

**Curriculum Vitae • JOHN ERICH M. CHRISTIAN**

Institute for Geophysics, University of Texas at Austin • johnerich.christian at austin.utexas.edu

**EDUCATION**

St. Olaf College, Northfield, MN  
University of Washington, Seattle, WA

BA, Physics, *Magna Cum Laude*, 2014  
PhD, Earth and Space Sciences, 2020  
Advisors: Drs Michelle Koutnik and Gerard Roe

**APPOINTMENTS**

University of Texas at Austin, Institute for Geophysics  
Postdoctoral Fellow • Supervisor: Dr. Ginny Catania  
Sept 2020—present

Georgia Institute of Technology, Dept. of Earth and Atmospheric Sciences  
Postdoctoral Scholar • Supervisor: Dr. Alexander Robel  
Sept 2020—present

University of Washington, Department of Earth and Space Sciences  
NSF Graduate Research Fellow  
Graduate Teaching and Research Assistant  
Sept 2015—Aug 2019  
Sept 2014—July 2020

USGS Washington Water Science Center  
NSF Graduate Research Opportunities Intern  
Jan 2018—May 2018

St. Olaf College, Center for Geophysical Studies of Ice and Climate  
Undergraduate Research Assistant  
Feb 2013—Feb 2014

**PUBLICATIONS** (\* indicates undergraduate mentee)

*IN PREP/REVIEW:*

**Christian, JE**, E Whorton, E Carnahan, M Koutnik, G Roe. Differences in the transient response of individual glaciers: a case study in the Washington Cascades. In prep for *Annals of Glaciology*.

Roe, G, **JE Christian**, B Marzeion. On the attribution of industrial-era glacier mass loss to anthropogenic climate change. *In review, The Cryosphere Discussions*

*PUBLISHED:*

**Christian, JE**, A Robel, C Proistosescu, G Roe, M Koutnik, K Christianson. The contrasting response of outlet glaciers to interior and ocean forcing. *The Cryosphere*, 14 (2020), pp. 2515–2535.

Bonan, DB\*, **JE Christian**, K Christianson. Influence of North Atlantic climate variability on glacier mass balance in Norway, Sweden, and Svalbard. *Journal of Glaciology*, 65(252) (2019), pp. 580-594.

**Christian, JE**, M Koutnik, G Roe. Committed retreat: controls on glacier disequilibrium in a warming climate. *Journal of Glaciology*, 64 (246) (2018), pp. 675-688.

**Christian, JE**, N Siler, M Koutnik, G Roe. Identifying dynamically induced variability in glacier mass-balance records. *Journal of Climate*, 29 (24) (2016), pp. 8915–8929.

Keisling, BA, K Christianson, RB Alley, LE Peters, **JEM Christian**, S Anandakrishnan, KL Riverman, A Muto, RW Jacobel. Basal conditions and ice dynamics inferred from radar-derived internal stratigraphy of the Northeast Greenland Ice Stream. *Ann. Glaciology*, 55 (67) (2014), pp. 127–137.

Vallelonga, P et al., including **JEM Christian**. Initial results from geophysical surveys and shallow coring of the Northeast Greenland Ice Stream (NEGIS). *The Cryosphere*, 8(4) (2014), pp.1275–1287.

### **SELECTED PRESENTATIONS (Presenting author)**

- Distinct Outlet-Glacier Responses to Surface-mass-balance and Ocean Variability. *Oral presentation*, AGU Fall Meeting 2020 (virtual). Abstract C040-05.
- Contrasting outlet glacier responses to ocean vs. interior forcing. *Oral presentation*, WAIS workshop, 2019, Julian, CA.
- Using snow radar to characterize the accumulation zone of South Cascade Glacier, Washington State. *Poster*, IGS symposium on Radioglaciology, 2019, Stanford University, CA.
- Mountain glacier disequilibrium in theory, and in the Washington Cascades. *Oral presentation*, Mount Rainier Researchers Workshop, 2019, Pacific Lutheran University, WA.
- What can short-term observations tell us about attribution and predictability of ice-stream response to climate? *Poster*, AGU Fall Meeting 2018, Washington, DC. Abstract C31C-1533.
- The committed retreat of mountain glaciers. *Poster*, Graduate Climate Conference, 2018, Pack Forest, WA.
- Estimating glacier response times and disequilibrium in a changing climate. *Poster*, AGU Fall Meeting 2017, New Orleans, LA. Abstract C33A-1182.
- Examining model hierarchies of glacier response to climate. *Oral presentation*, AGU Fall Meeting 2016, San Francisco, CA. Abstract C51G-06.
- Identifying dynamically induced variability in glacier mass-balance records. *Oral presentation*, AGU Fall Meeting 2015, San Francisco, CA. Abstract C51D-01.

### **ACADEMIC HONORS AND AWARDS**

- Institutional Postdoctoral Fellowship, University of Texas Institute for Geophysics 2020
- David A. Johnston Award for Research Excellence, University of Washington 2020
- NSF/USGS GRIP internship – *Committed glacier retreat in the WA Cascades* 2018
- Mazamas graduate student research grant – *Glacier velocity on Mt. Baker, WA* 2017
- NSF Graduate Research Fellowship 2015
- GROE Fellowship, College of the Environment, University of Washington 2014
- Top Scholar Award, University of Washington Graduate School 2014

### **TEACHING EXPERIENCE**

Teaching Assistant, Earth and Space Sciences, University of Washington

- ESS 402: *Ice and climate-change science and societal response* (Summer 2018). 1-month course in Greenland and Denmark. Lead instructor: Dr. Michelle Koutnik.
- ESS 431: *Principles of Glaciology* (Fall 2016). Lead instructors: Drs. Knut Christianson and Ed Waddington.

Lectures:

- ESS 402: *Ice and climate-change science and societal response* (Summer 2018). Four lectures: ice-sheet mass balance; polar amplification; glacier response times; and committed glacier retreat.
- ESS 431: *Principles of Glaciology* (Fall 2016—2019). Yearly guest lecture on glacier variations and response times.
- ESS 511: *Geophysical Continuum Mechanics* (Fall 2015). Two lectures on tensor algebra.

### **FIELD EXPERIENCE**

Antarctica, 2019–2020 field season

- South Pole subglacial lake: GPS and phase-sensitive radar (ApRES) surveys. 1 week.
- Hercules Dome: ice-penetrating radar surveys (HF, VHF, and ApRES). 4 weeks.

Mt. Baker, WA, Summer 2017 and 2018

- Terrestrial radar interferometry and kinematic GPS measurements of ice velocity. Multi-day trips.

South Cascade Glacier, WA, April 2017 and 2018

- Winter mass balance and VHF snow-radar surveys. 1-week trips.

### **SELECTED GRADUATE COURSEWORK**

*Glaciology*: Continuum Mechanics; Fluid dynamics; Snow and ice dynamics; Heat and mass flow modeling; Ice physics; Snow and ice on Earth's surface.

*Climate*: Advanced physical climatology; Climate dynamics; Carbon cycle and climate.

*Applied Math*: Complex vector calculus; Partial differential equations; Computational data analysis.

### **SUMMER SCHOOLS AND OTHER COURSES**

- Advanced Climate Dynamics Course (ACDC) – *The Anthropocene*, Yosemite, CA, Sept 2019
- Summer School on Ice Sheets and Glaciers in the Climate System, Karthaus, Italy, Sept 2016
- Polar Geospatial Center remote-sensing bootcamp, University of Minnesota, Aug 2015

### **PROFESSIONAL SERVICE**

- Reviewer, *The Cryosphere*
- Judge, AGU Outstanding Student Poster Awards, 2020 fall meeting