OSU RERF: Awarded to Joseph Stoner, COAS, January 2009, $21,080
Title: Acquisition of Critical Elements to Support the new OSU Paleo-and-Environmental Magnetism Laboratory
PI, Joseph Stoner, College of Oceanic and Atmospheric Sciences.

Budget Statement

Three Axis Fluxgate Magnetometer $6,400
Used to measure weak magnetic field and to successfully calibrate the instrument in the delicate trapping of the low field procedure.

Pfeiffer TSH 071E Pumping Station $6,500
Used to bring the cryocooler of the Super Conducting Rock Magnetometer down to 3.5 K after a planned or unplanned (power outage) shutdown.

Ionizing Blower with Cable/Cord $400
Used to reduce moisture build up and ice formation in the magnetometer

ASC Impulse Magnetizer $4,960
Used to impart DC field of variable strengths to assess magnetic mineralogies

Bartington Dual Frequency Laboratory Magnetic Susceptibility Sensor $2,820
Used to measure the magnetic susceptibility of discrete samples

Total $21,080

Scholarly work/Activities

The purchase of these critical elements has facilitated the development of the Paleo-and Environmental Magnetism Laboratory (P-Mag Lab) (http://paleomag.coas.oregonstate.edu/) that after more than a year of careful calibration is now fully operational. Ongoing projects include: The development of sediment magnetism based paleo-proxies to test the sensitivity of the Southern Greenland Ice Sheet to future warming in collaboration with Anders Carlson & Brian Beard, U. Wisconsin. Research on the Holocene Paleomagnetic record of the Arctic in collaboration with Mark Abbott, U. Pittsburgh. Studies on the Paleomagnetic record from Bering Sea IODP Expedition 323, in collaboration with Steve Lund, U. Southern California. Studies on sediment magnetic acquisition and the paleomagnetic record from the North Atlantic and the Gulf of Alaska. The Laboratory directly facilitates the research of three graduate students. PhD student Maureen Davies, expected graduation 2011; PhD student and NSF Graduate Fellow Sarah Strano, expected graduation 2013; and MS student Jason Dorfman, expected graduation 2012. Two Postdoctoral Research Associates also work in the Lab, Rob Hatfield and Chuang Xuan. Prof and Canadian Research Chair Gullaume St-Onge from the University of Quebec, Rimouski has been a Fulbright sponsored sabbatical visitor to P-Mag Lab for the year. This summer the P-Mag Lab will play host to an REU student Dillan Lee from the U. Florida. The P-Mag Lab is also being used for course work (OC532, OC562 and GPH 642) to help facilitate research with education.
**Publications related to RERF support**


**External funding requests related to RERF support**

*Funded*

Holocene paleomagnetic record and observations on magnetic acquisition from North Atlantic sediments, NSF-OCE0929066, 9/01/2009-8/31/2011 (Stoner PI OSU $332,329).

*Pending*

FESD Type I: Megathrust Earthquakes as Fundamental Drivers of Geoscape Evolution in Cascadia, (NSF, Wheatcroft PI, Hunter, Stoner, Goldfinger, Goni, co-PIs OSU $5,001,071)

Collaborative Research: POISE (Petermann Ocean Ice Shelf Experiment) - Paleo Context for Ocean Ice Interactions (NSF, Mix PI, Stoner, Brook, co-PIs OSU $1,915,575)