



Our Changing Planet: a timely 'gift' for teachers!

In September 2013 the Intergovernmental Panel on Climate Change (IPCC) published the first part of its Fifth Assessment Report (AR5), [The Physical Science Basis](#) (IPCC Working Group I contribution). In a worldwide press conference, Working Group I Co-Chair Thomas Stocker announced that the IPCC has concluded that “warming in the climate system is unequivocal” and that “it is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcing together.” Model simulations of future climate change crucially depend upon the quantity of CO₂ in the atmosphere, with predictions for the increase in global average temperature varying between 1.5°C and 4.5°C depending on the different gas-emission scenarios. In conclusion, the AR5 affirms: “Limiting climate change will require substantial and sustained reductions in greenhouse gas emissions.”

Given its major interest for humankind, there is no doubt that the IPCC report will be discussed worldwide. Therefore, it was clear to us that teachers would be eager to receive current and significant scientific information from eminent scholars, in order to answer the questions that will be asked by their students, as well as sharing their expertise as natural science pedagogues with their peers and scientists attending the EGU General Assembly.

There will be 85 science teachers from 18 different countries participating in the 3-day 2014 GIFT workshop focusing on [Our Changing Planet](#). They will be very busy! First, a guided tour of the Vienna Museum of Natural History on Sunday afternoon will get their natural science juices flowing, and will give them a chance to meet their new colleagues! In the following days, the teachers will first hear speeches about climate-change science from some of the leaders of different chapters of the IPCC report, as well as other leading science experts that are attending the General Assembly. Thomas Stocker will present the IPCC AR5 report, summarising the science that supports the interpretations of the Earth's changing past and the modelling results based on this science. There will also be presentations about natural environmental archives, such as ice cores that capture chemistry in the atmosphere, sea level rise in the context of climate warming, ocean acidification, changes in agricultural outputs and other key climatic factors that are used to understand climate change over time.

Two interactive hands-on demonstrations of climate science activities that teachers can use back in their classrooms after the workshop are planned for the GIFT participants. Experienced science educators will propose two different presentations to the teachers: ‘Some experiments on ocean acidification and the role of the ocean in the carbon cycle’ and the ‘Carbon cycle through the 5E model: game and experiment’ (5E stands for Engage, Explore, Explain, Extend (or Elaborate), and Evaluate).



GIFT teachers take part in a GPS activity outside the Austria Center Vienna.



GIFT teachers presenting their work at the EGU General Assembly.

Sixty teachers and 13 EGU researchers have submitted abstracts to the EGU [poster session EOS2: 'Science in tomorrow's classroom'](#), which highlights geology, biology, chemistry and physics field studies, lab exercises and other activities, primarily for middle/high school and undergraduate university students. This poster session gives teachers the opportunity to share their best practices in natural science activities with others, and also make connections for future collaborations for students from different countries to work together.

Based on previous GIFT workshop outcomes, we expect the teachers to use their updated knowledge and new contacts to create science activities in the future. Examples of previous outcomes include published articles in science magazines about the contents of the GIFT workshop, teaching colleagues about the latest developments presented at GIFT, and creating new teaching units in book form or websites.

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