Keio University Global Research Development Project - KGRI

OAchievements

Recruitment of young researchers with international research outcomes and leading international excellence project founders

1) Recruitment of young researchers with international research outcomes (KGRI Project Members Introduction page)

[Fiscal Years 2021~2023]

• Overview: KGRI has established a scheme to foster internationally active young researchers and welcome outstanding young researchers from Japan and abroad. To support the activities of the three-year project "Research Project Keio 2040" launched in FY2021, KGRI appointed project based researchers with international research outcomes.

- Achievements : English) Japanese) <u>https://www.kgri.keio.ac.jp/en/project-assistant-professor/yr-index.html</u> <u>https://www.kgri.keio.ac.jp/project-assistant-professor/yr-index.html</u>
- 2) Recruitment of a project professor to found a leading international excellence project [Fiscal Year 2023]

In order to become an internationally outstanding research university, a project professor was appointed to lead a leading international excellence project in FY2023. He played a central role in preparing the application for the "Program for Forming Japan's Peak Research Universities (J-PEAKS)," a grant from the Ministry of Education, Culture, Sports, Science and Technology (MEXT). As a result, Keio University has been selected for J-PEAKS.



(Overview of Keio University's J-PEAKS Project)

Recruitment of Top-Class Researchers

[~Fiscal Year 2022]

• Overview: Professor David J. Farber, a highly respected American national in the field of Cybersecurity, was appointed as on a special Foreign Researcher Fellowship from May 1st 2018 to March 31st 2023. He is currently working as the co-director of the Cyber Civilization Research Center, a KGRI research project, and is promoting initiatives involving the entire university. *Prof. Farber (Distinguished Professor, Keio University) has provided significant contributions to the advancement of science by laying the groundwork in the fields of electronics, programming languages, and distributed computing through his more than 50 years of research activities. As a result of these brilliant achievements recognized and admired by many scientists in the field of information, computing and communication, he received the prestigious title of Fellow of the American Association for the Advancement of Science (World's largest academic organization, AAAS). (Investiture ceremony on February 16th 2019)

Japanese) https://www.keio.ac.jp/ja/news/2018/11/30/27-49903/ English) https://www.keio.ac.jp/en/news/2018/Nov/28/48-49705/

• Achievements (Extract):

English)

http://www.kgri.keio.ac.jp/en/research-synergies/talk-4-1.html http://www.kgri.keio.ac.jp/en/research-synergies/talk-4-2.html http://www.kgri.keio.ac.jp/en/research-synergies/talk-4-3.html http://www.kgri.keio.ac.jp/en/research-synergies/talk-4-4.html Japanese) http://www.kgri.keio.ac.jp/research-synergies/talk-4-2.html http://www.kgri.keio.ac.jp/research-synergies/talk-4-2.html http://www.kgri.keio.ac.jp/research-synergies/talk-4-3.html http://www.kgri.keio.ac.jp/research-synergies/talk-4-3.html

Implementation of archived lecture series

[~Fiscal Year 2023]

• Overview: In order to enhance the international research capabilities and presence of Keio University, KGRI invite world-renowned researchers in cutting-edge fields to give lectures, and subsequently release videos of their lectures on its website. Thus, these lectures are not limited to the time they are given, but widely disseminated both domestically and internationally via the Internet. **KGRI Lecture Series:** Lectures by cross-appointed researchers from top world-class universities and research institutions

KGRI Great Thinker Series: Lectures by researchers with outstanding international achievements invited from abroad

KGRI Virtual Seminar Series: Online lectures held in Japan and overseas

Achievements: KGRI Lecture Series

English) <u>http://www.kgri.keio.ac.jp/en/lecture-series/index.html</u> Japanese) <u>http://www.kgri.keio.ac.jp/lecture-series/index.html</u>

① KGRI Lecture Series: Seminar on ALS

Date and time: Tuesday, May 30, 2023. 15:00-17:30

Venue: Center for Integrated Medical Research Building 1st Floor Lounge, Shinanomachi Campus Title and lecturer:

1) "Mechanism of therapeutic action of ropinirole in spinal motor neurons derived from ALS Patients"

Satoru Morimoto, MD, Ph.D.

Project Assistant Professor, Department of Physiology, Keio University School of Medicine

 "FMRP axonal retrograde transport is critical for its clearance and regulation of translational activity"

Marco Terenzio, Ph.D.

Assistant Professor, Okinawa Institute of Science and Technology Graduate University

 "Designer DNA drug therapy for neurodegenerative disease" Don W. Cleveland, Ph.D.
 Professor and Chair, Department of Cellular and Molecular Medicine, University of California at San Diego (CA, USA) ② "Intellectual Property Law Seminar Series: Patent Systems and Patent Offices - Tasks and Incentives"

Date and time: Thursday, December 12, 2023. 18:15-20:00 Venue: East Research Building 6th Floor G-Lab, Mita Campus Lecturer: Prof. Dr. jur. Christoph Ann, LL. M (TUM School of Management, Chair for Intellectual Property, Distinguished Guest Professor, Keio University [Global])

Achievements: KGRI Great Thinker Series

English) <u>http://www.kgri.keio.ac.jp/en/great-thinker-series/index.html</u> Japanese) <u>http://www.kgri.keio.ac.jp/great-thinker-series/index.html</u>

① "The En-ROADS Climate Workshop"

Lecturer: Prof. John D. Sterman (Director of the MIT System Dynamics Group and the Sustainability Initiative at MIT Sloan School of Management, Cambridge, MA, USA)

Date and time: Tuesday, January 23, 2024. 14:00-16:00

Venue: East Research Building 8th Floor Hall, Mita Campus



(Prof. Sterman, Director of the MIT System Dynamics Group and the MIT Sloan Sustainability Initiative)

Achievements: KGRI Virtual Seminar Series (On-demand)

English) <u>https://www.kgri.keio.ac.jp/en/virtual-seminar-series/index.html</u> Japanese) <u>https://www.kgri.keio.ac.jp/virtual-seminar-series/index.html</u>

 Data and Security as the U.S. and China Face Off Organizer: The Wall Street Journal Date and time: Wednesday, May 10, 2023. 18:30-19:30 Online Moderator: Peter Landers (Tokyo Bureau Chief, The Wall Street Journal) Panelists: Karen Makishima (Member of the Japanese House of Representatives), Josh Chin (Deputy Bureau Chief, China, The Wall Street Journal), Jiro Kokuryo (Professor, Faculty of Policy Management)



(Online seminar jointly held by the Wall Street Journal and KGRI)

Building a track record as an outstanding international research university

[Fiscal Year 2023]

• Overview

Aiming to become a world-class research university: Keio University will strategically promote international and interdisciplinary research to enhance its citation and reputation with the aim of becoming an internationally outstanding research university.

Achievements

As a new mission of KGRI, a "Research Showcase" has been launched to grasp and disseminate the "research content and appealing point" of all researchers at Keio University. Specifically, "Hidden Jewels" were nominated by the deans of undergraduate faculties and chairs of the graduate schools to be the core researchers who promote cross-disciplinary and international research, and their research was introduced to Keio University and the world through video clips as follows. The Hidden Jewels project, which introduces their research in a video both inside and outside Keio University, was implemented as follows.

Hidden Jewels Session

1st Edition)

Date and time: Tuesday, February 6, 2024. 16:00-18:00

Venue: East Annex 9th Floor Conference room, Mita Campus

Research Presentation: What is the point in studying mice brains to know about human brains?

"Bi-directional Translational Research on Brains"

Prof. Kenji Tanaka (Division of Brain Sciences, Institute for Advanced Medical Research, School of Medicine)

Salon Talk and Q&A:

Prof. Kenji Tanaka (Division of Brain Sciences, Institute for Advanced Medical Research, School of Medicine)

Prof. Tatsuhiko Yamamoto (KGRI Research Promotion Lead, Graduate School of Law, KGRI Deputy Director)

Prof. Junichi Ushiba (KGRI Research Promotion Lead, Department of Biosciences and Informatics, Faculty of Science and Technology)

Prof. Takeharu Okubo (KGRI Research Promotion Lead, Department of Political Science, Faculty of Law)



(Salon talk with Prof. Kenji Tanaka of the School of Medicine and 3 KGRI Research Promotion Leads)

2nd Edition)

Date and time: Wednesday, February 21, 2024. 10:00-12:00 Venue: East Annex 9th Floor Conference room, Mita Campus



(Event Poster of the Hidden Jewels Special Session with Prof. Nishikida and Associate Prof. Kubo)

Research Presentation: "Why is the Palestinian-Israeli Conflict Not Ending?: Deciphering the Background to the Prolonged Conflict in the Middle East." Prof. Aiko Nishikida (Department of Political Science, Faculty of Law) Salon Talk and Q&A: Prof. Aiko Nishikida (Department of Political Science, Faculty of Law) Prof. Tatsuhiko Yamamoto (KGRI Research Promotion Lead, Graduate School of Law, KGRI Deputy Director) Prof. Takeharu Okubo (KGRI Research Promotion Lead, Department of Political Science, Faculty of Law)

Research Presentation: "Is Economics Useful in the Policy Field? State of the Use of Economic Analysis in Competition Policy"

Prof. Kensuke Kubo (Associate Professor, Faculty of Business and Commerce) Salon Talk and Q&A:

Prof. Kensuke Kubo (Associate Professor, Faculty of Business and Commerce) Prof. Tatsuhiko Yamamoto (KGRI Research Promotion Lead, Graduate School of Law, KGRI Deputy Director)

Prof. Takeharu Okubo (KGRI Research Promotion Lead, Department of Political Science, Faculty of Law)



(Salon talk with Prof. Aiko Nishikida of the Faculty of Law and 2 KGRI Research Promotion Leads)

Various research presentations, information dissemination, and exchanges

• Overview

Our goal is to internationally disseminate the research results of Keio University researchers, to increase the visibility of Keio University among the world's leading researchers, and to create international research collaborations, by distributing information through an international database of articles. This time, with a focus on researchers introduced by faculties and graduate schools as Hidden Jewels and researchers in the humanities and sociology fields who will lead Keio University's research in the coming years, the university sent out information to researchers around the world. Videos and other information on the Hidden Jewels reported above will be posted on the website, enriching the website contents to more effectively disseminate KGRI's activities to overseas audiences.

Achievements

[Fiscal Year 2023]

1) Working Paper

Overview: The purpose of this website is to provide the results of research conducted by KGRI staff and KGRI research project members before and after their formal publication in academic papers, books, etc., for use and discussion by researchers inside and outside the institute. Therefore, there are various types of publications, including those before and under peer review, and KGRI seeks to contribute to free academic discussion in a way that only a university-affiliated research institute can provide.

English) https://www.kgri.keio.ac.jp/en/working-paper/index.html Japanese) https://www.kgri.keio.ac.jp/working-paper/index.html

- ①Title: Joint Statement: "Toward a Wholesome Platform for Speech ver. 2.0 Implementing Informational Health"
 - Authors: Fujio Toriumi (Professor, The Graduate School of Engineering, The University of Tokyo)

Tatsuhiko Yamamoto (Professor, Graduate School of Law /KGRI Deputy Director)

②Title: "Proposal of a Behavior Changing Digital Platform to Extend Healthy Life Expectancy toward 2040"

Author: Research Project Keio 2040, Healthy Life Expectancy Extension Team (A digest version and a full-text version are currently available in Japanese. English versions will subsequently be released.)

 ③Title: "Comparative Law Research on the Personal Data Protection Law in Various Countries" Authors: Editor's Representative Tatsuhiko Yamamoto (Professor, Graduate School of Law /KGRI Deputy Director) Editor Kyoichi Iida (Researcher, Graduate School of Law, Attorney-at-Law)

Editor Taiki Sato (L.L.D. Candidate, Graduate School of Law)

④ Title: "Digital Transformation (DX) of Medicine and Health"

Co-Editors: Jun Murai (Professor, Keio University, Cyber Civilization Research Center Co-Director) Masahito Kawamori (Project Professor, Graduate School of Media and Governance)

Ryutaro Yamamoto (Senior Researcher, SFC Research Institute) Hitomi Sano (Researcher, Graduate School of Media and Governance, Member of the

Cyber Civilization Research Center)



 (5)Title: "Comparative Law Research on the Personal Data Protection Law in Various Countries (Version 2.0)" * Provisional translation (full version will subsequently be released)
 Authors: Editor's Representative Tatsuhiko Yamamoto (Professor, Graduate School of Law /KGRI Deputy Director)
 Editor Kyoichi Iida (Researcher, Graduate School of Law, Attorney-at-Law)
 Editor Taiki Sato (L.L.D. Candidate, Graduate School of Law)

2) Research Results Presentations and Researchers Networking Events KGRI's mission is to support the fusion of fusing humanities and sciences, interdisciplinary, and cross-disciplinary research on a cross-departmental basis. To this end, KGRI holds research results presentations and researchers networking events three times a year.

• Focusing on the activities of the newly established projects in FY2022, six project representatives presented the results and took part in a Q&A session. Japanese) https://www.kgri.keio.ac.jp/news-event/151510.html

Date and time: Friday, July 28, 2023 17:00-20:00 Venue: Faculty Club, North Building 1st Floor, Mita Campus

< Part 1 - Research Results Presentations > 6 Research Results Presentations: Yuichi Hosoya (Professor, Faculty of Law), Keigo Komamura (Professor, Faculty of Law), Yuko Oguma (Professor, Sports Medicine Research Center), Rodney Van Meter (Professor, Faculty of Environment and Information Studies), Yasue Mitsukura (Professor, Faculty of Science and Technology), Yuko Kimijima (Professor, Faculty of Law)

< Part 2 - Researchers Networking Events> Introduction of the recipients of the FY2023 Startup and Pre-Startup Research Grants, Networking

• The results of the Research Project Keio 2040, now in its final year, were presented followed by a Q&A session.

Japanese) https://www.kgri.keio.ac.jp/news-event/160498.html

Date: Friday, November 10, 2023 Format: On-site Research Results Presentations: 18:30-20:05 Hall, North Building, Mita (North Building 1st Floor) Researchers Networking Events: 20:10-21:10

Conference Room 2, North Building, Mita (North Building 1st Floor)

< Part 1 - Research Results Presentations>

[Research Project Keio 2040] Masato Yasui Research Project Keio 2040 General Manager (Professor, School of Medicine)

<Longevity>Extending Healthy Life Expectancy Project: Establishment of the "KGRI role model for a healthy society with longevity"

Masato Yasui Professor, School of Medicine / Project Leader, Yasuhiro Kato KGRI Project Lecturer, Masako Toriya KGRI Project Professor

<Security>Platforms and the "2040 Problem": Formation of a new Network space order

Tatsuhiko Yamamoto Professor, Graduate School of Law / KGRI Deputy Director / Project Leader

Haluna Kawashima Associate Professor, Tohoku Fukushi University (Former KGRI Project Associate Professor)

<Creativity>Revolutionary & Interdisciplinary Soft Matter Integration Project

Kenji Yasuoka Faculty of Science and Technology Professor/ Project Leader, Makoto Asai KGRI Project Professor, Brian Sumali KGRI Project Lecturer

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(Research presentation by Research Project Keio 2040 team)

< Part 2 - Researchers Networking Events>

Discussion between Research Project Keio 2040 results presenters and KGRI members on the present and future of KGRI

• Research presentations by recipients of the 2023 Start-Up Research Grants were held in the North Building Hall, followed by a Poster Session at the Faculty Club for the pre-Start-up Research Grant recipients at the Faculty Club.

Japanese) https://www.kgri.keio.ac.jp/news-event/160528.html

Date: Friday, March 29, 2024 Format: On-site Research Results Presentations: 16:30-17:40

Hall, North Building, Mita (North Building 1st Floor)

Researchers Networking Events: 18:00-19:30

Faculty Club, North Building, Mita (North Building 1st Floor)

< Part 1 - Research Results Presentations > 6 Research Results Presentations:

Research Results Presentations (English: 10-minute research presentation, 10-minute Q&A) Ho Namkoong (Senior Assistant Professor, School of Medicine)

"Interdisciplinary Approach to Understand the Actual Situation of Long COVID and Create Treatment Strategies"

Akiko Hayashi (Associate Professor, Faculty of Business and Commerce)

"Embodied and Social-emotional Learning in Early Education and Development: If culture is all around us, what is our approach?"

Masaki Mori (Assistant Professor, Faculty of Environment and Information Studies)

"Elucidation and Representation of Various Grid Illusions by Psychological and Mathematical Approaches"

< Part 2 - Researchers Networking Events > Introduction of the recipients of the FY2023 Startup and Pre-Startup Research Grant, Networking

Poster Session (Flash talk: 2-minute research introduction per person) Ayumi Yoshifuji (Senior Assistant Professor, School of Medicine)

"Significance of IGRA test for diagnosis and treatment of latent tuberculosis in dialysis patients based on the prevalence of tuberculosis" Yoshifumi Uwamino (Senior Assistant Professor, School of Medicine) "Construction of a POCT-type immuno-prediction system that contributes to optimal selfdetermination of COVID-19 booster vaccination." Yusuke Osawa (Associate Professor, Graduate School of Health Management) "Subtypes of Frailty and Sarcopenia and Their Trajectory Changes in Community-dwelling Older adults in Three Countries" Chihiro Sato (Senior Assistant Professor, Graduate School of Media Design) "Cultural Social Welfare Service Design for the Aging Society" Sayaka Suga (Associate Professor, Faculty of Letters) "Investigation of psychological processes in problem solving situations through interaction with AI" Sumihiro Maeda (Senior Assistant Professor, School of Medicine) "Connection of cognitive dysfunction and autonomous diffusion of single molecules" Takanori Nishiyama (Senior Assistant Professor, School of Medicine) "Optimization of Shape for Improving the Acoustic Stabilization of Auricular Prosthesis incorporate with Cartilage Conduction Hearing Aid" Ai Hasegawa (Associate Professor, Faculty of Science and Technology) "Pre-Investigation for Femtech Development: Assessing the Current State of the Industry and Identifying Gaps to Uncover Undiscovered Areas" Shinya Fujii (Associate Professor, Faculty of Environment and Information Studies) "Neural Mechanisms of Drummer's Dystonia"

Yoshihiro Itaguchi (Associate Professor, Faculty of Letters)

"Understanding of temporal-semantic dynamics in patients with dementia and aphasia"



(Poster session of KGRI Pre-startup Research Grant recipients)

3) Research Presentations of PRESTO and FOREST programs researchers and networking event In order to provide an opportunity for exchange between researchers at Keio University who have been selected for the JST grant programs "PRESTO" and "FOREST," and to promote collaboration among researchers, a meeting was held to introduce research and for academic discussions. After this event we established a community of "PRESTO" and "FOREST" researchers using "Slack".

Date and time: Monday, March 11, 2024 18:00-20:00

Venue: Faculty Club, North Building 1st Floor, Mita Campus

*Similarly to what JST has been doing under the "FOREST" program regarding each selected researcher, KGRI also collected and published on the KGRI website the information of each selected researcher (research contents, achievements, biography, goals, etc.).

Japanese) https://www.kgri.keio.ac.jp/research-showcase/emergence.html

- < Part 1 Research Presentation > (Flash talk: 2-minute research introduction by 11 researchers)
- Masahiro Akiyama (Project Lecturer, Pharmaceutical Sciences, Faculty of Pharmacy) "A New Relationship Between Environmental Exposure and Intestinal Bacteria Based on Chemical Modifications" [FOREST]

2.Tomohisa Sujino (Senior Assistant Professor, Center for Diagnostic and Therapeutic Endoscopy, School of Medicine)
"Exploration of Drug Discovery Seeds Using Single-cell-level Spatiotemporal Analysis of

"Exploration of Drug Discovery Seeds Using Single-cell-level Spatiotemporal Analysis Intractable Diseases of the Small Intestine" [FOREST]

3. Takahisa Tanaka (Senior Assistant Professor, Department of Electrical and Information Engineering, Faculty of Science and Technology)

"Multimodal Gas Sensing using Nanodevices" [PRESTO]

4. Ho Namkoong (Senior Assistant Professor, Department of Infectious Diseases, School of Medicine)

"Fundamental Research to Build a Research System Resilient to Pandemics" [PRESTO]

5. Kei Fujiwara (Associate Professor, Biosciences and Informatics, Faculty of Science and Technology)

"The Design Principle of Life, an approach driven by the Biology of Creation" [FOREST]

6. Shuhei Nomura (Project Associate Professor, Department of Health Policy and Management, School of Medicine)

"An Empirical Study on Disease Burden for Developing a New Health System" [PRESTO] Q&A Session

- 7. Keiko Morimoto (Assistant Professor, Department of Anatomy, School of Medicine) "Roles of the players of the immune system in brain development and function" [FOREST]
- 8. Hiroyuki Yasuda (Associate Professor, Department of Internal Medicine (Pulmonary Medicine), School of Medicine)

"Clarification of the Carcinogenic Process using Non-Cancerous Lung Organoids and Its Application to Preemptive Medicine" **[**FOREST**]**

9. Eiji Yamamoto (Associate Professor, Department of System Design Engineering, Faculty of Science and Technology)

"Hierarchical elucidation of molecular behavior inside membraneless organelles" [PRESTO]

- 10. Satoshi Yuzawa (Project Lecturer, Graduate School of Media and Governance)"Establishment of a Platform to Synthesize various analogs of known Antibiotics using Synthetic Biology Techniques" [FOREST]
- 11. Kaori Hayashi (Professor, Department of Internal Medicine (Nephrology, Endocrinology and Metabolism), School of Medicine)

"Developing Novel Kidney Disease Therapeutic Strategies Targeting Blood Cell DNA Methylation Alterations" [FOREST]



(Opening remarks by President Ito)



(Flash talks by "PRESTO" and "FOREST" program researchers)

< Part 2 - Networking Event > 19:00-20:00

4) E-mails delivery to the world's top-level researchers

Using the article distribution service of Clarivate, we distributed by e-mail the most frequently cited articles in the Web of Science database written by researchers affiliated with Keio University, especially those written by 18 researchers selected by KGRI in FY2023, to each of 1,000 prominent overseas researchers in the same research field. The following three criteria were taken into consideration: 1) inclusion of researchers whom Keio wishes to feature (Hidden Jewels nominees, PRESTO/FOREST recipients, startup/pre-startup research grant recipients, and participants in the November 2023 "OIST-KEIO Showcase Talk Series"), 2) inclusion of researchers in the humanities and social sciences and 3) gender balance. By doing so, it is expected that opportunities for international research collaboration will increase.

Promotion of International Research Collaboration

OIST-KEIO Showcase Talk Series

Cooperation with Okinawa Institute of Science and Technology (OIST) began in 2020 with exchanges with the School of Medicine, and in August 2022, the two institutions signed a Basic Agreement on Scientific and Academic Cooperation for a university-wide collaboration. Currently, in addition to the School of Medicine, we continue to implement organized exchanges for the entire university. In November 2023, Keio University and OIST co-hosted a two-day Showcase Talk at OIST, with a total of 23 faculty members from the University, including the President and Executive Director for Research, participating on site.

OIST is primarily a graduate institute specializing in science and technology, but it aims to expand new areas of collaboration with Keio University, which has a School of Medicine and a School of Humanities and Social Sciences. In addition to collaboration with OIST's world-class cutting-edge research, Keio University hopes to promote research collaboration and the internationalization of its human resources through collaboration with OIST, where English is the complete official language.

"Science Meets Society: Exploring the Nexus of Planetary Well-being for a Sustainable Future" [Organizers] Keio University and Okinawa Institute of Science and Technology [Date and time] Thursday, November 16, 2023 - Friday, November 17, 2023

[Venue] Okinawa Institute of Science and Technology /Zoom (Hybrid)

Keio-OIST Research Showcase Event Participants

- Kohei Ito President, Keio University
- Masayuki Amagai Vice-President, Keio University
- Yuko Kimijima Professor, Faculty of Law / KGRI Director

Takanori KanaiDean, School of MedicineToshiharu SaikiDean, Faculty of Science and TechnologyYoko HiroseFaculty of Policy ManagementAs well as 11 researchers, 3 graduate students, and 3 administrative staff members.

Japanese) <u>https://www.kgri.keio.ac.jp/news-event/154770.html</u> English) https://www.kgri.keio.ac.jp/en/news-event/154770.html



Group photo of participants (Provided by OIST/[Micheal Cooper](CC BY 4.0))