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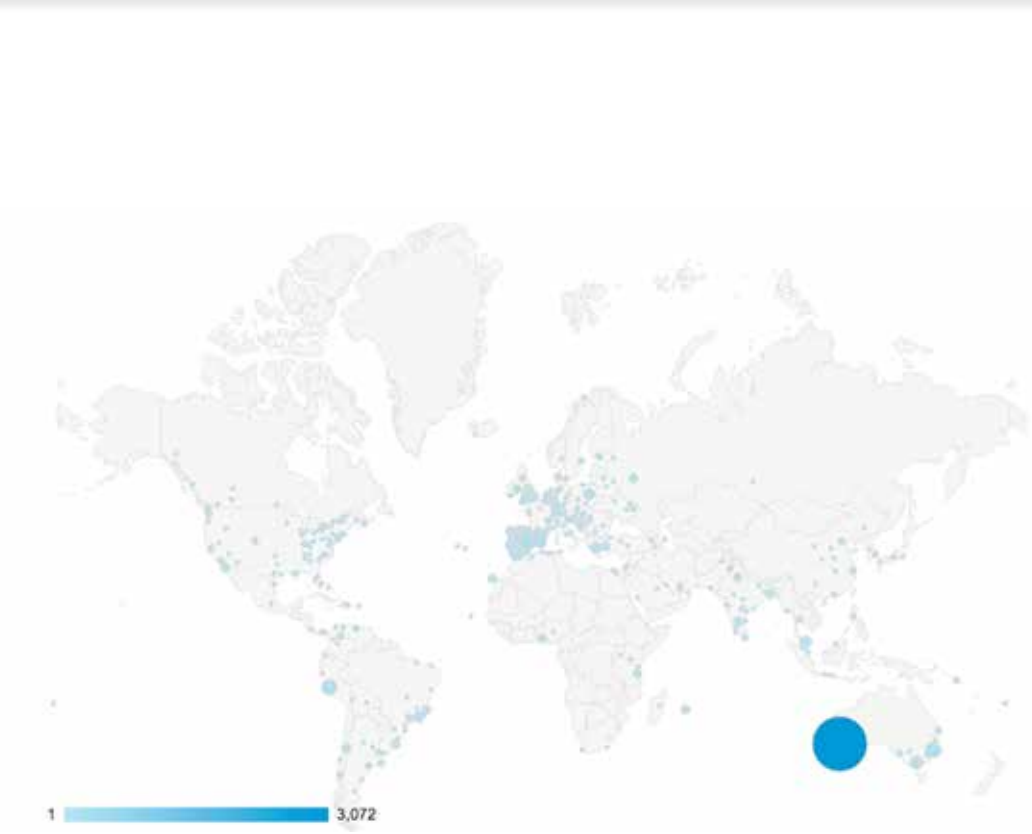


GRAPHIC: UWA

In this issue

Ocean Solutions Goes Global

The UWA Oceans Institute has wrapped up its first free massive open online course Ocean Solutions. The Oceans Institute Director, Winthrop Professor Carlos Duarte and co-author Aisling Fontanini, showed over 900 students from around the globe how the Ocean can play an important role in tackling humanities grand challenges.

"The Ocean Solutions course offered a great opportunity to share the vision of the UWA Oceans Institute with the world," said Professor Duarte.

The course promoted a sustainable use of the oceans to relieve the pressures on food, water and energy supplies, without threatening biodiversity or contributing to global climate change. Ocean Solutions did not simply alert participants to the problems society is facing, it explored the ocean-based solutions that can help to provide fair livelihoods to a global population of 9 billion people.

The course attracted students from varying contexts, which allowed for a diverse collective knowledge amongst the student body. "I am very proud of the fact that our University here in WA appears to be at the forefront of this type of (innovative) thinking," says a local commercial fisherman and Ocean Solution participant.

The course ran for 6 weeks with students receiving lectures, readings and quizzes each week through the new University's new Class2Go platform, managed by Associate Professor David Glance, the Director of The UWA Centre for Software Practice. Class2Go proved to be a valuable resource and was praised by participants for its easy navigation and accessibility.

The lectures presented in the Ocean Solutions course were recorded by Professor Duarte and Aisling Fontanini in just seven weeks across four different countries. However, it proved to be a worthwhile experience for participants and The UWA Oceans Institute.

Students were able to watch a variety of interviews from contributing researchers and industries such as desalination, wave energy, algae biofuel research, ocean nourishment or aquaculture. Professor Duarte was praised by students for his holistic approach to the course, "Prof Duarte started from the origin of the planet (through) to the business solutions. Not many marine scientists can see the big picture."

The next edition of Ocean Solutions is already in the works with several planned improvements including subtitles and new and improved academic and industry interviews.

For more information about open online courses offered by the University, please visit **www.class2go.uwa.edu.au**

Director's welcome

The Oceans Institute reaches out

The last months has seen intense efforts to reach out. A massive open on-line course (MOOC) on Ocean Solutions was delivered to students distributed around the world from the UWA MOOC platform, Class2Go. The feedback has been phenomenal and the effort from, both Associate Professor David Glance – who developed the platform – and co-author Aisling Fontanini, has paid off beyond expectations.

On top of that, we have engaged with the Department of Foreign Affairs and Trade of the Federal Government to propose a focus on the Oceans as a source of wealth during Australia's chair of the Indian Ocean Rim Regional Association for Cooperation (2013-2015).

Furthermore, we have broadened our international collaborations to explore further collaborative programs with Zhejiang University in China and University Malaysia Terengganu. In addition , we hosted a number of visitors including Dr Tim McClanahan, from the Wildlife Conservation Society in Kenya.

In the next months we will continue our efforts to broaden our partnerships and engagement across the world to help us deliver Ocean Solutions to the world.

PHOTO: JOAN COSTA 2013

UWA Oceans Institute Deputy Director

Professor Shaun Collin has been appointed as Deputy Director of the UWA Oceans Institute for 2013.

Shaun's role will support the UWA Oceans Institute by continuing to develop key relationships with government and international representatives. Since accepting the role in April, he has made a significant impact on progressing with an exciting MOU with Zhejiang University in China.

Shaun is a West Australian Premiers Fellow and Winthrop Professor at in the School of Animal Biology. He leads the large Neuroecology Group based in the School. His multidisciplinary research encompasses the fields of eco-physiology, neuroscience and marine science providing a world class platform for research and educational outreach.

PHOTO: SHAUN COLLIN/UWA

THE JOINT OFFICE FOR SCIENCE SUPPORT (JOSS) OF THE UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH

A visit to the White House

Between April 30 and May 2 UWA Oceans Institute Director, Winthrop Professor Carlos Duarte travelled to Washington to attend an exciting meeting hosted at the White House.

The aim was to provide a common intellectual framework for the coordination of research in the Arctic marine environment. For this, the Interagency Arctic Research Policy Committee (IARPC) brought 16 ecologists and Arctic experts to begin developing a conceptual model of the Arctic marine ecosystem, as well as testable hypotheses.

The meeting was a stimulating debate on the future of the Arctic and the possible responses to the multiple pressures acting on the Arctic. Considering the impossibility of testing current projections on the changes in the Arctic, the challenge was to formulate testable hypothesis addressing the key underpinnings of current projections.

Meeting with the Australian Ambassador

While in Washington, DC, for a meeting, UWA Oceans Institute Director, Winthrop Professor Carlos Duarte, met with Australian Ambassador Kim Beazley and Michael Schwager, Minister-Counsellor for Education, Science and Technology at the Australian Embassy.

At the meeting Ambassador Kim Beazley was impressed with the description of the capacity in marine science at the UWA Oceans Institute, and those associated with the Indian Ocean Marine Research Center partnership. The discussion focused on the importance of the oceans for the future of humanity and the common interests between the USA and Australia in research focused on understanding the impacts of global change on marine ecosystems, particularly coral reefs.

CARLOS DUARTE

Collaborations

Establishing links with Zhejiang University

As one of his first duties as OI's Deputy Director, Winthrop Professor Shaun Collin travelled to Zhejiang University in May with the Vice Chancellor Professor Paul Johnson and the University's newly appointed Deputy Vice Chancellor – International Professor Iain Watt, to establish closer links with scientists involved in Ocean Science research.

PHOTO: SHAUN COLLIN

They met with a large number of Ocean scientists and including the Executive Vice President Professor Yonghua Song and Professor Ying Ye. The successful visit will undoubtedly lead to forging links with the Department of Ocean Science and Engineering, the College of Life Sciences (deep-sea research and marine biology), the College of Environmental and Resource Science (ecotoxicology and environmental monitoring), the Department of Civil Engineering (offshore engineering, platform stabilisation, centrifuge testing, liquefaction and disaster avoidance), and the Guanghua Law School (maritime law and governance).

It is hoped that a Memorandum of Understanding will be signed between the two Universities providing a pathway for the development of joint research interests.

Universiti Malaysia Visit

PHOTO: JOAN COSTA 2013

A delegation of the Universiti Malaysia Terengganu (Terengganu, Malaysia), led by Professor Emeritus Dato', Dr Ibrahim Komoo, Vice Chancellor, and a number of senior leaders visited the UWA Oceans Institute to explore opportunities for collaboration in marine science.

With a large number of graduate students and excellent facilities in marine science, including an oceanic research vessel, a number of coastal vessels, an island devoted to a research station and another island for research on conservation biology, the Universiti Malaysia Terengganu is recognised as a key partner to the UWA Oceans Institute.

The meeting, also attended by UWA Professor Kimberly van Niel, Professor Susana Agusti, and Winthrop Professor Charitha Pattiaratchi focused on identifying areas of joint interest, including physical and coastal oceanography, seagrass and mangrove ecology, marine spatial ecology and impacts of pollutants on marine organisms.

UWA Oceans Institute Director, Winthrop Professor Carlos Duarte, has received an invitation to visit Universiti Malaysia Terengganu in October to further this partnership.

OI Joins Forces with Woods Hole

Woods Hole Oceanographic Institution (WHOI), in USA, is arguably the world's leading Oceanographic institution. Their extended experience and capacity in deep-sea research was instrumental in responding to the Deep Horizon blowout in the Gulf of Mexico.

This response lead to the development of a series of courses for professionals in the oil and gas industry. Their activities converge with one of the actions stemming from the Ocean Solutions Dialogue on "the role of science in responding to disasters in the ocean, namely providing opportunities for the professional development of industry staff on marine environmental monitoring.

WHOI and the UWA Oceans Institute have agreed to jointly organise a course on marine environmental monitoring to be offered before the end of the year. In addition, the partners are exploring the opportunity to provide the course on-line in the new year.

This agreement was reached over meetings in February in Perth between UWA Oceans Institute staff and Dr Larry Madin, Executive Vice President and Director of Research at WHOI, and a follow up meeting in April at Woods Hole.

PHOTO: LARRY MADIN

PROF. CARLOS M DUARTE WAS BRIEFED ON THE REFURBISHMENT OF WHOI SUBMERSIBLE ALVIN TO BE LICENSED TO 6,500 M DEPTH.

New discoveries on Reef Sharks diving behaviour

PHOTO: SAVE OUR SEAS FOUNDATION/ PETER VERHOOG

A new study observed for the first time in detail how the moon, water temperature and time of the day can affect reef shark's diving behaviour.

About 40 grey reef sharks were tagged in Palau, east of the Philippines, and followed for over two years using acoustic telemetry as part of a study by scientists from UWA's Oceans Institute and the Australian Institute of Marine Science (AIMS).

UWA Oceans Institute's researcher Gabriel Vianna, lead author of the study published in the international online science journal PLOS ONE, said researchers believed the changes were ultimately related to feeding and possibly predator avoidance.

In winter – when deeper waters were colder – the sharks remained closer to the surface where the water was warmer and temperature more constant. On the other hand, in summer - when the warmer layer of surface water expanded – the sharks tended to move in a broader range of depths. The authors suggested that because sharks are cold-blooded, they may prefer warmer waters to maintain constant metabolic rates.

Reef sharks dive deep under full moon, but the time of day could also affect how deeply sharks dive. "We were surprised to see sharks going progressively deeper during the morning and the exact inverse pattern in the afternoon, gradually rising towards the surface," Mr Vianna said.

Mr Vianna said the research had conservation implications because sharks tended to aggregate around reefs in many places across the Indo-Pacific. Their diving behaviour might make them susceptible to being inadvertently caught by people fishing at different times of the day so a better knowledge of shark behaviour might help reduce this chance.

"In places such as Palau, which relies heavily on marine tourism and where sharks are a major tourist attraction worth $18 million a year, the fishing of a few dozen sharks from popular dive sites could have a very negative impact on the national economy," Mr Vianna said.

New appointments and members

Caroline Ochieng-Erftemeijer

Caroline has commenced as the NCB Operations Manager and will be working closely with members to undertake research and coordinate the operational and reporting requirements of the "Pilbara Marine Conservation – Net Conservation Benefits" program (NCB).

Belinda Cannell

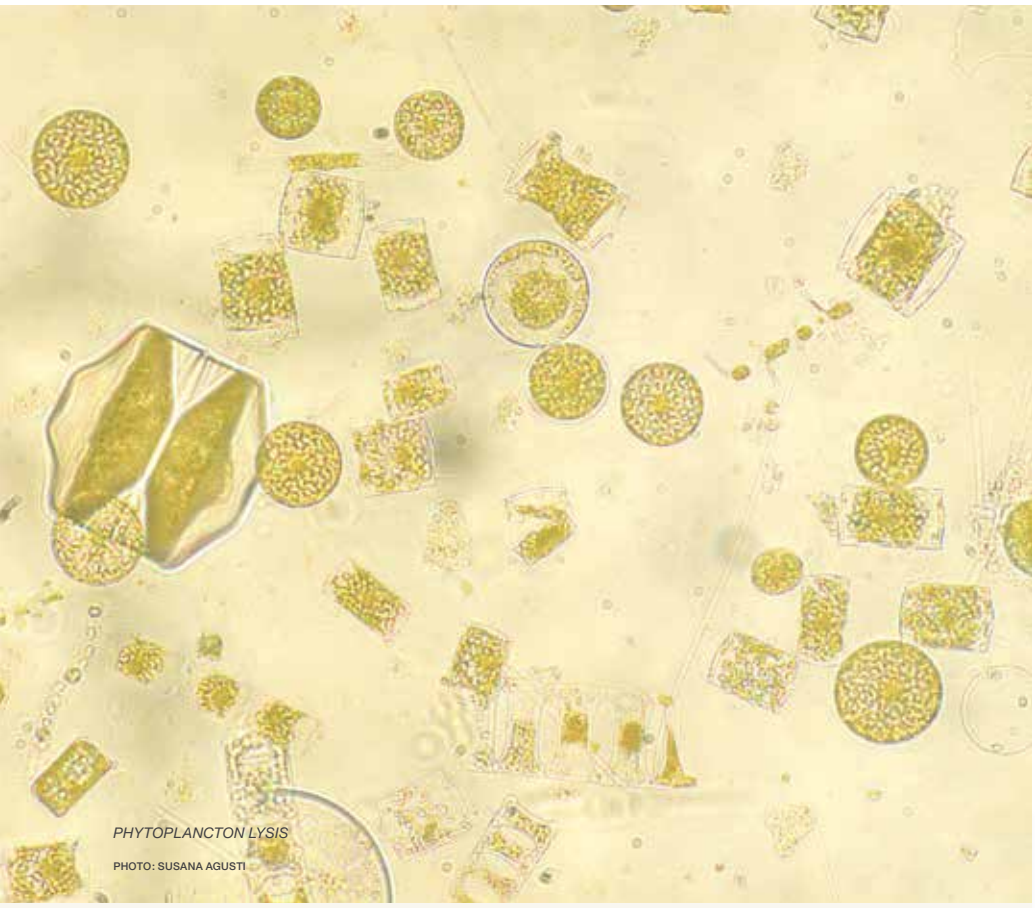
Belinda has commenced as the OSMP Operations Manager and will be working closely with members to research and coordinate the operational and reporting requirements of the "Shell Inpex OSMP / ARP" program (OSMP).

Lauren Butterly

Lauren is a Lecturer and Research Associate in Law at the University of Western Australia. Lauren has research interests in the areas of water law, environmental law and Indigenous Peoples and the law. Lauren is the Unit Coordinator of Indigenous Peoples and the Law and also teaches in Administrative Law and Law and Society.

Luke Smith

The OI welcomes the appointment of Dr Luke Smith as an Adjunct Research Fellow. Luke currently leads a multi-disciplinary team at Woodside Energy that is responsible for oil spill preparedness and planning and environmental technical inputs. Luke will be working on publications with OI members and contributing to OI programs and initiatives.



PHYTOPLANCTON LYSIS

PHOTO: SUSANA AGUSTI

Phytoplankton's cell disintegration predicts dissolved organic carbon release

Marine phytoplankton are microscopic algae that make photosynthesis, acting in the ocean as trees do in the forest: transforming solar light and minerals into sugars and other organic compounds that become food for animals, forming the basis of the marine food web.

As unicellular microorganisms, phytoplankton's growth and reproduction occurs at such a fast rate,whereas a tree would need years to duplicate the number of individuals in a population, phytoplankton only needs days to do so and the same applies for their mortality. Professor Susana Agusti and Winthrop Professor Carlos Duarte, both researchers at the UWA Oceans Institute calculated that longevity of phytoplankton cells occurs in days.

When phytoplankton cells die, their membrane disintegrates releasing the internal compounds outside the cell, a process called Phytoplankton cell lysis. Professor Agusti and Professor Duarte recently published a study at Biogeosciences that quantified the cell lysis rates of oceanic phytoplankton growing in the North Atlantic and the Southern Ocean.

To ascertain this, they used an intracellular enzyme, esterase, as a tracer of phytoplankton lysis. This technique was used a decade ago to quantify phytoplankton cell lysis rates in the oceans, and continues to be a favourable method for researchers.

The study showed that in the Atlantic Ocean, phytoplankton lysis rates were higher than those measured in the Southern Ocean, and the higher phytoplankton lysis rates were observed at the waters poor in nutritive minerals (oligotrophic), where the low nutrient availability must have stressed phytoplankton cells.

Professor Agusti and Professor Duarte found in their research that up to 80% of the carbon photosyntesized by phytoplankton in the ocean could be released in a dissolved form, thereby reducing the efficiency of the food web. This fraction of primary production is made available to bacteria instead of being eaten directly by the herbivores.

PHOTO: JOAN COSTA 2013

OI scientist to head Indian Ocean study in new research ship

Winthrop Professor Anya Waite has been appointed to lead a milestone expedition to the Indian Ocean next year on board Australia's newest marine research vessel, RV *Investigator*.

Professor Waite will be chief scientist on a research voyage in June 2014 that starts and ends in Broome. Anya will lead a team of Australian and international scientists on board the RV Investigator examining whether iron-rich dust stimulates nitrogen fixation in the eastern Indian Ocean.

The new ship will dramatically increase Australia's blue-water research capability when commissioned later this year. The RV Investigator will enhance scientists' ability to study fisheries, marine ecosystems and environment, marine geosciences, oceanography, climate, fisheries and marine environment.

The 94-metre vessel is currently being built in Singapore by Australia's Marine National Facility (MNF), which is operated and owned by the CSIRO and funded by the Australian Government.

Remote reefs can be tougher than they seem

PHOTO: N. THAKE

The study 'Recovery of an isolated coral reef system following severe disturbance' published in Science on April 2013 challenges the assumption that isolated reefs were more vulnerable to disturbance, because they were thought to depend on recolonisation from other reefs. Instead, the study conducted by a team of researchers including Dr James Gilmour and Dr Andrew Heyward, both from the Australian Institute of Marine Science (AIMS) and adjuncts to the UWA Oceans Institute, found that the isolation of the reefs allowed surviving corals to rapidly grow and propagate in the absence of human interference.

Scott Reef is some 250 km from the remote coastline of north Western Australia (WA). Prospects for the reef looked gloomy when in 1998 it lost around 80% of its coral following a catastrophic mass bleaching. Data collected over 15 years shows how the few remaining corals provided low numbers of new recruits to the reef. On that basis recovery was projected to take decades, but within 12 years the reef had largely recovered.

First author of the study, Dr James Gilmour says, "The initial projections for Scott Reef were not optimistic, given the negligible supply of new corals from other reefs in the region. However, the few small corals that did settle at Scott Reef had very high rates of survival and growth, given the favourable conditions"

In their publication, the team also draw attention to the effects of climate change in the longer-term prospects for coral reefs, noting that the recovery at Scott Reef still took over a decade.

The study highlights that by preventing illegal fishing and enhancing water quality we give coral reefs a greater capacity to recover from major disturbances.

"Recovery of an isolated coral reef system following severe disturbance", by J. P. Gilmour, L. D. Smith, A. J. Heyward, A. H. Baird and M. S. Pratchett is published in the journal Science 340, 69-71

PHOTO: L. SMITH

TOP: DESPITE THE VERY LOW RECRUITMENT AND SLOW RECOVERY FOLLOWING THE MASS BLEACHING, BY 2012 THE CORAL COMMUNITIES HAD LARGELY RETURNED TO THEIR PRE-BLEACHING STATE.

LEFT: THE MASS BLEACHING AT SCOTT REEF IN 1998 KILLED AROUND 80% OF THE SHALLOW-WATER CORALS. THE MORE SUSCEPTIBLE BRANCHING CORALS WERE AMONG THE FIRST TO BLEACH AND DIE, WHEREAS THE MASSIVE PORITES CORALS WERE SLOWER TO BLEACH AND SURVIVED BETTER.

PHOTO: JOAN COSTA 2013

Wave Energy

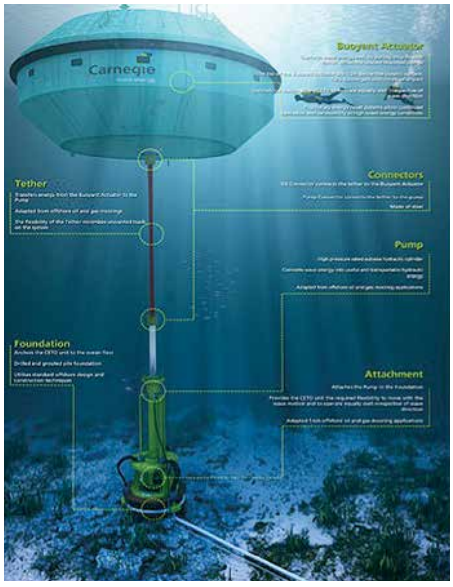
Carnegie Wave Energy Limited is owner and developer of the patented CETO wave energy technology that converts ocean swell into zero-emission renewable power and desalinated freshwater. After 10 years of development, testing and refinement, CETO is currently being demonstrated at commercial scale off HMAS Stirling, Australia's largest navy base, at Garden Island in Western Australia. CETO is the only ocean-tested wave energy technology globally that is both fully submerged and generates power and or desalinated water onshore.

The UWA Ocean Institute has initiated a large collaboration research plan to assist Carnegie in the last development step and implementation of CETO. The research collaboration plan takes advantages of the wide spectrum of expertise within the OI and aims at assisting Carnegie in the deployment and operation of CETO along the following axes:

- Optimising the CETO foundation system to reduce deployment costs.
- Assessing the effect of marine noise produced by the CETO on marine life to minimise impact on the ecosystem.
- Studying the ecology of wave energy park to better integrate then within the local ecosystem.
- Modelling the interaction between waves, flow and CETO to optimise array distribution and CETO performance.
- Developing a commercial vision for the CETO devices, notably including legal framework.
- Investigate the potential for a subsea observatory of the marine environment associated with the Carnegie Wave concession.

The first elements of the research collaboration plan are being implemented. ARC Research Fellow Professor Ryan Lowe and colleagues have been provided access to the Carnegie concession at Garden to study the dynamics of wave transformation and related hydrodynamic processes on rocky reef-protected beaches and ultimately understand how this controls both sediment transport processes and beach morphological changes.

Further work is scheduled to start in the second semester 2013 on the CETO foundation system, with Carnegie and COFS co-supervising a PhD Student.



CARNEGIE COMMUNITY INFORMATION SHEET MAP

Artist in Residence Joan Costa

PHOTO: JOAN COSTA 2013

Good communication makes people understand and acknowledge the relevance of investing in science and can push governments to dedicate more funding to this cause.

Spanish photographer Joan Costa (World Press Photo Awardee 2012) was invited to join the UWA Oceans Institute as an Artist in Residence, with funding secured from the UWA Oceans Institute, Institute of Advanced Studies, AIMS and CSIRO.

Whereas many photographers have focused on marine life, Joan's own uniqueness is that he specialises in capturing research as its being done. He focussed on documenting, with beautiful images and impeccable text, science as a practice, including the people that execute research, the instruments they use and the environments where they work.

While visiting the Oceans Institute as the Photographer in Residence, Joan produced a portfolio of images that will be used to the Oceans Institute's marketing materials (see for example the Oceans Institute's 2012 Annual Report).

In addition Joan gave a lunch talk on 'The role of image in communicating scientific research' and a masterclass on 'High Quality Images: Missed Opportunities to Strengthen Outreach'. Both events were organised by the Institute of Advanced Studies with a great attendance success.

World leader from Wildlife Conservation Society visits Oceans Institute

Dr Tim McClanahan, a world leader in coral reef and fisheries science from the Wildlife Conservation Society based in Kenya, recently visited The UWA Oceans Institute for 5 days as part of the Visitors Program.

During his visit, Dr McClanahan gave a public lecture on 'Sociological adaptation to climate and human resource use along the African coastline' interacted with many researchers and participated in a roundtable discussion organised by his hosts Assistant Professor Jens Zinke and Assistant Professor Michael Stat ,who currently collaborates with Dr McClanahan on a variety of projects.

The roundtable included researchers from the OI, Fisheries, AIMS and DEC. They all discussed potential pathways towards developing collaborative research focusing on Indian Ocean-wide synthesis of coral reef science and effective planning of marine protected areas.

TIM McCLANAHAN

PHOTO: JOAN COSTA 2013

Gledden Fellow Welcomed to the Oceans Institute

Winthrop Professor Carlos Duarte hosted the visiting Scientist Dr Núria Marbà, a Gledden Fellow 2013 of UWA's Institute of Advanced Studies, at The UWA Oceans Institute.

Dr Marbà is a Senior Scientist of the Research Council of Spain (CSIC) at the Institute of Mediterranean of Advanced Studies in Mallorca (Spain) conducting research on the effects of Global Change on marine vegetation and the role of these ecosystems for climate change mitigation and adaptation.

During her three month visit, Dr Marbà participated in the CSIRO Coastal Carbon Cluster project, through the collaboration with Oceans Institute scientists quantifying carbon burial and stocks in WA seagrass meadows and assessing the potential of seagrass revegetation to restore natural carbon sinks.

She also gave a one-day masterclass at Institute of Advanced Studies on 'Impacts of climate change on coastal marine ecosystems', and a Public Lecture on 'The role of marine vegetation on climate change mitigation and adaptation'

Oceans Institute members acknowledge World Oceans Day

PHOTO: JOAN COSTA 2013

To contribute to Oceans Day on the 8th of June, UWA Oceans Institute's PhD student, Julia Reisser, was invited to give a talk to Marine Shell Australia staff on her PhD research topic: marine plastic pollution. The talk covered subjects such as trends on global plastic production; how plastic waste ends up at its ultimate receiver: the oceans; plastic impacts on marine life and humans; and recent findings from her voyages around Australia and from the Malaspina Expedition.

In addition, Julia, Winthrop Professor Carlos Duarte, Dr Michele Thums, and Guiomar Duarte published a post on the topic at The Conversation: 'Take a stand on Oceans Day and de-plastify your life'.

Now the OI challenges you to significantly reduce the amount of plastic that you use (and waste). It is healthy for you and the marine environment. Different tips will be shared via the OI Facebook and Twitter accounts.

Support the Sharks film festival

Sharks, Camera, Action! was the inaugural ocean film festival hosted by Support Our Sharks and co-sponsored by UWA's Institute of Advanced Studies, Neuroecolgy Group and the UWA Oceans Institute.

Sharks, Camera, Action! focused on sharks and their relatives, including a Q&A with shark experts. The event, organized by OI PhD student Ryan Kempster, aimed to encourage, inspire, and educate the general public about the important role that these incredible animals play in our oceans. The goal was to facilitate understanding of sharks and their relatives by screening marine research and conservation films from around the world.

PHOTO: GUIOMAR DUARTE

PHOTO: JOAN COSTA 2013

'Gen O' researchers share their insights

There's a whole new breed of talented marine scientists ready to make their mark in the next few years. That's the definite impression you got if you attended the inaugural UWA Oceans Institute Postgraduate Student Conference held in late March.

At the all-day conference, the OI students gave brief presentations on their research projects and where they're heading. The postgrads' research covers such topics as the pollution caused by plastics in the oceans around Australia and the effects of winds on the surface currents around Rottnest Island.

Two keynote speakers were also invited, Dr Jens Zinke (Assistant Professor at UWA Oceans Institute and the Australian Institute of Marine Science) who presented a wide range of research opportunities and collaborations across the Indian Ocean and Dr Callum Robert (Marine Conservation Biologist at the University of York, UK) who shared his thoughts about the future of coral reefs.

The postgrad conference provides a good opportunity for postgrads to polish their presentation and networking skills and as such is set to be an annual event.


PHOTO: JOAN COSTA 2013

Arctic Public Lecture

A packed auditorium at the University Club welcomed UWA Oceans Institute's Director, Winthrop Professor Carlos Duarte, for his lecture entitled "Abrupt Climate Change in the Arctic – why we should care".

The lecture was part of the Inquiring Minds series organized by the Institute of Advanced Studies, Research Services and the Centre for Software Practice at UWA.

In his lecture, Professor Duarte provided evidence of the accelerating changes in the Arctic with climate change, and the huge challenges posed by the risks of these changes cascading at the planetary scale and the forthcoming rise in industrial activity in the Arctic. Professor Duarte's research team is undertaking three expeditions to the Arctic in 2013, and he joined an expedition in Greenland between July and August 2013.

Mystery sharks off Rottnest shed new light on species

The discovery of two sharks never seen before in Australian waters was set to re-write scientists' understanding of the species. Shark biologist Ryan Kempster, of the UWA's Oceans Institute, said the rare sharks were caught off Rottnest Island two years ago at a depth of 430 meters by local recreational fisherman Steve Downs.

After two years of thorough investigation which included DNA sequencing, in February 2013 the sharks were identified as mandarin dogfish (Cirrhigaleus barbifer), a species never before seen in Australia," Mr Kempster said.


PHOTO: JOAN COSTA 2013

ARC Laureate Fellowships 2013: Congratulations Winthrop Professor Mark Cassidy

Winthrop Professor Mark Cassidy, Director of UWA's Centre for Offshore Foundation Systems (COFS) and a member of the Oceans Institute, was successful in receiving one of 17 ARC Laureate Fellowships awarded, with funding of more than $3 million for the project "New frontiers in offshore geotechnics: securing Australia's energy future".

"Offshore gas lies at the heart of Australia's prosperity with $120 billion of infrastructure under construction," Professor Cassidy said. "But the future of offshore gas requires new technology to safely build offshore foundations in our weak and problematic soils. This project will provide engineers with science-based tools to unlock the natural gas 'stranded' in our deep oceans."

Professor Cassidy's research interests are in offshore geotechnics and engineering, predominantly developing wave-structure-soil interaction models for the analysis of oil and gas platforms, mobile drilling rigs and pipelines. COFS' achievements and innovative research are examples of UWA's Oceans Institute finding Ocean Solutions for humanity's grand challenges.

A third 10 m diameter centrifuge ordered by COFS will be specially housed in the new Indian Ocean Marine Research Centre (IOMRC) building on the UWA campus. The placement of the centrifuges – within the IOMRC co-housed alliance of Australian Institute of Marine Science, the CSIRO Wealth from Ocean Flagship and the OI – will also entrench COFS and the research of this Laureate Fellowship in the heart of Australia's world leading marine science capabilities and will foster collaboration between world-leading experts.

The ARC's Laureate Fellowships scheme supports excellence in research at Australian universities by attracting world-class researchers and research leaders to key positions.

New funding to analyse Shark Conservation and Management Laws

Professor Erika Techera, Dean of the UWA Faculty of Law and member of the UWA Oceans Institute, and Professor Natalie Klein, Dean of Macquarie Law School, have received Federal funding to analyse existing international laws and institutions that govern shark conservation and management, as well as regimes for other marine species.

The diminishing number of sharks has repercussions not only for the sharks but also for the health of entire marine ecosystems and the security of human communities that depend upon them for subsistence.

With this $101,000, through the Australian Research Council's Discovery Projects funding, the researchers will investigate how international laws can be reformed to improve shark conservation and management.

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