Neesha R. Schnepf

geophysics & planetary science PhD candidate

personal information

Citizenship: U.S.

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email
homepage
Google Scholar profile

languages

English- native speaker
French- fluent
Spanish- working knowledge
German- basic skills
Nepali- literate / basic skills

programming

♥ LaTeX
Matlab, IDL, Fortran
Java & HTML

I am a NASA Earth & Space Science Fellow interested in planetary magnetic fields and geomagnetic induction, as well as their applications for probing planetary interiors, exploring oceans, studying climate change, and monitoring natural hazards.

education

Present	**PhD Candidate** Geophysics	University of Colorado-Boulder, Department of Geological Sciences & CIRES
2015	**M.S,** Planetary Sciences	Massachusetts Institute of Technology, Department of Earth, Atmospheric, & Planetary Science
	Masters thesis: Sensing the conductivity of the upper mantle and lithosphere using ocean tidal magnetic field satellite measurements	
2013	**BSci,** Sci. of Earth Systems	Cornell University, College of Engineering
	Undergraduate thesis: An analysis of tsunami electromagnetic signals	
2009	**Advanced Studies Diploma**	Thomas Jefferson High School for Science and Technology

research experience

06/15–Now	**Cooperative Institute for Research in Environmental Sciences**	University of Colorado, Boulder, CO
08/13–05/15	**Earth, Atmospheric & Planetary Sciences**	MIT, Cambridge, MA
07/2014	**Institut für Geophysik**	ETH Zürich, Zürich, Switzerland
08/11–05/13	**Dept. of Earth & Atmospheric Sciences**	Cornell University, Ithaca, NY
01/12–05/13	**Dept. of Astronomy**	Cornell University, Ithaca, NY
05–08/12	**NOAA Hollings Scholar**	National Geophysical Data Center, Boulder, CO
06–07/11	**IRIS Internship Program**	UCSC, Santa Cruz, CA
08/10–05/11	**Ocean Resources and Ecosystems Program**	Cornell University, Ithaca, NY
06–08/2010	**Department of Energy Global Change Education Program**	Los Alamos National Lab, NM

teaching experience

02–05/2015	**Teaching assistant**	MIT EAPS, Cambridge, MA
	12.009: Theoretical Environmental Analysis, Professor Daniel Rothman. Won department's award for excellence in teaching.	

01/2014,2015 **Lecturer** MIT EAPS, Cambridge, MA
Co-taught 12.091 MATLAB Bootcamp with Dan Amhrein and Jaap Nienhuis.

11/2013,2014 **Lecturer** MIT Educational Studies Program, Cambridge, MA
Volunteered in Splash! by giving 1-hr presentations to 80-150 high school students on geomagnetism from Earth's inner core to the outer reaches of the solar system.

09–11/12 **Grader** Cornell University, EAS, Ithaca, NY
EAS 3530 Physical Oceanography, Dr. Bruce Monger.

awards

2017–now **NASA Earth and Space Science Fellowship**

2017 **George C. and Joan A. Reid Award** Cooperative Institute for Research in Environmental Sciences (CIRES)
The Reid Award celebrates intellectual contributions to CIRES and leadership within the broader University of Colorado Boulder community.

2017 **NOAA's National Centers for Environmental Information Innovative Product & Team Excellence Awards**

2015 **Governor of Colorado's Award for High-Impact Research** Colorado
Part of a NOAA's Geomagnetism team that won a 2015 Governor of Colorado's Award for High-Impact Research, given by CO-LABS, a non-profit association that supports federal laboratories in Colorado.

2014–2017 **NSF Graduate Research Fellowship Program**

2014 **NASA Earth and Space Science Fellowship** declined

2013–2014 **MIT Praecis Presidential Graduate Fellow** MIT, Cambridge, MA

2013 **NSF Graduate Research Fellowship Program, Honorable Mention**

2012 **Michael W. Mitchell Prize** Dept. of Earth & Atmospheric Sciences, Cornell University
An annual cash award ($3,000) to outstanding juniors or seniors at Cornell University in Science of Earth Systems (SES). The award is made to a 'geology student who proves himself adept at other liberal arts fields as well as geology– a student of the world.'

2011–2013 **NOAA Ernest F. Hollings Undergraduate Scholarship Program**

10/10–05/11 **NASA/New York Space Grant Consortium's Undergraduate Early Science & Engineering Research Competition**

2010–2012 **Dean's List** Cornell University, College of Engineering

2009–2013 **Jacobs Scholar** Cornell University, College of Engineering
Support for engineering students who exemplify strength and potential in academics, service, and leadership with an expressed interest in using engineering education for the betterment of society.

2009–2013 **Cornell Tradition Fellow** Cornell University
A fellowship for students dedicated to work, service, and scholarship.

2009–2012 **Federal Water Quality Association's Richard Barber Scholarship**

professional societies and service

2011–Now **American Geophysical Union**

2017–Now **Earth Science Women's Network**

2012–2017 **APS' Conference for Undergraduate Women in Physics**

2014 **Session co-chair & co-convener** AGU Fall Meeting
ED31C Solutions and Strategies for Fostering GeoEthics and Enhancing the Geosciences Section Posters

mentoring

2017

Anny Saivil (Smith College), Research Experiences in Solid Earth Sciences for Students (RESESS).
Anjelique Morine (Red Rocks Community College), Research Experience for Community College Students (RECCS).

invited commentaries/reviews

2017

Schnepf, N. R. Going electric: Incorporating marine electromagnetism into ocean assimilation models. *Journal of Advances in Modeling Earth Systems*, 9.

publications

2017

Schnepf, N. R., C. Manoj, A. Maute, N. M. Pedatella, A. Kuvshinov, & A. D. Richmond. An analysis of ionospheric versus oceanic tidal magnetic signals. *Geophysical Research Letters*, in prep.

2016

Grayver, A., **N. R. Schnepf**, A. Kuvshinov, T. Sabaka & N. Olsen (2016). Results of 1-D inversions using satellite-detected ocean tidal magnetic signals. *Science Advances*, 2, e1600798.

Schnepf, N. R., M. C. Nair, C. An, H. Sugioka & H. Toh (2016). Time-frequency characteristics of tsunami magnetic signals from four Pacific Ocean events. *Pure & Applied Geophysics*, 1-19.

2015

Schnepf, N. R., A. Kuvshinov, & T. Sabaka (2015). Can we probe the conductivity of the lithosphere and upper mantle using satellite tidal magnetic signals? *Geophysical Research Letters*, 42, 3233-3239.

Schnepf, N. R., R. V. E. Lovelace, M. M. Romanova & V. Airapetian (2015). Stellar wind erosion of protoplanetary discs. *Monthly Notices of the Royal Astronomical Society*, 448, 1628-1633.

2014

Schnepf, N. R., M. C. Nair, A. Kuvshinov, H. Toh, & S. Maus (2014). Tidal signals in ocean bottom magnetic measurements of the Northwestern Pacific: Observations versus predictions, *Geophys. J. Int.*, 198, 1096-1110.

2012

Greene, C. H., B. C. Monger, L. P. McGarry, M. D. Connelly, **N. R. Schnepf**, A. J. Pershing, I. M. Belkin, P. S. Fratantoni, D. G. Mountain, R. S. Pickart, A. Proshutinsky, R. Ji, J. J. Bisagni, S. M. A. Hakkinen, D. B. Haidvogel, J. Wang, E. Head, P. Smith, & A. Conversi (2012). Recent Arctic Climate Change and its Impacts on Northwest Atlantic Shelf Ecosystems, *J. Oceanography*, 25, 3, pp. 208-213.

news releases

2014

Gundersen, L., J. Geissman, G. Goldman, D. Mogk, **N. Schnepf**, B. Voss, M. Weiss, and R. Townsend (2014). Spotlight on scientific integrity and geoethics at the 2014 AGU Fall Meeting, *Eos Trans. AGU*, 95(49), 465.

presentations & abstracts

invited

July 2016	**Science Seminar**	NOAA NCEI, CO, USA
Apr. 2015	**Planetary Internal Colloquium Series**	MIT EAPS, MA, USA
Feb. 2015	**Planetary Geodynamics seminar**	NASA GSFC, MD, USA

contributed as lead author

Aug. 2016 — **Selected oral presentation (Session 1.2 Source Fields).** 23rd EM Induction Workshop
N. R. Schnepf, M. C. Nair, and A. Kuvshinov. An analysis of ionospheric versus oceanic tidal magnetic signals and implications for electromagnetic sounding.

Dec. 2015 — **Selected oral presentation (Section GP31B).** AGU Fall Meeting
N. R. Schnepf, A. Grayver, A. Kuvshinov, T. Sabaka, and N. Olsen. The electrical conductivity of the upper mantle and lithosphere from satellite magnetic signal due to ocean tidal flow.

June 2015 — **Selected oral presentation (Section JA04d).** IUGG 26th General Assembly
N. R. Schnepf, A. Kuvshinov, T. Sabaka, and N. Olsen. Sensing the conductivity of the upper mantle and lithosphere using ocean tidal magnetic field satellite measurements: Model studies and observations.

Dec. 2014 **Selected oral presentation (Section GP43B).** AGU Fall Meeting
N. R. Schnepf, A. Kuvshinov, T. Sabaka, and N. Olsen. Sensing the Electrical Conductivity of the Upper Mantle and Lithosphere Using Satellite Magnetic Signal Due to Ocean Tidal Flow.

Dec. 2014 **Selected poster presentation (Section GP51B).** AGU Fall Meeting
N. R. Schnepf, B. P. Weiss, E. A. Lima, R. Fu, M. Uehara, J. Gattacceca, H. Wang and C. Suavet. Paleomagnetism of a primitive achondrite parent body: The acapulcoite-lodranites.

Dec. 2013 **Selected oral presentation (Section GP22A).** AGU Fall Meeting
N. R. Schnepf, C. An, M. C. Nair, and S. Maus. Tsunami magnetic signals in Northwestern Pacific seafloor magnetic measurements.

Aug. 2013 **Selected oral presentation.** IAGA XIIth Scientific Assembly
N. R. Schnepf, M. C. Nair, A. Kuvshinov, H. Toh, and S. Maus. Tidal and tsunami signals in ocean bottom magnetic measurements in the North Pacific.

Apr. 2013 **First place physical science poster presentation.** CURB Spring Forum
N. R. Schnepf, C. An, M. C. Nair, and S. Maus. An analysis of tsunami electromagnetic signals.

Jan. 2013 **Selected oral presentation.** NCUWiP
N. R. Schnepf, M. C. Nair, A. Kuvshinov, H. Toh, and S. Maus. Tidal and tsunami signals in ocean bottom magnetic measurements in the North Pacific.

Dec. 2012 **Selected poster presentation (Section GP33A).** AGU Fall Meeting
N. R. Schnepf, M. C. Nair, A. Kuvshinov, H. Toh, and S. Maus. Tidal signals in ocean bottom magnetic measurements in the North Pacific: observations and predictions.

Aug. 2012 **1st place presentation for the Weather-Ready Nation session.** NOAA Hollings Science and Education Symposium
N. R. Schnepf, M.C. Nair, A. Kuvshinov, H. Toh, and S. Maus. Tidal signals in ocean bottom magnetic measurements in the North Pacific: observations and predictions.

Dec. 2011 **Selected poster presentation (Section S23B).** AGU Fall Meeting
N. R. Schnepf, S. Y. Schwartz, L. Xue, and M. Kim. Detecting Tremor in the Nicoya Peninsula, Costa Rica, from Dec 1999 – June 2001.

Feb. 2007 Parallel NGO meeting of the Annual UN Status of Women Conference
N. R. Schnepf and S. Schmoltner, 'Ask Me: I'll Tell You', a documentary on how Thomas Jefferson High School for Science and Technology perceives the status of women.

coauthored abstracts and presentations

Aug. 2016 23rd EM Induction Workshop
A. V. Grayver, N. R. Schnepf, A. V. Kuvshinov, M. C. Nair, T. J. Sabaka and N. Olsen. Sounding the Earth's electrical structure with satellite-detected ocean tidal magnetic signals.

Apr. 2016 EGU General Assembly
A. V. Grayver, N. R. Schnepf, A. V. Kuvshinov, M. C. Nair, T. J. Sabaka and N. Olsen. Global electrical conductivity model of lithosphere and upper mantle derived from satellite-detected ocean tidal electromagnetic signals.

M. C. Nair, M. Narayanan, N. R. Schnepf, A. Chulliat and J. Larsen. Magnetic detection of tsunamis. Selected poster presentation.