Dear Chris Underwood,

Congratulations on a successful submission of your abstract to the 2007 Annual Meeting, San Francisco, California. Your Program Identification Number (PIN) is: 90017015. Your abstract details are as follows:

**Title:** Using Mastodon Matrix to Teach Earth Science to Middle School Students

**Keywords:** GK-12, authentic research, mastodon matrix, earth science, paleontology, environmental history, university outreach

**Type:** Illustrated Paper

**Abstract:**
The Mastodon Matrix Project, coordinated by the Paleontological Research Institution (PRI) in collaboration with Cornell University, allows interested parties to contribute to an actual scientific study. Mastodons are extinct relatives of modern elephants that were numerous and widespread in North America until the end of the last glacial period. In July 2006, PRI loaned us 51 five-gallon buckets of sediment recovered during mastodon excavations at two sites in New York. University of Tennessee GK-12 Fellows are taking samples of this mastodon matrix into rural middle schools to engage students in hands-on, authentic paleontological research about our changing Earth. Students are each given 20 to 30 cc of matrix and are asked to be careful and observant researchers as they sort their findings into these categories suggested by PRI: 1) plant macrofossils, 2) rocks, 3) shells, and 4) everything else. Six classes at Carpenters Middle School found 861 items in ~3,000 cc of matrix. Included were 743 plant macrofossils (twigs, fragments of tree bark, seeds and conifer needles), 116 rocks, and 2 shells. These results were used in a lesson on graphing that was exciting to the students because it involved original data that they had collected. We are using the matrix at other schools and planning additional investigations for the students, including the examination of preserved pollen. The data and actual materials the students find will be returned to PRI where they will be examined and cataloged by PRI and Cornell paleontologists.

**Authors:**
Christopher A. Underwood, The University of Tennessee cunderw5@utk.edu*
Saskia L. van de Gevel, The University of Tennessee saskia@utk.edu
Gregory G. Metcalf, Heritage Middle School metcalfg@blountk12.org
Victoria Headrick, Carpenters Middle School headrickv@blountk12.org
Sally P. Horn, The University of Tennessee shorn@utk.edu

**Topics:**
Biogeography
Environment
Geography Education

**A/V Equipment:**
LCD Projector

If you have checked optional items that require a fee, you will be sent an invoice. All items must be paid in full prior to the meeting.

I understand what equipment is provided in each paper session room and that I am responsible for bringing any equipment that I need and that is not provided, such as my laptop or a laser pointer.

**Notes:**
I understand that there will be a 4'x8' posterboard for me to use, but that there will be no other audio visual equipment available.