

Yuya Kiguchi

Postdoctoral fellow

Division of Hematology, Medicine,

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PROFILE

[Nationality] Japan

[Affiliation] Division of Hematology, Medicine,
Stanford University

[Degree] Ph.D.

EDUCATION

Waseda University Tokyo, Japan

Ph.D. 2022

Cooperative Major of Advanced Health Science

Supervisor: Masahira Hattori

The University of Tokyo Chiba, Japan

Master of Science 2014

Department of Computational Biology, the Graduate School of Frontier Sciences

Supervisor: Masahira Hattori

Hosei University Tokyo, Japan

Bachelor of Science 2012

Faculty of Bioscience and Applied Chemistry

Supervisor: Kaneyoshi Yamamoto

WORK EXPERIENCE

Stanford University October 2024~Present

Postdoctoral Fellow

Division of Hematology, Medicine

Prof. Ami S. Bhatt group

The University of Tokyo

April 2022~September 2024

Postdoctoral Fellow

Department of Computational Biology and Medical Sciences

Prof. Yutaka Suzuki group

RIKEN Center for Integrative Medical Sciences

May 2020~Present

Visiting Researcher

Laboratory for Microbiome Sciences

Waseda University

April 2020~February 2022

Research Associate

Research Institute for Science and Engineering

National Institute of Advanced Industrial Science and Technology May 2017~March2020

Research Assistant

Computational Bio Big-Data Open Innovation Laboratory

Takara Bio Inc.

April 2014~March 2017

Scientific Researcher

Biomedical Center

FELLOWSHIP

1. Stanford Medicine Children's Health Center for IBD and Celiac Disease Postdoctoral and Early Career Support Award, Stanford University, 2024 ~ 2025
2. Competitive Scholarship for Young Doctoral Students from Waseda University, 2019
3. Competitive Scholarship for Young Doctoral Students from Waseda University, 2018
4. Competitive Scholarship for Young Doctoral Students from Waseda University, 2017

AWARDS

1. Poster Award for Excellence The 51st Naito Conference, The Naito Foundation, 2024
2. Seminar on Research Planning of Advanced Health Science (Best Presentation Award), Waseda University, 2017

GRANT

1. Japan Agency for Medical Research and Development(AMED), Investigation of Microbial Carcinogenesis and Development of Preventive Strategies in Head and Neck Cancer Using Long-Read Sequencing, 2025

2. Grant-in-Aid for Early-Career Scientists, Discovery of the extrachromosomal elements in the human microbiome, 2024-2026, 24K18092, **Principal Investigator**
3. Grant-in-Aid for Scientific Research (B), Elucidation of the full picture of mobile genetic elements and their defense systems in the intestinal microbiota, 2024-2027, 24K01676
4. Fund for the Promotion of Joint International Research (International Collaborative Research), Research for infection immunity against global viral infections with a new bioinformatic approach, 2023-2027, 23KK0176
5. Japan Agency for Medical Research and Development(AMED), Study of the antibiotic-resistant bacteria pathophysiology and control from gut ecosystem dynamics, 2023
6. Institute for Fermentation, Osaka (Y-2022-1-010), 2022, **Principal Investigator**

PUBLICATIONS

1. **Yuva Kiguchi**^{†*}., Nagisa Hamamoto[†]., Yukie Kashima., et al. Giant extrachromosomal element “Inocle” potentially expands the adaptive capacity of the human oral microbiome. *Nature Communications* 16, 7397 (2025). [†]**co-first author**, ***Corresponding author**
2. Maghini, Dylan G*., **Yuva Kiguchi***, Aaron E. Darling, Leigh G. Monahan, Aaron L. Halpern, Catherine M. Burke, Erich Jaeger, et al. 2025. “Illumina Complete Long Read Assay Yields Contiguous Bacterial Genomes from Human Gut Metagenomes.” *mSystems*, no. e01531-24 (July): e0153124. ***co-first author**
3. Daiki Takewaki*, **Yuva Kiguchi***, Hiroaki Masuoka, Mallahalli S. Manu, Ben J. E. Raveney, Seiko Narushima, Rina Kurokawa, et al. 2024. “Tyzzerella Nexilis Strains Enriched in Mobile Genetic Elements Are Involved in Progressive Multiple Sclerosis.” *Cell Reports* 43 (10): 114785. ***co-first author**
4. Masuda, Sachiko, Pamela Gan, **Yuva Kiguchi**, Mizue Anda, Kazuhiro Sasaki, Arisa Shibata, Wataru Iwasaki, Wataru Suda, and Ken Shirasu. 2024. “Uncovering Microbiomes of the Rice Phyllosphere Using Long-Read Metagenomic Sequencing.” *Communications Biology* 7 (1): 1–13.
5. Rina Kurokawa, Hiroaki Masuoka, Lena Takayasu, **Yuva Kiguchi**, Yusuke Ogata, Ryoko Miura-Kawatsu, Masahira Hattori, and Wataru Suda. 2023. “Recovery of Microbial DNA by Agar-Containing Solution from Extremely Low-Biomass Specimens Including Skin.” *Scientific Reports* 13 (1): 19666.
6. Lena Takayasu, Eiichiro Watanabe, Taichi Umeyama, Rina Kurokawa, Yusuke Ogata, **Yuva Kiguchi**, Hiroaki Masuoka, Masahiro Umezaki, Masahira Hattori, and Wataru Suda. 2022. “Lifelong Temporal Dynamics of the Gut Microbiome Associated with Longevity in Mice.” *bioRxiv*. <https://doi.org/10.1101/2022.11.07.515511>.
7. Suguru Nishijima, Naoyoshi Nagata, **Yuva Kiguchi**, Yasushi Kojima, Tohru Miyoshi-Akiyama, Moto Kimura, Mitsuru Ohsugi, Kohjiro Ueki, Shinichi Oka, Masashi Mizokami, Takao Itoi, Takashi Kawai, Naomi Uemura, Masahira Hattori, Extensive Gut Virome Variation and Its Associations with Host and Environmental Factors in a Population-Level Cohort, *Nature Communications*, 13 (1): 1–14, 2022.
8. **Yuva Kiguchi**, Suguru Nishijima, Naveen Kumar, Masahira Hattori, Wataru Suda, Long-read metagenomics of multiple displacement amplified DNA of low-biomass human gut phageomes by SACRA preprocessing chimeric reads, *DNA Research*, Volume 28, Issue 6, December 2021, dsab019

9. Koji Atarashi, Wataru Suda, Chengwei Luo, Takaaki Kawaguchi, Iori Motoo, Seiko Narushima, **Yuva Kiguchi**, Keiko Yasuma, Eiichiro Watanabe, Takeshi Tanoue, Christoph A. Thaiss, Mayuko Sato, Kiminori Toyooka, Heba S. Said, Hirokazu Yamagami, Scott A. Rice, Dirk Gevers, Ryan C. Johnson, Julia A. Segre, Kong Chen, Jay K. Kolls, Eran Elinav, Hidetoshi Morita, Ramnik J. Xavier, Masahira Hattori, Kenya Honda, Ectopic colonization of oral bacteria in the intestine drives TH1 cell induction and inflammation, *Science*, Vol. 358, Issue 6361, pp. 359-365, 2017.
10. Tatsuaki Kurata, Akira Katayama, Masakazu Hiramatsu, **Yuva Kiguchi**, Masamitsu Takeuchi, Tomoyuki Watanabe, Hiroshi Ogasawara, et al. 2013. "Identification of the Set of Genes, Including Nonannotated morA, under the Direct Control of ModE in Escherichia Coli." *Journal of Bacteriology* 195 (19): 4496–4505.

TALKS (2019~)

1. Human commensal microprotein array is a modulator of macrophage polarization, 2026, Keystone symposium, Human Microbiome: From Models and Mechanism to Medicine, Banff, Canada
2. Giant extrachromosomal element "Inocle" potentially expands the adaptive capacity of the human oral microbiome, 2024, 34th Microbiome Virtual International Forum
3. Discovery of the giant extrachromosomal element "Inocle" prevalent in the human oral microbiome, 2024, Tokyo, Japan, 2nd Life Functional Biology Seminar in Hosei University, (Invited Talk)
4. Inocles are novel extrachromosomal genetic element in the oral microbiome associated with blood cell populations, 2024, 51th Naito Conference, Hokkaido, Japan
5. Dysbiosis of the human gut bacteriophage community in Multiple Sclerosis, 2021, 44th Annual Meeting of the Molecular Biology Society of Japan, Yokohama
6. The structure of human gut virome, 2020, International Workshop on Eukaryotic Microbiome, The University of Tokyo
7. Comprehensive reconstruction of human gut full-length phage genomes using a long-read sequencer, 2019, The 42nd Annual Meeting of the Molecular Biology Society of Japan, Fukuoka

TEACHING

1. Molecular Biology II, Hosei University, 2025, A total of 12 lecture series for undergraduate students
2. Molecular Biology II, Hosei University, 2024, A total of 12 lecture series for undergraduate students
3. Basic Lecture for the Data Science for the Drug Development, The University of Tokyo, 2024, for graduate students
4. Genome School, The University of Tokyo, 2024, for industry researchers
5. Lecture of Omics, The University of Tokyo, 2024, for graduate students
6. Molecular Biology II, Hosei University, 2023, A total of 12 lecture series for undergraduate students
7. Basic Lecture for the Data Science for the Drug Development, The University of Tokyo, 2023, for graduate students
8. Lecture of Omics, The University of Tokyo, 2023, for graduate students

9. Basic Lecture for the Data Science for the Drug Development, The University of Tokyo, 2022, for graduate students
10. Lecture of Omics, The University of Tokyo, 2022, for graduate students
11. Global Week, Junten Senior High School, 2019, for high school students
12. Global Week, Junten Senior High School, 2018, for high school students

PEER REVIEW CONTRIBUTION

Jornal (number of reviews): Microbiome (1), Microbial Ecology (1), Probiotics and Antimicrobial Proteins (1), World Journal of Microbiology and Biotechnology (1)