

SUMMER BURTON RUPPER

Dept. of Geography
University of Utah
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ACADEMIC AND PROFESSIONAL HISTORY

- 2019- Professor, Department of Geography, University of Utah, Salt Lake City, UT
- 2015-2019 Associate Professor, Department of Geography, University of Utah, Salt Lake City, UT
- 2013-2015 Associate Professor, Department of Geological Sciences, Brigham Young University, Provo, UT
- 2007-2013 Assistant Professor, Department of Geological Sciences, Brigham Young University, Provo, UT
- 2007 Doctor of Philosophy, Department of Earth and Space Sciences, University of Washington, Seattle. *Dissertation*: Glacier Sensitivity and Regional Climate (advisors: Gerard Roe and Eric Steig)
- 2003 Master of Science, Department of Geological Sciences, University of Washington, Seattle. *Thesis*: The Relationship between a Mt. Logan, Yukon, ice core and climate variability of the North Pacific (advisor: Eric Steig)
- 2000 Bachelor of Science, Geology, Brigham Young University, Provo, UT

HONORS and AWARDS

- GK Gilbert Award, American Association of Geographers (2022)
- Outstanding Utah Higher Education Science Teacher, Utah Science Teachers Association (2021)
- Superior Research Award Finalist, CSBS, UU (2021)
- Top Researcher Award, Celebrate U Showcase of Extraordinary Faculty Achievements, UU (2017)
- CITES Fellow, BYU-Public School Partnership (2013)
- Young Scholars Award, College of Physical and Mathematical Sciences, BYU (2012)
- Hamblin Faculty Research Award, Geological Sciences, BYU (2011)
- Kavli Frontiers of Science Fellow, Indo-American, National Academy of Sciences (2011)
- Antarctic Service Medal, United States Air Force (2010)
- Ferrel Scholarship for Outstanding Graduate Research, University of Washington (2005)
- George Goodspeed Fellowship, University of Washington (2004)
- Graduate Student Research Award, University of Washington (2002)
- SIPES Foundation Scholarship (2000)
- Field Camp Scholarship, University of Arkansas (1999)

SYNERGISTIC ACTIVITIES

- AGU Cryosphere Fellows Committee, Member (2022-present)
- NASA Team (HiMAT), Lead (2020-present)
- NSF U.S. Ice Drilling Program, Ice Core Working Group, Member (2020-present)
- PAGES special issue, reviewer and editor (2022)
- NASA HiMAT Workshop, Convener (2020, 2022)

NSF Ice Core Early Career Workshop, Organizing Committee Member and Host (2021-2022)
Masters of Science for Secondary Science Teachers, Research Advisor (2020)
Consultant for USAID-RTI on Eurasia Energy-Water NEXUS (2018-2020)
National Geographic Society: Water Tower Thought Leader Convening (2019)
Associate Editor for Frontiers of Earth Science Special Issue (2018-2020)
NASA HiMAT Science Subgroup Team Meeting, Convener (2018)
US-Pakistan USAID Visiting Scholar Program, Research Advisor (2018-2019)
NASA HiMAT Interdisciplinary Science Team, Member (2016-2019)
Proposal Panelist: NSF (2008, 2018, 2019) and NASA (2016)
GLIMS International Advisory Board (2014-2016)
NASA-CAS Glacier Melt Tool Working Groups 1 and 2 (2014-2016)
Chair/Co-Chair Conference Sessions: AGU (2012, 2019-2022), INQUA (2011)
Guest Editor for Earth and Environmental Sciences (2009-2010)
PAGES Young Scientist Meeting (2010)
UJCC-NCAS Summer School on Climate Modeling (2009)

MENTORING

Graduate Students

Committee Chair/Advisor

Annika Quick (MS, 2008-2010), Troy Hiatt (MS, 2008-2010), Maria Asay (MS, 2009-2011), Landon Burgener (MS, 2010-2012), Jessica Williams (MS, 2011-2013), McLean Carpenter (MS, 2012-2014), Josh Maurer (MS, 2012-2015), Michelle Meadows (MS, 2014-2016), Eric Johnson (MS, 2014-2017; PhD progress, 2017-2021), Kate Baustian (MS, 2016-2019), Michael Hess (MS, 2016-present), Collin Riley (MS, 2017-2019), Joey Krueger (MS, 2017-2019), Kripa Thapa (MS, 2019-2021), Morgan McDonnell (MS, 2019-2021), Durban Keeler (MS, 2013-2015; PhD, 2016-2021), Matthew Olson (MS, 2015-2017; PhD, 2017-2022), Emma Marshall (MS, 2019-2021; PhD 2021-present), Josh Charlton (PhD, 2021-present), Cameron Markovsky (MS, 2021-present), Avina Khatri (PhD, 2022-present)

Committee Member

Greg Carling (MS, 2007), Teagan Tomlin (MS, 2007-2008), Eric Parks (MS, 2007-2009), Nicole Cox (MS, 2007-2009), Rachele Hart (MS, 2008-2010), Andrea Thomas (MS, 2008-2010), Matthew Davis (MS, 2011-2013), Tsz Man Lau Fisher (MS, 2012-2014), Ryan Shurtliff (MS, 2012-2014), Kathleen Huybers (Univ. of Washington, PhD, 2008-2014), Nicole June (MS, 2012-2015), Ali Giese (Dartmouth, PhD, 2013-2015), Phil White (MS, 2014-2016), Lawrence Kellum (MS, 2015-2016), Julie Miller (PhD, 2017), Dylan Dastrup (BYU, MS, 2014-2017), Batbaatar Jigjidsuren (Univ. of Washington, PhD, 2009-2018), Kaylee Jones (PhD, 2016-2019), Michael Christensen (BYU, MS, 2017-2019), Jon Wagner (MS, 2017-2019), Hannah Peterson (MS, 2018-2020), Josh Maurer (Columbia Univ., PhD, 2015-2020), Jewell Lund (PhD, 2015-present), Chris Mitchell (PhD, 2019-2022), Savanna Wolven (MS, 2020-2022; PhD, 2022-present), Dillon Ragar (MS, 2021-present), Gillian Gayler (MS, 2022-present), Otto Lang (PhD, 2022-present)

Undergraduate

Brandon Crandall (2007), John Major (2007-2008), Troy Hiatt (2007-2008), Clark Morgan (2007-2008), Annika Quick (2008), Shelley Keyser (2008), Scott Morris (2008-2009), Nathan Jones (2008-2010), Prajjwal Panday (2009), Maria Asay (2009), Chris Burton (2009-2011), Rachel Marker (2010-2011), Sarah Brown (2011), Carly Hamilton (2011), Cari Ryan (2011), McLean Carpenter (2012), Josh Mauer (2012), Preston Cook (2012), Durban Keeler (2011-2013), Laura Riley (2011-2013), Michael Jensen (2012-2013), Ryan Smith (2011-2014), Jon Wagner (2011-2014), Michelle Meadows (2012-2014), Caleb Cox (2013-2014), Josh

Flores (2013-2014), Eric Johnson (2013-2014), Scott Zylstra (2014), Jonathan Burton (2013-2015), Gerrit Gardner (2013-2015), Owen Craven (2014-2015), Michael Christensen (2017-2019), Cole Boyer (2018)

Postdoctoral Researchers

Kathleen Huybers (2017-2021), Alexandra Giese (2019-2021), Durban Keeler (2021-2022), Smriti Srivastava (2022-present), Husile Bai (2023-present)

Other Mentoring

Imran Khan (Research Mentor, U.S.-Pakistan Centers for Advanced Studies in Water, Exchange Program Spring 2018), Tayyeba Suhail (Research Mentor, U.S.-Pakistan Centers for Advanced Studies in Water, Exchange Program Fall 2019), Sadia Ditta (Research Mentor, U.S.-Pakistan Centers for Advanced Studies in Water, Exchange Program Fall 2019), Sandra Braumann (Research Advisor, BOKU, Austria, Visiting Student Scholar 2020), Laurie Pope (Committee Chair and Advisor, MS in Secondary Science Teaching, Summer-Fall 2020), Jeremy DeBry (Committee Chair and Advisor, MS in Secondary Science Teaching, Summer-Fall 2020), Tori Johnson (Committee Chair and Advisor, MS in Secondary Science Teaching, Summer-Fall 2020), Karen Rasmussen (Committee Member, MS in Secondary Science Teaching, Summer-Fall 2020)

COURSES TAUGHT

Brigham Young University: 2007-2015

Geological Communications: Undergraduate
Introduction to Geology: Undergraduate
Principles of Glaciology: Graduate
Paleoclimatology: Graduate
Department Colloquium Series: Undergraduate/Graduate
Antarctic Glaciology: Graduate
Geoscience Education: Undergraduate
Physical Geology for majors: Undergraduate
Numerical Modeling of Glaciers: Graduate
Climate Change Seminar: Undergraduate/Graduate
Field Camp: Undergraduate
Energy and Mass Balance of Snow and Ice: Graduate

University of Utah: 2015-present

Snow and Ice: Undergraduate
Mountain Glaciers, Water Resources, and Sea Level Rise: Graduate
Advanced Snow and Ice: Graduate
Quantitative Reasoning in Physical Geography: Undergraduate
Glacier Modeling: Graduate
Cryospheric Data Analysis: Graduate
Glacier Mass Balance: Graduate
Earth Environments: Undergraduate

UNIVERSITY and COMMUNITY SERVICE

University Service

Global Change and Sustainability Center Executive Committee, UofU (Member, 2021-present)
Department Director of Graduate Studies, UofU (2018-2022)
College Graduate Scholarship Committee, UofU (Member, 2018-present)

Undergraduate Honors Representative, UofU (2017-present)
Graduate Certificate in Hydrology Coordinating Committee, UofU (Member, 2016-present)
Department Rank, Promotion, and Tenure Committee, UofU (Member, 2015-present)
Department Graduate Committee, UofU (Member, 2015-2018; Chair, 2018-present)
Society, Water, Climate Executive Committee, UofU (Member, 2017-2019)
Global Change and Sustainability Center Student Grant Review Committee, UofU (Member, 2017)
Global Change and Sustainability Center Strategic Planning Committee, UofU (Member, 2017)
Department Research Committee, UofU (Member, 2017-2018)
Department Colloquia Committee, UofU (Member, 2017-2018)
Graduate Certificate in Hydrology Proposal Committee, UofU (Member, 2016)
Global Change and Sustainability Center Seminar Committee, UofU (Member, 2016-2017)
Society, Water, and Climate Physical Science Search Committee, UofU (Chair, 2016-2017)
Society, Water, and Climate Social Science Search Committee, UofU (Member, 2016-2017)
Environmental Ethics Initiative Steering Committee, BYU (Member, 2014-2015)
University Climate Seminar Steering Committee, BYU (Member, 2014-2015)
University Mentoring Grant Proposal Reviewer, BYU (Member, 2014-2015)
College Student Research Conference Committee, BYU (Member, 2012-2015)
Department Portfolio Committee, BYU (Chair, 2011-2015)
Department Curriculum Committee, BYU (Member, 2008-2014)

Community Service

Speaker, Meet a Scientist, Utah Science Teacher's Association (2023)
Workshop on Climate for professional development for Alpine and Provo School District teachers
(annually, 2012-2017, 2021, 2022)
Research Advisor, Masters of Science for Secondary Science Teachers (2020-present)
Keynote Speaker, Model UN, Lakeridge Jr. High (annually, 2015-2019)
Science Interviews (2009-present): NPR, BBC, CNN, Wall Street Journal, Inside Climate News,
PBS Nova, Australia NPR, Science News, Late-Late Early-Show in London, BYU TV,
BYU and University of Utah research highlights, The Appleseed, Antarctic Sun,
AsianNewsNetwork, Our Amazing Planet, The Daily Universe, The Daily Herald, Salt Lake
Tribune, Fox 13, Channel 2 News
Citizens' Climate Lobby, Lecture (2020, 2021)
Virtual Tour Guide, Antarctic Exhibit, Natural History Museum of Utah (2020)
Keynote Speaker, Utah Science Teacher Association Awards Ceremony (2019)
Public Lectures (2013-2016): Orem City Library Lecture Series, Lifelong Learning Public
Lectures, Salt Lake Main Library Climate Series
CITES Associates Workshops (2012-2013): Improving teacher education and schooling through a
BYU-Public school partnership
State Office of Education expert review committee member for the Utah Science Criterion
Referenced Tests (annually, 2011- 2014)
Antarctica field blog for elementary/preschool classes (2010, 2011)
Public school lectures (multiple per year, 2009-2019)

INVITED PRESENTATIONS

High Mountain Asia Team Research and Practice Dialogue Workshop, Keynote Address,
Kathmandu, Nepal, 2023
NASA Goddard, Science Colloquium Series, Washington D.C., 2022
ICECREW Early Career Workshop, NSF Workshop, 2022, 2023
Geological Society of America, Fall Meeting, Oregon, 2021
Idaho State University, Geology, 2021
UC Santa Barbara, Climate Seminar Series, 2020

American Meteorological Society Conference on Mountain Meteorology, Mountain Cryosphere Session, Keynote address, 2020
 NSF U.S. Ice Drilling Program, Ice Core Science Community Planning Workshop, Virginia, 2020
 Brigham Young University, Statistics Department, 2020
 American Geophysical Union, Fall Meeting, San Francisco, California, 2019
 Weber State, Physics Department, 2019
 University of Washington: Program on Climate Change Workshop, Washington, 2019
 National Geographic Society: Water Tower Thought Leader Convening, Washington DC, 2019
 University of Illinois, Chicago, 2018
 NASA-CAS HiMAT Workshop, China, 2018
 NASA HiMAT Workshop, Seattle, Washington, 2018
 Brigham Young University, Geology, 2017
 University of Utah, Geology and Geophysics, 2017
 NASA-CAS HiMAT Meeting, Juneau, Alaska, 2017
 NASA HiMAT Workshop, NASA Goddard, 2017
 Himalayan Glacier Workshop III, co-sponsored by NASA and Chinese Academy of Sciences, Sanya, China, 2016
 Himalayan Glacier Workshop II, co-sponsored by NASA and Chinese Academy of Sciences, Mammoth, CA, 2015
 International Glacier Symposium, UWICE, Bhutan, 2015
 University of Utah, Department of Geography, 2015
 Brigham Young University, Interdisciplinary Seminar on Climate Change, 2015
 Himalayan Glacier Workshop I, co-sponsored by NASA and Chinese Academy of Sciences, Kathmandu, 2015
 Utah State University, Department of Geology, 2015
 Utah Valley University, Department of Earth Science, 2014
 Stanford, Department of Environmental Earth System Science, 2014
 Columbia University, Bhutan Symposium, 2014
 Lamont-Doherty Earth Observatory, Workshop on Climate Change: Recent discoveries and future challenges, 2013
 University of Washington, Earth and Space Sciences Research Gala, Keynote Lecture, 2013
 Goldschmidt Conference, Montreal, Canada, 2012
 Jawaharlal Nehru University, School of Environmental Science, New Delhi, India, 2011
 Jawaharlal Nehru University, School of Physical Science, New Delhi, India, 2011
 Climate and Society International Conference, Thimphu, Bhutan, 2011
 Indo-American Frontiers of Science, National Academy of Science, 2011
 University of Cincinnati, 2010
 Lamont-Doherty Earth Observatory, Climate-Glaciers-Society Workshop, 2009
 University of Utah, Department of Atmospheric Sciences, 2008
 Brigham Young University, Department of Statistics, 2007
 Utah Geological Association, Seminar, 2007
 Brigham Young University, Department of Geological Sciences, 2006

RESEARCH GRANTS

EXTERNAL AWARDED (Total: \$8.2M, As PI: \$4.5M)

NSF FRES. EAR-Climate: Mountain Glacier Contribution to Sea Level CE 1900-2100 (MAGIC): \$2,699,998. PI: Joerg Schaefer (LDEO, Columbia University), co-PI: Summer Rupper, co-Is: Simon Brewer, Jacky Austermann (LDEO, Columbia University), Jennifer Givens (Utah State University), Ryan Vachon (University of Colorado-Boulder)

NASA FINESST. A surface velocity investigation of lake terminating glaciers in high mountain Asia. \$150,000 (2022-2025). Awarded to FI Emma Marshall (graduate student), PI: Summer Rupper, co-PI: Rick Forster.

NSF GLD. Understanding glacial-geomorphic-climatic changes in the arid Andes: Cordillera Oriental as a case study. \$450,000 (2021-2024). PI: Mike Kaplan (CU), Co-Is: Joerg Schaefer (CU), Summer Rupper.

NASA HMA. Historical and future precipitation and glacier changes in High Mountain Asia: \$1,240,757 (2020-2023). PI: Summer Rupper, Co-Is: Court Strong, Jim Steenburgh, Shane Reese (BYU), Matthew Heaton (BYU).

NSF GSS/LCD. Quantifying the contribution of mountain glaciers to sea-level rise - Past and future: \$456,586 (2019-2022). PI: Summer Rupper, Co-Is: Rick Forster (Univ. of Utah), Joerg Schaefer (Columbia Univ.).

NASA HMA. Commercial Satellite Imagery evaluation over high mountain Asia snow and ice: \$100,000 (2018-2019). PI: Summer Rupper. Co-Is: McKenzie Skiles, Richard Forster.

USAID PCASW. Glacier contributions to water resources and hazards in Pakistan: \$41,943 (2016-2019). PI: Summer Rupper.

NASA HMA. Precipitation and glacier mass balance in High Mountain Asia over the modern era: \$1,201,485 (2016-2021). PI: Summer Rupper, Co-Is: Jim Steenburgh (Univ. of Utah), Court Strong (Univ. of Utah), Adam Kochanski (Univ. of Utah), Shane Reese (BYU), William Christensen (BYU).

NASA Glaciology. Bayesian quantification of Antarctic surface mass balance: \$677,471 (2016-2022). PI: Summer Rupper, Co-Is: Shane Reese (BYU) and William Christensen (BYU).

NASA RRNR. Climate Reanalysis Product Intercomparison over High Mountain Asia: \$29,845 (2016-2017). PI: Summer Rupper.

NSF P2C2. Climate and glacier change in Bhutan: the last millennia, present, and future: \$552,894 (2013-2017). PI: Joerg Schaefer (LDEO, Columbia University), Co-Is: Summer Rupper, Edward Cook (LDEO, Columbia University).

NSF REU Antarctic Glaciology. Spatial and temporal variability in ice core tritium in West Antarctica: \$6,250 (2013-2014). PI: Summer Rupper.

NSF EAGER. Climate and glacier change in Bhutan: \$117,000 (2012-2014). PI: Joerg Schaefer (LDEO, Columbia University), Co-Is: Summer Rupper, Edward Cook (LDEO, Columbia University).

NSF Antarctic Glaciology. Annual satellite era accumulation patterns over WAIS Divide: A study using shallow ice cores, near-surface radars and satellites: \$525,851 (2010-2014). PI: Summer Rupper, Co-Is: Richard Forster (University of Utah), Lora Koenig (NASA Goddard).

NSF GLD, Small Grants in Exploratory Research. Glacier sensitivity to climate change – Quantifying the influence of tributary glaciers: \$37,500 (2009- 2010). PI: Summer Rupper, Co-I: John McBride (BYU).

INTERNAL AWARDED (\$300K)

BYU Interdisciplinary Research Origination Awards. The role of temperature variation for reconstructing the advance and retreat of glacial ice using thermal and radar imaging: \$119,910 (2020-2023). PI: Kevin Rey (BYU), Co-Is: John McBride (BYU), Phil White (BYU), Randal Beard (BYU), David Long (BYU), Summer Rupper

Univ. of Utah Society Water Climate Seed Grant. Assessing Dynamic Coupling between Environmental Policy, Public Attitudes, and Glacier Change in Developing Nations. \$8,000 (2017-2018). PI: Summer Rupper, Co-Is: Rick Forster, McKenzie Skiles, Tabitha Benney, Sara Yeo, Collaborator: Joerg Schaefer (Columbia Univ.).

Univ. of Utah SWC Seed Grant. Drivers of landscape evolution and human settlement in the Uinta Mountains, UT. \$5,900 (2017-2018). PI: Mitch Power, co-Is: Brian Coddling, Summer Rupper.

BYU College High Impact Research Proposal. Debris-covered glaciers in the Nepalese Himalaya. \$19,500 (2014-2015). PI: Summer Rupper, Co-I: Bob Hawley (Dartmouth).

BYU Mentoring Environment Grant. Evolution of thermal properties in alpine glaciers. \$19,980 (2014-2016). PI: Summer Rupper, Co-I: Scott Ritter (BYU).

CU Earth Institute Cross-cutting Initiative. Glacier change and energy-test case Rhone River catchment: \$30,000 (2013-2014). PI: Joerg Schaefer (LDEO, Columbia University), Co-Is: Pierre Gentine (LDEO, Columbia University), Summer Rupper.

BYU Mentoring Environment Grant. Impact of climate change on glacier health and water resources in the Indus watershed, NW Himalaya: \$19,350 (2010-2012). PI: Summer Rupper.

BYU Mentoring Environment Grant. Glacier sensitivity in the Bhutanese Himalaya: present and future: \$19,705 (2012-2014). PI: Summer Rupper.

BYU College High Impact Research Proposal. Quantifying the influence of tributary glaciers on the mass balance of the Gorner Glacier, Switzerland: \$39,000 (2009-2010). PI: Summer Rupper.

BYU Mentoring Environment Grant. Glacial Geology of the Sevier Plateau, Central Utah: \$18,430 (2008-2010). PI: Summer Rupper, Co-Is: Claire Todd (PLU), Michele Koppes (University of British Columbia).

EXTERNAL PENDING

NSF NRT. Convergent Human and Environmental Dynamics Research (CHEDR): \$2,868,945 (2022-2027). PI: Andrea Brunelle, Co-PI: Brian Coddling, Co-Is: Summer Rupper, Phil Dennison, Lisbeth Louderback, Senior Personnel: Simon Brewer, Shane Macfarlan, Brett Clark, Mitch Power, Jessica Martone.

NSF OPP. Climatic Controls of West Antarctic Ice Sheet Surface Mass Balance: \$611,646 (2023-2026). PI: Court Strong, co-I: Summer Rupper.

PUBLICATIONS

PEER REVIEWED – PUBLISHED, IN PRESS, and ACCEPTED

**graduate students, +undergraduate students, °postdocscholars*

51. Lund*, J., R. Forster, Y. Jameel, **S. Rupper**, E. Deeb, G. Hussain Dars, A. Zaheer, M. Ali, A. Ghafoor, M. Arfan, G. Liston, S. Burian, J. Qureshi, 2023. Constraining mountain streamflow constituents by integrating citizen scientist acquired geochemical samples and Sentinel-1

SAR wet snow time-series for the Shimshal catchment in the Karakoram Mountains of Pakistan. *Water Resources Research*, 59, e2022WR032171. DOI: <https://doi.org/10.1029/2022WR032171>.

50. Warr*, L., M. Heaton, W. Christensen, P. White, **S. Rupper**, 2022. Distributional validation of precipitation data products with spatially varying mixture models. *Journal of Agricultural, Biological, and Environmental Statistics*, 323. DOI: doi.org/10.1007/s13253-022-00515-0.
49. McCrimmon*, D., K. Keegan*, A. Ihle*, **S. Rupper**, 2022. Firn: Applications in dating, climate reconstruction, and interpreting atmospheric records. *Past Global Changes*, 30(2), 112-113. DOI: doi.org/10.22498/pages.30.2.112.
48. McDonnell*, M., **S. Rupper**, R. Forster, 2022. Geodetic mass balance for the Patagonian Icefields over the past 45 years. *Frontiers in Earth Science*, DOI: 10.3389/feart.2022.813574.
47. White, P., D. Keeler*, D. Sheanshang⁺, **S. Rupper**, 2022. Improving Piecewise Linear Snow Density Models through Hierarchical Spatial and Orthogonal Functional Smoothing. *Environmetrics*, 33, e2726. DOI: doi.org/10.1002/env.2726.
46. Giese^o, A, **S. Rupper**, D. Keeler*, Johnson*, R. Forster, 2022. Indus River basin melt at the subbasin scale. *Frontiers in Earth Science*, DOI 10.3389/feart.2022.767411.
45. Keeler*, D., **S. Rupper**, R. Forster, 2021. Repeatability of polar snow accumulation time series from interannual repeat radar echograms. *IEEE Geosciences and Remote Sensing Letters*, DOI: 10.1109/LGRS.2021.3126287.
44. Mishra, S., **S. Rupper**, S. Kapnick, K. Casey, H. Chan, E. Ciraci['], U. Haritashya, J. Hayse, J. Kargel, R. Kayastha, N. Krakauer, S. Kumar, R. Lammers, V. Maggioni, S. Margulis, M. Olson*, B. Osmanoglu, Y. Qian, S. Richey, K. Rittger, D. Rounce, D. Shean, I. Velicogna, T. Veselka, A. Arendt, 2021. Grand challenges of hydrologic modeling for food-energy-water nexus security in High Mountain Asia. *Frontiers in Water*. DOI: 10.3389/frwa.2021.728156
43. Shugar, D., M. Jacquemart, D. Shean, S. Bhushan, K. Upadhyay, A. Sattar, W. Schwanghart, S. McBride, M. Van Wyk de Vries, M. Mergili, A. Emmer, C. Deschamps-Berger, M. McDonnell*, R. Bhambri, S. Allen, E. Berthier, J. Carrivick, J., Clague, M. Dokukin, S. Dunning, H. Frey, S. Gascoin, U. Haritashya, C. Huggel, A. Kaab, J. Kargel, J. Kavanaugh, P. Lacroix, D. Petley, **S. Rupper**, M. Azam, S. Cook, A. Dimri, M. Eriksson, D. Farinotti, J. Fiddes, K. Gnyawali, M. Jha, M. Koppes, A. Kumar, U. Majeed, S. Mal, A. Muhuri, J. Noetzli, F., Paul, I. Rashid, K. Sain, J. Steiner, F. Ugalde, C. Watson, M. Westoby., 2021. A massive rock-ice avalanche caused the 2021 hazard cascade at Chamoli, Indian Himalaya. *Science*, eabh4455. DOI: 10.1126/science.abh4455.
42. Riley*, C., **S. Rupper**, J. Steenburgh, C. Strong, A. Kochanski, S. Wolvin*, 2021. Characteristics of historical precipitation in High Mountain Asia based on a 15-year high resolution dynamical downscaling. *Atmosphere*, 12(3), 355. DOI: 10.3390/atmos12030355 (*Special Issue: Climates of the Himalayas: Present, Past, and Future*)
41. White, P., D. Keeler*, **S. Rupper**, 2021. Hierarchical integrated spatial process modeling of monotone west Antarctic snow density curves. *Annals of Applied Statistics*, 15, 556-571. DOI: 10.1214/21-AOAS1443

40. Keeler*, D., **S. Rupper**, J. Schaefer, 2021. A first-order flexible ELA model based on geomorphic constraints. *MethodsX*, 8, 201173. DOI: 10.1016/j.mex.2020.101173
39. Batbaatar*, J., A. Gillespie, M. Koppes, D. Clark, O. Chadwick, D. Fink, A. Matmon, **S. Rupper**, 2021. Glacier development in continental climate regions of central Asia. In: Untangling the Quaternary Period-A legacy of Stephen C. Porter. Eds, R. WAitt, G. Thackray, A. Gillespie. *The Geological Society of America, Special Paper 548*. DOI: 10.1130/2020.2548(07)
38. Maurer*, J., J. Schaefer, J. Russell*, **S. Rupper**, N. Wangdi, A. Putnam, N. Young, 2020. Seismic observations, numerical modeling, and geomorphic analysis of a glacier lake outburst flood in the Himalayas. *Science Advances*, 6, eaba3645. DOI: 10.1126/sciadv.aba3645
37. Wittmeier*, H., J. Schaefer, J. Bakke, **S. Rupper**, Ø. Paasche, R. Schwartz, R. Finkel, 2020. Late Glacial mountain glacier culmination in Arctic Norway prior to the Younger Dryas. *Quaternary Science Reviews*, 241, 106461. DOI: 10.1016/j.quascirev.2020.106461
36. Johnson*, E., **S. Rupper**, 2020. An examination of physical processes that trigger the albedo-feedback on glacier surfaces and implications for regional glacier mass balance across High Mountain Asia. *Frontiers in Earth Science*, 8:129. doi: 10.3389/feart.2020.00129. (In special issue: “Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia”)
35. Keeler*, D., **S. Rupper**, R. Forster, C. Miede, 2020. A probabilistic automated isochrones picking routine to derive annual surface mass balance from radar echograms. *IEEE Transactions on Geoscience and Remote Sensing*, 58(12). DOI: 10.1109/TGRS.2020.2989102.
34. Lund*, J., R. Forster, **S. Rupper**, E. Deeb, H.P. Marshall, M. Hashmi, E. Burgess, 2020. Mapping snowmelt progression in the Upper Indus Basin with synthetic aperture radar. *Frontiers in Earth Science*. doi: 10.3389/feart.2019.00318. (In special issue: “Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia”)
33. Immerzeel, W., A. Lutz, M. Andrade, A. Bahl, H. Biemans, T. Bolch, S. Hyde, S. Brumby, B. Davies, Q. Dahe, A. Elmore, A. Emmer, M. Feng, A. Fernandez Rivera, U. Haritashya, J. Kargel, M. Koppes, A. Kulkarni, P. Mayewski, S. Nepal, P. Pacheco, T. Painter, F. Pellicciotti, H. Rajaram, **S. Rupper**, A. Sinisalo, A. Shrestha, D. Viviroli, Y. Wada, C. Xiao, T. Yao, J. Baillie, 2020. Importance and vulnerability of the world’s water towers. *Nature*, 577, 364-369. DOI: 10.1038/s41586-019-1822-y
33. Olson*, M., **S. Rupper**, D. Shean, 2019. Terrain induced biases in clear-sky shortwave radiation due to digital elevation model resolution for glaciers in complex terrain. *Frontiers in Earth Science*, 7(216). doi: 10.3389/feart.2019.00216. (In special issue: “Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia”)
32. Christensen*, M.F., M. Heaton, **S. Rupper**, C. Reese, W.W. Christensen, 2019. Bayesian multi-scale spatio-temporal modeling of precipitation in the Indus Watershed. *Frontiers in Earth Science*, 7(10). DOI: 10.3389/feart.2019.00210 (In special issue: “Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia”)

31. White*, P., C.S. Reese, W.F. Christensen, **S. Rupper**, 2019. A model for Antarctic surface mass balance and ice core site selection. *Environmetrics*, 30, e2579. DOI:10.1002/env.2579. [2019 Wiley-TIES Best Environmetrics Paper Award]
30. Maurer*, J., J. Schaefer, **S. Rupper**, A. Corley[†], 2019. 40 years of accelerating glacier change across the Himalayas. *Science Advances*, 5(6), eaav7266. DOI: 10.1126/sciadv.aav7266
29. Yoon, Y., S. Kumar, B. Forman, B. Zaitchik, Y. Kwon, Y. Qian, **S. Rupper**, V. Maggioni, P. Houser, D. Kirschbaum, A. Richey, A. Arendt, D. Mocko, J. Jacob, S. Bhanja, A. Mukherjee, 2019. Evaluating the uncertainty of terrestrial water budget components over High Mountain Asia. *Frontiers in Earth Science*, 7(120). (In special issue: “Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia”)
28. Watson, S., J. Kargel, D. Regmi, **S. Rupper**, J. Maurer*, A. Karki, 2019. Shrinkage of Nepal’s second largest lake (Phewa Tal) due to watershed degradation and increased sediment flux. *Remote Sensing*, 11(4), 444.
27. Olson*, M., **S. Rupper**, 2019. Impacts of topographic shading on glacier surface mass balance in High Mountain Asia. *The Cryosphere*, 13, 29-40.
26. Vargo*, L., J. Galewski, **S. Rupper**, D. Ward, 2019. Reply to "Comment on Sensitivity of glaciation in the arid subtropical Andes to changes in temperature, precipitation, and solar radiation by Vargo et al. (2018)" by Martini and Astini (2018). *Global and Planetary Change*, 172, 479-481.
25. Vargo*, L., J. Galewski, **S. Rupper**, D. Ward, 2018. Sensitivity of glaciation in the arid subtropical Andes to changes in temperature, precipitation, and solar radiation. *Global and Planetary Change*, 163, 86-96.
24. Carling, G., D. Fernandez, **S. Rupper**, D. Tingey, C. Harrison, 2017. Effect of atmospheric deposition and weathering on trace element concentrations in glacial meltwater at Grand Teton National Park, Wyoming, USA. *Arctic, Antarctic, and Alpine Research*, 49, 427-440.
23. Sagredo, E., T. Lowell, M. Kelly, **S. Rupper**, D. Ward, J. Aravena, A. Malone, 2016. Equilibrium line altitudes along the Andes during the last Millennium: Paleoclimatic implications. *The Holocene*, 1-15, DOI: 10.1177/0959683616678458.
22. Maurer*, J., **S. Rupper**, J. Schaefer, 2016. Quantifying ice loss in the eastern Himalayas since 1974 using declassified spy satellite imagery. *The Cryosphere*, 10, 2203-2215. doi: 10.5194/tc-10-2203-2016.
21. Liu*, Z., J. Radebaugh, E. Christiansen, R. Harris, **S. Rupper**, 2016. Role of fluids in the tectonic evolution of Titan. *Icarus*, 270, 2-13.
20. Koppes, M., **S. Rupper**, M. Asay*, A. Winter-Billington*, 2015. Sensitivity of glacier runoff projections to baseline climate data in the Indus River basin. *Frontiers in Earth Science*, 3:59, doi: 10.3389/feart.2015.00059.
19. Huybers*, K., **S. Rupper**, G. Roe, 2015. Response of closed basin lakes to interannual climate variability. *Climate Dynamics*, doi: 10.1007/s00382-015-2798-4.
18. Maurer*, J., **S. Rupper**, 2015. Tapping into the Hexagon spy imagery database: a new automated workflow for geomorphic change detection. *Journal of Photogrammetry and Remote Sensing*, 108, 113-127.
17. Krusic*, P., E. Cook, D. Dukpa, A. Putnam, **S. Rupper**, J. Schaefer, 2015. 638 years of summer temperature variability over the Bhutanese Himalaya. *Geophysical Research Letters*, 10.1002/2015GL063566.

16. **Rupper, S.**, W. Christensen, B. Bickmore, L. Burgener*, L. Koenig, M. Koutnik C. Miège*, R. Forster, 2015. The effects of dating uncertainties on net accumulation estimates from ice cores. *Journal of Glaciology*, 61(225), 163-172.
15. Sagredo*, E, **S. Rupper**, T. Lowell., 2014. Sensitivity of the equilibrium line altitude across the Andes. *Quaternary Research*, 81(2), 355-366.
14. Zdanowicz, C., D. Fisher., E. Osterberg., K. Kreutz, P. Mayewski, C. Wake, K. Yalcin, D. Dahl-Jensen, K. Goto-Azuma, E. Steig, **S. Rupper**, D. Froese, S. Kuehn, 2014. Ice cores from the St-Elias Mountains, Yukon Territory, Canada: Their significance for the Holocene climate history, volcanism and air pollution trends in the Northwest Pacific. *Arctic*, 61(S1), 35-57.
13. Burgener*, L., **S. Rupper**, L. Koenig, R. Forster, W. Christensen, J. Williams*, M. Koutnik, C. Mieke, E. Steig, D. Keeler+, L. Riley+, 2013. An observed negative trend in West Antarctic accumulation rates from 1975 to 2010: Evidence from new observed and simulated records. *Journal of Geophysical Research*, 118, 1-12.
12. Steig, E., Q. Ding, J. White, M. Kuttel, **S. Rupper**, T. Neumann, P. Neff, A. Gallant, P. Mayewski, K. Taylor, G. Hoffmann, D. Dixon, S. Schoenemann, B. Markle, D. Schneider, T. Fudge, A. Schauer, R. Teel, B. Vaughn, L. Burgener*, J. Williams*, E. Korotkikh, 2013. Recent climate and ice-sheet changes in West Antarctica compared with the past 2,000 years. *Nature Geoscience*, 6, 372-375.
11. **Rupper, S.**, S. Schaefer, L. Burgener*, L. Koenig, K. Tsering, E. Cook, 2012. Sensitivity and response of Bhutanese glaciers to atmospheric warming. *Geophysical Research Letters*, 39, 19, doi: 10.1029/2012GL053010.
10. McBride, J., **S. Rupper**, S. Ritter, D. Tingey, M. Koutnik, A. Quick*, T. Morris, R. Keach, L. Burgener+, A. McKean*, J. Williams*, J. Maurer+, D. Keeler+, R. Windell+, 2012. Relationship between wave ogives and radar scattering in an alpine glacier. *Geosphere*, 8, 1054-1077.
9. Thomas+*, A.L., **S. Rupper**, W. Christensen, 2011. Characterizing the statistical properties and interhemispheric distribution of Dansgaard-Oeschger events. *Journal of Geophysical Research*, 116, D03103.
8. Vizciano, M., **S. Rupper**, J. Chiang, 2010. Mechanisms of Glacial Onset 2.75 Ma. *Paleoceanography*, 25, PA2205.
7. **Rupper, S.** and Koppes, M., 2010. Spatial patterns in Central Asian climate and equilibrium line altitudes. *IOP Earth and Environmental Science*, doi:10.1088/1755-1315/9/1/012009.
6. McBride, J., **S. Rupper**, S. Ritter, D. Tingey, A. Quick*, A. McKean*, N. Jones+, 2010. Results of an experimental radar survey on the Gornergletscher Glacier System (Zwillingsgletscher), Valais, Switzerland: *Proceedings of the XIII International Conference on Ground Penetrating Radar*. doi: 10.1109/ICGPR.2010.5550157
5. **Rupper, S.**, G.H. Roe, and A. Gillespie, 2009. Spatial patterns of glacier advance and retreat in Central Asia in the Holocene. *Quaternary Research*, 72(3): 337-346.
4. **Rupper, S.**, and G.H. Roe, 2008. Glacier changes and regional climate – a mass and energy balance approach. *Journal of Climate*, 21(20): 5384-5401.

3. Fisher, D., E. Osterberg, A. Dyke, D. Dahl-Jensen, M. Demuth, C. Zdanowicz, J. Bourgeois, R. Koerner, P. Mayewski, C. Wake, K. Kreutz, E.J. Steig, J. Zheng, K. Yalcin, K. Goto-Azuma, B. Luckman, **S. Rupper**, 2008. The Mt Logan Holocene-late Wisconsinan isotope record: Tropical Pacific-Yukon connections. *The Holocene*, 18(5): 667-677.
2. **Rupper, S.**, E.J. Steig, and G.H. Roe, 2004. The relationship between snow accumulation at Mt. Logan, Yukon, and climate variability in the North Pacific. *Journal of Climate*, 17 (24): 4724-4739.
1. Fisher, D.A., Wake, C., Kreutz, K., Yalcin, K., Steig, E., Mayewski, P., Anerson, L., Zheng, J., **Rupper, S.**, Zdanowicz, C., Demuth, M., Waszkiewicz, M., Dahl-Jensen, D., Goto-Azuma, K., Bourgeois, J.B., Koerner, R.M., Sekerka, J., Osterberg, E., Abbott, M.B., Finney, B.P., and Burns, S.J., 2004. Stable isotope records from Mount Logan, Eclipse ice cores and nearby Jellybean Lake. Water cycle of the North Pacific over 2000 years and over five vertical kilometers: Sudden shifts and tropical connections. *Geographie Physique et Quaternaire*, 58(2-3): 337-352.

PEER REVIEWED - SUBMITTED/IN REVIEW/IN REVISION

*graduate students, +undergraduate students, °postdocscholars

1. Wang*, J., H. Pang, S. Wu, S. Schoenemann, **S. Rupper**, A. Criscitiello, E. Thomas, H. Zekollari, M. Werner, H. Steen-Larsen, S. Hou, *in revision*. Spatial distribution of logarithmic deuterium excess in Antarctic surface snow and its controlling factors. *Journal of Climate*.
2. Wang*, J., H. Pang, S. Wu, S. Schoenemann, R. Uemura, A. Ekaykin, M. Werner, A. Cauquoin, S. Oger, **S. Rupper**, S. Hou, *in review*. The Ant-Iso dataset: a compilation of Antarctic surface snow isotopic observations. *Earth System Science Data*.
3. Olson*, M., **S. Rupper**, M. Skiles, *in revision*. Monsoon snow cover, albedo feedbacks, and glacier mass balance in the Himalayas. *Journal of Geophysical Research*.
4. Marshall*, E., **S. Rupper**, R. Forster, S. Brewer, L. Stearns, *in revision*. Examining seasonal glacier surface velocity variability in Nepal, Central Himalaya, 2013-2017. *Scientific Reports*.

PEER REVIEWED – IN PREPARATION (Draft Completed)

*graduate students, +undergraduate students, °postdocscholars

1. Baustian*, K., **S. Rupper**, R. Forster, *in preparation*. Seasonal and spatial distribution of wet snow in western Washington State mapped with synthetic aperture radar data. *The Cryosphere*.
2. Keeler*, D., **S. Rupper**, R. Forster, C. Miede, P. White, *in preparation*. WAIS surface mass balance trends and variability. *Journal of Geophysical Research*.
3. Krueger*, J., **S. Rupper**, C. Strong, *in preparation*. Tropical forcing of West Antarctic Ice Sheet surface mass balance variability. *Nature Climate Change*.
4. **Rupper, S.**, J. Schaefer, E. Cook, A. Putnam, P. Krusic, K. Huybers°, J. Maurer, K. Tsering, T. Rinzen, P. Sharma, K. Tenzin, C. Riley, *in preparation*. Unprecedented glacier retreat rates over the last 100 years in the monsoonal Himalayas. *Science*.

5. Olson*, M., **S. Rupper**, R. Forster, S. Brewer, D. Selkowitz, *in preparation*. Advancements in monitoring supraglacial debris-cover over Himalayan glaciers with improved techniques for cloud masks, terrain shadows, and image fusion for Landsat OLI: A fully automated approach
6. Wang, Jiajia, H. Pang, S. Wu, S. Schoenemann, A. Criscitiello, A. Landais, M. Werner, J. Jouzel, **S. Rupper**, A. Bailey, S. Hou, *in preparation*. Recompiling the most comprehensive dataset of Antarctic surface snow isotopic composition revisited: Observations, isotopic numerical modeling, and implications for climate reconstruction of Antarctic ice core.

NOT PEER REVIEWED – PUBLISHED

1. **Rupper, S.**, and R. Hart*, 2008. Utah. In: *Encyclopedia of Global Warming and Climate Change, Three Volume Set*, edited by S.G. Philander, Elsevier Science.
2. **Rupper, S.**, and T. Tomlin*, 2008. Holocene Epoch. In: *Encyclopedia of Global Warming and Climate Change, Three volume Set*, edited by S.G. Philander, Elsevier Science.
3. Cleroux, C., J. Fehrenbacher, S. Phipps, **S. Rupper**, B. Williams, T. Kiefer, 2010: Editorial Preface. *IOP Earth and Environmental Science*, doi:10.1088/1755-1315/9/1/012009.
4. Maurer*, J., and **S. Rupper**, 2014. A new DEM extraction method for Hexagon spy imagery and application to Bhutan glaciers. *Utah Space Grant Consortium, USU Digital Commons*.
5. NASA HiMAT Consortium, 2016. Use of earth observations to address changes in glaciers, snow, and natural hazards in High Mountain Asia. *NASA White Paper*.
6. Handley, G., **S. Rupper**, 2020. Climate change and the poor: Implications for Latter-Day Saints. In: *The Hope of Nature: Our Care for God's Creation*. BYU Maxwell Institute. Chapter 5.
7. Paolo, G., S. Campbell, Z. Courville, K. Kreutz, A. Kurbatov, P. Neff, E. Osterberg, E. Pettit, **S. Rupper**, 2020. White Paper: IDP Ice Core Working Group (IDP-ICWG): Alpine Glaciers and Ice Caps. *Ice Drilling Program Ice Core Working Group Community Meeting*.
8. Arendt, A., N. Krakauer, S. Kumar, D. Rounce, **S. Rupper**, 2020. Editorial Preface. Collaborative research to address changes in the climate, hydrology, and cryosphere of High Mountain Asia. *Frontiers of Earth Science*. doi: 10.3389/feart.2020.605336
9. Pfeffer, T., B. Livneh, **S. Rupper**, B. Lord, et al., 2020. Energy-water Nexus: Estimates of future water availability for hydropower in Europe and Eurasia. *Report to the United States Agency for International Development*.
10. Badgeley*, J., T. Fudge, B. Koffman, **S. Rupper**, 2022. Editorial. Early-career perspectives on ice-core science. *Past Global Changes*, 30(2), 97.

MEETING ABSTRACTS

*graduate students, +undergraduate students, °postdoctoral scholars

*Charlton, J., **S. Rupper**, M. Martini, M. Kaplan, S. Brewer, J. Schaefer, 2022. Paleo-glacier equilibrium line altitudes around NEvado de Chani, Arid subtropical Andes. AGU, Fall

Meeting.

McGrath, D., B. Rick*, S. McCoy, **S. Rupper**, A. Dehecq, 2022. Assessing changes in glacial lakes in Hindu Kush Himalayan region from 1975 to 2018. AGU, Fall Meeting.

E. Marshall*, **S. Rupper**, R. Forster, 2022. Evaluating connections between terminus type and seasonal surface velocity variability of High Mountain Asia glaciers with the ITS-LIVE glacier velocity dataset. AGU, Fall Meeting.

S. Rupper, S. Brewer, D. Keeler*, R. Forster, L. Stearns, J. Schaefer, 2022. High Mountain Asia glacier sensitivity and transient response to climate change. AGU, Fall Meeting.

*Markovsky, C., **S. Rupper**, D. Keeler*, 2022. Spatially holistic approach to quantifying glacier mass change in the Karakoram. AGU, Fall Meeting.

*Olson, M., **S. Rupper**, R. Forster, 2022. Improvements in monitoring supraglacial glacier debris cover change in the Himalaya-Karakoram. AGU, Fall Meeting.

*Lund, J., R. Forster, Yusuf Jameel, **S. Rupper**, E. Deeb, G. Dars, G. Liston, M. Arfan, S. Burian, 2022. Constraining mountain streamflow constituents by integrating citizen scientist acquired geochemical samples and Sentinel-1 SAR wet snow time series for the Shimshal catchment in the Karakoram Mountains of Pakistan. AGU, Fall Meeting.

*Marshall, E., **S. Rupper**, R. Forster, S. Brewer, L. Stearns, W. Breikruetz, 2021. Distinct Seasonal Surface Velocity Patterns between Lake-terminating and Land-terminating glaciers in Langtang, Nepal. AGU, Fall Meeting.

*Proulx, H., D. McGrath, S. McCoy, **S. Rupper**, J. Maurer, A. Dehecq, 2021. Assessing changes in glacial lakes in Hindu Kush Himalayan region 1975 to 2018. AGU, Fall Meeting.

Keeler, D., **S. Rupper**, S. Brewer, R. Forster, 2021. Objective glacio-climate zonation of High Mountain Asia glaciers for improved mass balance prediction. AGU, Fall Meeting.

Rupper, S., M. Olson*, E. Johnson*, M. Skiles, C. Strong, W.J. Steenburgh, 2020. Climate-driven glacier and snowpack changes in the water towers of Asia. AGU, Fall Meeting.

*Lund, J., R. Forster, **S. Rupper**, M. Skiles, H. Marshall, E. Deeb, C. Hiemstra, 2020. Snowpack ripening and melt-freeze cycles on Grand Mesa, Colorado from field measurements and synthetic aperture radar. AGU, Fall Meeting.

*Marshall, E., **S. Rupper**, R. Forster, 2020. Investigating recent surface velocity responses to glacier thickness changes in High Mountain Asia, 2013-2019. AGU, Fall Meeting.

*McDonnell, M., **S. Rupper**, R. Forster, J. Maurer, 2020. Quantifying geodetic mass balance for Sout American glaciers since the 1970s using KH-9 Hexagon imagery and ASTER DEMs. AGU, Fall Meeting.

°Giese, A., **S. Rupper**, E. Johnson*, 2020. Indus River water supply at the sub-basin scale: an assessment of glacier melt. AGU, Fall Meeting.

Rupper, S., E. Johnson*, M. Olson*, J. Steenburgh, C. Strong, A. Kochanski, C. Riley*, M. Skiles, 2020. Climate-driven glacier and snowpack changes in the water towers of Asia. AMS

Mountain Meteorology Meeting.

- *Keeler, D., **S. Rupper**, P. White, C. Miede, R. Forster, 2019. Integrated trends in annual accumulation across West Antarctica from Operation IceBridge snow radar. AGU, Fall Meeting.
- *Ackroyd, C., M. Skiles, K. Rittger, **S. Rupper**, K. Musselman, 2019. A comparison of WorldView and MODIS in detecting fraction snow cover over High Mountain Asia. AGU, Fall Meeting.
- *Maurer, J., J. Schaefer, J. Russell*, **S. Rupper**, N. Wangdi, A. Putnam, N. Young, 2019. Remote seismic and satellite observations of a Himalayan glacier lake outburst flood. AGU, Fall Meeting.
- Putnam, A., J. Schaefer, **S. Rupper**, E. Cook, Karma Tsering, C. Dorji, D. Putnam, N. Young, T. Rinzin, P. Sharma, A. Gajurel, P. Krusic, P. Strand, L. Mattas, 2019. Chronology of past mountain glacier fluctuations in the eastern Himalaya as context for industrial-age glacier recession. AGU, Fall Meeting.
- Rupper, S.**, J. Krueger*, C. Strong, D. Keeler*, 2019. Tropical forcing of West Antarctic Ice Sheet surface mass balance variability. AGU, Fall Meeting.
- Rupper, S.**, C. Riley*, W. Steenburgh, C. Strong, E. Johnson*, A. Kochanski, 2019. Rethinking monsoon- and westerly disturbance-dominated precipitation dynamics and impacts on the cryosphere in High Mountain Asia. AGU, Fall Meeting.
- *Olson, M., **S. Rupper**, M. Skiles, 2019. Trends in snow albedo and radiative forcing by light absorbing particles over High Mountain Asia from remote sensing. AGU, Fall Meeting
- *Olson M., **S. Rupper**, 2018. Spatial and temporal changes in aerosol radiative forcing on glaciers in the eastern Himalaya. AGU, Fall Meeting.
- *Riley, C., **S. Rupper**, J. Steenburgh, C. Strong, A. Kochanski, 2018. Characteristics of extreme precipitation events in High Mountain Asia as inferred from high resolution regional climate modeling. AGU, Fall Meeting.
- *Krueger, J., **S. Rupper**, 2018. Examining the influence of tropical Pacific sea-surface temperatures on annual surface mass balance in West Antarctica. AGU, Fall Meeting.
- *Keeler, D., **S. Rupper**, R. Forster, C. Miede, 2018. Estimates of annual surface mass balance from radar for the West Antarctic Idvide using an automated layer picker. AGU, Fall Meeting.
- Huybers^o, K., **S. Rupper**, 2018. Understanding the rate of mass loss for debris-covered glaciers in High Mountain Asia. AGU, Fall Meeting.
- *Hess, M. **S. Rupper**, B. Coddling, M. Power, 2018. Deglaciation of the Uinta Mountain Range: The role of paleoglaciers for human settlements in northeastern Utah. AGU, Fall Meeting.
- *Johnson, E., **S. Rupper**, S. Kapnick, D. Rounce, I. Velicogna, J. Maurer, 2018. An analysis of the physical processes controlling observed spatial trends in glacier mass balances across High Mountain Asia. AGU, Fall Meeting.
- Christensen, W., S. Reese, **S. Rupper**, M. Christensen, 2018. Latent variable modeling for

extracting consensus estimates of precipitation in High Mountain Asia. Joint Statistical Meeting, Vancouver, Canada.

Arendt, A., P. Houser, S. Kapnick, J. Kargel, D. Kirschbaum, S. Kumar, S. Margulis, K. McDonald, B. Osmanoglu, T. Painter, B. Raup, **S. Rupper**, S. Tsay, I. Velicogna, 2017. NASA's High Mountain Asia Team: collaborative research to study changes of the High Asia region. AGU, Fall Meeting.

*Baustian, K., **S. Rupper**, R. Forster, 2017. Seasonal and spatial distribution of wet snow in western Washington State mapped with synthetic aperture radar data. AGU, Fall Meeting.

*Johnson, E., **S. Rupper**, W. Steenburgh, C. Strong, A. Kochanski, 2017. Sensitivity of glacier mass balance estimates to the selection of WRF cloud microphysics parameterization in the Indus River watershed. AGU, Fall Meeting.

*Keeler, D., **S. Rupper**, R. Forster, C. Miede, S. Brewer, L. Koenig, 2017. Spatio-temporal variability of recent snow accumulation across the West Antarctic Ice Sheet Divide using ultra-high frequency radar and shallow firn cores. AGU, Fall Meeting.

*Maurer, J., J. Schaefer, **S. Rupper**, 2017. 40 years of glacier change across the Himalayas. AGU, Fall Meeting.

*Olson, M., **S. Rupper**, 2017. Topographic forcing and related uncertainties on glacier surface energy balance in High Mountain Asia. AGU, Fall Meeting.

Rupper, S., J. Maurer*, J. Schaefer, G. Roe, K. Huybers^o, 2017. Response of debris-covered and clean-ice glaciers to climate change from observations and modeling. AGU, Fall Meeting.

*White, P., S. Reese, C. Christensen, **S. Rupper**, 2017, Gaussian process model for Antarctic surface mass balance and ice core site selection. AGU, Fall Meeting.

Christensen, W., S. Reese, **S. Rupper**, M. Christensen⁺, B. Mabey*, K. Larson*, 2017. Modeling spatiotemporal precipitation variability and glacier mass balance in High Mountain Asia. Meeting of the International Environmetrics Society.

*Maurer, J., J. Schaefer, **S. Rupper**, A. Corley⁺, 2016. Geodetic mass balance of key glaciers across High Mountain Asia: a multi-decadal survey. AGU, Fall Meeting.

Rupper, S., E. Johnson, K. Huybers^o, W. Christensen, S. Reese, Z. White, R. Forster, 2016. High Mountain Asia glacier area and meltwater flux changes under future climate scenarios. AGU, Fall Meeting.

*Meadows, M., **S. Rupper**, R. Forster, G. Carling, D. Keeler, J. Schaefer, 2016. High frequency variability in glacial meltwater patterns in the Rhone Watershed, Switzerland. AGU, Fall Meeting.

*Johnson, E., **S. Rupper**, 2016. Glacier sensitivity in the monsoonal Himalayas: Relative contributions of feedback mechanisms to regional glacier mass balance. AGU Fall Meeting, C53D-0775.

*Olson, M., **S. Rupper**, E. Johnson*, 2016. Impacts of topographic shading on surface energy

balance of High Mountain Asia glaciers. AGU, Fall Meeting.

*Keeler, D., **S. Rupper**, J. Schaefer, R. Finkel, J. Maurer*, 2016. Spatial variability and trends in Younger Dryas equilibrium line altitudes across the European Alps using a hypsometrically based ELA model: results and implications. AGU, Fall Meeting.

Putnam, A., J. Schaefer, **S. Rupper**, E. Cook, P. Krusic, D. Putnam, N. Young, 2016: ¹⁰Be surface-exposure chronology of Holocene glacier fluctuations in the Bhutanese Himalaya. GSA, Northeastern Section, 51st Annual Meeting.

2015: One first author, two student first author, two co-author
2014: Three first author, four student first author, one co-author
2013: One first author, five student first author
2012: Three first author, four student first author, five co-author
2011: Four first author, four student first author, two co-author
2010: One first author, one student first author, two co-author
2009: Six first author, three student first author
2008: One first author, two student first author, one co-author
2007: One first author, two co-author
2005: One co-author
2004: One first author
2003: Two first author, two co-author
2002: One first author

STUDENT AND POSTDOC EMPLOYMENT (as of 2023)

Annika Quick (MS): PhD, Boise State; Preceptor in Earth & Planetary Sciences, Harvard
Troy Hiatt (MS): Geologist, Chevron
Maria Asay (MS): Geologist, Petroleum Systems Institute
Landon Burgener (MS): PhD, University of Washington; Assistant Professor, BYU
Jessica Williams (MS), Geologist, Kennecott Copper Mine
McLean Carpenter (MS): Software Engineer, Lendio
Josh Maurer (MS): PhD, Columbia University
Michelle Meadows (MS): Market Place Manager, Pattern
Eric Johnson (MS): self employed
Kate Baustian (MS): Lidar acquisition company, Oregon
Collin Riley (MS): Geospatial Software Engineer, Maxar
Joey Krueger (MS): Project Engineer, The Haskell Company
Kripa Thapa (MS): ArcGIS Desktop Analyst, ESRI
Morgan McDonnell (MS): Hydrologist, USGS
Matthew Olson (MS, PhD): Assistant Professor, Utah Valley University
Kathleen Huybers (Postdoc): Lecturer, Atmospheric Sciences, University of Washington
Alexandra Giese (Postdoc): AAAS Science and Technology Policy Fellow, US Agency for International Development
Durban Keeler (MS, PhD): Climatologist, AccuWeather