



## Southern African

# Geosciences Information for Teachers (GIFT) Workshop

## *Climate change and human adaptation*



Earth Stewardship Science  
Research Institute



**Africa Earth Observatory Network  
Nelson Mandela Metropolitan University  
Port Elizabeth, South Africa  
February 26-28, 2014**



## **Application to participate in the UNESCO-EGU-ESA GIFT 2014 Teachers Workshop**

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### ***Climate change and human adaptation***

The workshop is aimed at secondary level science teachers in Southern Africa. Grants are available to support teachers to participate in the 2014 UNESCO-EGU-ESA Geosciences Information for Teachers (GIFT) Symposium. Selected teachers will receive a travel/hotel stipend and free registration to the meeting.

Participating teachers will be selected based on their teaching experience and a supporting statement from their school administration. Selected teachers will be expected to attend the entire workshop and submit a statement within 1 year after the workshop on their impression of the workshop and how they plan to use this experience in their future teaching activities.

#### **To apply please submit the following information:**

- Applicant name, contact information, E-mail address
- School name and address
- List the subjects you teach, and the ages of students
- The workshop will be conducted in English. Please describe your capability to understand and speak English.
- A description of any leadership activities you have taken at your school or in national educational activities (examples: training new teachers, developing curriculum, etc.).
- A letter of recommendation (by attached PDF document) from the senior administrator in your school supporting your application and specifying that you will have at least 5 years of teaching activity after the workshop.
- (Optional) There will be opportunities for teachers to present any creative science activities they have developed for their classrooms to other teachers at the workshop. These presentations can be in the form of a talk, a poster or a demonstration. If you would like to present a science activity, please provide a title and description for inclusion in the program.

**Applications should be received as soon as possible and in any case no later than  
December 9, 2013.**

**Send your application or questions via email to Jane Robb for the Local Organizing Committee ([sa-loc@egu.eu](mailto:sa-loc@egu.eu))**

The 2014 UNESCO-EGU-ESA GIFT Africa workshop will take place on February 26-28, 2014 at the Africa Earth Observatory Network at the Nelson Mandela Metropolitan University in Port Elizabeth, South Africa. The general theme of the workshop is Climate Change and Human Adaptation and it will explore some of the complex changes of the Southern African environment, in the framework of Global Change and the publication of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). The workshop is aimed at secondary level science teachers in Southern Africa.

Numerous geological, geophysical and geochemical data acquired over many years have documented that, on geological time-scales, the Earth has continuously undergone large changes. We know that continents have widely moved (plate tectonics), that the chemistry of the atmosphere has changed, that the climate of the Earth has undergone hot and cold periods (even that the Earth has been so cold at some points that the term “Snowball Earth” has been used). The term natural variability is employed to refer to the continuous evolution of our planet.

A new trend in variability has been progressively documented for the last 100-150 years of the Earth’s history, since the industrial revolution. Many studies have demonstrated that new factors of anthropogenic origin are starting to govern the environment of the Earth’s outer shells, i.e. precisely those where we live. A main, impressive characteristic of these environmental new factors is that changes are occurring at a rate and reach values unprecedented in the Earth’s history, to the point that the term “Anthropocene” has been proposed for this new era of the Earth’s history. The IPCC’s most recent assessment states unequivocally that it is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century.

Although Africa has made the smallest continental contribution to the carbon dioxide emissions at the root of this climate change, it is predicted to suffer the severest consequences. The impacts humans may experience in southern Africa range from unusual heat extremes to changing rainfall and water availability to agricultural impacts to shifting terrestrial ecosystem ranges to rising sea-level. The last IPCC report indicated that the climate of Africa is likely to warm more than other parts of the world during this century. Southern Africa occupies a unique geographic position that has played a significant role on the climate of the region which in turn has determined patterns of human evolution and settlement throughout the region. The Agulhas and Benguela currents come together at this southern-most tip of the African climate, driving climate patterns linked to oceanic currents and sea surface temperature, and hosting the tiny fynbos biome. Although changing environments have been drivers of human evolution in the region in the past, the current anthropogenic changes taking places at unprecedented rates will put a major strain on southern African’s lifestyles and challenge their ability to adapt.

Given the major importance for human kind, the continuation of so-called “climate skeptics” and the publication of the most recent IPCC report, there is no doubt that these questions will be discussed worldwide, in all media. Therefore, teachers must be provided with sound scientific information in order to answer the questions that, invariably, they will have from their students.

The UNESCO-EGU-ESA GIFT 2014 workshop will invite distinguished international and southern African scientists to address the teachers about the different aspects of climate change from a scientific perspective. The workshop will also comprise hands-on activities led by science educators.