

***Meeting Report and Action Items***  
**CMarZ Steering Group Meeting - Synthesis Planning**  
**IOCAS, Qingdao, China (May 11-14, 2010)**

*Note: Open discussion among Steering Group members took place on May 13<sup>th</sup> and the topics and Action Items resulting are recorded here. The CMarZ Symposium was held during May 11<sup>th</sup> and 12<sup>th</sup>. The program for that meeting follows this report. Presentation files (usually PDF conversion from PPT) for some Symposium talks are available on the CMarZ website.*

**May 13, 2010**

**10:30 am Super Powers of Zooplankton (Shuhe Nishida)**

Discussion included consideration of several different possible approaches

- Scientific American – total only 2500 words; use own images; strong editorial oversight
- National Geographic – maybe not exploratory enough
- Oceanus (WHOI magazine) – only US distribution
- Progress in Oceanography article – part of special issue?
- Picture book with descriptions of special properties
- Book for popular audience and students

Discussion also ranged across several different topics:

- Role of zooplankton in climate change, ocean food webs
- Adaptations to pelagic life (e.g., transparency, bioluminescence, etc)

Consensus of group seemed to converge on a book for popular audiences as a most useful approach, especially because of need for popular understanding and appreciation for zooplankton.

[Action Item: Shuhe will send an outline to the Steering Group members asking for contributions and suggestions;](#)

[Action Item: Ann will query CoML about possible publishers and ask Sloan about possible funding.](#)

**11:00 am Report from CMarZ DSR-II Editors' Meeting (Peter)**

First report indicated need for rearranging the papers and rewriting some of the introductory and editorial sections. Ann stressed the need to keep to a production schedule that allows 2010 publication date. Editors will meet again this afternoon and report back later on.

The Editors met again in the early afternoon. Peter presented a second report. Agreement was reached on all aspects of special volume, including changes of title, editorial introduction, and organization. Peter will also change his overview paper to include the Polarstern. Recommendation to dedicate the volume to Francesc Pages and include a bibliography of his work; Larry, Sigi, and Dhugal can help prepare a memorial statement and choose a CMarZ cruise-related photo.

Action Item: Peter, Shuhei, and Sigi will finish review of manuscripts, organization of special issue, and preparation of an introduction for submission to DSR-II.

**11:15 am Report from DNA barcoding Working Group Meeting (Ann)**

Major issue and need is to be able to count numbers of barcodes and numbers of species barcoded by CMarZ efforts across all laboratories and barcoding centers. Information on specimens and barcodes should be collected and made available by the CMarZ Barcoding Association (see <http://www.cmarz.org/barcode/index.htm>). Ryuji urged that request should make clear what information is absolutely needed and that as few fields as possible be requested. Suggestion is for: genus and species, latitude / longitude, barcode status, GenBank Acc. No.

Action Item: Ann will send request and instructions for submitting metadata to CMarZ Barcoding Association via the template for the specimen tracking database.

**11:30 am Another CMarZ Special Issue? (Martin)**

The proposal is to target Progress in Oceanography for a second special issue for CMarZ. The focus and emphasis was discussed by the Steering Group, without specific resolution. Taxon-specific syntheses seemed a possible approach; extent to which these syntheses can be global is open to question and may differ among taxonomic groups.

Martin suggested a single integrative and synthetic article on the zooplankton assemblage as a whole. Ann wondered whether CMarZ results, data, and information have provided enough new data and information to allow taxon-specific biogeographic syntheses with global focus.

Action Items: Martin and Ann will prepare versions of a short prospectus for discussion and comparison, so a prospectus that represents a consensus or shared view can be prepared and distributed to the CMarZ Steering Group for comments and suggestions.

Action Item: CMarZ Steering Group members and others will send information on possible papers to be submitted for a CMarZ special issue in Progress in Ocean, consistent with the prospectus.

**2:45 pm Data submission to CMarZ (Ann, Dicky, Nancy)**

Summary of responses from Ann's Feb. 2010 query to Steering Group members about data from cooperating projects cruises. Nancy summarized the responses and asked for more information from Steering Group members present. Next step is for Ann to remind Steering Group members and start getting the data in hand.

**3:00 pm New global biogeographies (Annelies)**

Mark Costello is the lead for this CoML Synthesis Working Group. OBIS database and maps are to be used to summarize a new pelagic biogeography. Draft report from the WG provides an overview of pelagic distributional patterns that is not surprising or exciting. Well-established species-area relationships may not pertain in the pelagic; higher diversity in tropics; correlation between sampling effort and biodiversity is not significant.

Comments: Summary is not simply uninteresting, it is misleading. Problem is lack of mesoscale oceanographic context, which is what determines the biogeographic processes. Latitudinal zones with propagating mesoscale eddies show highest biodiversity levels (Larry Harding), but this is spurious.

This exercise points out the problems with OBIS: not quantitative, no depth information (can't distinguish depth zones), no oceanographic context (only geography). Species names synonymies are also a big problem.

Action Item: Annelies will report to Mark on recommendations that biogeographic synthesis for the pelagic be depth stratified, since depth-specific abundance data will have vastly more value and significance for biogeographic analysis.

### **3:15 pm Species lists (Nancy Copley)**

North Atlantic is well advanced and is a basis for ongoing barcoding effort. Seems to particular application for a global species list; we will not pursue a global species list.

Action Item: Nothing further planned at this time.

### **3:45 pm Pelagic size spectrum; Biomass estimation (Peter Wiebe)**

Biomass – This is a large group of CoML researchers led by Gil Rowe. Peter has not been able to join this group yet. BCO-DMO will serve pelagic biomass data.

Action Item: Peter will remain involved for CMarZ.

Abundance Working Group – No CMarZ participation at this time, although Sigi may be willing and able to help with this activity.

Action Item: Ann will ask for more information about this group.

Pelagic size spectrum – still no CMarZ person for this group.

Action Item: Ann will ask for more information about this group in case someone wishes to participate and assist.

### **4:00 pm Future of zooplankton research (Larry)**

Possible focus area for a CMarZ article or position statement is taxonomy in the face of technology.

Larry presented a list of questions being asked now, many of which are the primary questions from the BASIN science plan. Other discussion topics were to develop an overall vision for the future of zooplankton research and to predict how zooplanktonologists will be doing what they do in 2020.

Action Item: Larry will send a draft of his “Future of Zooplankton Research” summary to the Steering Group (or to Ann or Nancy for distribution to the Steering Group). Steering Group members should indicate their interest in volunteering for particular aspects or their willingness to contribute the document. The goal is a published editorial or position piece. Possible journals include the Journal of Zooplankton Research (HORIZONS). The goal

would be to submit this piece by late 2010 (ideally before the Finale). Alternatively, this could be a contribution for the Progress in Oceanography special issue.

**4:45 pm      Wrap-up and Adjourn**

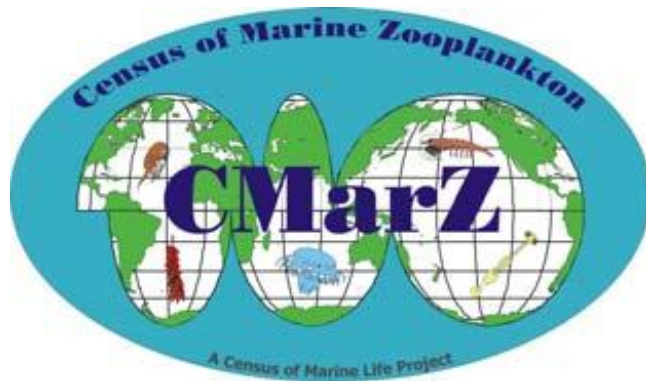
Shuhei Nishida and Sun Song encouraged consideration of how CMarZ would function in the future. Both were very optimistic about the future persistence of CMarZ and the long-term maintenance of the three databases at WHOI, ORI, and AWI.

Ann Bucklin thanked Sun Song for inviting CMarZ and hosting the meeting, Chaolun Li for his outstanding organizational efforts during the meeting, IOCAS students Tom (Wang Ling-Tao) and Leo (Wang Leung) for their excellent assistance, and Lily (Gao Li) for her superb assistance with planning and carrying out the meeting.

Action Item: Steering Group members should consider whether visits to the database centers at WHOI, ORI, or AWI would help them prepare synthesis papers (e.g., for the Progress in Oceanography special issue) or other papers. Individual and small-group meetings are encouraged to support CMarZ Synthesis activities (especially peer-reviewed publications, general-interest reports and articles, maps and data visualizations, and other Synthesis products). Some CMarZ funding may be available to Steering Group members to support travel for these visits.

**5:30 pm      Meeting adjourned**

# **Program & Conference Guide**



**CMarZ Steering Group Meeting**

**May 11 – 14, 2010**

**Institute of Oceanology, Chinese Academy of Sciences**

**Qingdao, China**

**CMarZ Steering Group Meeting**  
May 11 – 14, 2010  
*Institute of Oceanology – Chinese Academy of Sciences*  
*Qingdao, China*

**Steering Group Meeting Agenda**

**Theme: CMarZ Accomplishments and Finale**

**Goals for the Meeting:**

1. Public CMarZ Symposium
2. CMarZ Synthesis Working Group meetings
3. Planning for CMarZ finale

**Background reading:** *CMarZ Synthesis Renewal Proposal and Appendices*

**Monday, May 10      Arrival**

6:00 pm      Welcome dinner

**Tuesday, May 11      CMarZ Symposium I**

8:30 am      Welcome to IOCAS

8:45 am      Introduction to the Census of Marine Zooplankton - CMarZ (Ann Bucklin)

**Theme A:      Zooplankton biodiversity in Southeast Asia (Moderator: Shuhei Nishida)**

9:00 am      - *Zooplankton biodiversity in Southeast Asia: An overview (Shuhei Nishida)*

9:20 am      - *Community structure of copepods from different nearshore substrates off Tinggi and Sibul Islands, Malaysia (Ephraïm Metillo)*

9:40 am      - *Zooplankton community variation at a fixed station in the Straits of Malacca (Othman Bin Haji Ross)*

10:00 am      Tea Break

10:20 am      - *Biodiversity of mesozooplankton in the Sulu Sea and its adjacent waters, with special reference to copepods (Jun Nishikawa)*

10:40 am      - *Zooplankton community and biodiversity in the Yellow Sea and East China Sea (Guang-xing Liu)*

**Theme B:      Zooplankton biodiversity of Polar Seas (Moderator: Peter Wiebe)**

11:00 am      - *Diversity and distribution of Southern Ocean calanoid copepods (Sigrid Schnack-Schiel)*

11:20 am      - *Frozen jelly in the blender: ubiquitous species, endemic species, and biodiversity in the gelatinous plankton community of Eastern Antarctica (Dhugal Lindsay)*

11:40 am      Discussion

12:00 noon      Lunch

**Theme C:      Zooplankton biodiversity of the open ocean (Moderator: Sigrid Schnack-Schiel)**

2:00 pm      - *Zooplankton sampling of the deep Sargasso Sea (Peter Wiebe)*

2:20 pm      - *Chaetognaths of the Atlantic: Results from the MAR-ECO, R.H. Brown and Polarstern cruises (Annelies Pierrot-Bults)*

- 2:40 pm - *Species diversity of planktonic ostracods, with a focus on the Atlantic Ocean*  
(Martin Angel)
- 3:00 pm - *Contributions to CMarZ from the Indian Ocean* (Vijayalakshmi Nair)
- 3:20 pm Tea Break

### Panel Discussion

- 3:40 pm Panel Discussion: Challenges in zooplankton research: present and future
- 4:30 pm Questions and answer session with the panel members
- 5:00 pm Adjourn
- 6:00 pm Dinner

## Wednesday, May 12 CMarZ Symposium II

### Theme D: Genetic and Biochemical Studies of Zooplankton Diversity (Moderator: Dhugal Lindsay)

- 8:30 am Welcome and Announcements
- 8:40 am - *DNA barcoding of North Atlantic zooplankton* (Ann Bucklin)
- 9:00 am - *Zooplankton community genomics* (Ryuji Machida)
- 9:20 am - *Genetic diversity of pelagic chaetognaths* (Hiroomi Miyamoto)
- 9:40 am - *Using fatty acids as physiological and ecological indicator of zooplankton in the Yellow Sea: with implications in relationships of biochemical indices and biodiversity* (Xinming Pu)
- 10:00 am Tea Break
- 10:20 am - *New insights into phylogeny and evolution of Thaliaceans* (Larry Madin)
- 10:40 am - *Zooplankton phylogeography as a measure of ecosystem connectivity*  
(Leocadio Blanco-Bercial)

### Theme E: Data and Information Management for CMarZ (Moderator: Vijayalakshmi Nair)

- 11:00 am - *A guided tour through the CMarZ website* (Nancy Copley)
- 11:20 am - *Data management; mapping and visualization* (Dicky Allison)
- 11:40 am Discussion and closing comments
- 12:00 noon Lunch

### CMarZ Synthesis Planning

- 2:00 pm Overview of CMarZ Synthesis (Ann Bucklin)
- 2:30 pm Updates on CMarZ Synthesis products (Discussion)
- *CMarZ special issue of Deep-Sea Research II* (Peter Wiebe)
- *CMarZ poster* (Nancy Copley)
- *Additional synthesis products* (Everyone)
- 3:30 pm Tea Break
- 4:00 pm CMarZ Synthesis Planning (Discussion)
- 5:00 pm Adjourn
- 6:00 pm Dinner

**Thursday, May 13****CMarZ Synthesis Planning**

- 7:00 am Coffee and Continental Breakfast  
8:30 am CMarZ Synthesis planning (Discussion)  
9:00 am - *Organization of Working Groups*  
10:00 am Tea break (Group Photo)  
10:20 am CMarZ Synthesis Working Group Meetings
- 12:00 pm Lunch
- 2:00 pm CMarZ Synthesis planning (Discussion)  
- *Reports from Synthesis Working Groups*  
- *Contributions to CoML Synthesis*  
- *London Finale*
- 3:30 pm Tea break  
3:50 pm Action items and next steps for CMarZ Synthesis (Discussion)  
5:00 pm Adjourn  
6:00 pm Dinner

**Friday, May 14****Excursion Day**

Laoshan Mountain  
May Fourth Square  
Qingdao Olympic Sailing Center  
Qingdao Beer Museum

**Saturday, May 15****Departure**

## Registration

Registration will be carried out in the lobby of Huiquan Dynasty Hotel from 10:00 a.m. to 10:00 p.m. May 10. For guests arriving after that time, the secretary can arrange registration at the arrival time provided in advance by guests.

## Conference Room

CMarZ Steering Group Meeting will be held in Conference Room, 5th Floor of Complex Building, IOCAS (Southeast of Huiquan Dynasty Hotel).

## Meals

Guests will take Welcome Dinner in **Camellia Room, 2<sup>nd</sup> Floor, Huiquan Dynasty Hotel** at **6:00 p.m. May 10**, and Farewell Dinner in **Room 28, State Banquet Kitchen** on **May 14**. Other breakfast, lunch and supper will be arranged at the Revolving Restaurant at 25<sup>th</sup> Floor, Huiquan Dynasty Hotel.

## Emergency Telephone

When emergency, please call secretary's mobile phone:

**15898843828 ( Lily Gao)**

**13589227072 (Wang Liang)**

**13687600775 (Wang Yantao)**

## Wireless Network

The hotel room & conference room provide wireless access to the internet.

## Excursion

**Congregation: 8:10 am , 14May Gate of Huiquan Dynasty Hotel**

**Tour :** Laoshan Mountain, May Fourth Square, Qingdao Olympic Sailing Center, Qingdao Beer Museum

**Tourist Guide:** Ms. Mao from China International Travel Service Limited

**Telephone number of Ms. Mao : 13698691606**

## Shuttle Bus Service

The hotel offers shuttle bus service from the hotel to the airport, three shuttles a day:

**8:30 a.m., 1:30 p.m., 4:00 p.m.**

Guests can dial "12" in the hotel room to book the shuttle bus at least 1 hour before leaving. (It spends about 1hour from the hotel to Qingdao Airport)

Guests can also take a taxi from the hotel to the airport, which is very convenient.

## Participants' List

Name	Position	Affiliation/Address
Dicky Allison	Research Associate	Biological-Chemical Oceanography , Data Management Office, Woods Hole Oceanographic Institution, Woods Hole, Ma 02543 USA Tel. 508-289-2298; Email <a href="mailto:dallison@whoi.edu">dallison@whoi.edu</a>
Martin Angel	Emeritus Scientist	National Oceanography Centre, Southampton, United Kingdom, Tel. 023 80 596364, Email: <a href="mailto:Martin.V.Angel@noc.soton.ac.uk">Martin.V.Angel@noc.soton.ac.uk</a>
Othman Bin Haji Ross	Professor	Faculty of Science & Technology, University Kebangsaan Malaysia, 43600 UKM Bangi, Malaysia, Email: <a href="mailto:othross@gmail.com">othross@gmail.com</a>
Leo Blanco-Bercial	Postdoctoral Investigator	Department of Marine Sciences, University of Connecticut - Avery Point Groton, CT 06340 USA, Email: <a href="mailto:leocadio@uconn.edu">leocadio@uconn.edu</a>
Ann Bucklin	Professor	Department of Marine Sciences, University of Connecticut - Avery Point, Groton, CT 06340 USA Tel. 860-405-9208; Email: <a href="mailto:ann.bucklin@uconn.edu">ann.bucklin@uconn.edu</a>
Nancy Copley	Research Associate	Department of Biology, MS 33, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 USA, Tel. 508-289-3204; Email <a href="mailto:ncopley@whoi.edu">ncopley@whoi.edu</a>
Guang-xing Liu	Professor	Key Laboratory of Marine Envi. and Ecology, Ocean University of China, Qingdao 266100 China, Email: <a href="mailto:gxliu@ouc.edu.cn">gxliu@ouc.edu.cn</a>
Dhugal Lindsay	Research Scientist	Japan Agency for Marine-Earth Science and Technology (JAMSTEC) Yokohama, Japan Tel. 81-468-67-9563, Email: <a href="mailto:dhugal@jamstec.go.jp">dhugal@jamstec.go.jp</a>
Larry Madin	Senior Scientist	Department of Biology, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 USA Tel. 508-289-2739; Email <a href="mailto:lmadin@whoi.edu">lmadin@whoi.edu</a>
Ryuji Machida	Postdoctoral Researcher	Invertebrate Zoology, MRC 163, Smithsonian Institution / Natural History, Washington, D.C. 20560 USA, Email: <a href="mailto:MachidaR@si.edu">MachidaR@si.edu</a>
Ephrime B. Metillo	Professor	Department of Biological Sciences, Mindanao State University-Iligan, Bonifacio Avenue, Iligan City 9200, Philippines, Email: <a href="mailto:ephrime.metillo@g.msuiit.edu.ph">ephrime.metillo@g.msuiit.edu.ph</a>
Hiroomi Miyamoto	Postdoctoral Investigator	Atmosphere and Ocean Research Institute, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa 277-8564 Japan, Email: <a href="mailto:miyamoto@ori.u-tokyo.ac.jp">miyamoto@ori.u-tokyo.ac.jp</a>
Vijayalakshmi R. Nair	Consultant	Marine Biology and Marine Pollution HB/50, Kochi, Kerala, India, Tel/Fax +91-484-2316999 Email: <a href="mailto:vijayalakshmi40@hotmail.com">vijayalakshmi40@hotmail.com</a>
Shuhei Nishida	Professor	Atmosphere and Ocean Research Institute ,The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa 277-8564 Japan, Email <a href="mailto:nishida@ori.u-tokyo.ac.jp">nishida@ori.u-tokyo.ac.jp</a>
Jun Nishikawa	Assistant Professor	Atmosphere and Ocean Research Institute, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa 277-8564 Japan, Tel. 04-7136-6163; Email: <a href="mailto:jn@aori.u-tokyo.ac.jp">jn@aori.u-tokyo.ac.jp</a>
Annelies C. Pierrot-Bults	Senior Researcher	Zoological Museum, University of Amsterdam, Amsterdam, The Netherlands, Tel. +31 20 525 7194, Email: <a href="mailto:A.C.Pierrot-Bults@uva.nl">A.C.Pierrot-Bults@uva.nl</a>

Xinming Pu	Professor	First Institute of Oceanography State Oceanic Administration, Qingdao 266061, China Tel: +86-532-88961625, Email: <a href="mailto:xmpu@fio.org.cn">xmpu@fio.org.cn</a>
Sigrid Schnack-Schiel	Professor	Alfred Wegener Inst. for Polar and Marine Science, Bremerhaven, Germany Tel. +49-471-4831-1303, Email <a href="mailto:sschiel@awi-bremerhaven.de">sschiel@awi-bremerhaven.de</a>
Song Sun	Director	Institute of Oceanology, Chinese Academy of Sciences, Qingdao 266071 China Tel: +86 532 82898598, Email: <a href="mailto:sunsong@ms.qdio.ac.cn">sunsong@ms.qdio.ac.cn</a>
Peter H. Wiebe	Senior Scientist	Department of Biology, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 USA Tel. 508-289-2313; Email <a href="mailto:pwiebe@whoi.edu">pwiebe@whoi.edu</a>
Zhao-li Xu	Professor	East China Sea Fisheries Research Institute, Chinese Academy of Fisheries Science, Shanghai 200090, China Email: <a href="mailto:xu_zhaoli@126.com">xu_zhaoli@126.com</a>
Chao-lun Li	Professor	Institute of Oceanology, Chinese Academy of Sciences, Qingdao 266071 China Tel: +86 532 82898599, Email: <a href="mailto:lcl@qdio.ac.cn">lcl@qdio.ac.cn</a>