



Keio University
Human Biology-Microbiome-Quantum Research Center (Bio2Q)
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Title photo taken by Oltea Sampetean. Used with permission.

THE 3RD KEIO UNIVERSITY WPI-BIO2Q INTERNATIONAL SYMPOSIUM

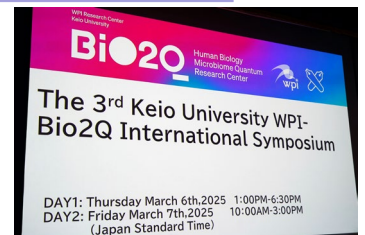
The 3rd Keio University WPI-Bio2Q International Symposium entitled "Integrating Biology, Microbiome and Immunology for Healthy Longevity" was held on March 6 and 7, 2025 at Kitasato Hall, the hall named after Shibasaburo Kitasato, the "Father of Modern Japanese Medicine," in the Shinanomachi campus as an on-site only event.

Twelve of the world's top scientists in the fields of biology, microbiome, and immunology presented their latest research progress and engaged the audience in lively scientific discussions. Approx. 200 professionals from science, business, government, embassies, students, and the general public involved in these fields attended.

At the end of the first day, nine young scientists presented their new scientific ideas in a poster session and had valuable discussions with the participants. The best-poster awards were then given to the top three presenters at the end of the second day.

WPI-Bio2Q will continue its efforts to ensure that the life science knowledge gained during these two days contributes to global scientific progress and innovation.

Please see 'News' on our website for the symposium agenda and more photos → <https://bio2q.keio.ac.jp/news/wpi-bio2q-third-symposium-report/>



Symposium Organizing Committee
Kazuyoshi ISHIGAKI, Therese SOLBERG,
Haowei LI, Fiona QUIRION,
Minami HOSOYA, Junta KOMAMURA



Speakers and chairpersons



Best-poster awardees

(from left) 1st Prize: Mari SHIOZAKI, "Exploring Synapses as a Key to Multior-gan Interactions - Hearing Impairment as a 'Synaptopathy'"
2nd Prize: Huizhuo PAN, "The Gut-Brain Connection: Microbiota Influences on the Enteric Nervous System"
3rd Prize: Seiga KOMIYAMA, "M-cell-dependent commensal uptake confers encephalitogenic phenotypes on $\gamma\delta T17$ cells in Peyer's patch."

All photos are Bio2Q original and used with the subjects' permission.

WELCOME ON BOARD!

We welcomed Dr. Joaquim Caner as a Bio-1 Core Post-doctoral Research Fellow on March 1, 2025!



Joaquim Caner
Used with permission.

"Hello everyone,
My name is Joaquim Caner, and I'm excited to be part of the Bio2Q-Metabolomics team under the leadership of Professor M. Arita. I grew up in Catalonia (Spain), where I completed my PhD at the University of Barcelona studying HIV-1 entry inhibitors and the synthesis of ^{15}N -purines.

My postdoctoral experiences in Japan advanced my expertise in photocatalysis, and now at Bio2Q, I'm eager to focus my research on the synthesis of dark-matter-derived metabolites and their stable isotope-labeled (SIL) analogs, to investigate and validate, for instance, microbiota-produced biological effectors in health, disease, and aging."

Bio2Q QUANTUM/AI WORKSHOP

In February, we began workshop activities for STaMP students to help improve Quantum Computing/AI capabilities within Bio2Q. The first five sessions are introductory, covering the history of IT/AI/Quantum technologies, the current state of generative AI, examples of application of AI and Quantum technologies to Bio2Q, giving hints and tips on applications for Bio-1 and Bio-2 research.

OPEN LAB UPDATES

We are pleased to share several updates from the Open Lab.

We have recently added a new NMR machine, a **Magitrek Spinsolve 80**, which boasts the highest resolution and sensitivity of any benchtop NMR.



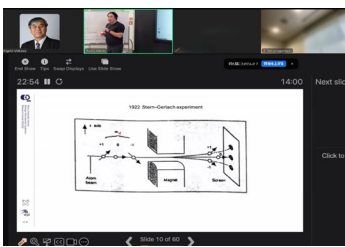
Magitrek Spinsolve 80. Bio2Q 2025. Original photo.

In addition, several new pieces of small equipment have been installed to support ongoing research activities, and we are planning to upgrade several older items, such as freezers.

In recent weeks, the robot automated bacterial colony picker has been utilized by several researchers, and we would like to continue to expand the use of this system. WPI-Bio2Q members can contact Ryan if interested in using it.

We are also looking forward to welcoming new members over the coming months, and as the new academic year approaches, we anticipate a productive and stimulating environment in the lab. Hope to welcome you here soon!

(Ryan Browne, Technical Staff)



Session conducted as hybrid on zoom and on-site. Bio2Q 2025. Original photo.

From April, roundtable workshops will be held once a month to discuss research themes relevant to STaMP students, some of which will be held at Shiba-Kyoritsu and Yagami campuses, where the Graduate School of Pharmaceutical Sciences and the Graduate School of Science and Technology are located respectively.



On-site participants. Bio2Q 2025. Original photo.

The roundtable sessions will be led by “ambassadors,” consisting of Jr. PIs, Postdocs, and technical staff of Bio2Q with Quantum Computing/AI skills. A certificate of completion will be issued to STaMP students who have fulfilled attendance requirements, and a letter of appreciation to the ambassadors, as evidence of their career development activities.

UPCOMING EVENTS OF WPI-Bio2Q

April 22 (Tue) 16:00- Brain Club Seminar @Shinanomachi by Dr. Eric Hosy (IINS, CNRS-Université de Bordeaux) “Super-resolution microscopy to resolve the intimate organization and function of the synapse”

May 14 (Wed) 14:00-15:00 Science Meeting Series (TBA)

May 28 (Wed) 14:00-15:00 Science Meeting Series (TBA)

June 5 (Thu)-6 (Fri) WPI-Bio2Q 2nd Retreat @Shizuoka

June 11 (Wed) 14:00-15:00 Science Meeting Series (TBA)

June 25 (Wed) 14:00-15:00 Open Seminar by Dr. Daniel Mucida @Shinanomachi Campus

STRUCTURAL ANALYSIS UNIT 【 NEW INSTRUMENT 】 HIGH PRESSURE FREEZER, COMPACT 03

Structural Analysis Unit in 1S3-5 on the ground floor of the Centre for Integrated Medical Research provides a unique technology for the in situ structural biology to reveal the molecular mechanism of the multi-organ interaction at the high resolution and in the physiological environment. The first key step is cryo-fixation (vitrification) of the samples. For the successful freezing of thick tissues, ultra-rapid cooling synchronized with pressurization at 2000 bar is critical. We invited an engineer, Martin from Engineering Office M. Wohlwend GmbH in Switzerland and installed the state-of-art HPF, Compact 03, in the Structural Analysis Unit. This is the first machine installed in Japan. Compact 03 can reliably freeze various forms of thick specimens (~300um) with variety of carriers that are useful for the following procedures like the FIB-milling, CEMOVIS, Freeze-substitution, CLEM, etc. If you are interested in this instrument for your experiments, please speak to members of the Structural Analysis Unit.



High pressure freezer, Compact 03. Bio2Q 2025. Original photo.

(Kunimichi Suzuki, Jr. PI)

NEW ISSUE OF THE Bio2Q BOOKLET SERIES

On April 1, 2025, Issue 07 of the Bio2Q booklet series featuring Dr. Shu Tanaka, Q-Core Director, will be published.



The next “Bio2Q Connect” will be issued on May 29, 2025.