



Keio University  
Human Biology-Microbiome-Quantum Research  
Center (Bio2Q)

35 Shinanomachi, Shinjuku-ku, Tokyo 160-8582, Japan  
URL: <https://bio2q.keio.ac.jp>  
E-mail: sc-wpi-staff@adst.keio.ac.jp

## Bio2Q HELD 2<sup>ND</sup> GENERAL ASSEMBLY AND CELEBRATED ITS UPCOMING 2<sup>ND</sup> ANNIVERSARY

On October 2, Bio2Q marked its second general assembly and celebrated its two-year anniversary. The General Assembly focused on the activity of the Open Lab, and highlighted the collaborative potential it offers.

Young researchers played a key role, sharing insightful suggestions on how to foster greater interdisciplinary collaborations through the Open Lab. Lively discussions were also held around the establishment and potential use of various data repositories to enhance operational efficiency and accessibility.



Source: Ashish Joshi.  
Used with Permission.

## WELCOME ON BOARD!

We are pleased to welcome Dr. Ashish Joshi as a postdoctoral fellow at Q core of Bio2Q. His research interests lie in using computational approaches to solve complex scientific problems. He completed his Ph.D. in physics recently, during

which he studied quantum many-body systems using machine learning methods. For his next step, he is excited to join Bio2Q. The idea of combining microbiome research with machine learning and quantum computing is very challenging and enthralling at the same time. At Bio2Q, he is looking forward to working with the experts in various fields and bridging the gap between these disparate research fields.

The assembly concluded with a commemorative event, celebrating the center's two years of pioneering research, global outreach, and the growth of our dedicated community.

## Bio2Q LAUNCHED ITS JAPANESE WEBSITE

On October 24, Bio2Q has launched the Japanese version of its website.  
(<https://bio2q.keio.ac.jp/ja/>)

To change the language settings, please select from the "Menu", or press the language button in the header section menu when browsing from a computer. Please visit and check out the site.

## KEIO RESEARCHERS, COME AND VISIT OUR OPEN LAB !

Our Open Lab is home to cutting-edge instruments that support innovative research.



Machines such as the LC-MS Orbitrap 180 (photo at left), which enables highly accurate mass spectrometry for complex sample analysis, and the Zeiss Lightsheet 7 (photo at right), designed for fast, high-resolution imaging of biological samples, particularly useful for studying tissues in 3D, are now available.

Additionally, we offer a bacterial culture colony picker housed in an anaerobic environment, allowing for high-throughput, fully

automated collection (photo at page 2 above). Our office space next to the Open Lab is home to young researchers working in various disciplines.

Photo: Keio University  
Far Left: LC-MS Orbitrap 180  
Below: Zeiss Lightsheet 7





## OPEN LAB (CONTINUED)

We are always ready to welcome other researchers for a chat and a tea! We hope that the Open lab will act as an incubator for new interdisciplinary research and the opportunity to share ideas and solutions.



For any inquiries related to the Open Lab, please contact Ryan Browne at [ryan.browne\(at\)keio.jp](mailto:ryan.browne(at)keio.jp).

Photo: Keio University  
Left: Bio2Q Open Lab research technician Ryan Browne operating Colony Picker

## WPI-Bio2Q EVENT FEATURING PROF. SIN-HYEONG IM OF POHANG UNIV. OF SCIENCE & TECHNOLOGY (OCT. 11)



An insightful seminar on the immune modulation effects of bacterial polysaccharides was delivered by Prof. Sin-Hyeog Im at the WPI-Bio2Q Open Seminar, held at Shinanomachi Campus, Keio University, on October 11, 2024.

He and his colleagues have established an elegant AI-driven system for exploring micro-organisms that can modulate the host's immune system. Using this fascinating system, they can demonstrate the clinical relevance of findings in pre-clinical studies, which helps to bridge the gap between pre-clinical models and human patients.

Prof. Im and his colleagues have identified two different bacterial polysaccharides with immuno-regulatory and immunostimulatory effects, respectively. The immuno-regulatory polysaccharide can be used as a treatment for inflammatory bowel disease, while the immunostimulatory one enhances immune checkpoint inhibitors to eliminate cancer.

More importantly, the effects were predicted from the pre-clinical results by the AI-driven system before the researchers confirmed them experimentally. I believe that this system will increase the efficiency and reduce the cost of developing live bacterial medicines, which typically require a huge amount of time and money.

(Seiga Komiya, WPI RA,  
Graduate School of  
Pharmaceutical Sciences)



Source: Bio2Q 2024. Original Photos

## NOTES FROM EDITING STAFF

As I pass the torch to my successor, this is the last time that I write my notes as a member of Bio2Q Connect editing staff.

Although it has only been seven months, it has been so much fun and such a great pleasure to put together this newsletter, picking the best pictures for the stories with everyone's smiles or editing the stories so they are written as plainly

as possible that those with only basic understanding of science like myself can understand them.

There is no doubt in my mind that the collaborative activities at Bio2Q and its international network will keep on expanding and ultimately produce great outcome in a very near future. I thank all the readers and contributors of Bio2Q Connect for continued support.

(Naoko Katahira)

## UPCOMING Bio2Q EVENTS

Oct. 30 (Wed) 16:00-17:30  
165<sup>th</sup> Brain Club Seminar  
(Host: Yuzaki lab, Co-host: Bio2Q) @Hybrid on ZOOM and at 1F Lounge, Center for Integrated Medical Research, Shinanomachi Campus  
Dr. Valentin Naegerl (Professor, Interdisciplinary Institute for Neuroscience, University of Bordeaux, France)  
"Super-resolution imaging of brain microanatomy"

Nov. 13 (Wed) 14:00-15:00  
Science Meeting Series #9\*

Nov. 16 (Sat) 11:00-16:30  
WPI Science Symposium  
@ Kyoto University WPI-ASHBi  
Jr. PI Dr. Sasabe is invited as a 'Science Talk' speaker  
<https://symposium.ashbi.kyoto-u.ac.jp/13th-wpisymposium/>

Nov. 27 (Wed) 14:00-15:00  
Science Meeting Series #10\*

Dec. 4 (Wed) 14:00-15:00  
Science Meeting Series #11\*

Dec. 25 (Wed) 15:00-16:00  
Science Meeting Series #12\*

\*Details of Science Meeting Series are TBA.

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March 6-7 (Thu-Fri), 2025  
WPI-Bio2Q Third Symposium  
@Shinanomachi Campus  
Details TBA