



Coral Reef Futures



PUBLIC FORUM

Date: Thursday, 15th June 2017
Time: 6.00pm to 7.00pm
Refreshments from 5.30pm
Venue: Shine Dome, Canberra

For further information: www.coralcoe.org.au

Are the world's coral reefs in trouble? Is there hope for the future? What about microplastic contaminants? For answers to these questions and more, popular science communicator, Dr Karl will host five internationally acclaimed scientists on topics of critical importance to coral reef futures. This event is for everyone. Please join us for a lively discussion.

HOST



Dr Karl

Dr Karl Kruszelnicki (pronounced "crucial-nitski") is the man with the answers when it comes to Science and Technology. The Julius Sumner Miller Fellow at Sydney University, Dr Karl spreads the word about science and its benefits. With weekly Radio shows in Australia and in the UK on the BBC, regular television appearances, magazine articles and 40 (so far) published books, Dr Karl is constantly in demand by the media and for corporate appearances. In 2002, Dr Karl was honoured with the prestigious Ig Nobel prize awarded by Harvard University in the USA for his ground-breaking research into "Belly Button Lint and why it is almost always blue". In September 2003 Dr Karl was named 'Australian Father of the Year'. Dr Karl Kruszelnicki received the Member of the Order of Australia Award in the 2006 Australia Day Honours list. His enthusiasm for science is totally infectious and no one is better able to convey the excitement and wonder of it all than Dr Karl Kruszelnicki is.



PRESENTERS

**PROFESSOR TERRY HUGHES**

Terry Hughes is the Director of the *Australian Research Council's Centre of Excellence for Coral Reef Studies*, headquartered at James Cook University in Townsville. His research interests encompass coral reef ecology, macroecology and evolution, social-ecological systems and governance. A recurrent theme in his studies is the application of new scientific knowledge towards improving management of marine environments.

Will coral reefs survive climate change?

Yes, they will survive – but only if we try a lot harder to secure a future for reefs. Over the coming centuries they will run the gauntlet of climate change, when rising temperatures will transform them into new configurations unlike anything previously experienced by humankind. Returning coral reefs to past configurations is no longer an option. Instead, the global challenge is to steer reefs into the future in a way that maintains them as functioning and sustainable ecosystems.

**ASSOCIATE PROFESSOR MIA HOOGENBOOM**

Mia is a research leader in the ARC Centre of Excellence for Coral Reef Studies. She is a leading expert on coral reef ecophysiology. Mia's research is multidisciplinary, addressing topics ranging from quantifying specific proteins involved in photosynthesis, to assessing the impacts of environmental pollutants on reef organisms. Her research informs strategies for managing the impacts of environmental contaminants on coastal marine ecosystems.

Microplastics and coal particles as marine contaminants

The close proximity of cities and ports to the coast can lead to contamination of the marine environment. This presentation will summarise recent research on two contaminants of emerging interest. Mia will review the sources and fates of microplastics in coral reef waters, and summarise the effects of suspended coal particles on several important coral reef species.

**PROFESSOR PHILIP MUNDAY**

Philip is an ARC Future Fellow in the ARC Centre of Excellence for Coral Reef Studies. Philip's research focuses on understanding and predicting the impacts that climate change and ocean acidification will have on marine fishes. Using a range of laboratory and field-based experiments the research group he leads is investigating the effects of ocean warming and acidification on reef fish populations and testing their capacity to acclimate and adapt to a rapidly changing environment.

What's the future for coral reef fish?

Coral reefs are experiencing unprecedented stress from human-induced climate change. How will this affect reef fish? Philip will discuss the effects of habitat loss, ocean warming and acidification on coral reef fishes and consider their capacity to adapt to these rapid environmental changes.

**DR VERENA SCHOEPF**

Verena is a research leader in the ARC Centre of Excellence for Coral Reef Studies at the University of Western Australia. Originally from Austria, Verena obtained a PhD from The Ohio State University in the impacts of combined climate change stressors on coral physiology and biogeochemistry. Verena's current research focuses on the heat tolerance of corals from the naturally extreme Kimberley region as well as coral calcification mechanisms under various climate change stressors.

Life on Australia's wildest coral reefs

In the remote Kimberley region, unique coral reefs exist in one of the harshest reef environments on Earth. Kimberley corals are exceptionally stress-tolerant and can cope with tides of up to 12 m and extreme temperature swings – but will they be able to survive climate change?

**DR MICHELE BARNES**

Michele is a U.S. National Science Foundation Postdoctoral Research Fellow affiliated with the University of Hawaii, and is currently based at the ARC Centre of Excellence for Coral Reef Studies. She is an interdisciplinary social scientist with expertise in network science and ocean policy. Her research draws on sociology and economics to contribute a better understanding of how people and marine ecosystems are linked, and how these linkages facilitate or constrain our ability to achieve conservation goals and equitable resource governance.

Moving beyond gloom and doom

As the worst effects of climate change to date unfold on the Great Barrier Reef, many are asking: is it too late for coral reefs? It's certainly not – but we need to act, and fast! In this talk, Michele will discuss the radical changes needed to help safely steer coral reefs into the future, and demonstrate why we shouldn't give up hope for the world's coral reefs.