

NAME

Dustin M. Schroeder

EMPLOYER

Stanford University

CITY, STATE, COUNTRY

Stanford, CA, USA

DEGREES

2014 Jackson School of Geosciences, University of Texas, Austin, TX

Doctor of Philosophy (Ph.D.) in Geophysics

2007 Bucknell University, Lewisburg, PA

Bachelor of Science in Electrical Engineering (B.S.E.E.), departmental honors, magna cum laude

Bachelor of Arts (B.A.) in Physics, magna cum laude, minors in Mathematics and Philosophy

HISTORY OF EMPLOYMENT

2022 – present Associate Professor of Geophysics, Stanford University

2022 – present Associate (by courtesy) of Electrical Engineering, Stanford University

2020 – present Center Fellow (by courtesy), Stanford Woods Institute for the Environment

2020 – present Faculty Affiliate, Stanford Institute for Human-Centered Artificial Intelligence

2021 – present Senior Member, Kavli Institute for Particle Astrophysics and Cosmology

2016 – 2022 Assistant Professor of Geophysics, Stanford University

2017 – 2022 Assistant Professor (by courtesy) of Electrical Engineering, Stanford University

2016 – 2020 Faculty Affiliate, Stanford Woods Institute for the Environment

2014 – 2016 Radar Systems Engineer, Jet Propulsion Laboratory, California Institute of Technology

2012 Graduate Researcher, Applied Physics Laboratory, Johns Hopkins University

2008 – 2014 Graduate Researcher, University of Texas Institute for Geophysics

2007 – 2008 Platform Hardware Engineer, Freescale Semiconductor

NARRATIVE OF RESEARCH EXPERIENCE

My research focuses on advancing the scientific and technical foundations of geophysical ice penetrating radar and its use in observing and understanding the interaction of ice and water in the solar system. I am primarily interested in the subglacial and englacial conditions of rapidly changing ice sheets and their contributions to sea level in a changing climate. However, a growing secondary focus of my work is the exploration of icy moons. I am also interested in the development and application of science-optimized geophysical radar systems. I consider myself a radio glaciologist and strive to approach problems from both an earth system science and a radar system engineering perspective. I am actively engaged with the flow of information through each step of the observational science process; from instrument and experiment design, through data processing and analysis, to modeling and inference. This allows me to draw from a multidisciplinary set of tools to test system-scale and process-level hypotheses. For me, this deliberate integration of science and engineering is the most powerful and satisfying way to approach questions in Earth and planetary science.

KEY PUBLICATIONS (* student advisee, ** postdoctoral advisee, senior author is 2nd after advisees)

- S.T. Peters*, **D.M. Schroeder**, W. Chu**, D. Castelletti**, M.S. Haynes, A. Romero-Wolf. Glaciological Monitoring Using the Sun as a Radio Source for Echo Detection, *Geophysical Research Letters*, 2021, doi.org/10.1029/2021GL092450
- R. Culberg*, **D.M. Schroeder**, W. Chu**. Extreme Melt Season Ice Layers Reduce Firn Permeability Across Greenland, *Nature Communications*, 2021, doi.org/10.1038/s41467-021-22656-5
- J.T. Bessette*, **D.M. Schroeder**, T.M. Jordan**, J.A. MacGregor. Radar-Sounding Characterization of the Subglacial Groundwater Table Beneath Hiawatha Glacier, Greenland, *Geophysical Research Letters*, 2021, doi.org/10.1029/2020GL091432
- D.M. Schroeder**, R.G. Bingham, D.D. Blankenship, K. Christianson, O. Eisen, G.E. Flowers, N.B. Karlsson, M.R. Koutnick, J.D. Paden, M.J. Siegert. Five Decades of Radioglaciology, *Annals of Glaciology*, 2020, doi.org/10.1017/aog.2020.11
- E. J. MacKie*, **D. M. Schroeder**, J. Caers, M. R. Siegfried**, C. Scheidt. Antarctic Topographic Realizations and Geostatistical Modeling Used to Map Subglacial Lakes, *Journal of Geophysical Research: Earth Surface*, 2020, doi.org/10.1029/2019JF005420
- D.M. Schroeder**, J.A. Dowdeswell, M.J. Siegert, R.G. Bingham, W. Chu**, E.J. MacKie*, M.R. Siegfried**, K.I. Vega*, J.R. Emmons, K. Winstein. Multi-Decadal Observations of the Antarctic Ice Sheet from Restored Analog Radar Records, *Proceedings of the National Academy of Sciences*, 2019, doi.org/10.1073/pnas.1821646116
- W. Chu**, **D.M. Schroeder**, M.R. Siegfried**. Retrieval of Englacial Firn Aquifer Thickness from Ice-Penetrating Radar Sounding in Southeastern Greenland, *Geophysical Research Letters*, 2018, doi.org/10.1029/2018GL079751
- A.K. Kendrick*, **D.M. Schroeder**, W. Chu**, T.J. Young, P. Christoffersen, S.H. Doyle, J.E. Box, A. Hubbard, B. Hubbard, P.V. Brennan, K.W. Nicholls, L.B. Lok. Surface Meltwater Impounded by Seasonal Englacial Storage in West Greenland, *Geophysical Research Letters*, 2018, doi.org/10.1029/2018GL079787
- D.M. Schroeder**, D.D. Blankenship, D.A. Young. Evidence for a Water System Transition Beneath Thwaites Glacier, West Antarctica, *Proceedings of the National Academy of Sciences*, 2013, doi.org/10.1073/pnas.1302828110

HONORS

- 2021 Symposium Prize Paper Award, IEEE Geoscience and Remote Sensing Society
- 2020 Excellence in Teaching Award, Stanford School of Earth, Energy, and Environmental Sciences
- 2019 Senior Member, Institute of Electrical and Electronics Engineers
- 2018 CAREER Award, National Science Foundation
- 2014 National Science Olympiad Heart of Gold Award for Service to Science Education
- 2012 NASA Group Achievement Award: Operation Ice Bridge
- 2007 Phi Beta Kappa, Bucknell University
- 2006 Tau Beta Pi, Bucknell University

PROFESSIONAL SOCIETY MEMBERSHIPS

American Geophysical Union, European Geosciences Union, IEEE Geoscience and Remote Sensing Society, IEEE Antennas and Propagation Society, International Association of Cryospheric Scientists, International Glaciological Society, Society of Exploration Geophysicists