UM SEEDS You Choose Report
July 2010.

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My You Choose award paid $2,500 of travel funds so that I could attend a Workshop on the oceanography of the Southwest Indian Ocean in Kiel, Germany. Arne Biastoch (IFM-Geomar) and myself organized and co-chaired the workshop which ran for three days from 2-4th March, 2009. We brought together a diverse international community of scientists who conduct research in this region, including participants from South Africa, the U.K., Japan, Germany, France, the Netherlands, and the U.S., with expertise covering western boundary current dynamics, observational process studies, regional, global, and coupled modeling, biophysical interactions, satellite remote sensing, and paleo-oceanography.

The primary goal of the workshop was to develop a SCOR (Scientific Committee for Oceanographic Research) proposal for a new Working Group (WG) on the Climatic Importance of the Greater Agulhas System. A working group which would bring international attention to the region and its role in global climate change, as well as facilitate communication and collaboration among researchers, discuss and strategize on future research directions, and capacity build in East Africa with an eye towards sustained observations in the region.

The first two days of the workshop we shared research results and thoughts of future directions. The SCOR proposal was discussed extensively during the third day of the workshop and an outline drawn up. Subsequently I led the writing and submittal of the proposal to SCOR in October 2009 and we heard of its success, following competitive international peer review, in January this year. Information about our WG (#136), its members and terms of reference, and the full proposal, can be found at the SCOR website [http://www.scor-int.org/wkgroups.htm](http://www.scor-int.org/wkgroups.htm).

Myself and Arne Biastoch are co-chairs of WG136. There are eight other full (funded) members (two women) and eleven associate members. We are sponsored by SCOR, WCRP (World Climate Research Program), and IAPSO (International Association for the Physical Sciences of the Ocean). Our first meeting was held in Portland, Oregon, on 20-21st February 2010. A brief report was published about this meeting and our WG goals in EOS, vol. 91, no. 18, 4 May 2010 and is included below.

This summer I have just returned from spending one month collaborating with Will de Ruijter (U. Utrecht) on a review paper of the Agulhas Current system - a collaboration which also spawned from the Kiel workshop and WG136. In terms of sustained observations in the region, through the publicized goals of WG136, collaborations built between U.S and South African WG members, and the resourcefulness of member Meghan Cronin, a NOAA surface-flux buoy will be established in the Agulhas Current system in October this year. The work of WG136 continues with the organization of a week-long meeting and capacity-building workshop in Africa next spring. We will be submitting an ONR proposal to augment our SCOR funds so that we can fund the participation of as many East African scientists as possible, exposing them to our goals and inviting collaborations with them.

In my You Choose proposal I wrote, “Ultimately, this is an opportunity for me to spearhead the international effort to advance the scientific understanding of the regional dynamics and climate feedbacks of the Southwest Indian Ocean.” and “This is a unique opportunity for me to prove leadership qualities and build a strong international reputation.” With the establishment of SCOR/WCRP/IAPSO WG136 following the Kiel workshop both these opportunities have come to light, and I am enjoying new recognition and international collaborations which are boosting my career.
The first meeting of the new Scientific Committee on Oceanic Research (SCOR) Working Group 136 was held to discuss recent developments in understanding the greater Agulhas Current system and future research directions. The overarching goal of the working group is to improve understanding and awareness of the regional and global climate impacts of the Agulhas Current, a major western boundary current that flows along the east coast of Africa, and its interocean leakage.

In addition to studying modern circulation, the working group is motivated by recent paleodata that suggest that through the currents’ southern influence on the Atlantic meridional overturning circulation (AMOC), changes in the leakage of warm and salty Agulhas waters into the Atlantic may have triggered the end of ice ages. In terms of global climate, this arguably puts the importance of the greater Agulhas system on a par with Heinrich (land-ice release) events and high-latitude deepwater formation.

Recent studies discussed at the meeting suggest that Agulhas leakage is increasing as a result of global warming, with the potential to strengthen the AMOC. This is a profound finding because it could represent a positive feedback on Northern Hemisphere climate change, in contrast to Greenland ice sheet melting, which represents a negative feedback (through weakening of the AMOC). Working group members noted that although the relative strengths of these feedbacks are unknown, these findings suggest that the Agulhas deserves much greater attention from the scientific community.

During the meeting, the working group began fulfilling its first three terms of reference. The first term of reference is to facilitate collaborations between existing and planned studies of the region. Several current observational programs in particular were identified that would benefit from improved coordination across individual disciplines. The second term is to write a review paper that discusses current levels of both understanding and uncertainty as to how changes in the Agulhas system come about, how they affect regional and global climate, and vice versa. The main foci of the planned review paper that shall be communicated to a wider community were discussed at the meeting. The third term is to identify key components of the circulation that deserve further study and/or sustained monitoring; this was also discussed at the meeting.

Over the next 3 years, the working group will meet twice more, next year in East Africa. With help from SCOR’s Committee on Capacity Building, the group will look for ways to help build scientific capacity in East African nations, such as Mozambique, Tanzania, and Kenya. More resources in these nations will greatly increase the feasibility of sustained observations over the region in the future. The working group’s final term of reference is to plan to hold in 2012 an AGU Chapman Conference, with full participation of the African science community, on the climatic importance of the greater Agulhas Current system.

Anyone interested in the greater Agulhas Current system, or in the goals of the working group, is encouraged to contact the authors of this report. Working Group 136 is cosponsored by SCOR, World Climate Research Programme (WCRP), International Association for the Physical Sciences of the Ocean (IAPSO), and International Marine Global Change Studies (IMAGES). For information about Working Group 136, its full terms of reference, and a list of members, see http://www.scor-int.org/Working_groups/wg136.htm.