

## Project Endorsement Form

### 1. PROJECT TITLE

Full title	A Korea-US inDianOcean Scientific (KUDOS) Research Program on the Physical, Biogeochemical and Ecological Dynamics ofthe Seychelles-Chagos Thermocline Ridge
Acronym	KUDOS
Website	<a href="https://kiost-noaa-lab.wixsite.com/kudos2018">https://kiost-noaa-lab.wixsite.com/kudos2018</a>
Keywords (up to 10, describing the project research)	Indian Ocean, Seychelles-Chagos Thermocline Ridge, climate, weather, biogeochemistry ecosystems
New initiative or continuing programme?	New

### 2. APPLICANTS

#### Lead applicant / Project Leader / key research contact person:

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#### Other key participants / research team leaders: (repeat as needed)

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*N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.*

### **3. ABSTRACT– Brief description of the project: (1/4 page maximum)**

*This will be placed on the IIOE-2 Website after endorsement.*

The Seychelles-Chagos Thermocline Ridge (SCTR) is a feature unique to the Indian Ocean – it is a consequence of the meridional asymmetry in the Indian Ocean circulation that arises as a result of geometry of the Indian Ocean and its strong monsoon forcing. The SCTR strongly influences atmospheric convection in both the Indian and Pacific Oceans via initiation of the Madden-Julian Oscillation (MJO) and it is also an important foraging ground for tuna. Yet, in large part because of its remote location, the current understanding of the physical dynamics of the SCTR remains rudimentary at best, while knowledge of the biogeochemical and ecological dynamics is even less developed. Moreover, sea level has been falling and the thermocline shoaling in the SCTR region in association with a trend towards rising SSTs in the Indian Ocean since the 1960s. These trends are likely due to changes in atmospheric circulation in response to anthropogenic greenhouse gas forcing. How future global warming may affect the SCTR and its impacts on patterns of weather variability in the Indian Ocean region and over East Asia, North America, and other parts of the globe, is poorly known if at all. Likewise, how marine biogeochemistry, carbon cycling, ocean acidification, ecosystems and fisheries will change in the SCTR under continued anthropogenic greenhouse gas forcing is highly uncertain.

The KUDOS science plan and implementation strategy for studying the SCTR is structured around five themes, each of which presents significant opportunities for profound advances in our ability to understand and predict dynamical variability in the region, its far field impacts, and its effects on biogeochemical processes and ecosystem function in the Indian Ocean. The five themes are: 1) ocean-atmosphere interactions; 2) ocean circulation; 3) biogeochemical and carbon cycles; 4) climate variability, change and extreme events; and 5) ecosystems and fisheries. The KUDOS plan includes a short list of high level scientific questions for each theme and an outline of observational and modeling

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implementation strategies for how to address them.

**4. LINKS TO IIOE-2 SCIENCE PLAN:***(1/2 page maximum)*

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds. Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

KUDOS addresses several IIOE-2 themes, will deliver new data to IIOE-2, and will engage Korea and the US in significant way in IIOE.

**5. INTERNATIONAL COLLABORATION(S):**

Is the project part of a related multi-national activity? **YES**

If No, would you welcome international collaboration in your project? **YES**

**6. REGION(S) OF STUDY**

Provide a description of 'where' the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing either the coordinates of the area of studies or the coordinates of the planned cruise tracks, as well as a figure as an addendum to your proposal).

Seychelles Chagos Thermocline Ridge Region of the Indian Ocean

**6. TIMETABLE OF THE PROJECT**

Start date:  
2020

End date: 2025

**7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES**

Is the project part of a related national or multi-national activity?

If yes, provide the related activity title and website for reference, if available:

**IIOE-2 Joint Project Office (JPO)**

Bilateral Korea-US program

Is your project part of, or affiliated to, another SCOR, IOC or IOGOOS activity or project?  
If “yes”, please indicate which activity or project:

No

## 8. DATA MANAGEMENT AND SHARING

1. Will new data be collected as part of this project (yes or no?)

Yes

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders.

*Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.*

Michael McPhaden (contact information above)

3. Recognizing the need for an initial period of exclusive data use, would you be willing to provide timely access to all data generated under this project and associated metadata in accordance with relevant national and funding agency data sharing policies?**YES/NO**

## 9. FUNDING

*Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.*

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

## IIOE-2 Joint Project Office (JPO)

Funding proposals are being drafted to NSF and NOAA in the US, KIOST in Korea

**10. BENEFITS FROM IIOE-2 ENDORSEMENT** (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

Endorsement will help promote the program in the US and Korea. In turn, KUDOS will benefit IIOE-2 because it is highly complementary to other IIOE-2 programs and will collect new data in a data sparse region of the Indian Ocean. KUDOS also brings a significant US and Korean to IIOE-2.

**11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL** (length and detail may be at the discretion of and as deemed necessary by the applicant)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.



(Signature of the PI)

**IIOE-2 Joint Project Office (JPO)**