

M. GRACE ANDREWS

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EDUCATION

- Ph.D., Earth and Planetary Sciences**, Northwestern University 2017
Advisor: Andrew D. Jacobson
- M.S., Earth and Planetary Sciences**, Northwestern University 2014
Advisor: Andrew D. Jacobson
- B.A. with distinction and honors, Earth Sciences**, Boston University 2010
Advisor: Ethan F. Baxter

PROFESSIONAL APPOINTMENTS

- Post-doctoral Research Fellow** 2017 –
Ocean and Earth Science, University of Southampton at the National Oceanography Centre,
Southampton
Leverhulme Centre for Climate Change Mitigation (LC3M)
P.I.'s: Rachael James & Christopher Pearce

RESEARCH

- Post-doctoral Research**, University of Southampton 2017 –
Implementing and evaluating the first large-scale field tests of enhanced rock weathering as a
climate change mitigation strategy in northern hemisphere and equatorial agricultural sites
- Graduate Research**, Northwestern University 2012 – 2017
“Carbon cycling of glacial catchments on modern and geologic timescales: Investigation with
strontium and carbon isotope geochemistry”
- Post-undergraduate Research**, Northwestern University 2010 – 2012
“Quantification of fossil fuel derived CO₂ in Chicagoland water using stable carbon isotopes”
- Undergraduate Senior Thesis**, Boston University 2009 – 2010
“Oxygen and strontium isotope zonation in a shear zone garnet: evidence for open system
exchange”
- Undergraduate Directed Studies**, Boston University 2007 – 2009
“Development of a TIMS Total Evaporation method for measurement of stable strontium isotope
fractionation”

TEACHING

- Module Contributor**, University of Southampton 2017
Contemporary Topics (SOES6001); “Controls on long-term climate”; staff members ask directed
questions about topics presently under debate, provide key readings, and grade subsequent
presentations and reports.
- Teaching Certificate Program**, Northwestern University 2015 – 2016
A program that prepares participants for university-level teaching through seminars and
workshops. Participants also receive mentoring and discipline-specific direction as they build and
implement a university-level course.
- Teaching Assistant**, Northwestern University 2013 – 2016
Earth Systems Revealed (Earth 201); A combination lecture, lab, and fieldwork course. Primary
duties included weekly lab instruction and field instruction.
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GRANTS AND FELLOWSHIPS

Geologists' Association Research Award , Geologists' Association	2017
Goldschmidt Travel Grant , NSF	2016
Takken Student Research Presentation Travel Award , Association for Women Geoscientists	2016
Goldschmidt Travel Grant , NSF	2010
UROP Conference Participation Award , Boston University	2010

AWARDS

Horace A. Scott Graduate Award for Outstanding Research , Earth and Planetary Sciences, Northwestern University	2016
Marion Sloss Award for Outstanding Graduate Teaching Assistant , Earth and Planetary Sciences, Northwestern University	2016
Departmental Prize for Excellence in Earth Science , Earth Science, Boston University	2010

COLLABORATIONS

Kangerlussuaq International Research Network (KAIRN) Organizers: Jasmine Saros (University of Maine) and John Anderson (Loughborough University)	2016
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INVITED TALKS

University of Sheffield , LC3M Annual Meeting	2017
University of Illinois, Urbana – Champaign , Dept. of Plant Biology	2016

PUBLICATIONS

Andrews, M.G. and Jacobson, A.D. (2017) The radiogenic and stable Sr isotope geochemistry of basalt weathering in Iceland: Role of hydrothermal calcite and implications for long-term climate regulation *Geochimica et Cosmochimica Acta* 215, 247 – 262.

Andrews, M.G., Jacobson, A.D., Lehn, G.O., Horton, T.W., and Craw, D. (2016) Radiogenic and stable Sr isotope ratios ($^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{88/86}\text{Sr}$) as tracers of riverine cation sources and biogeochemical cycling in the Milford Sound region of Fiordland, New Zealand. *Geochimica et Cosmochimica Acta* 173, 284 – 303.

Jacobson, A.D., **Andrews, M.G.**, Lehn, G.O., and Holmden, C. (2015) Silicate versus carbonate weathering in Iceland: New insights from Ca isotopes. *Earth and Planetary Science Letters* 416, 132 – 142.

ABSTRACTS/CONFERENCES

Andrews, M.G., Jacobson, A.D., Osburn, M.R., and Flynn, T.F. (2017) Microbial CO₂ production at the Greenland Ice Sheet margin. Goldschmidt Conference, Paris, France. *Oral presentation*.

Jacobson, A.D., and **Andrews, M.G.** (2017) The impact of subsurface silicate weathering on the long-term C cycle. Goldschmidt Conference, Paris, France. *Oral presentation*.

Andrews, M.G. and Jacobson, A.D. (2016) Radiogenic and stable Sr isotope ratios as tracers of silicate and carbonate weathering in Iceland. Goldschmidt Conference, Yokohama, Japan. *Oral presentation*.

Andrews, M.G. and Jacobson, A.D. (2015) Seasonal variation and controls on subglacial riverine CO₂ concentrations from a small catchment, west Greenland Ice Sheet. Fall American Geophysical Union, San Francisco, CA.

Andrews, M.G., Jacobson, A.D., and Lehn, G.O. (2014) Stable strontium isotopes ($\delta^{88/86}\text{Sr}$) as a tracer of Sr sources and biogeochemical cycling in two catchments draining Fiordland, New Zealand. Fall American Geophysical Union, San Francisco, CA.

Andrews, M.G., Baxter, E.F., Pollington, A.D., Spicuzza, M. and Valley, J.W. (2010) Oxygen and strontium isotope zonation in a shear zone garnet: evidence for open system exchange. Goldschmidt Conference, Knoxville, TN.

OUTREACH

- Bright Club**, Southampton, UK 2017
Comedian; this stand-up comedy club combines laughs and research to educate and entertain a diverse public audience.
- Pint of Science Festival**, Southampton, UK 2017
Organizer; this three-day festival brings science to the public over a pint of beer. Housed in pubs across the city, university researchers give informal talks about their work.
- STEAM Research and Design Program**, Northwestern University 2016
Graduate Student Mentor; this partnership program between Evanston Township High School and NU brings high school students, interested in pursuing university STEM degrees, to shadow NU graduate students and then design their own research project.
- New York Times** 2015
"Climate research at the end of the world" (Josh Haner, 26 Nov.); a look at climate research in Greenland with a spotlight on my PhD work.
- NASA Television** 2015
"Rising Seas: Science on the Greenland Ice Sheet"; a profile on active scientific fieldwork in Greenland.
- Project EXCITE**, Northwestern University 2014, 2015
Module Presenter: "Evidence for paleoclimates through leaf margin analysis"; EXCITE is a collaborative educational and social outreach project between NU and Evanston, IL School District. EXCITE addresses the achievement gap between minority and non-minority students by providing extracurricular opportunities in mathematics and the sciences.
- Girls Do Hack**, Adler Planetarium, Chicago, IL 2014
Mentor; GDH is designed to encourage female high school students to pursue STEM careers by partnering them with female mentors in STEM fields. Together, students and mentors complete workshops designed to bolster skills needed to succeed in STEM careers.
- Research Magazine**, Boston University 2010
"Rock of Ages"; a profile on my undergraduate research in the Baxter Group TIMS Laboratory at Boston University.