctic Sea Ice Workshop, Boulder, CO

2015 *Tropical influences on Southern Ocean Variability*, 20th Annual CESM Workshop, Breckenridge, CO

2015 *Causes and consequences of the westerly wind increase over the Southern Ocean*, INSTAAR Noon Seminar, University of Colorado, Boulder, CO

- 2014 *Wind increase over cooling Southern Ocean driven by tropical warming and polar ozone hole*, AGU Fall Meeting, San Francisco, CA
- 2014 *Understanding Antarctic climate change in the context of Global Warming*, department seminar, Institute for Geophysics, University of Texas, Austin, TX
- 2013 *Relative roles of tropical SSTs and stratospheric ozone in driving recent changes in high-latitude Southern Hemisphere atmospheric circulation*, Amundsen Sea Low Workshop for Polar Predictability Initiative, UCLA, Los Angeles, CA
- 2013 *Modes of large-scale climate variability and tropical teleconnections affecting Antarctica*, SCAR Antarctic Climate 21 Initiative, Castine, ME
- 2013 *Climate Data Guide*, NCAR/UCAR Research Data Management Town Hall, Boulder, CO
- 2013 *Antarctic sea ice data*, CESM Polar Climate Working Group Meeting, Boulder, CO
- 2013 *Antarctic climate, Recent and Future*, New Mexico Tech Earth and Environmental Science seminar, Socorro, NM
- 2012 *Antarctic climate dynamics and its connections with low latitudes*, ESF Conference: Modes of Climate Variability in the Climate System: Past-Present-Future, Obergurgl, Austria.
- 2012 *Antarctic warming, sea ice, and the bipolar seesaw: Comparing multiple datasets*, Brown University Climate Modeling Seminar
- 2011 *Trends in Antarctic surface climate and the role of the atmospheric circulation*, CLIVAR Southern Ocean Panel meeting, Boulder, CO
- 2009 *Insights into 20th and 21st Century Antarctic climate change from combining ice cores, observations and modeling*, First World Young Earth-Scientists Congress, Beijing, China
- 2008 *An Antarctic perspective on 20th-Century climate change: integrating ice core research, observations and quantitative modeling*, Leverhulme Climate Symposium, Cambridge and London, UK
- 2007 *Simulation of Arctic climate response to high- and low- latitude volcanic eruptions during the late Thirteenth Century: Possible early onset of the Little Ice Age*, AGU Fall Meeting, San Francisco, CA
- 2007 *Water isotopes and ice cores as indicators of climate change: Integrating data, modeling and theory*, The International Environmetrics Society North American Regional Meeting, Seattle, WA

SCIENTIFIC PUBLICATIONS

34. **Schneider, D.P.**, J.E. Kay, and J. Lenaerts, 2020: Improved clouds amplify Antarctic precipitation response to ozone depletion in an Earth System Model, in review.
33. Fogt, R.L., **D.P. Schneider**, C.A. Goergens, , M. Garberoglio, and J.M. Jones, 2019: Seasonal Antarctic pressure variability during the 20th century from spatially complete reconstructions and CAM5 simulations., *Climate Dynamics*, 53, 1435-1452, doi:10.1007/s00382-019-04674-8.

32. **Schneider, D. P.**, and R. L. Fogt, 2018: Artifacts in Century-Length Atmospheric and Coupled Reanalyses Over Antarctica Due To Historical Data Availability. *Geophys. Res. Lett.*, doi: 10.1002/2017GL076226.
31. Fogt, R. L., C. A. Goergens, J. M. Jones, **D. P. Schneider**, J. P. Nicolas, D. H. Bromwich, and H. E. Dusselier, 2017: A twentieth century perspective on summer Antarctic pressure change and variability and contributions from tropical SSTs and ozone depletion. *Geophys. Res. Lett.*, doi:10.1002/2017GL075079.
30. **Schneider, D. P.**, and C. Deser, 2017: Tropically driven and externally forced patterns of Antarctic sea ice change: reconciling observed and modeled trends. *Clim. Dyn.*, doi:10.1007/s00382-017-3893-5.
29. Jones, J.M., S.T. Gille, H. Goosse, N.J. Abram, P.O. Canziani, D.J. Charman, K.R. Clem, X. Costa, C. de Lavergne, I. Eisenman, M.H. England, R.L Fogt, L.M. Frankcombe, G.J. Marshall, V. Masson-Delmotte, A.K. Morrison, A.J. Orsi, M.N. Raphael, J.A. Renwick, **D.P. Schneider**, G.R. Simpkins, E.J. Steig, B. Stenni, D. Swingendow, and T.R. Vance, 2016: Assessing recent trends in high-latitude Southern Hemisphere surface climate, *Nature Climate Change*, 6, 917-926.
28. **Schneider, D.P.** and D.A. Reusch, 2016: Antarctic and Southern Ocean surface temperatures in the context of the surface energy budget, *Journal of Climate*, 29, 1689-1716.
27. **Schneider, D.P.**, T. Fan and C. Deser, 2015: Comparing the impacts of tropical SST variability and polar stratospheric ozone loss on the Southern Ocean westerly winds, *Journal of Climate*, 28, 9350-9372.
26. Berkelhammer, M., D.C. Noone, H.C. Steen-Larsen, M. O'Neill, A. Bailey, C. Cox, **D.P. Schneider**, K. Steffen, and J.W.C. White, 2016: Surface-atmosphere decoupling limits accumulation at Summit, Greenland, *Science Advances*, 2, e1501704.
25. Mayewski, P.A., T. Bracegirdle, I. Goodwin, **D.P. Schneider**, N.A.N. Bertler, S. Birkel, A. Carleton, M.H. England, J.H. Kang, A. Khan, J. Russell, J. Turner, and I. Velicogna, 2015: Potential for Southern Hemisphere Climate Surprises, *Journal of Quaternary Science*, 30, 391-395.
24. Raphael, M.N, G.J. Marshall, J. Turner, R. Fogt, **D.P. Schneider**, D.A. Dixon, J.S. Hosking, J. Jones, and W. Hobbs, 2015: The Amundsen Sea Low: Variability, change and impact on Antarctic climate, *Bull. Amer. Met. Soc.*, 97, 111-121.
23. Fan, T., C. Deser and **D.P. Schneider**, 2014: Recent Antarctic sea ice trends in the context of Southern Ocean surface climate variations since 1950, *Geophys. Res. Lett.*, 41, 2419-2426.
22. **Schneider, D.P.**, C. Deser, J. Fasullo, and K. Trenberth, 2013: Climate Data Guide Spurs Discovery and Understanding, *Eos Trans. AGU*, 94(13), 121.
21. Steig, E.J., Q. Ding, J.W.C. White, M. Kuttel, S. B. Rupper, T.A. Neumann, P.D. Neff, A.J.E. Gallant, P.A. Mayewski, K.C. Taylor, G. Hoffmann, D.A. Dixon, S.W. Schoenemann, B.R. Markle, T.J. Fudge, **D.P. Schneider**, A.J. Schauer, R.P. Teel, B.H. Vaughn, L. Burgener, J. Williams, and E.

- Korotkikh, 2013: Recent climate and ice-sheet changes in West Antarctica compared with the past 2000 years, *Nature Geoscience* 6, 372-375.
20. Noone, D., Risi, C., Bailey, A., Berkelhammer, M., Brown, D. P., Buening, N., Gregory, S., Nusbaumer, J., **Schneider, D.**, Sykes, J., Vanderwende, B., Wong, J., Meillier, Y., and Wolfe, D. 2012: Determining water sources in the boundary layer from tall tower profiles of water vapor and surface water isotope ratios after a snowstorm in Colorado, *Atmos. Chem. Phys. Discuss.*, 12, 16327-16375, doi:10.5194/acpd-12-16327-2012.
 19. Okumura, Y., **D.P. Schneider**, C. Deser, and R. Wilson, 2012: Decadal-interdecadal climate variability over Antarctica and linkages to the tropics: Analysis of ice core, instrumental, and tropical proxy data, *Journal of Climate*, 25, 7241-7441.
 18. Landrum, L., M. Holland, **D.P. Schneider**, and M. Hunke, 2012: Antarctic sea ice climatology, variability and late 20th-Century change in CCSM4, *Journal of Climate*, 25, 4817-4838.
 17. **Schneider, D.P.**, Y. Okumura and C. Deser, 2012: Observed Antarctic climate variability and tropical linkages, *Journal of Climate*, 25, 4048-4066.
 16. **Schneider, D.P.**, and D.C. Noone, 2012: Is a bipolar seesaw consistent with observed Antarctic climate variability and trends?, *Geophysical Research Letters*, 39, L06704, doi:/10.1029/2011GL050826.
 15. **Schneider, D.P.**, C. Deser, and Y. Okumura, 2012: An assessment and interpretation of the observed warming of West Antarctica in the austral spring, *Climate Dynamics* 38(1), 323-347, doi:10.1007/s00382-010-0985-x.
 14. Zhong, Y., G. Miller, B. Otto-Bliesner, M. Holland, D. Bailey, **D.P. Schneider**, and A. Geirsdottir, 2011: Centennial-scale climate change from decadal-paced explosive volcanism: A coupled sea ice-ocean mechanism, *Climate Dynamics*, doi:10.1007/s00382-010-0967-z.
 13. Kaufman, D.S., **D.P. Schneider**, N.P. McKay, C.M. Ammann, R.S. Bradley, K.R. Briffa, G.H. Miller, B.L. Otto-Bliesner, J.T. Overpeck et al., 2009: Recent warming reverses long-term Arctic cooling, *Science*, 325, 1236-1239, doi:10.1126/science.1173983.
 12. **Schneider D.P.**, C.M. Ammann, B.L. Otto-Bliesner, and D.S. Kaufman, 2009: Climate response to large, high latitude and low-latitude volcanic eruptions in the Community Climate System Model, *Journal of Geophysical Research-Atmospheres*, 114, doi:10.1029/2008JD011222.
 11. Steig E.J., **D.P. Schneider**, S.D. Rutherford, M.E. Mann, J.C. Comiso, and D.T. Shindell, 2009: Warming of the Antarctic ice sheet surface since the 1957 International Geophysical Year, *Nature*, 457, 459-463, doi:10.1038/nature07669.
 10. Monaghan A.J., D.H. Bromwich and **D.P. Schneider**, 2008: Twentieth-century Antarctic air temperature and snowfall simulations by IPCC Climate models. *Geophysical Research Letters*, 35, L07502, doi:10.1029/2007GL032630.
 9. **Schneider D.P.**, and E.J. Steig, 2008: Ice cores record significant 1940s Antarctic warmth related to tropical climate variability, *Proceedings of the National Academy of Sciences*, 105, 12154-12158, doi:10.1073/pnas.0803627105.

8. **Schneider, D.P.**, and D.C. Noone, 2007: Spatial covariance of water isotope records in a global network of ice cores spanning twentieth-century climate change, *Journal of Geophysical Research*, 112, D18105, doi:10.1029/2007JD008652.
7. **Schneider, D.P.**, E.J. Steig, T. van Ommen, D. Dixon, P.A. Mayewski, J. Jones, and C. Bitz, 2006: Antarctic temperatures over the past two centuries from ice cores, *Geophysical Research Letters*, 33, doi:10.1029/2006GL027057.
6. **Schneider, D.P.**, E.J. Steig, and T. van Ommen, 2005: High-resolution ice core stable isotopic records from Antarctica: towards interannual climate reconstruction, *Annals of Glaciology*, 41, 63-70, doi:10.3189/172756405781813357.
5. Steig, E.J., P.A. Mayewski, D. Dixon, S. Kaspari, M. Frey, **D.P. Schneider**, S.A. Arcone, G.S. Hamilton, V.B. Spikes, M. Albert, D. Meese, A. Gow, C.A. Shuman, J.W.C. White, S. Sneed, J. Flaherty, and M. Wumkes 2005: High-resolution ice cores from US-ITASE (West Antarctica): development and validation of chronologies and determination of precision and accuracy, *Annals of Glaciology*, 41, 77-84, doi:10.3189/172756405781813311.
4. Jacobel, R., B. Welch, E.J. Steig, and **D.P. Schneider**, 2005: Hercules Dome, Antarctica: A Possible Site for deep ice core drilling, *Journal of Geophysical Research*, 110, F01015, doi:10.1029/2004JF000188.
3. **Schneider, D.P.**, E.J. Steig, and J.C. Comiso, 2004: Recent climate variability in Antarctica from satellite-derived temperature data, *Journal of Climate*, 17, 1569-1583, doi:10.1175/1520-0442(2004)017.2.
2. Winebrenner, D.P., E.J. Steig, and **D.P. Schneider**, 2004: Temporal covariation of surface and microwave brightness temperatures in Antarctica, with implications for the observation of surface temperature variability using satellite data, *Annals of Glaciology*, 39, 346-350, doi:10.3189/172756404781813952.
1. **Schneider, D.P.**, and E.J. Steig, 2002: Spatial and temporal variability of Antarctic ice sheet microwave brightness temperatures, *Geophysical Research Letters*, 29, 25.1-25.4, doi:10.1029/2002GL015490.

OTHER PUBLICATIONS

in Northwest Science and Technology magazine, www.nwst.org:

Avalanches in the Northwest (Winter 2005;

http://wwik.org/nwst/issues/index.php?issueID=winter_2005&storyID=693)

Peak Performance: Doctors scale mountains to research the body's response to high altitudes (Winter 2005;

http://wwik.org/nwst/issues/index.php?issueID=winter_2005&storyID=697)

Vancouver, City on the Edge [book review] (Winter 2004)

UW's Kirsten Wind Tunnel Keeps the Northwest Flying (Autumn 2003)

Secrets to Superbug's Resistance Revealed (Autumn 2003)

Websites:

Climate Data Guide, climatedataguide.ucar.edu

Boulder ICO, www.boulderico.org
Climate Moon, www.climatemoon.com