

Joshua Cuzzone

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CURRENT APPOINTMENT

- Project Scientist, University of California-Irvine
- Affiliate, NASA Jet Propulsion Laboratory

EDUCATION

Ph.D. in Ocean, Earth, and Atmospheric Sciences **2014**

Oregon State University

Dissertation: *An Interdisciplinary approach towards understanding Late Pleistocene Ice Sheet change.*

Advisors: Peter Clark, Justin Wettstein

M.S. in Atmospheric Science **2010**

University of Wisconsin-Madison

Thesis: *The relationships between Arctic sea ice and cloud-related variables in the ERA-Interim reanalysis and CCSM3.*

Advisor: Steven Vavrus

B.S. in Meteorology **2007**

Rutgers University-New Brunswick

PROFESSIONAL EXPERIENCE

University of California, Irvine **2019 – present**

Assistant Project Scientist in the department of Earth System Science.

NASA Jet Propulsion Laboratory **2015 – present**

Affiliate in the Sea Level and Ice group.

University of California, Irvine **2016 – 2019**

Postdoctoral Scholar in the department of Earth System Science.

NASA JPL/Caltech **2015 – 2016**

Postdoctoral in the Sea Level and Ice group.

Expert Witness, Meteorologist **2017-Present**

Expert witness with testifying experience in forensic Meteorology.

TEACHING EXPERIENCE

Part-time Lecturer **2019**
 California State University, Los Angeles
 ‘Introduction to Physical Geography’ 40 students (GEOG 1600)

Teaching Assistant **2014**
 Oregon State University
 ‘The Solid Earth’, 32 students

Teaching Assistant **2013**
 Oregon State University
 ‘Environmental Geology’, 35 students

Lab Manager and Mentor **2012-2014**
 Oregon State University cosmogenic surface exposure laboratory

STUDENTS SUPERVISED

Mentor through NASA Direct Stem Program

2019 – present Chelsy Salas California State University, Los Angeles
 Thesis project: Sensitivity of Regional Land-Atmosphere Coupling to Human Activity

2019 – present Jessica Kromer California State University, Los Angeles
 Thesis project: Determining the impact of precipitation biases on the surface mass balance over Greenland

PUBLICATIONS

Briner, J., **Cuzzone, J.K.**, Badgley, J., Cluett, A., Csatho, B., deVernal, A., Down, J., Hakim, G., Johnson, J., Larour, E., Lesnek, A., Morlighem, M., Nowicki, S., Schaefer, J., Schlegel, N., Steig, E., Thomas, E., Young, N. (*to be submitted Dec. 2019*). Greenland Ice Sheet mass loss rate will exceed Holocene values this century.

Cuzzone, J. K., Schlegel, N.-J., Morlighem, M., Larour, E., Briner, J. P., Serousi, H., and Caron, C.: The impact of model resolution on the simulated Holocene retreat of the Southwestern Greenland Ice Sheet using the Ice Sheet System Model (ISSM), *The Cryosphere*, <https://doi.org/10.5194/tc-2018-249>. 2019.

Lesnek, A., Briner, J., Young, N., **Cuzzone, J.** Maximum Southwest Greenland Ice Sheet recession in the early Holocene. *Geophysical Research Letters (Accepted)*. 2019.

Downs, J., Johnson, J., Briner, J., Young, N., Lesnek, A., and **Cuzzone, J.**: West Greenland ice sheet retreat history reveals elevated precipitation during the Holocene thermal maximum, *The Cryosphere Discuss.*, <https://doi.org/10.5194/tc-2019-129>. 2019.

Cuzzone, J. K., Morlighem, M., Larour, E., Schlegel, N., and Seroussi, H. Implementation of higher-order vertical finite elements in ISSM v4.13. for improved ice sheet flow modeling over paleoclimate timescales. 2018. *Geosci. Model Dev.*, <https://doi.org/10.5194/gmd-2017-319>.

Leydat, D.J., Carlson, A.E., Teller, J.T., Breckenridge, A., Barth, A.M., Ullman, S.J., Sinclair, G., Milne, G.A. **Cuzzone, J.K.**, Caffee, M.W. 2018. Opening of glacial Lake Agassiz's eastern outlets by the start of the Younger Dryas cold period. *Geology*. 46 (2): 155-158. <https://doi.org/10.1130/G39501.1>.

Barth, A.M, Clark, P.U., Clark, J., Roe, G.H., Marcott, S.A, McCabe, A.M., Caffee, M.W., He, F., **Cuzzone, J.K.**, Dunlop, P. 2017. Persistent millennial-scale glacier fluctuations in Ireland between 24 ka and 10 ka. *Geology*. 46 (2): 151-154. <https://doi.org/10.1130/G39796.1>.

Ullman, D., Carlson, A., Hostetler, S.W., Clark, P.U., **Cuzzone, J. K.**, Milne, G., Winsor, K., Caffee, M. 2016. Final Laurentide ice-sheet deglaciation and Holocene climate-sea level change. *Quaternary Science Reviews*. 152, doi.org/10.1016/j.quascirev.2016.09.014

Cuzzone, J.K., Clark, P.U., Carlson, A, Ullman, D, Rinterknecht, V., Milne, G., Lunkka, J.P., Marcott, S., Caffee, S. 2016. Final deglaciation of the Scandinavian Ice Sheet and implications for the Holocene global sea-level budget. *Earth and Planetary Science Letters*. 448, doi.org/10.1016/j.epsl.2016.05.019

Cuzzone, J.K., Vavrus, S.J. 2011. The relationship between Arctic sea ice and cloud related variables in the ERA-Interim reanalysis and CCSM3. *Environ. Res. Lett.* 6, [doi:10.1088/1748-9326/6/1/014016](https://doi.org/10.1088/1748-9326/6/1/014016)

FIELD EXPERIENCE

Greenland

Summer 2016

Sampling glacial erratics, piston coring of proglacial lakes.

Collier Glacier, Oregon USA

2010-2012

Installation of meteorological instruments, snow density tests, and the drilling and setting of ablation stakes.

Norway, Sweden, and Finland

Summer 2010/2011

Planned, coordinated with foreign faculty, travel and budget, sampling of glacial erratics.

AWARDS and GRANTS

2016-2019: Served as Postdoc: National Science Foundation: Ice sheet sensitivity in a changing Arctic system - using data and modeling to test the stable Greenland Ice Sheet hypothesis, \$610,187.

Geologic Society of America student research grant, 2011 (\$4,000)

SUBMITTED GRANTS

2019: Co-PI. National Science Foundation: Collaborative Research Paleo Perspectives on Climate Change: Title: *A case study of a continental ice sheet response to topographic obstacles: The southernmost advance of the Okanogan lobe of the Cordilleran ice sheet over the Columbia river incision.* Collaborators from Oregon State University. To be submitted October, 2019. \$390,000

2019: Co-PI. National Science Foundation: Collaborative Research. Frontier Research in Earth Sciences (FRES). Title: *Ice Forcing in Arc Magma Plumbing Systems.* Collaborators from University of Wisconsin-Madison, University of Oregon, Brown University. To be submitted February, 2020. \$280,000

2019: Co-PI. National Science Foundation: Science and Technology Center (STC): Title: *C-SLIC: A vision for the Center of Sea Level, Ice, and Climate.* Submitted August 2019. \$400,000

SERVICE AND OUTREACH

- Reviewer for Journal of Climate, Nature Geoscience, Geophysical Research Letters, Quaternary Science Reviews.
- Convener of AGU Fall Meeting session “*Merging Ice Sheet and Climate Reconstructions with Numerical Models to Understand the Mechanisms and Rates of Ice-Sheet Change*” in **2019**.
- Mentor, NASA Direct Stem Program **2019 – present**
- JPL Open house Science Volunteer **2016, 2017**
- High School Cycling Coach, **2016 - present**
Aveson Charter School, National Interscholastic Cycling Association,
15 student athletes/year, 70% from historically underrepresented backgrounds.

MEMBERSHIP

American Geophysical Union
Geological Society of America
American Meteorological Society

REFERENCES

Dr. Mathieu Morlighem
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University of California-Irvine
Irvine, CA 92697
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Dr. John Reager
Jet Propulsion Laboratory
4800 Oak Grove Drive
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Dr. Jason Briner
University of Buffalo
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