

## **Leading Caltech Science Saturday**

**Apr 27, 2013**

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### Program description:

I led a Science Saturday presentation entitled "Far From a Cold Case: Solving the Riddles of Planet Earth." The program included clips from the BBC documentary "Earth: Power of the Planet--Ice", which focused on how glaciers form, glacial erosion and its lasting mark on Earth's landscapes, and links between glaciers and climate change. I presented slides which reinforced these concepts, largely using field photos and some hometown geology from the glacially influenced landscape of southern Wisconsin. I also included a few biographical slides, which included photos from my childhood and interests outside of science. I fielded questions one-on-one with the audience after the presentation.

Prior to the talk I collected links to online resources on glaciers, which were distributed by the event staff along with the program. Here are the links:

1. This website from Ohio State University has stories on geology, living creatures, and people in polar regions. Pick a topic, then try the "Electronic Book" option.

<http://beyondpenguins.ehe.osu.edu/stories-for-students>

2. The Exploratorium museum in San Francisco has lots of fun videos online for you to explore. Try this page and type "glacier" in the search box. You'll get some great movies and podcasts about glaciers and the scientists who study them.

<http://www.exploratorium.edu/media/archive.php>

3. Google Earth is a great tool for exploring a place you've never been. Here's a link to a Google Earth tour of glaciated landscapes all over the world! Click the download link next to "Download File." If you don't have Google Earth on your computer, you can download it for free at [earth.google.com](http://earth.google.com).

<http://wileygeohottopics.com/2010/02/15/glacier-virtual-tour-using-google-earth/>

### Glacial erosion demo:

To introduce some glacial landforms, I constructed a glacier out of a blob of ice cream, placed it in a clear glass baking dish coated with sediment (graham cracker crumbs), and tipped the pan to make the glacier slide. It formed lateral and terminal moraines, and I had a volunteer come to the stage and listen for till deformation at the base of the glacier. I showed photos from a trial run of the experiment to show the fine details of the experiment. The clear pan was especially useful because you could see a subglacial stream (melted ice cream) and the moraine distribution nicely from a photo taken through the bottom of the

pan. This activity was inspired by content from Carlton College's Science Education Resource Center website (<http://serc.carleton.edu>), which has a lot of great material for a variety of topics in earth science.