

“EAR to the Ground” Newsletter

April 2010

This is the first of a new email “newsletter” to members of the EAR community which will be published about twice a year with information we hope you will find useful. Topics covered in this inaugural issue include:

- 1. Division Overview and Recent Staff Changes**
- 2. Career Opportunities in EAR**
- 3. EAR FY2010 and Proposed FY2011 Budgets**
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1. Division Overview and Recent Staff Changes

The Division of Earth Sciences (EAR) is currently headed by Dr. Robert Detrick who has served as Division Director since November 2008. EAR has two sections: the Deep Earth Processes Section (DEP) and the Surface Earth Processes Section (SEP).

The DEP Section is headed by Jim Whitcomb and includes programs in geophysics, tectonics, petrology and geochemistry, and continental dynamics. The DEP Section also includes the new EarthScope program and EAR’s Instrumentation and Facilities program which serves the entire Division.

DEP Programs and Program Officers:

Geophysics - Robin Reichlin, Eva Zanzerkia, and Ben Phillips

Petrology and Geochemistry - Sonia Esperanca and Bill Leeman

Tectonics – David Fountain and James Dunlap

Continental Dynamics – Leonard Johnson

EarthScope – Greg Anderson and Linda Warren

Instrumentation and Facilities – David Lambert, Russell Kelz and Thomas Boyd

Program Director for DEP – Steve Harlan

The SEP Section is headed by acting Section Head Enriqueta Barerra and includes programs in geomorphology and land use, hydrologic sciences, geobiology and low temperature geochemistry, and sedimentary geology and paleobiology. The Division’s education programs, which include a number of programs to attract and support students and early career investigators to the Earth Sciences, are also included in the SEP Section.

SEP Programs and Program Officers

Geobiology and Low Temperature Geochemistry – Enriqueta Barerra and Marilyn Fogel

Sedimentary Geology and Paleobiology – Rich Lane, Paul Filmer and Ray Bernor

Geomorphology and Land Use – Richard Yuretich
Hydrologic Sciences – Thomas Torgersen and Richard Cuenca
Education and Human Resources – Lina Patino
Science Assistant for SEP – Erin Hollembeak

New EAR Program Officers:

Marilyn Fogel - Marilyn is a stable isotope biogeochemist and has worked at the Geophysical Laboratory of the Carnegie Institution of Washington since 1977. She is serving as a Program Director in the Geobiology and Low-Temperature Geochemistry program. Fogel has a B.S. in Biology from Penn State and a Ph.D. in Botany (Marine Sciences) from the Univ. of Texas. At NSF she hopes to strengthen interactions with colleagues in the BIO directorate, to engage the community to articulate their goals, and to enjoy a break from a laboratory environment, while helping NSF carry out their mission to fund excellent research. Marilyn has worked in defining stable isotope systematics in biology, geochemistry, ecology, and paleontology. About half of her work deals with modern ecosystems, and the remainder, on how the ancient fossil and rock records provide isotopic clues of past climate, environment, and ecology. Fogel is a Maryland Senior Olympics Gold Medalist in the shot put and is actively training for medalist status in the 100 m dash and discus.

Tom Torgersen - Tom (aka Torg) joins EAR as a new Program Officer in Hydrologic Sciences. Tom hails from the University of Connecticut after previous appointments at Australian National University and a post-doc at WHOI. With a 1971 B.S. in ChemEng from the University of Illinois and graduate degrees in Geological Sciences from Columbia/LDEO, Tom has a long history in tracer applications and reaction and transport analysis in lakes, surface water and groundwater and is currently working on a collaborative book with the IAEA on the dating of old groundwater. In 2003-2004 Tom's prior experience include a stint as Program Officer in EAR's Hydrologic Sciences in 2003-2004 and as Program Director in DOE's Office of Basic Energy Science. He also served as editor and then Editor in Chief for Reviews of Geophysics (1994-2004) as well as Editor for Water Resources Research (2005-2009). In his spare time, Tom likes to row in the early morning with a competitive group from Alexandria. His collection of ties and Hawaiian shirts is infamous.

2. Career Opportunities in EAR

Eight of the 23 Program Officers in EAR are on temporary appointments. The Division is nearly always looking for individuals from the EAR community who are interested in serving as Program Officer for up to 3 years.

Qualifications of a successful candidate include a PhD degree or equivalent in a relevant discipline, and two years (Assistant Program Director) four years (Associate Program Director) or six years (Program Director) of experience with an established record of research and education in a field appropriate for the position, and managerial experience in academe, industry or government. If you are interested in applying for one of these positions, or just finding out more about them, contact one of the Program Officers listed above. Also check out the "Career Opportunities" section of the NSF website at http://www.nsf.gov/about/career_opps/vacancies/scientific.jsp for current vacancy listings.

3. EAR's FY2010 and Proposed FY2011 Budgets

In FY2010, the GEO budget will increase to ~\$890M, an ~10% increase over FY09. EAR's FY2010 budget will stand at \$183M, an ~7% increase over FY09 and an ~16% increase over FY08. EAR spending priorities in FY2010 include:

- enhancing EAR core program budgets (which have been increased an average of ~5% across the Division);
- participating in NSF's Climate Research Investment (see section 4);
- supporting critical EAR facilities, and
- funding more high-risk, return research.

On February 1st, 2010, President Obama's FY2011 budget was released. The budget includes a proposed 8% increase for NSF and a 7.4% increase for GEO (see table below). The EAR budget is proposed to grow to \$199M or about \$16M (+8.7%) over FY2010. EAR spending priorities in the proposed FY2011 budget include:

- maintaining a healthy portfolio of core science programs and the critical facilities and instrumentation needed to support those programs;
- participation in NSF's new Science, Engineering, and Education for Sustainability (SEES) (<http://www.nsf.gov/geo/sees/>) program through EAR's continued support of NSF's Climate Research investment (CRI), EAR's Critical Zone Observatory program, and supporting the NCAR-Wyoming Supercomputer Center construction;
- expanding support for research into Earth's Dynamic Systems, especially for large, interdisciplinary projects that cannot be supported through EAR's core programs;
- expanding support for EarthScope science, including collaboration with the Division of Ocean Sciences on ocean-land experiments along the margins of the North American continent (e.g. Cascadia);
- supporting development of advanced geoinformatics, computational infrastructure, and models to facilitate the dissemination and utilization of data acquired by Earth scientists;
- increasing support for REU, EAR post-doctoral fellowships, and CAREER awards to attract a new and more diverse generation of students to pursue careers in Earth science, and to support early career scientists.

	FY2008 Actual	FY2009 Actual	FY2009 ARRA	FY2010 Estimate	FY2011 Request	FY2011 Request over:			
						FY2009 Amount*	%	FY2010 Amount	%
NSF	\$6,084.04	\$6,468.76	\$2,401.66	\$6,872.51	\$7,424.40	\$955.64	14.8%	\$551.89	8.0%
GEO	\$ 757.87	\$ 808.53	\$ 347.00	\$ 889.64	\$955.29	\$146.76	18.2%	\$65.65	7.4%
EAR	\$ 157.82	\$ 171.01	\$ 85.22	\$ 183.00	\$199.00	\$27.99	16.4%	\$16.00	8.7%

* Excluding ARRA funds

For additional information on NSF's proposed FY2011 budget, see:

<http://www.nsf.gov/about/budget/fy2011/toc.jsp>

4. New Solicitations in Climate Research

A major new initiative in NSF's FY2010 budget is its Climate Research Investment (CRI). Eight different Directorates in NSF are participating in CRI. Five new solicitations have been issued in conjunction with CRI. These new solicitations include:

Decadal and Regional Climate Prediction using Earth System Models (EaSM): NSF 10-554
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503399

Water Sustainability and Climate (CRI-WSC): NSF 10-524
<http://www.nsf.gov/pubs/2010/nsf10524/nsf10524.htm>

Ocean Acidification (CRI-OA): NSF 10-530
<<http://www.nsf.gov/pubs/2010/nsf10530/nsf10530.htm>>

Dimensions of Biodiversity: NSF 10-548
<<http://www.nsf.gov/pubs/2010/nsf10548/nsf10548.htm>>

Climate Change Education (CCE): Climate Change Education Partnership (CCEP) Program, Phase I (CCEP-I): NSF 10-542
<<http://www.nsf.gov/pubs/2010/nsf10542/nsf10542.htm>>

For additional information on these solicitations, including submission deadlines and program guidelines, please click on the associated URLs above or go to <http://www.nsf.gov/geo/sees/>

5. Upcoming NSF proposal announcement deadlines/target dates and program information of interest to the EAR community

Water Sustainability and Climate 10-524: Full Proposal: April 15, 2010

Major Research Instrumentation Program (MRI) 10-529: Full Proposal: April 21, 2010

Climate Change Education Program (CCE); Climate Change Education Partnership Program (CCEP) 10-542 Letter of Intent (required): April 23, 2010.

Dimensions of Biodiversity 10-548: Letter of Intent (required): May 7, 2010

Climate Change Education Program (CCE); Climate Change Education Partnership Program (CCEP) 10-542 Full Proposal: May 24, 2010.

Hydrologic Sciences 09-538: Full Proposal: June 1, 2010

Research Experiences for Undergraduates (REU) 09-598: Full Proposal: June 4, 2010

Geophysics 09-539: Full Proposal: May 5 - June 5, 2010

Dimensions of Biodiversity 10-548: Full Proposal: June 8, 2010

MARGINS Programs 07-546: Full Proposal: July 1, 2010

NSF Earth Science Postdoctoral Fellowships 10-500: Full Proposal: July 1, 2010

Petrology and Geochemistry 09-543: Full Proposal: June 6 - July 6, 2010

Tectonics 09-542: Full Proposal: June 6 - July 6, 2010

Earth Sciences: Instrumentation and Facilities 09-517: Full Proposal: July 14, 2010

EarthScope 09-535: Full Proposal: July 16, 2010

Geobiology and Low Temperature Geochemistry 09-552: Full Proposal: July 16, 2010

Geomorphology and Land Use Dynamics 09-517: Full Proposal: July 16, 2010

Sedimentary Geology and Paleobiology 09-560: Full Proposal: July 16, 2010

Faculty Early Career Development (CAREER) Program 08-557: Full Proposal July 20, 2010

6. Early Career (Post-Ph.D.) Opportunities for Earth Scientists

NSF Earth Sciences Postdoctoral Fellowships (EAR-PF)

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503144&org=GEO&sel_org=GEO&from=fund

CAREER Faculty Early Career Development Program

<http://www.nsf.gov/career>

ESWN Earth Science Women's Network

<http://www.sage.wisc.edu/eswn/>

On the Cutting Edge Professional Development for Geoscience Faculty

<http://serc.carleton.edu/NAGTWorkshops/index.html>

7. Supplement Opportunities

NSF provides several opportunities for PIs of existing awards to receive supplemental funding to engage different audiences in research related activities:

Research Experiences for undergraduates (REU) and for teachers (RET)

This supplement opportunity provides funding to facilitate the participation of 1-3 students and/or teachers in funded research projects. The student/teacher should be intellectually involved in the different stages of research project, from hypothesis generation to data collection to presentation of the results. Keep in mind that graduating high school students are eligible for the REU supplements. If you are interested in this supplement opportunity, please refer to the REU web page (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund) and communicate with your program director.

Communicating Research to Public Audiences (CRPA)

This supplement opportunity is supported by the Informal Science Education program in the Directorate of Education and Human Resources. It is designed to assist with the broader dissemination of research findings and to promote STEM learning by the general public. CRPAs may include the design and implementation of exhibitions, films, television, radio, web, and youth and community projects. CRPA proposals can be a maximum of \$150,000 and up to two years in duration. More information on this supplement opportunity can be found at <http://www.nsf.gov/pubs/2009/nsf09553/nsf09553.pdf>. If you are considering this supplement opportunity, we encourage you to contact program directors in the Informal Science Education Program at DRLISE@nsf.gov

8. RAPID and EAGER Awards

Grants for Rapid Response Research (RAPID) and EARly-concept Grants for Exploratory Research (EAGER) replaced the Small Grants for Exploratory Research (SGER) program beginning January 5, 2009. RAPID is a funding mechanism to support quick-response research on natural or anthropogenic disasters and similar unanticipated events. Requests may be for up to \$200K and of one year duration.

The EAGER mechanism supports high-risk, exploratory and potentially transformative research. Requests may be for up to \$300K and up to two years duration. RAPID and EAGER proposals are only required to be reviewed internally at NSF; further submission information is contained in

these sections. See Chapter II, Sections D.1 and 2 of the NSF Proposal and Award Policies and Procedures Guide.

PIs are strongly encouraged to contact a Program Officer in the relevant EAR program before submitting a RAPID or EAGER proposal.

9. Changes to NSF Proposal and Award Policies and Procedures Guide: Postdoctoral Mentorship Statement

In order to address requirements of the America COMPETES Act, all NSF proposals submitted after October 1, 2009 that request funding to support postdoctoral researchers must include in the Supplementary Document section a description of the mentoring activities that will be provided for such individuals. The mentoring plan will be evaluated during the merit review process under the Broader Impacts criterion. Proposals that do not include a mentorship statement will be returned without review. The Proposal Preparation Checklist (Exhibit II-1) and Chapter IV.B. on Return without Review have been updated to reflect this. See the NSF Grant Proposal Guide (http://www.nsf.gov/pubs/policydocs/pappguide/nsf09_1/nsf091.pdf) for additional information

10. MOU between NSF and AAPGF

On March 11, 2010 NSF and the American Association of Petroleum Geologists Foundation signed an MOU agreeing to work together to enhance research and education in the earth sciences at U.S. universities. See:

http://www.nsf.gov/news/news_summ.jsp?cntn_id=116639&org=OLPA&from=news

11. NRC Study of Future Research Opportunities in Earth Sciences

The Board of Earth Sciences and Resources at the National Academy of Sciences has been asked by NSF's Earth Sciences Division to identify new research opportunities in Earth science, emphasizing the connections between traditional solid-Earth science disciplines such as geophysics and geochemistry and other disciplines such as hydrology and biology. The committee will consider the role of the NSF in the context of related activities being conducted or sponsored by other government agencies, industry, and international partners. It will also explore linkages between research and societal needs. In particular, the committee will undertake four tasks:

1. Identify high-priority new and emerging research opportunities in the Earth sciences over the next decade, including surface and deep Earth processes and interdisciplinary research with fields such as ocean and atmospheric sciences, biology, engineering, computer science, and social and behavioral sciences.
2. Identify key instrumentation and facility needed to support these new and emerging research opportunities.
3. Describe opportunities for increased cooperation in these new and emerging areas between EAR and other government agency programs, industry, and international programs.
4. Suggest new ways that EAR can help train the next generation of Earth scientists, support young investigators, and increase the participation of underrepresented groups in the field.

The committee slate was approved by the National Research Council in March 2010. The committee membership is listed below; Mark Lange will be the Study Director. The final report of the committee is expected in about 18 months.

Committee Membership:

Thorne Lay: Committee Chair, *UC Santa Cruz*

Kristine Larson: *UC Boulder*

Peter Olson (NAS): *Johns Hopkins*
Michael Bender (NAS): *Princeton*
David Montgomery: *U of Washington*
Michael Manga: *UC Berkley*
Ken Farley: *CalTech*
Tim Lyons: *UC Riverside*
Paul Olsen (NAS): *Columbia*
Suzanne Carbotte: *Columbia*
Isabel Montanez: *UC Davis*
Patricia Wiberg: *University of Virginia*
Don Zhang: *University of Southern California*
Ho-kwang (Dave) Mao (NAS): *Carnegie Institute*

12. Highlights Requested:

To help us communicate the excitement and importance of achievements derived from your EAR-supported project, we would like to request you submit a research “Highlight”. Highlights can be submitted at any time and are essential to advancing EAR’s mission in the following ways:

- Communicating the value of EAR-supported research advances and innovations to the public and Congress.
- Justifying our budget request at the Division, Directorate, Foundation, and Federal levels.
- Providing evidence of NSF performance in response to the Government Performance and Results Act.

Your highlight should be brief (one or two paragraphs) and address a general audience. We ask that you include:

- An engaging title.
- The location and/or lead institution for the research and the names of all principal investigators when manageable.
- A description of the results, including information on Intellectual Merit and Broader Impacts.
- An informative image and caption is critical. You can expect to receive a request from NSF for permission to use the image.

Separate, one sentence answers to the following questions would also be appreciated:

- Is the research transformative and if so why?
- What is the intellectual merit of the activity?
- What are the broader impacts of the activity?
- What is the NSF award number associated with this research and was it supported with ARRA (American Recovery and Reinvestment Act of 2009) funds?

Finally, if you are publishing a paper in a major journal (e.g., *Science, Nature, PNAS*) on research supported by NSF with results of broad interest to the general public, please let your Program Officer know at least 2-3 weeks prior to publication. If appropriate, NSF may wish to issue a press release in conjunction with your university or institution.