



CIC NEWSLETTER

NO.5 2007

Center for International Cooperation
Ocean Research Institute
The University of Tokyo

Current Status and Future Plans for the Center for International Cooperation

Mitsuo UEMATSU

Professor and Director, Center for International Cooperation

As the new director of the Center for International Cooperation (CIC), the Ocean Research Institute, starting in April 2006, I would like to review our accomplishments this fiscal year and to relate our capabilities and directions in this era of global ocean science.

Since the CIC was established in June 1994, this has been the first year that all five positions have been filled. Faculty members represent the fields of physics, chemistry, geology, biology, and fisheries, and the CIC is operating at full throttle.

FY2006 marked the first year of a 5-year program in “Coastal Marine Science,” succeeding “Coastal Oceanography,” the Multilateral Core University Program supported by the Japan Society for the Promotion of Science (JSPS). Prof. N. Miyazaki is a lead coordinator for this program which involves five Southeast Asian countries and Japan.

The CIC has also organized and supported several international marine science projects. The “Western Pacific Air-Sea interaction Study” (W-PASS), a 5-year program (PI: M. Uematsu) related to the Japanese Surface Ocean Lower Atmosphere Study (SOLAS), a core project of the International Geosphere-Biosphere Programme (IGBP), was also funded as a ‘Grant-in-Aid for Scientific Research in Priority Areas’ by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT).

We have also developed new cooperative projects with our neighboring countries— China, South Korea, and Russia—that focus on the marginal seas of the western North Pacific as part of the Northwest Pacific Action Plan (NOWPAP)/the United Nations Environment Programme (UNEP) and the Intergovernmental Oceanographic Commission (IOC)/WESTPAC.

ORI has developed formal agreements on scientific cooperation with 10 research and educational institutions around the world. Further agreements are under consideration. Potential partner institutions will be carefully evaluated; all agreements should be both effective and mutually rewarding.

The CIC maintains two visiting positions, for foreign and domestic professors. It is critical to invite active scientists to ORI for stimulating interactions with faculty members and graduate students. Furthermore, the positions constitute an excellent opportunity to publicize ORI research activities internationally. The CIC provides opportunities to deepen friendship between foreign scientists and Japanese colleagues at ORI. To activate academic exchanges between ORI and cooperating institutions, recommendations for candidate visiting scientists are accepted. In the near future, the CIC will organize an international symposium for scientists from cooperative ocean science institutions.

Scientists representing the spectrum of marine sciences work together in the CIC, and the center leads international research endeavors through planning, coordinating, and promoting international cooperative studies and research programs. The CIC strives to fulfill a unique role in enhancing the quality of ocean science disseminating from ORI to Asia and the world beyond.

The 11th session of Ocean Observations Panel for Climate (OOPC)

Yutaka MICHIDA

Associate Professor, Center for International Cooperation

The Ocean Observations Panel for Climate (OOPC), a scientific advisory group charged with making recommendations for a sustained global ocean observing system for climate in support of the goals of its sponsors—the Global Climate Observing System (GCOS), the Global Ocean Observing System (GOOS), and the World Climate Research Programme (WCRP). The 11th Session of the OOPC was held at the ‘Sanjo Kaikan Conference Hall’ of the University of Tokyo, hosted by the Center for International Cooperation of the Ocean Research Institute, on May 16-20, 2006, and involved 9 panel members and about 20 related experts. It was the first meeting of the Panel in Asia. Two leading oceanographers from China and Korea were invited to join the Panel’s discussions to foster ocean observations in the Asian region. The Panel discussed evaluation of ongoing observing activities for oceanographic conditions and made recommendations for future developments of the observing system.



Report on the 3rd International Conference “Man and Ocean” Held by UNU, ORI and Iwate Prefecture

Nobuyuki MIYAZAKI

Professor, Center for International Cooperation

In 1998, the United Nations University (UNU), the Ocean Research Institute of the University of Tokyo (ORI), and the Iwate Prefectural Government, with the support of UNESCO and UNEP, held the 1st International Conference entitled “Man and Ocean”. Participants, numbering 50 scientists from 16 countries, discussed the current state of the marine environment, exchanged the latest research results, and explored future directions. Following recommendations developed at the conference, the UNU, ORI, and Iwate Prefecture signed an agreement entitled, “International Joint Research Project on the Marine Environment,” in September 1999, and eight years of joint research in two phases commenced. Three research themes constitute the project: 1) nutrient circulation, 2) coastal ecosystems, and 3) prevention of marine contamination. The Sanriku coastal area was selected as a model area for researching the themes. Complementing field research, we have held three international conferences and six workshops, formed an international network, and made significant efforts in outreach and education through lectures and meetings with local residents.

The 3rd International Conference on “Man and Ocean” was held on Friday July 28, 2006, to review results of research activities to date and to foster further research. Participants included 16 invited scientists from six countries; the venue was the UNU in Shibuya, Tokyo (see photo). The Conference was open to the general public and more than 80 citizens attended. Prof. Hans van Ginkel (President of UNU), Shun-ichi Kamimura (Chief Cashier of the Iwate Prefectural Government), and Prof. Makoto Terazaki (Director of ORI) delivered opening addresses. Prof. Nobuyuki Miyazaki (ORI) then delivered a keynote address, reviewing overall research results and future prospects for the project. During the ensuing Session I, three scientists made presentations: Prof. David H. Secor (University of Maryland) - “Study on the life history of marine fish based on the idea of portfolio (concept applying securities)”; Dr. Tomoaki Gotoh (Iwate Fisheries Technology Center) - “Waste problems caused by dumping into the sea”; and Dr. Daisuke Shimizu (National Stock Enhancement, Fisheries Research Agency) - “Sustainable fishery in view of decrease at an early stage”. In Session II, presenters included: Prof. Andrew Trites (University of British Columbia) - “Ecosystem impacts of ocean-climate regime shifts in the North Pacific”; Dr. Kaoru Nakada (Incorporated Administrative Agency, Fisheries Research Agency) - “Long term variation of planktonic ecosystem in the Kuroshio current in relation to climate change”; and Dr. Qiwei Wei (Yangtze River Fisheries Research Institute, China) - “Overview of life history of *Acipenser sinensis* and its conservation”. In Session III, Prof. Dan Costa (University of California) reported on “Tagging of Pacific Pelagics: The use of electronic tags to assess the habitat utilization of marine vertebrates”, and Dr. Jeung Sook Park (NOWPAP RCU Busan Office, United Nations Environment Programme (UNEP)) made a presentation on “Activities of NOWPAP.” Finally, Dr. Juha Uitto (United Nations Development Programme (UNDP)), chairman of the conference, summarized the proceedings of the entire conference, and discussed future prospects for the project and the upcoming research program with participants. In light of developing research using new and innovative methods such as bio-logging systems and Sr/Ca density analysis of otoliths using X-rays, building international joint research endeavors was deemed essential.

On the morning of the following day, Saturday July 29, participants traveled to Morioka, Iwate Prefecture, by bullet train to attend the Symposium on the Marine Environment held at the Morioka City Central Public Hall. In Session I of the Symposium, a panel discussion involved Prof. Hans van Ginkel (UNU President), Mr. Hiroya Masuda (Governor of Iwate Prefecture), and Prof. Makoto Terazaki (Director of ORI), with Prof. Nobuyuki Miyazaki (ORI) moderating. Governor Masuda praised the eight-year International Joint Research Project on the Marine Environment and affirmed that Iwate Prefecture would continue to tackle the issue of environmental protection of the Sanriku coastal area despite the current project finishing at the end of this fiscal year. Prof. Ginkel remarked that the UNU wanted to further close cooperation among the three parties and to help address various international issues including management of the EEZ. Prof. Terazaki introduced the project’s research accomplishments in a book entitled, “Ocean and Living Creatures in Sanriku”, and he noted that the current project has laid the groundwork for significant further research. The three panelists concluded by issuing a joint appeal: “With the help of local people, we will make the utmost efforts to protect the marine environment in this area and create a new industry taking advantage of the genuine and affluent nature of Iwate prefecture”. In Session II, Dr. Katsufumi Sato (Assistant Professor of the International Coastal Marine Research Center of ORI) delivered a keynote presentation for citizens on the “Marine Environment from the Viewpoint of Marine Animals”, showing marvelous, self-shot pictures of wild animals, including penguins and seals. In Session III, multiple lecturers addressed “The Role of the Marine Environment for the Supply of Safe Marine Products”; they were Dr. Jeung Sook Park (UNEP), Dr. Taku Asahida (Kitasato University), Ms. Sachiko Irisawa (Council of Women’s Section of the Fishery Cooperatives of Iwate Prefecture), Mr. Akira Uchida (Industry Promotion Section of Yamada Town), and Ms. Midori Sasaki (Iwate Cooperatives). The speakers from Iwate Prefecture impressively pointed out the importance of local marine products such as seaweed, scallops, and oysters produced in the Iwate coastal area, stressing how vital it is to protect such a productive environment.



Lecturers of the 3rd International Conference on “Man and Ocean”

As stated previously, the 3rd International Conference encompassed the entire results of the eight-year, two-phase “International Joint Research Project on Marine Environment”, and included discussions of future prospects for fruitful further research. Project achievements include more than 100 academic research papers and two books, one for specialists, “Man and the Ocean” (eds. Miyazaki, N., Adeel, Z., and Ohwada, K., United Nations Press, 2005), and one for the general public, “Marine life off the Sanriku Coast” (ed. Miyazaki, N., Scientist Publishing Co., 2005). In addition, a total of three international conferences and six international workshops were held, involving approximately 300 scientists from 16 countries around the world. During the conference, participants visited local junior and senior high schools and communicated directly with young people as well as gave lectures to the general public. These activities attracted attention not only domestically, but also internationally.

Last, but not least, I would like to express my sincere thanks to the many scientists who took part in the project, and the people at the UNU, in Iwate Prefecture and at ORI who gave us valuable support.

The 2nd KIOS-ORI Joint Symposium on Marine Science

Jin-Oh PARK

Associate Professor, Center for International Cooperation

The 2nd KIOS-ORI Joint Symposium on Marine Science was held at Pukyong National University on September 22-23, 2006. The goal of this symposium is to exchange new findings in marine science and to promote scientific interactions between the Korea Inter-University Institute of Ocean Science (KIOS) of Pukyong National University and Ocean Research Institute (ORI) of the University of Tokyo. The 1st Joint Symposium was organized and held successfully in Tokyo in August 2002, under an academic exchange agreement between the two institutions. The Symposium rotated to KIOS in 2006, and it will alternate every two to three years between KIOS and ORI as a major opportunity for academic exchange and cooperation.

During two full days of this symposium, distinguished scientists from both institutions delivered 26 oral and 19 poster presentations covering seven major topics of biological, chemical, geological, and physical oceanography, and fisheries science, marine resources, and paleoceanography. Most presentations were stimulating and fostered much discussion. At the end of the Symposium, we discussed future collaborative programs involving the two institutions. We agreed to undertake collaborative research using R/V *Tansei-maru* (ORI/JAMSTEC) and R/V *Tam Yang* (KIOS) in the near future. It was also agreed that ORI would organize the next Joint Symposium in Kashiwa, the planned new campus of ORI, in 2009.

Finally, all participants firmly believe that this Joint Symposium provided an excellent opportunity to promote scientific cooperation and collaboration in marine science between the two institutions as well as between the two countries.



A group photo of the 2nd KIOS-ORI Joint Symposium in Pukyong National University

Agreement on Scientific Cooperation between ORI and the National Institute of Oceanography (NIO), India

Mitsuo UEMATSU

Professor, Center for International Cooperation

Researchers around the world, including ORI scientists, are interested in oceanographic studies in the Indian Ocean. Heightened recent interest encompasses the formation of oxygen deficient zones, changes in biogeochemical cycling and marine ecosystems caused by climate changes, causes of the tragic Sumatra earthquake and tsunami in 2004, development of an Indian Ocean tsunami warning system, D/V *Chikyu* drilling of the continental margins of Kenya and western Australia, and mid-ocean ridge processes near the Rodriguez triple junction.

In light of such significant interest, Dr. Dileep Kumar, an NIO researcher who was a visiting scientist at ORI supported by JSPS for one year (2004-2005), discussed and drafted an agreement on scientific cooperation with the previous CIC Director, Prof. K. Tsukamoto.

The signing ceremony for the agreement took place at NIO on the fifth of October, 2006, at 11 o'clock. From Japan, on behalf of Prof. M. Terazaki (Director of ORI), CIC Director Prof. M. Uematsu, Prof. T. Saino of Nagoya University and Dr. H. Kitazato, a Program Director at IFREE/JAMSTEC attended. The signing ceremony was marked by good spirits among all scientists and officers.

Commemorative gifts were exchanged between parties, and the NIO director, Dr. Shetye, requested future educational exchanges. We announced a plan to establish an international office of the University of Tokyo for academic exchanges in India in the near future.

In addition, we discussed ORI's plans to investigate the Indian Ocean using Japanese research vessels. We agreed to foster cooperative research and to undertake bilateral exchange programs in the future. We anticipate that our colleagues in Japan and NIO scientists will submit joint research proposals.



The 6th National Coordinators' Meeting of JSPS Multilateral Core University Program "Coastal Marine Science"

Koji INOUE

Associate Professor, Center for International Cooperation

The 6th National Coordinators' Meeting of The Japan Society for the Promotion of Science (JSPS) Multilateral Core University Program "Coastal Marine Science (CMS)" was held at the Saigon-Halong Hotel, Halong City, Vietnam, on 6-8 November, 2006. CMS is an international research program involving Japan and five Asian countries (Indonesia, Malaysia, Thailand, Philippines and Vietnam) that was launched in 2001. It encompasses four major projects: "Water circulation and the process of material transport in the coastal areas and marginal seas of East and Southeast Asia" (Project 1); "Ecology and oceanography of harmful marine microalgae" (Project 2); "Biodiversity studies in the coastal waters of East and Southeast Asia" (Project 3); and "Pollution of hazardous chemicals in the coastal marine environment and their ecological effect" (Project 4). The Ocean Research Institute (ORI) has played a central role in this program.

In the opening session, Professor Nobuyuki Miyazaki of ORI briefly summarized the program's progress. He remarked that the activities of the first phase of this program (2001-2005, former name, "Coastal Oceanography") were ranked as "A (highest)" by a JSPS mid-term evaluation committee in December 2005, and emphasized that this meeting, which was the first of the program's second phase, was especially important. In the subsequent session, national coordinators of the six countries introduced their respective activities, and project leaders presented the work of the four projects in the afternoon session. On the second day, hot topics in each project were presented, and the third day consisted of general discussions. Throughout the meeting, discussions were lively, and consensus was reached to increase program activity further, not only in research, but also with respect to publications, international networking, linkages with other programs, reorganization of members, and future activities. Detailed information on the meeting is available at the program's new website: <http://www.wdc-jp.com/jspms-cms/>.

Visiting Professors' Reports

Myng-Soo Han

*Visiting Professor, Center for International Cooperation
Professor, Hanyang University*



I joined the Ocean Research Institute on 23 August 2006 to begin my term as a Visiting Professor for 6 months at the Center for International Cooperation. I had studied at ORI as a Ph.D. student from April 1984 to July 1988. This visit was exciting for me because it was my first reunion in twenty years with colleagues in the Plankton Group and the rest of ORI. The staff and offices of ORI as well as the city have changed greatly, yet my affection for them has not. Tokyo is my adopted home. Professor Shuhei Nishida, Associate Professor Atsushi Tsuda, and all other members of the Plankton Group made my visit very enjoyable.

During my stay I was able to undertake research on the eco-physiology of toxic dinoflagellates, and to help develop an agreement to collaborate on research and conduct joint seminars between Korea and Japan. Strong connections to other Japanese laboratories allowed me to collaborate with Professor Takashi Ishimaru of the Tokyo University of Marine Science and Technology. In January, we prepared a manuscript entitled, "Changes in PSP toxin of axenic *Alexandrium tamarense* in N- and P-limited chemostat and during enrichments batch culture." Furthermore, I had invaluable discussions about ecological plankton research using new molecular tools with ORI Professor Mutsumi Nishida and Dr. Ryuji Machida.

I also visited several universities and laboratories beyond ORI, including Yokohama National University, National Research Institute of Fisheries Science, Soka University, and University of Tokyo Hongo Campus. These visits afforded opportunities to meet with old colleagues and discuss current topics and problems in marine plankton ecology. Developing new joint research initiatives and discussing improvements for my ongoing projects were especially rewarding. In particular, an interest in in situ growth characteristics of HAB species *Cochlodinium polykrikoides* is shared by Professor Ken Furuya of the University of Tokyo and me.

I was able to attend the international EASTHAB meeting, and some meetings of the Japanese Societies of Plankton, Oceanography, and Limnology. Meeting so many Japanese researchers was a great opportunity to initiate future collaborations. I have already started joint research on the population genetics of HAB species with Dr. Satoshi Nagai at the National Research Institute of Fisheries and Environment of the Inland Sea, whom I met at the EASTHAB meeting in Nagasaki. Professor Zen'ichiro Watanabe of the Research Institute for Humanity and Nature in Kyoto and I also developed a new plan for biannual joint seminars between Korea and Japan on riverine and lacustral environments of aquatic ecosystems.

Life in Tokyo was an enjoyable change from that in Seoul. I really enjoyed doing sports at the Nakanofujimicho Sports Plex. I am pleased because my body weight and fat decreased dramatically. After my official tenure ended in February, my wife joined me in Japan and we took a vacation week to visit Hokkaido (Yukimatsuri sightseeing) and Hakone Onsen, and we took my son to Enoshima Aquarium and sightseeing in Tokyo.

I am grateful to the University of Tokyo for offering me this opportunity to do collaborative research at ORI. I sincerely thank Prof. Makoto Terazaki, Director of ORI, and Professor Mitsuo Uematsu, Director of the Center for International Cooperation, for arranging my visit. Finally I especially thank Professor Shuhei Nishida and all members of the Plankton Group for their kind help and support during my sabbatical year.

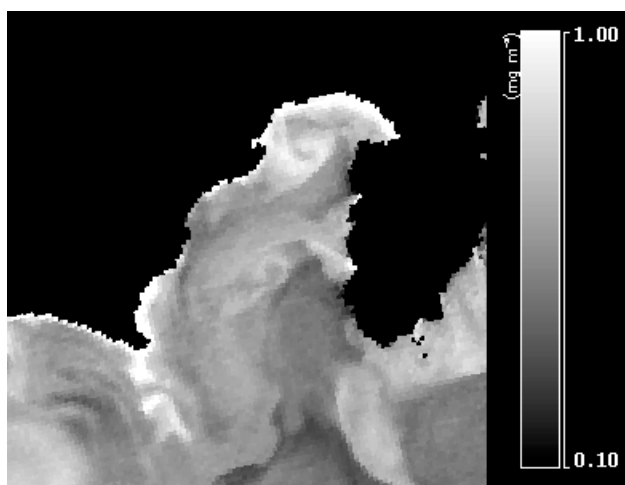
Mitsuhiro TORATANI

Visiting Associate Professor, Center for International Cooperation

Associate Professor, Tokai University



I have researched ocean color via remote sensing since 1986. Satellite data show phytoplankton blooming or red tide, suspended sediment from river, sea ice, eddies, and aerosols, especially Asian dust. A satellite-derived image of chlorophyll-a concentration distribution in Suruga Bay shows not only distribution of phytoplankton, but also current patterns, which vary over a few days. Satellite data are used in different fields, and it is exciting to discuss oceanographic phenomena with scientists of the Ocean Research Institute of the University of Tokyo. I would like to contribute further to the field of oceanography through analysis of ocean color satellite data.



Chlorophyll-a concentration image in Suruga Bay from MODIS/Aqua on 2006/3/16.

New Members of CIC

Jin-Oh PARK

Associate Professor



Jin-Oh PARK joined the Center for International Cooperation on April 1, 2006. His research interests focus on the marine geology and geophysics of convergent plate margins, especially subduction zones, utilizing 2-D and 3-D multichannel seismic reflection data. He was awarded B.Sc. (1990) and M.Sc. (1992) degrees by Busan National University, Republic of Korea, and received a Ph.D. (1996) for work on the tectonic evolution of the Okinawa Trough at the Ocean Research Institute, University of Tokyo. His research has focused on Nankai Trough seismogenic zone studies since he began working at the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) in 1996. He is closely involved in the Integrated Ocean Drilling Program (IODP) by serving as a member of the Site Survey Panel as well as being a co-proponent of the NanTroSEIZE (Nankai Trough Seismogenic Zone Experiment) complex drilling project. Currently, his specific research involves 2-D and 3-D prestack depth imaging and physical properties estimation in the Nankai subduction zone. He is a member of the American Geophysical Union, Seismological Society of Japan, Society of Exploration Geophysicists, and Society of Exploration Geophysicists of Japan.

Koji INOUE

Associate Professor



Koji INOUE is a new member of the Research Planning Division of CIC, who moved from the Physiology Laboratory at ORI on July 16, 2006. He studies mechanisms of environmental adaptation in marine vertebrates and invertebrates including Asian medakafishes, deep-sea mussels, and Antarctic krill, using the techniques of molecular biology, biochemistry, genetics, and comparative genomics. Special interests include relationships between the evolution of functional genes and the ecological status of species. He has also published significant papers concerning transgenic technologies in fish and underwater adhesion mechanisms of mussels. He is a member of The Japanese Society of Fisheries Science, The Zoological Society of Japan, and Japanese Society of Developmental Biologists, and also serves as a member of the editorial board of *Marine and Freshwater Behaviour and Physiology*.

--- STAFF ---

Director of CIC	Mitsuo UEMATSU	Professor
Research Cooperation Division	Mitsuo UEMATSU	Professor
	Jin-Oh PARK	Associate Professor
Research Planning Division	Nobuyuki MIYAZAKI	Professor
	Yutaka MICHIDA	Associate Professor
	Koji INOUE	Associate Professor

Center for International Cooperation
Ocean Research Institute, The University of Tokyo
1-15-1 Minamidai, Nakano-ku, Tokyo 164-8639
Tel: 03-5351-6342, Fax: 03-5351-6530
URL: <http://www.ori.u-tokyo.ac.jp>