

NIBB-EMBL Collaborations

Sending Graduate Students to the EMBL PhD Students Symposium

Three PhD students from NIBB were funded by NIBB to participate in the 13th International EMBL PhD Students Symposium “Competition in Biology: The Race for Survival, from Molecules to Systems” (held on 21-23 November). Our students had the chance to give poster presentations at the PhD students symposium to introduce their current research. They also visit some laboratories in Europe and to exchange experimental information and discuss their research with PhD students, post-docs and PIs.

Participating students from Japan

Rammohan Shukla

Toshiya Nishimura

Takema Sasaki

Comments from student

• Rammohan Shukla

As a researcher it's important to present your work to both broad and domain specific audiences. While explaining your work to an audience of broad scientific backgrounds you get new perspectives toward your work. On the other hand, presenting to domain specific audiences fills the gap towards the understanding of your work. I am happy that I got the opportunity to present my work to both kinds of audience.

In Heidelberg Germany, the Ph.D symposium gave me an opportunity to interact with students of various scientific disciplines. I had a good time seeing and understanding others' work and explaining my own. It gave me an idea that while explaining to a broad audience I should focus on telling them my work as a story rather than presenting the in-depth analysis.

In Monterotondo, Italy I visited to Dr. Cornelius Gross. I had an opportunity to make a presentation of my work. That was my first scientific presentation to domain specific audience. It gave me an opportunity to skim out the most important result and organize it in a presentable form. The comments and questions asked filled up many gaps which I had towards the understanding of my work. In addition, I got many constructive suggestions from Dr. Gross to further improve my work.

Overall I had a good time deepening my understanding of science thanks to NIBB for providing me this wonderful opportunity.



The NIBB TALEN Training Course

Recent advancement of a reverse genetics method using an artificial nuclease (TALE nuclease) has made it possible to disrupt target genes in small fishes in an ordinary laboratory. In response to requests from domestic researchers' community using small fishes for a practical course on the gene disruption method using TALEN, we held a training course with the help of Dr. Masato Kinoshita (Kyoto Univ.) and Dr. Atsuo Kawahara (RIKEN). The same two-and-a-half-day course was given twice in tandem to accommodate the larger number of participants than expected. The course was designed so that the participants could proceed with gene disruption experiments by themselves back in their laboratories, and the practices of the key techniques of TALEN method were given, together with lectures on essential principles of gene disruption using TALEN. Participants were very active in both practices and lectures, and we could feel the high level of expectation of this method. We hope participants continue to communicate with each other and further advance their research. (Shinji Takada and Taijiro Yabe)

“Gene disruption method using an artificial nuclease in small fishes (TALEN practical course)”

February 25 (Mon) -27 (Wed), 2013

February 27 (Wed) -March 1 (Fri), 2013

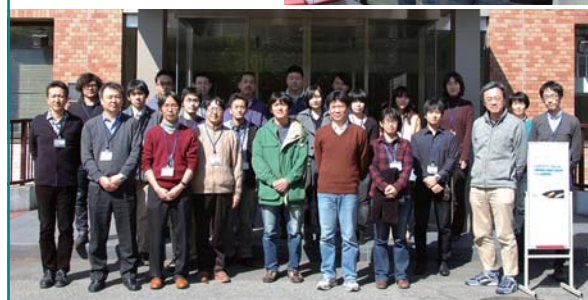
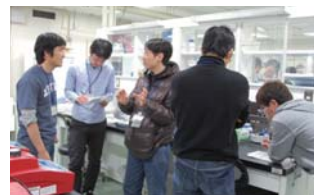
■ Organizers: Dr. Shinji Takada (NIBB), Dr. Atsuo Kawahara (RIKEN), Dr. Masato Kinoshita (Kyoto Univ.), Dr. Taijiro Yabe (NIBB)

■ Lecturers: Dr. Atsuo Kawahara (RIKEN), Dr. Yu Hisano (RIKEN), Dr. Masato Kinoshita (Kyoto Univ.), Mr. Satoshi Ansai (Kyoto Univ.), Dr. Taijiro Yabe (NIBB)

■ Participants: 34

■ Lecture: Gene disruption method using TALEN in the fish -Explanation of basic methods and introduction of practical applications-

■ Practical Course:
Preparation of
TALEN construct
and evaluation of
mutation efficiency



The NIBB Genome Informatics Training Course

NIBB organizes a series of training courses on up-to-date research techniques for researchers from mainly Japanese universities and institutions. In 2013 we held two training courses on Genome Informatics. The two-day programs offered lectures and hands-on tutorials to introduce basic knowledge and skills to deal with genomic scale large data such as those obtained by next-generation sequencing (NGS). The programs were specially designed for biologists who were not familiar with bioinformatics.

“Introduction to Transcriptome Data Analysis”

March 14 (Thu) -15 (Fri), 2013

Organizer: Dr. Shuji Shigenobu (NIBB Core Research Facilities)

Lecturers: Dr. Shuji Shigenobu, Dr. Masanao Sato, Dr. Ikuo Uchiyama, Dr. Katsushi Yamaguchi

Participants: 20 (including 2 from NIBB)

Program:

1. Overview: Transcriptome data analysis
2. Introduction to statistics
3. Introduction to “R”
4. RNA-seq analysis pipeline
5. Basic format of mapping data and basic tools
6. Expression data analysis I: Normalization, differential expression analysis
7. Expression data analysis II: Multivariate analysis
8. Exercise

“Introduction to Next-generation DNA Sequence Data Analysis”

September 19 (Thu) -20 (Fri), 2013

Organizer: Dr. Shuji Shigenobu (NIBB Core Research Facilities)

Lecturers: Dr. Shuji Shigenobu, Dr. Ikuo Uchiyama, Mr. Tomoki Miwa, Dr. Katsushi Yamaguchi, Dr. Taro Maeda

Participants: 19 (including 3 from NIBB)

Program:

1. Overview: NGS data analysis
2. UNIX for beginners
3. NGS basic data formats
4. NGS basic tools I: Mapping
5. NGS basic tools II: Visualization tools
6. NGS basic tools III: Samtools
7. Methods for text data processing
8. Exercise



The NIBB Bioimage Analysis Training Course

Thanks to the enhancement of the performance of imaging devices such as microscopes and cameras, it is getting more and more important to handle large-sized and multi-dimensional image data in the biological research. Most biology researchers, however, lack the basic knowledge of image data handlings. Training courses of microscopic observations are frequently held, while courses centered on image data handlings are seldom held. To improve such situations the spectrography and bioimaging facility, in collaboration with the department of imaging science, the center for novel science initiative, NINS, held a three-day practical course and lectures on the basis of image data processing and analysis. The course proceeded according to the program shown below and, at the end of the course, participants discussed over real problems some of the participants are facing. Most of the participants were satisfied with the course and we plan to hold such courses periodically in future. (Shigenori Nonaka)

October 16 (Wed) -18 (Fri), 2013

Organizers: Dr. Takuo Yasunaga (Kyushu Inst. Tech.), Dr. Yuki Tsukada (Nagoya Univ.), Dr. Yoshitaka Kimori (NIBB), Dr. Kagayaki Kato (NIBB), Dr. Yasuhiro Kamei (NIBB), Dr. Shigenori Nonaka (NIBB), Dr. Takashi Murata (NIBB), Dr. Hiroshi Koyama (NIBB)

Participants: 22 (including 2 from NINS)

Program:

- Basis of image processing and analysis (lecture and practice)
- Usage of ImageJ software and its macros (lecture and practice)
- Quantitative analysis of images (lecture and practice)

Lectures:

“Dynamic description and information extraction of biological phenomena by analyzing movie data”

Dr. Yuki Tsukada

“Basic knowledge of microscope for image analysis”

Dr. Takashi Murata

