

## HOWIE D. SCHER

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### Education

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- Ph.D. Geological Sciences, University of Florida, Gainesville, FL 2005
- B.S. Environmental Sciences (high distinction), University of Rochester, Rochester, NY 1999

### Dissertation

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Paleogene deep water circulation in the Atlantic sector of the Southern Ocean revealed from neodymium isotopes

Major Professor: Ellen E. Martin

Supervisory committee: James E.T. Channell, Fred W. Hamann, David A. Hodell, Paul A. Mueller

### Areas of Specialization

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Cenozoic climate change and paleoceanography, radiogenic isotope geochemistry, stratigraphy

### Professional Experience

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| Visiting Assistant Professor     | University of Rochester         | 2005-present |
| Graduate Teaching Assistant      | University of Florida           | 2000-2004    |
| Graduate Research Fellow         | University of Florida           | 1999-2004    |
| Undergraduate Research Fellow    | University of Alaska, Fairbanks | 1998         |
| Undergraduate Research Assistant | University of Rochester         | 1996-1999    |
| Undergraduate Teaching Assistant | University of Rochester         | 1996-1998    |

## **Research And Field Experience**

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University of Florida, Department of Geological Sciences, 1999-2005. *Graduate Research Assistant*. Doctoral work focused on generating high resolution Nd isotope records and multivariate analysis of observed secular variability of these records on Paleogene time scales. Research addresses tectonic gateway events and reconstruction of paleocirculation.

University of Alaska, Fairbanks, Geophysical Institute/Department of Geology, 1998. *REU/NSF Research Intern*. Internship concentrated efforts on paleomagnetic analysis of layered pillow basalts within the Chulitna terrain as part of a larger project to unravel the tectonic history of the Alaska Range. Participated in 1998 expedition to the Chulitna district. Dr. David A. Stone, principal investigator.

University Rochester, Department of Earth and Environmental Sciences, 1996-1999. *Undergraduate Research Assistant*. Senior thesis research examined the clay and zeolite mineralogy of a paleosol derived from a late Cretaceous flood basalt. Participated in 1996 and 1997 expeditions to Axel Heiberg Island, Nunavut, Canadian Arctic. Dr. John A. Tarduno, principle investigator.

## **Teaching Experience**

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University Rochester, Department of Earth and Environmental Sciences, 2005-present. Visiting Assistant Professor. EES 103 "*Introduction to Environmental Science*"; EES 214 "*Environmental Geology*"; EES 274/474 "*Seminar in Paleoceanography*"; EES 275/475 "*Building the Icehouse*". EES 103 is the introductory course for the Environmental Science major, introduces students to the processes that influence the physical environment. EES 214 is a required course for the Environmental Science major that focuses on the interaction between natural processes shaping Earth's surface and modern human society. EES 274/474 is for graduate students and upper level undergraduates seeking introduction to principles of paleoceanographic study. EES 275/475 is for graduate students and undergraduates and focuses on Cenozoic climate change.

University of Florida, Department of Geological Sciences, 2000-2004. Graduate Teaching Assistant. GLY 1001 "*Exploration of the Earth Sciences*"; GLY 2030 "*Environmental and Engineering Geology*"; GLY 5241C "*Geochemistry*"; GLY 6268C "*Isotope Geology*". GLY 1001 is for undergraduate science majors. GLY 2030 is for students in the engineering sciences, focuses on assessing geological hazards. GLY 5241C is the introductory geochemistry course for incoming graduate students. GLY 6268C is an advanced graduate course covering topics in Isotope Geology.

University Rochester, Department of Earth and Environmental Sciences, 1996-1998. Undergraduate Teaching Assistant. GEO 101 "*Introduction to Physical Geology*"; GEO 201 "*Evolution of the Earth*". GEO 101 is the required introductory course for Geology majors. GEO 201 is a required course for undergraduate majors focusing on the evolution of Earth and life through time.

## Publications

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**Scher, H.D.** and Martin E.E. (in prep). Neodymium isotopic evidence for water mass stratification in the Paleogene Southern Ocean.

**Scher, H.D.** and Martin E.E. (in prep) A Southern Ocean perspective on global ocean circulation changes during the Paleogene.

Martin E.E. and **Scher H.D.**, (submitted) Circulation in the Indian Ocean during the Paleogene. *Geochemistry, Geophysics, and Geosystems*.

Barker, P., Filippelli, G., Florindo, F., Martin, E.E., and **Scher, H.D.**, (submitted) Onset and Role of the Antarctic Circumpolar Current. *Deep Sea Research II*.

**Scher H.D.** and Martin E.E. (in press) The timing and climatic influence of the opening of Drake Passage. *Science*.

**Scher H.D.** and Martin E.E. (2004) Circulation in the Southern Ocean during the Paleogene inferred from neodymium isotopes. *Earth and Planetary Science Letters* 228, 391-405.

Martin E.E. and **Scher H.D.** (2004) Preservation of seawater Sr and Nd isotopes in fossil fish teeth: Bad news and good news. *Earth and Planetary Science Letters* 220, 25-39.

Channell J.E.T., Galeotti S., Martin E.E., Billups K., **Scher H.D.** and Stoner J.S. (2003) Eocene to Miocene magnetostratigraphy, biostratigraphy, and chemostratigraphy at ODP Site 1090 (sub-Antarctic South Atlantic). *Geological Society of America Bulletin* 115, 607-623.

Stone, D.A., **Scher H.D.** and Schopp C. (2001) Chulitna district paleomagnetic study. State of Alaska Open file publication 2.

Tarduno J.A., Brinkman D.B., Renne P.R., Cottrell R.D., **Scher H.D.** and Castillo P. (1998) Evidence for extreme climatic warmth from late Cretaceous Arctic vertebrates. *Science* 282, 2241-2244.

## Meeting Abstracts

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**Scher, H.D.**, and Martin, E.E. (2005) *Invited*, New insights into Atlantic sector paleoceanography from Nd isotopes, *Eos Trans. AGU*, 86, Fall Meet. Suppl., Abstract PP51F-01.

Martin, E.E., **Scher, H.D.**, Livera, K. (2004), Tracking Warm Saline Deep Water on Maud Rise Using Nd Isotopes, *Eos Trans. AGU*, 85, Fall Meet. Suppl., Abstract PP31B-02.

**Scher, H.D.**, Martin, E.E. (2004) Evidence for an Open Drake Passage in the Late Middle Eocene, *Eos Trans. AGU*, 85, Fall Meet. Suppl., Abstract PP54A-01.

**Scher H.D.**, Martin E.E. and Blair S.W. (2003) A Comparison of Nd Isotopes From

Ferromanganese Oxide Coatings and Fossil Fish Teeth: Toward Higher Resolution Nd Records on Cenozoic Time Scales. *Eos Trans. AGU*, 84, Ocean Sci. Meet. Suppl., Abstract OS42F-11.

**Scher H.D.** and Martin E.E. (2003) A History of Water Mass Circulation in the Paleogene Southern Ocean from Nd Isotopes. *Eos Trans. AGU*, 84(46), Fall Meet. Suppl., Abstract PP32C-01.

**Scher H.D.** and Martin E.E. (2003) Eocene to Miocene Southern Ocean Circulation: Neodymium Records from Fossil Fish Teeth. *Geophysical Research Abstracts*, Vol. 5, 06643.

Martin E.E. and **Scher H.D.** (2003) Preservation of Seawater Strontium and Neodymium in Fossil Fish Teeth. *EOS Trans. Geophysical Research Abstracts*, Vol. 5, 06368.

**Scher H.D.**, Martin E.E. and Haase A.A. (2002) Eocene to Miocene Intermediate Indian Ocean Water Circulation. *Geochim Cosmochim Acta*, 66, A677.

**Scher H.D.**, and Martin E.E. (2001) Eocene to Miocene Southern Ocean Deep Water Circulation Revealed From Fossil Fish Teeth Nd Isotopes. *EOS Trans. AGU*, 82 (47) Fall Meet. Suppl., Abstract OS31C-0468.

Channell J.E.T., Galeotti S., Martin E.E., Billups K., **Scher H. D.**, Stoner J. (2001) Eocene to Miocene magnetic, bio- and chemostratigraphy at ODP Site 1090 (sub-Antarctic South Atlantic). *EOS Trans. AGU*, 82 (47) Fall Meet. Suppl., Abstract. GP12A-0201.

**Scher, H.D.** and Martin E.E. (2001) Eocene to Miocene Nd Isotopes From Southern Ocean Fossil Fish Teeth. *Program and Abstracts 7*, 7<sup>th</sup> International Conference on Paleoceanography, 181.

Martin E. E. and **Scher, H.D.** (2000) Timing of the Opening of the Drake Passage to Deep Water Flow Based on Nd Isotopes. *EOS Trans. AGU*, 81 (48), Fall Meet. Suppl., Abstract OS72F-01.

**Scher H.D.** (1999) New Evidence for a Warm Arctic Climate During the Late Cretaceous. National Conference for Undergraduate Research.

## **Analytical Experience**

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Expertise with Sm-Nd, Rb-Sr radioactive decay systems

Extensive experience with management of class 1000 clean labs

Extensive experience with thermal ionization mass spectrometry

Proficiency with single and multi-collector ICP-MS techniques

## **Professional Service**

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Session convener, American Geophysical Union meetings  
Synthesis volume author, Southern Ocean drilling synthesis submitted to Deep Sea Research  
Research advisor, Summer Science Training Program, University of Florida  
Organizational committee, 2003 AGU Chapman Conference, Gainesville, Florida  
Graduate representative to faculty search committee, Department of Geological Sciences, University of Florida  
University of Florida delegate to 2002 ExxonMobil leadership conference, Houston, Texas  
Webmaster, Department of Geological Sciences, University of Florida  
Manuscript reviewer for *Geochemistry, Geophysics, and Geosystems*; *Geology*; *Nature*; *Paleoceanography*; and *Palaeogeography, Palaeoclimatology, Palaeoecology*

## **Awards & Honors**

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Horn Award for Outstanding Graduate Student, Department of Geological Sciences, University of Florida, 2005  
McLaughlin Dissertation Fellowship, Research and Graduate Programs, University of Florida, 2005 (declined)  
University of Florida Alumni Fellowship, Research and Graduate Programs, University of Florida, 1999-2004  
Exxon Mobil Student Delegate, Exxon Mobil Exploration Corporation, 2002  
High distinction in research, Department of Earth and Environmental Sciences, University of Rochester, 1999  
Percy Dutton Award, Office of the Dean, College of Liberal Arts and Sciences, 1999  
NSF-REU Fellowship, Geophysical Institute/Department of Geological Sciences, University of Alaska, 1998

## **Professional Affiliations**

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American Geophysical Union  
Geochemical Society