

## Greta H. Wells, Ph.D.

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Institute of Earth Sciences, University of Iceland  
Sturlugata 7, Reykjavík 101, Iceland

### EDUCATION

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- 2021           **Ph.D., University of Texas at Austin**  
                  Geography and the Environment  
                  *Dissertation:* Holocene jökulhlaups along the Hvítá River, Iceland
- 2016           **M.A., University of Texas at Austin**  
                  Geography and the Environment  
                  *Thesis:* Timeline reconstruction of Holocene jökulhlaups along the Jökulsá á Fjöllum channel, Iceland
- 2011           **B.A., Colby College, Waterville, ME**  
                  Geology; French Studies (double major)
- 2010           International study program (semester), Aix-Marseille Université, Aix-en-Provence, France

### RESEARCH AND TEACHING EXPERIENCE

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- 2022–Present   **Postdoctoral Research Fellow**, Institute of Earth Sciences, University of Iceland
- 3-year fellowship from University Recruitment Fund for independent project “Future proglacial lake evolution and outburst flood hazard in Iceland”
- 2022–Present   **Honorary Fellow**, School of Geosciences, University of Edinburgh
- Demonstrator on annual 10-day undergraduate Physical Geography field course in Iceland
  - Assist with B.A. student thesis projects
- 2021–Present   **Cryosphere Working Group Fellow**, International Arctic Science Committee (IASC)
- Participate in workshops, meetings, and conferences to coordinate Arctic research efforts at working group (Cryosphere) and national (U.S.) network scales
  - Contribute to report writing on Arctic research projects and scientific priorities
- 2020–Present   **Lecturer**, Institute of Earth Sciences, University of Iceland
- Present lectures for undergraduate and Master’s courses “Natural Hazards” and “Glaciers, Volcanoes and Jökulhlaups”
  - Assist with design and grading of exams and final projects; co-lead field trips
  - Co-supervise M.Sc. student thesis projects
- 2019–2020      **Fulbright-NSF Arctic Research Fellow**, Iceland
- Conducted Ph.D. research; hosted by Institute of Earth Sciences–University of Iceland and Icelandic Meteorological Office
- 2016–2019      **Lead Research Assistant**, Environmental Hydrology and Water Quality Laboratory, Department of Geography and the Environment, UT-Austin
- Responsible for all lab analyses, equipment, materials, and data management

- Analyzed major ion chemistry of water samples for faculty and student research projects; prepared samples for ICP-MS analysis and interpreted results
  - Analyzed rock and soil sample geochemistry using XRD and XRF
- 2014–2016     **Teaching Assistant**, Department of Geography and the Environment, UT-Austin
- Taught three weekly lab sections for “The Natural Environment” (undergraduate introductory physical geography course); designed and graded lab exams and exercises
- 2011–2014     **English Instructor**, Prague, Czech Republic (2011–2013) and Takamatsu, Japan (2014)

## FELLOWSHIPS

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- 2021            Cryosphere Working Group Fellow, International Arctic Science Committee (IASC)
- 2019–2020     Fulbright-NSF Arctic Research Fellow, Iceland (\$19,300)
- 2019–2020     University Graduate Continuing Fellowship, Graduate School, UT-Austin (*deferred to 2020–2021*) (\$44,000)
- 2016            Continuing Fellowship, Graduate School, UT-Austin (\$5000)
- 2014            Recruitment Fellowship, Department of Geography and the Environment, UT-Austin (\$4000)

## RESEARCH GRANTS

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- 2023            Rannsóknasjóður Vegagerðarinnar (Icelandic Road and Coastal Administration Research Fund) (1.2 million ISK)
- 2023            Orkurannsóknasjóður (Energy Research Fund), Landsvirkjun, Iceland (1.2 million ISK)
- 2022            Moray Endowment Fund Award, University of Edinburgh (£1200)
- 2020            American-Scandinavian Foundation Fellowship (\$5000)
- 2020            Leifur Eiríksson Foundation Fellowship (\$5000)
- 2020            American Association of Geographers (AAG) Dissertation Research Grant (\$1000)
- 2020            PRIME Lab Seed Grant: funding for cosmogenic nuclide analysis of ten rock samples, PRIME Lab, Purdue University (\$5450/\$2725 with NSF discount)
- 2019            USNC/INQUA Fellowship Grant: to attend 20<sup>th</sup> INQUA Congress, Dublin, Ireland (\$1000)
- 2018            Explorers Club Exploration Fund Grant (\$1200)
- 2018            Geological Society of America (GSA) Graduate Student Research Grant (\$2500)
- 2017            Global Research Fellowship, International Office, UT-Austin (\$3500)
- 2015            Robert E. Veselka Fellowship for Graduate Research Travel, Department of Geography and the Environment, UT-Austin (\$900)

## HONORS AND AWARDS

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- 2021            Best Student Talk, PalaeoArc International Conference
- 2019            M. Gordon “Reds” Wolman Doctoral Student Research Award, Geomorphology Specialty Group, AAG Annual Meeting (\$600)

- 2018 PhD Student Research Competition Award, Paleoenvironmental Change Specialty Group, AAG Annual Meeting (\$300)
- 2016 Master's Student Paper Award, Geomorphology Specialty Group, AAG Annual Meeting (\$250)
- 2011 Faculty Award in Geology, Colby College

## PUBLICATIONS

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- Wells, G.H.**, Dugmore, A.J., Sæmundsson, Þ., Beach, T., Luzzadder-Beach, S., Ben-Yehoshua, D., 2022. Geomorphologic evidence of jökulhlaups along the Hvítá River, southwestern Iceland. *Jökull* 72, 35-70.
- Wells, G.H.**, Dugmore, A.J., Beach, T., Baynes, E.R.C., Sæmundsson, Þ., Luzzadder-Beach, S., 2022. Reconstructing glacial outburst floods (jökulhlaups) from geomorphology: challenges, solutions, and an enhanced interpretive framework. *Progress in Physical Geography* 46(3), 398–421.
- Hilgendorf, Z., **Wells, G.**, Larson, P.H., Millett, J.F., Kohout, M.A., 2020. From basins to rivers: Understanding the revitalization and significance of top-down drainage integration mechanisms in drainage basin evolution. *Geomorphology* 352, 107020.
- Beach, T., Luzzadder-Beach, S., Cook, D., Krause, S., Doyle, C., Eshleman, S., **Wells, G.**, Dunning, N., Brennan, M.L., Brokaw, N., Cortes-Rincon, M., Hammond, G., Terry, R., Trein, D., Ward, S. 2018. Stability and instability on Maya Lowlands tropical hillslope soils. *Geomorphology* 305, 185-208.

## PRESENTATIONS

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### *Conferences/Sessions Convened*

- June 2023 Co-convener of GSA Penrose Conference on “The role of outburst floods in Earth and planetary evolution,” Coulee City, WA
- February 2023 Session co-convener, “Hydrologic and Societal Impacts of Snow and Ice Changes in Arctic and Alpine Regions,” Arctic Science Summit Week, Vienna, Austria

### *Invited Conference and Seminar Talks*

- March 2023 Geomorphologic evidence of jökulhlaups along the Hvítá river, southwestern Iceland. Jöklarannsóknafélag Íslands (Iceland Glaciological Society) spring meeting, Reykjavík, Iceland
- March 2023 Geomorphologic reconstruction of Holocene jökulhlaups in southwestern Iceland. International Association of Geomorphologists–Northern Europe webinar for International Geomorphology Week
- October 2019 Fulbright in the Arctic—Meet the Scientists. Panelist. Arctic Circle Assembly, Reykjavík, Iceland
- October 2019 Geomorphologic and geochronological reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. Seminar Series, Institute of Earth Sciences and Nordic Volcanological Center, University of Iceland
- May 2019 Geomorphologic and geochronological reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. DeFord Lecture Series, Jackson School of Geosciences, UT-Austin

April 2019 Geomorphologic and geochronological reconstruction of glacial lake outburst floods in Iceland: Applications to Mars. EU-IN-TIME RISE Workshop on Geochronology and Mars Exploration, Jackson School of Geosciences, UT-Austin

***Oral Conference Presentations***

June 2023 Geomorphologic and hydraulic reconstruction of Holocene jökulhlaups along the Hvítá river, southwestern Iceland. GSA Penrose Conference, Coulee City, WA

April 2023 Future proglacial lake evolution and outburst flood hazard in south Iceland. European Geosciences Union (EGU) General Assembly, Vienna, Austria

May 2022 Holocene jökulhlaups along the Hvítá River, Iceland: geomorphology, chronology, and hydrology. EGU General Assembly, Vienna, Austria

May 2022 Geomorphology, hydrology, and chronology of early Holocene jökulhlaups along the Hvítá River, southwestern Iceland. Nordic Geological Winter Meeting, Reykjavík, Iceland

November 2021 Holocene jökulhlaups along the Hvítá River, Iceland: geomorphology, hydrology, and implications for Icelandic Ice Sheet reconstruction. Geoscience Society of Iceland Autumn Conference, virtual

May 2021 Geomorphology, hydrology, and chronology of Holocene jökulhlaups along the Hvítá River, Iceland: implications for Icelandic Ice Sheet dynamics. PalaeoArc International Conference, virtual

April 2021 Geomorphology, hydrology, and chronology of Early Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. EGU General Assembly, virtual

December 2020 Geomorphologic and hydraulic reconstructions of Early Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. American Geophysical Union (AGU) Fall Meeting, virtual

November 2020 Reconstruction of Early Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland, during Icelandic Ice Sheet retreat. International Glaciological Society (IGS)-Nordic Branch Meeting, virtual

October 2020 Reconstruction of jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland, during Early Holocene ice sheet retreat. GSA Annual Meeting, virtual

May 2020 Reconstruction of Early Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. EGU General Assembly, virtual

January 2020 Geomorphologic and geochronological reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. Nordic Geological Winter Meeting, Oslo, Norway

November 2019 Reconstruction of Early Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. IGS-Nordic Branch Meeting, Reykholt, Iceland

July 2019 Geomorphologic and geochronological reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss waterfall, Iceland. 20<sup>th</sup> INQUA (International Union for Quaternary Research) Congress, Dublin, Ireland

April 2019 Geomorphologic and geochronological reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. AAG Annual Meeting, Washington, D.C.

November 2018 Geomorphologic evidence and timeline reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. GSA Annual Meeting, Indianapolis, IN

- April 2018      Geomorphologic evidence and timeline reconstruction of jökulhlaups along the Hvítá River and Gullfoss, Iceland. AAG Annual Meeting, New Orleans, LA
- January 2018    Geomorphologic evidence and timeline reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. Nordic Geological Winter Meeting, Copenhagen, Denmark
- October 2017    Geomorphologic evidence and timeline reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. GSA Annual Meeting, Seattle, WA
- April 2017      Using water geochemistry to forecast volcanically-triggered glacial lake outburst floods in Iceland. AAG Annual Meeting, Boston, MA
- March 2016     Geomorphologic evidence of a Holocene jökulhlaup in the Jökulsá á Fjöllum Channel, Iceland. AAG Annual Meeting, San Francisco, CA

***Poster Conference Presentations***

- October 2023    Future proglacial lake evolution and outburst flood hazard in Iceland. Rannsóknaráðstefna Vegagerðarinnar (Road Construction Research Conference), Reykjavík, Iceland
- December 2018   Geomorphologic evidence and timeline reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. AGU Fall Meeting, Washington, D.C.
- October 2017    Geomorphologic impacts and timeline reconstruction of Holocene jökulhlaups along the Hvítá River and Gullfoss, Iceland. Binghamton Geomorphology Symposium, San Marcos, TX
- November 2015   Preliminary soil erosion and sediment budgets in the Valley of Leyva, Boyacá, Colombia, GSA Annual Meeting. Baltimore, MD
- April 2015      Geomorphologic evidence of Holocene jökulhlaups in the Jökulsá á Fjöllum Channel, Iceland, AAG Annual Meeting. Chicago, IL

***Guest Lectures***

- May 2019        Glacial lake outburst flood geomorphology and landscape interpretation. Upper-division undergraduate “Process Geomorphology” course, Geography, UT-Austin
- April 2019      Glaciers: Processes, landforms, and hydrology. Upper-division undergraduate “Process Geomorphology” course, Geography, UT-Austin
- March 2019     Research grant writing. Graduate seminar “Research in Geography,” Geography, UT-Austin
- November 2018   Glacial lake outburst floods: Geomorphology, climate, and geohazards. Upper-division undergraduate “Process Geomorphology” course, Geography, UT-Austin
- February 2018    Glacial lake outburst floods: From the Pleistocene to the future. Upper-division undergraduate “Climate Change” course, Geography, UT-Austin

**FIELD COURSES AND WORKSHOPS**

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- 2019             Science-Policy Workshop: “Raising awareness and building capacity for science-based policy-making,” Reykjavík, Iceland

- Selected to participate in science-policy communication workshop for early career researchers
- 2018 Nordic Workshop on Cosmogenic Nuclides, Geiranger, Norway
- Participated in workshop on cosmogenic nuclide dating applications and techniques
- 2015 International Geochronology Summer School, Bergün, Switzerland
- Attended field school on geochronological dating techniques
- 2015 Central American Dendroecological Fieldweek, Sierra de los Cuchumatanes, Guatemala
- Invited to participate in NSF-funded field course on dendrochronological sample collection, analysis, and interpretation

## FIELD RESEARCH EXPERIENCE

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**Iceland** (2015–Present). Field research on jökulhlaup geomorphology, glacial environmental change, proglacial landscape evolution, and natural hazards. Included five field seasons of thesis and dissertation research in the central highlands.

**Himalayas, Nepal** (2016). Field assistant on a research project studying glacier change, glacial lake development, and glacial outburst flood risk at Imja Lake in the Khumbu region, led by UT-Austin Department of Civil, Architectural and Environmental Engineering.

**Belize** (2017). Field assistant on project studying hydrochemistry and ancient Maya landscape use.

**Boyacá, Colombia** (2015). Field assistant on project measuring sediment budget and erosion rates around a highland archaeological site.

## SERVICE AND ENGAGEMENT

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2023–Present GeoNorth (Nordic branch, International Association of Geomorphologists)–Young Geomorphologist national representative for Iceland

2023–Present Co-organizer, Institute of Earth Sciences–NordVulk seminar series, University of Iceland

2022 Assistant at Vísindavaka (science outreach event as part of European Researchers' Night), Reykjavík, Iceland

2022 Judge for EGU OSPP (Outstanding Student and PhD candidate Presentation) Award

2021 Observer at UN Climate Change Conference (COP 26) for American Association of Geographers (AAG), Glasgow, Scotland, UK

2018–2019 President, Graduate Association of Geography and the Environment, UT-Austin

2017 Mentor, UT-Austin Intellectual Entrepreneurship Pre-Graduate School Internship program

**Reviewer for:** *Earth Surface Dynamics; Geology; Nature Reviews Earth and Environment; Journal of Geophysical Research—Planets*

## LANGUAGE AND TECHNICAL SKILLS

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**Languages:** English (native); French (fluent); Icelandic (elementary); Czech (elementary)

**Field Methods:** Geomorphologic mapping; cosmogenic nuclide dating sample collection; water chemistry sampling; tephra/soil/sedimentological sampling and description; dendrochronology

**Lab Techniques:** Major ion water chemistry; ICP-MS; XRD; XRF; tephrochronology sample prep and analyses; Electron Microprobe Analyzer (EMPA)

**Technical Skills:** ArcGIS; HEC-RAS; Surfer; Adobe Illustrator; MatLab

**Other Certifications:** NOLS Wilderness First Aid certification; Trinity CertTESOL (Certification for Teaching English to Speakers of Other Languages)

### **PROFESSIONAL MEMBERSHIP**

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American Association of Geographers (AAG); American Geophysical Union (AGU); American Quaternary Association (AMQUA); American Association for the Advancement of Science (AAAS); Association of Polar Early Career Scientists (APECS); European Geosciences Union (EGU); Geological Society of America (GSA)

### **RELEVANT GRADUATE COURSES**

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Environmental Hydrology; Advanced Geomorphology; Introduction to the Cryosphere; Transboundary Water Resources; Groundwater Resource Evaluation; GIS in Water Resources; Long-Term Climate Change; Soil Geomorphology; Environmental Isotope Geochemistry; Fundamentals and Applications of ICP-MS; Geoarchaeology and Environmental History; Wetlands and Floodplains; Geoscience Lab Techniques; Regression Analysis in Geography; Biodiversity Conservation