

# ReFuGe 2020

## December 2014

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Welcome to the ReFuGe 2020 newsletter. Stay connected with the ReFuGe 2020 consortium, read about their latest activities, and celebrate their achievements.

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### ReFuGe 2020 consortium meet at the University of Melbourne

This newsletter showcases outcomes of the ReFuGe2020 meeting held at the University of Melbourne on the 15 - 16 October 2014.

Fifteen consortium members and five consortium Post-Docs attended, representing the Great Barrier Reef Foundation, the Australian Institute of Marine Science, the Australian National University, Bioplatforms Australia, the University of Queensland, Great Barrier Reef Marine Park Authority and King Abdullah University of Science and Technology.



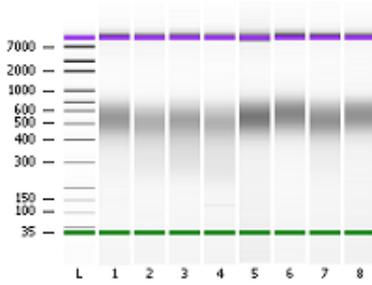
### ReFuGe 2020 consortium video

During the consortium meeting in April 2014, consortium members were interviewed regarding how the consortium has come together to help address the gap in knowledge around coral resilience and their capacity to adapt.

Bridging this knowledge gap is critical for reef managers who want to maintain the diversity and function of coral reefs and need to develop and implement innovative management approaches in order to do this.

The video is now available and can be viewed online at <https://vimeo.com/106256176>.

## Sea-quence project completes coral, symbiodinium, microbial and viral genome



The [Sea-quence project](#) is a ReFuGe2020 initiative supported by Rio Tinto and Bioplatforms Australia. This project is sequencing the genomes of 10 coral species from the GBR and the Red Sea.

The genome from 4 of the 10 coral species has been sequenced (*Porites lutea*, *Galaxea fascicularis*, *Goniastrea aspera* and *Fungia fungites*). Sequences for two coral *Symbiodinium* (Clade F and Clade C1) has also been completed.

Microbial samples have been collected for 5 corals – *P. lutea*, *G. aspera*, *G. fascicularis*, *Montipora aequituberculata* and *Porites cylindrica*.

Virus DNA and RNA fractions have been extracted from nine coral species. The methods have recently been published in *Frontiers in Microbiology* (<http://journal.frontiersin.org/Journal/10.3389/fmicb.2014.00206/abstract>)

### Collaborative research

Consortium scientists spoke about research directions and new projects opportunities. Consortium members from UQ, AIMS, ANU, GBRMPA, GBRF, BPA and JCU have recently been successful in receiving an Accelerate Queensland grant, 2 years, \$1.2 million, to explore Coral genomes along environmental gradients.

A paper for *Trends in Ecology and Evolution* ‘A genomic approach to assessing the resilience and adaptability of complex ecosystems: the case of coral reefs’ has been drafted by members of the consortium and John Mattick, the Executive Director of the Garvan Institute of Medical Research. It is due to be submitted by the end of 2014.

### Genomics assists Reef management

Following a presentation by the Great Barrier Reef Marine Park Authority (GBRMPA) the Consortium agreed to undertake presentations to Reef managers in Townsville in 2015.

A paper explaining how genomics-based approaches can inform Reef management has been drafted with input from consortium members. This paper has been submitted to *Frontiers in Ecology and the Environment*.

### Data application and uses

Consortium scientists spoke about the links between Sea-quence data, hypothesis driven projects and reef management.

The synthesis of data from the Sea-quence and hypothesis driven projects into outputs that can feed into management is important.

There are a number of interim outputs that can feed into management now. The synthesis of these outputs would ideally

contextualise the value of the information, the importance of supporting foundational work such as Sea-quence and the known knowledge gaps that limit current and future management.

**Major Milestones coming soon....**

A public website which outlines the work of the consortium members is being developed. The website will provide background on the consortium and progress updates. The website is due for release at the beginning of 2015.

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The newsletter was prepared by the Great Barrier Reef Foundation on behalf of the ReFuGe 2020 Consortium.

Reef	Future	Genomics	 <b>GREAT BARRIER REEF</b> <i>foundation</i>	
Re	Fu	Ge	 Australian Government	 AUSTRALIAN INSTITUTE OF MARINE SCIENCE
			 Australian Government Great Barrier Reef Marine Park Authority	
	2o	2o	 Bioplatforms Australia	
			 JAMES COOK UNIVERSITY AUSTRALIA	
			 KAUST King Abdullah University of Science and Technology	 كاوست جامعة الملك عبد الله للعلوم والتقنية
			 THE UNIVERSITY OF QUEENSLAND AUSTRALIA	
			 Australian National University	