



Department of Biotechnology
Ministry of Science and Technology
Government of India
DBT



National Institute of
Advanced Industrial Science
and Technology
AIST

DBT - AIST International Laboratory for Advanced Biomedicine

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Since Oct. 3, 2013



Newsletter
Volume 3 (August 2015)

Background: DAILAB (DBT-AIST International Laboratory for Advanced Biomedicine) at Biomedical Research Institute (BMRI), Tsukuba campus of National Institute of Advanced Industrial Science & Technology (AIST), Japan is the first International laboratory in Life Sciences & Biotechnology. It was established on Oct 3, 2013 under the comprehensive **Memorandum of Understanding (MoU)** between AIST and the Department of Biotechnology (DBT) of the Ministry of Science and Technology, India.

Highlights of activities in 2015

Goals of DAILAB are to (i) conduct **basic to applied research** on disease prevention and therapeutics for increasing the Quality of Life (with focus on old age), (ii) offer research training to young International students, (iii) networking among researchers for fundamental and cutting edge research, and (iv) endeavor global frontage of both the institutions. Some research results from DAILAB, in last one year, are listed on the back page of this newsletter.

DAILAB is committed to offer **research training** and **networking opportunities to young talents**, and has initiated the following programs:

◆ **DAILAB-STAR Program** - Since April 2014, DAILAB launched a **STAR** (Student Training for Advanced Research) Program, and has been offering training in an International and highly organized environment for a period of 3 months to a year. Several young researchers have been benefited by this program and many are currently enrolled in this program. Some of them have opted to stay in Japan for long term degree courses.

- http://www.nature.com/natureevents/science/events/31869-DAILAB_STAR_Program
- <http://www.indiabioscience.org/>
- <https://unit.aist.go.jp/biomed-ri/cie/>

◆ **DAILAB-DACTOR Program** - In order to **Develop Application and Clinical Trial Oriented Research**, DAILAB launched a new program called **DACTOR** program. The purpose of this program is to create opportunity for students and young researchers to meet medical doctors, academia & industry experts from diverse disciplines so that the broad innovative aspects of research could be conceived and discussed. In order to get interactions on daily basis, program offers invited stay at AIST for 1- 3 months. During this period, the invited partners not only get thorough acquaintance with the ongoing projects in DAILAB but also get chance to be involved in the research activities, learn technologies and realize the application and innovation potentials. The first batch involved three invitees including (i) Dr. Durai Sundar, an Associate Professor and Expert in Bioinformatics/Molecular Docking from IIT-Delhi, (ii) Dr. Preeti S. Maste, MD Microbiologist from KLES Dr. Prabhakar Kore Hospital & Medical Research Centre, Karnataka and (iii) Dr. Sukant Garg, MBBS Researcher, Gwalior University, M.P. The program has received high appreciation and is likely to be continued for coming terms.

◆ **Networking** - DAILAB is actively organizing educational and interactive seminars on advanced science and technologies on a regular basis in several forms

✧ **DAILAB-CAFÉ** (Classroom for Advanced & Frontier Education)

Held once in about 6 weeks, **DAILAB-CAFÉ** provides relaxed CAFÉ-like environment for study and learning. It features an informal CAFÉ like atmosphere and free interaction over tea/coffee and snacks. Frontier topics selected for CAFÉ talks are presented on an educational level, and are being skyped to overseas institutions including IIT-Delhi, India; Peking Union Medical College Tsinghua University, China; Hanyang University, Korea and Brawijaya University, Indonesia.

Time, efforts and cooperation of the following guest speakers during this term are highly appreciated.

Dr. Masami Kojima (Biomedical Research Institute, AIST) - **Series 07** - Single nucleotide polymorphism and proteolytic processing multiply the biological actions of growth factor in brain.

Dr. Masakazu Namihira (Biomedical Research Institute, AIST) - **Series 08** - The role of DNA methylation and methyltransferases in mammalian brain development.

Dr. Tej K. Pandita (The Houston Methodist Research Institute, Houston, USA) - **Series 09** - Chromatin status and DNA DSB repair.

Dr. Naduparambil K. Jacob (The Ohio State University Comprehensive Cancer Center, Columbus, USA) - **Series 10** - Circulating microRNAs as biomarkers of radiation response and biodosimeters.

Dr. Durai Sundar (Department of Biochemical Engineering and Biotechnology, IIT-Delhi, India) - **Series 11** - Zinc finger nucleases - Past, Present and Future.



DAILAB-CAFÉ Series 11

DAILAB@AIST, Japan



PUMC
Beijing, China



IIT-Delhi, India



Brawijaya University
Malang, Indonesia



Hanyang University
Seoul, Korea



❖ DAILAB CAFÉ-PLUS (Presentation-Learning for Young Scholars)

DAILAB has started a new forum of CAFÉ called **CAFÉ-PLUS**. The aim is to offer chance to Young Scholars to present their work and train them for “Clear, Crisp, Careful and Concise” presentations. First CAFÉ-PLUS was held on April 30, 2015

Four candidates were selected, based on their submitted abstracts, from DAILAB-AIST (Japan) and Satellite CAFEs: *IIT-Delhi (India)*, *Hanyang University (Korea)*; *Peking Union Medical College (China)* and *Brawijaya University (Indonesia)*. Connected by Skype, CAFÉ-PLUS relayed the presentations (10 min presentation + 3 min QA) to four countries. Experts from the team of DAILAB mentors evaluated the presentations on the spot and gave comments on how to improve it further from various aspects.

Congratulations to **Arpita Konar** and **Nupur Nigam** for being the Gold and Silver Winners, respectively.

CAFÉ-PLUS will be followed by **CAFÉ-EXPRESS (Extraordinary PREsentor Selection Series)** in which the winners of CAFÉ-PLUS series will compete to win the presentation awards set up by DAILAB and BMRI.

❖ PIKNIKH (Platform for Innovating Knowledge to International Know Hows):

DAILAB has initiated a new forum of informal scientific meetings/symposia/sessions to be held in Japan and overseas to promote direct personal interactions, interdisciplinary thinking, innovating opportunities and to reach remote areas in India and the world.



✧ **DAILAB-PIKNIKH Series IV** was held at IIT-Delhi on February 23, 2015. It was supported by the Department of Biotechnology (DBT), Govt of India under the aegis of Foundation for Innovation and Technology Transfer (FITT), IIT Delhi. Over 70 participants, including 17 participants from AIST, Japan attended the symposium. A key highlight of the Symposium was the battery of 15 speakers-well known names from India and Japan who delivered research talks on two main topics - (i) Imaging tools/technologies for biology and medicine and (ii) Bioinformatics in biomedicine. Prof. R.K. Shevgaonkar, Director of IIT-Delhi presided over the Inaugural Session and desired that a strong collaboration be established between the two institutions, AIST and IIT-Delhi.

In his inaugural address, Prof. K. VijayRaghavan, Secretary, Dept. of Biotechnology, Govt of India said: "India and Japan have long worked together in areas of mutual strategic interest. The DBT and AIST played a vital role in facilitating this cooperation between the two countries. To continue bringing together the best researchers in Japan and India, both DBT and AIST have established a new joint research laboratory, named DAILAB at AIST Tsukuba." He elaborated the significance of research in the area of big data analyses and the need of percolating the benefits of modern technologies to the common man.

Prof. P. Mishra, Head of the Dept. of Biochem. Eng. and Biotechnology at IIT-Delhi welcomed the delegates. He said that the symposium would serve as a platform for exchanging ideas on various topics in Bioinformatics and Biotechnology

PIKNIKH featured a special STAR Session where undergraduate, PhD students and young PIs made short oral presentations. A poster with free discussions was a highlight. The recommendations that emerged from the daylong PIKNIKH were - *"It should be organized on a periodic basis"*. Such symposia will be helpful for (i) students and young researchers to network and establish future collaborations with scientists from both the countries and (ii) DAILAB-community to identify new areas for potential collaboration and expansion.

<http://web.iitd.ac.in/~sundar/meeting/piknikh2015/>



✧ **DAILAB-PIKNIKH Series V** was held at AIST on June 18, 2015. It was attended by dignitaries from AIST - Dr. K. Matsuoka, Vice-President, Director General, Dept. of Life Science & Biotechnology; Dr. Y. Kamagata, Deputy Director General, Dept. of Life Science & Biotechnology; Dr. N. Yumoto, AIST Fellow; Dr. K. Awazu, Deputy Director, Collaboration Promotion and International Affairs Division; Dr. Y. Onishi, Director, Research Planning Office, DAILAB executives and several members of BMRI including young researchers, students and guest researchers. IIT-Delhi dignitaries, Prof. S. Koul, Deputy Director, Prof. S. Tuli, Dean, Res. & Development

<https://unit.aist.go.jp/biomed-ri/en/event/index.html>

and Dr. D. Sundar, Associate Professor graced the PIKNIKH and exchanged the first agreement for collaboration for academic cooperation between IIT-Delhi and AIST, effective from April 01, 2015 for 5 years. This PIKNIKH led to the initiation of proposal of setting up of SISTER DAILAB at IIT-Delhi. Scientists from two ends have successfully planned and submitted the proposal to IIT-Delhi. DAILAB hopes to grow soon.



❖ **DAILAB Participated in the India-Japan Science Seminar at IIT-Delhi on Feb 26, 2015** Organized by Department of Science & Technology, Government of India and Ministry of Educational Culture, Sports, Science & Technology, Japan and Japan Science & Technology Agency. Yoshihiro Ohmiya and Sunil Kaul represented AIST and DAILAB at this important event led by Nobel Laureate Dr. Ryoji Noyori.



❖ **DAILAB Participated in Seminar “Amazing!! State-of-the-art Technology of Japan for Creating Future”** It was organized by the MEXT, Japan on Feb 27, 2015 at the 21st International Engineering & Technology Fair (IETF) 2015 at Pragati Maidan, New Delhi, India. Sunil Kaul gave an open talk on DAILAB activities. Yoshihiro Ohmiya, Tomonori Deguchi and Renu Wadhwa attended the young Indian students at Japan Pavilion and explained the AIST technologies and activities. Lot of interest and enthusiasm were shared.



Pragati Maidan, New Delhi, India

❖ **DAILAB joined DBT for the display of Indian Biotechnology Strategies through the Indian Pavilion at the BioTech Japan 2015 (May 13-15, 2015 held at Tokyo Big Sight).** The Indian Pavilion was represented by DBT, BIRAC (New Delhi) and C-CAMP (Bangalore) and Bharat Bio-Tech(P) Ltd. Meeting with Prof. K. VijayRaghavan was also held to (i) plan the next year Biotech-Japan displays more reachable to Japanese scenarios and (ii) future expansion of DAILAB to DAICENTER.



Tokyo Big Sight, Japan



• **DAILAB Executive Team**

- Patron - N. Yumoto, Fellow, AIST
- Executive Director - Y. Ohmiya, Director, Biomedical Research Institute (BMRI)
- Coordinator - S. Kaul, Chief Senior Research Scientist, BMRI
- Leader - R. Wadhwa, Prime Senior Research Scientist, BMRI
- Fellow - Y. Onishi, Group Leader, Physiologically Active Substances Research Group, BMRI
- Fellow - M. Doi, Group Leader, Molecular Neurobiology Group, BMRI

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DAILAB Presents