

Collaboration Programs with Overseas Institutions

NIBB-Centre for Organismal Studies Heidelberg (COS Heidelberg), Germany

NIBB and COS Heidelberg are conducting collaborative activities based on the academic exchange agreement signed in 2019.

NIBB-COS Heidelberg international collaboration research project focusing on the mechanisms and evolution of light sensing in cnidarians

NIBB and COS Heidelberg started an international collaborative research project focusing on the mechanism and evolution of light sensing in cnidarians. This project was financially supported by the NINS. In this collaborative research project, a new emerging model organism, sea anemone (*Aiptasia* sp.), was used. Professor Annika Guse, who has been conducting research analyzing the mechanisms and evolution of light sensing in sea anemones at COS Heidelberg, joined the “Open Laboratory” established in NIBB. In October 2020, a post-doc researcher, Dr. Mariko Kishimoto who received PhD degree in NIBB, joined this research project and has been conducting research using molecular biological and molecular genetic approaches (p. 74).

The Kick Off (1st) meeting for NIBB–COS Heidelberg International Collaborations

Lecture series #1 “Plant Root Development”

The “Kick Off (1st) meeting for NIBB–COS Heidelberg International Collaborations” was held on March 30, 2021. We had planned to hold an NIBB–COS Joint Workshop in Okazaki in 2020, but this was postponed due to the COVID-19 pandemic and was changed to an online exchange program between the two institutes. The program consisted of two events: a lecture series at which researchers from both institutes presented their research projects, and a break-out discussion session using an online communication tool for all members in attendance. The theme of the lecture series was “Plant Root Development”. Dr. Takashi Soyano from the Division of Symbiotic Systems and Dr. Alexis Maizel from COS Heidelberg gave presentations on rhizogenesis and lateral root formation, respectively. 58 members from NIBB and 32 members from COS (both totals include post-docs and students) participated in this event, and lively discussions took place.



At the break-out discussion session, we used the Remo online meeting platform, and the PIs from both sides were

grouped into seven research themes (New Model Organisms, Stem Cells / Regeneration, Development, Cell Biology / Signaling, Neurobiology, Bioimaging, Modeling, and Quantitative Biology) to facilitate discussions. To our delight, this event generated new research ideas and possibilities for collaborative research.

As the overall feedback was very positive, we will continue this format of meetings in 2021, namely the lecture series combined with the break-out discussion session. The theme of the lecture series will change every time to attract a broader range of participants for the lectures as well as for the break-out discussion session.

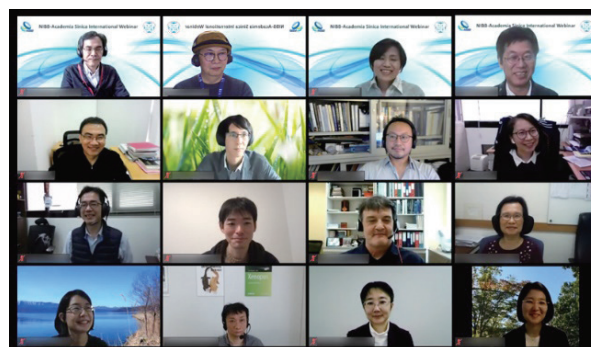
NIBB-Princeton University, USA

Collaborative activities between NIBB and Princeton University are conducted under the support of the International Research Collaboration Center (IRCC) of the National Institutes of Natural Sciences (NINS), based on the academic exchange agreement between the NINS and Princeton University. In AY2020, Dr. Ellen Reed, an IRCC's specially appointed research employee and postdoctoral research fellow of Princeton University, promoted a collaborative research project with Professor Kazuhiro Aoki of NIBB and Professor Jared Toettcher of Princeton University on “Dissolving biomolecular condensates using optical or chemical recruitment of soluble proteins” at Princeton University. Although it was difficult to travel between NIBB and Princeton University due to the pandemic of COVID-19, collaborative research activities were conducted using online communication tools.

NIBB–Institute of Cellular and Organismic Biology (ICOB), Academia Sinica, Taiwan

NIBB–ICOB, Academia Sinica, Taiwan, International Webinar of Aquatic Model Organisms for Basic Biology to Human Disease Models

The “NIBB–Academia Sinica International Webinar of Aquatic Model Organisms for Basic Biology to Human Disease Models” was held online on March 5, 2021. A training course jointly organized by NIBB and Academia Sinica was initially planned in 2020, but was postponed to Autumn 2022 due to the pandemic. In response to this, the course’s organizers held the above-mentioned webinar as an international cooperative activity when international travel was limited. A total of 11 lecturers were invited from China, Singapore, Taiwan, and Japan to attend the online webinar. The lectures covered a wide variety of topics and aquatic



organisms, from corals and sea urchins to amphibians and bony fishes, in the fields of developmental biology, evolutionary biology, genomics, neurophysiology, and immunology.

A total of 100 people from Japan, Taiwan, China, Indonesia, India, Singapore, Germany, Poland, Switzerland, the Netherlands, Ukraine, the United States, Canada, and Argentina registered to this webinar. An advantage of the online format was that the number of registered participants had expanded worldwide. The webinar itself saw roughly 50–60 people consistently staying online to participate in all sessions.

In the post-event questionnaire, 97% of respondents answered that the webinar content was interesting, and many gave high marks to the lecture content and management. During this webinar, we attempted to foster real-time dialogue via Slack in the form of a typed chat format enabling week-long question-and-answer sessions to encourage our participants to discuss the issues. 86% of participants felt that Slack was easy to use, while others preferred direct discussions with all lecturers and participants. In addition, there were useful comments regarding the timing of breaks, which will be helpful in organizing future webinars. We would like to organize scientific events in this format, not only because travel bans remain in effect, but also because this format attracts participants from more diverse countries.

Webinar information:

Organizers

Kiyoshi Naruse (NIBB / NBRP-medaka / IBBP)
Ai Shinomiya (ExCELLS / NIBB)
Yasuhiro Kamei (NIBB)
Chen-Hui Chen (ICOB, Academia Sinica, Taiwan)
Sheng-Ping Hwang (ICOB, Academia Sinica, Taiwan)
Date: March 5, 2021

Collaborative Activities with Joint Usage/Research Center

NIBB–Institute of Low Temperature Science (ILTS), Hokkaido University

NIBB and ILTS are conducting collaborative research based on the agreement of cooperation signed in 2019.

Accomplishment of the NIBB Priority Collaborative Research Project

Project Title:

Molecular and physiological mechanisms for understanding mammalian hibernation and their comparative analysis among species

Co-Principal Investigators:

Prof. Yoshifumi Yamaguchi (ILTS)
Prof. Toshihiko Fujimori (NIBB)
Prof. Shuji Shigenobu (NIBB)

NIBB–Institute of Molecular Embryology and Genetics (IMEG), Kumamoto University

Agreement of Cooperation with IMEG, Kumamoto University

NIBB and IMEG at Kumamoto University have signed an agreement of cooperation, which is deemed effective from May 26, 2020. To prevent the further spread of COVID-19 infection, the signing ceremony was held in a remote capacity via an online connection between Kumamoto and Okazaki.



Dr. Kiyokazu Agata, the Director General of NIBB, and Dr. Hitoshi Niwa, the Director of IMEG, signing the agreement.

This agreement will promote research and education efforts at these two top research institutes, leading the way in advanced research of the highest international standards through mutual collaboration in the fields of developmental medicine and basic biology. The results of the collaborative activities will be used for research on both sides. In addition, the agreement aims to strengthen the support infrastructure for joint usage and joint research nationwide and to revitalize international academic exchange.

Young researchers and graduate students in NIBB and IMEG have organized regular joint mini-meetings focused on developmental biology.