

We spoke with Dr. Hideyuki Okano, who was appointed a Director of Keio University Regenerative Medicine Research Center opened in April, 2024.



The members of the Keio University Center for Regenerative Medicine Research

Keio University Regenerative Medicine Research Center (hereinafter referred to as the "KRM") was established on April 1, 2024, as a research center within Keio University Tonomachi Advanced Research and Education Collaboration Square. We had the opportunity to speak to Dr. Okano, who has been appointed Director and conducts research and development focused on regenerative medicine, about the center's activities and future goals.

About KRM:

We are engaged in the research and development of next-generation regenerative medicine for spinal cord injuries. We have already initiated clinical trials and are progressing daily towards societal implementation. Additionally, we are conducting research using iPS cell technology to elucidate disease mechanisms and develop drugs, focusing on neurodegenerative diseases such as ALS (Amyotrophic Lateral Sclerosis) and Alzheimer's disease. We are collaborating with several pharmaceutical companies and hope to use this opportunity to expand this into larger collaborative research endeavors. In addition, we also created a logo to increase public awareness of our activities. The three lines at the bottom symbolize the Tama River, while the upward-pointing arrow carries various meanings. It embodies the image of regenerating damaged tissues and cells, symbolizes outreach to the world like an airplane flying, and represents the upward and diverse directions of our progress. While a stylish identity is nice, we prioritized a design that conveys its intention and leaves a lasting impression, opting for a design with a strong message.

Collaborative Research/Partnerships:

We have been conducting joint research with Central Institute for Experimental Medicine and Life Science (hereinafter referred to as "CIEA") since I graduated from university. Our collaboration dates to when CIEA was in Nogawa, Kawasaki City, and we were developing genetically modified mice and marmosets at that time. We have been conducting joint research for nearly 25 years, and we intend to continue our collaboration to accelerate research and development in the future. To advance the societal implementation of regenerative medicine, it is essential not only to conduct research within the university but also to disseminate and standardize techniques such as mass culture and quality control for companies. In practice, we utilize Keio University's facilities and are inviting relevant companies for technology transfer. These efforts towards societal implementation are being carried out in collaboration with Fujita Health University and with the support of the Ministry of Economy, Trade, and Industry. The opening of the Tama River Sky Bridge in 2022, which connects Ota Ward and the King SkyFront, has further promoted these initiatives. Additionally, with Haneda Airport nearby, we aim to internationally disseminate our technologies and initiatives in the future.



Tamagawa Sky Bridge



Keio University
Regenerative Medicine Research Center

慶應義塾大学
再生医療リサーチセンター

**The logo of the Center for Regenerative
Medicine Research**

Director Okano's Real Insights:

★ About Recent Activities:

Among the research I am leading, regenerative medicine for spinal cord injuries is nearing societal implementation. In our clinical research for spinal cord injury using iPSCs-derived neural progenitor cells, we have completed transplants for all required participants in clinical studies, and the follow-up observations have also been concluded. Currently, we are in the process of compiling the data. The next goal is to proceed with clinical trials in collaboration with our research partners, aiming for approval. Regarding dementia, while some drugs have been developed, there are still many unknowns concerning conditions other than Alzheimer's disease. Therefore, we are heavily focusing on disease analysis and drug discovery. Furthermore, to realize the highly challenging field of regeneration medicine of the nervous system, fundamental research is essential, and such related basic research is being conducted at the KRM. Once these research outcomes come closer to societal implementation, we aim to swiftly collaborate with companies to shorten the time to innovation.

While advancing this research, we also support students who voluntarily join our projects and conduct research for their degrees. We are committed to human resource development and believe that technologies like AI and informatics will further evolve. In this context, rather than fearing job displacement by AI, we aim to nurture talents who can utilize AI, identify problems independently, and find solutions.

To cultivate such talents, it is important to conduct historical reviews. For example, while no one doubts the double helix model of DNA today, revisiting how it was discovered and why that conclusion was reached can provide excellent stimulation. By developing a habit of logical thinking, one can better discern the essence of problems.

★ About Daily Life:

I commute to King SkyFront about three times a week. In addition to being the Director of the KRM, I also serve as a team leader at RIKEN and as the director and CSO of K Pharma Inc. Despite having overseas business trips, I continue to write papers within these activities. Even though I am busy, I ensure to secure 6-7 hours of sleep, so I am well-rested.

There are quite a few tasks that need to be done late at night, but if they are not mentally demanding, I work on them while watching streaming services. Although, I often end up getting absorbed in watching (laughs).

After coming home and having dinner, I go for a walk with my wife and our dog. Even when I feel tired, walking is a good refreshment. I love walking so much that I walk across the Tama River Sky Bridge to King Skyfront. When I commute to the Massachusetts Institute of Technology (hereinafter referred to as "MIT"), where I am a visiting professor, I cross the Harvard Bridge. Seeing MIT's dome-shaped facilities from the bridge always lifts my spirits. The scenery is like walking across the Tama River Sky Bridge to King Skyfront, which makes me happy. I aim to build and develop a world-class ecosystem at King Skyfront, just like at MIT.

About Future Challenges:

My goal is to develop treatments that can cure one or two diseases that were previously incurable. To achieve this, I aim to bring ongoing clinical trials and clinical research to approval. In regenerative medicine for spinal cord injuries, I want to further improve the precision of gene cell therapy. Additionally, it is necessary to elucidate the disease mechanisms of ALS and Alzheimer's disease in more detail. Fundamental research is essential to achieve these goals.

As research progresses, existing challenges are solved, but new challenges continuously arise. This is wonderful, isn't it? When conducting research, one finds new challenges one after another, with no end in sight. This is never boring. That is why, even if I were to be reborn, I would still want to be a researcher.



Inside the Center for Regenerative Medicine Research

Through this interview, I was able to get a glimpse of Director Okano's kind personality. Thank you very much for taking the time to speak with us despite your busy schedule!



Director Okano during the interview

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Special Feature: Ota City, Haneda Area

King SkyFront and the Haneda area signed an agreement in March 2022 when the Tama River Sky Bridge opened. We confirm that we will collaborate and cooperate to build an integrated advanced industrial and research development hub. As such, we will introduce initiatives to promote exchanges between King SkyFront and the Ota Ward/Haneda area.

Ota Chapter, The Tokyo Chamber of Commerce and Industry Visit King SkyFront

Ota Chapter, The Tokyo Chamber of Commerce and Industry holds a networking event "Middle Salon" for the purpose of information exchange among mid-level members. This time, it included an inspection tour at King SkyFront as a collaborative project between the Tonomachi and Haneda areas and a networking event.

After visiting the Innovation Center of NanoMedicine (iCONM), which is working on research aimed at realizing in-body hospitals, and SB Kawasumi Corporation, which is disseminating innovative medical equipment to the world that will lead to the future medicine, the networking event was held with representatives from King SkyFront. Through exchanges across disciplines, we were able to identify new possibilities for collaboration to address future challenges.



Introducing the vibrant companies of Haneda Innovation City!

METALISM

METALISM is a manufacturing consortium formed by seven companies specializing in metal processing technologies. Each company contributes its expertise, in areas spanning precision sheet metal processing, press processing, laser processing, plating, mold processing and painting. Feel free to contact METALISM for all your manufacturing-related needs. Leveraging the connections among participating companies, we will take action to find innovative solutions. King SkyFront and HICity are in proximity, which makes it easy to interact and collaborate. By promoting mutual exchange, we benefit from each other's initiatives and strengths, leading to new developments and solutions to common problems. We look forward to our continued collaboration.



Please visit us at the METALISM Lounge, where you will find metalwork products crafted by each company featured in the interior design, as well as exhibits displaying the products from each company.

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sakurabo

Kids Programming School Sakurabo was established as a new venture by SEEDEA Corporation, whose main business is semiconductor circuit design.

Our goal is to foster the skills and creativity that allow children to bring their envisioned ideas to life. To achieve this, we provide not only programming but also lessons on technology, social systems, finance, and ethics, fostering individuals who can bring joy to others.

We are fascinated by KING SKYFRONT's summer science events, which create opportunities for children to experience various aspects of science and technology.



Also, since it is close to Haneda Innovation City, where Sakurabo is located, we hope to collaborate and work together on initiatives that contribute to the future of children.

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AIM Ltd.

Based in Haneda Innovation City and Yamaguchi Prefecture, AIM develops systems to realize the thoughts and desires of customers in the Tokyo metropolitan area and throughout Japan. We also contribute to the local community through research and development using new technologies such as AI, satellite remote sensing, and XR, as well as through digital talent development. AIM (Aim = goal) has a management philosophy of combining methods and ideals to create new value. AIM's Tokyo headquarters, located in Haneda Innovation City, is a new base that relocated from Kawasaki City in October 2024. At KING SKYFRONT, companies and research institutions in the life sciences field are engaged in innovation and startups, and we are also hoping to collaborate and to work together in the fields of system development and software development. Please feel free to contact us.



[Click here for details](#)

PROTOTYPE Inc.

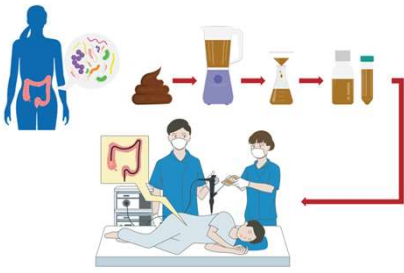
PROTOTYPE INC. has set up a studio in HICity equipped with various sensors and equipment to respond to increasingly sophisticated projects, providing an environment where new prototyping can be conducted. As our flagship business, besides engaging in research and development of VR simulators that expand the appeal of motorsports, we provide one-stop services from design, development, spatial presentation, and production. King SkyFront and HICity have gathered as places to foster open innovation. We are excited to imagine what could happen when our expertise in mobility, simulation, and life sciences integrate.



We would be delighted if you could also visit our studio.

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Metagen Therapeutics and Juntendo University, Launch Joint Research Project



Metagen Therapeutics, Inc. and Juntendo University have begun a joint research project on Development of FMT (Fecal Microbiota Transplantation) with Antimicrobial Agents for Parkinson's Disease from September 2024.

FMT is a treatment method in which the gut microbiome contained in the stool of a healthy person is transplanted into the intestines of a patient to rebuild a balanced gut environment.

The purpose of this research is to investigate the safety and therapeutic efficacy of FMT for Parkinson's disease patients. Based on the outcome of the research, the possibility of offering FMT as a new treatment option for Parkinson's disease patients will be considered.

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Held an event!

Seminar co-hosted by Stanford School of Medicine, Kanagawa Prefecture, and Kawasaki City (11/6)



Stanford School of Medicine and Kanagawa Prefecture signed a MOU for collaboration in 2016 and have been working together in cooperation to develop technology in the field of life sciences, and to promote their practical application and industrialization.

In this seminar, we invited leading innovators from Industry-Academia-Government from both Japan and US. Latest R&D was introduced, as well as examples of business activities in Kanagawa which collaborate with Stanford University. A networking event was held after the seminar, and the participants enjoyed the opportunity to meet and exchange with the Stanford researchers.



KINGSKYFRONT Day 2024 (10/10)

For visitors to BioJapan2024, held at Pacifico Yokohama, we held "KINGSKYFRONT Day 2024" to facilitate networking with KINGSKYFRONT stakeholders. Those who participated enjoyed their interactions around the food stalls (Yatai). We will continue to organize such activities that contribute to networking opportunities for people inside and outside of KINGSKYFRONT, with stimulating events.

iCONM Now



Launch of the Kawasaki Care Design Consortium!

Project CHANGE (Leader: Prof. Takanori Ichiki) established the "Kawasaki Care Design Consortium" on November 1 and began recruiting members (Note 1). In Japan, which leads the world in aging societies, an unbalanced situation is emerging, characterized by an increase in patients due to aging and a shortage of medical professionals resulting from declining birth rates, casting a shadow over our future lives. With a limited number of hospital beds, those in relatively good health are required to engage in home care, similar to the situation during the COVID-19 pandemic. While doctors and nurses can provide 24-hour care in hospitals, this level of care is not easily achievable at home. Therefore, it is essential to promote care products that can be managed by families and individuals themselves, as well as to foster "care competency."

Issues in care settings, arising from the declining birthrate and aging population, have been highlighted through surveys conducted by the Kawasaki Nursing Association and "Shadowing" activities carried out by Project CHANGE (Note 2). Although about 70% of companies express interest in entering the healthcare industry, which is estimated to reach a market size of 77 trillion yen by 2050, a survey indicates that 60% of companies hesitate to enter for various reasons. The Kawasaki Care Design Consortium (Note 3) is positioned as a community aimed at improving this situation and swiftly implementing products and services that meet the needs of care settings. The kick-off symposium held on November 6 was attended by over 200 people, and a feature article on this consortium will be published in the December issue of "Sangyo Joho Kawasaki," a magazine issued by the Kawasaki Institute of Industrial Promotion (Note 4). In addition, a public seminar is scheduled for February 26, 2025. More details will be posted on our website and other media in January.

Note 1: Corporate members are required to pay an annual fee of 360,000 yen (for companies with more than 101 employees) or 120,000 yen (for companies with 101 or fewer employees), but can utilize options for demonstration research and shadowing at additional costs. Associate members can participate in workshops and hearings with care workers free of charge, but are not able to use the demonstration research facilities or shadowing.

Note 2: Shadowing: Observing the duties of care workers in care settings and making improvement proposals from an engineering perspective.

Note 3: <https://change.kawasaki-net.ne.jp/consortium/>

Note 4: Sangyo Joho Kawasaki: A monthly magazine published by the Kawasaki City Industrial Promotion Foundation. It is available at various municipal facilities, including Keikyu Kawasaki Station, and can also be viewed for free online. Odd-numbered months feature columns on Project CHANGE's activities, while even-numbered months introduce research conducted by iCONM.



Left: First Management Committee. From left, Ichiki (Chairperson), Hotta, Iwagami, Shirasaki (Secretary General)
Right: Takayoshi Mimura (Former Chairperson of Terumo) as the keynote speaker at the kick-off symposium