

## Curriculum Vita

### Steven L. Goldstein

Higgins Professor of Earth and Environmental Sciences  
Department of Earth and Environmental Sciences, Columbia University  
61 Rt. 9W, Palisades, NY 10964 USA

Tel.: 845-365-8787; Fax: 845-365-8155

E-mail: [steveg@ldeo.columbia.edu](mailto:steveg@ldeo.columbia.edu); [slg41@columbia.edu](mailto:slg41@columbia.edu)

LDEO site: <https://lamont.columbia.edu/directory/steven-l-goldstein>

Google Scholar: <https://scholar.google.co.il/citations?user=TqCxoAAAAAJ&hl=en>

ORCID ID: 0000-0001-7252-8064

Citizenship: USA

#### **Education:**

1986	Ph.D.	Columbia University, Palisades, NY, USA
1978	M.A.	Harvard University, Cambridge, MA, USA
1976	B.A.	Columbia University, New York, NY, USA
no degree		McGill University, Montreal, PQ, CA
no degree		University of Maryland, College Park, MD, USA

#### **Dissertation:**

"Isotopic studies of continental and marine sediments, and igneous rocks of the Aleutian Island arc".  
Thesis supervisor: R.K. O'Nions. Other dissertation committee members: Alan Zindler, Charles Langmuir, Wallace Broecker, Karl Turekian.

#### **Positions:**

2016-present	Higgins Professor, Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964, USA
2020-22	Director, Division of Earth Sciences, US National Science Foundation (public service leave from Columbia)
2019-present	Affiliated Faculty, Center for Archaeology, Columbia University, New York, NY 10025 USA
2005-present	Professor, Lamont-Doherty Earth Observatory and Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964, USA.
2014-20	Associate Director, Lamont-Doherty Earth Observatory, Geochemistry Division.
2011-12	Past Chair, Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964, USA.
2008-11	Chair, Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964, USA.
2006-08	Associate Chair, Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964, USA.

1998-2005	Associate Professor, Lamont-Doherty Earth Observatory and Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964 USA.
1996-98	Assistant Professor, Lamont-Doherty Earth Observatory and Department of Earth and Environmental Sciences, Columbia University, Palisades, NY 10964 USA.
1985-96	Staff Scientist, Max-Planck Institut für Chemie, Department of Geochemistry, Mainz, Germany.
1984-85	Research assistant, Department of Earth Sciences, University of Cambridge, Cambridge, UK.
1978-82, 1984-85	Graduate student, Department of Geological Sciences, Columbia University, New York, NY, USA.
1976-78	Graduate student, Department of Geological Sciences, Harvard University, Cambridge, MA USA.

#### **Professional Organizations:**

American Geophysical Union  
 European Association of Geochemistry  
 European Geosciences Union  
 Geochemical Society  
 Geological Society of America

#### **Honors:**

2022: Columbia University Great Teacher Award, awarded by the Society of Columbia Graduates  
 2021: Hebrew University of Jerusalem - Visiting Professor Fellowship (virtual due to COVID-19)  
 2018: American Geophysical Union - Norman L. Bowen Award and Lectureship  
 2018: Institut de Physique du Globe de Paris - Visiting Professor Fellowship  
 2017: Fellow of the Geochemical Society and European Association of Geochemistry  
 2013: Hebrew University of Jerusalem - Lady Davis Fellowship  
 2010: Columbia University Lenfest Distinguished Faculty Award  
 2009: Fellow of the American Geophysical Union  
 2005: Columbia University Department of Earth and Environmental Sciences (DEES) Excellence in Teaching Award, awarded by the DEES Graduate Student Committee

#### **Professional Activities/Community Service:**

Chemical Geology, Editorial Advisory Board, 1990-2002.  
 Earth and Planetary Science Letters, Editorial Advisory Board, 1991-2004.  
 Journal of Geophysical Research-Solid Earth, Associate Editor, 1995-1997.  
 FUMAGES (NSF Workshop on the Future of Marine Geosciences), 1996.  
 Harry H. Hess Medal Committee, American Geophysical Union, 1998-1999.

Search Committee, Curator of Meteorites, American Museum of Natural History, 1999-2000.  
 Geochimica et Cosmochimica Acta, Associate Editor, 2000-2002.  
 Chemical Geology, Editor-in Chief, 2002-2009.  
 Co-Organizer, ICDP (International Continental Drilling Program) Workshop on Deep Drilling in the Dead Sea, January 2002, Potsdam, Germany.  
 NSF Workshop on Cyberinfrastructure (CI) for the Integrated Solid Earth Sciences (ISES), March 2003.  
 Cyberinfrastructure for the Integrated Solid Earth Sciences Initiative (ISES-CI), Member.  
 SAMPLES (Sample Archive and Management PLanning for the Earth Sciences) – an ISES-GERM (Geochemical Earth Reference Model) Initiative on preservation of Geological Samples, 2003-2007.  
 GERM (Geochemical Earth Reference Model) Steering Committee Member (2003-2006).  
 National Terrestrial Sample Repository, UT-Austin, Houston TX, Oversight Committee Member, 2003-2007.  
 Northeast National Ion Microprobe Facility (NENIMF), WHOI, Oversight Committee Member (2004-2010).  
 Co-Organizer, Workshop on Curation of Terrestrial Scientific Cores, Samples, and Collections, at the National Terrestrial Sample Repository, Houston, TX, May, 2004.  
 Co-Organizer, Workshop on Linking Information Systems in Marine and Terrestrial Geosciences, Washington, D.C., June 2004.  
 Geochemical Editor's Rountable (Working Group of Editors of Geochemical Journals), 2002-2009.  
 Co-Organizer, Workshop on Interoperability for Sample-Based Data Management via the International Geo Sample Number IGSN, San Diego Supercomputing Center, UC-San Diego, January 2005.  
 Advisory Committee, Houston Research Center, U of Texas-Austin, 2003-2005.  
 Co-organizer, Fifth GERM (Geochemical Earth Reference Model) Workshop, Columbia University, May 2006.  
 Visiting Committee, Korean Basic Science Institute (KBSI), Daejeon, Korea, 2010.  
 AGU, Volcanology, Petrology, and Geochemistry Nominations Committee, 2009-2017.  
 AGU, Union Fellows Committee, 2016-2020.  
 Geochemical Society, Strategic Planning Committee, Chair, 2016-present.  
 AGU, College of Fellows Steering Committee, 2017-2020.  
 AGU College of Fellows Town Hall Subcommittee, Chair, 2017-2020.  
 Guest Editor, Quaternary Science Reviews, Special Volume on the Dead Sea Deep Drilling Project, published 2020.  
 Geochemical Society, Committee on Diversity, Equity, and Inclusion (DEI), member, 2020-present.

**Service to Columbia University and Lamont-Doherty Earth Observatory:**

Committee on Science Instruction, Faculty of Arts and Sciences, 2006-08.  
 Associate Chair, Department of Earth and Environmental Sciences, 2006-08  
 Chair, Department of Earth and Environmental Sciences, 2008-11  
 Past Chair, Department of Earth and Environmental Sciences, 2011-2012  
 LDEO Observatory Management Group, 2008-11.  
 Academic Review Committee (ARC), Faculty of Arts and Sciences, Columbia University, Committee Member, 2012-2015.

Chair, Review of the Columbia University School of Continuing Education, 2012-13.

Chair, Review of the Columbia University Department of Statistics, 2014-15.

Associate Director, Lamont-Doherty Earth Observatory (i.e. Chair of the Geochemistry Division), 2014-2020.

LDEO Executive Committee, 2008-11, 2014-2020.

LDEO Associate Directors Council, 2014-2020.

Academic Review Committee: Internal Review Committee of the Nevis Laboratory, Committee Member, 2017-18.

Committee on Instruction, Columbia College and School of General Studies, 2017-2020.

Graduate Admissions Committee, Department of Earth and Environmental Sciences, member, 2014-2017.

Space and Facilities Planning Committee, Department of Earth and Environmental Sciences, chair, 2016-2020.

Graduate Admissions Committee, Department of Earth and Environmental Sciences, chair, 2018-2020.

LDEO Strategic Planning (Vision) Committee, Spring 2020.

LDEO COVID-19 Research Rampdown (as LDEO Associate Director and the head of the Geochemistry Division, the largest collection of labs and analytical equipment, I organized the ramp-down and monitoring of the equipment), March-April 2020.

LDEO COVID-19 Research Working Group (responsible for COVID-19 research ramp-up planning), chair, May-July 2020.

Columbia Climate School, Department of Earth and Environmental Sciences Liaison, 2022-present.

Columbia Climate School, Interim Steering Committee, 2022-present.

### **Field experience:**

Geology field camp, University of Kansas, 1976.

As a graduate student, field assistant on projects in the western USA and Spain.

Principal investigator or participant in projects to collect igneous, sedimentary, and water samples for geochemical analysis from the Aleutian Islands, Barbados, Botswana, Chile, P.R. China, Colombia, Comoro Islands, Colombia, Hawaii, India, Israel, Italy, Jordan, Mozambique, Pyrenees, P.R. China, Republic of South Africa, Tanzania, USA, Turks and Caicos, Venezuela, Zambia.

### **Research Cruises:**

Co-Principal Investigator and Watch Leader: AMORE 2001 (Arctic Mid-Ocean Ridge Expedition), USCGC Healy, Aug. 29-Oct. 3, 2001.

Scientific Participant and Watch Leader: Cruise CD154: The Agulhas Current and Abrupt Climate Change, RRS Charles Darwin, Dec. 13, 2003-Jan. 10, 2004.

Scientific Participant, JOIDES Resolution Expedition 379T: Extending high resolution paleoclimate records from the Chilean Margin to the Eemian, JOIDES Resolution, July 20-Aug. 18, 2019.

### **Continental Deep Lake Drilling:**

Co-Principal Investigator and Co-Field Leader: ICDP (International Continental Scientific Drilling Program) Dead Sea Deep Drilling Project, November 2010-March 2011.

**Languages:**

English, facility in German and Spanish.

**Courses Taught at Columbia University**

SCNC CC1000 and 1100: Frontiers of Science (Columbia College Core Curriculum Course): 2004-05, 05-06, 06-07.

EESC 2200 Earth's Environmental Systems - The Solid Earth: 2006-07, 07-08, 08-09, 09-10, 10-11, 11-12, 12-13, 13-14, 14-15, 15-16, 16-17, 17-18, 18-19, 19-20; 22-23:

EESC 4887 or 4888 - Principles of Isotope Geology (alternate years): 1996-97, 98-99, 2000-01, 02-03, 04-05: 07-08, 14-15, 16-17, 18-19, 20-21, 22-23.

EESC 8884 Advanced Isotope Geochemistry – 1997-98, 99-00, 2001-02, 05-06, 11-12, 12-13

EESC 3010 Field Geology: Barbados (2011-12, 13-14, 15-16, 17-18, 19-20) and Italy (2012-13, 14-15, 16-17, 18-19, 22-23).

**Graduate Students Advised and their Current Locations:**

**At MPI:** Jane Barling (Research Scientist, Oxford, now retired), Cornelia Class (Lamont Associate Research Professor, LDEO), Karsten Haase (Professor, U Erlangen, Germany), Gabrielle Loock, Daniel Miller (Rockland County Geologist, NY), Alexandra Haase-Schramm (Oxford Instruments, Wiesbaden, Germany), Theofil Toulkeridis (U San Francisco, Quito, Ecuador).

**At Columbia:** *As primary advisor or co-primary advisor:* Yue Cai (Research Scientist, Nanjing University), Alison Hartman (US Geological Survey, Columbia MO), Kevin Jones (Exxon-Mobil), Jason Jweda (ConocoPhillips), Joohee Kim (Ph.D. student, LDEO), Alexandra LaGatta (Adjunct Professor, St. Mary's College, California), Alexander Piotrowski (Reader, U Cambridge), Randy Rutberg (Assistant Professor, Hunter College, CUNY), Kyla Simons (Exxon-Mobil), William G. Thompson (Associate Scientist, Woods Hole Oceanographic Institution, now retired), Maayan Yehudai (postdoc, Max-Planck-Institut für Chemie), Yingzhe Wu (Postdoc, Columbia).

*Advisory committee:* Daniel Babin (Postdoc, LDEO), Alejandra Borunda (AAAS), Li Cao (freelance translator), Tzu-chien Chiu (Academica Sinica, Taiwan), Anna Cipriani (U Modena and Reggio Emilia, Italy), Martin Collier (Exxon-Mobil), Michael Deluca (PhD student, Columbia); Cathleen Doherty (Research scientist, Rutgers), Kathleen Donnelly (American Academy of Arts and Sciences), Elizabeth Gier (deceased), Marina Gemma (Postdoc, Stony Brook U); Sean Kinney (Postdoc, LDEO), Candace Major (Program Director, NSF), Laura Mori (research scientist, UNAM, Mexico), Juan Carlos de Obesos (Asst. Prof., U of Utah), Guido Paparoni (Exxon-Mobil), Daniel Rasmussen (postdoc, Smithsonian), Michael Sandstrom (Postdoc, Columbia), Jill van Tongeren (Professor, Tufts U), Kevin Wheeler (The Kaizen Company), Yongjun Su (Sanford C. Bernstein, LLC).

*As host or co-host for visiting graduate students (home institution during visit):* Angels Canals (U Barcelona), Stefania Gili (U of Cordoba, Argentina), Shilei Li (with Maureen Raymo; Nanjing U, China); Laura Mori (UNAM, Mexico); Timothy Murray (Penn State), Adi Torfstein, (Professor, Hebrew U), Gabriela Torre (U of Cordoba, Argentina).

### **Mentored Post Doctoral Scientists and their current or last known positions:**

**At MPI:** *As mentor:* Wafa Abouchami (U of Cologne), Achim Albrecht (ETH-Zurich), Jane Barling (Researcher, Oxford U, retired), Antonio Simonetti (Professor, U Notre Dame), Mordechai Stein (Geological Survey of Israel and Hebrew University).

**At Columbia:** *As primary mentor:* Giulio Borghini (U Milan, Italy), Yue Cai (Res. Scientist, Nanjing U), Kathleen Donnelly (American Academy of Arts and Sciences), Norbert Frank (Professor, U Heidelberg, Germany), Allison Franzese (Asst. Prof. Hostos Community College, CUNY), Karsten Haase (Professor, U Erlangen, Germany), Yael Kiro (Assistant Professor, Weizmann Institute of Science, Israel), Karla Knudson (Postdoc, Columbia), Bess Koffman (Assistant Professor, Colby College), Paolo Montagna (CNR Scientist, ISMAR-Bologna, Italy), Katharina Pahnke (Professor, U Oldenburg, Germany), Leopoldo Pena (Professor, U Barcelona, Spain), Cristina Recasens (private sector), Adi Torfstein (Professor, Hebrew U Jerusalem), Yaakov Weiss (Assistant Professor, Hebrew U Jerusalem), Wenfang Zhang (Research Scientist, Nanjing U).

*As co-mentor:* Karen Block (Professor, City College, CUNY), Chandranath Basak (Assistant Prof. U of Delaware), Cornelia Class (Lamont Associate Research Professor, LDEO), Jennifer Cole (Lecturer, Western Kentucky U), Oana Dumitru (Postdoc, LDEO), Arturo Gómez-Tuena (Professor, UNAM, Queretaro, Mexico), Shilei Li (Postdoc, Nanjing U), Martin Roy (Professor, U Quebec at Montreal, Canada), Mark Siddall (Faculty, U Bristol, UK), Susanne Straub (Lamont Research Professor, LDEO), Tina van de Fliertd (Professor, Imperial College, London, UK).

*As host for short-term doctoral and postdoctoral visitors (home institution during visit):* Giulio Borghini (U Genoa, Italy), Stephane Escrig (Harvard), Stefania Gili (U Cordoba); Guillem Gisbert Pinto (UNAM-Mexico City), Matthias Lopez-Correa (U Erlangen), Sara Mana (Salem State University), Gabriela Torre (U Cordoba); Hongfu Zhang (Academica Sinica, Beijing).

### **Undergraduate Mentoring**

*Undergraduate Research:* Advisor for LDEO Summer Intern Program as well as research or undergraduate thesis advisor for Columbia and Barnard undergraduates (Margaret Scott, UNC-Chapel Hill (1997); Stacey Kish, Indiana U of Pennsylvania (1998); Stacey Kepler, Amherst (2002); Kevin Jones Indiana U of Pennsylvania (2001); David Zylberberg, Dartmouth (2002-03); Sarah Fonville, Columbia (2003); Caleb Schiff, U Colorado (2003); Eric Strong, UCSB (2006); Priya Murthy, Columbia (2007); Joseph Simonson, Columbia (2007-08); Ilana Somasunderam, Columbia (2008); Daniel Cohen, Columbia (2009-10); Todd Nelson, Columbia (2010); Nina Yang, Barnard (2010); William Jacobson, Carlton (2011-12); Rachel Lupien, Amherst (2012-14); Adrian Cox, Columbia (2014); Joohee Kim, Columbia (2014, 2015); Jennifer Olson, Columbia (2015); Thomas Fahey, SUNY-Maritime (2016); Marissa Sterling, Columbia (2016-17); Margaret Zimmer, Columbia (2016-17); Matthew Johns, Columbia (2016-17); Julianne Sweeney, SUNY-Geneseo (2016-17), Alison Corley, Barnard (2016-17); Erin Gregoire, Columbia (2018), Bridget Craig, Columbia (2018); Carolina Rabbat, Columbia (2017-19); Cecelia Bowe, Colby College (2021, 2022); Annika Gonzales, Cal State-Long Beach (2021), Ryan S. Barker, Columbia (2022-23). (31 students from 1996-present).

### **High School Mentoring**

Maria Malanowski, 10<sup>th</sup>-11<sup>th</sup> grader, Briarcliff High School, NY, Intel Science Competition (2003-2004); Elena Chung, student, Montgomery Blair High School, MD, summer intern (2004), Eitan Tal, student, Abraham Heschel High School, NY (2018).

### **Externally Funded Grants at Columbia:**

**(P)** and **(A)** indicate mentored post-doc and assistant research professor PIs, respectively.

Langmuir, C.H., Goldstein, S.L., “What is the cause of the thick crust geochemical signature of convergent margin volcanics?”; NSF-Earth Sciences: Petrology and Geochemistry, 1997-2001, EAR-9614782, \$205,000.

Goldstein, S.L., Katz, A. (Hebrew Univ. of Jerusalem), “The geochemical history of Lake Lisan (the Paleo-Dead Sea) as a tracer of continental climate change during the last glacial period”; US-Israel Binational Science Foundation, 1997-2000; LDEO portion - \$57,000.

Goldstein, S.L., Class, C., Stute, M., “Hotspot volcanism and the role of the oceanic lithospheric mantle – an integrated geochemical case study”; NSF-Earth Sciences: Petrology and Geochemistry, 1998-2000, EAR-9725681, \$135,000.

Goldstein, S.L., “A high resolution study of mantle flow and melting processes along the Kolbeinsey Ridge”, NSF-Ocean Sciences: Marine Geology and Geophysics, 1998-2000, OCE-9731033, \$180,000.

Hemming, S.R., Goldstein, S.L., “Evidence for deepwater circulation changes in the late Quaternary from the Nd isotope composition of ferromanganese precipitates in marine sediments”; NSF-Ocean Sciences: Marine Geology and Geophysics, 1998-2001, OCE-9809253, \$236,000.

Langmuir, C.H., Goldstein, S.L., Webb, S., “Collaborative Research: Investigation of the Origin of Non-Hotspot, Intraplate Volcanic Ridges and Cross Grain Gravity Lineations, NSF-Ocean Sciences: Marine Geology and Geophysics, 2001-2006, OCE-9912380, \$707,000.

Langmuir, C.H., Goldstein, S.L., “Collaborative research: mantle melting and crustal genesis at the slowest spreading rate: a petrological investigation of the Gakkel Ridge, Arctic Ocean”, NSF-Office of Polar Programs: ARC Research Support & Logistics, ANS-Arctic Natural Sciences Arctic Research; NSF-Ocean Science, Marine Geology and Geophysics, 2001-2004, OPP-0000389, \$349,000.

Goldstein, S.L., Hemming, S.R., “Establishing the pattern of Holocene-LGM changes in sediment contributions from Antarctica to the Southern Ocean”, NSF-Office Polar Programs: Antarctic Earth Sciences, 2001-2004, OPP-0088054, \$230,000.

Goldstein, S.L., Hemming, S.R., Ninnemann, U., Anderson, R.F., “Late Quaternary history of the Agulhas Current and its relationship to South Atlantic Sea Surface temperatures and thermohaline circulation”, NSF-Ocean Sciences: Marine Geology and Geophysics, 2001-2004, OCE-0096427, \$263,000.

NOAA CICAR CORC ARCHES Consortium: “Constraining changes in winds, the conveyor and local currents during periods of abrupt climate change”, 2002-2007. NOAA, S. Hemming’s and S. Goldstein’s increment - \$240,000.

Goldstein, S.L., Gavrieli, I. (Geological Survey of Israel), Stein, M. (Hebrew University of Jerusalem), “Limnology and Climatic History of the Dead Sea Basin During the Last Glacial Period”, US-Israel Binational Science Foundation, 2002-2005, COLUMBIA/LDEO portion - \$150,000.

Goldstein, S.L., “Collaborative Research: Integrated hydrothermal and petrological studies of the Eastern Lau spreading center”, w/ C. Langmuir (Harvard), NSF-Ocean Sciences: Marine Geology and Geophysics, 2004-2007, OCE-0242675, \$29,356.

Class, C., Goldstein, S.L., “The Tristan-Gough plume source and constraints on the composition of recycled sediment”, NSF-Earth Sciences: Petrology and Geochemistry, 2004-2007, EAR-0408543, \$310,000.

Goldstein, S.L., “Collaborative Research: Petrology and Geochemistry of Gakkel Ridge basalts”, NSF-Office of Polar Programs: Arctic Natural Sciences, 2004-2006, OPP-0425686, \$206,000.

Lehnert, K., Goldstein, S.L. "Linking Information Systems in Marine and Terrestrial Geosciences: Sediment Geochemistry", NSF-Ocean Sciences: SCEC, Marine Geology and Geophysics, Ocean Drilling Program, 2004-2005, OCE-0434559, \$35,000.

Dutton, S., Goldstein, S.L., "Workshop: Curation of terrestrial scientific cores, samples, and collections", NSF-Earth Sciences: SCEC, Petrology and Geochemistry, Hydrologic Sciences, Instrumentation & Facilities, ANT Earth Sciences, Geobiology & Low-Temperature Geochem, 2005-2006, EAR-0435812, \$25,000.

Lehnert, K., Goldstein, S.L., Lenhart, W.C., Vinayagamoorthy, S. "SGER: An online registry for unique sample identification in the solid Earth Sciences (SESAR)", NSF-Earth Sciences: Instrumentation & Facilities, Marine Geology and Geophysics, ANT Earth Sciences, Geoinformatics, Sedimentary Geology & Paleobiology, 2004-2005, EAR-0445178, \$134,770.

**(P)** Straub, S., Class, C., Goldstein, S.L., "Reconstructing slab and mantle fluxes during the Eocene-Oligocene evolution of the Izu-Bonin volcanic arc: NSF-Ocean Sciences: Marine Geology and Geophysics, Ocean Drilling Program, 2005-2007, OCE-0453515, \$219,000.

Lehnert, K., Goldstein, S.L., Vinayagamoorthy, S., "SedDB: an online information system for sedimentary geochemistry", NSF-Ocean Sciences: Marine Geology and Geophysics, Geoinformatics, Sedimentary Geology & Paleobiology, 2005-2008, OCE-0453958, \$828,000.

Lehnert, K., Goldstein, S.L., Lenhardt, W.C. "SESAR Workshop: Designing Interoperability for sample-based data management via the International Geo Sample Number ISGN", NSF-Earth Sciences: Geoinformatics, Marine Geology and Geophysics, 2005-2006, EAR-0514551, \$19,963.

Goldstein, S.L., Hemming, S.R., "Nd and Sr isotope tracers of deep and shallow ocean circulation around South Africa", NSF-Ocean Sciences: Chemical Oceanography, Marine Geology and Geophysics, 2005-2008, OCE-0526884, \$360,000.

Hemming, S.R., Goldstein, S.L. "Antarctica's geological history reflected in sedimentary radiogenic isotopes, NSF-Office of Polar Programs: Antarctic Earth Sciences, 2006-2009, OPP-0538580, \$390,000.

**(P)** van de Fliedert, T., Hemming, S.R., Goldstein, S.L., "SGER: Development of the paired authigenic neodymium-hafnium isotope weathering tracer from marine sediments in the Circum-Antarctic realm, NSF-Office of Polar Programs: Antarctic Earth Sciences, 2005-2007, OPP-0548918, \$70,000.

Goldstein, S.L., Anderson, R.F., DeMenocal, P., Mortlock, R., "Sea Level Record of the Last Glacial Period 19,000-29,000 years BP", NSF-Ocean Sciences: Marine Geology and Geophysics, 2006-2008, OCE-0550900, \$245,000.

Lehnert, K., Goldstein, S.L., Lenhart, W.C., Vinayagamoorthy, S. "An online registry for unique sample identification in the solid Earth Sciences (SESAR)", NSF-Ocean Sciences: Marine Geology and Geophysics, Sedimentary Geology & Paleobiology, 2006-2009, OCE-0552123, \$500,000.

**(P)** Pahnke, K., Goldstein, S.L., Hemming, S.R. "Glacial water mass geometry in the South Atlantic: testing neodymium versus benthic carbon isotopes as paleo-water mass tracers", NSF-Ocean Sciences: Marine Geology and Geophysics, 2007-2010, OCE-0726575, \$337,000.

Goldstein, S.L. (U.S.), Almogi-Labin, A. (Geological Survey of Israel) and Stein, M. (GSI), "Sources and climate controls of fine-particle transport to the Gulf of Aden-Dead Sea Rift from late Quaternary deep sea cores and lacustrine sediments", US-Israel Binational Science Foundation, 2007-2011, COLUMBIA/LDEO Portion - \$180,000.



Goldstein, S.L., Anderson, R.F., Class, C., Schlosser, P., Stute, M., "Acquisition of new instrumentation for geochemical studies in the Earth and environmental sciences", NSF-Earth Sciences, Instrumentation and Facilities, 2008-2012, EAR 0746273, \$1,300,000.

Anderson, R.F., Goldstein, S.L., Fleisher, M., "Patagonia glaciation, geochemical tracers of Atlantic Meridional overturning circulation, and iron fertilization of the glacial South Atlantic ocean", NSF-Ocean Sciences: Marine Geology and Geophysics, 2008-2012, OCE-0823507, \$319,998.

Lehnert, K., Goldstein, S.L., Vinayagamoorthy, S., "SedDB, The Online Information System for Sediment Geochemistry Continued Operation and Development", NSF-Ocean Sciences: Marine Geology and Geophysics, Geoinformatics, 2008-2012, OCE-0826197, \$399,123.

Goldstein, S.L., Collaborative Research: US GEOTRACES North Atlantic Section-Nd isotope distribution: Sources, sinks, and internal cycling, with Pahnke, K. (U of Hawaii), Scher, H. (U of South Carolina); NSF-Ocean Sciences: Marine Geology and Geophysics, Chemical Oceanography, 2010-2013, OCE 09-28409, \$234,571.

Hemming, S.R., Goldstein, S.L., Cole, J., "Abrupt climate change in a warming world: lessons from Holocene paleo and modern instrumental records, and model simulations: radiogenic isotope tracer paleo-proxy scope", NOAA-CICAR, 2008-2011, \$166,217.

Ben-Avraham, Z. (Israel), Stein, M. (Israel), Goldstein, S.L. (USA), Agnon, A. (Israel), Brauer, A. (Germany), Haug, G. (Switzerland), Yasuda, Y. (Japan), "The Dead Sea Deep Drilling Project (DSDDP): The Dead Sea as a Global Paleo-environmental, Tectonic, and Seismological Archive", International Continental Drilling Program (ICDP), 2010-2011, Total from ICDP - \$1,200,000.

**(P)** Straub, S.M., Goldstein, S.L., Kelemen, P.B., "Constraints on the composition of the subducting oceanic crust in the northwest Pacific ocean basin", NSF-Ocean Sciences, Marine Geology and Geophysics, 2010-2014, OCE-0961359, \$206,735.

**(P)** Pena, L., Goldstein, S.L., and Hemming, S.R., "Late Quaternary variability of the Agulhas thermohaline valve from Nd isotopes in planktonic foraminifera", NSF-Ocean Sciences: Marine Geology and Geophysics, 2010-2014, OCE-1031198, \$236,132.

Class, C., Goldstein, S.L., "Dynamic and geochemical evolution of the lithospheric mantle beneath the western Ross Sea area, Antarctica", NSF-Antarctic Programs, Antarctic Programs, 2010-2016, ANT 1043540, \$299,432.

**(P)** Kaplan, M., Bory, A., Goldstein, S.L., Pena, L., Winckler, G., "A study of atmospheric dust in the WAIS divide ice core based on Sr-Nd-Pb-He isotopes"; NSF-Antarctic Programs, 2011-2017, ANT 1043471, \$376,561.

Goldstein, S.L., Ito, E., "RAPID: US contribution to the ICDP Dead Sea Deep Drill Core Project (DSDDP)", NSF-Earth Sciences, Paleo-Perspectives on Climate Change Program (P2C2); EAR 1115312; 2011-2012, \$150,000.

Goldstein, S.L. (U.S.), Stein, M. (Israel), "The Dead Sea deep drill core as the longest paleo-environmental archive of the late Quaternary Levant", US-Israel Binational Science Foundation, 2011-2017, BSF 2010375, COLUMBIA/LDEO portion - \$105,800.

Kelemen, P.B., Goldstein, S.L., Hemming, S.R., "Collaborative Research: Plutons as ingredients for continental crust: pilot study of the differences between intermediate plutons and lavas in the intra-oceanic Aleutian Arc", NSF-Ocean Sciences, Marine Geology and Geophysics, 2012-2014, OCE 1144759, COLUMBIA/LDEO portion - \$99,105.

Goldstein, S.L., Pena, L.D., "A critical test of the Nd paleocirculation proxy", NSF-Ocean Sciences, Marine Geology and Geophysics, 2013-2017, OCE 1260514, \$310,000.

Goldstein, S.L., Pena, L.D., "Collaborative Research: Nd isotopes and REEs in the South Pacific" with Haley, B., (Oregon State U), NSF-Ocean Sciences, Chemical Oceanography, 2013-2020, OCE 1234687, COLUMBIA/LDEO portion - \$425,246.

**(P)** Weiss, Y., Class, C., Goldstein, S.L., "Fibrous diamonds through time: insight to mantle fluids and mantle metasomatism", NSF-Earth Sciences, Petrology and Geochemistry, EAR 1348045, 2014-2017, \$143,945.

Goldstein, S.L., Pena, L., Hönisch, B., Raymo, M., "Thermohaline circulation and deep-ocean carbonate chemistry across the Mid-Pleistocene Transition", NSF-Ocean Sciences, Marine Geology and Geophysics, 2014-2017, OCE 1436079, \$696,199.

Goldstein, S.L., Pena, L.D., "Collaborative Research: Arctic Geotraces - Nd Isotopes and REEs in the Arctic", with Haley, B., (Oregon State U) and Scher, H. (U South Carolina), NSF-Ocean Sciences, Chemical Oceanography, NSF-OCE 1459716, 2015-2021; COLUMBIA/LDEO portion - \$289,447.

Kelemen, P., Cai, Y., Goldstein, S.L., "Collaborative Research: Focused Study Of Aleutian Plutons And Their Host Rocks: Understanding The Building Blocks Of Continental Crust", NSF-Earth Sciences, Petrology and Geochemistry, NSF-EAR 1457293, 2015-2018, COLUMBIA/LDEO portion - \$200,003.

Goldstein, S.L., Karas, C., "Deciphering Antarctic Intermediate Water Variability During the Pliocene", Max Kade Foundation, 2015-2017, \$26,750.

**(P)** Kiro, Y., Goldstein, S.L., Kushnir, Y., "Reconstructing east Mediterranean climate during extreme aridities from Dead Sea salt deposits and implications for late Quaternary climate", NSF-Earth Sciences, Sedimentary Geology and Paleontology, NSF-EAR 1635391, 2016-2018, \$318,015.

**(P)** Weiss, Y., Class, C., Goldstein, S.L., Kiro, Y., Winckler, G., "The systematics of helium in diamond-forming metasomatic mantle fluids", NSF-Earth Sciences, Petrology and Geochemistry, NSF-EAR 1725323, 2017-2021, \$365,837.

**(P)** Basak, C. and Goldstein, S.L., "Testing fidelity of Nd isotopes as a paleocirculation tracer in the Southeast Indian-Southern Ocean", NSF-Ocean Sciences, Marine Geology and Geophysics, NSF-OCE 1737151, 2017-2019, \$142,643.

Goldstein, S.L., Basak, C., "Collaborative Research: US GEOTRACES Pacific Meridional Transect: Sources and Sinks of Neodymium Isotopes and REE, with Haley, B., (Oregon State U), NSF-Ocean Sciences, Chemical Oceanography, NSF-OCE 1737318, 2017-2020, COLUMBIA/LDEO portion - \$443,776.

Goldstein, S.L., Johnson, K., "Support for students from underrepresented institutions and groups to attend the 2018 Goldschmidt Conference; August 12-17, 2018, Boston, MA", NSF-Earth Sciences, Petrology and Geochemistry, NSF-EAR 1834561, 2018-2019, \$15,000.

Class, C., Goldstein, S.L., "The unlikely journey of Anjouan's quartzite - from its continental origin, hundreds of km into an ocean basin and a 4000 m uplift within a volcano", National Geographic, NGS-148R-18, 2018-2019, \$29,721.

Hemming, S.R., Goldstein, S.L., Winckler G., Hines, S., "Collaborative Research: Examining linkages between the Agulhas Leakage and ocean overturning in the last glacial cycle and through the mid-Pleistocene transition", NSF-OCE 1831415, 2018-2021, \$560,105.

Rudnick, R., Bernard, R., Cooperdock, E.H.G., Goldstein, S.L., “Diversifying geochemistry – travel support for students from under-represented constituencies to attend the Goldschmidt Conference”, NSF-EAR-2018087; 2020-2022, \$55,200.

Goldstein, S.L. and Hemming, S.R., “Collaborative Research: EAGER: Development of a Method for Paired Potassium/Argon Geochronology and Strontium-Neodymium-Lead Radiogenic Isotope Geochemistry of Dust in Ice Cores”, with Koffman, B. (Colby College), NSF-OPP-2032849; 2020-22, Columbia/LDEO portion, \$82,691.

Goldstein, S.L., “IPA Rotator: Division Director, Division of Earth Science, Steven L Goldstein”, NSF CU204383, 2020-2022, \$656,384.

Goldstein, S.L., Kushnir, Y. (U.S.), Kiro, Y. (Israel), “Cycles of drought and floods during the last three interglacials in the East Mediterranean-Levant”, US-Israel Binational Science Foundation, 2021-2024, BSF 2020364, 2021-2014; Columbia/LDEO portion - \$125,000.

***As I was not allowed to be a PI or co-PI while on assignment as Director of the Division of Earth Sciences at NSF, the following are awards where I would have been a PI and am a member of the research group:***

Hemming, S.R., Wu, Y., “Collaborative Research: US GEOTRACES GP17-OCE: Understanding neodymium isotopes and rare earth element systematics in the South Pacific”, with Basak, C. (U Delaware) and Scher, H. (U South Carolina), NSF-OCE-2049604; 2021-2023, Columbia/LDEO portion: \$469,092.

Dumitru, O., Raymo, M., Austermann, J., “Last Interglacial sea-level evolution from U-series chronology of ooids, corals, and caves deposits from Crooked Island, Bahamas”, NSF-OCE-2103064, 2021-2023, \$261,455.

## Publication List

### Steven L Goldstein

Higgins Professor of Earth and Environmental Sciences  
Department of Earth and Environmental Sciences, Columbia University  
61 Rt. 9W, Palisades, NY 10964 USA

LDEO tel.: 845-365-8787, LDEO Fax: 845-365-8155

Columbia/LDEO email: [slg41@columbia.edu](mailto:slg41@columbia.edu) / [steveg@ldeo.columbia.edu](mailto:steveg@ldeo.columbia.edu)

LDEO website: <http://www.ldeo.columbia.edu/user/steveg>

Google Scholar: [https://scholar.google.co.il/citations?user= TqCxoAAAAAJ&hl=en](https://scholar.google.co.il/citations?user=TqCxoAAAAAJ&hl=en)

ORCID ID: 0000-0001-7252-8064



### Steven L Goldstein

Professor of Earth and Environmental Sciences, Lamont-Doherty  
Earth Observatory, [Columbia University](https://www.columbia.edu)

Verified email at [ldeo.columbia.edu](mailto:slg41@columbia.edu) - [Homepage](#)

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i10-index	145	126

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### Peer reviewed journals and books

*(S) and (P) indicate mentored student or post-doc first authors, respectively.*

#### Published or in press:

- 176 **(P)** Koffman, B.G., Goldstein, S.L., Winckler, G., Kaplan, M.R., Bolge, L., Biscaye, “Abrupt changes in atmospheric circulation during the Medieval Climate Anomaly and Little Ice Age recorded by Sr-Nd Isotopes in the Siple Dome Ice Core, Antarctica”, *Paleoceanography and Paleoclimatology*, 38, e2022PA004543. <https://doi.org/10.1029/2022PA004543>, 2023.
- 175 **(S)** Wu, Y. Pena, L.D., Anderson, R.F., Hartman, A.E., Bolge, L.L., Basak, C., Rijkenberg, M.J.A., de Baar, H.J.W., Goldstein, S.L., “Assessing neodymium isotopes as an ocean circulation tracer in the Southwest Atlantic”, *Earth and Planetary Science Letters*, 599 117846, <https://doi.org/10.1016/j.epsl.2022.117846>, 2022.
- 174 **(S)** Tawil-Morsink, K., Austermann, J., Dyer, B., Dumitru, O.A., Precht, W.F., Cashman, M., Goldstein, S.L., Raymo, M.E., “Probabilistic investigation of global mean sea level during MIS 5a based on observations from Cave Hill, Barbados”, *Quaternary Science Reviews*, 295, 107783, 2022.
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- 170 **(P)** Li, S., Goldstein, S.L., Raymo, M.E., “Reply to von Blanckenburg et al.: We provide a solution to the Neogene beryllium conundrum”, *Proceedings of the National Academy of Sciences*, 119, <https://doi.org/10.1073/pnas.2208945119>, 2022.
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- 145 **(P)** Karas, C., Goldstein, S.L., deMenocal, P.B., “Formation of Antarctic Intermediate Water during the Plio-Pleistocene”, *Quaternary Science Reviews*, 223 105945; <https://doi.org/10.1016/j.quascirev.2019.105945>, 2019.
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