Dustin M. Schroeder

Department of Geophysics, School of Earth, Energy, and Environmental Sciences
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dustin.m.schroeder@stanford.edu, (440) 567 – 8343

EDUCATION

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

PROFESSIONAL EXPERIENCE

2016 – present Assistant Professor of Geophysics, **Stanford University**
2014 – 2015 Radar Systems Engineer, **Jet Propulsion Laboratory, California Institute of Technology**
2008 – 2014 Graduate Researcher, **University of Texas Institute for Geophysics**
2012 Graduate Researcher, **Applied Physics Laboratory, Johns Hopkins University**
2007 – 2008 Platform Hardware Engineer, **Freescale Semiconductor**
2006 – 2007 Undergraduate Researcher, **Bucknell University Department of Electrical Engineering**
2005 Undergraduate Researcher, **Lerner Research Institute, Cleveland Clinic Foundation**
2004 Undergraduate Researcher, **Harvard-Smithsonian Center for Astrophysics**
2002 Undergraduate Researcher, **Case Western Reserve University Department of Physics**

HONORS AND AWARDS

2015 JPL Team Award, Europa Mission Instrument Proposal
2014 Best Graduate Student Paper, Jackson School of Geosciences
2014 National Science Olympiad Heart of Gold Award for Service to Science Education
2013 Best Ph.D. Student Speaker, Jackson School of Geosciences
2013 Jackson School of Geosciences Research Symposium, 1st Place Late-Career Ph.D.
2012 NASA Group Achievement Award: Operation Ice Bridge
2012 Gale White Fellowship, University of Texas Institute for Geophysics
2012 David Brunton Jr. Fellowship, University of Texas Graduate School
2011 National Science Foundation Antarctic Service Medal
2010 The Friar Society, The University of Texas
2009 NSF Graduate Research Fellowship
2008 University of Texas Graduate School Recruiting Fellowship
2007 Thelma Johnson Showalter Prize, Bucknell University
2007 Phi Beta Kappa, Bucknell University
2006 Tau Beta Pi, Bucknell University
2006 Sigma Pi Sigma, Bucknell University
2005 COMAP Mathematical Contest in Modeling, Meritorious Winner

MISSION PARTICIPATION

2015 – present Co-I, REASON Radar Sounder, Europa Mission, NASA
2015 – present Member, Interiors Working Group, Europa Mission Project Science Group
2013 – present Collaborator, RIME Radar Sounder, JUICE mission, ESA
2015 Working Group Lead, REASON Altimetry Working Group
2015 Working Group Lead, RIME Passive Sounding Working Group
2013 – 2014 Technical Assistant, Europa Assessment Group, NASA
2010 – 2012 Technical Assistant, Europa Science Definition Team, NASA

GRANTS

2016 – 2019 **PI,** Investigating Bed Conditions and Control at the Boundary Between Thwaites and Pine Island Glaciers, West Antarctica. NASA New Investigators Program **(in review)**

2016 – 2019 **PI**, Joint Radar and Model Investigations of Greenland Basal Water Conditions. NASA Cryospheric Science, with T. Creyts, C. Grima **(in review)**

2016 – 2019 **Co-I**, Observing land ice processes using SWOT: an integrated assessment for monitoring and modeling. NASA SWOT Science Team, with H. Seroussi (PI) **(in review)**

2016 – 2019 **Collaborator,** East Antarctic Grounding Line Experiment. NSF, with D. Blankenship (PI), D. Young, J. Greenbaum **(in review)**

2015 – 2017 **Co-I**, Radar Sounding and Propagation through Heterogeneous Media. JPL Research and Technology Development, with M. Haynes (PI), X. Duan, D. Arumugam, S. Hensley

2015 – 2033 **Co-I**, Science Team Member, Radar for Europa Assessment and Sounding: Ocean to Near Surface (REASON). NASA's Europa Mission, with PI: D. Blankenship (PI), A. Moussessian, J. Plaut, G. Patterson, L. Bruzzone, B. Campbell, L. Bruzzone, L. Carter, C. Elachi, Y. Gim, C. Grima, A. Henrique, H. Hussma, W. Kofman, W. Kurth, M. Mastrogiuseppe, W. McKinnon, A. Mlinar, J. Moore, F. Nimmo, C. Paty, D. Plettemeier, B. Schmidt, K. Soderlund, D. Young, M. Zolotov

2014 – 2015 **PI**, Technique development for improved grounding zone characterization using airborne radar sounding. NASA Cryospheric Science.

2013 – 2014 **Key Personnel**, Ice Penetrating Radar for Europa Exploration. NASA Instrument Concepts for Europa Exploration, with A. Moussessian (PI), D. Blankenship, Y. Gim, L. Harcke, S. Hensley, D. Kirchner, M. McEachen, J. Plaut, C. Grima, K. Soderlund.

2009 - 2014 **PI,** NSF Graduate Research Fellowship Program

PUBLICATIONS

2015 **D.M. Schroeder**, C. Grima, D.D. Blankenship. Evidence for Variable Grounding-Zone and Shear-Margin Basal Conditions Across Thwaites Glacier, West Antarctica, ***Geophysics*** (in press)

2015 C. Grima, D.D. Blankenship, **D.M. Schroeder**. Radio Propagation through Europa Ionosphere, ***Planetary and Space Science***

2015 J.S. Greenbaum, D.D. Blankenship, D.A. Young, A.R.A. Aitken, B. Legresy, **D.M. Schroeder**, T.G. Richter, J.L. Roberts, R.C. Warner, T.D. van Ommen, M.J. Siegert. Increasing Ocean Access to Totten Glacier, East Antarctica, ***Nature Geoscience***

2015 **D.M. Schroeder**, R.K. Raney, D.D. Blankenship. Detecting Subglacial Water Bodies from the Specularity of Radar Bed Echoes. ***IEEE Geoscience and Remote Sensing Letters***

2014 **D.M. Schroeder,** D.D. Blankenship, D.A. Young, A.E. Kirshner, J.B. Anderson. Radar Sounding Evidence for Deformable Sediments and Outcropping Bedrock Beneath Thwaites Glacier, West Antarctica, ***Geophysical Research Letters***

2014 G. Grima, D.D. Blankenship, D.A. Young, **D.M. Schroeder**. Surface Slope Control on Firn Density at Thwaites Glacier, West Antarctica: Results from airborne radar sounding, ***Geophysical Research Letters***

2014 C. Grima, **D.M. Schroeder,** D.D. Blankenship, D.A. Young. Planetary Landing Zone Assessment by Radar Sounder: Demonstration in Antarctica, ***Planetary and Space Science***

2014 **D.M. Schroeder,** D.D. Blankenship, D.A. Young, E. Quartini. Evidence for Elevated and Spatially Heterogeneous Geothermal Flux Beneath the West Antarctic Ice Sheet, ***Proceedings of the National Academy of Sciences***

2014 A.E. Witus, C.M. Branecky, J.B. Anderson, W. Szczucinski, **D.M. Schroeder**, D.D. Blankenship, M. Jakobsson. Meltwater Intensive Glacial Reatreat in Polar Environments and Investigation of Associated Sediments: Example from Pine Island Bay, West Antarctica, ***Quaternary Science Reviews***

2013 **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 J.A. MacGregor, G.A. Catania, H.B. Conway, **D.M. Schroeder**, I.R. Joughin, D.A. Young, S.D. Kempf, D.D. Blankenship. Weak Bed Control of the Eastern Shear Margin of Thwaites Glacier. ***Journal Glaciology***

2012 A.P. Wright, D.A. Young, J.L. Roberts, **D.M. Schroeder**, J.L. Bamber, J.A. Dowdeswell, N.W. Young, A.M. Le Brocq, R.C. Warner, A.J. Payne, D.D. Blankenship, T.D. van Ommen, M.J. Siegert. Evidence for a Hydrological Connection Between the Ice Divide and Ice Sheet Margin in the Aurora Subglacial Basin Sector of East Antarctica, ***Journal of Geophysical Research Earth Surface***

2011 D.A. Young, A.P. Wright, J.L. Roberts, R.C. Warner, N.W. Young, J.S. Greenbaum, **D.M. Schroeder**, D.E. Sugden, J.W. Holt, D.D. Blankenship, T. Van Ommen, M.J. Siegert. A Dynamic Early East Antarctic Ice Sheet Suggested by Ice Covered Fjord Landscapes, ***Nature***

INVITED TALKS

2015 Climate Center Seminar, Jet Propulsion Laboratory, July 17th

2015 Department of Geophysics, Stanford University, April 23rd

2015 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech, March 27th

2015 Department of Electrical Engineering, University of Colorado, Boulder, February 13th

2014 Department of Geophysics, Stanford University, November 13th

2014 Workshop on Instruments for Polar Geology and Geophysics Research, NASA/NSF, October 9th

2014 Norwegian Polar Research Institute, Tromso, Norway, June 4th

2014 Department of Geology, University of Kansas, April 9th

2013 Bromery Seminar, Earth and Planetary Science, Johns Hopkins University, November 7th

2013 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech, September 19th

2012 Institute for Geophysics, University of Texas at Austin, September 7th

2012 Space Research Group, Applied Physics Lab, Johns Hopkins University, May 3rd

2011 AGU Fall Meeting, Session on Interpretation Techniques in Radio Glaciology, December 5th

CONFERENCE PARTICIPATION

2015 **D.M. Schroeder**, *Characterizing the Attenuation and Temperature Structure of Thwaites Glacier, West Antarctica*, International Symposium on Contemporary Ice-Sheet Dynamics: ocean interaction, meltwater and non-linear effects, Cambridge, UK, August 16th – 21st

2015 M.J. Siegert, N. Ross, **D.M. Schroeder**, et al., *Radio Echo Sounding of Active Subglacial Lakes in Institute Ice Stream, West Antarctica*, International Symposium on Contemporary Ice-Sheet Dynamics: ocean interaction, meltwater and non-linear effects, Cambridge, UK, August 16th – 21st

2015 J.S. Greenbaum, D.D. Blankenship, D.A. Young, J.L. Roberts, R.C. Warner, **D.M. Schroeder**, T. Van Ommen, M.J. Siegert, *Controls on the Sabrina Coast grounding line, East Antarctica*, International Symposium on Contemporary Ice-Sheet Dynamics: ocean interaction, meltwater and non-linear effects, Cambridge, UK, August 16th – 21st

2015 J.S. Greenbaum, D.D. Blankenship, D.A. Young, T.G. Richter, J.L. Roberts, A.R.A. Aitken, B. Legresy, **D.M. Schroeder**, R.C. Warner, T.D. van Ommen, M.J. Siegert, *Controls on a Costal Marine Ice Sheet Instability Zone Along the Sabrina Coast, East Antarctica*, International Symposium on International Earth Sciences, Goa, July 13th – 17th

2015 M.G.P. Cavitte, D.D. Blankenship, D.A. Young, **D.M. Schroeder**, M.J. Siegert, F. Parrenin, E. Le Meur, J. A. MacGregor, *Radar Internal Layer Stratigraphic Constraints on the East Antarctic Plateau's Old Ice*, International Symposium on International Earth Sciences, Goa, July 13th – 17th

2015 E. Quartini, D.D. Blankenship, D.A. Young, **D.M. Schroeder**, *An Evaluation OF Active Subglacial Volcanism as a Source of Thwaites Glacier Hetergeneous Geothermal Flux*, International Symposium on International Earth Sciences, Goa, July 13th – 17th

2015 D. Castelletti, **D.M. Schroeder**, S. Hensley, C. Grima, G. Ng, D. Young, Yonggyu Gim, L. Bruzzone, A. Moussessian, D. D. Blankenship, *Clutter Detection Using Two-Channel Radar Sounder Data*, IEEE Geoscience and Remote Sensing Society, Milan, July 26th – 31st

2015 D.D. Blankenship, A. Moussessian, K.M. Soderlund, C. Grima, D.A. Young, **D.M. Schroeder**, Y. Gim, J.J. Plaut,*Revealing Secrets of Europa's Ice Shell, Hidden Water and Plume Activity Through Flyby Radar Sounding*, Astrobiology Science Conference, Chicago, June 15th – 19th

2015 D.A. Young, **D.M. Schroeder**, E. Quartini, D.D. Blankenship, The Context for Subglacial Water Systems from Antarctic Airborne Observations, Sublacial Anatarctic lake exploration: first results and future plans, The Royal Society, London, March 30th – 31st

2014 **D.M. Schroeder**, C.Y. Grima, D.D. Blankenship, Characterizing Englacial Attenuation and Grounding Zone Geometry Using Airborne Radar Sounding, AGU Fall Meeting, San Francisco, December 15th - 19th

2014 M.J. Siegert, N. Ross, **D.M. Schroeder**, Channelised Subglacial Hydrology Modulates West Antarctic Ice Stream Basal Conditions and Flow, AGU Fall Meeting, San Francisco, December 15th – 19th

2014 **D.M. Schroeder,** Analysis Techniques, Information Content, and Measurement Requirements for Airborne Radar Sounding Data, NASA/NSF Workshop on Instruments for Polar Geology and Geophysics Research, Washington DC, October 9th -10th **(invited)**

2014 **D.M. Schroeder**, C. Grima, D.D. Blankenship, Characterizing the Location and Extent of the Thwaites Glacier Grounding Zone Using Airborne Radar Sounding, West Antarctic Ice Sheet Workshop, Julian, CA, September 24th – 27th

2014 D.A. Young, E. Quartini, E.M. Powell, **D.M. Schroeder**, T.G. Richter, D.D. Blankenship, Structure of the Marie Byrd Land crustal province from GIMBLE aerogeophysics, SCAR Open Science Conference, Auckland, New Zealand, August 25th – 28th

2014 D.A. Young, D.D. Blankenship, **D.M. Schroeder**, J.S. Greenbaum, The subglacial environment from remote sensing: key questions and paths forward, SCAR mini symposium on innovation on Antarctic science, Auckland, New Zealand, August 25th – 28th

2014 **D.M. Schroeder**, D.D. Blankenship, D.A. Young, E. Quartini, J.B. Anderson, A.E. Witus, Radar-sounding observations of basal water, sediments and geothermal heat flux, IGS Symposium on the Contribution of Glaciers and Ice Sheets to Sea-Level Change, Chamonix, France, May 26th – 30th

2014 D.D. Blankenship, **D.M. Schroeder**. Airborne Studies of Subglacial Boundaries in West Antarctica, International Symposium on Polar Sciences, Incheon, South Korea, May 27th – 29th

2014 D.D. Blankenship, A. Moussessian, **D.M. Schroeder**, K.M. Soderlund, C.Grima, Y. Gim, J.J. Plaut, B.E. Schmidt. Flyby Sounding of Europa's Icy Shell: Radar Investigations, Analogs, and Instruments for the Europa Clipper Mission, Workshop on the Habitability of Icy Worlds, Pasadena, CA, February 5th – 7th

2014 C.Grima, **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Europa Landing Site Selection Supported by Ice Penetrating Radar, Workshop on the Habitability of Icy Worlds, Pasadena, CA, February 5th – 7th

2014 **D.M. Schroeder**, C.B. Burch, K.M. Soderlund, C. Grima, D.D. Blankenship, T.D. Komacek, T.M. Quinn, M.A. Van Hecke, B.E. Schmidt, G.W. Patterson, J.J. Plaut. Icy World Science and Habitability in the National Science Olympiad for Middle School Students, Workshop on the Habitability of Icy Worlds, Pasadena, CA, February 5th – 7th

2013 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Quantifying Bedform Geometry, Water Configuration, and Melt Rate Beneath Thwaites Glacier from Radar Scattering Functions. AGU Fall Meeting, San Francisco, CA, December 9th – 13th

2013 C. Grima, **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Planetary Surface Rougness Derived from Ice Penetrating Radar Data: Method and Concept Validation in Antarctica. AGU Fall Meeting, San Francisco, CA, December 9th – 13th

2013 C. Cura, E. Arnold, B. Karwoski, C. Grima, **D.M. Schroeder**, D.A. Young, D.D. Blankenship. Enhancing Europa Surface Characterization with Ice Penetrating Radar: A Comparative Study in Antarctica. AGU Fall Meeting, San Francisco, December 9th – 13th

2013 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. What Can Radar Scattering Tell Us About Past and Future Retreats in the Amundsen Sea Embayment? WAIS Workshop, Sterling, VA, September 29th – October 2nd

2013 A.E. Kirshner, C.M. Branecky, J.B. Anderson, W. Szczucinski, **D.M. Schroeder**, D.D. Blankenship, M. Jakobsson.The Sedimentary Record of Meltwater Intensive Glacial Erosion in Pine Island Bay, West Antarctica and Implications for Glacial Dynamics, WAIS Workshop, Sterling, VA, September September 29th – October 2nd

2013 **D.M. Schroeder**, D.D. Blankenship, R.K. Raney, D.A. Young. Buried Information: Constraining Bed Geometry and Material from the Doppler-Dependent Radar-Scattering Function. International Symposium on Radioglaciology, Lawrence, September 9th – 13th

2013 D.D. Blankenship, B.E. Schmidt, **D.M. Schroeder**, K.M. Soderlund, C. Grima. Flyby Sounding of Europa's Icy Shell: Radar Investigations, Analogs and Instruments for the Europa Clipper Mission, IGS International Symposium on Radioglaciology, Lawrence, KS, September 9th – 13th

2013 C. Grima, **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Firn Variability Derived from a Statistical Analysis of Airborne Ice-Penetrating Radar Over the Thwaites Glacier Catchment, West Antarctica, IGS International Symposium on Radioglaciology, Lawrence, KS, September 9th – 13th

2013 M.G.P. Cavitte, D.D. Blankenship, D.A. Young, **D.M. Schroeder**, M.J. Siegert, E. LeMeur. Extending East Antarctic Ice-Core Chronology with Radar Layer Stratigraphy. IGS International Symposium on Radioglaciology, Lawrence, KS, September 9th – 13th

2013 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Beyond Intensity and Depth: Geophysical Glaciology with Higher Order Information from Radio Echo Sounding , Radio Echo Sounding Layer Tracing Workshop, Copenhagen, DK, May 6th – 10th

2013 C. Grima, **D.M. Schroeder**, D.D. Blankenship. Identifying Surface Characteristics Using an Ice Penetrating Radar Sounder at Europa: Potential for Landing Site Selection, Lunar and Planetary Science Conference, The Woodlands, TX, March 18th – 22nd

2012 **D.M. Schroeder**, D.D. Blankenship, D.A. Young, E.M. Powell. Configuration of Subglacial Water and Sediments Beneath Thwaites Glacier, West Antarctica: Context for a Potential Basal-Water-Triggered Grounding-Line-Retreat. AGU Fall Meeting, San Francisco, CA, December 3rd – 9th

2012 B.E. Schmidt, D.D. Blankenship, **D.M. Schroeder**. Europa Subsurface Science from Mutli-Flyby Missions, European Planetary Science Congress, Madrid, September 23rd – 28th

2012 **D.M. Schroeder**, D.B. Blankenship, D.A.Young. Evidence for Ice-Flow-Coupled Subglacial Water Systems Beneath West Antarctica's Potentially Unstable Thwaites Glacier, WAIS Workshop, Eatonville, WA, September 19th – 22nd

2012 D.A. Young, J.L. Roberts, A.P. Wright, J.S. Greenbaum, S.D. Kempf, G. Ng, T.G. Richter, J.W. Holt, E. Le Meur, **D.M. Schroeder**, R.C. Warner, N.W. Young, D.D. Blankenship, M.J. Siegert, T. Van Ommen. ICECAP Data Over the Periphery of East Antarctica: A New View of a Crucial Ice Sheet, SCAR Open Science Conference, Portland, OR, July 13th – 25th

2012 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Remote Sensing of Subglacial Water Networks with Ice Penetrating Radar, Chapman Conference on Remote Sensing of Terrestrial Water Cycle, Kona, HI, February 19th – 22nd

2011 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Interpretation of Sub-resolution Bedform and Subglacial Hydrologic Network Geometries from Radar Echo Specularity: Application to Thwaites Glacier, West Antarctica, AGU Fall Meeting, San Francisco, CA, December 5th – 9th **(invited)**

2011 A.M. Baker, **D.M. Schroeder**, M. Van Hecke. Bringing Field Science to a High School Audience: Connecting to the Next Generation of Scientific Minds through Science Olympiad, AGU Fall Meeting, San Francisco, December 5th – 9th

2011 D. D. Blankenship, B. E. Schmidt, D. A. Young, **D.M. Schroeder**, J.S. Greenbaum. The Search for a Habitable Europa: Radar, Water, and an Active Ice Shell, EPSC-DPS Joint Meeting, October 2nd – 7th

2011 D.A. Young, **D.M. Schroeder**, D.D. Blankenship, C.S. Jackson, M.J. Siegert, A.P. Wright, J.L. Roberts, R.C. Warner, T. van Ommen, N.W. Young. Under the Antarctic Ice: New Data in the East, New Approaches in the West, WAIS Workshop, Loveland, CO, September 21st – 23rd

2011 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. The Basal Boundary of the Thwaites Glacier Catchment: Characterizing and Anisotropic Hydrological Environment, International Symposium on Antarctic Earth Science, Edinburgh, UK, July 10th – 16th

2010 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Basal Specularity of Thwaites Glacier, West Antarctica: Results from a New Tool for Evaluating Subglacial Hydrology, West Antarctic Ice Sheet Workshop, Raystown, PA, September 23rd – 25th

2010 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. The Subglacial Hydrology of Thwaites Glacier: Characterization and Interpretation of a Basin-Scale Specularity Map, SCAR Open Science Conference, Buenos Aires, Argentina, August 3rd – 6th

2010 D.A. Young, D.D. Blankenship, M.J. Siegert, T. Van Ommen, A.P. Wright, J.L. Roberts, J.S. Greenbaum, B.C. Frederick,**D.M. Schroeder**, J.W. Holt, R.C. Warner, N.W. Young. Extent, geomorphology and geo-

physics of the Aurora and Wilkes Subglacial Basins, East Antarctica: Influences on ice sheet architecture, SCAR Open Science Conference, Buenos Aires, Argentina, August 3rd – 6th

2010 A.P. Wright, M.J. Siegert, D.A. Young, D.D. Blankenship, T. Van Ommen, J.L. Roberts, J.S. Greenbaum, B.C. Fredrick, **D.M. Schroeder**, J.W. Holt, R.C. Warner, N.W. Young. Subglacial hydrology of the Aurora Basin, East Antarctica, from the geophysical investigations of the ICECAP project, SCAR Open Science Conference, Buenos Aires, Argentina, August 3rd – 6th

2010 J.W. Holt, D.A. Young, D.D. Blankenship, J.S. Greenbaum, **D.M. Schroeder**, T.G. Richter, A.P. Wright, T. Van Ommen, M.J. Siegert, J.L. Roberts, R.C. Warner. Bed topography of the Byrd Glacier trunk from radar soundings of the ICECAP project, SCAR Open Science Conference, Buenos Aires, Argentina, August 3rd – 6th

2010 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Comparative Subglacial Hydrology of Thwaites Glacier, Using Basal Specularity, Chapman Conference, Exploration and Study of Antarctic Subglacial Aquatic Systems, Baltimore, MD, March 15th – 17th

2009 **D.M. Schroeder**, D.D. Blankenship, D.A. Young. Improved Characterization of Subglacial Hydrology Using Multiple Radar Focusing Windows: Examples from Thwaites Glacier, West Antarctica, First Antarctic Climate Evolution Symposium, Granada, Spain, September 7th – 11th

FIELD WORK

2010 – 2011 The ICECAP Project and Operation Ice Bridge, East Antarctica (2 Months)
2009 – 2010 The ICECAP Project, East Antarctica (3 Months)
2008 – 2009 The ICECAP Project, East Antarctica (3 Months)
Agencies: NSF (US), NASA (US), NERC (UK), AAD (AUS), IPEV (FR), PNRA (IT)
Bases: McMurdo (US), Casey (AUS), Terra Nova (IT), Cap Prud'homme (FR)
Targets: Aurora Subglacial Basin, Astrolabe, Byrd, Totten, and Wilkes Glaciers
Instruments: VHF Radar, HF Radar, GPS, Gravimeter, Magnetometer, Lidar
Role: Lead RF Engineer and Radar Operator

INSTRUMENT DEVELOPMENT

2014 – present REASON Radar Sounder, NASA Europa Clipper Mission
2013 – present RIME Radar Sounder, ESA JUICE Mission
2010 – 2014 University of Texas MARFA Ice Penetrating Radar
2008 – 2011 University of Texas HiCARS II Ice Penetrating Radar

PROFESSIONAL AFFILIATIONS

Member, International Glaciological Society
Member, American Geophysical Union
Member, IEEE Geoscience and Remote Sensing Society
Member, Society of Exploration Geophysicists
Member, IEEE Antennas and Propagation Society

PROFESSIONAL SERVICE

2015 AGU Session Convener, Radar Investigations of Planetary Surfaces and Subsurfaces
2015 AGU Oral Session Chairman, Radar Investigations of Planetary Surfaces and Subsurfaces
2015 Division Representative, JPL Early Career Core Committee
2015 Member, JPL Advisory Council for Women

Panel Participation

2015 NSF Science and Technology Center (external)
2015 NASA Planetary Fellowship Program (external)
2015 NASA Earth Science Fellowship Program
2015 NASA Planetary Instrument Concepts for Advancement of Solar System Observations (external)
2014 NASA Cassini Data Analysis and Participating Scientist (external)
2014 NASA Operation Ice Bridge

Reviewer

Journal of Glaciology
Geophysics
Geophysical Research Letters
Journal of Geophysical Research
Earth and Planetary Science Letters
IEEE Geoscience and Remote Sensing Letters
IEEE Geoscience and Remote Sensing Magazine
Philosophical Transactions of the Royal Society
Radio Science

TEACHING EXPERIENCE

2015 Guest Lecturer, Remote Sensing, UCLA, 1 Lecture
2013 Guest Lecturer, The Cryosphere, Rice University, 1 Lecture
2013 Geophysical Glaciology: Ice Penetrating Radar, UT Institute for Geophysics, 10 Weeks
2010 Radar Principles Short Course, UT Institute for Geophysics, 4 Weeks

Graduate Student Mentorship

2015 – present Winnie Chu, Columbia University, Ph.D. Candidate in Geophysics
2014 – present Davide Castelletti, University of Trento, Ph.D. Candidate in Electrical Engineering
2014 – present Enrica Quartini, University of Texas, Ph.D. Candidate in Geophysics

Undergraduate Student Mentorship

2013 – present Youry Agylamov, California Institute of Technology, Geophysics Major
2013 – 2014 Ben Ayton, University of Texas, Now: Ph.D. Student in Aerospace Engineering at MIT
2012 Leo Breston, University of Illinois, Engineering Physics Major
2012 Harris Davidson, Olin College, Engineering, Mechanical Engineering Major
2010 – 2014 Evelyn Powell, University of Texas, Now: Ph.D. Student in Geophysics at Harvard

2008 – 2013 John DeSanto, University of Texas, Now: Ph.D. Student in Geophysics at UCSD
2011 – 2014 Arami Rosales, University of Texas, Physics Major

High School Student Mentorship

2007 – 2014 Coached and mentored over 40 high school students in science competitions and/or research

OUTREACH

2014 – present Co-Chair, Earth and Space Science Committee, National Science Olympiad
2015 – present Middle School Astronomy National Event Supervisor, National Science Olympiad
2013 – 2015 Planetary Science National Event Supervisor, National Science Olympiad
2015 Keynote Speaker, MIT Science Olympiad Invitational
2015 High School Astronomy State Event Supervisor, Southern California Science Olympiad
2003 – 2013 High School Astronomy National Event Supervisor, National Science Olympiad
2011 Onboard Science Lecture, Aurora Australis AAD Voyage: Casey to Hobart
2010 Tejas Club Life Raft Debate, Austin, TX
2009 Energy and Climate Facilitator, Clinton Global Initiative University, Austin, TX