Message from the Director

There is a widespread and ever-increasing interest in marine biotechnology and its socio-economic impacts. Oman’s exploitable economic zone covers some 400,000 square kilometers of ocean, which has a rich biodiversity. Living marine resources are Oman’s major renewables and have remarkable potential for commercial exploitation beyond the present capture fishery. With foresight, Sultan Qaboos University has actively supported marine biotechnology through establishment of a UNESCO Chair in Marine biotechnology and the Center of Excellence in Marine Biotechnology (CEMB) in 2005. CEMB was opened with the states aims of capacity building and implementation of new research programs in marine biotechnology. Since 2005, CEMB has served as the Sultan Qaboos University focal point for marine biotechnology, through multi-disciplinary research programs, post-graduate training and dissemination of information. The Center facilitate interactions between SQU and government ministries, international organizations and the commercial sector for conducting research and development in the field of marine biotechnology. The Centre strives to establish solid collaborative links between marine biotechnology centers in the region and in the world to enhance research and improve knowledge dissemination. CEMB creates awareness of the potential developments and commercial opportunities for marine biotechnology in Oman through the use of scientific and popular media and by the organization of local, regional and international meetings. Also the Centre supports the postgraduate programs in the Colleges by providing close supervision to graduate students.

Dr. Sergey Dobretsov
Director, CEMB
CEMB Mission
1. Create a strong infrastructure and develop an integrated research program in marine biotechnology.
2. Facilitate interdisciplinary and multi-institutional efforts to bridge gaps in research and encourage partnerships between academia, government and industry to commercialize scientific findings.
3. Apply advanced molecular biology techniques and information technology to a carefully selected suite of marine habitats and organisms.
4. Discover genes and processes that can be used to develop innovative products and approaches to benefit biomedicine and industry.
5. Use and management of marine resources in a sustainable manner.

CEMB Vision
1. To establish an internationally recognized research center for marine biotechnology which will exploit marine resources sustainably, resulting in the development of innovative compounds and processes.

CEMB Objective and Strategies
1. To serve as the Sultan Qaboos University focal point for marine biotechnology.
2. To seek and administer internal and external research funding for multi-disciplinary marine biotechnology research programs.
3. To support post graduate training and education.
4. To support visiting research scientists and facilitate their research in marine biotechnology in Oman.
5. To facilitate interactions between Sultan Qaboos University and government ministries, international organizations and the commercial sector for conducting research and development in the field of marine biotechnology.
6. To create awareness of the potential developments and commercial opportunities for marine biotechnology through the use of scientific and popular media and by the organization of local, regional and international meetings.

Research topics
The Center has consolidated its research activities in advanced aquaculture, biofouling and antifouling, genetics of commercial species, and bioinformatics.

Research projects
The Research Council Grants

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Code</th>
<th>Title</th>
<th>PI</th>
<th>Date Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RC/DVC/CEMB/13/01</td>
<td>Larval culture of the tropical spiny lobster, <em>Panulirus homarus</em>, a new candidate species for aquaculture in Oman</td>
<td>Dr. Wenresti Gallardo</td>
<td>December 2013</td>
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<tr>
<td>2</td>
<td>RC/DVC/CEMB/14/01</td>
<td>Spatial genetic structure of tropical spiny lobster (<em>Panulirus</em></td>
<td>Dr. Madjid Delghandi</td>
<td>September 2014</td>
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### Internal Grants

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Code</th>
<th>Title</th>
<th>PI</th>
<th>Date Granted</th>
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<tbody>
<tr>
<td>1</td>
<td>IG/DVC/CEMB/17/01</td>
<td>Epizoic diatom community on marine turtles from Omani coasts: an ultrastructural and biogeographical analysis</td>
<td>Dr. Sergey Dobretsov</td>
<td>January 2017</td>
</tr>
<tr>
<td>3</td>
<td>RC/AGR/FISH/16/01</td>
<td>Biofouling in Oman waters and prevention of microbial and algal fouling using novel nanorod photocatalytic coatings</td>
<td>Dr. Sergey Dobretsov</td>
<td>January 2016</td>
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</tbody>
</table>

*homarus*) Using novel methods to support a new era of fisheries management and regulation
External Grant

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Code</th>
<th>Title</th>
<th>PI</th>
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<tbody>
<tr>
<td>1</td>
<td>ONRG-CSP-N62909-17-1-2135</td>
<td>Second GCC Marine Biotechnology Conference</td>
<td>Dr. Sergey Dobretsov</td>
<td>August 2017</td>
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Research output

<table>
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<tr>
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<th>2017</th>
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<tbody>
<tr>
<td>Paper Published in Refereed Journals</td>
<td>11</td>
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<tr>
<td>Book chapters</td>
<td>0</td>
</tr>
<tr>
<td>Conference Proceedings</td>
<td>17</td>
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</table>
Research publications
Paper Published in Refereed Journals


Conference Proceedings


the tropical spiny lobster (*Panulirus homarus*) from Oman. 2\textsuperscript{nd} National Conference on Agriculture & Fisheries Research, Muscat, 3-4 April 2017.


14. Al-Fori M., Myint MTZ, Dobretsov S., Dutta J. 2017. Antifouling properties of ZnO nanorod coatings. Poster presentation at the 2\textsuperscript{nd} National Conference on Agriculture and Fisheries Research, Muscat, Oman, 3-4 April 2017.

15. Sathe P., Myint MTZ, Dobretsov S., Dutta J. 2017. Removal of microalgae using visible light photocatalysis with ZnO nanorods. Poster presentation at the 2\textsuperscript{nd} National Conference on Agriculture and Fisheries Research, Muscat, Oman, 3-4 April 2017.

16. Dobretsov S., Muthukrishnan T. 2017. Microbial biofouling on commercial antifouling coatings. Poster presentation at the 2\textsuperscript{nd} National Conference on Agriculture and Fisheries Research, Muscat, Oman, 3-4 April 2017.

17. Dobretsov S. 2017. Second GCC Marine biotechnology conference. Poster presentation at the 2\textsuperscript{nd} National Conference on Agriculture and Fisheries Research, Muscat, Oman, 3-4 April 2017.
Conference organized

The Center of Excellence in Marine Biotechnology organized the 2nd GCC Marine biotechnology conference Marine Biotechnology conference: emerging opportunities and future perspectives. The conference was held at Sultan Qaboos University, 31 October – 1 November 2017. The conference focused on four major themes, including Genetics and biodiversity, Marine biofouling and its prevention, Marine natural products, and Aquaculture and fisheries. In total, 160 delegates from 23 different countries were registered for this conference and 106 delegates attended the conference. One plenary lecture and three keynote addresses were given, 39 oral and 30 poster presentations were made. The final session reviewed national and regional issues and identified some of the main challenges in marine biotechnology in the region.

Participants of the 2nd GCC Marine Biotechnology Conference
### Students
#### PhD students

<table>
<thead>
<tr>
<th>No.</th>
<th>PhD student’s name</th>
<th>Year started</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Rufaida Dhuai Al-Breiki</td>
<td>2015</td>
<td>On-going</td>
</tr>
<tr>
<td>2</td>
<td>Aisha Salim Al-Wahaibi</td>
<td>2014</td>
<td>On-going</td>
</tr>
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</table>

#### MSc students

<table>
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<th>No.</th>
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<th>Year started</th>
<th>Status</th>
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<tr>
<td>1</td>
<td>Sumaiya Hilal Al-Riyami</td>
<td>2015</td>
<td>Graduated</td>
</tr>
<tr>
<td>2</td>
<td>Sultana Sulaiman Al-Jardani</td>
<td>2015</td>
<td>Graduated</td>
</tr>
<tr>
<td>3</td>
<td>Mohamed Khalfan Al-Wahaibi</td>
<td>2015</td>
<td>Graduated</td>
</tr>
<tr>
<td>4</td>
<td>Yasmin Hamed Al-Alawi</td>
<td>2015</td>
<td>Graduated</td>
</tr>
<tr>
<td>5</td>
<td>Huda Khalfan Al-Brashdi</td>
<td>2014</td>
<td>Graduated</td>
</tr>
</tbody>
</table>
**Visitors and international collaborations**

1. Visit of Prof. Mario De Stefano, Second University of Naples, Italy. Prof. Mario during his research leave was working on epizoic diatom community on marine turtles from Omani coasts.

2. Visit of Dr. Maria Salta, University of Portsmouth, UK. Dr. Maria during her research visit was testing antifouling coatings.
3 Visit of the delegates from Temasek Polytechnic, Singapore. During this visit cooperation between Temasek Polytechnic and CEMB was discussed.

4 Visit of Dr. E.P. Preetham, Department of Biochemistry, Kerala University of Fisheries and Ocean Sciences, India.

Sultan Qaboos University signed a Letter of Understanding with TEMASEK Polytechnic, a higher education institute from Singapore. The Center of Excellence in Marine Biotechnology is a focal point of this LoU.
In 2017, two students from Sur College of Applied Sciences were trained in Marine Biotechnology at the Center of Excellence in Marine Biotechnology.

**Outreach**

During 2017, the Center of Excellence in Marine Biotechnology organized the following workshops and the members of the Center gave the following talks and media presentations.

**Workshops**

2. Workshop on Standard Scanning Electron Microscopy (sSEM), Sultan Qaboos University, Muscat, Oman, 2 November 2017.

Talks


Media presentations

3. Temasek praises marine biotechnology projects at SQU. SQU Website, 8 November 2017.
TV Interviews

Contact us

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