

# Accelerate creation of novel agrochemicals using molecularly targeted agrochemical platforms

## (AgroDesign Studios)



City	Year of Establishment	Founder
Kashiwa-city, Chiba	2018	Yuki Nishigaya, Ph.D.

Partner VC	Latest round of Fundraising	Valuation
real-tech fund	Series A	JPY 1,000 million

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### ○ Business Plan

As the world population continues to grow, it is important to develop highly effective pesticides to increase crop production, but at the same time, highly safe pesticides are also required. Molecular-targeted pesticides are promising as pesticides that are both effective and safe. This type of pesticide targets enzymes (proteins) that exist only in the organisms to be controlled (weeds, insects, and plant pathogens), thereby making it possible to exert its effect only on the target organism.

Although the advantages of molecular-targeted pesticides have been mentioned for some time, the technological hurdles to realize them have been high. Therefore, this project will establish a platform for the development of molecular-targeted pesticides, which will be useful for our own pesticide discovery and will accelerate the creation of safe and secure pesticides by providing the technology to Japan and global agrochemical companies.

### ○ Research Outline

In this project, a platform will be developed to efficiently analyze the 3D structure of the enzyme (protein) that will be the pesticide target, which is the most significant technical issue in the development of molecular-targeted pesticides. Furthermore, the platform will be used to actually create pesticide insecticides.

The platform will include: 1) an environment for rapid structural analysis of membrane proteins (using X-ray crystallography and cryo-electron microscopy), 2) computational pesticide discovery (molecular dynamics simulation and AI drug discovery methods), and 3) Digital transformation (DX) for pesticide development (automation of experiments using robots and AI).

Furthermore, these will be utilized to conduct pesticide discovery for highly challenging pesticide target proteins such as membrane proteins.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Food & Agriculture	STS 2023～2024FY	JPY 208 million	—

As of February,2024

Development of automation systems for assisted reproductive technologies (ARCS Inc.)



City	Year of Establishment	Founder
Shibuya-ku, Tokyo	2022	Masayasu Tanase

Partner VC	Latest round of Fundraising	Valuation
DEEPCORE Inc.	Pre-seed	Non-Disclosure

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○ Business Plan

Using artificial intelligence (AI) and robotics, we aim to create a world where everyone has access to safe, high-quality fertility treatment. Our system focuses on improving assisted reproductive technology. Concretely, our objective is to reduce the burden on medical workers and increase the success rate of treatment (i.e. improve the pregnancy rate) by automating 1) the selection of most suitable sperm and 2) delicate manipulator operations in the ICSI process. Therefore, we are developing two core technologies: sperm-recognition AI and autopilot feature.

○ Research Outline

This research and development aims to reduce the burden on medical workers and increase the success rate of treatment by utilizing two core technologies.

The goals at the end of the grant project period are as follows.

1. Sperm-recognition AI
- By the end of the grant period,
- Collecting sperm imaging data to achieve sorting accuracy beyond that of a experienced embryologist.
- (2) Automation system
- By the end of the grant period,
- The PoC of an automation system with mice and evaluation tests of a mass-produced prototype have both been completed.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 109 million	—

# Development of VR Digital Therapeutics for Depression (BiPSEE Inc.)



○ Business Plan  
In depression treatment, conventional therapies often aren't enough. Only one in three patients achieve remission with their first antidepressant, and cognitive-behavioral therapy (CBT) is used in only 6% of cases in Japan. BiPSEE aims to introduce a new treatment option by digitizing CBT with VR and AI technologies.

○ Research Outline  
In this project, we will conduct R&D to achieve personalization of VR digital therapeutics and bring it closer to practical use. Additionally, we will begin R&D to realize digital diagnosis in the mid to long term.

City	Year of Establishment	Founder
Tokyo	2017	Masayo Matsumura

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 71 million	Thailand and other major countries

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Pre Series A	Non-Disclosure

○International collaborative technology demonstration

- Contract with local partners
- Relationship development with potential local partner

Currently, we are conducting clinical research in Thailand and are exploring research partners and market potential in key countries, including Thailand, the United States, Germany, and others.

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# Development of a non-invasive colorectal cancer screening system based on deep learning

(Boston Medical Sciences, Inc.)



City	Year of Establishment	Founder
Chuo-ku, Tokyo, Japan	2023	Masaki Okamoto

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Seed-round	JPY 1,000 million

## ○ Business Plan

Colorectal cancer ranks second worldwide in both incidence and mortality among cancer types (in Japan, it ranks first in incidence and second in mortality), making it a malignancy with a significant disease burden. Over the next 20 years, both the incidence and mortality rates of colorectal cancer are expected to deteriorate rapidly. Despite the fact that early detection and early therapeutic intervention can prevent cancer death and significantly improve life prognosis, the situation is worsening due to the reality that detailed examinations of the lower gastrointestinal tract are often avoided. The mental and physical invasiveness of the preparation involving the consumption of large amounts of laxatives starting the day before, the insertion of a scope through the anus, and the need for sedation and recovery are contributing factors to this avoidance. Our goal is to solve this "examination aversion issue" by implementing a completely laxative-free virtual colonoscopy, thereby promoting early detection and early therapeutic intervention to ultimately eradicate deaths from colorectal cancer.

## ○ Research Outline

In this research and development project, we aim to develop a medical device software program, named AIM4CRC, that applies a deep learning approach to perform virtual colon cleansing and automatic polyp detection in colon CT images. The initiative seeks to solve the challenges associated with implementing a "completely laxative-free virtual colonoscopy," which has been clinically difficult to achieve. In the STS phase, we will complete the prototype version of the product and achieve the following Proof of Concept (PoC) objectives, leading to clinical trials and regulatory approval applications starting from the fiscal year 2025, with the goal of early domestic and international clinical implementation.

1. Evaluate the detection accuracy of colon polyps at domestic medical institutions (generalization performance verification) and demonstrate clinical effectiveness.
2. Demonstrate at U.S. medical institutions that the reading support provided by this product improves physicians' detection accuracy.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 190 million	Japan, the United States, Europe, China, and across all countries and regions around the world

## ○International collaborative technology demonstration

• Contract with local partners  
To demonstrate the clinical effectiveness of AIM4CRC in the United States and provide foundational data for FDA approval, a preclinical observer study (interpretation test) will be conducted. The hypothesis for validation posits that the interpretation of colon CT scans aided by AIM4CRC will enhance the detection capabilities of radiologists for colorectal cancer and polyps.

The study will utilize a validation dataset that does not involve laxatives and will conduct two sessions: "Session A: Non-AI-assisted reading" and "Session B: AI-assisted reading", to statistically compare their detection performance. All patient information and disease prevalence data will be anonymized, and a defined washout period will be implemented between the sessions.

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# Development of exercise workload optimization function and cardiac rehabilitation program medical device (CaTe inc.)



City	Year of Establishment	Founder
Bunkyo-ku, Tokyo	2020	Kazuhiro Terashima

Partner VC	Latest round of Fundraising	Valuation
Jafco Group Co., Ltd.	Series A	JPY 1,115 million

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○ Business Plan  
Although cardiac rehabilitation has proven therapeutic benefits for patients with cardiac disease, participation in outpatient cardiac rehabilitation in Japan is low, at about 4-8%, resulting in many cardiac patients being repeatedly re-hospitalized, and society as a whole is burdened with medical costs. CaTe aims to create a healthier future by providing appropriate exercise therapy and behavior modification for a variety of patients, including those with cardiac disease, thereby creating an environment in which many patients can receive better medical care at home.

○ Research Outline  
This research and development will develop a cardiac rehabilitation program medical device that will realize exercise therapy in a standing position that is both effective and safe by developing an exercise load volume optimization function.

- (1) Development of the function to optimize the amount of exercise load
- (2) Develop a cardiac rehabilitation program medical device equipped with (1)
- (3) Conduct exploratory investigator-initiated trials
- (4) Preparation of a validative clinical trial including protocol development.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	JPY 191 million	—



# R&D Cost of HSC Expansion Platform Technology for Cell and Gene Therapy Companies (Celaid Therapeutics Inc.)



City	Year of Establishment	Founder
Bunkyo-ku, Tokyo	2020	Nobuyuki Arakawa

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners (UTEC)	Series A extension	Non-Disclosure

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○ Business Plan  
Celaid will establish and validate systems for supplying clinical and commercial-grade HSC expansion methods and culture media to the biotechnology field enabling global biotech/pharmaceutical companies to address their technical challenges encountered in commercial manufacturing of cell and gene therapy products.

○ Research Outline  
Through this R&D effort, clinical and commercial-grade HSC expansion methods and culture media will be established (R&D #1&2). In parallel, experiments on the application of HSC expansion technology to cell and gene therapy products will be conducted (R&D #3&4).

- R&D #1. Establishment of clinical-grade culture media
- R&D #2. Development of HSC expansion manufacturing process
- R&D #3. Application to the manufacturing process of ex vivo gene therapy products
- R&D #4. Application to the manufacturing process of cell therapy products

Business Area/Field	Research Period	Research Amount	International collaborative technology demonstration
Healthcare	STS 2024~2025FY	JPY 199 million	United States, Europe etc.

# Globalization of Single Enzyme Activity-based Liquid Biopsy (Cosomil, Inc.)



City	Year of Establishment	Founder
Tokyo, JAPAN	2022	Yu Kagami

Partner VC	Latest round of Fundraising	Valuation
ANRI Inc.	Pre-series A	Non-Disclosure

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○ Business Plan  
We revolutionize disease diagnosis and drug development with our proprietary 'Single Enzyme Activity-based Liquid Biopsy' technology, enabling enzyme activity analysis at single protein level.

○ Research Outline  
This grant project aims to achieve the following and increase the likelihood of expansion into the U.S. market:

1. Conduct a clinical study of approximately 1,000 U.S. participants to provide the basis for selling a pancreatic cancer diagnostic laboratory developed test (LDT) in the U.S.
2. Conduct a clinical study using very early stage (Stage 0-I) pancreatic cancer samples to differentiate and demonstrate the utility of the pancreatic cancer test
3. Conduct a clinical study to provide the basis for selling a colorectal cancer diagnostic LDT in Japan
4. Develop a home test kit to enable at-home testing using fingertip blood collection
5. Develop a fully automated measurement system to significantly increase testing throughput
6. Conduct PMDA consultations and obtain FDA Breakthrough Device Designation for obtaining regulatory approval in Japan and the U.S.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024～2025FY	JPY 499 million	United States

○International collaborative technology demonstration

- Contract with local partners
- Local base establishment

We will conduct clinical development and prepare for the sale of our cancer screening test in the United States, which is the largest market for the test. Specifically, we will collect blood samples from approximately 1,000 American pancreatic cancer patients and healthy individuals to evaluate the test's performance and establish the evidence needed to sell the test in the U.S. We will also obtain the FDA Breakthrough Device Designation to receive prioritized support for future clinical development. Additionally, we will conduct research for establishing our company's laboratory in the United States.

As of April,2024

Development of a drug discovery system based on fully chemically synthesized mRNA (Crafton Biotechnology Inc.)



○ Business Plan

Our goal is to develop a world-leading, innovative drug discovery system based on fully chemically synthesized mRNA. By establishing a chemical process-based mRNA drug discovery system and subsequent CDMO business infrastructure, we aim to create mRNA drug candidates with unparalleled performance that surpass conventional methods and deliver them to patients as quickly as possible.

○ Research Outline

Based on our proprietary method of chemically-synthesized mRNA, we aim to enable rapid generation and optimization of lead compounds by establishing a high-throughput synthesis process and multiple assays, thereby improving the overall efficiency of the discovery system.

City	Year of Establishment	Founder
Nagoya City, Aichi Prefecture	2022	Shokaku Kim

Partner VC	Latest round of Fundraising	Valuation
Organization for Creation of MIRAI	Seed	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024~2025FY	Non-Disclosure	—

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in silico enzyme libray development (digzyme Inc.)



City	Year of Establishment	Founder
Tokyo	2019	Naoki Watarai

Partner VC	Latest round of Fundraising	Valuation
DG Daiwa Ventures	Series A	Non-Disclosure

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○ Business Plan  
We have developed an enzyme development platform by using bioinformatics. In recent years, due to trends such as the Sustainable Development Goals (SDGs), the needs of enzyme users have become more diverse, and there is a demand for rapid development. However, enzyme manufacturers lack the means to develop quickly. In this project, we aim to establish manufacturing techniques for in silico-designed enzyme libraries to facilitate rapid production and development.

○ Research Outline  
To achieve our goal, we will undertake the following three stages of research and development:

- ①Development of an in silico enzyme expression strain design system.
- ②Automation of enzyme performance evaluation experiments.
- ③Implementation of a sample-level enzyme production platform.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2024 - 2026FY	JPY 333 million	—

## Development of High-Frequency Space Experimentation and Recovery Platform. (ElevationSpace Inc.)



○ Business Plan

The objective is to provide an integrated service that will conduct demonstration of space components and services necessary for future expansion of space activities in low Earth orbit, provide autonomous platform capable of conducting science and engineering experiments utilizing space environment as well as prototyping and manufacturing materials, and recover experiment results (products) to Earth and return them to customers.

○ Research Outline

This research and development project aims to acquire core technologies necessary for commercialization by resolving R&D challenges related to the following element technologies:

- ①Acquisition of small satellite bus system technology enabling low Earth orbit space experimentation and manufacturing.
- ②Acquisition of re-entry technology.
- ③Acquisition of recovery technology.
- ④Acquisition of safety and reuse technology.

City	Year of Establishment	Founder
Sendai, Miyagi	2021	Ryohei Kobayashi

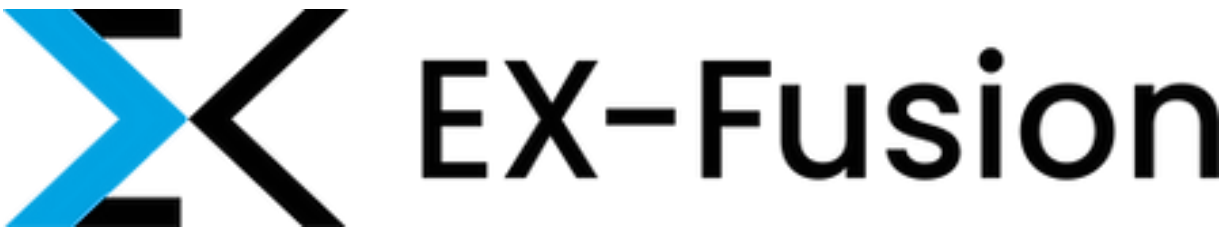
Partner VC	Latest round of Fundraising	Valuation
TOHOKU University Venture Partners Co., Ltd.	Seed-extension	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023～2025FY	JPY 291 million	—

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Realization of high-precision, high-speed machining of difficult-to-process materials by high-power laser processing machines (EX-Fusion Inc.)



City	Year of Establishment	Founder
Suita City, Osaka, JAPAN	2021	Kazuki Matsuo

Partner VC	Latest round of Fundraising	Valuation
Delight Ventures, Inc.	Seed	Non-Disclosure

○ Business Plan

This project will develop a laser processing system for CFRP, which has been difficult to achieve both "speed" and "quality" using the world's first laser cutting method based on the double-wobbling method. The initial target will be the automotive industry, where cost and quality are important and market expansion is expected in the future, with the aim of later expanding the application to the aircraft field.

○ Research Outline

This R&D will realize a laser cutting process using a high-power laser with a double-wobbling method. The following development items will be implemented to efficiently and effectively use high-power lasers.

- (1) Development of laser processing head
- (2) Development of processing head driving device
- (3) Optimization of laser irradiation conditions

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023 - 2024FY	JPY 200 million	—

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# Microbial production of useful compounds by multistep gene introduction system (Fermelanta, Inc.)



City	Year of Establishment	Founder
Ishikawa, Japan	2022	Shogo Fukizaki Hiromichi Minami Akira Nakagawa

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Seed	JPY 800 million

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## ○ Business Plan

A lot of compounds with complex chemical structures derived from nature have useful bioactivities promoting human health. But there is a lot of issues for mass production based on traditional processes, especially agricultural cultivation and extraction. The total synthesis by chemical reaction is also technologically difficult , inefficient and unreasonable. We develop artificial microorganisms capable of producing target compounds with high productivity, which whould be achieved by introducing more than 20 foreign genes into a microorganism, expressing enzymes functionally and controlling the whole biological sytem as a living cell. By solving the technical problems with constructing a multi-step biosynthetic pathway of continuous enzymatic reactions, we aim to realize social implementation of the innovative process.

## ○ Research Outline

In this R&D project, we will solve the technical problems for constructing alternative biosynthetic pathways and improving metabolic systems of cells with our original multi-step genes transfer technology. We taking model compounds with commercial demand but limited supply as examples, especially those requiring complex biosynthetic pathways. Through the construction of prototype cells and their optimization, we aim to achieve practical production yields (at the order of grams per liter) in laboratory culture equipments.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023～2024FY	JPY 192 million	—

Development of a microsurgery assistance robot and a training system. （ F.MED Co., Ltd.）



- Business Plan  
Develop a microsurgery assist robot. Extremely delicate tool manipulation skill is required to perform microsurgery, and this difficulty limits the number of performing surgeons. This project aims to develop a robot which maximizes the safety and stability of microsurgery. It also targets to have enough quality to meet medical device regulatory standards. In addition, we develop a training system which assists surgeons to learn safe robot operation efficiently.
- Research Outline  
In this project, we develop the first generation commercial product which assists safe and efficient microsurgery. Also, it is in scope to reach the quality to comply with regulatory standards.

The project consists of the following topics.

- 1. Development of microsurgery assistance robot
- 2. Development of training system of microsurgery assistance robot.

City	Year of Establishment	Founder
Fukuoka, Japan	2021	Keita Shimomura Susumu Oguri

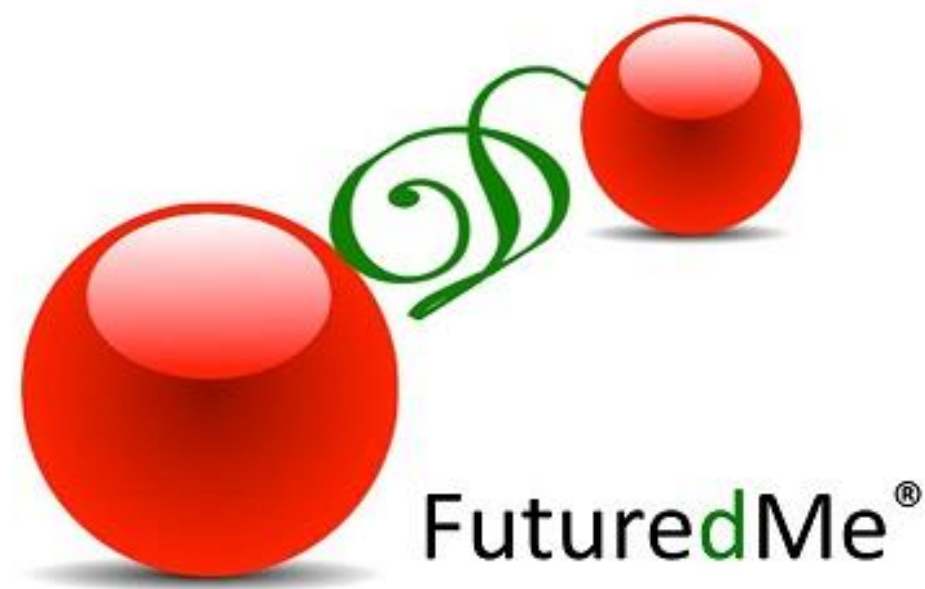
Partner VC	Latest round of Fundraising	Valuation
FFG Venture Business Partners	Series A	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024～2025FY	JPY 215 million	—

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# Construction of drug development platform of disease-specific degradation by CANDDY (FuturedMe Inc.)



City	Year of Establishment	Founder
Chuou-ku,Tokyo	2018	Etsuko Miyamoto-Sato

Partner VC	Latest round of Fundraising	Valuation
KSP,Inc.	Series A	Non-Disclosure

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○ Business Plan

In the era of precision medicine, genomic medicine needs to solve the problem (pain) that even if the causative molecule (target) of a disease is identified, there is no therapeutic drug for the target. To this end, we will raise the barrier to entry for CANDDY, the next-generation degradative drug discovery technology, and build a disease-specific degradative drug development platform that will establish a differentiated prototype, expand the market, and reduce side effects.

○ Research Outline

In this research and development, we will construct the "Immune CANDDY Platform" as a degradative drug development technology that does not act on normal cells but can target degradation only in cancer cells due to immunoproteasome selectivity.

- ① Shows the difference in the degradation index (DC50) between normal cells and diseased cells.
- ② Shows the degradation of naturally denatured proteins.
- ③ Showing the POC of the initial prototype of the CANDDY molecule.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2025FY	JPY 61 million	Worldwide, especially in the US

○International collaborative technology demonstration

• Contract with local partners  
STS phase plans to have a Japanese pharmaceutical company become an expert and obtain a "letter of interest" from PCA phase to realize a partnership. We will also be in contact with pharmaceutical companies in the United States or Europe etc., and plan to partner with overseas pharmaceutical companies after graduation.

## Development of a small hybrid thruster for a small spacecraft (Letara Ltd.)



City	Year of Establishment	Founder
Sapporo, Hokkaido	2020	Shota HIRAI Landon KAMS Harunori NAGATA

Partner VC	Latest round of Fundraising	Valuation
SBI Investment	Pre-Seed	Non-Disclosure

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○ Business Plan  
Spacecraft such as satellites need propulsion systems with high thrust for large-scale space travel, but until now they have used extremely dangerous propellants that are toxic, flammable, and explosive. Letara, a start-up company from Hokkaido University, has been researching and developing a hybrid chemical propulsion technology that uses plastics as fuel. By applying this technology, we will realize the world's first innovative propulsion system that simultaneously satisfies safety and thrust and gives small satellites freedom of movement.

○ Research Outline  
This R&D will build on the hybrid chemical propulsion technology that has been developed at Letara and optimize it to fit into a small size. Using the technology officially licensed from Hokkaido University, we will develop a safe and high thrust hybrid chemical propulsion system fueled by plastic, and conduct a PoC for commercialization.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023～2024FY	JPY 236 million	—

Commercialization of synthetic biology platform (Logomix)



City	Year of Establishment	Founder
Harumi, Chuo-ku, Tokyo	2019	Yasunori Aizawa Taiki Ishikura

Partner VC	Latest round of Fundraising	Valuation
JAFCO Group Co., Ltd.	Series A	JPY 2,199 million

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○ Business Plan  
Construction of industrial microorganisms/cells with enhanced property using our proprietary large-scale genome engineering platform technology.  
With the technology, we address the SDGs challenges with our partner companies.

○ Research Outline  
In this R&D effort, we upgrade our genome engineering platform by the following measures:

- 1. Constructing a high-throughput evaluation system for the genome-engineered organisms
- 2. Building an efficient system for creating genome-engineered organisms
- 3. Developing a lab-scale evaluation protocol that can replicate scale-up evaluation.

Business Area/Field	Research Period	Research Amount	International collaborative technology demonstration
Healthcare	STS 2024~2025FY	JPY 352 million	—

# Development of long-distance quantum communication system and market creation (LQUOM, Inc.)



City	Year of Establishment	Founder
Yokohama-shi, Kanagawa	2020	Kazuya Niizeki

Partner VC	Latest round of Fundraising	Valuation
SBI Investment Co., Ltd.	Series A	JPY 1,800 million

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## ○ Business Plan

LQUOM, named after Long-Distance Quantum Communication, develops hardware for "quantum repeater systems" necessary for long-distance quantum communication. Quantum key distribution is a well-known application of quantum communication. The highest communication security based on information theory makes it possible to prepare for the "Harvest now, decrypt later" cyberattacks (holding the ciphertext until future improvements in computing power). The quantum repeater system we are developing can generate "quantum entangled states," which will enable applications other than key distribution, such as quantum teleportation and world clocks, and will be extended to a network that can be called the quantum Internet.

Aiming for such technological innovation, LQUOM will continue to develop long-distance quantum communication hardware day by day, with a group of physicists specializing in cutting-edge technologies such as quantum mechanics and optics at the core.

## ○ Research Outline

In this R&D, we will develop the two-photon source toward the entanglement generation, quantum memory, and interface technologies based on the research results we have cultivated so far. These are essential elemental technologies for the development of quantum repeater products.

At the same time, we will conduct global market research and customer development using the two-photon sources as initial products.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 402 million	—

# Development of mass-produced hybrid rocket system (MJOLNIR SPACEWORKS Inc.)



City	Year of Establishment	Founder
Sapporo Hokkaido	2020	Tor VISCOR

Partner VC	Latest round of Fundraising	Valuation
REAL TECH FUND	SEED	JPY 580 million

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- Business Plan  
We aim to mass produce hybrid engines in order to provide rocket engines, which are the main component that determines rocket performance, to more rocket development organizations and companies. This project aims to improve the performance of this mass-produced hybrid engine to a practical level and then demonstrate its performance through launch demonstrations.
- Research Outline  
In this research and development, we aim to solve the problem by developing a rocket system using a hybrid rocket engine that is safe and easy to mass produce. We will also develop an observation rocket for demonstration launches using a hybrid rocket engine. In addition, the performance of the engine and rocket system will be demonstrated by conducting a launch demonstration test.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Aerospace	STS 2023~2024FY	JPY 168 million	—



# Creation of a Japanese materials industry through mass production and overseas expansion of silkworm biomaterials (Morus Inc. )



City	Year of Establishment	Founder
Shinagawa, Tokyo	2021	Ryo Sato

Partner VC	Latest round of Fundraising	Valuation
DG Daiwa Ventures Inc.	Pre Series A	Non-Disclosure

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Website : <https://morus.jp/>

○ Business Plan  
Silkworms, for which Japan boasts world-class research technology, will be used overseas as a bio-based raw material, most recently as a food protein raw material. Silkworms have unique functional components that are not found in other insects, allowing them to enter a variety of markets, and because they are domesticated insects, they are highly suitable for mass production, making them one of Japan's strengths in food. Together with our technology and brand, we aim to create a materials industry originating from Japan.

○ Research Outline  
In this research and development, we will work on research and development that will contribute to the following matters when using silkworms as food.

- ① Adding high value to silkworm-derived food ingredients
- ② Mass production of silkworm-derived food ingredients
- ③ Overseas expansion of silkworm-derived food ingredients and food products containing them

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Food & Agriculture	STS 2023～2025FY	JPY 217 million	Singapore, United States

○International collaborative technology demonstration

- ① Contract with local partners
- ② Local base establishment
- ③ Relationship development with potential local partner
- ④Supply chain development

We have already secured a local partner in Singapore, where we plan to expand our business, and we plan to establish our own base in 2023 (②,③). In addition, we are collaborating with partners on the premise that after the demonstration in Singapore, we will expand to other countries around the world, including ASEAN (④).

At the same time, we are conducting joint research with a local university in the United States, another country we plan to expand into (①), and are building a foundation for future expansion into the United States.

# Development of an Innovative Anti-Thrombotic Coated Stent for Intracranial Aneurysm Treatment (N.B.Medical Inc.)

○ Business Plan  
Non-Disclosure

○ Research Outline  
Non-Disclosure

City	Year of Establishment	Founder
Chuo-ku, Tokyo, JAPAN	2021	Kazuya Shobayashi

Partner VC	Latest round of Fundraising	Valuation
ANRI Inc.	Non-Disclosure	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024 - 2025FY	Non-Disclosure	Non-Disclosure

## Development of quantum repeater utilizing cavity QED (Nanofiber Quantum Technologies, Inc.)



City	Year of Establishment	Founder
Shinjyuku, Tokyo	2023	Masashi Hirose Takao Aoki Akihisa Goban

Partner VC	Latest round of Fundraising	Valuation
Waseda University Ventures	Non-Disclosure	Non-Disclosure

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○ Business Plan

Quantum network combines quantum computing and communication. This project develops core technology, quantum repeaters, using a unique method to set global standards.

○ Research Outline

This project aims to implement foundational technology for an optical fiber network with absolute security, different from existing information and communication systems, by developing quantum repeaters using cavity QED. To achieve this goal, the following development items are undertaken:

- 1. Manufacturing of low-loss nano-fiber resonators in the communication wavelength band
- 2. Development of Yb atom arrays trapped near nano-fiber resonators
- 3. Implementation of logic gate operations in the communication wavelength band
- 4. Research on business strategy, regulations, and standardization activities

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2023～2025FY	JPY 492 million	United States (California/ Maryland State)

○International collaborative technology demonstration

- Contract with local partners

NanoQT Inc.: Conducting site surveys and feasibility studies on the U.S. market environment and technology demonstrations.

University of Maryland: Exploring applications of quantum networks using quantum repeaters and detailed examination of small-scale quantum networks using Yb cavity QED systems.

# International Expansion of Wearable Epileptic Seizure Detection Systems (Quadlytics Inc.)



City	Year of Establishment	Founder
Kyoto	2018	Manabu Kano Norikata Kobayashi Koichi Fujiwara Toshitaka Yamakawa

Partner VC	Latest round of Fundraising	Valuation
Lifetime Ventures	Series A	Non-Disclosure

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Website : <https://www.quadlytics.com/>

- Business Plan  
Regarding the wearable epilepsy seizure prediction system that our company is developing in Japan to become the world's first medical device, this project will refine and accelerate the international expansion strategy following domestic approval. We will achieve regulatory approval and reimbursement in Australia, which will be a significant milestone for our U.S. expansion. Based on the clinical trial data and health economic research results obtained in Australia, we aim to achieve regulatory approval and insurance reimbursement in the U.S. more smoothly, at lower cost, and with reduced risk.
- Research Outline  
In this R&D project, we will refine the commercialization roadmap in Australia of our technology by addressing the following issues, aiming for early clinical trials after the completion of the STS phase:
  1. Formulating a regulatory strategy through retrospective and prospective clinical studies at Australian medical institutions and pre-submission meetings with the TGA.
  2. Developing mass production prototypes in collaboration with local manufacturers.
  3. Formulating an insurance strategy through negotiations with insurance agencies and consultants.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2024~2026FY	JPY 299 million	Australia, United States

# AI-based Thermal-Fluid Simulation Leading to Automated Product Design (RICOS Co. Ltd.)



City	Year of Establishment	Founder
Chiyoda-ku, Tokyo	2015 (Year of business start)	Yu Ihara

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners Co., Ltd.	Series A-2	JPY 1,200 million

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○ Business Plan  
In current product design, simulations take time and are limited in application. RICOS aims to develop an AI-CAE system for thermal fluids using proprietary AI technology highly compatible with physical phenomena to solve various issues in analysis. Customer needs have already been identified, and the development system will be swiftly introduced to the market and expanded for sales.

○ Research Outline  
In this R&D effort, in the area of thermal fluids (and related fields), we aim to 1) complete the AI algorithm that will serve as the core of the system to be provided to customers and achieve the prediction speed and accuracy they require, and 2) implement a system for the thermal fluidics field that uses that algorithm, identify the functions that customers require, and set a goal for development and implementation.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Information & Communication	STS 2024 - 2025FY	JPY 190 million	—



# Creation of Delicious Next-Generation Aquaculture Fish Adapted to Global Warming (SAKANA Dream Inc.)



SAKANA Dream

City	Year of Establishment	Founder
Chiba	2023	Goro Yoshizaki Shunichiro Hosoya Yuho Ishizaki Tetsuro Morita

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures	Seed	Non-Disclosure

○ Business Plan

Due to the recent global increase in water temperatures, issues such as growth stagnation, decreased survival rates, and increased disease outbreaks among farmed fish during high-temperature periods have become apparent. On the other hand, southern fish species generally have poor fat content and inferior taste. In this proposal, we aim to develop next-generation aquaculture fish that possess both high-temperature tolerance during summer and excellent taste, while also being environmentally friendly, by utilizing the "surrogate broodstock hybridization technology".

○ Research Outline

In this research and development project, we will produce over 20 types of hybrid fish and evaluate their growth, survival rates, fertility, and taste to develop five types of hybrid fish with high suitability for aquaculture. This quantitative goal is set as an achievable figure by leveraging our company's research facilities and technological capabilities. Over the past 60 years, approximately 70 species of fish have been attempted for seed production technology establishment in Japan, with only about 10 species being stably supplied for aquaculture. Our project aims to develop five species of aquaculture fish within two years, and achieving this goal will sufficiently demonstrate the versatility and reproducibility of our company's technology. Additionally, the taste of the newly developed aquaculture fish will be evaluated through sensory tests conducted by potential trading partners in the seafood wholesale industry, restaurants, and consumers, using objective feedback as a basis for assessment.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Food & Agriculture	STS 2024 - 2025FY	JPY 98 million	—

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Commercialization of a device for the treatment of acute ischemic stroke due to atherosclerosis.  
（ T.G.Medical Inc.）

○ Business Plan  
Non-Disclosure

○ Research Outline  
Non-Disclosure

City	Year of Establishment	Founder
Chuo-ku, Tokyo	2020FY	Kohei Banno

Partner VC	Latest round of Fundraising	Valuation
Beyond Next Ventures Inc.	Non-Disclosure	Non-Disclosure

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023～2024FY	Non-Disclosure	—

Contact Information : Non-Disclosure

Website : Non-Disclosure

As of February,2024

R&D of a new immersive solid-phase synthesis method (TKG Therapeutics, Inc.)



City	Year of Establishment	Founder
Tokyo	2022	Akimitsu Okamoto/ Masaaki Matsui

Partner VC	Latest round of Fundraising	Valuation
Real Tech Holdings Co.,Ltd.	Seed	JPY 300 million

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○ Business Plan

We are advancing the commercialization of an immersion solid-phase synthesis method known as the 'jabot-zuke' method. This synthesis method is anticipated to enable the production of nucleic acid materials that are capable of mass production, cost-effective, and have a reduced environmental impact. By commercializing this project, we aim to contribute to the expansion of the nucleic acid materials market, including nucleic acid pharmaceuticals.

○ Research Outline

We are going to create a prototype of an automated synthesizer utilizing the immersion solid-phase synthesis method, aiming to achieve the following Proof of Concept (PoC) goals: 1. Synthesis on a milligram scale using the prototype machine 2. Synthesis with less than 50% of the reaction reagent amount compared to conventional solid-phase synthesis methods 3. Synthesis of our company's proprietary new functional nucleic acids.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Materials	STS 2023～2024FY	JPY 80 million	—

# Realization of Variable-Volume and Variable-Type Production through Flexible Fabrication Using AMR

( TriOrb Inc. )



City	Year of Establishment	Founder
Kitakyushu City, Fukuoka Prefecture	2023	Shuichi Ishida

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners Co.Ltd.	Series A	JPY 1,580 million

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○ Business Plan

Due to the lack of flexibility in current mass production lines in the manufacturing industry, we propose a flexible fabrication production system based on AMR utilizing the ball-driven omnidirectional movement mechanism "TriOrb BASE." This system addresses the challenges of variable-volume and variable-type production, aiming to enhance productivity and efficiency in the manufacturing sector.

○ Research Outline

"In this research and development project, we aim to improve the TriOrb BASE and autonomous mobility systems to control multiple AMRs and achieve integration with various robotics technologies. Our objectives include:Development and validation of AMRs for electronic components and semiconductor manufacturers.Enhancing the intelligence of autonomous mobility systems, including the development of advanced environmental recognition technologies and path generation algorithms.Development of user-friendly robot controllers.Development of an integrated operational control system for multiple AMRs.Development of integration technologies with various robotics, starting with omnidirectional collaborative robots."

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Mobility	STS 2024～2026FY	JPY 387 million	—

Development of an AI Foundation Model for Achieving Fully Autonomous Driving （ Turing inc.）



City	Year of Establishment	Founder
Shinagawa City,Tokyo	2021	Issei Yamamoto

Partner VC	Latest round of Fundraising	Valuation
ANRI	Pre sories A	Non-Disclosure

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- Business Plan  
This project aims to develop an AI foundation model that enables "fully" (Level 5) autonomous driving and to achieve social implementation through collaboration with automobile manufacturers. The applicant's strengths lie in camera-based autonomous driving technology and AI foundation models. This project aims to solve the issues of driver shortages in logistics and mobility challenges for vulnerable road users, thereby significantly contributing to the enhancement of our country's economic strength.
- Research Outline  
In this research, we will develop an end-to-end autonomous driving AI model and carry out the "Tokyo30" project, which involves autonomous driving on the roads of Tokyo for 30 minutes without human intervention. Specifically, the following research will be conducted.

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Mobility	STS 2024～2025FY	JPY 299 million	—



# Development of drug delivery capsule that selectively delivers mRNA et al. to immune cells

## (United Immunity Co., Ltd.)



City	Year of Establishment	Founder
Chuo-ku, Tokyo	2017	Naozumi Harada

Partner VC	Latest round of Fundraising	Valuation
The University of Tokyo Edge Capital Partners Co., Ltd.	Series B	JPY 2,420 million

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### ○ Business Plan

The development of mRNA vaccines and nucleic acid drugs is fiercely competitive worldwide. Conventional drug delivery capsules for delivering nucleic acids to cells have faced some challenges including side effects, storage stability, low cell selectivity, and the potential risk of infringing upon overseas patents. In response, we have invented a novel technology to overcome these challenges, demonstrating high accumulation within immune cells, high efficacy, and strategic avoidance of pre-existing patents. In this project, we aim to establish prototypes of vaccines or pharmaceutical drugs by optimizing the efficacy, safety, and stability of our technology, and develop manufacturing methodologies for large-scale production. Our goal is to address societal challenges, such as potential pandemics following the novel coronavirus, by leveraging domestically developed technology.

### ○ Research Outline

In this project, we aim to accumulate points of differentiation from technologies already in practical use, such as mRNA vaccines, by optimizing capsule compositions using proprietary lipids. In the development of the proprietary lipids, joint research is being conducted with Hokkaido University. The following are the R&D items.

- (1) Optimization of formulation composition
- (2) Concept validation in cells and animals (pharmacological experiments)
- (3) Safety validation in cells and animals
- (4) Establishment of scalable manufacturing processes

Business Area/Field	Research Period	Research Grant Amount	International collaborative technology demonstration
Healthcare	STS 2023~2024FY	JPY 300 million	—