

## JAMIN S. GREENBAUM, Ph.D.

Research Associate • The University of Texas Institute for Geophysics • Jackson School of Geosciences  
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h index = 12; citations: 727

### RESEARCH INTERESTS

I seek to acquire, analyze, and integrate geophysical data into numerical ocean and ice sheet model domains to enable improvements to our understanding of Antarctic land-ice-ocean interaction processes in areas sensitive to rapid inland retreat. Specific interests include airborne remote sensing-derived estimates of seafloor bathymetry, ice shelf surface and basal melting, generation and transport of subglacial meltwater to grounding lines, and geological controls on ice sheet stability, especially the impacts of tectonics and geothermal heat flux. I am additionally interested in guiding the development of novel observational approaches including autonomous airborne and underwater geophysical and oceanographic platforms.

### EDUCATION

The University of Texas at Austin	Geophysics	Ph.D.	2015
Adviser: Donald D. Blankenship			
Dissertation: <i>“Geophysical investigations of the coastal evolution of the Totten Glacier System, East Antarctica”</i>			
The University of Texas at Austin	Aerospace Engineering	M.S.	2006
Adviser: E. Glenn Lightsey			
Thesis: <i>“Flight unit fabrication of a University Satellite, the FASTRAC experience”</i>			
The University of Texas at Austin	Aerospace Engineering	B.S.	2004

### PROFESSIONAL PREPARATION

University of Texas Institute for Geophysics	Research Associate	2019 – present
University of Texas Institute for Geophysics	Postdoctoral Research Fellow	2016 – 2019
University of Texas Institute for Geophysics	Research Engineer / Scientist Assoc. III	2013 – 2016
University of Texas Institute for Geophysics	Graduate Research Assistant	2007 – 2013
Austin Satellite Design	Consultant	2009 – 2010
UT Dept. of Aerospace Engineering	Graduate Research Assistant	2005 – 2007
Air Force Research Laboratory, NM	Space Scholar internship	Summer 2006
UT Dept. of Aerospace Engineering	Teaching Assistant	2004 – 2005
UT Dept. of Aerospace Engineering	Undergraduate Assistant	Spring 2004
Jet Propulsion Laboratory, CA	Co-operative program internship	2000 – 2003

### UNIVERSITY SERVICE

September 2019 to present: University Advisor to the UT Longhorn Science Olympiad Association.  
October 2019: Elected member, Jackson School of Geoscience Dean Search early career panel.  
April 2019: Member of the UTIG Graduate Student Award Committee.  
May 2016: Co-author of the UTIG 10-year Science Vision.  
Spring 2009: Developed Grade 5 science lessons for the UT Environmental Science Institute and co-taught once per week for a semester; Pillow Elementary School, Austin, Texas.  
Fall 2007: Organized and hosted the UTIG weekly “Brownbag” seminar series.  
Fall 2006: President of the University of Texas Friar Society (active member from 2004 to 2015).  
Spring 2006: Co-Chair, Friar Centennial Teaching Fellowship search committee.  
Spring 2004: Vice President, Tejas Club; organized and hosted a weekly campus-wide seminar series.  
Fall 2003: President, Sigma Gamma Tau, Aerospace Engineering Honor Society.

## HONORS AND RECOGNITION

- 2019 J. William Fulbright Foundation: U.S. Scholar Award for collaborative research at the Institute of Oceanography at Shanghai Jiao Tong University and the Polar Research Institute of China.
- 2019 Antarctic Science Foundation: Concept selected for international philanthropic fundraising to develop a transformative scientific airborne platform focused on ice-ocean interactions.
- 2019 Travel grant, International Glaciological Society Symposium on Radioglaciology, Stanford, CA.
- 2018 Geosoft Education Program Award: Free software support for myself and two graduate students.
- 2018 Photograph selected for the cover of the Geological Society London Special Publications Vol. 461.
- 2017 First foreign scientist to visit China's Kunlun Station on Dome A, East Antarctica.
- 2016 Travel grant, International Glaciological Society Ice-Ocean Interactions, La Jolla, NSF/NASA.
- 2016 Travel grant, Scientific Committee on Antarctic Research (SCAR), Kuala Lumpur, Malaysia.
- 2015 Travel grant, 12th ISAES meeting, Goa, India, 13-17 July.
- 2013 Marine Geology and Geophysics Field Course Fellowship, Institute for Geophysics.
- 2013 2<sup>nd</sup> place, Best Student Presentation, Strategic Science in Antarctica Conference, U. of Tasmania.
- 2011 Operation Ice Bridge Instrument Team Group Achievement Award, NASA.
- 2011 Travel grant, 11<sup>th</sup> ISAES meeting, Edinburgh, Scotland, 9-16 July.
- 2010 Antarctica Service Medal, National Science Foundation.
- 2009 Teaching Fellowship (Pillow Elementary School), Texas State Energy Conservation Office.
- 2009 Geosoft Education Program Award: Software support for my PhD studies (2009-2015).
- 2008 Ewing-Worzel Research Fellowship, Institute for Geophysics, University of Texas at Austin.
- 2007 NASA Graduate Student Researchers Program Fellowship.
- 2007 Gail White Research Fellowship, Institute for Geophysics, University of Texas at Austin.
- 2004 The Friar Society, The University of Texas at Austin.
- 2000 Department merit fellowship, Aerospace Engineering, The University of Texas at Austin.

## PUBLICATIONS

† Indicates students that I mentor or have mentored.

### SUBMITTED (6):

- Aitken, A, L. Ramos, J.L. Roberts, **J.S. Greenbaum**, D.A. Young, D.D. Blankenship (submitted), A magnetic data correction workflow for sparse, four dimensional data (MDCWS-4D).
- Indrigo, C., C. Dow, **J.S. Greenbaum**, M. Morlighem (in review), Drygalski Ice Tongue stability influenced by rift formation and ice morphology, *Journal of Glaciology*.
- Roberts, J.L., L.M. Jong, F.S. McCormack, M.A. Curran, A.D. Moy, D. Etheridge, **J.S. Greenbaum**, D.A. Young, S.J. Phipps, W. Xue, T.D. van Ommen, D.D. Blankenship, M.J. Siegert (in review), Integral correlation for uneven and differently sampled data: Application to the Law Dome Antarctic climate record, *Nature Scientific Reports*.
- Guo, J., W. Yang, Y. Dou, X. Tang, R. Dou, Y. Pan, M. Ding, Y. Zhang, G. Shi, **J.S. Greenbaum**, B. Sun (in review), Antarctica surface mass balance variability along a traverse from Zhongshan Station to Dome A, *Journal of Glaciology*.
- Golynsky, A., G. Eagles, F. Ferraccioli, D. Golynsky, R. von Frese, H. R. Kim, D.A. Young, D.D. Blankenship, J.W. Holt, S. Ivanov, A. Kiselev, V. Masolov, K. Gohl, W. Jokat, D. Demaske, R. Forsberg, C. Finn, A. Aitken, R. Bell, E. Armadillo, T. Jordan, **J.S. Greenbaum**, E. Bozzo, G. Caneva, M. Ghidella, J. Galindo-Zaldívar, F. Bohoyo, Y. Martos, Y. Nogi, E. Quartini, J.K. Hong, J.L. Roberts (in review), ADMAP-2 reveals new magnetic anomaly constraints of the Antarctic crust, *Geochemistry, Geophysics, Geosystems*.

Sun, B., **J.S. Greenbaum (corresponding author)**, J. Guo, J.K. Davis, W. Wei, F.A. Habbal, L.E. Lindzey, X. Cui, L. Li, D. Arora, T. Zhang, A. Lloyd, W. Shen, D.A. Young, J.L. Roberts, I. Dalziel, D. Wiens, T. van Ommen, N. Pant, M.J. Siegert, D.D. Blankenship, (in revision), Indo-Antarctic evolution revealed, *Nature Geoscience*.

#### PEER REVIEWED PUBLICATIONS (27):

##### Journal Articles:

1. † Wei, Wei, D.D. Blankenship, **J.S. Greenbaum**, N. Gourmelen, C. Dow, T.G. Richter, C.A. Greene, D.A. Young, S.H. Lee, T.W. Kim, W.S. Lee, A. Wählin, K. Assmann, (2020), Getz Ice Shelf melt enhanced by freshwater discharge from beneath the West Antarctic Ice Sheet, *The Cryosphere*.
2. Dow, C., F.F. McCormack, D.A. Young, **J.S. Greenbaum**, J.L. Roberts, D.D. Blankenship (2020), Totten Glacier subglacial hydrology determined from geophysics and modeling, *Earth and Planetary Science Letters*.
3. Morlighem, M., Rignot, E., T. Binder, D. Blankenship, R. Drews, G. Eagles, O. Eisen, F. Ferraccioli, R. Forsberg, P. Fretwell, V. Goel, **J.S. Greenbaum**, H. Gudmundsson, J. Guo, V. Helm, C. Hofstede, I. Howat, A. Humbert, W. Jokat, N.B. Karlsson, K. Matsuoka, R. Millan, J. Mouginot, J. Paden, F. Pattyn, J.L. Roberts, S. Rosier, A. Ruppel, H. Seroussi, E.C. Smith, D. Steinhage, B. Sun, M.R. van den Broeke, T.D. van Ommen, M. van Wessem, D.A. Young (2019), Deep glacial troughs and stabilizing ridges unveiled beneath the margins of the Antarctic ice sheet, *Nature Geoscience*.
4. Bangbing, W., B. Sun, Z. Shi, Y.L.J. Wang, G. Tian, **J.S. Greenbaum**, D.D. Blankenship, (2019), Removal of 'strip noise' in airborne radar data using combined wavelet and 2D FFT filtering, *Annals of Glaciology*, 1-11 doi: 10.1017/aog.2019.4.
5. Grima, C., I. Koch, **J.S. Greenbaum**, K.M. Soderlund, D.M. Schroeder, D.A. Young, D.D. Blankenship, S. Fitzsimons, (2019), Surface and Basal Boundary Conditions at the Southern McMurdo and Ross Ice Shelves, Antarctica, *Journal of Glaciology*, 65(252) 675–688 doi: 10.1017/jog.2019.44
6. Markov, A. S. Polyakov, B. Sun, V. Lukin, S. Popov, H. Yang, T. Zhang, X. Cui, J. Guo, P. Cui, L. Zhang, **J.S. Greenbaum**, A. Mirakin, A. Voyevodin, A. Boronina, A. Sukhanova, G. Deshovykh, A. Krekhov, S. Zarin, A. Semyonov, V. Soshchenko, A. Mel'nik (2019), The conditions of the formation and existence of "Blue Ice Areas" in the ice flow transition region from the Antarctic ice sheet to the Amery Ice Shelf in the Larsemann Hills area, *Polar Science*, ISSN 1873-9652, doi.org/10.1016/j.polar.2019.08.004.
7. Dow, C.F., W.S. Lee, **J.S. Greenbaum**, C.A. Greene, D.D. Blankenship, K. Poinar, A.L. Forrest, D.A. Young, C. Zappa, (2018), Basal channels drive active surface hydrology and transverse ice shelf fracture, *Science Advances*, 4(6), p.eaao7212.
8. Golynsky, A.V., F. Ferraccioli, J.K. Hong, D.A. Golynsky, R.R.B. von Frese, D.A. Young, D.D. Blankenship, J.W. Holt, S.V. Ivanov, A.V. Kiselev, V.N. Masolov, G. Eagles, K. Gohl, W. Jokat, D. Damaske, C. Finn, Aitken, R.E. Bell, E. Armadillo, T. A. Jordan, **J.S. Greenbaum**, E. Bozzo, G. Caneva, R. Forsberg, M. Ghidella, J. Galindo-Zaldivar, F. Bohoyo, Y.M. Martos, Y. Nogi, E.

Quartini, H.R. Kim, J.L. Roberts, (2018), New Magnetic Anomaly Map of the Antarctic, *Geophysical Research Letters*. 45, 6437-6449. <https://doi.org/10.1029/2018GL078153>.

9. Gwyther, D.E., T.J. O'Kane, B.K. Galton-Fenzi, D.P. Monselesan, **J.S. Greenbaum**, (2018), Intrinsic processes drive variability in basal melting of the Totten Glacier Ice Shelf, *Nature Communications*. 9:3141 | DOI: 10.1038/s41467-018-05618-2.
10. Cook, S., J. Åström, T. Zwinger, B.K. Galton-Fenzi, **J.S. Greenbaum**, R. Coleman, (2018), Modelled fracture and calving on the Totten Ice Shelf, *The Cryosphere*. <https://doi.org/10.5194/tc-12-2401-2018>.
11. Cui, X.B., **J.S. Greenbaum**, L.H. Beem, J.X. Guo, G. Ng, L. Li, D.D. Blankenship, B. Sun, (2018). The First Fixed-wing Aircraft for Chinese Antarctic Expeditions: Airframe, modifications, Scientific Instrumentation and Applications. *JEEG*, 23(1), 1-13). <https://doi.org/10.2113/JEEG23>.
12. Rutishauser, A., D.D. Blankenship, M. Sharp, M.L. Skidmore, **J.S. Greenbaum**, C. Grima, D.M. Schroeder, J.A. Dowdeswell, D.A. Young, (2018), Discovery of a hypersaline subglacial lake complex beneath Devon Ice Cap, Canadian Arctic, *Science Advances*. 2018;4: eaar4353 4 (4), DOI: 10.1126/sciadv.aar4353.
13. Roberts, J.L., B.K Galton-Fenzi, F.S. Paolo, C. Donnelly, D.E. Gwyther, L. Padman, D.A. Young, R.C. Warner, **J.S. Greenbaum**, H.A. Fricker, A.J. Payne, S. Cornford, A. Le Brocq, T. van Ommen, D.D. Blankenship and M.J. Siegert. (2017). Ocean forced variability of Totten Glacier mass loss. *Geological Society, London, Special Publications*. doi:10.1144/sp461.6.
14. Forsberg, R. A.V. Olesen, F. Ferraccioli, T. Jordan, K. Matsuoka, A. Zakrajsek, M. Ghidella, **J.S. Greenbaum**. (2017) Exploring the Recovery Lakes region, East Antarctica, by airborne gravity, magnetics, and radar measurements, *Geological Society of London Special Publications*. <https://doi.org/10.1144/SP461.17> .
15. Rintoul, S.R., A. A. Silvano, B. Pena-Molino, E. van Wijk, M. Rosenberg, **J.S. Greenbaum**, D.D. Blankenship, (2016), Ocean heat drives rapid basal melt of Totten Ice Shelf, *Science Advances*. 2 (12), e1601610. DOI: 10.1126/sciadv.1601610.
16. Grima C., **J.S. Greenbaum**, E. Lopez Garcia, K. M. Soderlund, A. Rosales, D. D. Blankenship, D. A. Young (2016), Radar detection of the brine extent at McMurdo Ice Shelf, Antarctica, and its control by snow accumulation, *Geophysical Research Letters* 43(13), 7011-7018. <http://dx.doi.org/10.1002/2016GL069524>
17. Aitken, A. R. A., J. L. Roberts, T. D. van Ommen, D. A. Young, N. R. Golledge, **J. S. Greenbaum**, D. D. Blankenship, and M. J. Siegert. "Repeated large-scale retreat and advance of Totten Glacier indicated by inland bed erosion." *Nature* 533, no. 7603 (2016): 385-389.
18. Jamieson, S. S., N. Ross, **J.S. Greenbaum**, D. A. Young, A. R. Aitken, J. L. Roberts, D. D. Blankenship, S. Bo, and M. J. Siegert (2016), An extensive subglacial lake and canyon system in Princess Elizabeth Land, East Antarctica, *Geology*, 44(2), 87-90.

19. **Greenbaum, J.S.**, D. Blankenship, D. Young, T. Richter, J. Roberts, A. Aitken, B. Legresy, D. Schroeder, R. Warner, and T. van Ommen (2015), Ocean access to a cavity beneath Totten Glacier in East Antarctica, *Nature Geoscience*, 8(4), 294-298. doi:10.1038/ngeo2388.
20. Young, D. A., L. E. Lindzey, D. D. Blankenship, **J.S. Greenbaum**, A. G. De Gorordo, S. D. Kempf, J. L. Roberts, R. C. Warner, T. Van Ommen, and M. J. Siegert (2015), Land-ice elevation changes from photon- counting swath altimetry: first applications over the Antarctic ice sheet, *Journal of Glaciology*, 61(225), 17.
21. Aitken, A.R.A., D.A. Young, F. Ferraccioli, P. G. Betts, **J.S. Greenbaum**, T. G. Richter, J. L. Roberts, D. D. Blankenship, and M. J. Siegert (2014), The subglacial geology of Wilkes Land, East Antarctica, *Geophysical Research Letters*, 41(7), 2390-2400.
22. Le Meur, E., M. Sacchetti, S. Garambois, E. Berthier, A.S. Drouet, G. Durand, D.A. Young, **J.S. Greenbaum**, J.W. Holt, D.D. Blankenship, E. Rignot, J. Mouginot, Y. Gim, D. Kirchner, B. De Fleurian, O. Gagliardini, F. Gillet-Chaulet (2014), Two independent methods for mapping the grounding line of an outlet glacier –an example from the Astrolabe Glacier, Terre Adélie, Antarctica, *The Cryosphere*. doi:10.5194/tc-8-1331-2014.
23. Palmer, S. J., J. A. Dowdeswell, P. Christoffersen, D. A. Young, D. D. Blankenship, **J.S. Greenbaum**, T. Benham, J. Bamber, and M. J. Siegert (2013), Greenland subglacial lakes detected by radar, *Geophysical Research Letters*, 40(23), 6154-6159.
24. Young, D. A., A. P. Wright, J. L. Roberts, R. C. Warner, N. W. Young, **J.S. Greenbaum**, D. M. Schroeder, J. W. Holt, D. E. Sugden, and D. D. Blankenship (2011), A dynamic early East Antarctic Ice Sheet suggested by ice-covered fjord landscapes, *Nature*, 474(7349), 72-75.
25. Ghidella, M.E., R. Forsberg, **J.S. Greenbaum**, A.V. Olesen, A.F. Zakrajsek, D.D. Blankenship (2011), Magnetic anomaly data from a regional survey: from Tierra del Fuego to northern Palmer Land, Antarctic Peninsula, *Latinmag Letters*. Volume 1, Special Issue (2011), A19, 1-7.

#### Peer reviewed conference proceedings:

26. Diaz-Aguado, M., **J.S. Greenbaum**, W.T. Fowler, E.G. Lightsey, Small satellite thermal design, test, and analysis, Proc. SPIE 6221, Modeling, Simulation, and Verification of Space-based Systems III, 622109 (31 May 2006); doi: 10.1117/12.666177.
27. Carranza, E., A.H. Taylor, B.G. Williams, D. Han, C.E. Helfrich, R. Bhat, **J.S. Greenbaum**, (2003) Navigating CONTOUR using the noncoherent transceiver technique, *Advances in Astronautical Sciences* 114, January. 2003, 21pgs.

#### OTHER CONFERENCE PROCEEDINGS (4):

1. Munoz, S., **J.S. Greenbaum**, E.G. Lightsey, T.M. Campbell, S. Stewart, G.N. Holt (2011), The FASTRAC Mission: Operations Summary and Preliminary Experiment Results, *Proceedings of the USU Smallsat Conference*, August 2011, Logan, Utah.
2. Munoz, S., **J.S. Greenbaum**, T.M. Campbell, G.N. Holt, E.G. Lightsey (2010), The FASTRAC experience: A student run nanosatellite program. *Proceedings of the USU Smallsat Conference*, August 2010, Logan, Utah.

3. **Greenbaum, J.S.**, G.N. Holt, S. Stewart, T.M. Campbell, E. Rogstad, R.B. Zwerneman, E.G. Lightsey. 2008. "A combined Relative Navigation and Single Antenna Attitude Determination sensor on the FASTRAC Student-Built Nanosatellite Mission." *Proceedings of the Institute of Navigation National Technical Meeting, 28-30 January*. San Diego, California.
4. Holt, G., S. Stewart, J. Mouldin, T. Campbell, P. Eckhoff, H. Elmasri, B. Evans, M. Garg, **J.S. Greenbaum**, M. Linford, M. Poole, E.G. Lightsey, L.L. Raja, T. Ebinuma, (2003), Relative navigation, Microdischarge Plasma Thruster, and Distributed Communications Experiments on the FASTRAC Mission. *Proceedings of the USU Smallsat Conference, August 2003*, Logan, Utah.

#### REPORTS (2):

1. Williams, M., G. Budillon, W. Smith, S. Ackley, D.D. Blankenship, **J.S. Greenbaum**, S. Lee, W.S. Lee (2015), Observation Activities in the Ross Sea: Current and future national contributions to the Southern Ocean Observing System. Zenodo. 10.5281/zenodo.21169.
2. Leventer, A., D.D. Blankenship, E. Domack, B. Huber, A.H. Orsi, A.E. Shevenell, S.P.S. Gulick, **J.S. Greenbaum**, L. Armand, C. Lavoie, A.L. Post, M.A. Rosenberg, A. Walters, S. Saustrup, R.A. Fernández, B. Frederick, D.E. Gwyther (2014), Cruise Report for NBP1402: Sabrina Coast: Marine Record of Cryosphere-Ocean Dynamics, NSF/OPP Antarctic Integrated Systems Science.

#### DATA PRODUCTS (10):

1. Blankenship, D.D., Beem, L.H., **J.S. Greenbaum**, Roberts, J.L., Young, D.A., Le Meur, E. and Van Ommen, T. (2018) EAGLE/ICECAP II INSTRUMENT MEASUREMENTS (LASER, MAGNETICS and POSITIONING), Ver. 1, Australian Antarctic Data Centre - doi:10.26179/5bcfef4e3a297.
2. Roberts, J.L., Blankenship, D.D., **J.S. Greenbaum**, Beem, L.H., Kempf, S.D., Young, D.A., Richter, T.G., Van Ommen, T. and Le Meur, E. (2018) EAGLE/ICECAP II GEOPHYSICAL OBSERVATIONS (SURFACE AND BED ELEVATION, ICE THICKNESS, GRAVITY DISTURBANCE AND MAGNETIC ANOMALIES), Ver. 1, Australian Antarctic Data Centre - doi:10.26179/5bcfffdabcf92.
3. Blankenship, D.D., Roberts, J.L., **J.S. Greenbaum**, Young, D.A., Van Ommen, T., Le Meur, E. and Beem, L.H. (2018) EAGLE/ICECAP II RADARGRAMS, Ver. 1, Australian Antarctic Data Centre - doi:10.26179/5bcff4afc287d.
4. Blankenship, D. D., S. D. Kempf, D. A. Young, T. G. Richter, D. M. Schroeder, G. Ng, **J.S. Greenbaum**, T. van Ommen, R. C. Warner, J. L. Roberts, N. W. Young, E. Lemeur, and M. J. Siegert. 2017. *IceBridge HiCARS 2 L1B Time-Tagged Echo Strength Profiles, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/0I7PFBVQOGO5>.
5. Blankenship, D. D., S. D. Kempf, D. A. Young, T. G. Richter, D. M. Schroeder, **J.S. Greenbaum**, T. van Ommen, R. C. Warner, J. L. Roberts, N. W. Young, E. Lemeur, M. J. Siegert, and J. W. Holt. 2017. *IceBridge HiCARS 1 L1B Time-Tagged Echo Strength Profiles, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/W2KXX0MYNJ9G>.

6. **Greenbaum, J.S.**, Blankenship, D.D., Young, D.A., Richter, T.G., Roberts, J.L., Aitken, A.R., Legresy, B., Schroeder, D.M., Warner, R., Van Ommen, T., Siegert, M.J. (2016) Totten Glacier Ice Shelf cavity bathymetry, Ver. 1, Australian Antarctic Data Centre - doi:10.4225/15/57468BEE1B9D4, Accessed: 2020-01-27.
7. Blankenship, D. D., D. A. Young, T. G. Richter, and **J.S. Greenbaum**. 2014. *IceBridge CMG GT-1A Gravimeter L2 Geolocated Free Air Gravity Disturbances, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/3X4CIKKSQRU>.
8. Blankenship, D. D., S. D. Kempf, D. A. Young, T. G. Richter, D. M. Schroeder, G. Ng, **J.S. Greenbaum**, T. van Ommen, R. C. Warner, J. L. Roberts, N. W. Young, E. Lemeur, and M. J. Siegert. 2012, updated 2017. *IceBridge HiCARS 2 L2 Geolocated Ice Thickness, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/9EBR2T0VXUDG>.
9. Blankenship, D. D., S. D. Kempf, D. A. Young, T. G. Richter, D. M. Schroeder, **J.S. Greenbaum**, J. W. Holt, T. van Ommen, R. C. Warner, J. L. Roberts, N. W. Young, E. Lemeur, and M. J. Siegert. 2011, updated 2017. *IceBridge HiCARS 1 L2 Geolocated Ice Thickness, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/F5FGUT9F5089>.
10. Blankenship, D. D., D. A. Young, T. G. Richter, and **J.S. Greenbaum**. 2011, updated 2014. *IceBridge BGM-3 Gravimeter L2 Geolocated Free Air Anomalies, Version 1*. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: <https://doi.org/10.5067/8DJW56PKY133>.

## STUDENT INSTRUCTIONAL ACTIVITIES:

### Doctoral candidates:

Nov. 2017 – present: Committee member and research mentor for UTIG Ph.D. candidate Wei Wei; she has a manuscript in revision reflecting our work together and has presented at multiple international conferences.

Oct. 2019 – present: Committee member for UTIG Ph.D. candidate Sophie Goliber.

June 2018 – present: Research mentor for UTIG Ph.D. student Natalie Wolfenbarger on ice sounding radar analyses of the Amery Ice Shelf and Mill Island in East Antarctica.

June 2017 – present: Research mentor UTIG Ph.D. student Shuai Yan on East Antarctic subglacial lakes and gravity data analysis.

June 2017 – Dec. 2018: Mentored University of Alberta Ph.D. candidate Anja Rutishauser on Canadian Arctic glacier basal conditions; Anja completed her Ph.D. in January, 2019.

### Undergraduate Researchers:

Feb. 2017 – Dec. 2018: Mentored former Mathematics undergraduate Alyssa Jones on automatic detection of subglacial lakes through advanced statistical analysis techniques which she presented in at an international Mathematics Conference (see presentations).

Summer 2017: Advised two University of Waterloo Geography Masters students on their research on the Nansen Ice Shelf and David Glacier Catchment in West Antarctica.

### **High School Researchers:**

September 2018 – present: Mentoring current high school student Chinmay Murthy on constraining subglacial heterogeneous geothermal heat flow in East Antarctica. Chinmay presented this research at the upcoming AGU Fall Meeting in December, 2019.

Summer 2019: Recruited Isabella Vergara, a recent high school graduate from Anne Richards School for Young Women Leaders to participate in Antarctic radar data interpretation.

### **Other Instructional Activities:**

Spring 2009: Co-taught once per week for a semester to three Grade 5 science classes at Pillow Elementary School in Austin, Texas; developed lesson plans on alternative energy and the scientific method, including laboratory exercises; gave special lectures on Antarctic research and space exploration.

Fall 2004: Teaching Assistant, Department of Aerospace Engineering: Assistant instruction for a senior-level course in spacecraft dynamics and attitude-determination; taught study sessions, graded assignments, and held office hours. Also assisted with a senior-level design course with responsibilities ranging from guest lecturing to group mentorship and advising.

### **GUEST LECTURES:**

October 2019: Syracuse University Maxwell School of Public Administration and International Affairs course “From Fragility to Resilience: New Approaches to Global Development”, *Climate change, ice sheets, and sea level*, Washington D.C.

July, 2019: Shanghai Jiao Tong University School of Oceanography course “Reversing Climate Change”, Lecture 1: *Ice and Ice Shelves*, Lecture 2: *Sea level and Antarctica’s great basins*, Lecture 3: *Geoengineering ice sheets*, Shanghai, China.

May 2016 Airborne Gravity School, US National Geodetic Survey, *UTIG Airborne operations in Antarctica from 2008 to 2016 and future directions*, Silver Spring, MD.

Nov. 2015: Department of Oceanography Polar Regions course, Texas A&M University, *Controls on glacier melting along the Sabrina Coast, East Antarctica*, College Station, Texas.

April 2015: Department of Earth Sciences, Montana State University, *Controls on marine ice sheet instability along the Sabrina Coast, East Antarctica*, Bozeman, Montana.

June 2012: Ph.D. summer school, Stability and Variations of Arctic Land Ice Center of Excellence and the Danish Technical University, *Space Methods for Monitoring the Cryosphere*, Gilleleje, Denmark.

### **OTHER INVITED SEMINARS AND PRESENTATIONS**

November 2019: Science seminar to Casey Station, Australian Antarctic Division, *Sea level, East Antarctica, and the ICECAP project*.

August 2019: Scripps Institution of Oceanography’s Institute of Geophysics and Planetary Physics seminar, *Vulnerabilities to ice sheet retreat along the Indo-Pacific Margin of East Antarctica*.

April 2019: Polar Research Institute of China; status of the ICECAP-2 project; Shanghai, China.

May 2018: Korea Polar Research Institute; status of the Land-Ice/Ocean Network Exploration with Semi-autonomous Systems (LIONESS) project; Incheon, KR.

May 2018: Polar Research Institute of China; status of the ICECAP-2 project; Shanghai, China.

April 2018: Global Innovation Initiative symposium on the China-India-US-UK survey of Princess Elizabeth Land that I have been managing since 2015; US State Department, Washington D.C.

Dec. 2017: American Geophysical Union Fall Meeting Session "From the Earth to the Moons; Ice-ocean systems on Earth and Ocean Worlds"; New Orleans, LA.

Oct. 2017: National Institute of Polar Research; a discussion of the ROBOTICA project, Tokyo, Japan.

June 2017: Observing and Understanding the Ocean beneath Antarctic Sea Ice and Ice Shelves (OASIIS) Session on airborne data acquisition for ocean research, Bremerhaven, Germany.

June 2017: Polar Research Institute of China; status of the ICECAP-2 project; Shanghai, China.

July 2016: ICECAP-2 workshop, preliminary results of US-UK-China-India collaborative airborne survey; Scientific Committee on Antarctic Research conference, Kuala Lumpur, MY.

July 2016: Sabrina Coast Survey (R/V Investigator cruise) workshop, status of Totten Glacier results; Scientific Committee on Antarctic Research conference, Kuala Lumpur, MY.

May 2016: Polar Research Institute of China; status of the ICECAP-2 project; Shanghai, China.

May 2016: Korea Polar Research Institute; polar airborne survey from rotary-wing aircraft; Incheon, KR.

Mar. 2016: IPICS Oldest ice workshop, status of a US-China-Australia old ice survey; Hobart, TAS.

Dec. 2015: American Geophysical Union Fall Meeting Session "Glacier Ice-Ocean Interactions: Process Studies"; San Francisco, CA.

Mar. 2015: Totten Glacier research overview, Geosoft Inc., Toronto, ON.

Oct. 2014: Presented to Iowa Senator Tom Harkin and Maryland Governor Martin O'Malley on sea level reservoirs and glacier observations, Halethorpe, MD, 27-October.

Oct. 2014: Instrumentation for Polar Glaciology and Geophysics Research, NASA/NSF, 10-October 10.

Sept. 2014: Overview of airborne research activities and the need for unpiloted airborne vehicles; Intuitive Machines, LLC, Houston, TX.

June 2010: Status of the DK-US-NOR airborne survey of the Antarctic Peninsula; NASA Operation IceBridge workshop; Seattle, WA.

## FIELDWORK EXPERIENCE

I have led or participated in thirteen expeditions to Antarctica and three to Greenland. Antarctic work has included eleven airborne geophysical campaigns, one surface-based geophysical survey, and one marine geophysical, geological, and oceanographic survey. Greenland work has included two airborne geophysical campaigns and one surfaced-based geophysical study.

2019-2020: Science and engineering lead on a six-week fixed-wing airborne survey of East Antarctica's continental shelf between 90E and 165E to infer seafloor shape from gravity and magnetics data; deployments of sensors to constrain seafloor depth and estimate heat content of the ocean nearby glacier grounding lines.

2018-2019: Science and engineering lead on a six-week airborne survey of Antarctica's George V Coast and Northern Victoria Land to infer seafloor shape from gravity and magnetics; glacier ice thickness measurements near grounding lines. Facilitated work with the Chinese, Australian, French, and Korean Antarctic programs.

2017-2018: Science and engineering lead on a three-month airborne survey of Princess Elizabeth Land (PEL), East Antarctica; coordinated activities between the Chinese and Australian Antarctic programs.

2016-2017: Science and engineering lead on a three-month airborne survey of the Shackleton Ice Shelf and various targets in PEL, East Antarctica; coordinated with the Chinese and Australian programs.

- 2015-2016: Science and engineering lead for a four-month airborne survey of PEL, East Antarctica in collaboration with the Chinese Program (Nov-Feb). Field lead on a separate expedition to demonstrate an unpiloted aircraft (collaboration with the Australian Antarctic Division).
- 2014-2015: Equipment installation and test flight lead for an airborne survey of Marie Byrd Land (MBL), West Antarctica.
- 2013-2014: 43-day R/V NB Palmer icebreaker expedition to the Sabrina Coast, East Antarctica; served on the project management committee with the PI and Co-Investigators.
- 2012-2013: Flight operations lead for a two-month ICECAP (International Collaborative Exploration of the Cryosphere by Airborne Profiling) survey of targets in the Aurora Subglacial Basin, East Antarctica (Nov-Dec) followed by a survey of MBL, West Antarctica (January).
- 2011-2012: Flight operations lead for an ICECAP survey of the Aurora Subglacial Basin in East Antarctica; I served the same role on a 1-month airborne survey of Greenland outlet glaciers in May, 2012.
- 2010-2011: Participant in a one-month Denmark-led ICEGRAV survey of the Antarctic Peninsula (October). I then served as Flight operations lead on an ICECAP survey of East Antarctica's Wilkes and Aurora Subglacial Basins (Nov., 2010 to Jan., 2011) followed by another ICEGRAV survey of Dronning Maud Land, East Antarctica (Jan. 2011). I also served as Flight operations lead on a 3-week airborne survey of Greenland outlet glaciers in April, 2011.
- 2009-2010: Flight operations lead on ICECAP surveys of the Byrd and Totten Glacier Catchments and the George V Coast in East Antarctica (Nov, 2009-Jan. 2010). I also participated in a separate, 1-month Denmark-led ICEGRAV airborne survey of the Antarctic Peninsula (Jan.-Feb., 2010).
- 2008-2009: Participated in the first ICECAP airborne campaign, a 2-month survey of the Totten Glacier Catchment, East Antarctica; ice-penetrating radar, gravity, magnetics, and surface laser altimetry.
- 2007: Engineering support of a six-week ground radar survey in west-central Greenland (April-May) followed by a 2-month radar survey of Siple Coast ice streams in West Antarctica (Nov.-Dec.).

#### **SPACECRAFT EXPERIENCE**

- April 2005 to January 2007: Project Manager for the Formation Autonomy Spacecraft with Thrust, Relative navigation, Attitude, and Crosslink (FASTRAC) dual microsatellite project; oversaw the detailed design, fabrication, delivery, and environmental testing of both satellites and ground support equipment. The satellite pair were launched on 20 November 2010, separated successfully, and operated for several years.
- June 2003 to April 2005: Mission Systems Engineer for the FASTRAC mission.

#### **MICROGRAVITY PAYLOAD EXPERIENCE**

- August 2003 – May 2004: Project Manager for the “Nanosatellite Separation and Initial Condition Analysis in six Degrees of Freedom Experiment”. Designed and operated a platform to test the separation phase of the FASTRAC mission. Two mass models were repeatedly commanded to separate over a RF transceiver while an inertial measurement system recorded flight dynamics over 35 parabolic arcs conducted on NASA's KC-135 aircraft.
- August 2001 – May 2003: Project Manager for the “Effects of Buoyancy on an Acoustically Forced, Non Premixed, Laminar, Jet-Diffusion Flame Experiment”. Designed and constructed a platform to record luminosity and Schlieren density gradient images of flames under the influence of an acoustic forcing input. Design included redundant safety features for use on NASA's KC-135 aircraft over two consecutive annual campaigns for a total of 84 parabolic arcs.

## CONTRIBUTIONS TO PROMOTING DIVERSITY:

I am the University Advisor to the Longhorn Science Olympiad Alumni Association, a student organization (of mostly undergraduates) that mentors and promotes the establishment of middle and high school Science Olympiad teams, creates assessments for, and organizes, a nationwide invitational and a Texas regional competition at UT Austin. Established in 1984, Science Olympiad is the largest team-based science competition in the United States and a major platform for children from diverse backgrounds to be exposed to STEM fields. I chose to advise because the student is specifically working to increase access to STEM disciplines by providing financial and mentorship support to establish new Science Olympiad teams in Texas Title I schools.

I am committed to training and mentoring students of all identities and backgrounds and I firmly believe that we must cultivate a generation of interdisciplinary and intercultural scientists comfortable working across geographic, political, and linguistic barriers. I am currently mentoring two graduate students who are Chinese citizens (one female, one male) and one male high school student of Indian descent. Formerly as a postdoc I mentored a female student from Switzerland who recently received her Ph.D. in Canada, a female undergraduate mathematics student, and I recruited a female high school student researcher. In addition to academic mentoring, I have collaborated with, trained, and/or mentored ten women during my expeditions to Antarctica and Greenland, including seven from the US and one each from China, Italy, and the UK and at least twenty men from Australia, China, Colombia, Denmark, France, Norway, Russia, and the UK.

## SELECTION OF FUNDED PROPOSALS

- 2018: Negotiated and managed a contract for \$50k from the Australian Antarctic Division to provide Antarctic season planning, fieldwork, and engineering support for the 2018/2019 field season.
- 2018: Lead author of a proposal to Geosoft Inc. for three research software licenses. The Geosoft "Knowledge from Data" sponsorship program funded the proposal which includes licenses for myself and two graduate students valued at \$14.4k.
- 2017: Lead author of a Supplement Proposal for the "*East Antarctic Grounding Line Experiment (EAGLE)*" project; \$100k, NSF, collaborative with ACE-CRC, AAD, LGGE, and PRIC; PI: Donald Blankenship.
- 2017: Negotiated a \$140k contract from the Polar Research Institute of China to provide season planning, fieldwork management, and engineering for the 2017/2018 and 2018/2019 field campaigns.
- 2017: Initiated and led negotiations for aircraft access then acquired the data that enabled funding for the "*Collaborative Research: Southern Plateau Ice-sheet Characterization and Evolution of the Central Antarctic Plate (SPICECAP)*" proposal; \$357k, NSF, collaborative with Univ. of Minnesota Duluth, Scripps Oceanographic Institute, USGS, AAD, and IGE; PI: Duncan Young.
- 2015: Lead author of the "*East Antarctic Grounding Line Experiment (EAGLE)*" proposal, \$724k, NSF, collaborative with ACE-CRC, AAD and IGE; this proposal funded my Postdoc at UTIG.
- 2015: Lead author of a supplement for the "*Totten Glacier System and the Marine Record of Cryosphere-Ocean Dynamics*"; \$57.5k, NSF, collaborative with ACE-CRC, AAD, and LGGE; PI: Blankenship.
- 2014: Co-author of a proposal submitted to the Global Innovation Initiative program (US State Department and UK Foreign Office): "*ICECAP-2 International Collaborative Exploration of Central East Antarctica through Airborne geophysical Profiling*"; £150k, a partnership between China, India, the UK, and the US to initiate exploration of the last void in Antarctic data coverage.
- 2015: Co-author for an equipment match proposal to the Jackson School of Geosciences for the partial purchase of the state-of-the-art kinematic relative gravimeter, GT-2A, \$152.8k. I also initiated negotiations for the co-ownership agreement that was the basis for the purchase. The external match was funded through the "SPICECAP" proposal which was ultimately awarded in 2017.

- 2013: Co-author of the “*Unpiloted Aircraft System-Borne Gravimeter*” SBIR proposal; \$31k, NOAA, collaborative with Aurora Flight Sciences; PI: Donald Blankenship.
- 2011: Co-author of the “*Totten Glacier System and the Marine Record of Cryosphere-Ocean Dynamics*” proposal; \$577k, NSF, collaborative with ACE-CRC, AAD, and CSIRO; PI: Prof. Amy Leventer.
- 2011: Co-author of the “*Sub-ice Investigation of Marine and Planetary-analog Ecosystems (SIMPLE)*” proposal; \$4.9m, NASA, collaborative with University of Illinois, San Jose State University, University of Nebraska at Lincoln, Montana State University; PI: Prof. Britney Schmidt.
- 2009: Co-author of the “*Guidance, Navigation, and Control System for Maneuverable Pico-Satellites*” Phase 2 STTR proposal; \$600k, NASA (2009, Austin Satellite Design); PI: Prof. E. Glenn Lightsey.
- 2008: Lead author of the “*Guidance, Navigation, and Control System for Maneuverable Pico-Satellites*” Phase 1 STTR proposal; \$100k, NASA (2008, Austin Satellite Design); PI: Prof. E. Glenn Lightsey.

#### **EXTERNAL PROFESSIONAL ACTIVITIES**

- Recent and periodic reviewer for the Journal of Glaciology, Geophysical Research Letters
- June 2018 – present: Bedmap3 Steering Committee member
- June 2018 – present: ADMAP Steering Committee member
- June 2017 – present: Project Management Committee member, Australian Cooperative Research Centre Project for transformative technologies for airborne gravimetry.
- June 2017: Presenter and participant, Observing and Understanding the Ocean beneath Antarctic Sea Ice and Ice Shelves (OASIIS), Bremerhaven, Germany, 14-17 June, 2017.
- April 2017: Co-Convener, Airborne geodesy and geophysics with focus on polar applications, workshop at the Technical University of Dresden, Dresden, Germany, 19-21 April, 2017.
- 2014 – present: Board member of the Ocean Research Project, a 501(c)(3) non-profit dedicated to seagoing research.

#### **EXTERNAL REVIEWS OF PRIMARY CREATIVE WORK**

- 23 September 2016 –Austin American Statesman, A. Price, “UT Scientists make new discoveries about underside of Antarctic ice.”
- May 2016 – Alcalde Magazine, J. Hanson, “Underwater” (<http://alcalde.texasexes.org/underwater/>).
- 20 March 2015 – Atlantic Magazine, J. Hamblin, “How the Most Important Glacier In East Antarctica Is Melting.”
- 16 March 2015 –Nature Geosciences News and Views, P. Fretwell, “Entry beneath ice.”
- 17 March 2015 – National Public Radio “Here and Now” interview, “Warm Water Accelerating Melting of East Antarctic Glacier.”
- 16 March 2015 – Washington Post, C. Mooney, “Scientists confirm that East Antarctica’s biggest glacier is melting from below.”

#### **OTHER RECENT PRESS**

- July 2018: Interview with the Alcalde Magazine about our collaborative work with the Polar Research Institute of China on airborne geophysical survey in East Antarctica:  
<https://alcalde.texasexes.org/2018/07/texas-exes-shanghai-chapter-looks-at-china-and-uts-icy-explorations/>
- June 2018: Interview with *Inside Climate News* about our recent paper on ice shelf basal channels, surface melt, and fracture:  
<https://insideclimatenews.org/news/13062018/antarctica-ice-loss-accelerating-tripled-sea-level-rise-climate-change-nature-study>

- May 2018: Interview with The Daily Texan on our recent paper on salty lakes beneath the Devon Ice Cap:  
<https://www.dailytexanonline.com/2018/04/29/discovery-of-salty-subglacial-lakes-may-aid-search-for-extraterrestrial-life>
- Nov. 2017: Interview with Scientific American E&E News ClimateWire on sub-ice topography mapping:  
<https://www.scientificamerican.com/article/new-maps-show-how-greenland-s-ice-sheet-is-melting-from-the-bottom-up/>
- March 2017: Interview with LiveScience regarding record high temperatures in Antarctica.  
<https://www.livescience.com/58078-record-breaking-antarctica-temperatures.html>
- Feb. 2016: Interview with the Washington Post regarding a new study on instability of the East Antarctic Ice Sheet:  
[https://www.washingtonpost.com/news/energy-environment/wp/2016/02/22/antarctica-could-be-more-vulnerable-to-major-melting-than-we-thought/?utm\\_term=.5661177bc390](https://www.washingtonpost.com/news/energy-environment/wp/2016/02/22/antarctica-could-be-more-vulnerable-to-major-melting-than-we-thought/?utm_term=.5661177bc390)
- Nov. 2015: Interview with the Washington Post regarding a study on Antarctic mass balance:  
[https://www.washingtonpost.com/news/energy-environment/wp/2015/11/05/a-controversial-nasa-study-says-antarctica-is-gaining-ice-heres-why-you-should-stay-skeptical/?utm\\_term=.d0ee13efde5b](https://www.washingtonpost.com/news/energy-environment/wp/2015/11/05/a-controversial-nasa-study-says-antarctica-is-gaining-ice-heres-why-you-should-stay-skeptical/?utm_term=.d0ee13efde5b)
- Oct. 2015: Interview with the Washington Post regarding Totten Glacier's grounding line change:  
[https://www.washingtonpost.com/news/energy-environment/wp/2015/10/26/east-antarcticas-biggest-glacier-is-melting-from-below-study-confirms/?utm\\_term=.89e30d7903e4](https://www.washingtonpost.com/news/energy-environment/wp/2015/10/26/east-antarcticas-biggest-glacier-is-melting-from-below-study-confirms/?utm_term=.89e30d7903e4)
- Aug. 2015: Radio Interview on Green Local 175 Live Radio and Internet Show  
<http://www.greenlocal175.com/GL175LIVET0415.mp3>
- July 2015: Interview with the Austin American Statesman regarding Antarctic fieldwork and Totten Glacier research  
[https://www.mystatesman.com/news/scientists-make-new-discoveries-about-underside-antarctic-ice/39gxqUVLLgZMYdjAKS6cqI/?icmp=statesman\\_internallink\\_invitationbox\\_apr2013\\_state\\_smanstbtomystatesmanpremium#18750513.3999187.735791](https://www.mystatesman.com/news/scientists-make-new-discoveries-about-underside-antarctic-ice/39gxqUVLLgZMYdjAKS6cqI/?icmp=statesman_internallink_invitationbox_apr2013_state_smanstbtomystatesmanpremium#18750513.3999187.735791)
- May 2015: Interview with the Alcalde Magazine regarding sea level rise and Totten Glacier  
<http://alcalde.texasexes.org/underwater/>
- May 2015: Interview with the National Monitor regarding a study on rates of sea level rise:  
<http://natmonitor.com/2015/05/12/sea-level-rising-faster-than-predicted-say-scientists/>
- April 2015: Interview with Yale Climate Connections on Totten Glacier and sea level rise:  
[https://www.youtube.com/watch?v=0pDB\\_C-jwkU](https://www.youtube.com/watch?v=0pDB_C-jwkU)
- April 2015: Presentation to over 100 University of Texas undergraduate and graduate students at the Tejas Club, a University of Texas student organization
- April 2015: Interview with the Geosoft Earth Explorer Magazine on Totten Glacier:  
[http://www.earthexplorer.com/2015/Southern\\_Surveys\\_Unravelling\\_the\\_mystery\\_of\\_East\\_Antarctica.as](http://www.earthexplorer.com/2015/Southern_Surveys_Unravelling_the_mystery_of_East_Antarctica.as)
- March 2015: Interview with The Atlantic magazine regarding Antarctic fieldwork and Totten Glacier:  
<https://www.theatlantic.com/international/archive/2015/03/the-new-west-antarctica-yep-its-east-antarctica/388018/>
- March 2015: Interview with the Wall Street Journal (video interview) regarding Totten Glacier research:  
<http://www.wsj.com/video/warm-ocean-currents-contribute-to-melting-glaciers/46D0660B-508E-4C50-A005-E485B60A3196.html>
- March 2015: National Public Radio interview on "Here and Now" radio show on Totten Glacier:  
<http://www.wbur.org/hereandnow/2015/03/17/antarctic-glacier-melting>
- March 2015: Interview with the Washington Post regarding Totten Glacier research:

[https://www.washingtonpost.com/news/energy-environment/wp/2015/03/16/the-melting-of-antarctica-was-already-really-bad-it-just-got-worse/?utm\\_term=.ab89e9e39ac3](https://www.washingtonpost.com/news/energy-environment/wp/2015/03/16/the-melting-of-antarctica-was-already-really-bad-it-just-got-worse/?utm_term=.ab89e9e39ac3)

#### CONFERENCE PARTICIPATION IN LAST 4 YEARS (not including invited talks listed above):

† Indicates students that I mentor or have mentored.

##### 2019

- † Murthy, C., **J.S. Greenbaum**, D.A. Young, D.D. Blankenship, Determining an Optimal Window Size for Accurate Curie Depth Measurements in Antarctica, AGU Fall meeting, San Francisco, CA, Dec. 2019.
- Young, D.A., **J.S. Greenbaum**, D.D. Blankenship, M.J. Siegert, J.L. Roberts, T.D. van Ommen, A. Aitken, C. Grima, E. Le Meur, and the ICECAP collaboration, *ICECAP's contribution to NASA's Operation IceBridge in East Antarctica*, AGU Fall meeting, San Francisco, CA, Dec. 2019.
- † S. Yan, D.D. Blankenship, **J.S. Greenbaum**, J. Guo, L. Li, D.A. Young, J.L. Roberts, T.D. van Ommen, B. Sun, *Integrated Airborne Geophysics Survey over a Newly-discovered Subglacial Lake in Princess Elizabeth Land, East Antarctica*, AGU Fall meeting, San Francisco, CA, Dec. 2019.
- I.W. Park, E.K. Jin, K.K. Lee, W.S. Lee, M. Morlighem, C.K. Lee, D.A. Young, D.D. Blankenship, **J.S. Greenbaum**, J.L. Roberts, B. Sun, *Sea level projections using ice sheet model based on RCP scenarios at David Glacier, East Antarctica*, AGU Fall meeting, San Francisco, CA, Dec. 2019.
- † C. Indrigo, P.L. Wray, C.F. Dow, D. Mueller, W.S. Lee, D.A. Young, **J.S. Greenbaum**, D.D. Blankenship, M. Morlighem, *The role of basal channels and fractures in the stability of ice bodies in Terra Nova Bay, East Antarctica*, AGU Fall meeting, San Francisco, CA, Dec. 2019.
- Greenbaum, J.S.**, J.L. Roberts, N. Gourmelen, C.Y. Grima, D.M. Schroeder, C.F. Dow, P. Heimbach, D.A. Young, B. Sun, J. Guo, C. Zappa, T.D. van Ommen, D.D. Blankenship. Oral presentation: *Ocean-driven thinning of Totten and Shackleton Ice Shelves, the two primary outlets of the Aurora Subglacial Basin in East Antarctica*, XIII International Symposium on Antarctic Earth Sciences (ISAES), Incheon, Republic of Korea, 22-26 July, 2019.
- B. Sun, **J.S. Greenbaum** (presenter), J. Guo, J.K. Davis, W. Wei, F.A. Habbal, L.E. Lindzey, X. Cui, L. Li, D. Arora, T. Zhang, A. Lloyd, W. Shen, D.A. Young, J.L. Roberts, I. Dalziel, D. Wiens, T.D. van Ommen, N. Pant, M.J. Siegert, D.D. Blankenship. Oral presentation: *Assembly and breakup of Indo-Antarctica revealed*, XIII International Symposium on Antarctic Earth Sciences (ISAES), Incheon, Republic of Korea, 22-26 July, 2019.
- Greenbaum, J.S.**, D.M. Schroeder, C.Y. Grima, N. Gourmelen, C.F. Dow, F.A. Habbal, J.L. Roberts, R.C. Warner, D.E. Gwyther, T.D. van Ommen, M.J. Siegert, and D.D. Blankenship. Oral presentation: *Surface and basal melting of Totten Glacier Ice Shelf*, East Antarctica, IGS Symposium on Radioglaciology, Stanford University, July 2019.
- J.S. Greenbaum**, B. Sun, I. Dalziel (presenter), J. Guo, J.K. Davis, W. Wei, F.A. Habbal, L. E. Lindzey, X. Cui, L. Li, D. Arora, T. Zhang, A. Lloyd, w. Shen, D.A. Young, J.L. Roberts, D. Wiens, T.D. van Ommen, N. Pant, M.J. Siegert, D.D. Blankenship. Oral presentation: *The assembly and breakup of Indo-Antarctica*, IGCP 648 Supercontinent Cycles and Global Geodynamics, Antananarivo, Madagascar, June, 2019.

##### 2018

- † Wei, W., **J.S. Greenbaum**, N. Gourmelen, C.F. Dow, B. Sun, J. Guo, T.D. van Ommen, J.L. Roberts, D.A. Young, D.D. Blankenship, *The bathymetric and subglacial hydrological context for basal melting of the West Ice Shelf in East Antarctica*, poster, AGU Fall meeting, Washington D.C., Dec. 2018.
- † Wei, W., **J.S. Greenbaum**, N. Gourmelen, C.F. Dow, T.G. Richter, D.A. Young, S.H. Lee, W.S. Lee, A. Wählin, K. Assmann, D.D. Blankenship, *The bathymetric and subglacial hydrological context for basal melting of the Getz Ice Shelf*, poster, West Antarctica, West Antarctic Ice Sheet Initiative meeting, Stony Point, NY, September, 2018.

- † Wei, W., **J.S. Greenbaum**, D.D. Blankenship, T.G. Richter, D.A. Young, S. Lee, W.S. Lee, A. Wählin, K. Assmann, *On the bathymetry of the Getz Ice Shelf cavity from airborne gravity data inversion*, Scientific Committee on Antarctic Research (SCAR) Open Science Conference, Davos, Switzerland, June, 2018.
- Habbal F., **J.S. Greenbaum**, C. Grima, D.A. Young, J.L. Roberts, T.D. van Ommen, and D.D. Blankenship, *Using radar sounding to detect grounding line positions with evidence of modern grounding line retreat in East Antarctica*, poster, AGU Fall meeting, Washington D.C., Dec., 2018.
- Gourmelen, N., D. Goldberg, **J.S. Greenbaum**, Satoshi Kimura, Kate Snow, *Concentrated basal melt under Antarctic Ice Shelves*, AGU Fall meeting, Washington D.C., Dec., 2018.
- Maylath, M.M., N.S. Wolfenbarger, **J.S. Greenbaum**, W. Wei, B. Sun, J. Guo, T.D. van Ommen, J.L. Roberts, D.D. Blankenship, *A New Estimate of Marine Ice Accretion Under Amery Ice Shelf*, poster, AGU Fall meeting, Washington D.C., Dec. 2018.
- † Rutishauser, A., D.D. Blankenship, L.H. Beem, **J.S. Greenbaum**, D.A. Young, C. Grima, A.S. Criscitiello, *New insights from an airborne geophysical survey over the hypersaline subglacial lakes beneath Devon Ice Cap, Canadian Arctic*, poster, AGU Fall meeting, Washington D.C., Dec. 2018.
- Beem, L., L.E. Lindzey, E. Quartini, D.A. Young, **J.S. Greenbaum**, C.F. Dow, W.S. Lee, S.H. Lee, D.D. Blankenship, *Subglacial hydrology and ice shelf processes from helicopter-based geophysical observations, Amundsen and Western Ross Sea Sectors, West Antarctica*, poster, West Antarctic Ice Sheet Initiative meeting, Stony Point, NY, Sept., 2018.

#### 2017

- Greenbaum, J.S. (invited talk)**, D.D. Blankenship, C.Y. 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*, American Geophysical Union Fall Meeting, New Orleans, LA, December 2017.
- † Jones A.D., W. Tansey, **J.S. Greenbaum**, J.G. Scott, D.D. Blankenship, *Automatic detection of subglacial lakes via a discrete autoregressive change point analysis*, Joint Statistical Meetings, Baltimore, 29 July to 3 August, 2017.
- Young, D.A., C. Grima, **J.S. Greenbaum**, L.H. Beem, M.G.P. Cavitte, E. Quartini, S.D. Kempf, J.L. Roberts, M.J. Siegert, C. Ritz, D.D. Blankenship, *The subglacial roughness of Antarctica: Analogs, interpretation and implications for ice thickness uncertainties*, AGU Fall Meeting, New Orleans, Dec 2017.
- Greenbaum, J.S.**, D.D. Blankenship, D.A. Young, P. Heimbach, C.Y. Grima, T.D. van Ommen, J.L. Roberts, E. Lemeur, G. Durand, B. Sun, J. Guo, *Motivation, initial results, and field plans for the East Antarctic Grounding Line Experiment and the West Antarctic Land-Ice/Ocean Network Exploration with Semi-autonomous Systems projects*, Forum for Research into Ice Shelf Processes (FRISP), Bergen, Norway, June 2017.
- Greenbaum, J.S.**, C.Y. Grima, D.M. Schroeder, C.F. Dow, D.A. Young, J.L. Roberts, R.C. Warner, D.E. Gwyther, B. Huber, A. Leventer, T.D. van Ommen, M.J. Siegert, D.D. Blankenship, *Surface and basal melting of Totten Glacier Ice Shelf, East Antarctica*, Poster presentation at the Forum for Research into Ice Shelf Processes (FRISP), Bergen, Norway, June 2017.
- † Wei W., **J.S. Greenbaum**, D.D. Blankenship, T.G. Richter, D.A. Young, S. Lee, J. Eom, A. Wählin, K. Assmann, *The bathymetry of Getz Ice Shelf cavity from airborne gravity data inversion*, Forum for Research into Ice Shelf Processes (FRISP), Bergen, Norway, June 2017.
- Greenbaum, J.S. (invited talk)**, D.D. Blankenship, D.A. Young, T.D. van Ommen, J.L. Roberts, B. Sun, J. Guo, E. Lemeur, G. Durand, C.Y. Grima, P. Heimbach, *The East Antarctic Grounding Line Experiment:*

*Aerogeophysics for coastal bathymetry and subglacial freshwater discharge in East Antarctica*, Observing and Understanding the Ocean beneath Antarctic Sea Ice and Ice Shelves (OASIIS), Bremerhaven, Germany, 14-17 June, 2017.

Dow, C., F. Graham, D.A. Young, **J.S. Greenbaum**, J.L. Roberts, D.D. Blankenship, *Water flux through Aurora Subglacial Basin and its impact on Totten Glacier stability*, Proceedings of the Buffalo Symposium: Timescales, Processes and Glacier Dynamics, 04-08 June, Buffalo, New York, US.

**Greenbaum, J.S.**, *Morphological evidence and direct estimates of rapid melting beneath Totten Glacier Ice Shelf, East Antarctica*; poster presentation to the EGU General Assembly 2017, 24 Apr 2017.

Habbal, F.A., **J.S. Greenbaum**, et al., *Improved grounding line constraints and evidence of retreat of Totten Glacier, East Antarctica*, EGU General Assembly 2017, 24 Apr 2017.

Young, D., D.D. Blankenship, L.H. Beem, M.G.P. Cavitte, E. Quartini, L.E. Lindzey, C. Jackson, J.L. Roberts, C. Ritz, M.J. Siegert, **J.S. Greenbaum**, and B. Frederick, *The roughness of grounded ice sheet beds: Case studies from high resolution radio echo sounding studies in Antarctica*, Poster, EGU General Assembly, Apr 2017, Vienna.

Cui X., B. Sun, J. Guo, X. Tang, **J.S. Greenbaum**, L.E. Lindzey, F.A. Habbal, D.A. Young, *A new airborne geophysical platform and its application in the Princess Elizabeth Land during CHINARE 32 and 33 in East Antarctica*, EGU General Assembly 2017, Friday, 28 Apr 2017.

**Greenbaum, J.S.**, D.D. Blankenship, D.A. Young, T.D. van Ommen, J.L. Roberts, B. Sun, J. Guo, E. Lemeur, G. Durand, S. Lee, J. Lee, W.S. Lee, A. Wählin, K. Assmann, L.H. Beem, F.S. Graham, L.M. Jong, W. Wei, L. Lindzey, E.S. Quartini, T.G. Richter, C.Y. Grima, P. Heimbach, *The East Antarctic Grounding Line Experiment and Land-Ice/Ocean Network Exploration with Semi-autonomous Systems projects: Fixed-wing and helicopter gravity and radar sounding for bathymetry and subglacial freshwater discharge in East and West Antarctica*, Airborne Geodesy and Geophysics with Focus on Polar Applications workshop, Technical University of Dresden, Dresden, Germany, 19-21 April, 2017.

Sun B., **J.S. Greenbaum (presenter)**, D.D. Blankenship, J. Guo, M.J. Siegert, N. Pant, S. Jamieson, T.D. van Ommen, J.L. Roberts, N. Ross, D.A. Young, *ICECAP/PEL Aerogeophysical data confirm an extensive subglacial lake and canyon system in Princess Elizabeth Land, East Antarctica*, Airborne Geodesy and Geophysics with Focus on Polar Applications workshop, Technical University of Dresden, Dresden, Germany, 19-21 April, 2017.

## 2016

**Greenbaum, J.S.**, D.D. Blankenship, D.A. Young, T.G. Richter, J.L. Roberts, A.R.A. Aitken, B. Legresy, R.C. Warner, T.D. van Ommen, M.J. Siegert, *Basal melt in channels and terraces beneath Totten Glacier, East Antarctica*, Forum for Research into Ice Shelf Processes (FRISP), Gothenburg, Sweden, October, 2016.

Sun B., **J.S. Greenbaum**, D.D. Blankenship, M.J. Siegert, N. Pant, J. Guo, X Cui, B. Wang, L.E. Lindzey, L. Li, D. Arora, G. Ng, T.G. Richter, *ICECAP-2 Aerogeophysical Observations of Princess Elizabeth Land*, East Antarctica, Scientific Committee on Antarctic Research, Kuala Lumpur, Malaysia, August, 2016.

**Greenbaum, J.S.**, D.D. Blankenship, D.A. Young, T.G. Richter, J.L. Roberts, A.R.A. Aitken, B. Legresy, R.C. Warner, T.D. van Ommen, M.J. Siegert, *Basal Terraces Beneath Totten Glacier, East Antarctica*, International Glaciological Society Ice-Ocean Interactions, La Jolla, July, 2016.

**Greenbaum, J.S. (invited talk)**, T.G. Richter, D.A. Young, D.D. Blankenship, *UTIG airborne gravity operations in Antarctica from 2008 to 2016 and future directions*, Airborne Gravity School, US National Geodetic Survey, 23-27 May, 2016.

Aitken A., J.L Roberts, T.D. van Ommen, D.A. Young, N. Golledge, **J.S. Greenbaum**, D.D. Blankenship, M.J. Siegert, *Totten Glacier catchment bed erosion indicates repeated transitions between a modern-scale and a retreated ice sheet*, European Geophysical Union meeting, April, 2016.

**PROFESSIONAL MEMBERSHIPS:**

American Geophysical Union

International Glaciological Society

European Geophysical Union (inactive)

American Institute of Aeronautics and Astronautics (inactive)

US Parachute Association (inactive)