

Robert George Hatfield

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EDUCATION	Ph.D. Physical Geography (University of Lancaster, UK) Advisor: Professor Barbara Maher Thesis Title: <i>"Sediment sourcing using particle size-specific magnetic fingerprinting: Lake Bassenthwaite, NW England."</i>	2004 – 2008
	B.Sc. (Hons.) Geography. (University of Lancaster, UK) Undergraduate Dissertation Title: <i>"Sediment sources to the North Atlantic during the Last Glacial Maximum."</i>	2000 – 2003

EMPLOYMENT & POSITIONS HELD	<i>Research Assistant (Post-Doc)</i> , College of Earth, Ocean, and Atmospheric Science, Oregon State University. USA.	2010 – present
	<i>Assistant Curator; Digital Curation Specialist</i> . OSU – Marine Geology Repository, College of Earth, Ocean, and Atmospheric Science, Oregon State University. USA.	2013 – present
	<i>Post-Doctoral Research Fellow</i> , Department of Earth and Environmental Science, University of Windsor. Canada.	2008 – 2009

RESEARCH INTERESTS	Reconstructions of the history of the south Greenland Icesheet and N. Atlantic paleoclimatology and paleoceanography using the marine sediment record. Collaborators: A. Reyes, J. Stoner, A. Carlson, B. Beard
	Paleomagnetic reconstruction of the earth's geomagnetic field to establish stratigraphy and deep-earth understanding: IODP Expedition 340, IODP Expedition 363, ICDP Drilling Lake Junin, Peru. Collaborators: J. Stoner, M. Abbott, D. Rodbell, A. Fraass, Y. Rosenthal, A. Holborne, C. Ravelo
	Reconstructing the volcanic history of the Lesser Antilles Volcanic Arc: IODP Expedition 340 Collaborators: M. McCanta, A. Fraass, M. Palmer
	Applied rock- and environmental magnetism to understand sediment provenance, environmental processes, and sedimentology from the ocean basin to lake catchment scale. Collaborators: J. Stoner, B. Maher, B. Reilly, B. Housen

GRANT FUNDING & AWARDS	Total Funding Awards as PI or Co-PI: \$912,350	
	\$197,897 – National Science Foundation, OCE Marine Geology and Geophysics Principal Investigator: <i>"Developing paleomagnetic chronologies of, and paleogeomagnetic understanding from, IODP sites U1486 and U1489 in the western Pacific warm pool."</i>	2017 – 2019
	\$14,998 – Post Expedition Award, United States Science Support Program Principal Investigator: <i>"Rock magnetic characterization of sediments recovered during IODP Expedition 363 and paleomagnetic characterization of the Gauss/Matuyama Boundary at IODP Site U1486."</i>	2017 – 2018

\$359,424 – National Science Foundation, OCE-Marine Geology and Geophysics Co-Principal Investigator: <i>“Developing new magnetic tracers of ice sheet instability and ocean circulation in the northern North Atlantic”</i>	2016 – 2018
\$98,304 – National Science Foundation, EAR-Petrology and Geochemistry Principal Investigator: <i>“Collaborative Research: Expanding the Tephrochronologic Record of the Northern Lesser Antilles Arc: Rapid Identification of Cryptotephra Using Multiple Methods.”</i>	2014 – 2018
\$189,727 – National Science Foundation, OCE-Marine Geology and Geophysics Principal Investigator: <i>“Paleomagnetic Assisted Chronology of IODP Sites U1395 and U1396.”</i>	2013 – 2016
\$15,000 – Post Expedition Award, United States Science Support Program Principal Investigator: <i>“Creation of a composite spliced record for IODP Site U1395 and U1396 and initial paleomagnetic and environmental magnetic measurements.”</i>	2012 – 2013
\$37,000 (CAD\$) – Commonwealth Post-Doctoral Fellowship. Govt. of Canada Nationally competitive Post-Doctoral Fellowship: <i>“Sediment tracing in a coastal foreland”</i>	2008 – 2009
Jack Dymond Excellence in Mentoring Award. Annual award open to all CEOAS faculty for a faculty member that goes above and beyond in mentoring graduate and/or undergraduate students other than their own advisees.	2017
Best Oral Presentation – Soils System Science, European Geophysical Union	2008

TEACHING

Guest Lecturer: GPH 642 Earth Magnetism (Environmental Magnetism) and OC 562 Sedimentary Processes in the Ocean Basins – Designed and taught course modules	2013 – present
Tutor: Geographical Skills – Designed and taught scientific theory and skills in a small class environment (6-8 students)	2004 – 2008
Academic Co-Advisor: Benjamin Freiberg (MS – expected 2019)	2017 – present
Academic Mentor: Benjamin Wheeler (OSU UG now MS Student at Uni. N. Arizona), Eric Gallaway (UG then MS student at University of Windsor), Elizabeth Patterson (OSU REU Student), David Konyndyk (OSU IDES [Increasing Diversity in Earth Science] Student)	2009 – present

PUBLICATIONS [number of citations as of Sept 1 2017. Source - Google]

h-index: 12
i10-index: 14

Hatfield, R.G., Stoner, J.S., Reilly, B.Y., Tepley III, F.J., Wheeler, B.H., & Housen, B. (2017) Grain size dependent magnetic discrimination of Iceland and south Greenland terrestrial sediments in the northern North Atlantic sediment record. *Earth and Planetary Science Letters*, 474, 474-489

Fraass, A.J., Wall-Palmer, D., Leckie, M., **Hatfield, R.G.**, et al., (2017) A revised Plio-Pleistocene age model and paleoceanography of the northeastern Caribbean Sea: IODP Site U1396 off Montserrat, Lesser Antilles. *Stratigraphy*, 13, 183-203.

Carlson, A.E., Kilmer, Z., Ziegler, L.B., Stoner, J.S., Wiles, G.C., Starr, K., Walczak, M.H., Colgan, W., Reyes, A.V., Leydet, D.J., & **Hatfield, R.G.** (2017) Retreat of the Columbia Glacier, Alaska. Millennial context. *Geology*, 45, G38479.1

- Hatfield, R.G.,** Reyes, A.V., Stoner, J.S., Carlson, A.E., Beard, B.L., Winsor, K., & Welke, B. (2016) Interglacial responses of the south Greenland ice sheet over the last 430,000 years determined using particle-size specific magnetic and isotopic tracers. *Earth and Planetary Science Letters*, 454, 225-236. [4]
- Coussens, M. et al., (2016) The relationship between eruptive activity, flank collapse, and sea level at volcanic islands: A long-term (>1 Ma) record offshore Montserrat, Lesser Antilles, *Geochemistry, Geophysics, Geosystems*. 17 [4]
- Coussens, M. et al., (2016) Synthesis: Stratigraphy and age control for IODP Sites U1394, U1395, and U1396 offshore Montserrat in the Lesser Antilles. In Le Friant, A., Ishizuka, O., Stroncik, N.A., and the Expedition 340 Scientists, Proc. IODP, 303/306: College Station, TX (Integrated Ocean Drilling Program Management International, Inc.) [2]
- McCanta, M., **Hatfield, R.G.**, Thomson, B., Hook, S., & Fisher, E (2015) Identifying Cryptotephra Units Using Correlated Rapid, Non-Destructive Methods: VSWIR Spectroscopy, X-Ray Fluorescence, and Magnetic Susceptibility. *Geochemistry, Geophysics, Geosystems*. 16, 4029-4056 [2]
- Hornbach, M. et al. (2015) High pore pressure in Lesser Antilles submarine slide deposits inferred from seismic velocities and rock physics models. *Journal of Geophysical Research: Solid Earth*, 120, 7986-8011 [2]
- Hatfield, R.G.** (2015) Data Report: Stratigraphic correlation of Site U1396 and creation of a composite depth scale and splice. In Le Friant, A., Ishizuka, O., Stroncik, N.A., and the Expedition 340 Scientists, Proc. IODP, 303/306: College Station, TX (Integrated Ocean Drilling Program Management International, Inc.) [3]
- Le Friant, A., et al., (2015) Submarine record of volcanic island construction and collapse in the Lesser Antilles arc: First scientific drilling of submarine volcanic island landslides by IODP Expedition 340. *Geochemistry, Geophysics, Geosystems*. 16, 420-442 [20]
- Hatfield, R.G.** (2014) Using particle size-specific measurements to understand bulk magnetic properties. *Minerals*, 4, 758-787. [12]
- Reyes, A.V., A.E. Carlson, B. Beard, **R.G. Hatfield**, J.S. Stoner, K. Winsor, B. Welke, & D.J. Ullman (2014) South Greenland ice-sheet collapse during Marine Isotope Stage 11, *Nature*, 510, 525-528. [37]
- Wall-Palmer *et al.* (2014). Late Pleistocene stratigraphy of IODP Site U1396 and compiled chronology offshore of south and south west Montserrat, Lesser Antilles. *Geochemistry, Geophysics, Geosystems*, 15, 3000-3020. [10]
- Hatfield, R.G.**, Stoner, J.S., Carlson A.E., Reyes, A.V., & Housen, B (2013) Source as a controlling factor on the quality and interpretation of sediment magnetic records from the northern North Atlantic. *Earth and Planetary Science Letters*, 368, 69-77. [11]
- Hatfield, R.G.** & Stoner J.S. (2013) Magnetic Properties and Susceptibility, In Elias, S.A. (ed.) *Encyclopedia of Quaternary Science*, Elsevier. [2]
- Gallaway, E., Trenhaile, A.S., Cioppa, M.T. & **Hatfield, R.G.** (2012) Magnetic mineral transport and sorting in the swash-zone: northern Lake Erie, Canada, *Sedimentology*, 59, 1718-1734. [19]
- Manga, M., et al., "Heat flow in the Lesser Antilles island arc and adjacent back arc Grenada basin," *Geochemistry, Geophysics, Geosystems*, Vol. 13, Q08007, 19 [17]
- Winsor, K., Carlson, A.E., Klinkhammer, G.P., Stoner, J.S. & **Hatfield R.G.** (2012) Evolution of the northeast Labrador Sea during the last interglaciation, *Geochemistry, Geophysics, Geosystems*, 13, Q11006 [24]
- Colville, E.J., Carlson, A.E., Beard, B.L., **Hatfield, R.G.**, Stoner, J.S., Reyes, A.V. & Ullman, D.J. (2011) Sr-Nd-Pb Isotope Evidence for Ice-Sheet Presence on Southern Greenland During the Last Interglacial, *Science*, 333, 620-623 [73]
- Hatfield, R.G.**, Cioppa, M.T. & Trenhaile, A.S. (2010) Sediment sorting and beach erosion along a coastal foreland: Magnetic measurements in Point Pelee National Park, Ontario, Canada, *Sedimentary Geology*, 231, 63-73 [27]

- Hatfield, R.G.** & Maher, B.A. (2009) Fingerprinting upland sediment sources: particle size-specific magnetic linkages between soils, lake sediments and suspended sediments, *Earth Surface Processes and Landforms*, 34 (10), 1359-1373 [65]
- Hatfield, R.G.** & Maher, B.A. (2009) Holocene sediment dynamics in an upland temperate lake catchment: climatic and land-use impacts in the English Lake District, *The Holocene*, 19 (3), 427-438 [15]
- Hatfield, R.G.**, Maher, B.A., Pates, J.M. & Barker, P.A. (2008) Sediment dynamics in an upland catchment: changing sediment sources, rates and deposition, *Journal of Paleolimnology*, 40 (4), 1143-1158 [24]
- Hatfield, R.G.** & Maher, B.A. (2008) Suspended sediment characterisation and tracing using a magnetic fingerprinting technique: Bassenthwaite Lake, Cumbria, UK. *The Holocene*, 18 (1), 105-115 [35]

**PRESENTATIONS
& CONFERENCE
ABSTRACTS**

- Rodbell, D., Abbott, M., Chen, C., McGee, D., **Hatfield, R.G.**, Stoner, J.S., Tapia, P., Valero Garces, B., Weidhaas, N., Woods, A., Hillman, A., Larsen, D., Valencia, B., & Bush, M. An ~500,000 yr record of tropical glaciation recovered during the Lake Junin (Peru) Drilling Project. Presentation to the EGU, Vienna, 27th April, 2017.
- Weidhaas, N., Woods, A., Rodbell, D., Larsen, D., Abbott, M., & **Hatfield, R.G.** The Timing and Magnitude of Late Pleistocene and Holocene Lake Level Change from a Paired Carbonate $\delta^{18}\text{O}$ - Stratigraphy Record Of A Core Transect In Lake Junin, Peru. Presentation to GSA Joint Annual Section Meeting, Pittsburgh, 21st March 2017.
- Hatfield, R.G.**, Stoner, J.S., Reyes, A.V., Carlson, A.E., Beard, B.L., Winsor, K., Reilly, B.T., Welke, B., Housen, B.A., & Wheeler, B.H. Linking Particle Size Specific Measurements of Terrestrial and Marine Sediments to Understand the Deglacial Behavior of the Southern Greenland Icesheet since MIS12. Presentation to AGU Fall Meeting, San Francisco, 12th December 2016.
- Morris, J., Stoner, J.S., Reilly, B.T., **Hatfield, R.G.**, Konyndyk, D., Abbott, M., Finkenbinder, M.S., Hillman, A.L. Lake Sediment Particle Size Analysis for Holocene Paleoenvironmental Study of Steens Mountain, Eastern Oregon. Presentation to AGU Fall Meeting, San Francisco, 12th December 2016.
- McCanta, M.C. & **Hatfield, R.G.** Identifying Eruption Dynamics in the Northern Lesser Antilles Using Cryptotephra. Presentation to AGU Fall Meeting, San Francisco, 12th December 2016.
- Palmer, M.R., Fraass, A.J., **Hatfield, R.G.**, & McCanta, M.C. The pace of arc volcanism. Presentation to AGU Fall Meeting, San Francisco, 12th December 2016.
- Rodbell, D., Abbott, M., Weidhaas, N., **Hatfield, R.G.**, Woods, A., Hillman, A.L., Tapia, P.M., Chen, C.Y., McGee, D., & Stoner, J.S. Initial Results from the Deep Drilling of Lake Junin, Perú. Presentation to AGU Fall Meeting, San Francisco, 13th December 2016.
- Walczak, M.H., Carlson, A.E., Stoner, J.S., **Hatfield, R.G.**, Mathias, A., & Wolhowe, M.D. Late Pliocene Glaciation of Southern Greenland and Ice/Ocean Interactions. Presentation to AGU Fall Meeting, San Francisco, 15th December 2016.
- Weidhaas, N., Larsen, D., Rodbell, D., Woods, A., **Hatfield, R.G.**, & Abbott, M. Controls on the composition and distribution of late Pleistocene and Holocene sediment in Lake Junín, Peru: A transect core study. Presentation to AGU Fall Meeting, San Francisco, 13th December 2016.
- Blake-Mizen, K., Bailey, I., Carlson, A.E., Stoner, J.S., **Hatfield, R.G.**, Xuan, C., & Lawrence, K. Reconstructing southern Greenland Ice Sheet history during the intensification of Northern Hemisphere glaciation: Insights from IODP Site U1307. Presentation to the EGU, Vienna, 22nd April, 2016.
- Farrington, E., Rodbell, D., Abbott, M., Tapia, P., Stoner, J., **Hatfield, R.G.**, Weidhaas, N., Woods, A., Hillman, A., Chen, C., Larsen, D., & Delgado, G. Initial Results from Deep Drilling Lake Junin, Peru. Presentation to GSA Northeastern Section Meeting, Albany, 23rd March 2016.

- Weidhaas, N., Woods, A., Abbott, M., Rodbell, D., Larsen, D., Hillman, A., Finkenbinder, M.S., **Hatfield, R.G.**, Delgado, G., & Tapia, P. Controls on the Composition and Distribution of Holocene Sediment in Lake Junín, Peru. Presentation to GSA Northeastern Section Meeting, Albany, 23rd March 2016.
- Weidhaas, N., Woods, A., **Hatfield, R.G.**, Abbott, M., Rodbell, D., Larsen, D., Brady, K., Delgado, G., & Hillman, A. Controls on the Composition and Distribution of Holocene Sediment in Lake Junín, Peru. Presentation to AGU Fall Meeting, San Francisco, 14th December 2015.
- Hatfield, R.G.**, Stoner, J.S., & Tepley III, F. Discrimination of Terrestrial Source Materials to the Northern North Atlantic Using Particle Size Specific Magnetic Measurements and Electron Microscopy. Presentation to AGU Fall Meeting, San Francisco, 18th December 2015.
- Walczak, M., Carlson, A.E., Stoner, J.S., **Hatfield, R.G.**, Wolhowe, M., & Mathias, A. Late Pliocene deglaciation of Southern Greenland. Presentation to AGU Fall Meeting, San Francisco, 17th December 2015.
- Stoner, J.S., Abbott, M., Ziegler, L., Reilly, B., Finkenbinder, M., **Hatfield, R.G.**, Hillman, A., & Konyndyk, D. The Holocene History of the North American Flux lobe: New Constraints From Fish Lake, Harney County, Oregon. Presentation to AGU Fall Meeting, San Francisco, 17th December 2015.
- Hatfield, R.G.** and Stoner, J.S. Paleo- and Environmental Magnetic Record of U1396: a 4.5Myr record from the Caribbean Sea. Presentation to AGU Fall Meeting, San Francisco, 16th December 2014.
- Carlson, A.E., Mathias, A., **Hatfield, R.G.**, Winsor, K., and Stoner, J.S. "South Greenland ice-sheet response to the Mid-Pliocene Climatic Optimum. Presentation to AGU Fall Meeting, San Francisco, 17th December 2014.
- Reilly, B., Stoner, J.S., **Hatfield, R.G.**, Ziegler, L.B., Abbott, M.B., Larsen, D.J., Hillman, A.L., and Finkenbinder, M.S. A 33kyr paleomagnetic secular variation record from Fish Lake, Utah. Presentation to AGU Fall Meeting, San Francisco, 19th December 2014.
- Stinton, A.J., **Hatfield, R.G.**, and McCanta, M. Effect of aseismic ridge subduction on volcanism in the NE Lesser Antilles Arc. Presentation to AGU Fall Meeting, San Francisco, 17th December 2014.
- Ziegler, L.B., Stoner, J.S., Abbott, M.B., Finkenbinder, M.S., **Hatfield, R.G.**, Konyndyk, D., Reilly, B., and Hillman, A.L. A Holocene paleomagnetic record from Fish Lake, Oregon. Presentation to AGU Fall Meeting, San Francisco, 19th December 2014.
- Hatfield, R.G.**, Stoner, J.S., and Jennings, A.E. "Paleo- and environmental magnetic record of Holocene marine sediments from West Greenland" Presentation at the MagIC Workshop, Scripps Institution of Oceanography, La Jolla, 12th May, 2014.
- Stoner, J.S., Ziegler, L., Abbott, M., Finkenbinder, M., **Hatfield, R.G.**, & Strano, S. Does the Mantle Impose a Structure on the Geodynamo That Dictates Paleo-Geomagnetic Behavior? New Results from Fish Lake, Oregon. Presentation to the EGU, Vienna, 29th April, 2014.
- Hatfield, R.G.**, Stoner, J.S., and Jennings, A.E. "Paleo- and environmental magnetic record of Holocene marine sediments from West Greenland" Presentation to AGU Fall Meeting, San Francisco, 12th December 2013.
- Gorby, D.B., Winsor, K., Carlson, A.E., Mathias, A., McKay, J.L., and **Hatfield, R.G.** Investigating Labrador Sea warmth during the mid-Pliocene optimum with Eirik Drift sediments. Presentation to AGU Fall Meeting, San Francisco, 12th December 2013.
- Hatfield, R.G.**, Stoner, J.S., Carlson A.E., Reyes, A.V., and Housen, B. "*Source as a controlling factor on the quality and interpretation of sediment magnetic records from the northern North Atlantic*". Invited Presentation to the American Geophysical Union, San Francisco, 5th December 2012.
- Hatfield, R.G.**, Stoner, J.S., Carlson A.E., and Reyes, A.V. "*Fingerprints of Greenlandic and Icelandic Sediment Sources to the Eirik Drift through Five Glacial Terminations and Interglacials*" Abstract PP23B-2056. Presentation to AGU Fall Meeting, San Francisco, 4th December 2012.
- Reyes, A.V., Carlson, A.E., Beard, B.L., Winsor, K., Ullman, D.J., **Hatfield, R.G.**, Stoner, J.S., and Welke, B. "*Sr-Nd-Pb Isotope Composition of Eirik Drift Silt as a Proxy for South Greenland Ice Sheet Retreat during the Last Five Interglaciations*" Abstract PP11E-06. Presentation to AGU Fall Meeting, San Francisco, 3rd December 2012.

- Dominguez, D.B., Stoner, J.S., Jin, Y., Xuan, C., **Hatfield, R.G.**, Dorfman, J.M., Mix, A.C., Goni, M.A., and Wheatcroft, R.A. "*Observing diagenesis on the Oregon Margin through a Paleomagnetic lens.*" Abstract GP41A-1112. Presentation to AGU Fall Meeting, San Francisco, 6th December 2012.
- Reyes, A.V., Carlson, A.E., Beard, B.L., **Hatfield, R.G.**, and Stoner, J.S. "*Sr-Nd-Pb isotope evidence for substantial retreat of the southern Greenland Icesheet during marine isotope stage 11.*" Abstract PP33A-1910. Presentation to AGU Fall Meeting, San Francisco, 7th December 2011.
- Hatfield, R. G.**, Stoner, J. S., Carlson, A. E., and Reyes, A.V. "*Fingerprints of Greenlandic and Icelandic Sediment Sources to the North Atlantic through Five Glacial Terminations and Interglacials*" Abstract PP33A-1911. Presentation to AGU Fall Meeting, San Francisco, 7th December 2011.
- Hatfield, R. G.**, Stoner, J. S., Carlson, A. E., and Reyes, A.V. "*Magnetic fingerprints of Greenlandic sediments*" Abstract ID 2570. Presentation to INQUA XVIII Congress, Bern, 21st July 2011.
- Hatfield, R. G.**, Stoner, J. S., Carlson, A. E., and Reyes, A.V. "*Development of particle sized magnetic fingerprints to trace the retreat of the Greenland ice sheet.*" Presentation to The Arctic Workshop, UQAM, Montreal, 4th March 2011.
- Hatfield, R. G.**, Stoner, J. S., Carlson, A. E., and Strano, S.E. "*Magnetic fingerprints of Greenlandic sediments*" Abstract PP11D-1455. Presentation to AGU Fall Meeting, San Francisco, 13th December 2010.
- Hatfield, R.G.**, and Maher, B.A. "*Sediment sourcing and environmental reconstruction using particle size-specific magnetic fingerprinting: Bassenthwaite Lake, UK.*" Presentation to PAGES YSM, Oregon State University, 7th July 2009.
- Hatfield, R.G.**, and Cioppa, M.T. "*Particle size specific magnetic fingerprinting of beach sands: Point Pelee National Park, Ontario, Canada.*" Abstract GP32A-05 Presentation to the AGU Joint Assembly, Toronto, 27th May 2009.
- Hatfield, R.G.**, and Maher, B.A. "*Sediment dynamics in an upland temperate catchment: magnetic identification of changing sediment sources and rates.*" Abstract ID 1607-7962. Presentation to the EGU, Vienna, 16th April 2008.
- Hatfield, R.G.**, and Maher, B.A. "*Suspended sediment tracing using a magnetic fingerprinting technique*" Presentation to SET for Britain, 13th March 2005, House of Commons, Palace of Westminster, London