



**RGNO - Regional Graduate Network in Oceanography**  
**6<sup>th</sup> African Ocean Discovery Camp on Integrated Earth Systems Sciences**  
**Biogeochemical Oceanography in Upwelling Ecosystems**

SAM NUJOMA CAMPUS & MARINE and COASTAL RESEARCH CENTER (SANUMARC) and  
 NATIONAL MARINE INFORMATION and RESEARCH CENTER (NatMIRC)

**April 28 to May 24, 2019**

Week 1 April 28 - May 5		Morning	Afternoon	Evening
<b>Sunday</b>	<b>28</b>	Travel to Namibia and pick-up at Walvis Bay or Swakopmund	Participants (Students, TAs and Instructors) arrive in Swakopmund at the Municipal Bungalows.	19.30 Welcome and Get Together at the Residence. Pizza and drinks will be provided
Monday	29	07.30 Breakfast at NatMIRC 08.45 Benguela Symposium at NatMIRC. Special Program	Symposium cont.	19.30 Dinner Activities defined by Participants
Tuesday	30	07.30 Bus departs for medical exam. Breakfast box at Medixx. Medical tests for seafarer certificate	will probably last until early afternoon. Shopping for personal needs	18.30 Dinner Activities defined by Participants
Wednesday	01	07.30 Breakfast at NatMIRC 08.30 Tim Eglinton. <b>How is organic matter preserved in sediments?</b> 10.00 Luke Bridgestock. <b>Studying nutrient cycling applying ODV to the GEOTRACES intermediate data product</b>	13.30 Lunch at NatMIRC 14.15 Daniel Montluçon. Introduction to Librarybox 14.00 ALL. Designing projects and defining sampling needs	19.00 Dinner Activities defined by Participants
Thursday	02	07.30 Breakfast at NatMIRC 08.30 Luke Bridgestock. <b>Reconstructing export production using stable Ba-isotopes</b> 10.00 Richard Horaeb. Pre-cruise meeting. Cruise organization. Designing sampling plan. Assignments to cruise legs, signing documents 11.00 Tim Eglinton. <b>Overview of analytical methods used in biogeochemistry</b>	12.30 Lunch box 12.45 Departure from NatMIRC for Henties Bay 14.15 Collecting sampling materials, hard hats, boots, etc. at SANUMARC	19.00 Dinner Activities defined by Participants
Friday	03	07.30 Breakfast at NatMIRC 08.30 Departure from NatMIRC to Walvis Bay harbour. <b>Installing equipment on the MIRABILIS</b> (Harbour access for bus required)	Lunch at local restaurant when finished with installations on the MIRABILIS Early afternoon: Prepare for presentation at Student + Alumni Forum.	18.00 Dinner Activities defined by Participants
Saturday	04	07.30 Breakfast at NatMIRC 08.30 <b>Student + Alumni Forum</b> at NatMIRC. Special Program compiled by Mohamed Elsafy	Student + Alumni Forum continued	19.00 Dinner Activities defined by Participants
Sunday	05	Relax, catch up, explore. Breakfast, lunch and dinner on your own. Please let us know where you are going, if you are leaving for a Sunday excursion alone or as a group.		

**Week 2**  
May 6 - May 12

		<b>Morning</b>	<b>Afternoon</b>	<b>Evening</b>
<b>Monday</b>	06	07.30 Breakfast at NatMIRC 08.30 ALL, Departure for cruise leg 1 11.00 Instructions onboard the MIRABILIS	Group 1 departs for cruise leg 1. Group 2 returns to SANUMARC laboratories in Henties Bay and sets up laboratories	19.30 Dinner Activities defined by Participants
<b>Tuesday</b>	07	Group 1: at sea Group 2: 07.30 Breakfast at Eagle Holiday Flats 08.30 Bus departs for Lab. 09.00 Kurt Hanselmann. <b>1. Ecological Concepts. 2. Ocean Acidification</b>	Group 2: Lab work. Preparing for experiments	18.30 Dinner Activities defined by Participants
<b>Wednesday</b>	08	07.30 Breakfast at Appartments 09.00 Group 2 departs from Henties Bay for cruise leg 2 and pickup of group 1	11.30 Group changes. Group 1 disembarks. Group 2 begins cruise leg 2. Group 1: Sample preservation at SANMUARC labs in Henties Bay and moving into appartments	19.00 Dinner Activities defined by Participants
<b>Thursday</b>	09	Group 2 at sea Group 1: 07.30 Breakfast at Appartments 09.00 Kurt Hanselmann. <b>2. Ocean Acidification and 3. How to make media.</b> 11.00 Work with samples in the lab	Continue working in the lab Analyzing samples, making growth media	19.00 Dinner Activities defined by Participants
<b>Friday</b>	10	Group 2 at sea Group 1: 07.30 Breakfast at Appartments 09.00 Continue working in the lab	Continue working in the lab Analyzing samples, preparing growth media	19.00 Dinner Activities defined by Participants
<b>Saturday</b>	11	Group 2 at sea Group 1: 07.30 Breakfast at Appartments 09.00 Bus departs from Henties Bay to pickup group 2 from cruise leg 2	Group 2 returns from cruise leg 2: Sample preservation at SANMUARC labs in Henties Bay and cleaning sampling materials, hard hats, boots, etc. Moving into Henties Bay appartments	19.00 Dinner Activities defined by Participants
<b>Sunday Mothersday</b>	12	Relax, catch up, explore. Breakfast, lunch and dinner on your own. Please let us know where you are going, if you are leaving for a Sunday excursion alone or as a group.		

**Week 3**

May 13 - May 19

**Morning**

**Afternoon**

**Evening**

Monday	13	07.30 Bus departs, breakfast at SANUMARC 08.30 Kurt Hanselmann. <b>Catchup week 1 lectures for those who missed them</b> 10.00 Gideon Henderson (recorded). <b>Taking it back - Removing CO2 from the atmosphere to limit climate change</b>	Continue working in the lab. Analyzing samples, carrying out experiments	19.30 Dinner Activities defined by Participants
Tuesday	14	07.30 Bus departs for breakfast 09.15 <b>Ocean Highlights Symposium</b> at SANUMARC. Special Program also for campus students and staff.		18.00 Dinner with speakers and guests
Wednesday	15	07.30 Bus departs for breakfast 08.30 John Compton. <b>Origin of phosphorite deposits on the Namibian shelf</b> 10.00 Sandy Thomalla. <b>The role of phytoplankton in mediating global climate through stratus cloud albedo in the Benguela System</b>	Continue working in the lab. Analyzing samples, carrying out experiments	19.00 Dinner Activities defined by Participants
Thursday	16	07.30 Bus departs for breakfast 08.30 Jake Bailey. <b>Microbial Metabolisms in the BCE</b> 10.00 Kurt Hanselmann. <b>Evolution of microbial processes in micro-aggregate ecosystems</b>	Continue working in the lab. Analyzing samples, carrying out experiments	19.00 Dinner Activities defined by Participants
Friday	17	07.30 Bus departs from flats for breakfast at SANUMARC 08.30 Chibo Chickwilliwa. <b>Excursions to sea water desalination plant, oyster hatchery and farm and salt factory</b> . Special program		18.00 Dinner in Swakopmund Activities defined by Participants
Saturday	18	07.30 Bus departs for breakfast 08.30 Sümeyya Eroglu. <b>Application of stable isotope geochemistry in marine sciences</b> 10.00 Chibo Chikwilliwa. <b>Understanding HABs in 2019</b>	Continue working in the lab. Analyzing samples, carrying out experiments	19.00 Dinner Activities defined by Participants
Sunday	19	One-day trip to the Namibian Desert Research Station at Gobabeb. Departure 07.30 from apartments. Return ca. 21.30.		

**Week 4**

May 20 - May 24

**Morning****Afternoon****Evening**

Monday	20	07.45 Bus departs for breakfast at SANUMARC 08.30 <b>Summarizing results, writing proposals</b> at SANUMARC. For those who would like to attend the "Blue Ocean Economy" meeting at Nat MIRC in Swakopmund (Special Program): Transport departs from flats at 08.00. Symposium begins at 09.00 and ends at 15.00	19.00 Dinner with the mayor of Henties Bay, Hon. Hermann Honeb. Interactions between scientists and the public
Tuesday	21	07.45 Bus departs for breakfast <b>08.30 Summarizing results, writing proposals, preparing presentations, designing posters</b> If time allows, begin cleaning up equipment and laboratories	19.00 Dinner Activities defined by Participants
Wednesday	22	07.30 Bus departs from flats. Breakfast in Swakopmund. 09.00 <b>"Scientific Knowledge applied to the Sustainable Use of Coastal Upwelling Ecosystems"</b> organized by Elena Bruni. Special Program	19.00 Graduation Dinner
Thursday	23	07.45 Bus departs for breakfast at SANUMARC 08.30 <b>Cleaning up, packing, storing RGNO equipment, turning over facility to host</b>	19.00 Dinner and Farewell Party
Friday	24	<b>End of RGNO 2019</b> Transports to Swakopmund and Walvis Bay airport depart according to sign-up plan	

**Instructors, TAs, Lecturers, Students, Course Coordinator, Course Directors, Cruise Leader, Symposium Speakers**

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<b>ST</b>	Sandy Thomalla (CSIR, South Africa) sandy.thomalla@gmail.com	Y	Gadaffi Muhanze Liswaniso (SANUMARC, Namibia) gliswaniso@unam.na	TA
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**Legend**

Instructor	I	Technical Assistant	T
Host	H	Lecturer / Organizer / Speaker /	Y
Cruise Leader	C	Student Participant	S
Logistics, Visa, Transport, Housing,	L	Participation in Cruise Leg #	1, 2

## Overall Workshop Plan

RGNO 2019, Time plan			RGNO course week 1							RGNK course week 2							RGNL course week 3							RGNO course week 4							MEE0 Course Week							June																			
Month	April							May																																																	
Location	Swakopmund and RV MIRABILIS							Henties Bay																					Swakopmund																												
Date	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1																						
Week day	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa																						
Topics	Students																																																								
A Productivity, Food Webs	1																																																								
B Productivity, Food Webs	2																																																								
C Degradation Bottom Currents	3																																																								
D Degradation Bottom Currents	4																																																								
E Trace Metal, Organics Thiomargarita	5																																																								
F Trace Metal, Organics Thiomargarita	6																																																								
G Sulfidic Symbioses Coastal	7																																																								
H Sulfidic Symbioses Coastal	8																																																								
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H Sulfidic Symbioses Coastal	16																																																								
Working Groups:	A 1 + 9							B 2 + 10							C 3 + 11							D 4 + 12							E 5 + 13							F 6 + 14							G 7 + 15							H 8 + 16							
Travel / Relaxation: 3 days	Symposia / Fora: 4 days							Lectures / Tutorials / Experiments / Writing: 10 days							Cruise incl. Preparation: 7 days							Excursions: 3 days							Total: 27 days							MEE0 / Teacher Outreach Course: Total 8 days																					

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