



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
COMMISSION OCÉANOGRAPHIQUE INTERGOUVERNEMENTALE  
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL  
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ  
اللجنة الدولية الحكومية لعلوم المحيطات  
政府间海洋学委员会

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**IOC Circular Letter No.**  
(English only)

WWW/VR/WZ  
06 July 2017

**To:** Official National Coordinating Bodies for Liaison  
with the IOC in the Western Pacific

**Cc:** Permanent Delegates/Observers Missions to UNESCO of IOC Member  
States in Western Pacific;  
National Commissions for UNESCO of IOC Member States in Western  
Pacific IOC;  
Other IOC Member States  
IOC and WESTPAC Officers

**Subject:** **WESTPAC Training Course on Molecular Taxonomy based on Single DNA  
Barcoding and Metabarcoding – IOC Regional Training and Research  
Center on Marine Biodiversity and Ecosystem Health, Jakarta, Indonesia,  
25 September – 6 October 2017**

**Action required:** To nominate one or more participants to the Training Course, preferably no later  
than **31 July 2017**

You may recall that the Intergovernmental Oceanographic Commission endorsed in 2008 the “IOC Regional Network of Training and Research Centers” initiated by its Sub-Commission for the Western Pacific (WESTPAC). The initiative aims to improve regional capability and capacity on marine science in a sustainable and systematic manner, through the establishment of IOC Regional Training and Research Centers (RTRCs) in national oceanographic institutes or universities, and regular provision of training and research opportunities in their domains of focus to young scientists mainly from developing countries within and outside the region.

Thanks to the strong commitment of the Government of Indonesia and after satisfactory evaluation, a Regional Training and Research Center on Marine Biodiversity and Ecosystem Health (hereinafter referred to as “MarBEST Center”) was inaugurated in the Research Center for Oceanography- Indonesian Institute of Sciences (RCO-LIPI) on 17 October 2016 in Jakarta, Indonesia. The MarBEST Center is committed to addressing the “taxonomic impediment” in tropical marine biodiversity studies in view of the dramatic declining numbers of taxonomic specialists on specific organisms.

.../...

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As an initial activity, the MarBEST Center conducted its first training course on Crustacean Taxonomy at the MarBEST Center Building on the Pari Island, Jakarta, Indonesia (17-29 October 2016), with the objective of enhancing the capacity of scientists and lectures in the Western Pacific and adjacent regions for taxonomic research on tropical marine biota, especially for crustacean taxonomy.

I have the pleasure to inform you that the second training course at the MarBEST Center is being scheduled from 25 September to 6 October 2017 upon the kind invitation of the Government of Indonesia. It will focus on Molecular Taxonomy based on Single DNA Barcoding and Metabarcoding. Following the constructive suggestions and overwhelming expression of interest received from the previous trainings, this training course will last for two weeks with the number of trainees limited to 25.

The course is primarily targeted at young researchers and lecturers from universities and research institutions from member states in the Western Pacific and adjacent regions, including ASEAN countries, and various stakeholders engaged in marine conservation and environmental protection. Priority will be given to young scientists and junior technical staff who have knowledge and/or working experience in molecular marine taxonomy.

Given the limited financial resources available, some of the most qualified applicants may receive financial support upon request after careful selection by a committee established jointly by Indonesia and WESTPAC. Details and updated information regarding this course will be made available at the WESTPAC website (<http://iocwestpac.org>) and the Indonesian Institute of Science website (<http://lipi.go.id>).

On behalf of IOC, I encourage you to nominate one or more qualified experts to join the course using the attached application form. Applications should be sent before **31 July 2017** to Ms Hilda Novianty ([hildanovianty2012@gmail.com](mailto:hildanovianty2012@gmail.com)), with a copy to Ms Rianta Pratiwi ([pratiwiafriadi@gmail.com](mailto:pratiwiafriadi@gmail.com)), and Ms Nachapa Saransuth ([n.saransuth@unesco.org](mailto:n.saransuth@unesco.org)).

I take this opportunity to thank you once again for your cooperation and look forward to the active participation of suitable trainees from your country in this training course.

Yours sincerely,

Vladimir Ryabinin  
Executive Secretary, IOC

Enclosures (2):      I. General Information on the Training Course  
                                 II. Application Form

## ANNEX I

### **WESTPAC TRAINING COURSE ON MOLECULAR TAXONOMY BASED ON SINGLE DNA BARCODING AND METABARCODING**

**UNESCO/IOC Regional Training and Research Center on Marine Biodiversity and  
Ecosystem Health**

**Jakarta, Indonesia 25 September – 6 October 2017**

## GENERAL INFORMATION

### ***Introduction***

The UNESCO/IOC Regional Training and Research Center on Marine Biodiversity and Ecosystem Health (hereinafter referred to as “MarBEST Center”) was inaugurated on 17 October 2016 at the host institute of the Research Center for Oceanography-Indonesian Institute of Sciences (RCO-LIPI), Jakarta, Indonesia. The Agreement on the MarBEST Center establishment was signed by the Intergovernmental Oceanographic Commission of UNESCO and the Indonesian Institute of Sciences, at the Eleventh Intergovernmental Session of UNESCO/IOC Sub-Commission for the Western Pacific (WESTPAC-XI) in Qingdao, China in April 2017.

The MarBEST Center offered its first training course on Crustacean Taxonomy right after the MarBEST Center’s launch in October 2016. The training covered ocean biosystematics, crustacean species identifications and techniques, and scientific writing skills for publications. The first training course of MarBEST Center reached to more than 30 trainees from 10 countries.

As per the Agreement, “*the objectives of the Center shall be to enhance the regional research capacity and capability on marine taxonomy and promote long-term assessment of ecosystem health through, among others, provisions of regular training courses in English once a year to students, young researchers and lecturers mainly from the developing member states of IOC in the Western Pacific.*”

To this end, with the constructive suggestions and overwhelming interests received from the previous training course, this Training Course on Molecular Taxonomy based on Single DNA Barcoding and Metabarcoding will be held on 25 September – 6 October 2017.

### ***Objectives and Scope of the Training course***

This training course is designed to develop the capacity of member states in the Western Pacific (suitable candidates from outside the region will also be welcome), who are involved in molecular taxonomy of marine organisms. The training will cover topics related to Molecular Taxonomy based on Single DNA Barcoding and Metabarcoding study of various marine organisms in the tropical region including marine vertebrate, invertebrate (Insects, Mollusk, Polychaeta & Annelids, Crustaceans, Coelenterate, Cnidarians, Echinoderms), marine planktons, marine bacteria and virus, and marine plants (algae and sea grass).

### ***Expected Outcomes***

In addition to establishing the regional network of marine diversity research, the trainees are expected to improve their understanding of Molecular Taxonomy based on Single DNA Barcoding and Metabarcoding study.

### ***Date and Venue***

The training course will be conducted from **25 September to 6 October 2017** in Jakarta, Indonesia. More information about this center and this training course can be found on the websites of WESTPAC (<http://iocwestpac.org>) and Indonesian Institute of Science (<http://lipi.go.id>).

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***Lecturers and Agenda for the Training Course***

Experienced experts on molecular taxonomy of marine organisms within and outside the region will serve as lecturers of this training course. Lecturers and tentative training topics are listed as follows. Detailed agenda for the training course will be updated on the websites of WESTPAC (<http://iocwestpac.org>) and Indonesian Institute of Science (<http://lipi.go.id>).

*Lecturers*

**Assoc Prof Dr Suchana Chavanich<sup>1</sup>**

Chulalongkorn University, Thailand

**Prof Forest Rohwer<sup>2</sup>**

San Diego University, USA

**Prof Dr Youn Ho Lee<sup>3</sup>**

Korea Institute of Ocean Science and Technology (KIOST), Republic of Korea

**Dr Philip Borsa<sup>4</sup>**

Institute of Research for Development (IRD), France

**Dr Christopher Meyer<sup>5</sup>**

Natural Museum, USA

**Dr Nicholas Hubert<sup>6</sup>**

Institute of Research for Development (IRD), France

**Dr Albert Chokona<sup>7</sup>**

South African Institute of Aquatic Biodiversity (SAIAB), South Africa

**Dr Satoshi Yamamoto<sup>8</sup>**

Kobe University, Japan

**Dr Takahiro Yonezawa<sup>9</sup>**

Fudan University, China

**Dr Hagi Yulia Sugeha<sup>10</sup>**

Research Center for Oceanography (RCO)-LIPI, Indonesia

**Dr Irma Shita Arlyza<sup>11</sup>**

Research Center for Oceanography (RCO)-LIPI, Indonesia

**Dr Yopi<sup>12</sup>**

Research Center for Biotechnology- LIPI, Indonesia

*Tentative Training Topics*

*Lectures*

- a. Present Status of Marine Biodiversity in the Indo-Pacific<sup>1</sup>
- b. Cell Biology: Structure and Function<sup>2</sup>
- c. Introduction of Molecular Genetics<sup>3</sup>
- d. Progress of Molecular Taxonomy on Marine Vertebrate<sup>4</sup>
- e. Progress of Molecular Taxonomy on Marine Invertebrate<sup>5</sup>
- f. Single DNA Barcoding in Invertebrate<sup>6</sup>
- g. Single DNA barcoding in Vertebrate-Fish<sup>7</sup>
- h. Environment-DNA/Meta-Barcoding-Fish<sup>8</sup>
- i. Environment-DNA/Meta Barcoding- Plankton<sup>3</sup>
- j. Practical Guide: Genetic data analysis in single DNA barcoding study<sup>7</sup>
- k. Practical Guide: Genetic data analysis in metabarcoding study<sup>8</sup>
- l. Practical Guide: Genetic data analysis in Molecular Phylogenetic & Evolution<sup>9</sup>
- m. Practical Guide: Total DNA extraction and Gel Electrophoresis Procedures<sup>10</sup>
- n. Practical Guide: PCR and Real Time PCR Procedures<sup>11</sup>
- o. Practical Guide: DNA Single Sequencing & NGS Procedures<sup>12</sup>

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*Field Sampling*

- a. Collecting genetic material at Pari Island, Indonesia
- b. Total DNA extraction from environmental DNA samples at Pari Island, Indonesia

*Genetic Laboratory Works*

- a. Total DNA extraction from individual sample at Genetic Lab of RCO-LIPI
- b. PCR analysis at Genetic Lab of RCO-LIPI
- c. RT PCR analysis at Genetic Lab of RCO-LIPI
- d. DNA sequencing analysis at Genetic Lab of Research Center for Biotechnology-LIPI

**Working Language**

The training course will be conducted in English.

**Trainees**

Trainees will be selected mainly from WESTPAC member states with priority given to those young scientists and junior technical staff who have experience in molecular taxonomy of marine organism and/or have doctoral degrees in related major. The applicants should have a good command of English.

**Qualification for Candidates:**

1. Young researchers, lecturers and marine conservation managers (under 40 years old as of 1 July 2017) of IOC-WESTPAC member countries including ASEAN countries.
2. Candidate shall meet at least one of the criteria below:
  - 2.1 Holding bachelor, master and/or doctoral degree in molecular biology (please provide a copy of graduation certificate with the application)
  - 2.2 Minimum 1 year of work experience in molecular biology (please provide a formal letter of notification from the head of institute with the application)
  - 2.3 Attending a previous training related to molecular biology (please provide a training certificate with the application)

**Financial Assistance for Participants**

Financial support will be provided to trainees who are in need, particularly those from developing countries. A selection committee will be set-up with a view to selecting the most qualified participants among applications to receive financial assistance. The information filled in the attached application form will be of great help for the selection process.

**Deadline for Application**

The filled-in application form shall be sent to Ms Hilda Novianty with a copy to Ms Rianta Pratiwi, and Ms Nachapa Saransuth at the following addresses no later than **31 July 2017**. All applicants will be informed of the final selection result no later than **7 August 2017**. A certain number of self-funded applicants will be also selected to take part in this training course.

**Visa**

Selected trainees traveling to Indonesia probably need to apply for entry visa to Indonesia in accordance with relevant laws and regulations. Please check the visa requirements with the Embassy/Consulate of Indonesia in your country and apply for it as soon as possible. The local secretariat (Ms Hilda Novianty and Ms Rianta Pratiwi) will be glad to provide you any assistance upon your request.

**Contacting Information**

Ms Hilda Novianty  
Technical Implementing Unit (TIU) –Pari Island  
Indonesian Institute of Sciences  
E-mail: [hildanovianty2012@gmail.com](mailto:hildanovianty2012@gmail.com)

Ms Rianta Pratiwi  
Research Center for Oceanography, Indonesian Institute of Sciences  
E-mail: [pratiwiafriadi@gmail.com](mailto:pratiwiafriadi@gmail.com)

Ms Nachapa Saransuth  
Programme Assistant  
UNESCO/IOC Regional Office for the Western Pacific (WESTPAC)  
Intergovernmental Oceanographic Commission of UNESCO  
Tel: +66 2 141 1288  
Fax: +66 2 143 9245  
E-mail: [n.saransuth@unesco.org](mailto:n.saransuth@unesco.org)

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**ANNEX II****WESTPAC TRAINING COURSE ON MOLECULAR TAXONOMY BASED ON SINGLE DNA  
BARCODING AND METABARCODING****UNESCO/IOC Regional Training and Research Center on Marine Biodiversity and  
Ecosystem Health****Jakarta, Indonesia 25 September – 6 October 2017****APPLICATION FORM**

The Government of ..... proposes the nomination of the following trainee to participate in the Training Course.

First name		<input type="checkbox"/> Dr / <input type="checkbox"/> Mr / <input type="checkbox"/> Ms
Family name		
Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female	
Nationality		
Date of birth		
Education level	<input type="checkbox"/> Bachelor <input type="checkbox"/> Master <input type="checkbox"/> PhD Graduated from: Major: Supervisor/Advisor:	
Job title		
Affiliation		
Years of experience in current job		
Address		
Tel. number(s)		
Fax number(s)		
Email(s)		
Contact person, in case of emergency		
Dietary Restriction	<input type="checkbox"/> None <input type="checkbox"/> No pork <input type="checkbox"/> No beef <input type="checkbox"/> Bachelor <input type="checkbox"/> Other, please specify	
Major and/or Research Area		
Previous Training Courses/Workshops attended and related to this training course	<input type="checkbox"/> No <input type="checkbox"/> Yes, please specify the workshop titles: (a) (b)	

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Self-descriptions and brief statement of research activities that is linked to this training course, and related publication if any ( <b>This part is crucial for qualifying, so separate pages could be annexed to this form</b> )		
Please provide with name and E-mail address of two referees whom can be contacted to support your application		
Referee #1	Name	
	Job title	
	Affiliation	
	Email	
	Tel	
Referee #2	Name	
	Job title	
	Affiliation	
	Email	
	Tel	
<u>Financial assistance</u> <input type="checkbox"/> I could cover my expense. <input type="checkbox"/> I would apply for the financial assistance. <input type="checkbox"/> Fully (including round trip airfare, accommodation); <input type="checkbox"/> On airfare in the amount of US\$_____ <input type="checkbox"/> On accommodation.		

Date: .....

.....  
(Signature of Head/Director of the Institution)

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Please return the completed form with your CV (with a 2-inch photo), by fax or e-mail to the following addresses before **31 July 2017**:

Ms Hilda Novianty  
 Technical Implementing Unit (TIU) –Pari Island  
 Indonesian Institute of Sciences  
 E-mail: [hildanovianty2012@gmail.com](mailto:hildanovianty2012@gmail.com)

With a copy to:

Ms Rianta Pratiwi  
 Research Center for Oceanography, Indonesian Institute of Sciences  
 E-mail: [pratiwiafriadi@gmail.com](mailto:pratiwiafriadi@gmail.com)

Ms Nachapa Saransuth  
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