



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

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### 13<sup>TH</sup> WPI SCIENCE SYMPOSIUM – “THE WORLD EXPANDS THROUGH SCIENCE” AT KYOTO UNIVERSITY



Bio2Q 2024. Original Photo

On Saturday, Nov. 16, the 13<sup>th</sup> WPI Science Symposium, hosted by the Institute for the Advanced Study of Human Biology (WPI-ASHBi) and co-organized by all 18 WPI research centers in Japan, was held at Kyoto University.



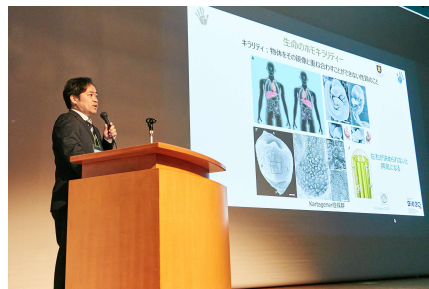
Bio2Q 2024. Original Photo

This year, 28 groups of students and teachers from ‘Super Science High Schools’ all over Japan were invited to attend science talks, give poster presentations together with younger researchers of WPI research centers, and visit booths at the exhibition.

From Bio2Q, Dr. Sasabe, Jr.PI, presented in the ‘Science Talk’ session and the poster session, and members from the administration office held a booth at the exhibition.

**Inspiring interactions across generations** “At the 13th WPI Science Symposium, I, Jumpei Sasabe, Jr. PI from Bio2Q, delivered a lecture and poster presentation, while also engaging with high school students from across Japan. The event, which featured three speakers including myself, was attended by approximately 160 students and other participants.

My talk centered on the fascinating relationship between



Dr.Sasabe's Science Talk. Photo by WPI-ASHBi, used with permission.

sybiotic microorganisms and the chirality of



At the poster session. Bio2Q 2024. Original Photo

amino acids, highlighting the mysteries of life's fundamental systems and encouraging the involvement of young researchers in unraveling many unknowns.

During lunch and the poster sessions, I had the opportunity to interact with both students and their teachers, strengthening connections and offering advice on research and career paths. This exchange fostered meaningful interactions across generations, making for a fun and inspiring day.

I am truly grateful to the WPI-ASHBi organizers, as well as to the members of ASHBi and Bio2Q for making this opportunity possible. I look forward to the continued success and growth of future WPI Science Symposia, and to the promising futures of the high school students involved.”

(Jumpei Sasabe)

### KEIO MEDICAL SCIENCE PRIZE SATELLITE SYMPOSIUM 2024 “AI-DRIVEN LIFE SCIENCE & DRUG DISCOVERY”

On Nov. 21, a symposium inviting Sir Demis Hassabis, one of the 29<sup>th</sup> Keio Medical Science Prize winners as well as a 2024 Nobel Prize laureate in Chemistry, was held on Shiba-Kyoritsu campus, hosted by the Faculty of Pharmacy. 3 researchers of Keio Univ. presented on AI-related research, followed by an interactive talk with

Sir Hassabis, moderated by Prof. Hase.

“I thoroughly enjoyed attending the event featuring Sir Demis Hassabis. During the session, I gave a brief talk titled ‘AI and Quantum Computing: Building the Next Computing Revolution.’ The subsequent discussion with him about Quantum Computing and Artificial General Intelligence (AGI) was truly enlightening,” says Dr. Takahiko Koyama, PI of WPI-Bio2Q.



From left: Prof. Arita, Sir Demis Hassabis, Prof. Koyama and Prof. Hase. Bio2Q 2024. Original Photo

→ Read more about the Keio Medical Science Prize at <https://www.ms-fund.keio.ac.jp/en/>

### INTRODUCTION TO BIO2Q RESEARCH

Series #5:  
Dr. Shigeki Ishikawa  
(Q Core, Principal Investigator)



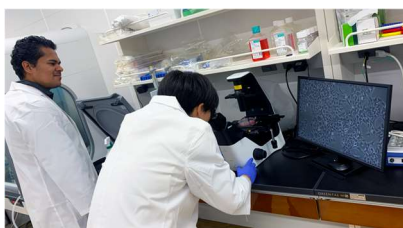
My major research objective is to solve and clarify unsolved issues in biology by utilizing quantum computing and AI. I am establishing the strategy and roadmap to achieve them. Fundamental research on quantum computers is still

ongoing, and they have not been fully put to practical use yet. Recently, AI has made tremendous progress, and especially generative AI has become important. First, we will use AI and gradually move on to the use of quantum computers. We will 1) plan measures to solve unsolved issues, 2) put them into a roadmap, 3) design and build an IT platform to realize this, and 4) increase the Q/AI literacy of young researchers in Bio-1 and -2 Cores. Let's make this happen together.

### KEIO RESEARCHERS, VISIT OUR OPEN LAB!

The Open Lab at Bio2Q was introduced last month in the October issue of the Newsletter. This month, we're excited to report an increase in cross-lab collaboration, with students from several Bio2Q-affiliated labs now regularly visiting to use our research facilities. In a recent General Assembly\* meeting of Bio2Q, several members stated that they wished to see the Open Lab act as a place to encourage interaction and shared learning across different research groups, and we are making good progress towards this.

\*See diagram below



Researchers collaborating on their research at the Open Lab. Bio2Q 2024. Original Photo



HPLC machine. Bio2Q 2024. Original Photo

A new high-performance liquid chromatography (HPLC) machine was installed in the Open Lab last month, beside a chemical synthesis area. Several new resources are planned to be available for reservation in the coming weeks, in addition to the currently available machines (LC-MS Orbitrap 120 and Zeiss Lightsheet 7).

### UPCOMING EVENTS OF WPI-BIO2Q

#### Science Meeting Series

Dec.4 (Wed) 14:00-15:00  
#10: Affiliated PI, Yasumichi Arai @JKiC 1F & zoom (hybrid)  
"Supercentenarian Study: What can we learn from exceptionally long-lived people?"

Dec.25 (Wed) 15:00-16:00  
#11: Bio-2 PI, Yasuyo Minagawa  
"Neurocognitive development of the plastic infant brain: Network formation, connectivity, and behavior"  
@JKiC 1F & zoom (hybrid)

Jan.15 (Wed) 14:00-15:00  
#12: Jr.PI, Yuki Sugiura

Jan.29 (Wed) 14:00-15:00  
#13: TBA

Feb.5 (Wed) 14:00-15:00  
#14: Jr.PI, Timur Tuganbaev

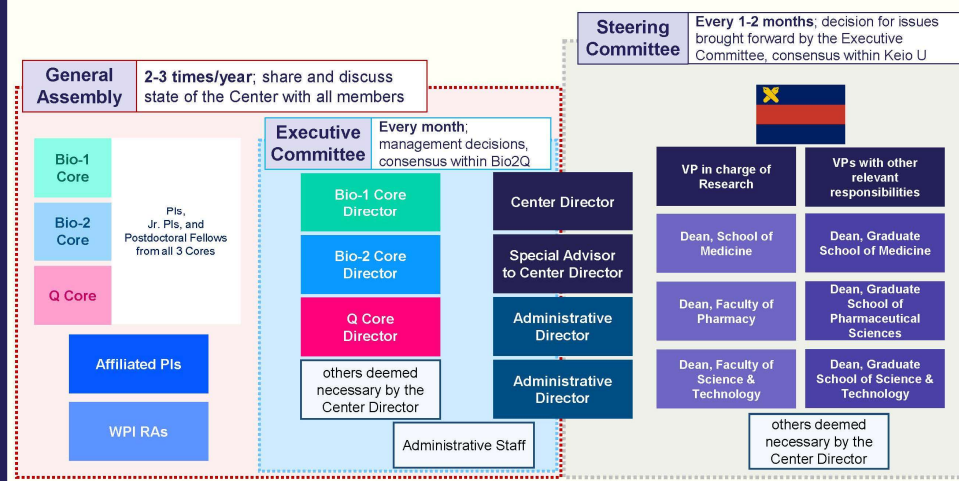
Mar.6-7 (Thu-Fri), 2025  
The 3<sup>rd</sup> Keio University WPI-Bio2Q International Symposium  
@Shinanomachi Campus  
Details TBA

We will announce the new equipment and machines that can be reserved through several channels, so please look out for these updates!

We look forward to seeing new collaborations flourish at Bio2Q!

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

### Decision-making process of WPI-Bio2Q



The diagram on the left shows the organizational structure of Bio2Q, as of Nov. 2024. Decisions are made at three levels: Steering Committee, Executive Committee, and General Assembly.

The next "Bio2Q Connect" will be issued on January 29, 2025.