

# Dustin M. Schroeder

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## 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    Science Team Member, REASON Radar Sounder, Europa Mission, NASA
- 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, 1<sup>st</sup> 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

## 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. 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

- 2016 D.M. Schroeder, C. Grima, D.D. Blankenship. Evidence for Variable Grounding-Zone and Shear-Margin Basal Conditions Across Thwaites Glacier, West Antarctica, **Geophysics**
- 2015 D.A. Young, D.M. Schroeder, D.D. Blankenship, S.D. Kempf, E. Quartini. The Distribution of Basal Water Between Antarctic Subglacial Lakes from Radar Sounding, **Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences** (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 Retreat 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 AGU Fall Meeting, Session on Processes at the Beds of Glaciers and Ice Sheets, December 14<sup>th</sup>
- 2015 AGU Fall Meeting, Geophysical Exploration of the Cryosphere, December 14<sup>th</sup>
- 2015 Scripps Institute of Oceanography, University of California San Diego, December 1<sup>st</sup>
- 2015 Climate Center Seminar, Jet Propulsion Laboratory, July 17<sup>th</sup>
- 2015 Department of Geophysics, Stanford University, April 23<sup>rd</sup>
- 2015 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech, March 27<sup>th</sup>
- 2015 Department of Electrical Engineering, University of Colorado, Boulder, February 13<sup>th</sup>
- 2014 Department of Geophysics, Stanford University, November 13<sup>th</sup>
- 2014 Workshop on Instruments for Polar Geology and Geophysics Research, NASA/NSF, October 9<sup>th</sup>
- 2014 Norwegian Polar Research Institute, Tromsø, Norway, June 4<sup>th</sup>
- 2014 Department of Geology, University of Kansas, April 9<sup>th</sup>
- 2013 Bromery Seminar, Earth and Planetary Science, Johns Hopkins University, November 7<sup>th</sup>
- 2013 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech, September 19<sup>th</sup>
- 2012 Institute for Geophysics, University of Texas at Austin, September 7<sup>th</sup>
- 2012 Space Research Group, Applied Physics Lab, Johns Hopkins University, May 3<sup>rd</sup>
- 2011 AGU Fall Meeting, Session on Interpretation Techniques in Radio Glaciology, December 5<sup>th</sup>

#### CONFERENCE PARTICIPATION

- 2015 **D.M. Schroeder**, H. Seroussi, *Characterizing Englacial and Subglacial Temperature Structure Using Airborne Radar Sounding*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>

- 2015 M. Haynes, **D.M Schroeder**, G. Steinbruegge, B. Bills, *Europa Tide Inversion from REASON Altimetry*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 W. Chu, **D.M Schroeder**, H. Seroussi, R. Bell, T. Creyts, *Extensive Subglacial Hydrological Network and Basal Temperate Layer in Southwest Greenland: An Integrated Approach of Radar Analysis and Ice Sheet Modeling*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 Y. Aglyamov, **D.M Schroeder**, M. Haynes, S. Vance, *Significance of Near-Surface Ice Fracture for Radar Sounding of Europa's Ice*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 **D.M Schroeder**, C. Grima, M. Haynes, *Surface and Basal Roughness in Radar Sounding Data: Obstacle and Opportunity*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 C. Grima, D.D. Blankenship, **D.M Schroeder**, A. Moussessian, K. Soderlund, Y. Gim, J. Plaut, J. Greenbaum, E.L. Garcia, B. Campbell, N. Putzig, G. Patterson, *Understanding Europa's Ice Shell and Subsurface Water Through Terrestrial Analogs for Flyby Radar Sounding*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 D.D. Blankenship, C. Grima, D.A. Young, **D.M Schroeder**, K. Soderlund, Y. Gim, J. Plaut, G. Patterson, A. Moussessian, *Surface and Basal Roughness in Radar Sounding Data: Obstacle and Opportunity*, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 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 16<sup>th</sup> – 21<sup>st</sup>
- 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 16<sup>th</sup> – 21<sup>st</sup>
- 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 16<sup>th</sup> – 21<sup>st</sup>
- 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 13<sup>th</sup> – 17<sup>th</sup>
- 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 13<sup>th</sup> – 17<sup>th</sup>
- 2015 E. Quartini, D.D. Blankenship, D.A. Young, **D.M. Schroeder**, *An Evaluation OF Active Subglacial Volcanism as a Source of Thwaites Glacier Heterogeneous Geothermal Flux*, International Symposium on International Earth Sciences, Goa, July 13<sup>th</sup> – 17<sup>th</sup>
- 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 26<sup>th</sup> – 31<sup>st</sup>
- 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 15<sup>th</sup> – 19<sup>th</sup>
- 2015 D.A. Young, **D.M. Schroeder**, E. Quartini, D.D. Blankenship, *The Context for Subglacial Water Systems from Antarctic Airborne Observations, Subglacial Antarctic lake exploration: first results and future plans*, The Royal Society, London, March 30<sup>th</sup> – 31<sup>st</sup>

- 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 15<sup>th</sup> - 19<sup>th</sup>
- 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 15<sup>th</sup> - 19<sup>th</sup>
- 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 9<sup>th</sup> -10<sup>th</sup> (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 24<sup>th</sup> - 27<sup>th</sup>
- 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 25<sup>th</sup> - 28<sup>th</sup>
- 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 25<sup>th</sup> - 28<sup>th</sup>
- 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 26<sup>th</sup> - 30<sup>th</sup>
- 2014 D.D. Blankenship, D.M. Schroeder. Airborne Studies of Subglacial Boundaries in West Antarctica, International Symposium on Polar Sciences, Incheon, South Korea, May 27<sup>th</sup> - 29<sup>th</sup>
- 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 5<sup>th</sup> - 7<sup>th</sup>
- 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 5<sup>th</sup> - 7<sup>th</sup>
- 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 5<sup>th</sup> - 7<sup>th</sup>
- 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 9<sup>th</sup> - 13<sup>th</sup>
- 2013 C. Grima, D.M. Schroeder, D.D. Blankenship, D.A. Young. Planetary Surface Roughness Derived from Ice Penetrating Radar Data: Method and Concept Validation in Antarctica. AGU Fall Meeting, San Francisco, CA, December 9<sup>th</sup> - 13<sup>th</sup>
- 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 9<sup>th</sup> - 13<sup>th</sup>
- 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 29<sup>th</sup> - October 2<sup>nd</sup>
- 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 29<sup>th</sup> – October 2<sup>nd</sup>
- 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 9<sup>th</sup> – 13<sup>th</sup>
- 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 9<sup>th</sup> – 13<sup>th</sup>
- 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 9<sup>th</sup> – 13<sup>th</sup>
- 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 9<sup>th</sup> – 13<sup>th</sup>
- 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 6<sup>th</sup> – 10<sup>th</sup>
- 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 18<sup>th</sup> – 22<sup>nd</sup>
- 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 3<sup>rd</sup> – 9<sup>th</sup>
- 2012 B.E. Schmidt, D.D. Blankenship, **D.M. Schroeder**. Europa Subsurface Science from Mutli-Flyby Missions, European Planetary Science Congress, Madrid, September 23<sup>rd</sup> – 28<sup>th</sup>
- 2012 **D.M. Schroeder**, D.D. 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 19<sup>th</sup> – 22<sup>nd</sup>
- 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 13<sup>th</sup> – 25<sup>th</sup>
- 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 19<sup>th</sup> – 22<sup>nd</sup>
- 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 5<sup>th</sup> – 9<sup>th</sup> (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 5<sup>th</sup> – 9<sup>th</sup>
- 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 2<sup>nd</sup> – 7<sup>th</sup>

- 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 21<sup>st</sup> – 23<sup>rd</sup>
- 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 10<sup>th</sup> – 16<sup>th</sup>
- 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 23<sup>rd</sup> – 25<sup>th</sup>
- 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 3<sup>rd</sup> – 6<sup>th</sup>
- 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 geophysics of the Aurora and Wilkes Subglacial Basins, East Antarctica: Influences on ice sheet architecture, SCAR Open Science Conference, Buenos Aires, Argentina, August 3<sup>rd</sup> – 6<sup>th</sup>
- 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 3<sup>rd</sup> – 6<sup>th</sup>
- 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 3<sup>rd</sup> – 6<sup>th</sup>
- 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 15<sup>th</sup> – 17<sup>th</sup>
- 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 7<sup>th</sup> – 11<sup>th</sup>

## 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 – present Member, Interiors Working Group, Europa Mission Project Science Group  
 2013 – present Collaborator, RIME Radar Sounder, JUICE mission, ESA  
 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 Lead, RIME Passive Sounding Working Group  
 2015 Member, JPL Advisory Council for Women  
 2013 – 2014 Technical Assistant, Europa Assessment Group, NASA  
 2010 – 2012 Technical Assistant, Europa Science Definition Team, NASA

**Panel Participation**

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

**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