ISEN Booster Grant Progress Report for December 31, 2011

Ancient greenhouse worlds: Past climates as a roadmap for the future
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1. Publications linked to ISEN funding.

Conference Presentations


Bush, R.T., F.A. McInerney, S.L. Wing. 2011. Composition of \(n\)-Alkanes in Individual Fossil Leaves from the Paleocene-Eocene Boundary. *Climate and Biota of the Early Paleogene (Salzberg, Austria)*.

Bush, R.T., F.A. McInerney. 2010. Variation in \(n\)-Alkane Distributions of Modern Plants: Questioning Applications of \(n\)-Alkanes in Chemotaxonomy and Paleoecology. *Fall Meeting of the American Geophysical Union (San Francisco, CA)*.

Bush, R.T., F.A. McInerney. 2009. Re-evaluating the isotopic divide between angiosperms and gymnosperms using \(n\)-alkane \(^{13}\)C values. *Fall Meeting of the American Geophysical Union (San Francisco, CA)*.

Publication in Preparation

Graduate student Rosemary Bush is currently preparing a manuscript for submission to *Organic Geochemistry* called "Characterizing the Variation of \(n\)-Alkane Distributions in Modern Plants: Implications for Paleoecology, Chemotaxonomy, and Ecophysiology." This work relied heavily on the software STATA purchased with this ISEN Booster grant.

2. Any proposals submitted and/or awarded:


Undergraduate Training

Senior thesis by Debra Chen, Biological Sciences Major.
Debra Chen is working with Rosemary bush to examine how \( n \)-alkane distributions record a plant’s relationship to its environment in the modern world. The results will be applied to interpretations of \( n \)-alkane distributions from fossil sites in the Bighorn Basin, WY, including the Cretaceous Big Cedar Ridge and Paleocene-Eocene Thermal Maximum sites in the Cabin Fork area. This work will utilize STATA, software purchased with this Booster Award and will compliment the on-going graduate research of Rosemary Bush. Debra will complete her thesis for graduation in June 2011.

John Kapnick worked was funded by this ISEN Booster award to work a field assistant with Rosemary Bush in the summer of 2009 and gained valuable geological and paleontological field skills. John became so interested in the research that he designed and completed an Honors Thesis in Earth and Planetary Sciences entitled, “\( n \)-Alkanes as a Chemo-taxonomic Indicators for Ferns”. He graduated in June of 2010.

Science Education Research and Teaching Synthesis (SERTS)
SERTS is a university-wide initiative at Northwestern to engage all students in the value and substance of scientific research. Non-science undergraduates learn about scientific research through workshops in active labs led by graduate students. Rosemary Bush was a workshop leader in March 2009, 2010 and 2011 during which time her ISEN funded project was used as an example of original scientific research.