

Riley T. Culberg

397 Panama Mall, Mitchell Building
Stanford, CA 94305

culberg@stanford.edu
(253) 254-4857

EDUCATION

- 2023 Stanford University, Stanford, California
PhD, Electrical Engineering
- 2019 Stanford University, Stanford, California
Master of Science, Electrical Engineering
- 2012 United States Military Academy, West Point, New York
Bachelor of Science, Computer Science and Geospatial Information Science

PROFESSIONAL EXPERIENCE

- 2018 – present Stanford Radio Glaciology, Department of Geophysics, Stanford University
Graduate Research Assistant
- 2018 Antennas and Radio Frequency Systems Division, Toyon Research Corporation
Associate Research Analyst
- 2012-2017 United States Army
Engineer Officer

AWARDS

- 2019 Best Student Poster, West Antarctic Ice Sheet Workshop
- 2019 Best Student Oral Presentation, IGS Symposium on Five Decades of Radioglaciology
- 2019 National Defense Science and Engineering Graduate Fellowship
- 2019 National Science Foundation Graduate Research Fellowship (declined)
- 2014 Steel Order of the De Fleury Medal, Army Engineer Association
- 2012 Brigadier General Elvin R. Heiberg Memorial Award for the Highest Composite Standing in Applied Science and Engineering, United States Military Academy
- 2012 U. S. Grant Memorial Award for Excellence in Computer Science, United States Military Academy
- 2012 Excellence in Geospatial Information Science Award, United States Military Academy

PUBLICATIONS

R. Culberg, D. M. Schroeder, “Firn Clutter Constraints on the Design and Performance of Orbital Radar Ice Sounders,” IEEE Transactions on Geoscience and Remote Sensing, 2020.

K. Winter, J. Woodward, N. Ross, S. A. Dunning, A. S. Hein, M. J. Westoby, **R. Culberg**, S. M. Marrero, D. M. Schroeder, D. E. Sugden, M. J. Seigert, “Radar-detected glacial debris in the West Antarctica ice sheet,” Geophysical Research Letters, 46, 10454-10462, 2019.

REFEREED CONFERENCE PROCEEDINGS

R. Culberg, D. M. Schroeder, “Radar Scattering in Firn and its Implications for VHF/UHF Orbital Ice Sounding,” IGARSS 2019, Yokohama, Japan, 28 Jul – 2 Aug.

CONFERENCE PRESENTATIONS

R. Culberg, D. M. Schroeder, “Firn Density in Greenland’s Dry Snow Zone from Operation IceBridge Radar Sounding Data,” 2020 PARCA Workshop, Greenbelt, MD, 20 Feb.

R. Culberg, D. M. Schroeder, “Spatial Extension of Deep Ice Core Electrical Stratigraphy by Radar Sounding,” 2019 AGU Fall Meeting, San Francisco, 9-13 Dec.

*M. Altenburg, D. M. Schroeder, **R. Culberg**, N. L. Bienert, “Testing the Feasibility of Orbital Altitude Radar Sounding Using a Multi-Frequency Radar System,” 2019 AGU Fall Meeting, San Francisco, 9-13 Dec.

R. Culberg, D. M. Schroeder, “Radar-Derived Firn Density in Greenland’s Dry Snow Zone,” 2019 West Antarctic Ice Sheet Workshop, Julian, CA, 16-18 Oct.

R. Culberg, D. M. Schroeder, “Radar Scattering in Firn and the Implications for Orbital Ice Sounding,” 2019 IGS Symposium on Five Decades of Radioglaciology, Stanford, CA, 8-12 Jul.

K. Winter, J. Woodward, N. Ross, S. A. Dunning, A. S. Hein, M. J. Westoby, **R. Culberg**, S. M. Marrero, D. M. Schroeder, D. E. Sugden, M. J. Siegert, “Radar-detected Englacial Sediments,” 2019 IGS Symposium on Five Decades of Radioglaciology, Stanford, CA, 8-12 Jul.

R. Culberg, A. Kendrick, A. Conger, D. M. Schroeder, “An Airborne Radar Sounding Instrument Concept for Characterizing Water Storage in Greenland’s Porous Ice and Firn (C51F-0531),” 2018 AGU Fall Meeting, Washington, D.C., 10-14 Dec.

TEACHING ACTIVITIES

Radar Processing Module, Radar Sounding Short Course, 2019 IGS Symposium on Five Decades of Radioglaciology, Stanford, CA, 8 Jul.

PROFESSIONAL MEMBERSHIPS

2019 – present International Glaciological Society, Student Member

2018 – present IEEE Geoscience and Remote Sensing Society, Student Member

2018 – present American Geophysical Union, Student Member

AWARDS TO MENTORED STUDENTS

2019 Martin Altenburg, Winner, AGU Cryosphere Innovation Award for Students

* *Presentation or publication by mentee.*