## Winnie (Wing Yin) Chu


**Contact Information**

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**Professional Appointments**

**Assistant Professor** August 2020 – present
School of Earth & Atmospheric Sciences
College of Sciences
Georgia Institute of Technology

**Postdoctoral Researcher** July 2017 – July 2020
Department of Geophysics
School of Earth, Energy, and Environmental Sciences
Stanford University
Supervisor: Dr. Dustin M. Schroeder

**Visiting Student Researcher** May – September 2015
Radar Science and Engineering Division
NASA Jet Propulsion Laboratory

**Education**

**Ph.D. in Earth & Environmental Sciences** October 2017
**Columbia University**, New York, NY
Dissertation: *Variability of Subglacial Drainage Across the Greenland Ice Sheet: A Joint Model/Radar Study*
Advisor: Dr. Robin E. Bell

**Master of Philosophy in Earth & Environmental Sciences** May 2015
**Columbia University**, New York, NY
Advisor: Dr. Robin E. Bell

**Master in Sciences in Geophysics** June 2011
**University College London**, London, United Kingdom
*$1^{st}$ class honors*
Thesis: *Assessment of CryoSat-2 radar altimetry performance on sea-ice extent retrieval*
Advisor: Prof. Seymour Laxon

**Funded Grants**

**Heising-Simons Foundation**
Title: *Follow the Water: Hydrology of Helheim Glacier*
Period: 08/2020 – 07/2023
PI: W. Chu
Co-Is: C. Meyer (Dartmouth College), K. Poinar (University at Buffalo)
Funded Amount:$2,190,527 ($873,472 to Georgia Tech)

**National Aeronautics and Space Adminstration**
Solicitation: Earth and Space Science Fellowship
Period: 2015 – 2017
Funded Amount: $90,000

**Honors and Awards**

**American Geophysical Union**
*Outstanding Student Paper Award* 2016
**United States Congress**
*Antarctica Service Medal* 2015
**University College London, United Kingdom**

*Old Student Association Trust Scholarship* 2010

**University College London, United Kingdom**

*Matthews Prize for Excellence in Geophysics* 2010

**University College London, United Kingdom**

*Chubb Prize for Works of Good Honours Standard* 2009

**University College London, United Kingdom**

*Alumni Scholarship* 2007

**Manuscript In Review**

* indicates student or postdoctoral advisee

[16] Culberg, R*., D.M. Schroeder, **W. Chu**., Extreme Melt Season Ice Layers Reduce Firn Permeability Across Greenland, *Nature Communications*, In Review

[15] Peters, S. T*., D. M. Schroeder, **W. Chu**, D. Castelletti, M. S. Haynes, P. Christoffersen A. Romero-Wolf., Glaciological Monitoring Using the Sun as a Radio Source for Echo Detection, *Proceedings of the National Academy of Sciences of the United States of America*, In Review

[14] **Chu, W.**., A. M. Hilger*., D. M. Schroeder., R. Culberg, T. M. Jordan, H. Seroussi, D. A. Young and D. G. Vaughan., Multi-System Synthesis of Radar Sounding Observations of the Amundsen Sea Sector from the 2004-2005 Field Season, *Journal of Geophysical Research: Earth Surface*, In Review

**Publications**

[13] Pitcher, L*., L. Smith, C. Gleason, C. Miège, J. Ryan, B. Hagedorn, D. Van As, **W. Chu**, R. Forster (2020), Direct observation of winter meltwater drainage from the Greenland Ice Sheet, *Geophysical Research Letters*, 47(9), 1–10, doi:10.1029/2019GL086521.

[12] Schroeder, D. M., J. A. Dowdeswell, M. J. Siegert, R. G. Bingham, **W. Chu**, E. J. MacKie, M. R. Siegfried, K. I. Vega, J. R. Emmons, and K. Winstein (2019), Multidecadal observations of the Antarctic ice sheet from restored analog radar records, *Proc. Natl. Acad. Sci*, 116(38), 18867–18873, doi:10.1073/pnas.1821646116.

[11] Bowling, J. S*., S. J. Livingstone, A. J. Sole, and **W. Chu** (2019), Distribution and dynamics of Greenland subglacial lakes, *Nature Communications*, 10(1), 281, doi:10.1038/s41467- 019-10821-w.

[10] Tinto, K. J., L. Padman, C.S. Siddoway, S.R. Springer, H.A. Fricker, I. Das, F.C. Tontini, D.F. Porter, N.P. Frearson, S. Howard, M.R. Siegfried, C. Mosbeux, M.K. Becker, C. Bertinato, A. Boghosian, N. Brady, B.L. Burton, **W.Chu** and et al. (2019), Ross Ice Shelf response to climate driven by the tectonic imprint on seafloor bathymetry, *Nat. Geosci.*, 12(6), doi:10.1038/s41561-019-0370-2.

[9] **Chu, W.**, D.M. Schroeder, and M.R. Siegfried. (2018). Retrieval of Englacial Firn Aquifer Thickness from Ice-Penetrating Radar Sounding in Southeastern Greenland. *Geophysical Research Letters*, 45. doi:10.1029/2018GL079751

[8] Kendrick A.K.*, 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 (2018). Seasonal Surface Meltwater Impounded by Seasonal Englacial Storage in West Greenland. *Geophysics Research Letters*, 45, 1–8. doi:10.1029/2018GL079787

[7] **Chu W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts, and R.E. Bell (2018). Complex basal thermal transition near the onset of Petermann Glacier, Greenland. *Journal of Geophysical Research: Earth Surface*, 123(5), 985–995. doi:10.1029/2017JF004561

[6] Livingstone S.J., **W. Chu**, J.C. Ely, J. Kingslake (2017). Paleofluvial and subglacial channel networks beneath Humboldt Glacier, Greenland. *Geology*, 45(6), 551–554. doi:10.1130/G38860.1

[5] Bell, R.E., **W. Chu**, J. Kingslake, I. Das, M. Tedesco, K.J. Tinto et al. (2017). Antarctic ice shelf potentially stabilized by export of meltwater in surface river. *Nature*, 544(7650), 344–348. doi:10.1038/nature22048

[4] **Chu, W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts, S.J. Palmer and R.E. Bell (2016). Extensive winter subglacial water storage beneath the Greenland Ice Sheet. *Geophysical Research Letters*, 43(24), 484–492. doi:10.1002/2016GL071538

[3] Schroeder, D.M., H. Seroussi, **W. Chu**, and D.A. Young (2016). Adaptively constraining radar attenuation and temperature across the Thwaites Glacier catchment using bed echoes. *Journal of Glaciology*, 62(236), 1075–1082. doi:10.1017/jog.2016.100

[2] **Chu, W.**, T.T. Creyts, and R.E. Bell (2016). Rerouting of subglacial water flow between neighboring glaciers in West Greenland. *Journal of Geophysical Research: Earth Surface*, 121(5), 925–938. doi:10.1002/2015JF003705

[1] Bell R.E., K. Tinto, I. Das, M. Wolovick, **W. Chu**, T.T Creyts, N. Frearson, A. Abdi, J.D. Paden (2014). Deformation, warming and softening of Greenland's ice by refreezing meltwater. *Nature Geoscience*, 7(7), 497–502. doi:10.1038/ngeo2179

**Invited Talks**

Peering beneath the ice: Merging radar Sounding modeling to investigate subsurface hydrology in Greenland
*Geophysics Seminar, Georgia Institute of Technology* 16 Oct. 2020

Understanding Greenland subsurface hydrology through radar sounding
*Climate Research Seminar, Heising-Simons Foundation* 12 Feb. 2020

25 years of airborne radar sounding: Insights into the time varying changes in Greenland glacial hydrology
*American Geophysical Union Fall Meeting, San Francisco* 10 Dec. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Department of Geology Seminar, University of Kansas* 31 Oct. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Glaciology Seminar, University of California, Irvine* 26 Sept. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Ice-Climate Research Seminar, NASA Jet Propulsion Laboratory* 16 Sep. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Ice/Climate Seminar, Geological Survey of Denmark and Greenland* 29 Aug. 2019

Layer attenuation: Constraining ice sheet temperatures and hydrology from data assimilation
*International Glaciological Society Meeting* 10 Jul. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Earth & Planetary Science Seminar, University of California, Santa Cruz* 30 Apr. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Department of Earth Sciences Seminar, University of Cambridge* 11 Mar. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Department of Geosciences Seminar, Penn State University* 28 Feb. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Department of Earth Sciences Seminar, Durham University* 13 Feb. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Department of Geosciences Seminar, University of Arkansas* 28 Jan. 2019

Merging radar with models: Getting new geophysical insights into the subsurface system of ice sheets
*Earth & Atmospheric Sciences Seminar, Georgia Institute of Technology* 15 Jan. 2019

Peering beneath the ice: dynamic subsurface hydrology of the Greenland Ice Sheet
*Department Seminar, New Mexico Institute of Mining and Technology* 18 Nov. 2018

Imaging the Greenland and Antarctic ice sheet subsurface with radio-echo sounding
*Geography Seminar, University of California, Santa Barbara* 15 Nov. 2018

Combined radar sounding and ice-sheet modeling: a powerful tool to study dynamic meltwater drainage in the Greenland Ice Sheet
*Glaciology Seminar, University of Exeter, United Kingdom* 6 Jul. 2018

Dynamic meltwater drainage beneath the Greenland Ice Sheet: a joint radar sounding-modeling perspective
*Glaciology Seminar, Newcastle University, United Kingdom* 27 Jun. 2018

Dynamic meltwater drainage beneath the Greenland Ice Sheet: a joint radar sounding-modeling perspective
*IGPP Seminar, Scripps Institution of Oceanography* 26 Apr. 2018

Variability of subglacial and englacial drainage across the Greenland Ice Sheet: a joint model/radar study
*Geophysics Brown Bag Seminar, California Institute of Technology* 20 Oct. 2017

Understanding subglacial hydrology of Russell Glacier, Greenland using radar sounding data
*Radar Science & Engineering Seminar, NASA Jet Propulsion Laboratory* 21 Sep. 2015.

Investigating the influence of subglacial hydrologic conditions on glacier velocity in Greenland
*Glaciology Seminar, University of California, Irvine* 15 Mar. 2015

Influence of ice sheet geometry and supraglacial lakes on subglacial hydrology
*Marine Geophysics Division Seminar, Lamont-Doherty Earth Observatory* 4 Dec. 2013

## Mentoring

**Graduate Student Advising**
Renée Clavette, 2020–present

**Dissertation Committee Membership**
Shengjun Xi, Georgia Tech, Earth & Atmospheric Sciences, 2020–present
Syed Abdul Salam, University of Tasmania, Institute for Marine & Antarctic Studies, 2020

**Graduate Student Mentorship**
Riley Culberg, Electrical Engineering, Stanford University, 2019–present
Eliza Dawson, Geophysics, Stanford University, 2018–present
Sean Peters, Electrical Engineering, Stanford University, 2019–2020
Alexander Kendrick, Geophysics, Stanford University, 2017–2018
Andrew Hilger, Electrical Engineering, Stanford University, 2017–2018

**Visiting Graduate Student Mentorship**
Jade Bowling, Geography, Lancaster University, 2018–2019

**Undergraduate Student Mentorship**
Joanna Millstein, Earth Sciences, Dartmouth College, 2016

**Teaching Experience**

**Georgia Institute of Technology**, Atlanta, GA
*Co-Instructor*
EAS 4403/8803: Glacier and Ice Sheet Dynamics — Spring 2021

**Stanford University**, Palo Alto, CA
*Co-Instructor*
IGS Radar science course for early-career researchers — Summer 2019

**Columbia University**, New York, NY
*Guest Lecturer*
Ice Core & Paleoclimate
*EESC 2100: Earth's Environmental System: The Climate System* — Spring 2013

*Teaching Assistant*
EESC 2100: Earth's Environmental System: The Climate System — Spring 2013
EESC 2100: Earth's Environmental System: The Climate System — Fall 2013
EESC 4085: Geodynamics — Spring 2012

**Professional Service**

**Conference Service**

- *Organizing Committee*: Five Decades of Radioglaciology (IGS Stanford University 2019);
- *Session Chair*: *Advances in Understanding Processes at the Beds of Glaciers and Ice Sheets* (AGU Fall Meeting 2018); *Beyond Ice Thickness: Using Radar Sounding to Understand the Dynamics of Glacier Systems* (AGU Fall Meeting 2018); *Mass and energy balance of snow and ice and drivers of Greenland ice sheet mass loss* (European Geological Union Meeting 2015)
- Judge: *AGU Outstanding Student Paper Award, New York City Science and Engineering Fair, EGU Student Poster, PICO Award*

**Referee Service**

- Journals: *Journal of Geophysical Research: Earth Surface, Geophysical Research Letters, Nature, Nature Geoscience, Nature Communications, Journal of Glaciology*
- Proposals: *NASA Solar System Working (panel member), NSF Faculty Early Career Development Program (reviewer)*

**Outreach**

- Research highlighted in press releases from multiple institutions, including Georgia Institute of Technology, Stanford University, and Earth Institute of Columbia University.
- Quoted in "Dozens of lakes discovered deep under the Greenland Ice Sheet" (NBC News, 29 Jun. 2019)
- Quoted in "Dozens of lakes discovered deep under colossal ice sheet"(EuroNews, 29 Jun. 2019)
- Quoted in "Scientists find missing piece in glacier melt predictions"(AGU Blog, 16 Oct. 2019)
- Quoted in "Radar reveals meltwater's year-round life under Greenland ice" (ScienceBlog, 5 Jan. 2017)
- Featured in "The Ice Detectives" (Columbia Magazine, Fall 2017)
- Featured in "New breakthroughs in the study of glacial meltwater" (Earth.com, 2017)
- Quoted in "Greenland Meltwater Study Seeks Answers" (NetNewsLedger, 7 Jan. 2017)
- Invited panelist for "Meeting early career scientists in STEM-related fields", hosted by PANTHER Academy of Earth and Space Science
- Exhibit organizer for the NASA Sun and Earth Day, hosted by American Museum of Natural History in New York
- Exhibit organizer for the Open house day, hosted by Lamont-Doherty Earth Observatory in Palisades
- Exhibit organizer for the World Science Festival, hosted by the World Science Foundation in New York
- Exhibit organizer for Women in STEM event at the Intrepid Air and Space Museum

**University Services**

**Georgia Institute of Technology**
Graduate Student Admission Committee, 2020 – 2021

**Field Experience**

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|---|---|
| West Antarctica, Airborne Geophysics (NASA Operation IceBridge)<br>*Gravity Team Leader* | 2016 |
| Ross Ice Shelf, Antarctica, Airborne Geophysics<br>*Gravimeter Operator & Flight Planner* | 2014 |
| Ross Ice Shelf, Antarctica, Airborne Geophysics<br>*Radar Sounder Operator* | 2013 |
| West Greenland, Airborne Geophysics<br>*Radar Sounder Operator* | 2013 |
| Disko Island, Greenland, Surface Geophysics | 2013 |
| Kennicott Glacier, Alaska, Surface Geophysics | 2011 |
| Naples, Italy, Surface Geophysics | 2011 |
| Pyrenees, Spain, Geodynamics | 2009 |
| Cornwall and Devon, United Kingdom, Geology | 2008 |
| Norfolk, United Kingdom, Geomorphology | 2007 |
| Dorset, United Kingdom, Geology | 2007 |

**Professional Affiliations**

Institute of Electrical and Electronics Engineers, Member, 2019–present
American Geophysical Union, Member, 2012–present
International Glaciological Society, Member, 2012–present
European Geosciences Union, Member, 2014–present
New York Academy of Science, Member, 2011–present
Geological Society of London, Member, 2007–present

**Conference Abstracts**

[40] Dawson, E., D. M. Schroeder, **W. Chu**, E. Mantelli, H. L. Seroussi, 2020, Investigating Basal Thaw as a Mechanism of Ice Mass Loss in Antarctica, *AGU Fall Meeting*.

[39] Boghosian, A., L. H. Pitcher, A. F. Banwell, **W. Chu**, A. L. LeWinter, L. C. Smith, M. J. Willis, D. R. MacAyeal, R. E. Bell, 2020, Investigating longitudinal fractures along ice-shelf estuaries, *AGU Fall Meeting*.

[38] Culberg, R., D. M. Schroeder,**W. Chu**, 2020, Extreme Melt Season Ice Layers Reduce Firn Permeability in GreenlandâĂŹs Interior, *AGU Fall Meeting*.

[37] Dawson, E., D. M. Schroeder, **W. Chu**, E. Mantelli, H. L. Seroussi, 2020, Investigating basal thaw as a potential driver of ice flow acceleration in Antarctica, *EGU General Assembly*.

[36] Dawson, E., D. M. Schroeder, **W. Chu**, E. Mantelli, H. L. Seroussi, 2020, Investigating basal thaw as a mechanism of ice flow acceleration in Antarctica, 2020, *SCAR Open Science Conference*.

[35] **Chu, W.**. S. Vijay, M. King, D.M. Schroeder, and S. Livingstone, 2020, Decadal changes in Greenland subglacial hydrology from airborne radar sounding. *NASA Program for Arctic Regional Climate Assessment Meeting*.

[34] **Chu, W.**, D. M. Schroeder, S. J. Livingstone, S. Vijay, M. D King, R. Culberg, N.B. Karlsson, A. Messerli, 2019, 25 years of airborne radar sounding: Insights into the time varying changes in Greenland glacial hydrology, *AGU Fall Meeting*.

[33] Vijay, S., **W. Chu**, M. D. King, I. M. Howat, S. A. Khan, A. Solgaard, 2019, Seasonal ice velocity changes of Greenlandic glaciers: insights from new and dense remote sensing observations and hydrological modeling, *AGU Fall Meeting*.

[32] Peters, S. T., D. M. Schroeder, **W. Chu**, M. Haynes, A. Romero-Wolf, 2019, Passive radio sounding with ambient signals of opportunity to monitor cryospheric subsurface conditions, *AGU Fall Meeting*.

[31] Pitcher, L. H., L. C. Smith, C. J. Gleason, C. Miege, J. Ryan, B. Hagedorn, D. van As, **W. Chu**, R. R Forster, 2019, Meltwater export from the Greenland Ice Sheet observed during winter, *AGU Fall Meeting*.

[30] **Chu, W.**, D. M. Schroeder, H. Seroussi, M. Morlighem, and M. Siegert, 2019, Using radar sounding observations to improve numerical models' estimates on ice sheet temperatures in West Antarctica, *West Antarctic Ice Sheet Initiative*.

[29] Dawson. E., D.M. Schroeder, **W. Chu**, E. Mantelli, A. Miltenberger, H. Seroussi, 2019, Vulnerability of the Antarctic ice sheet to basal thermal regime change: Integrating observations and models, *West Antarctic Ice Sheet Initiative*.

[28] Peters, S. T. D.M. Schroeder, **W. Chu**, M. Haynes, A. Romero-Wolf, 2019, Passive radio sounding using the Sun as a signal to monitor subsurface processes, *West Antarctic Ice Sheet Initiative*.

[27] **W. Chu**, 2019, Layer attenuation: Constraining ice sheet temperatures and hydrology from data as-similation, *IGS Symposium on Five Decades of Radioglaciology*.

[26] Peters, S. T., D.M. Schroeder, **W. Chu**, D. Castelletti, M. Haynes, A. Romero-Wolf, 2019, Passive radio sounding for glaciological investigations of subsurface processes, *IGS Symposium on Five Decades of Radioglaciology*.

[25] Creyts, T. T., **W. Chu**, C. Grima, D. M. Schroeder, 2018, Bed roughness as a control on the drainage of subglacial water, *AGU Fall Meeting*.

[24] Schroeder, D. M., A. M. Hilger, D. Castelletti, **W. Chu**, T. Jordan, H.L. Seroussi, D. A. Young, D. G. Vaughan, 2018, Multi-Instrument Synthesis of Radar Sounding Observations of the Thwaites Glacier and Pine Island Glacier Catchments, West Antarctica, *AGU Fall Meeting*.

[23] Bowling, J., S. Livingstone, A. Sole, **W. Chu**, 2018, Fifty-two new subglacial lakes discovered beneath the Greenland Ice Sheet, *AGU Fall Meeting*.

[22] **Chu, W.** and D.M. Schroeder, 2018, Quantifying Greenland Water Budget Variability from Top to Bottom using Radar Sounding Data and Modeling. *SCAR/IASC Polar Open Science Conference*.

[21] MacKie E. J., D.M. Schroeder, J.A. Dowdeswell, K.I. Vega, M.R. Siegfried*, **W. Chu**, R.G. Bingham, 2018, Digitization and Analysis of the SPRI-NSF-TUD Radar Data Archive, Scientific Committee on Antarctic Research,*SCAR/IASC Polar Open Science Conference*.

[20] **Chu, W.**, T. Jordan, D.M.Schroeder, Y.M. Martos and J. Bamber, 2018, Partitioning the geothermal component of basal melting beneath ice-sheets: lessons from Greenland, *Taking the Temperature of the Antarctic Continent Workshop*.

[19] Schroeder, D.M., **W. Chu**, 2018, Observationally Constraining Geothermal Heat Flux Using Ice Penetrating Radar, *Taking the Temperature of the Antarctic Continent Workshop*.

[18] **Chu, W.** and D.M. Schroeder, 2018, Quantifying Water Retention Within the Greenland Ice Sheet using Airborne Radar Sounder, *NASA Program for Arctic Regional Climate Assessment Meeting*.

[17] Schroeder, D. M., **W. Chu**, A. K. Kendrick, S.T. Peters, D. Castelletti, 2018, 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*.

[16] **Chu, W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts, R.E. Bell and J.D. Paden, 2017, Constraining Greenland basal water extent and drainage morphology from radar reflectivity and specularity analysis, *AGU Fall Meeting*.

[15] Ely, J., S. Livingstone, **W. Chu**, J. Kingslake, 2017, Hydrologically active palaeofluvial and subglacial channel networks beneath Humboldt Glacier, Greenland, *EGU General Assembly*.

[14] **Chu, W.**, Using Radar Sounding to Constrain Temporal Changes in Subglacial Hydrology across the Greenland Ice Sheet. 2017, *National Science Foundation Arctic Science Workshop*.

[13] **Chu, W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts and R.E. Bell, 2017, Large Variability in Subglacial Drainage Processes Revealed by Airborne Radar Sounding Across the Greenland Ice Sheet, *International Glaciological Society Meeting*.

[12] **Chu, W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts, S.J. Palmer and R.E. Bell, 2016, Distinct Subglacial Drainage Patterns Revealed in High-Resolution Mapping of Basal Radar Reflectivity across Greenland, *AGU Fall Meeting*.

[11] Bell, R.E., **W. Chu**, J. Kingslake, I. Das, M. Tedesco, K. J. Tinto, C. J. Zappa, M. Frezzotti, 2016, Persistent Surface River on Nansen Ice Shelf Drains Meltwater Preventing Collapse for Decades, *AGU Fall Meeting*.

[10] Millstein, J. D., **W. Chu**, I. Das, R. E. Bell, 2016, An Englacial Radar Attenuation Modeling Approach and Application to the Ross Ice Shelf, *AGU Fall Meeting*.

[9] Das, I., L. Padman, **W. Chu**, H. A. Fricker, M. K. Becker, R. E. Bell, K. J. Tinto, J. D. Millstein, 2016, Mass Balance and Structure of the Ross Ice Shelf, *AGU Fall Meeting*.

[8] Schroeder, D.M., H. Seroussi, **W. Chu**, D. Young, 2016, Signature of recent ice flow acceleration in the radar attenuation and temperature structure of Thwaites Glacier, West Antarctica, *EGU General Assembly*.

[7] **Chu, W.**, D.M. Schroeder, H. Seroussi, T.T. Creyts, S.J. Palmer and R.E. Bell, 2015, Winter storage subglacial water modulates glacier velocity sensitivity to summer surface melting in Southwest Greenland, *NASA Program for Arctic Regional Climate Assessment Meeting*.

[6] **Chu, W.**, D.M. Schroeder, H. Seroussi, R.E. Bell and T.T. Creyts, 2015, Extensive subglacial hydrological network and basal temperate layer in Southwest Greenland: an integrated approach of radar analysis and ice sheet modeling. *AGU Fall Meeting*.

[5] **Chu, W.**, T.T.. Creyts and R.E. Bell, 2014, Spatial Variability of the Subglacial Hydrology in West Greenland from Airborne Radar Data and Simple Drainage Models. *AGU Fall Meeting*.

[4] Bell, R.E., K. J. Tinto, D. F. Porter, I. Das, N. Frearson, C. Bertinato, A. Boghosian, **W. Chu**, T. T. Creyts, T. Dhakal, L. Dong, S. E. Starke, 2014, Regional surface melt constrained from exposed strata on the Greenland ice sheet using structural geology, satellite imagery and IcePod data, *AGU Fall Meeting*.

[3] Tinto, K. J., R. E. Bell, D. F. Porter, I. Das, N. Frearson, C. Bertinato, A. Boghosian, **W. Chu**, T. T. Creyts, T. Dhakal, L. Dong, S. E. Starke, 2014, Regional surface melt constrained from exposed strata on the Greenland ice sheet using structural geology, satellite imagery and IcePod data, *AGU Fall Meeting*.

[2] **Chu, W.**, T.T. Creyts and R.E Bell, 2013, Subglacial drainage of surface melt water affects ice motion: Application of a modeling study to West Greenland, *AGU Fall Meeting*.

[1] Bell, R.E., K. J. Tinto, I. Das, M. Wolovick, **W. Chu**, T. T. Creyts, N. Frearson, 2013, Widespread refreezing of both surface and basal melt water beneath the Greenland Ice Sheet, *AGU Fall Meeting*.