### STATUS OF 2013 OCEAN CLIMATE COMMITTEE PROJECTS

### 2013-15 Joint Research on Coral Paleoclimatology

**Status:** No activity due to travel restrictions

**Outcomes:** The project will trace the changes in isotopic ratios and other environmental variables through time at several sites, and we expect these new data sets to improve our understanding of the changes in the Warm Pool through time. Through measurements related to ocean acidification, this project contributes to the panel theme on ocean acidification as well as the ocean observations theme.

NOAA POC: Dr. David M. Anderson (david.m.anderson@noaa.gov); Dr. Amy Wagner (wagnera@uncw.edu)

KIOST POCs: Dr Sang Hoon Lee (sanglee@kordi.re.kr), Dr. Jin Kyoung Kim (jink92@kordi.re.kr)

### 2013-16 NOAA-KORDI Cooperation in Ocean Acidification -OA Monitoring in Coral Reef Ecosystem, Chuuk, FSM

**Status:** Due to travel restrictions no activity has occurred

**Outcomes:** As part of a NOAA-KIOST cooperative agenda, this project will conduct ocean acidification (OA) monitoring in a coral reef ecosystem utilizing the Korea South Pacific Ocean Research Center (KSORC) in Chuuk, Federated States of Micronesia. It is believed that Chuuk is an ideal place to tackle this emerging issue and ideal for the NOAA-KIOST cooperative agenda. Cooperative activities would include expanding research activities, deploying a buoy and monitoring (with the possible deployment of a second buoy in Chuuk Lagoon).

NOAA POCs: Dr. Adrienne Sutton (adrienne.sutton@noaa.gov); Dr. Chris Sabine (chris.sabine@noaa.gov); Dr. Dick Feely (Richard.a.feely@noaa.gov)

KIOST POCs: Dr. Jae Hoon Noh (jhnoh@kiost.ac); Ms. Charity Lee (cmlee@kiost.ac)

### 2013-17 Observational Climate Study in the Equatorial Western Pacific

**Status:** No activity due to travel restrictions

**Outcomes:** The primary scientific objective of this project is to develop a long term KIOST-NOAA climate observation and research program in the western Pacific Ocean. As a beginning step, KIOST will deploy a sub-surface Acoustic Doppler Current Profiler (ADCP) mooring at a site of NOAA’s Tropical Atmosphere Ocean (TAO) array at 165E during a scheduled NOAA TAO maintenance on its Research Vessel Ka’imimoana (KA). KIOST’s ADCP was intended to be maintained by using NOAA TAO maintenance KA cruise in 2013. However, this is now delayed into 2014.

NOAA POC: Sidney Thurston (Sidney.thurston@noaa.gov)

KIOST POC: Jae Hak Lee (jhlee@kiost.ac)

### 2013-18 ITF Monitoring Design in the Western Pacific

**Status:** No activity due to travel restrictions (May have travel in late summer 2013)

**Outcomes:** The project objective is to design a field program to effectively define the magnitude and governing processes of the Pacific leakage into the ITF. We refer to this program as Gateway. The basic approach of Gateway was developed in 2011 and was furthered at a meeting in Indonesia in March 2012. In 2013 and 2014 the KIOST and NOAA US team will oversee the operational plan and implementation of Gateway, and coordination with other contributing countries, e.g. Indonesia, the Philippines and China, and programs, e.g. CLIVAR.

U.S. POC: Prof. Arnold Gordon of LDEO (agordon@ldeo.columbia.edu)

KIOST POC Jae Hak Lee (jhlee@kiost.ac); DongchullJeon ([dcjeon@kiost.ac](mailto:dcjeon@kiost.ac))

### 2013-19 Deployment and Monitoring of Drifting Buoys

**Status:** Unfunded project

**Outcomes:** Drifter deployments in the Western Equatorial Pacific were not possible during 2013, as a drifter recall earlier in the year affected drifter availability and prevented a shipment from occurring in time to meet the vessel.

In late 2013, thirty (30) SVPB drifter deployments were conducted in the Southern Ocean, aboard the R/V ARAON. This was the first collaborative deployment session in the region and all thirty drifters are currently transmitting and providing valuable data.

NOAA POC: Dr. Rick Lumpkin (rick.lumpkin@noaa.gov) , Shaun Dolk (shaun.dolk@noaa.gov)

KIOST POC: Dr. DongchullJeon (dcjeon@kiost.ac)

### 2013-20 Modeling Study on Ocean Dynamics Climate

**Status:** No activity due to travel restrictions

**Outcomes:** The first objective of this project is to identify the variability of the North Equatorial Current-Kuroshio-SCSTF system and its forcing mechanism, and to determine the impacts of this variability on circulation of the South and East China Seas. The second objective is to investigate the role of mixing parameterization on the tropical subsurface current system in terms of the Equatorial Under Current, tropical thermocline, and Tsuchiya Jets, and to understand the relationship of the climate variability between the Northwestern Pacific and the Tropical Pacific. The long-term goal is to develop an intermediate level coupled climate model to identify the variability of western Pacific circulation and its dynamical linkage to the global climate variability, and also to contribute to improve the performance of KIOST’s coupled model in terms of the long-term climate prediction. Comparisons will be made of model performance in terms of the tropics and extra-tropics current systems in the Pacific. The reasons for the difference will be explored.

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