Dr. Cameron J. Batchelor

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■ EDUCATION

University of Wisconsin-Madison, Madison, WI **2018–February 2022**

Ph.D., Geoscience, Minor: Geography

Dissertation: Reconstructing high-resolution paleoclimate for portions of the last 250,000 years from Cave of the Mounds speleothems, *Advisor(s): Dr. Shaun Marcott & Dr. Ian J. Orland*

Research foci: Geochemistry, paleoclimatology, micro-analytical techniques

University of Wisconsin-Madison, Madison, WI **Fall 2016–2018**

M.S. Geoscience

Thesis: A high-precision U-Th chronology of calcite deposition at Cave of the Mounds, Wisconsin, and its implications for climate and permafrost in the late Pleistocene, *Advisor(s): Dr. Shaun Marcott & Dr. Ian J. Orland*

Appalachian state University, Boone, NC **Fall 2012–December 2015**

B.S. Geology in Quantitative Geoscience, Minor in Mathematics

Undergraduate Thesis: Constraining ages of Late Devonian Extinction Events in the Central Asian Orogenic Belt: U-Pb Geochronology and Igneous Petrology

■ PROFESSIONAL APPOINTMENTS

Postdoctoral Fellow, "Atmospheric and Geospace Sciences" division of the National Science Foundation **2022–present**

**Host Institution: Massachusetts Institute of Technology*

Research Assistant, Department of Geoscience, University of Wisconsin**-**Madison **2016-2017, 2018-2022**

Teaching Assistant, Department of Geoscience, University of Wisconsin**-**Madison **Fall 2017–Spring 2018**

■ TEACHING EXPERIENCE

University of Wisconsin-Madison

Fall 2017: Introduction to Geology

Spring 2018: Introduction to Oceanography

■ LABORATORY EXPERIENCE

McGee Lab for Paleoclimate and Geochronology, *Massachusetts Institute of Technology* **2022-present**

Lab PI: Dr. David McGee
Experience: Uranium-Thorium (U-Th) disequilibrium lab column chemistry

Wisconsin Secondary Ion Mass Spectrometer (WiscSIMS) Lab, *University of Wisconsin-Madison* **2018-present**

Lab PI: Dr. John Valley
Experience: Micro-analytical (μm-scale), in-situ stable oxygen isotope ($\delta^{18}O$) geochemistry

Optical Imagine Core Laboratory, *University of Wisconsin-Madison* **2018-present**

Lab PI: Lance Rodenkirch
Experience: Confocal laser fluorescent microscopy

Isotope Geochemistry Laboratory, *University of Wisconsin-Madison* **2016-2018**

Lab PI: Dr. Lawrence R. Edwards
Experience: U-Th disequilibrium lab column chemistry and the Neptune multi-collector inductively-coupled-plasma mass spectrometer (Neptune MC-ICP-MS)

Isotope Geochemistry Laboratory, *University of North Carolina at Chapel Hill* **2013-2016**

Lab PI: Dr. Drew Coleman
Experience: U-Th disequilibrium lab column chemistry and the Neptune multi-collector inductively-coupled-plasma mass spectrometer (Neptune MC-ICP-MS)

■ FIELD EXPERIENCE

Field Researcher in Wisconsin caves, Wisconsin **2016-2022**
Experience: Worked with the Department of Natural Resources to explore caves around the state of Wisconsin to collect samples (speleothems) for geological research

Astrostratigraphy field course, Gubbio, Italy, *4-day field excursion* **Summer 2019**

New Zealand Geology Field Course, South Island, New Zealand, *12-day field excursion and semester-long course* **April 2018**

Field assistant for surface exposure dating, Beartooth Mountains, Montana, *10-day field excursion* **Summer 2017**

Field camp participant, Apennine Mountains, Italy, *6-week field Mapping course run through Appalachian State University* **Summer 2015**

Field researcher for the International Geoscience Program (IGCP) 586 & 580, Belgium, *10-day field excursion* **Fall 2015**

Field researcher for IGCP 586 & 580, Mongolia, *14-day field Excursion in the Gobi Desert* **Summer 2014**

■ PUBLICATIONS

Published:

4. **Batchelor, C.J.,** Marcott, S.A., Orland, I.J., Kitajima, K., 2022. Late Holocene increase of winter precipitation in mid-continental North America from a seasonally resolved speleothem record: *Geology.* DOI:10.1130/G50096.1

3. **Batchelor, C.J.,** Orland, I.J., Marcott, S.A., Slaughter, R., Edwards, R. L., Zhang, P., Li, X. and Cheng, H., 2019. Distinct permafrost conditions across the last two glacial periods in midlatitude North America. *Geophysical Research Letters, 46(22),* pp. 13318-13326.

2. Suttner, T. J., Kido, E., Ariunchimeg, Ya., Sersmaa, G., Waters, J.A., Carmichael, S.K., **Batchelor, C.J.,** et al., "Conodonts from Late Devonian island arc settings (Baruunhuurai Terrane, western Mongolia). *Palaeogeography, Palaeoclimatology, Palaeoecology* (2019).

1. Carmichael, S. K., Waters, J.A., **Batchelor, C. J.,** Coleman, D. M., Suttner, T. J., Kido, E., …& Chadimová, L. (2016). Climate instability and tipping points in the Late Devonian: detection of the Hangenberg Event in an open ocean island arc in the Central Asian Orogenic Belt. *Gondwana Research*, 32, 213-231

In Review:

Batchelor, C.J., Marcott, S.A., Orland, I.J., He, F.., 2022, Decadal warmings in central North America during the Last Glacial Period. Nature Geoscience, *In Review*.

In Preparation

Batchelor, C.J., Marcott, S.A., Orland, I.J., Disparate seasonal climate conditions between the Last Interglacial Period and the Holocene from two mid-continental North American speleothems, *In prep.*

Batchelor, C. J., Marcott, S.A., Orland, I. J., Tan, R. Q., A high-resolution reconstruction of climate during the Penultimate Interglacial Period in central North America from a seasonally resolved speleothem: *In prep.*

■ RESEARCH FUNDING

National Science Foundation "Atmospheric and Geospace Science" (AGS) Postdoctoral Fellowship **($190,000)** **2021**

National Science Foundation "Paleo Perspectives on Climate Change" (P2C2) grant **($180,000)** **2021**
**Written in collaboration with Dr. Kaustubh Thirumalai (University of Arizona) and Dr. Jud Partin (University of Texas-Austin)*

Geological Society of America Student Research Grant **($840)** **2017**

Mark DeBroder Memorial Scholarship **($1600**) **2015**

Explorers Club Youth Explorers Grant **($1500**) **2014**

James E. Strickland Geology Scholarship **($1000**) **2013**

Charlotte Gem and Mineral Scholarship **($1000**) **2013**

■ SELECTED ABSTRACTS AND INVITED TALKS
**denotes abstract selected as a talk, ** denotes invited talk*

****Batchelor C.J.,** et al., "Resolving high-resolution paleoclimate variability from subarctic Canada speleothems across three Pleistocene interglacial periods," *Geological Society of America 2022 Annual Meeting*, Denver CO **Antic. October 2022**

****Batchelor C.J.,** "Resolving high-resolution paleoclimate records from subarctic Canada speleothems across three Pleistocene interglacial periods," *2022 Comer Climate Conference,* virtual. **September 2022**

****Batchelor C.J.,** et al., "Late Holocene increase of winter precipitation in midcontinental North America from a seasonally resolved speleothem record," *AMQUA 2022 Biennial Meeting,* Madison, WI. **June 2022**

***Batchelor, C.J.,** et al., "Resolving decadal-scale warming events in the interior of North America during the Last Glacial Period," *American Geophysical union Fall Meeting,* New Orleans, LA, USA. **December 2021**

****Batchelor, C.J.,** "Reconstructing late Pleistocene seasonal climate In mid-continental North America from relatively slow growing speleothems," *Appalachian State University, Department of Geological and Environmental Sciences,* Boone, NC. **November 2021**

****Batchelor, C.J.,** "What caves tell us about mid-continental paleoclimate: an important terrestrial archive," *Rowan University, Department of Geology,* Glassboro, NJ. **February 2021**

***Batchelor C.J.,** et al., "A high-precision U-Th chronology of calcite deposition at Cave of the Mounds, Wisconsin, and its implications for climate and permafrost in the latte Pleistocene", *Geological Society of America North-Central Section*, Ames, IA. **October 2018**

****Batchelor C.J.,** "What caves tell us about past climate," *The Annual Wisconsin State Bat Festival;* Milwaukee, WI **September 2018**

****Batchelor C.J.,** "What caves tell us about past climate," *The Annual Wisconsin State Bat Festival;* Ashland, WI **September 2017**

****Batchelor, C.J.,** "A high-precision U-Th chronology of calcite deposition at Cave of the Mounds, Wisconsin and its implications for climate and permafrost, *Climate, People, and the Environment Program Colloquium (University of Wisconsin-Madison)*, Madison, WI. **September 2017**

■ SHORT COURSES AND WORKSHOPS

Inclusive Mentoring Workshop, Massachusetts Institute of Technology **May 2022**

Summer School of Speleothem Science ("S4"), *Online* **Spring 2022**

URGE (Unlearning Racism in the Geoscience) participant And Pod Leader, *Online.* (*16-week curriculum/seminar training). **Fall 2020–Spring 2021**

The Urbino Summer School in Paleoclimatology (USSP), Urbino, Italy (*3-week course curriculum)* **Summer 2019**

■ PRESS RELEASE/MEDIA

Featured guest speaker, "*Under Our Feet*" podcast (Episode 6, "Secrets of the Underground.") *Podcast creator: Rudy Molinek **Fall 2021**

Featured photo, front cover of the University of Wisconsin-Madison "College of Letters & Science" magazine: "*Black-light image of the oldest stalagmite sample in the Midwest."* **Fall 2020**

Featured article, University of Wisconsin-Madison "College of Letters of Science" magazine: "*What can caves reveal about glaciers?"* *Article written by: Kelly April Tyrrell **Spring 2020**

Featured article, "Echolater" newsletter, Volume 8 Issue I: "*Wisconsin Caves hold keys to climate 250,0000 years ago."* **Spring 2019**

■ PROFESSIONAL AND DEPARTMENTAL SERVICE

Reviewer, Geophysical Research Letters, *Commentary* **2022**

Reviewer, Geophysical Research Letters, *Article* **2022**

Reviewer, Geochronology, *EGU* **2022**

President, Geoscience Graduate Student Association (GGSA), University of Wisconsin-Madison **Fall 2020–Spring 2021**

Pod Leader for URGE (Unlearning Racism in the Geosciences), pod: "UW-GGSA" (University of Wisconsin-Geoscience Graduate Student Association) **Fall 2020–Spring 2021**

Treasurer, Association for Women Geoscientists (AWG), the University of Wisconsin-Madison Chapter **Fall 2020–Spring 2021**

Reviewer, Climate of the Past, *EGU* **2020**

Reviewer, Climate of the Past, *EGU* **2020**

Chair of the Graduate Student Research Symposium, Department of Geoscience, University of Wisconsin-Madison **Spring 2020**

Professional Development Chair, GGSA **Fall 2019-Spring 2020**

Vice President, AWG, University of Wisconsin-Madison Chapter **Fall 2019-Spring 2020**

Reviewer, Geophysical Research Letters, *article* **2020**

Public Relations Chair, GGSA **Fall 2017-Spring 2019**
**Served two consecutive terms*

■ AWARDS

AMQUA Denise Gaudreau Award for Excellence in Quaternary Research *($1000)* **2022**

Editor's Citation for Excellence in Refereeing, *Geophysical Research Letters* **2020**

Winner of "Cool Science Image Contest," *image of a speleothem ($100)* **2020**

The Reid Bryson poster contest award, first place **($750**) **2018**

Stanley A. Tyler Excellence in Teaching Award, *for "Introduction to Geology"* **2017**

Most Outstanding Geology Major **2016**

Appalachian Global Leadership Award **2015**

Most Outstanding Mineralogy Student **2015**

■ UNDERGRADUATE RESEARCH MENTEES

Markey Freudenberg-Puricelli, "Geochemistry of Nahanni Cave Speleothems to explore paleoclimate history of the last 400,000 years" **2022–present**

B.S., Earth, Atmospheric, and Planetary Sciences, class of 2026, Massachusetts Institute of Technology

Rui Tan, "Assessing the Crystal Fabrics and Minerology of Speleothems from Cave of the Mounds, WI" **2018–2019**

B.S., Geoscience, class of 2019, University of Wisconsin-Madison

Olivia Paschall, "Exploring Late Devonian Mass Extinctions and Ocean. Anoxia Events in Understudied Paleoenvironments of Asia" **2014–2015**

B.S., Geological and Environmental Science, class of 2018, Appalachian State University

■ OUTREACH AND VOLUNTEERING

Field Trip Leader for "Weather and Climate" course, Cave of the Mounds WI, Professor: Dr. Michael Notaro (Atmospheric and Ocean Science, University of Wisconsin-Madison) **July 2022**

**This course was for the "Summer Collegiate Experience" program, which consist of first-generation students*

AMQUA Field Trip Leader, AMQUA 2022 Annual Meeting, Madison, WI **June 2022**

Leader of Cave of the Mounds staff "Boot Camp," Cave of the Mounds, Blue Mounds, WI **Summers of 2017-2022**

Description: Worked closely with 20-30 Cave of the Mounds staff to share with them the findings of my research and how they can incorporate these scientific findings to the public during daily cave tours

Geology Museum Open House Volunteer, University of Wisconsin-Madison, *800 people in attendance* **Spring 2019**

Science Night Volunteer, Falk Elementary School, Madison, WI, *300 people in attendance* **Spring 2019**

Visiting lecturer for an A.P. Chemistry class, D.C. Everest High School, Schofield, WI. *Teacher: William Heeran* **Fall 2018**

Field Trip Leader for Geomorphology class, Cave of the Mounds, WI *30 students in attendance* **Spring 2017**

■ PROFESSIONAL MEMBERSHIPS

Association for Women Geoscientists **2018–present**

American Geophysical Union **2017–present**

Geological Society of America **2016–present**