

Kiya L. Riverman
Curriculum Vitae – January 2021

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EDUCATION

2017	<i>PhD – Geosciences</i>	Pennsylvania State University
2016	<i>Graduate Teaching Certificate</i>	Pennsylvania State University
2011	<i>B. S. – Earth Science</i>	Oregon State University Honors College

RESEARCH APPOINTMENTS

2020	Postdoctoral Researcher, New York University
2017-20	Postdoctoral Fellowship, University of Oregon
2013-17	NSF Graduate Research Fellow, Penn State

PUBLICATIONS (citations: 344, h-index 7)

- 2020 Maguire, R., Schmerr, N., Pettit, E., **Riverman, K.**, Gardner, C., Della-Guistina, D., Avenson, B., Wagner, N., Marusiak, A., Habib, N., Broadbeck, J., Bray, V., Bailey, H. Geophysical constraints on the properties of a lake in northwest Greenland. *The Cryosphere Discussions (in review for TC)*.
- 2019 **Riverman, K.**, Alley, R., Anandakrishnan, S., Muto, A., Christianson, K., Dow, C. Shear margin moraines under an actively flowing ice stream. *Annals of Glaciology*.
- 2019 **Riverman, K.**, Alley, R., Anandakrishnan, S., Christianson, K., Holschuh, N., Medley, B., Peters, L. Enhanced firn densification stabilizes NE Greenland ice stream shear-margin positions. *Journal of Geophysical Research: Earth Surface*.
- 2016 Muto, A., Peters, L., Gohl, K., Sasgen, I., Alley, R., Anandakrishnan, S., **Riverman, K.** Improved subglacial bathymetry and sediment distribution beneath Pine Island Glacier ice shelf modeled using aerogravity and in situ geophysical data. *Earth and Planetary Science Letters*, 433, 63-75
- 2014 Keisling, B. A., Christianson, K., Peters, L. E., Alley, R. B., Christian, J. E. M., Anandakrishnan, S., **Riverman, K. L.**, Muto, A., Jacobel, R. W. Basal conditions and ice dynamics inferred from radar-derived internal stratigraphy of the Northeast Greenland Ice Stream. *Annals of Glaciology*. V 55, n 67.
- Valelonga, P., Christianson, K., Alley, R. B., Anandakrishnan, S., Christian, J. E. M., Dahl-Jensen, D., Gkinis, V., Holme, C., Jacobel, R., Karlsson, N., Keisling, B. A., Kipfstuhl, S., Kjaer, H. A., Kristensen, M. E., Muto, A., Peters, L., Popp, T., **Riverman, K.**, Svensson, A. M., Tibuleac, C., Vinther, B. M., Weng, Y., Winstrup, M. Initial results from geophysical surveys and shallow coring of the Northeast Greenland Ice Stream (NEGIS). *The Cryosphere*, V 8.

- Christianson, K., Alley, R., Anandakrishnan, S., Peters, L., Jacobel, R., **Riverman, K.**, Muto, A. 2014. Dilatant till facilitates ice-stream flow in northeast Greenland. *Earth and Planetary Science Letters*, *V 401*.
- 2013 Stanton, T., Shaw, W., Truffer, M., Corr, H., Peters, L., **Riverman, K.**, Bindschadler, R., Holland, D., Anandakrishnan, S. Channelized ice melting in the ocean boundary layer beneath Pine Island Glacier, Antarctica. *Science*. *V 341*, 6151.
- 2012 Walker, R.T., Parizek, B. R., Alley, R. A., Anandakrishnan, S., **Riverman, K. L.**, Christianson, K. Ice-shelf tidal flexure and subglacial pressure variations. *Earth and Planetary Science Letters*, *V 391*.

Submitted

Rempel, A., Meyer, C., **Riverman, K.** Melting temperature changes during slip across subglacial cavities drive basal mass exchange. *Accepted, Journal of Glaciology*.

Alley, R., Holschuh, N., MacAyeal, D., Parizek, B., Zoet, L., **Riverman, K.**, Muto, A., Christianson, K., Clyne, E., Anandakrishnan, S., Stevens, N. Bedforms of Thwaites glacier, west Antarctica: character and origins. *In review, Journal of Geophysical Research – Earth Surface*.

TEACHING EXPERIENCE

- 2014-20 Lead faculty member, Juneau Icefield Research Program
Developed and taught a 2 week unit on glacier modeling, a 2 week unit on glacial geophysics, and a 2 week unit on glacier hydrology
- 2018,19 Instructor, University of Oregon: Geology of the National Parks
Developed and taught a ~100 student lecture and lab course which included 3 field trips
- 2018 Instructor, University of Oregon: Geoscience Field Camp
Developed and taught a 2-week field course focused on glacial geology and remote sensing
- 2016,17 Guest Faculty, University Center on Svalbard: Glacial Hydrology and Modeling
Developed and taught a 1-week course including two fieldtrips with data collection and analysis
- 2016 Instructor, Penn State (Online): Geology of the National Parks
Taught a semester-long online course with ~1,000 students
- 2016-17 Teaching Assistant, Penn State: Geophysics; Geology of Climate Change

FUNDED GRANTS

2020-22 **NSF 1739003** (\$2.28 million) Melting at the Thwaites grounding zone and its control on sea-level. *Ghostwriter and named postdoctoral scholar*.

2013-17 **NSF DGE1244832** (\$138,000) Characterizing the unique flow mechanism of the NE Greenland Ice Stream: implications for sea-level rise *PI - Graduate Research Fellowship*

SELECTED INVITED TALKS (2017-2020)

- 2020 Colorado School of Mines, “Geometry of a Giant: seismic constraints on ice-ocean processes of Thwaites Glacier”

- 2020 Dartmouth, “Ice-ocean interactions at Thwaites Glacier, west Antarctica”
 2018 Scripps Institute of Oceanography, “Glacier response to oceanic and atmospheric forcing along the west Antarctic Peninsula”
 2018 UC Santa Cruz, “Why is there an ice stream in the middle of Greenland?: Surface and subglacial controls on ice flow in the NE Greenland Ice Stream”
 2017 University of Oregon, “Glacier response to ocean forcing: case studies from NE Greenland and the Antarctic Peninsula”

SELECT FIRST-AUTHOR CONFERENCE ABSTRACTS (2018-20) (=invited)**

- 2020 ** Riverman, K., Anandakrishnan, S., Clyne, E., Schmidt, B., Washam, P., Nicholls, K., Davis, P., Holland, D., Basinski-Ferris, A., Anker, P., Smith, J., Dichek, D., Mullen, A. Geometry of the eastern Thwaites ice shelf cavity and implications for continued grounding zone retreat. AGU Fall Meeting.
- 2020 Riverman, K., Anandakrishnan, S., Leeman, J., Clyne, E., Dichek, D. Tidally forced bending of the Thwaites glacier grounding zone and implications for seawater pumping. AGU Fall Meeting.
- 2020 ** Riverman, K. Sharing science with Cartoons. West Antarctic Ice Sheet Workshop.
- 2020 Riverman, K., Clyne, L., Anandakrishnan, S., Leeman, J., Dichek, D. Tidal bending of the Thwaites grounding zone: implications for seawater pumping. West Antarctic Ice Sheet Workshop.
- 2019 ** Riverman, K., Anandakrishnan, S. Complex geometry of the Thwaites glacier grounding zone. International Union of Geodesy and Geophysics General Assembly.
- 2019 Riverman, K., Anandakrishnan, S., Alley, R., Parizek, B., Christianson, K., Holschuh, N., Dow, C., Peters, L. Wet subglacial landforms of the NE Greenland Ice Stream shear margins and interior. International Glaciological Society Meeting on Subglacial Erosion.
- 2018 Riverman, K., Sutherland, D., Obermeyer, R., Gonzalez, B., Moffat, C., Dinniman, M., Klinck, J., Grounding zone depth modulates oceanic control on glacier terminus retreat along the west Antarctic Peninsula. AGU Fall Meeting.
- 2018 Riverman, K., Sutherland, D., Obermeyer, R., Gonzalez, B., Moffat, C., Meyer, C., Environmental controls on glacier tongue stability in the west Antarctic Peninsula. West Antarctic Ice Sheet Workshop.
- 2018 Riverman, K., Sutherland, D., Obermeyer, R., Dinniman, M., Klinck, J., Gonzalez, B., Moffat, C., Surface melt and ocean temperature control on Antarctic tidewater glaciers: implications for sea-level rise contributions from the west Antarctic Peninsula. Antarctic Surface Hydrology Workshop.

FELLOWSHIPS AND AWARDS

- 2018 University of Oregon Postdoctoral Research Fellowship
 2016 Center for Remote Sensing of Ice Sheets: Mentorship Award
 2016 Hess Corporation Exploration & Production Technology Scholarship

- 2015 PSU Scholten-Williams-Wright Fellowship
- 2014 PSU Hiroshi and Koya Ohmoto Graduate Fellowship in Geosciences
- 2014 PSU Richard R. Parizek Graduate Fellowship
- 2013 PSU Graduate Colloquium: Best Talk, PhD pre-comps level

SERVICE

- 2018-21 Scheduling Committee, American Geophysical Union (AGU) Fall Meeting
- 2014-21 Early Career Representative, AGU Cryosphere Executive Committee
- 2016-21 Academic and Research Council, Juneau Icefield Research Program
- 2020 NASA funding panel
- 2018-19 AGU Fall Meeting session convener
- 2014-17 Board Member, AGU EOS Publication
- 2013-15 PSU Departmental Colloquium Committee Chair

Referee for Science Advances, Journal of Glaciology, Hydrology and Earth Systems Sciences, Journal of Geophysical Research, Geophysical Research Letters, and various NSF and NASA funding panels

FIELD EXPERIENCE *= Field leader

- 2019 *Thwaites Glacier, Antarctica, 12wks, active seismics, tiltmeters, GPS
- 2019 Mendenhall Glacier, Alaska, 1wk, ice penetrating radar
- 2018 *Thwaites Glacier, Antarctica, 6wks, active seismics
- 2018 *Lemon Creek Glacier, Alaska, 2wks, surface hydrology, GPS
- 2017 *Llewellyn Glacier, Alaska, 2wks, surface hydrology- temperature, stream geometry, GPS
- 2017 *Svalbard, 3wks, glacio-speleology cave mapping, ice penetrating radar, GPS
- 2016 *Taku Glacier, Alaska, 2wks, gravimetry, GPS
- 2016 *Svalbard, 3wks, glacio-speleology cave mapping, ice penetrating radar
- 2015 *Taku Glacier, Alaska, 8wks, active seismics, mass-balance, GPS
- 2015 *WAIS Divide Antarctica, 4 wks, active seismics, passive seismics, ice penetrating radar, GPS
- 2014 *SE Alaska, 7wks, active seismics, ice coring, mass-balance
- 2014 *Svalbard, 7wks, glacio-speleology cave mapping, ice penetrating radar
- 2013 Pine Island Glacier, Antarctica, 8wks, ice penetrating radar, active seismics, GPS
- 2012 Central Greenland, 6wks, ice penetrating radar, active seismics, passive seismics, GPS
- 2010 Svalbard, 6mo, glacio-speleology cave mapping, ice penetrating radar, GPS