

Joshua Moser Feinberg

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Curriculum vitae

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Educational History

University of California, Berkeley, Department of Earth and Planetary Science
Ph.D. Completed October 2005.
Carleton College, Northfield, Minnesota
Bachelor of Arts, Geology, Graduated June 1997.

Work Experience

Assistant Professor, December 2007-present

Department of Geology and Geophysics, University of Minnesota

Guest Professor, 2010-2011

Department of Earth and Environmental Sciences, Kumamoto University, Japan

Natural Environment Research Council (NERC) Postdoctoral Fellow, 2005-2007

Department of Earth Sciences, University of Cambridge, United Kingdom

Ph.D. Candidate at the University of California, Berkeley, 2001-2005

Thesis: The Mineralogic Origins of Magnetic Remanence in Silicate-Hosted Magnetite Inclusions.

California Coastal Conservancy, 2000-2001

Co-edited [Restoring the Estuary](#), a cooperative agreement between 26 non-governmental organizations, businesses, state and federal agencies to address and improve the ecological health of San Francisco Bay.

Montgomery Watson Americas, 1998-2000

Associate Hydrogeologist and Drilling Geologist, Designed and installed groundwater remediation wells and extraction systems, created three dimensional digital stratigraphy models to image contaminant transport through aquifers.

U.S. Geological Survey-National Association of Geoscience Teachers Intern, 1997-1998

Monitored crustal deformation in Long Valley Caldera, CA operating and maintaining 2-color laser network, GPS, tiltmeter, seismometers, & magnetometers.

Professional Affiliations

American Geophysical Union
Mineralogical Society of America
Sigma Xi

Geological Society of America
Mineralogical Society of Great Britain and Ireland

Editorial Service

- Associate Editor for *Geochemistry, Geophysics, Geosystems*, 2008-present
- Associate Editor for *American Mineralogist*, 2005-present
- Guest Editor, *Elements, An International Magazine of Mineralogy, Geochemistry, and Petrology*, special issue dedicated to Mineral Magnetism, 2008-2009.

Outreach (Last 5 years)

- Member of Project MICRO, a volunteer organization that aims to increase the role of microscopy in K-12 education.
- Co-convenor (along with Julie Bowles and Robert Sternberg) of "Magnetism of Glassy Materials" session at the Fall Meeting of the American Geophysical Union. Dec. 2010.
- Co-convenor (along with Richard Harrison and Emo Martin) of "[Mineral magnetism: applications to the geosciences](#)" at the International Mineralogical Association Meeting in Budapest, Hungary. August 21-27, 2010.
- Co-organizer (along with the IRM staff) of The Eighth Santa Fe Conference on Rock Magnetism, New Mexico, June 24-27, 2010.
- Co-convenor (along with Richard Harrison) of "Mineral Magnetism: Providing New Insights into Geoscience Processes" at the Goldschmidt 2010 meeting in Knoxville, Tennessee, June 13-18, 2010
- Co-convenor (along with Ellery Frahm) of "Obsidian from Magma to Artifact: Geological and Archaeological Perspectives" at the Geological Society of America 2009 Annual Meeting in Portland, Oregon. October 18-21, 2009.

- Co-convenor (along with Claire Carvallo, Fukama Koji, and Adrian Muxworthy) of “Rock Magnetism: Theory, Experiments and Observations” at the IAGA 2009 meeting in Sopron, Hungary.
- Co-convenor of two sessions, “Fine Particle Rock Magnetism” and “Magnetic Properties and Behavior of Single Crystals and Their Inclusions” at the American Geophysical Union Fall Meeting in San Francisco. December 15-19, 2008.
- Convenor of session “From Quaternary Geology and Physical Volcanology to Geoaerchology and Paleoanthropology: A Memorial to Harold E. Malde” at the Geological Society of America Annual Meeting in Houston, Texas, Oct. 5-9, 2008.
- Co-organizer of “2008 International Conference on Rock Magnetism and its Earth Science Applications”, Cargese, France, June 2-8, 2008. Convenor of two sessions, “Mineral Magnetism” and “Biomagnetism and Nanomagnetism”.
- Treasurer of the Mineral Physics Group of the Mineralogical Society of Great Britain and Ireland, 2007-present.
- Co-convenor (along with Richard Harrison) of session “Mineral Magnetism: From the Nanometre to the Planetary Scale” at the Frontiers in Mineral Sciences 2007 conference at the University of Cambridge. June 26-28, 2007.
- Co-convenor (along with Ted Evans) of session GP02 “Magnetic Microstructures and Interactions: Implications for Paleomagnetism” at the AGU Joint Assembly in Acapulco, Mexico. May 21-25, 2007.
- Organizer of the Magnetic Interactions 2007 conference at the University of Cambridge, January 9-10, 2007
- Co-convenor (along with Andrew Newell) of the session “Techniques of Measuring and Modeling” at the Institute for Rock Magnetism Santa Fe Conference, June 23, 2006.

Fellowships, Scholarships, and Awards

- Editors’ Citation for Excellence in Refereeing for *Geochemistry, Geophysics, Geosystems*, 2008
- Natural Environment Research Council (NERC) Postdoctoral Fellowship, 2005
- George D. Louderback Award 2005
- Institute for Rock Magnetism, Visiting Fellowship, 2002, 2005
- Schlanger Ocean Drilling Fellowship, 2002-2003.
- Berkeley Geochronology Center Scholarship, 2002
- University of California, Berkeley Graduate Student Teaching Award, 2001

Locations of Invited Talks

University of Minnesota, Department of Astronomy, 2011
 University of Minnesota Libraries, 2010
 Kumamoto University, Department of Earth and Environmental Sciences, Japan, 2010.
 Beijing Earth and Planetary Interiors Symposium, China, 2010
 University of Wisconsin, Madison, Department of Geology and Geophysics, 2010
 Carleton College, Department of Geology 2009
 Minnesota Geological Survey, 2009.
 Princeton University, Department of Geosciences, 2009
 Minnesota Speleological Society, 2009.
 Mankato State University, Department of Physics, 2009
 Michigan State University, Department of Geological Sciences, 2008
 Carleton College, Department of Geology, 2008
 University of Minnesota, Duluth, Department of Geological Sciences, 2007
 Carleton College, Department of Geology, 2007
 International Union of Geodesy and Geophysics (IUGG) Conference, Perugia, 2007
 University of Cambridge, Department of Archaeology, 2006
 University of Cambridge, Department of Earth Sciences, 2006
 University of Minnesota, Geology & Geophysics Department 2006
 University of Oxford, Department of Earth Sciences, 2006
 University of California, Berkeley Physics Department, 2005
 University of California, Berkeley Earth & Planetary Science Department, 2005
 Institute for Rock Magnetism, Santa Fe National Conference, 2004
 AGU Fall Conference, San Francisco, 2004
 AGU Fall Conference, San Francisco, 2003
 First Order Reversal Curve Conference, University of California, Davis, 2004
 Sonoma State University, 2003

Refereed and Invited Papers

Church, N., Feinberg, J.M., and Harrison, R.J., 2011. Low-temperature domain wall pinning in titanomagnetite, *submitted*.

Lappe, S.-C., Fanta, A., Bromily, G., Russel, S., Dunin-Borkowski, R., Feinberg, J.M., Harrison, R.J., 2011. Mineral Magnetism of dusty olivine, *submitted*.

- Swanson-Hysell, N.L., Feinberg, J.M., Berquo, T.S., and Maloof, A.C., 2011. Self-reversed magnetization held by martite in basalt flows from the 1.1-billion-year-old Keweenaw rift, Canada, *Earth and Planetary Science Letters*, *accepted*.
- Kasama, T., Church, N., Feinberg, J.M., Dunin-Borkowski, R.E., and Harrison, R.J., 2010. The complexity of ferrimagnetic/ferroelastic domain interactions in magnetite below the Verwey transition, *Earth and Planetary Science Letters*, doi:10.1016/j.epsl.2010.05.004.
- McNeil, R.P.G., Schneble, R.J., Kataoka, M., Ford, C.J.B., Kasama, T., Dunin-Borkowski, R.E., Feinberg, J.M., Harrison, R.J., Barnes, C.H.W., Tse, D.H.Y., Trypaniotis, T., Bland, J.A., Anderson, D., Jones, G.A.C., and Pepper, M., 2010. Localised magnetic fields in arbitrary directions using patterned nanomagnets, *Nano Letters*, *NanoLetters*, 23, doi: 10.1021/nl902949v.
- Shaar, R., Ron, H., Tauxe, L., Kessel, R., Agnon, A., Ben-Yosef, E., Feinberg, J.M., 2010. Testing the accuracy of absolute intensity estimates of the ancient geomagnetic field using copper slag material. *Earth and Planetary Science Letters*, 290, 201-213. doi:10.1016/j.epsl.2009.12.022.
- Brownlee, S.J., Feinberg, J.M., Harrison, R.J., Kasama, T., Scott, G.R., and Renne, P.R., 2010. Effects of Temperature on Ilmenite-Hematite: Microstructure and Magnetic Properties in the Ecstall Pluton, British Columbia, 95, 153-160.
- Brown, M.C., Singer, B.S., Knudsen, M.F., Jicha, B.R., Finnes, E., and Feinberg, J.M., 2009. No evidence for Brunhes age excursions, Santo Antão, Cape Verde, 287, 100-115, doi:10.1016/j.epsl.2009.07.039.
- Galindo-Gonzalez, C., Feinberg, J.M., Kasama, T., Gontard, L.C., Posfai, M., Kosa, I., Duran, J.D.G., Gil, J.E., Harrison, R.J., and Dunin-Borkowski, R.E., 2009. Magnetic and microscopic characterization of magnetite nanoparticles adhered to clay surfaces, *American Mineralogist*, 94, 1120-1129.
- Feinberg, J.M., Renne, P.R., Arroyo-Cabrales, J., Waters, M.R., Ochoa-Castillo, P., and Perez-Campa, M., 2009. Age Constraints on Alleged 'Footprints' Preserved in the Xalnene Tuff near Puebla, Mexico, *Geology*, 37 (3), 267-270.
- Harrison, R.J., and Feinberg, J.M., 2008. FORCinel: An improved algorithm for calculating first-order reversal curve (FORC) distributions using locally-weighted regression smoothing: *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2008GC001987.
- Junginger, F., Kläui, M., Backes, D., Krzyk, S., Rüdiger, U., Kasama, T., Dunin-Borkowski, R.E., Feinberg, J.M., Harrison, R.J., Heyderman, L.J., 2008. Quantitative determination of vortex core dimensions in head-to-head domain walls using off-axis electron holography, *Applied Physics Letters*, 92, 112502, doi: 10.1063/1.2829601.
- Feinberg, J.M., Harrison, R.J., Kasama, T., Simpson, E.T., and Dunin-Borkowski, R.E., 2007, *Electron Holography and Rock Magnetism: IRM Quarterly*, 16 (4) p. 5.
- Harrison, R.J., Dunin-Borkowski, R.E., Kasama, T., Simpson, E.T., and Feinberg, J.M., 2007, *Magnetic properties of rocks and minerals*, In G. Schubert, Ed., *Treatise on Geophysics*, Elsevier. ISBN 0444519289.
- Feinberg, J.M., Harrison, R.J., Dunin-Borkowski, R.E., Kasama, T., Scott, G.R., and Renne, P.R., 2006, The influence of nanoscale microstructure on the remanence properties of clinopyroxene-hosted titanomagnetite inclusions: an electron holography study: *Journal of Geophysical Research - Solid Earth*, 111, B12S15, doi:10.1029/2006JB004498.
- Feinberg, J.M., Wenk, H.-R., Scott, G.R., and Renne, P.R., 2006, Preferred orientation and anisotropy of seismic and magnetic properties in gabbro-norites from the Bushveld layered intrusion: *Tectonophysics*, 420, 345-356.
- Renne, P.R., Feinberg, J.M., Waters, M.R., Arroyo-Cabrales, J., Ochoa-Castillo, P., Perez-Campa, M., and Knight, K.B., 2005, Age of the Xalnene ash, Central Mexico, and archeological implications: *Nature*, 438, doi:10.1038/nature04425
- Feinberg, J.M., Scott, G.R., Renne, P.R., and Wenk, H.-R., 2005, Exsolved Magnetite Inclusions in Silicates: Features Determining Their Remanence Behavior: *Geology*, 33 (6), p. 513-516.
- Twitchett, R.J., Feinberg, J.M., O'Connor, D.D., Alvarez, W., and McCollum, L., 2005, Early Triassic Ophiuroids: their Paleogeology, Taphonomy and Distribution: *Palaios*, 20, p. 213-223.
- Feinberg, J.M., Wenk, H.-R., Renne, P.R., Scott, G.R., 2004. Epitaxial relationships of silicate-hosted magnetite determined using electron backscatter diffraction (EBSD) technique. *American Mineralogist*, 89, p. 462-466.
- Renne, P.R., Scott, G.R., Glen, J.M.G., and Feinberg, J.M. (2002) Oriented inclusions of magnetite in clinopyroxene: Source of stable remanent magnetization in gabbros of the Messum Complex, Namibia. *Geochemistry, Geophysics, Geosystems*, 3(12), 1079, doi: 10.1029/2002GC000319.
- Feinberg, Joshua, 1997. *Geology of the Proterozoic metamorphic rocks along Johnson Gulch, Wet Mountains, Colorado*, Keck Research Symposium in Geology; Proceedings, v. 10, p. 253-256.

Book Chapter

Harrison, R.J., Dunin-Borkowski, R.E., Kasama, T., Simpson, E.T., and Feinberg, J.M., 2007, Magnetic properties of rocks and minerals, In G. Schubert, Ed., Treatise on Geophysics, Elsevier. ISBN 0444519289.

Public Policy Paper

Steere, J., Feinberg, J., and Board Members of the San Francisco Bay Joint Venture, 2000. Restoring the Estuary: An Implementation Strategy for the San Francisco Bay Joint Venture, p. 111.

Grants and Funding Sources

- NSF – EAR – IF: Continuation of a Facility: Institute for Rock Magnetism, (Award Amount \$1,396,115, Feinberg – Co-PI)
- NSF – EAR – Geophysics: Collaborative Research: Morphology and Timing of the Reunion/Huckleberry Ridge Event(s), \$142,662. (Feinberg - PI)
- NSF – OCE – IODP: Collaborative Research: Paleomagnetic and rock magnetic investigation of IODP Expedition 318 Site U1357 sediments, \$10,000. (Feinberg - PI)
- NSF – EAR – Geophysics: Linking Rock Magnetic Properties to the Performance of Paleointensity Techniques, \$253,597. (Feinberg - PI)
- NSF – EAR – IF: Development of a Closed Cycle Cryostat for Full-Vector, Low-Temperature Magnetic Measurements of Geologic Materials, \$73,030. (Feinberg – PI)
- NSF – EAR – Geophysics: Collaborative Proposal: The Effect of Dislocation Properties of Small Titanomagnetite Minerals, \$44,784 (Feinberg – PI)
- NSF – EAR – IF: Continuation of a Facility: Institute for Rock Magnetism, \$1,200,000 (Feinberg – Co-PI)
- NSF – EAR – IF: Acquisition of a DC-SQUID magnetometer, \$436,994 (Feinberg – Co-PI)
- University of Minnesota – GIA: Assembling Records of Earth's Magnetic Field and Climate Change from Speleothems, \$34,283. (Feinberg – PI)
- University of Minnesota – Start-Up Funds

Current Postdoctoral Researchers

- *Nicholas Swanson-Hysell* – Precambrian tectonics and geomagnetism.

Current Graduate Students

- *Nathan Church* – PhD student (Cambridge) Expected completion December 2010.
- *Evan Finnes* – Masters student. Expected completion May 2012.
- *Lars Hansen* – PhD student (Co-advised with David Kohlstedt) Expected completion May 2012.
- *Ioan Lascu* – PhD student (Co-advised with Subir Banerjee) Expected completion May 2011.
- *Anna Lindquist* – PhD student. Expected completion 2013.
- *Mahlite Adamu Tsegaye* – Masters student (Co-advised with Tesfaye Kidane) Expected completion May 2013.

Current Undergraduate Students

- *Steve Newman* – Undergraduate Student, University of Minnesota
- *Stephanie Olson* – Undergraduate Student, University of Minnesota, **UROP**
- *Susanna Webb* – Undergraduate Student, University of Minnesota, **UROP**
- *Courtney Sprain* – Undergraduate Student, University of Minnesota

Past Students

- *Maxwell Christopher Brown* – Postdoc. Currently in a 3 year position at GFZ in Potsdam, Germany.
- *Ellery Frahm* – PhD student (Co-advised with Gil Tostevin, University of Minnesota, Dept. of Anthropology). Currently the Manager of the Electron Microprobe Lab at the University of Minnesota.
- *Cale Anger* – Masters student (Co-advised with E. Calvin Alexander, Jr.)
- *Amy Chen* – Masters student. Currently in a PhD program at the University of Munich.
- *Yifan Hu* – Masters student. Currently in a PhD program at the University of Florida.
- *Julia Prokop* – Masters student in the Dept. of Geography.
- *Shaun Williams* – Masters student, University of Bristol.
- *Joseph Cropsey* – Undergraduate Student, University of Minnesota
- *Travis Drake* – **REU Intern**, Undergraduate Student, Carleton College.
- *Amy Hillis* – **REU Intern**, Undergraduate Student, Macalester College.
- *Charissa Johnson* – Undergraduate Student, University of Minnesota
- *Zachary Montes* – **REU Intern**, Undergraduate Student, Carleton College. Presented research at the 2008 AGU conference in San Francisco.
- *Alissa Morson* – Howard Hughes Medical Institute Intern, Carleton College.
- *Rebecca Smith* – **REU Intern**, University of California, Berkeley.
- *Becky Strauss* – **REU Intern**, Oberlin College.

- *Lucy Sullivan* – Undergraduate Student, Cambridge University.
- *Leif Tokle*– Undergraduate Student, University of Minnesota