

# 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
- 2017 – present Assistant Professor (by courtesy) of Electrical Engineering, Stanford University
- 2016 – present 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
- 2006 – 2007 Undergraduate Researcher, Bucknell University Department of Electrical Engineering

## AWARDS

- 2018 CAREER Award, National Science Foundation
- 2018 LInC Fellow, Woods Institute, Stanford University
- 2016 Frederick E. Terman Fellow, Stanford University
- 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

## PUBLICATIONS

### Journal Articles (\* indicates student or postdoctoral advisee)

- 2018 D. Castelletti\*, D.M. Schroeder, E. Mantelli\*, Layer Optimized SAR Processing and Slope Estimation in Radar Sounder Data (submitted)
- 2108 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, Seasonal Surface Meltwater Impounded by Persistent Englacial Storage in West Greenland (submitted)
- 2018 D.M. Schroeder, J.A. Dowdeswell, M.J. Siegert, R.G. Bingham, W. Chu\*, E.J. MacKie\*, M.R. Siegfried\*, K.I. Vega\*, John R. Emmons, K. Winstein, Multi-Decadal Observations of the Antarctic Ice Sheet from Archival Radar Film (in review)
- 2018 L. Carrer\*, D.M. Schroeder, A. Romero-Wolf, L. Bruzzone, The Effects and Implications of Jovian Noise Temporal and Structural Characteristics on Radar Passive Sounding of Jupiter's Icy Moons (in review)
- 2018 T.J. Young\*, D.M. Schroeder, P. Christoffersen, L. Lok, K.W. Nicholls, P.V. Brennan, S.H. Doyle, B. Hubbard, A. Hubbard, Resolving Glacier Internal and Basal Geometry of Ice Masses Using Imaging Phase-Sensitive Radar (in review)
- 2018 T.M. Jordan\*, C.N. Williams, D.M. Schroeder, Y.M. Martos, M.A. Cooper, M.J. Siegert, J.D. Paden, P. Huybrechts, J.L. Bamber, A Constraint Upon the Basal Water Distribution and Basal Thermal State of the Greenland Ice Sheet from Radar Bed-Echoes, The Cryosphere Discussions (in review)
- 2018 S.T. Peters\*, D.M. Schroeder, D. Castelletti\*, M. Haynes, A. Romero-Wolf, In-Situ Demonstration of a Passive Radio Sounding Approach Using the Sun for Echo Detection, IEEE Transactions in Geoscience and Remote Sensing (in press)
- 2018 M.S. Haynes, E. Chapin, D.M. Schroeder, Geometric Power Fall-off in Radar Sounding, IEEE Transactions in Geoscience and Remote Sensing
- 2018 W. Chu\*, D.M. Schroeder, H. Seroussi, T. Creyts, R.E. Bell, Complex basal thermal transition near the onset of Petermann Glacier, Greenland, Journal of Geophysical Research
- 2018 A. Rutishauser, D.D. Blankenship, M. Sharp, M.L. Skidmore, J.S. Greenbaum, C. Grima, D.M. Schroeder, J.A. Dowdeswell, D.A. Young, Discovery of a Hypersaline Subglacial Lake Complex Beneath Devon Ice Cap, Canadian Arctic, Science Advances
- 2018 G. Steinbruegge\*, D.M. Schroeder, M.S. Haynes, H. Hussmann, C. Grima, D.D. Blankenship, Assessing the potential for measuring Europa's tidal Love number  $h_2$  using radar sounder and topographic imager data, Earth and Planetary Science Letters
- 2018 B.A. Campbell, D.M. Schroeder, J.L. Whitten, Mars Radar Clutter and Surface Roughness Characteristics from MARSIS Data, Icarus
- 2017 D.M. Schroeder, A.M. Hilger\*, J.D. Paden, D.A. Young, H.F.J. Corr, Ocean Access Beneath the Southwest Tributary of Pine Island Glacier, West Antarctica, Annals of Glaciology
- 2017 D. Castelletti\*, D.M. Schroeder, S. Hensley, C. Grima, G. Ng, D.A. Young, Y. Gim, L Bruzzone, A. Moussessian, D.D. Blankenship, An Interferometric Approach to Cross-Track Clutter Detection in Two Channel VHF Radar Sounders, IEEE Transactions on Geoscience and Remote Sensing
- 2017 T.M. Jordan\*, M.A. Cooper\*, D.M. Schroeder, C.N. Williams, J.D. Paden, M.J. Siegert, J.L. Bamber, Self-affine subglacial roughness: consequences for radar scattering and basal water discrimination in northern Greenland, The Cryosphere
- 2017 K. Kalousova\*, D.M. Schroeder, K. Soderlund, Radar attenuation in Europa's ice shell: Obstacles and opportunities for constraining the shell thickness and its thermal structure, Journal of Geophysical Research

## Schroeder C.V. July 2018

- 2017 Y. Aglyamov\*, D.M. Schroeder, S.D. Vance, Bright prospects for radar detection of Europa's ocean, *Icarus*
- 2016 W. Chu\*, D. M. Schroeder, H. Seroussi, T. Creyts, S. J. Palmer, R. E. Bell, Extensive winter subglacial water storage beneath the Greenland Ice Sheet, *Geophysical Research Letters*
- 2016 D.M. Schroeder, H. Seroussi, W. Chu, D.A. Young, Adaptively constraining radar attenuation and temperature across the Thwaites Glacier catchment using bed echoes, *Journal of Glaciology*
- 2016 A. Khazendar, E. Rignot, D.M. Schroeder, H. Seroussi, M.P. Schodlok, B. Scheuchl, J. Mouginot, T. Sutterley, I. Velicogna, Rapid submarine ice melting in the grounding zones of ice shelves in West Antarctica, *Nature Communications*
- 2016 D.M. Schroeder, A. Romero-Wolf, L. Carrer, C. Grima, B.A. Campbell, W. Kofman, L. Bruzzone, D.D. Blankenship, Assessing the potential for passive radio sounding of Europa and Ganymede with RIME and REASON, *Planetary and Space Science*
- 2016 A. Romero-Wolf, D.M. Schroeder, P. Ries, B.G. Bills, C. Naudet, B.R. Scott, R. Treuhaft, S. Vance, Prospects of passive radio detection of a subsurface ocean on Europa with a lander, *Planetary and Space Science*
- 2016 M.J. Siegert, N. Ross, J. Li, D.M. Schroeder, D. Rippin, D. Ashmore, R. Bingham, P. Gogineni, Subglacial Controls on the Flow of Institute Ice Stream, West Antarctica, *Annals of Glaciology*
- 2016 M.G.P. Cavitte, D.D. Blankenship, D.A. Young, D.M. Schroeder, F. Parrenin, E. LeMeur, J.A. MacGregor, M.J. Siegert. Deep Radiostratigraphy of the East Antarctic Plateau: Connecting the Dome C and Vostok Ice Core Sites, *Journal of Glaciology*
- 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*
- 2015 C. Grima, D.D. Blankenship, D.M. Schroeder. Radar Signal 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. Ocean Access to Totten Glacier, East Antarctica, *Nature Geoscience*
- 2015 D.M. Schroeder, D.D. Blankenship, R.K. Raney, C. Grima. Estimating Subglacial Water Geometry from the Specularity of Radar Bed Echoes: Application to Thwaites Glacier, West Antarctica. *IEEE Geoscience and Remote Sensing Letters*
- 2014 D.M. Schroeder, D.D. Blankenship, D.A. Young, A.E. Kirshner, J.B. Anderson. Airborne 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 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 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 A.E. Witus, C.M. Braneky, 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*

## Schroeder C.V. July 2018

- 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

### Refereed Conference Papers (\* indicates student or postdoctoral advisee)

- 2018 D. Castelletti\*, D.M. Schroeder, E. Mantelli\*, A.M. Hilger\*, Unfocused SAR Processing for Englacial Layer Slope Estimation Using Radar Sounder Data, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 2018 L. Carrer\*, D.M. Schroeder, A. Romero-Wolf, P.A. Reis, L. Bruzzone, Noise Character Constraints on Passive Radio Soundings of Jupiter's Icy Moons Using Jovian Decametric Radiation, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 2018 S.T. Peters\*, D.M. Schroeder, D. Castelletti\*, M.S. Haynes, A. Romero-Wolf, First In-Situ Demonstration of Passive Radio Sounding Using the Sun as a Source for Echo Detection, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 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>

### INVITED TALKS

- 2018 Department of Earth and Planetary Science, Harvard University
- 2018 Jones Seminar, Dartmouth University Thayer School of Engineering
- 2018 Department of Aerospace Engineering, University of Texas at Austin
- 2018 American Physical Society April Meeting, Columbus
- 2018 Department of Earth and Planetary Sciences, Washington University in Saint Louis
- 2018 Keynote, Taking the Temperature of the Antarctic Continent Workshop
- 2018 Department of Earth System Science, Stanford University
- 2017 Europa Science Series, Jet Propulsion Laboratory, Caltech
- 2017 Department of Earth and Planetary Science, Johns Hopkins University
- 2017 Berkeley Seismology Lab, University of California, Berkeley
- 2017 Keynote, International Glaciological Society Symposium, Boulder
- 2017 Advanced Instrumentation Seminar, SLAC National Accelerator Laboratory
- 2017 School of Geosciences, University of Edinburgh
- 2017 Keynote, Canadian Geophysical Union and CSAFM Joint Annual Scientific Meeting, Vancouver
- 2017 Symposium Keynote, Department of Electronic and Electrical Engineering, University College London
- 2017 Department of Earth and Space Sciences, University of Washington

## Schroeder C.V. July 2018

- 2016 Institute of Planetary Research, German Aerospace Center
- 2016 Glaciology Center Seminar, Bristol University
- 2016 Remote Sensing Laboratory, University of Trento
- 2016 Physics Department, Bucknell University
- 2016 Planetary Seminar Series, Georgia Institute of Technology
- 2016 Institute for Geophysics and Planetary Physics, UC Santa Cruz
- 2016 Lamont-Doherty Earth Observatory, Columbia University
- 2015 Scripps Institute of Oceanography, University of California San Diego
- 2015 AGU Fall Meeting, San Francisco
- 2015 Climate Center Seminar, Jet Propulsion Laboratory
- 2015 Department of Geophysics, Stanford University
- 2015 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech
- 2015 Department of Electrical Engineering, University of Colorado, Boulder
- 2014 Department of Geophysics, Stanford University
- 2014 Workshop on Instruments for Polar Geology and Geophysics Research, NASA/NSF
- 2014 Norwegian Polar Research Institute, Tromso
- 2014 Department of Geology, University of Kansas
- 2013 Earth and Planetary Science, Johns Hopkins University
- 2013 Radar Science and Engineering Section, Jet Propulsion Laboratory, Caltech
- 2012 Institute for Geophysics, University of Texas at Austin
- 2012 Space Research Group, Applied Physics Lab, Johns Hopkins University
- 2011 AGU Fall Meeting, San Francisco

### CONFERENCE PARTICIPATION (\* indicates student or postdoctoral advisee)

- 2018 M.R. Siegfried\*, D.M. Schroeder, D. Castelletti\*, Looking Forward and Backward: New Techniques for Quantifying Dynamic Surface-Height Changes With Radar Altimetry in Antarctica, 25 Years of Progress in Radar Altimetry, Pota Delgada, September 24<sup>th</sup> – 29<sup>th</sup>
- 2018 G. Steinbruegge\*, L. Fanara, D. Haack, M. Hamm, A. Heffels, M. Maurice, A. Nikolaou, Y. Rosas Ortiz, I. Varatharajan, D.M. Schroeder, K. Zikidis, H. Hussmann, T. Spohn, PRIME – A concept for passive radar investigation of Jupiter's moon Io, European Planetary Science Congress, Berlin, September 16<sup>th</sup> – 21<sup>st</sup>
- 2018 D. Castelletti\*, D.M. Schroeder, E. Mantelli\*, A.M. Hilger\*, Unfocused SAR Processing for Englacial Layer Slope Estimation Using Radar Sounder Data, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 2018 S.T. Peters\*, D.M. Schroeder, D. Castelletti\*, M.S. Haynes, A. Romero-Wolf, First In-Situ Demonstration of Passive Radio Sounding Using the Sun as a Source for Echo Detection, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 2018 L. Carrer\*, D.M. Schroeder, A. Romero-Wolf, P.A. Reis, L. Bruzzone, Noise Character Constraints on Passive Radio Soundings of Jupiter's Icy Moons Using Jovian Decametric Radiation, IEEE Geoscience and Remote Sensing Symposium, Valencia, July 23rd – 27th
- 2018 C.Grima, D.D. Blankenship, C. Paty, Y. Gim, W. Kurth, E. Chapin, D.M. Schroeder, J. Plaut, G.W. Patterson, A. Moussessian, D.A. Young, Investigating Europa's Plasma Environment From Radar Sounding, Committee on Space Research, Pasadena, July 14th – 22nd

## Schroeder C.V. July 2018

- 2018 D.D. Blankenship, A. Moussessian, J. Plaut, G.W. Patterson, D.A. Young, K.M. Soderlund, D.M. Schroeder, C. Grima, A. Freedman, E. Chapin, J. Hoffman, S. Collins, Y. Gim, T.Ray, A. Romero-Wolf, The REASON Science Team, REASON for Europa, Committee on Space Research, Pasadena, July 14th – 22nd
- 2018 D.M. Schroeder, A.M. Hilger\*, E.J. MacKie\*, H.F.J. Corr, D.D. Blankenship, J.D. Paden, J.A. Dowdeswell, Multi-System, Multi-Decadal Radar Sounding of Thwaites and Pine Island Glaciers, Scientific Committee on Antarctic Research, Polar 2018 Open Science Conference, Davos, June 19th – 23rd
- 2018 M.R. Siegfried\*, S. Adusumilli, H.A. Fricker, T.D. Scambos, D.M. Schroeder, B.E. Smith, Investigating Large Active Subglacial Lake Drainages in East Antarctica, Scientific Committee on Antarctic Research, Polar 2018 Open Science Conference, Davos, June 19th – 23rd
- 2018 W. Chu\*, D.M. Schroeder, Quantifying Greenland Water Budget from Top to Bottom using Radar Sounding, Scientific Committee on Antarctic Research, Polar 2018 Open Science Conference, Davos, June 19th – 23rd
- 2018 E.J. MacKie\*, D.M. Schroeder, J.A. Dowdeswell, K.I. Vega\*, M.R. Siegfried\*, W. Chu\*, R.G. Bingham, Digitization and Analysis of the SPRI-NSF-TUD Radar Data Archive, Scientific Committee on Antarctic Research, Polar 2018 Open Science Conference, Davos, June 19th – 23rd
- 2018 E. Mantelli\*, D. Castelletti\*, D.M. Schroeder, J. Suckale, A.M. Hilger\*, Improved Processing, Slope Estimation, and Ice Flow Interpretation Using Englacial Layer Data from Radar Sounding, International Glaciological Society Symposium on Timescales, Processes, and Glacier Dynamics, Buffalo, June 3rd – 8th
- 2018 M. Cooper\*, T.M. Jordan\*, D.M. Schroeder, M. Siegert, C. Williams, J. Bamber, Subglacial Roughness of the Greenland Ice Sheet: Relationship with Contemporary Ice Velocity and Geology, EGU General Assembly, Vienna, April 8th – 13th
- 2018 T.M. Jordan\*, C. Williams, D.M. Schroeder, Y. Martos, M. Cooper\*, M.J. Siegert, J.D. Paden, P. Huybrechts, J. Bamber, A Constraint upon the Basal Water Distribution and Thermal State of the Greenland Ice Sheet from radar bed-echoes, EGU General Assembly, Vienna, April 8th – 13th
- 2018 E. Mantelli\*, D. Castelletti\*, D.M. Schroeder, J. Suckale, A.M. Hilger\*, Improved Processing, Slope Estimation, and Ice Flow Interpretation Using Englacial Layer Data from Radar Sounding, EGU General Assembly, Vienna, April 8th – 13th
- 2018 G. Steinbruegge\*, L. Fanara, D. Haak, M. Hamm, A. Heffels, M. Maurice, A. Nikolaou, Y. Rosas Ortiz, I. Varatharajan, D.M. Schroeder, K. Zikidis, H. Hussmann, T. Spohn, PRIME – A concept for passive radar investigation of Jupiter's moon Io, EGU General Assembly, Vienna, April 8th – 13th
- 2018 D.M. Schroeder, Observing Antarctic Ice-sheet Conditions Using Ice-Penetrating Radar, American Physical Society April Meeting, Columbus, April 14th – 17th (invited)
- 2018 W. Chu\*, D.M. Schroeder, T. Jordan\*, Y. Martos, Elevated Geothermal Heat Flux Produces Extensive Meltwater Beneath Large Ice Sheets: Lessons from Greenland, Taking the Temperature of the Antarctic Continent Workshop, Hobart, Tasmania, March 21st – 23rd
- 2018 D.M. Schroeder, W. Chu\*, Observationally Constraining Geothermal Heat Flux Using Ice Penetrating Radar, Taking the Temperature of the Antarctic Continent Workshop, Hobart, March 21st – 23rd (keynote)
- 2018 C. Culha\*, D.M. Schroeder, M. Haynes, Assessing the potential for detecting Europa's eutectic using radar sounding, Lunar and Planetary Science Conference, The Woodlands, Texas, March 19th – 23rd
- 2018 R.J. Michaelides, D.M. Schroeder, Assessing the Ability of Radar Sounders to Discriminate between Corner-Reflections and Point Scatterers: Application to Europa's Chaos Terrains, Lunar and Planetary Science Conference, The Woodlands, Texas, March 19th – 23rd
- 2018 D.M. Schroeder, W. Chu\*, A. K. Kendrick\*, S.T. Peters\*, D. Castelletti\*, Constraining the Spatial and Temporal Evolution of Supraglacial and Englacial Meltwater Using Radar Sounding Data, Workshop on Antarctic Surface Hydrology and Future Ice Shelf Stability, Palisades, New York, February 21st – 22nd

## Schroeder C.V. July 2018

- 2017 D.M. Schroeder, J.A. Dowdeswell, E.J. MacKie\*, K.I. Vega\*, J.R. Simmons\*, K. Winstein, R.G. Bingham, T.J. Benham, High-Resolution Digitization of the Film Archive of SPRI/NSF/TUD Radar Sounding of the Antarctic Ice Sheet, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 W. Chu\*, D.M. Schroeder, H.L. Seroussi, T.T. Creyts, R.E. Bell, J.D. Paden, Constraining Greenland basal water extent and drainage morphology from radar reflectivity and specular analysis, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 D. Castelletti\*, D.M. Schroeder, Estimating Englacial Vertical Velocity from Airborne Radar Sounding Data, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 A.M. Hilger\*, D.M. Schroeder, H.F.J. Corr, D.D. Blankenship, J.D. Paden, Constraining Basal Conditions across the Amundsen Sea Embayment of West Antarctica using a Synthesis of the PASIN and HiCARS Radar Sounding Data, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 S.T. Peters\*, D.M. Schroeder, A. Romero-Wolf, M.S. Haynes, Preliminary Field Demonstration of Passive Radio Sounding Using the Sun as a Signal for Echo Detection, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 T.M. Jordan\*, C. Williams, D.M. Schroeder, Y.M. Matos, M. Cooper, M.J. Siegert, J.D. Paden, P. Huybrechts, J.L. Bamber, The Distribution of Basal Water Beneath the Greenland Ice Sheet from Radio-Echo Sounding, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 M.R. Siegfried\*, S. Adusumilli, H.A. Fricker, T.A. Scambos, D.M. Schroeder, B.E. Smith, Unraveling the cause of large surface-height anomalies on Slessor and Recovery glaciers, East Antarctica, with multi-mission data integration, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 A. Rutishauser, M.J. Sharp, D.D. Blankenship, M.L. Skidmore, C. Grima, D.M. Schroeder, J.S. Greenbaum, J.A. Dowdeswell, D.A. Young, Geophysical Investigations of Hypersaline Subglacial Water Systems in the Canadian Arctic: A Planetary Analog, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 J.S. Greenbaum, D.D. Blankenship, C. Grima, D.M. Schroeder, K.M. Soderlund, D.A. Young, S.D. Kempf, M.J. Siegert, J.L. Roberts, R.C. Warner, T.D. van Ommen, Remote Characterization of Ice Shelf Surface and Basal Processes: Examples from East Antarctica, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 L.M. Simkins, S.P. Carter, S. Greenwood, D.M. Schroeder, Meltwater drainage beneath ice sheets: What can we learn from uniting observations of paleo- and contemporary subglacial hydrology?, AGU Fall Meeting, December 11<sup>th</sup> – 15<sup>th</sup>
- 2017 D.M. Schroeder, A.K. Kendrick\*, K.I. Vega\*, E.J. MacKie\*, A.M. Hilger\*, S.T. Peters\*, W.Chu\*, Observing the Temporal Evolution of Subglacial Conditions Using Radar Sounding Data, WAIS Workshop, Couperville, Washington, October 8<sup>th</sup> – 11<sup>th</sup>
- 2017 D.M. Schroeder, A.K. Kendrick\*, K.I. Vega\*, E.J. MacKie\*, A.M. Hilger\*, S.T. Peters\*, W.Chu\*, Observing the Temporal Evolution of Subglacial Conditions Using Radar Sounding Data, WAIS Workshop, Coupeville, Washington, October 8<sup>th</sup> – 11<sup>th</sup>
- 2017 C.W. Ellsworth\*, D.M. Schroeder\*, M.R. Siegfried\*, Internal layer deformation reveals past ice flow over the central sticky spot of Whillans Ice Stream, West Antarctica, WAIS Workshop, Coupeville, Washington, October 8<sup>th</sup> – 11<sup>th</sup>
- 2017 G.W. Patterson, L.M. Carter, A.M. Stickle, J.T.S. Cahill, M.C. Nolan, G.A. Morgan, D.M. Schroeder, Mini-RF Team, Mini-RF S- and X-Band Bistatic Radar Observations of the Moon, Annual Meeting of the Lunar Exploration Analysis Group, Columbia, MD, October 10<sup>th</sup> – 12<sup>th</sup>

## Schroeder C.V. July 2018

- 2017 D.M. Schroeder, J.A. Dowdeswell, High Resolution Digitization of the Film Archive of SPRI/NSF/TUD Radar Sounding of the Antarctic Ice Sheet, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup> (invited keynote)
- 2017 T. Teisberg\*, T. Diamandis\*, L. Herrera\*, I. Kushan\*, A. Tedjarati\*, D.M. Schroeder, Radar Sounder Development for an Expendable High Altitude Balloon, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 S.T. Peters\*, D.M. Schroeder, A. Romero-Wolf, M. Haynes, Passive Radio Sounding for Terrestrial Glaciology: Preliminary Field Testing and Proof-of-Concept, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 A.K. Kendrick\*, D.M. Schroeder, T.J. Young\*, P. Christoffersen, P.V. Brennan, K.W. Nicholls, L. Lok, Estimating seasonal englacial water content using autonomous phase-sensitive radio-echo sounding data, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 A.M. Hilger\*, D.M. Schroeder, H.F.J. Corr, D.D. Blankenship, J.D. Paden, Synthesizing the PASIN and HiCARS Radar Sounding Data to Constrain Basal Conditions across the Amundsen Sea Embayment of West Antarctica, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 T.J. Young\*, D.M. Schroeder, P. Christoffersen, L. Lok, K.W. Nicholls, P.V. Brennan, S. Doyle, B. Hubbard, A. Hubbard, Observing and quantifying dipping internal reflectors in 3-dimensions using phase-sensitive ice-penetrating radar, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 W. Chu\*, D.M. Schroeder, H. Seroussi, T.T. Creyts, R.E. Bell, Large Variability in Subglacial Drainage Processes Revealed by Airborne Radar Sounding Across the Greenland Ice Sheet, International Symposium on Polar Ice, Polar Climate, Polar Change: Remote Sensing and Modeling Advances in Understanding the Cryosphere, Boulder, August 14<sup>th</sup> – 19<sup>th</sup>
- 2017 D.M. Schroeder, Advances in Ice Penetrating Radar Time Series Observations, Canadian Geophysical Union and CSAFM Joint Annual Scientific Meeting, Vancouver, May 28<sup>th</sup> – 31<sup>st</sup> (invited keynote)
- 2017 D.M. Schroeder, A.M. Hilger\*, J. Paden, H. Corr, D.D. Blankenship, Radar Sounding Investigations at the Boundary of Thwaites and Pine Island Glaciers, European Geosciences Union, April 23<sup>rd</sup> – 28<sup>th</sup>
- 2017 T. Jordan, M. Cooper, J.L. Bamber, D.M. Schroeder, C. Williams, J.D. Paden, M.J. Siegert, P. Huybrechts, O. Gagliardini, F. Gillet-Chaulet, S.F. Price, Self-Affine Subglacial Roughness: Consequences for Radar Scattering and Basal Thaw Discrimination from Radio-Echo Sounding, EGU, April 23<sup>rd</sup> – 28<sup>th</sup>
- 2017 J.S. Greenbaum, D.M. Schroeder, C. Grima, F. Habbal, C. Dow, J.L. Roberts, D. Gwyther, T. van Ommen, M.J. Siegert, D.D. Blankenship, Morphological evidence and direct estimates of rapid melting beneath Totten Glacier Ice Shelf, East Antarctica, European Geosciences Union, April 23<sup>rd</sup> – 28<sup>th</sup>
- 2017 G. Steinbruegge\*, D.M. Schroeder, M.S. Haynes, H. Hussmann, C. Grima, D.D. Blankenship, Assessing the Potential for Measuring Europa's Tidal Love Number h<sub>2</sub> Using Radar Sounder and Topographic Imager Data, European Geosciences Union, April 23<sup>rd</sup> – 28<sup>th</sup>
- 2017 C. Grima, D.D. Blankenship, C. Paty, Y. Gim, W. Kurth, E. Chapin, D.M. Schroeder, J.J. Plaut, G.W. Patterson, A. Moussessian, D.A. Young, Investigating Europa's Plasma Environment from Radar Sounding, 48<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, March 20<sup>th</sup> – 24<sup>th</sup>



## Schroeder C.V. July 2018

- 2017 D.D. Blankenship, C. Grima, D.A. Young, D.M. Schroeder, K.M. Soderlund, Y. Gim, J.J. Plaut, G.W. Patterson, A. Moussessian, A. Rutishauser, I. Koch, Understanding Europa's Ice Shell and Subsurface Water Through Terrestrial Analogs for Flyby Radar Sounding, 48<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, March 20<sup>th</sup> – 24<sup>th</sup>
- 2017 D.M. Schroeder, T.J. Young\*, A. Kendrick\*, L.B. Lok, P. Christoffersen, Stationary Radio Sounding Time Series Observations: Challenges and Opportunities, NASA PARCA Meeting, January 24<sup>th</sup> – 25<sup>th</sup>
- 2016 D.M. Schroeder, J.D. Paden, H.F.J. Corr, D.D. Blankenship, A.M. Hilger\*, Cross-Instrument Radar Sounding Synthesis: Characterizing Basal Conditions Across the Amundsen Sea Embayment, AGU Fall Meeting, December 12<sup>th</sup> – 16<sup>th</sup>
- 2016 W. Chu\*, D.M. Schroeder, H.L. Seroussi, T.T. Creyts, S.J. Palmer, R.E. Bell, Distinct Subglacial Drainage Patterns Revealed in High-Resolution Mapping of Basal Radar Reflectivity across Greenland, AGU Fall Meeting, December 12<sup>th</sup> – 16<sup>th</sup>
- 2016 M. Haynes, D.M. Schroeder, X. Duan, D. Arumugam, J.G. McMichael, S. Hensley, T. Cwick, Simulator for Large-scale Planetary and Terrestrial Radar Sounding, AGU Fall Meeting, December 12<sup>th</sup> – 16<sup>th</sup>
- 2016 T. Jordan, M. Cooper, J.L. Bamber, D.M. Schroeder, C. Williams, J.D. Paden, M.J. Siegert, P. Huybrechts, O. Gagliardini, F. Gillet-Chaulet, S.F. Price, An Integrated Assessment of Basal Scattering and Topographic Roughness Information Derived from Greenland Radar-Sounding Data, AGU Fall Meeting, Dec. 12<sup>th</sup> – 16<sup>th</sup>
- 2016 K. Kalousova\*, D.M. Schroeder, K.M. Soderlund, Radar attenuation in Europa's ice shell: obstacles and opportunities for constraining shell thickness and thermal structure, Division of Planetary Sciences #48 and European Planetary Science Congress, Pasadena, October 16<sup>th</sup> - 21<sup>st</sup>
- 2016 J.S. Greenbaum, D.M. Schroeder, C.Y. Grima, C.F. Dow, D.D. Blankenship, D.A. Young, J.L. Roberts, D.E. Gwyther, A.H. Orsi, B. Huber, A. Leventer, R.C. Warner, T.D. van Ommen, and M.J. Siegert, Basal melt in channels and terraces beneath Totten Glacier, East Antarctica, Forum for Research into Ice Shelf Processes, October 4<sup>th</sup> – 6<sup>th</sup>
- 2016 E. Quartini, D.A. Young, D.M. Schroeder, D.D. Blankenship, An Evaluation of Geothermal Flux Along a Subglacial Volcano in the Executive Committee Range, SCAR Open Science Conference, Kuala Lumpur, Malaysia, August 20<sup>th</sup> – 30<sup>th</sup>
- 2016 M.R. Siegfried\*, D.M. Schroeder, T. Scambos, S.P. Carter, H.A. Fricker, A large, rapid subglacial lake drainage beneath Slessor Glacier, East Antarctica, and its potential impact in the Filchner Trough, IGS International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, July 10<sup>th</sup> – 15<sup>th</sup>
- 2016 D.M. Schroeder, C. Grima, M.S. Haynes, J.S. Greenbaum, Distinguishing the Signatures of Ice Shelf Surface Roughness, Basal Roughness, Temperature, and Chemistry in Radar Sounding Data, IGS International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, July 10<sup>th</sup> – 15<sup>th</sup>
- 2016 J.S. Greenbaum, D.D. Blankenship, D.M. Schroeder, D. Gwyther, D.A. Young, L.E. Lindzey, J.L. Roberts, R.C. Warner, T. Van Ommen, M.J. Siegert, Basal terraces beneath Totten Glacier, East Antarctica, IGS International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, July 10<sup>th</sup> – 15<sup>th</sup>
- 2016 L.E. Lindzey, D.M. Schroeder, J.S. Greenbaum, D.A. Young, D.D. Blankenship, Dielectric losses in Totten Ice Shelf using multiple reflection from ice penetrating radar, IGS International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, July 10<sup>th</sup> – 15<sup>th</sup>
- 2016 D.M. Schroeder, H. Seroussi, W. Chu\*, D.A. Young, Signature of Recent Ice Flow Acceleration in the Radar Attenuation and Temperature Structure of Thwaites Glacier, West Antarctica, EGU General Assembly, Vienna, Austria, April 17<sup>th</sup> – 22<sup>nd</sup>
- 2016 Y.S. Aglyamov\*, D.M. Schroeder, M.S. Haynes, S. Vance, An Investigation of Radar Scattering from Fracture in Europa's Upper Ice Shell, Lunar & Planetary Science Conf., The Woodlands, TX, Mar. 21<sup>st</sup> – 25<sup>th</sup>

## Schroeder C.V. July 2018

- 2016 M.G.P. Cavitte, D.D. Blankenship, D.A. Young, F. Parrenin, C. Ritz, J.L. Roberts, T. van Ommen, D.M. Schroeder, M.J. Siegert, E. le Meur, Old Ice and the Stability of the Byrd-Totten Glacier Divide Region, International Partnerships in Ice Cores Sciences, Hobart, Australia, March 7<sup>th</sup> – 11<sup>th</sup>
- 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> (invited)
- 2015 A. Khazendar, E.J. Rignot, D.M. Schroeder, H.L. Seroussi, M. Schodlok, B. Scheuchl, T.C. Sutterley, I. Velicogna, Direct Observations of Rapid Basal Melting and Bed Topography in the Grounding Zones of the Dotson and Crosson Ice Shelves, West Antarctica, AGU Fall Meeting, San Francisco, December 14<sup>th</sup> – 18<sup>th</sup>
- 2015 A. Moussessian, D.D. Blankenship, J. Plaut, G.W. Patterson, Y. Gim, D.M. Schroeder, K.M. Soderlund, D. Young, C. Grima, E. Chapin, REASON for Europa, 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> (invited)
- 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, Dec. 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, M.S. Haynes, G. Steinbruegge\*, An Initial Assessment of REASON Altimetry for Europa Geodesy, Europa Gravity Science Working Group, Pasadena, CA, December 6<sup>th</sup>
- 2015 G.W. Patterson, D.D. Blankenship, K.M. Soderlund, C. Grima, A. Moussessian, J. Plaut, Y. Gim, D.M. Schroeder, E. Chapin, REASON for Europa, AAAS Div. for Planetary Sciences, Wash. DC, Nov. 8<sup>th</sup> – 13<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 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 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>

## Schroeder C.V. July 2018

- 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 Antarctic Earth Sciences, Goa, July 13<sup>th</sup> – 17<sup>th</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, Intl. Sym. on Antarctic Earth Science, 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 Antarctic Earth Sciences, Goa, July 13<sup>th</sup> – 17<sup>th</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 Anatarctic 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 T.D. Komacek, D.L. Young, D.M. Schroeder, M.A. VanHecke, Star Formation and Exoplanetary Systems in the National Science Olympiad Astronomy Event for High School Students, American Astronomical Society, DPS meeting #46, November 9<sup>th</sup> – 14<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>

## Schroeder C.V. July 2018

- 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. Braneky, 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, Sept. 29<sup>th</sup> – Oct. 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.B. Blankenship, D.A. Young. Evidence for Ice-Flow-Coupled Subglacial Water Systems Beneath West Antarctica's Potentially Unstable Thwaites Glacier, West Antarctic Ice Sheet Workshop, Eatonville, WA, September 19<sup>th</sup> – 22<sup>nd</sup>

## Schroeder C.V. July 2018

- 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 Conf. on Remote Sensing of Terrestrial Water Cycle, Kona, HI, Feb 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, American Geophysical Union 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 Conf., 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>

Schroeder C.V. July 2018

### **SPACECRAFT MISSION PARTICIPATION**

2016 – present Science Team Member, Mini-RF Radar, Lunar Reconnaissance Orbiter, NASA  
2015 - present Science Team Member, REASON Radar Sounder, Europa Mission, NASA  
2015 – present Member, Interiors Working Group, Europa Project Science Group, NASA  
2015 - 2017 Lead, Passive Sounding Working Group, RIME Radar Sounder, JUICE mission, ESA  
2013 – 2014 Technical Assistant, Europa Assessment Group, NASA  
2010 – 2012 Technical Assistant, Europa Science Definition Team, NASA

### **FIELD CAMPAIGN PARTICIPATION**

2010 – 2011 RF Engineer and Radar Operator, ICECAP and Operation Ice Bridge, East Antarctica (2 Months)  
2009 – 2010 RF Engineer and Radar Operator, The ICECAP Project, East Antarctica (3 Months)  
2008 – 2009 RF Engineer and Radar Operator, The ICECAP Project, East Antarctica (3 Months)

### **INSTRUMENT DEVELOPMENT**

2016 – present Stanford Low-resource Ice Penetrating Radar (SLIPR)  
2014 – present REASON Radar Sounder, NASA Europa Clipper Mission  
2013 – 2017 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

### **GRANTS**

2015 – 2033 Co-I, Science Team Member, Radar for Europa Assessment and Sounding: Ocean to Near Surface (REASON), Europa Clipper Mission, NASA  
2018 – 2022 PI, CAREER: Cross-Instrument Synthesis of Antarctic Radar Sounding Observations, NSF  
2017 – 2022 Collaborator, REsolving Subglacial Properties, hydrOlogical Networks and Dynamic Evolution of ice flow on the gReenland ice sheet (RESPONDER), European Commission  
2018 – 2021 Co-I, TIME (Thwaites Interdisciplinary Margin Evolution) - The Role of Shear Margin Dynamics in the Future Evolution of Thwaites Drainage Basin, NSF-NERC  
2018 – 2020 Co-I, Ground-based Radar Monitoring of Plant Water Content, Stanford Woods Institute  
2016 – 2019 PI, Joint Radar and Model Investigations of Greenland Basal Water Conditions, NASA  
2016 – 2019 Co-I, Mini-RF Radar, Lunar Reconnaissance Orbiter, NASA  
2017 – 2018 Co-I, Passive Sounding using Astronomical Radio Sources for Earth and Planetary Science, JPL  
2017 Co-I, Glacier Velocity on Mt. Baker, Washington, MUIR Award, Stanford Woods Institute  
2015 – 2016 Co-I, Radar Sounding and Propagation through Heterogeneous Media, JPL  
2014 – 2015 PI, Technique Development for Grounding Zone Characterization Using Radar Sounding, NASA  
2013 – 2014 Key Personnel, Ice Penetrating Radar, NASA Instrument Concepts for Europa Exploration  
2009 - 2014 PI, NSF Graduate Research Fellowship Program

Schroeder C.V. July 2018

## **PROFESSIONAL SERVICE**

### **Leadership**

2019 Chair, IGS Symposium Scientific and Organizing Committee  
2019 Chief Editor, Annals of Glaciology Volume on Progress in Radioglaciology  
2016 – present Steering Committee, Solid Earth Response and Influence on Cryosphere Evolution, SCAR  
2015 - present AGU Outstanding Student Paper Judge  
2018 AGU Cryosphere Session Convener  
2018 AGU Planetary Session Convener  
2018 Convener, Invited Session, IEEE Geoscience and Remote Sensing Symposium  
2017 AGU Planetary Session Convener  
2017 EGU Outstanding Student Paper Judge  
2016 AGU Planetary Session Convener  
2016 AGU Fall Meeting Mentor  
2015 AGU Planetary Session Convener

### **Panel Participation**

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

### **Reviewer**

Annals of Glaciology, Earth and Planetary Science Letters, Earth System Science Data, Geological Society of London, Geophysical Research Letters, Geophysics, Geosciences, Icarus, IEEE Geoscience and Remote Sensing Letters, IEEE Geoscience and Remote Sensing Magazine, IEEE Transactions on Aerospace and Electronic Systems, , IEEE Transactions on Geoscience and Remote Sensing, Journal of Geophysical Research, Journal of Glaciology, Nature, Nature Geoscience, Philosophical Transactions of the Royal Society, Planetary and Space Science, Radio Science, Remote Sensing, Science, The Cryosphere

### **Professional Affiliations**

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

Schroeder C.V. July 2018

## **INSTITUTIONAL SERVICE**

2018 – present Faculty Senator, Stanford University  
2018 – present Earth Counsel Delegate, School of Earth, Energy, and Environmental Sciences, Stanford University  
2017 – present Academic Affairs Committee Chair, Department of Geophysics, Stanford University  
2017 – present Director of Undergraduate Studies, Department of Geophysics, Stanford University  
2017 – present Graduate Admissions Committee, Department of Geophysics, Stanford University  
2016 – present Long Term Planning Committee, Department of Geophysics, Stanford University  
2016 – present Pre-Major Advisor / Newcomer Guide, Stanford University  
2018 Reviewer, Stanford Interdisciplinary Graduate Fellowship  
2016 – 2017 Undergraduate Coordinator, Department of Geophysics, Stanford University  
2017 Undergraduate Program Team, Stanford School of Earth, Energy, and Environmental Sciences  
2017 Reviewer, Stanford Interdisciplinary Graduate Fellowship  
2016 – 2017 Atmospheric Dynamics Search Committee, Earth Systems Science Department, Stanford University  
2014 – 2015 Member, JPL Advisory Council for Women  
2014 – 2015 Division Representative, JPL Early Career Core Committee

## **TEACHING**

2018 Ice Penetrating Radar, Stanford University  
2018 Know Your Planet: Big Earth, Stanford University (Guest Lecturer)  
2017 Mission to Europa, Stanford University  
2017 Near Surface Geophysics and Hydrogeophysics, Stanford University  
2017 Know Your Planet: Big Earth, Stanford University (Guest Lecturer)  
2016 Introduction to the Foundations of Contemporary Geophysics, Stanford University  
2016 Digital Image Processing, Stanford University (Guest Lecturer)  
2016 Climate Physics, Bucknell University (Guest Lecturer)  
2015 Remote Sensing, University of California, Los Angeles (Guest Lecturer)  
2013 The Cryosphere, Rice University (Guest Lecturer)  
2013 Geophysical Glaciology: Ice Penetrating Radar, University of Texas Institute for Geophysics  
2010 Radar Principles Short Course, University of Texas Institute for Geophysics

## **Postdoctoral Scholar Advising**

2017 – present Davide Castelletti, Stanford University, Geophysics  
2017 – present Winnie Chu, Stanford University, Geophysics  
2017 – present Tom Jordan, Stanford University, Geophysics  
2017 – present Matthew Siegfried, Stanford University, Geophysics  
2017 – present Elisa Mantelli, Stanford University, Geophysics  
2015 – 2016 Klara Kalousova, Jet Propulsion Laboratory, Planetary Science

## **Graduate Student Advising**

2018 – present Nicole Bienert, Stanford University, Electrical Engineering  
2018 – present Hannah (Riley) Culberg, Electrical Engineering  
2018 – present Eliza Dawson, Stanford University, Geophysics  
2017 – present Emma (Mickey) MacKie, Stanford University, Geophysics



## Schroeder C.V. July 2018

2016 – present Sean Peters, Stanford University, Electrical Engineering  
2016 – 2018 Andrew Hilger, Stanford University, M.S. Electrical Engineering

### **Graduate Student “Second-Project” and Rotation Advising**

2016 – present Cansu Culha, Stanford University, Geophysics  
2016 – present Cooper Elsworth, Stanford University, Geophysics  
2016 – present Alexander Kendrick, Stanford University, Geophysics  
2016 – present Roger Michaelides, Stanford University, Geophysics

### **Visiting Graduate Student Mentorship**

2018 – present Oliver Bartlet, University of Exeter, Geography  
2018 – present Richard Delft, University of Edinburgh, Geography  
2017 – 2018 Michael Cooper, University of Bristol, Geography  
2017 – 2018 Leonardo Carrer, University of Trento, Electrical Engineering  
2017 Corinne Benedek, University of Cambridge, Geography  
2016 – 2017 T.J. Young, University of Cambridge, Geography  
2015 – 2017 Gregor Steinbruegge, Technical University of Berlin, Planetary Science  
2015 – 2017 Winnie Chu, Columbia University, Geophysics  
2014 – 2017 Davide Castelletti, University of Trento, Electrical Engineering

### **Undergraduate and Co-Term Student Mentorship**

2016 – present Theo Diamandis, Stanford University, Electrical Engineering  
2018 – present Madison Goldberg, Harvard College, Earth and Planetary Sciences  
2018 – present Isabella Pena, Fullerton College, Physics  
2017 – present Meera Radhakrishnan, Stanford University, Electrical Engineering  
2017 – present Kathy Vega, Fullerton College and University of Colorado, Engineering Physics  
2016 – 2018 Logan Herrera, Stanford University, Electrical Engineering  
2017 – 2018 Kai Marshland, Stanford University, Electrical Engineering  
2016 – 2018 Thomas Teisberg, Stanford University, Electrical Engineering  
2016 – 2018 Nikita Darbar, Stanford University, Chemical Engineering  
2016 – 2018 Aria Tedjarati, Stanford University, Electrical Engineering  
2017 – 2018 Stephen Spears, Stanford University, Electrical Engineering  
2016 – 2017 Paige Brown, Stanford University, Undeclared  
2016 - 2017 Joan Creus-Costa, Stanford University, Electrical Engineering  
2016 – 2017 Jake Hillard, Stanford University, Electrical Engineering  
2016 – 2017 Iskender Kushan, Stanford University, Electrical Engineering, Now: Microsoft  
2016 – 2017 Sasha Maldonado, Stanford University, Electrical Engineering  
2017 Allen Holster, Stanford University, Electrical Engineering  
2017 Ryan Kirk, Stanford University, Mechanical Engineering  
2017 Kat McNeill, Stanford University, Undeclared  
2017 Kirill Safin, Stanford University, Electrical Engineering  
2017 Adam Stanford-Moore, Stanford University, Physics  
2016 Valarie Sarge, Massachusetts Institute of Technology, Electrical Engineering

## Schroeder C.V. July 2018

- 2013 – 2016 Youry Agylamov, CalTech, Now: Ph.D. Student in Astronomy at Cornell
- 2013 – 2014 Ben Ayton, University of Texas, Now: Ph.D. Student in Aerospace Engineering at MIT
- 2012 Leo Breston, University of Illinois, Now: Ph.D. Student in Neuroscience at UCSD
- 2012 Harris Davidson, Olin College, Mechanical Engineering
- 2010 – 2014 Evelyn Powell, University of Texas, Now: Ph.D. Student in Geophysics at Harvard
- 2011 – 2014 Arami Rosales, University of Texas, Physics
- 2008 – 2013 John DeSanto, University of Texas, Now: Ph.D. Student in Geophysics at UCSD

### Dissertation Committee Membership

- 2017 – present Noah Dewar, Stanford University, Geophysics
- 2016 – present Cansu Culha, Stanford University, Geophysics
- 2016 – present Cooper Elsworth, Stanford University, Geophysics
- 2016 – present Alex Kendrick, Stanford University, Geophysics
- 2016 – present Roger Michaelides, Stanford University, Geophysics
- 2016 – present Yujie Zheng, Stanford University, Geophysics
- 2018 Ryan Smith, Stanford University, Geophysics
- 2018 Enrica Quartini, University of Texas, Geophysics
- 2017 Nattavadee Srisutthiyakorn, Stanford University, Geophysics
- 2017 Ben Hockman, Stanford University, Mechanical Engineering
- 2017 Priyanka Dutta, Stanford University, Geophysics
- 2016 Emily Fay, Stanford University, Geophysics
- 2016 Sam Johnstone, Stanford University, Geology
- 2016 Michael Tsiang, Stanford University, Earth System Science

### High School Student Mentorship

- 2007 – 2018 Coached and mentored over 40 high school students in science competitions and/or research

### OUTREACH

- 2016 – present Faculty Advisor, Stanford-Berkeley Science Olympiad Invitational
- 2014 – present Chair, Earth and Space Science Committee, National Science Olympiad
- 2003 – present 6<sup>th</sup>-12<sup>th</sup> Grade Astronomy and Planetary Science National Event Supervisor, Science Olympiad
- 2018 Keynote Speaker, Generation Sci, Stanford University
- 2018 Speaker, Hopkins Marine Station, Monterey, CA
- 2018 Panelist, One Strange Rock Screening, The Exploratorium, San Francisco, CA
- 2018 Speaker, BEAM Career Seminar, Stanford University
- 2017 Panelist, Uncommon Dialogues: Coastal Resilience, Woods Institute for the Environment
- 2017 Speaker, Classes Without Quizzes, Stanford Homecoming
- 2017 Speaker, Stanford Summer Research Program for Teachers Seminar
- 2017 Speaker, Stanford Summer Undergraduate Research Program Seminar
- 2017 Presenter, TEDx, Stanford University
- 2017 Speaker, Golden Gate Science Olympiad Invitational, Berkeley, CA
- 2017 Presenter, Stanford Continuing Studies, Public Seminar
- 2017 Panelist, The Frontiers of Earth Science, Stanford University Parents Weekend
- 2017 Speaker, Stanford Earth Matters San Francisco

## Schroeder C.V. July 2018

- 2016 Speaker, STEM Career Day, Mountain View High School, Mountain View, CA
- 2016 Speaker, Society of Physics Students Seminar, Massachusetts Institute of Technology
- 2016 Engaging with Faculty Speaker, New Student Orientation, Stanford University
- 2016 Presenter, Northern California Science Olympiad Coaches Clinic
- 2015 Keynote Speaker, MIT Science Olympiad Invitational
- 2015 Presenter, Caltech Science Olympiad Coaches Clinic
- 2015 Interviewee, The Blue Dot Report, North State Public Radio
- 2015 High School Astronomy State Event Supervisor, Southern California Science Olympiad
- 2003 – 2014 Member, Earth and Space Science Committee, National Science Olympiad
- 2014 Guest Speaker, Lakeway Men's Breakfast, Lakeway, TX
- 2007 – 2014 Volunteer Science Coach, Liberal Arts and Sciences Academy, Austin, TX
- 2011 Onboard Science Lecture, Aurora Australis AAD Voyage: Casey to Hobart
- 2010 Guest Speaker, University United Methodist Church, Austin, TX
- 2010 Guest Speaker, Solon High School, Solon, OH
- 2010 Tejas Club Life Raft Debate, Austin, TX
- 2003 – 2010 Educational Resource Agent, Chandra X-Ray Observatory