

USGS Rock CORE-LAB and ICE CORE-LAB Lakewood, CO

Dates: Friday September 9th, 2011 (11:30-3 P.M.)

Trip Leader: Paul Belanger

Bring your lunch for a handout, lecture by Paul on climate change prior to a tour by USGS personnel of the Core Research Center (CRC) and the U.S. National Ice Core Laboratory (NICL) located at the Federal Center in Lakewood, Colorado. ([Map](#))

Core Research Center (CRC): Geologists come here to look at cores of rock formations that are buried in the subsurface and that are otherwise inaccessible. Cores gives a spatial comparison of un-weathered rock formations to what are sometimes very limited outcrop exposures that might also represent a different depositional facies. Coring is an expensive undertaking of drilling for, cutting a core, extracting a core to surface, slabbing (cut in half), sampling, logging, analyzing and ultimately storing these rocks of subsurface formations. In the past, Oil and Gas companies have had to discard such cores and it has been an invaluable service for the USGS to archive and store such materials and make them available to the public. Much data is available online as well as thin-sections, photographs and various studies stored at CRC. Their stated goal: "to preserve valuable rock cores for use by scientists and educators from government, industry, and academia. The cylindrical sections of rock are permanently stored and available for examination and testing at the core storage and research facility in Denver (Lakewood), Colorado. The CRC is currently one of the largest and most heavily used public core repositories in the United States." For more information: <http://geology.cr.usgs.gov/crc/>.

U.S. National Ice Core Laboratory (NICL): The NICL is a facility for storing, curating, and studying ice cores recovered from the polar regions of the world. Their stated goal is: "It provides scientists with the capability to conduct examinations and measurements on ice cores, and it preserves the integrity of these ice cores in a long-term repository for current and future investigations." Ice cores have given US direct information about atmospheric changes and our climate past. For more information: <http://nicl.usgs.gov/index.html> OR <http://rmmcweb.cr.usgs.gov/outreach/nicl.html>

Paul has a research background in paleoclimate (foraminifera and stable isotopes: North Atlantic and Mediterranean areas) and has been leading (for the past 5 years) meetings and a Yahoo email-discussion group (<http://tech.groups.yahoo.com/group/DenverClimateStudygroup/>) and associated website <http://www.denverclimatestudygroup.com/>) on climate change and affiliated political-socio-economic issues. Our understanding of climate change comes from deep-sea drilling cores (stored at other institutions as Woods Hole, Lamont, Texas A&M, Scripps, etc. (see <http://geology.cr.usgs.gov/crc/links.html> for more). Another very important area of understanding climate change has come through ice coring of the Antarctic and Greenland Ice Sheets. Albeit, the core record is not as long in geologic time (~ 1Ma for Antarctic cores; ~0.5 Ma for Greenland cores), it nevertheless provides a direct empirical measure of atmospheric gases for the past million years and has been invaluable in understanding our climate past and inferred indications of our climate future.

Accommodations:

* BYOL (lunch), drink machines (need change) and paper towels will be available.

* BYOC (BRING your own Clothes): IMPORTANT: warm jacket, hat and gloves; it's MINUS 26-40 degrees Celsius in the ice core lab.)

HOW TO GET THERE - MAP (Allow time for checking into gate), parking etc, <http://nicl.usgs.gov/dfcmap.htm> Contact Paul Belanger, particularly if you have cores you might know/have an interest in: 303-526-7996 ; cell 303-249-7966 ;
<mailto:pebelanger@glassdesignresources.com>

Limited to 30 people

Cost: \$5 WIPS field trip fee

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