

Unit Name

Integrated Open Systems Unit
Adjunct Professor Hiroaki Kitano

Collaborations

Institut Teknologi Bandung (ITB), Institut Teknologi Bandung (ITB), Indonesia, Gut microbiome study from population with high prevalence of stunting

Corundum Systems Biology Inc., Corundum Systems Biology Inc., Japan, Global deep cohort study characterized by long-term tracking of multi-omics and microbiome and creation of new industries to achieve preventive medicine

Japan Tobacco Inc, Japan Tobacco Inc, Japan, Development of Novel Pluripotent Stem Cell-Inducing Factors Using Parasteatoda tepidariorum

Misawa Homes Institute of Research and Development Co. Ltd., Misawa Homes Institute of Research and Development Co. Ltd., Japan, Development of mobile hydrogen cartridges and transportation system on campus

Metable LLC, Metable LLC, Japan, Development of an Automation System for Metabolomics Analysis

POLA CHEMICAL INDUSTRIES INC., POLA CHEMICAL INDUSTRIES INC., Japan, Development of a new pluripotent stem cell induction technology

Sony Computer Science Laboratories, Inc., Sony Computer Science Laboratories, Inc., Japan, Cybernetic Humanity Project

Yasuda Women's University, Yasuda Women's University, Japan, Analysis of the mechanisms of anti-tumor T cell responses and their application for cancer therapy

University of the Ryukyus, National Institute of Technology Okinawa College, Meio University, National Institute of Technology Okinawa College, Meio University, Japan, An Observational Cross-Sectional Study on Gut Microbiota and Cognitive Function Using Experimental Automation System

Research Personnel

Tai Inui, Visiting Research Student

Hiiro Okano, Visiting Research Student

Kenta Hashiura, Visiting Research Student

Yume Takahashi, Rotation Student

Gabriela Lucia Vega Lopez, Visiting Research Student

Yume Takahashi, Rotation Student

Mikito Ishigaki, Research Intern

Masato Kubota, Research Assistant

Kenji Kamimoto, Visiting Researcher

Hidekazu Nagamura, Visiting Researcher

Takayuki Teruya, Visiting Researcher

Toshiki Kobayashi, Visiting Researcher

Takayuki Kuge, Staff Scientist
Shunichi Kasahara, Visiting Researcher
Maho Uehara, Visiting Researcher
Miho Tamai, Visiting Researcher
Takeru Hashimoto, Visiting Researcher
Kenichiro Arakaki, Research Unit Technician
Moreno Zolfo, Postdoctoral Scholar
Mia Utami Fitria, Postdoctoral Scholar
Naoyuki Taira, Postdoctoral Scholar
Hirotsugu Shiroma, Postdoctoral Scholar
Tai Inui, Visiting Research Student
Sota Hoshi, Visiting Research Student

Scholarly Contributions and Creative Productions (by Faculty)

Book Chapter

1. Kitano, H.
Mission-Critical Policy Decisions in a Pandemic: Japan's Use of AI and Complex Systems Simulation in COVID-19 Response. In *Social Simulation of COVID-19 with AI in Japan* Multi-agent Simulation, Multi-layered AI Simulation, Deep Learning-Based Modelling, and Beyond; Springer Nature, 2025; pp 1–17.

Journal Article

1. Kitano, H.
The Future of Fundamental Science Led by Generative Close-Loop Artificial Intelligence. *Frontiers in Artificial Intelligence* 2026, Volume 9.

Other Scholarly Work

1. Kitano, H.; Granot Mayer, G.
沖縄科学技術大学院大学（OIST）におけるスタートアップエコシステム形成戦略. *月刊経団連 Policy & Action* 2025, 38–40.

Presentation at Conference

1. Kitano, H.
The Nobel Turing Challenge: Creating Autonomous AI Systems as the Engine of Scientific Discovery for Human Metaverse Medicine. The 4th WPI-PRIME International Symposium 2026.
2. Kitano, H.
AI as a Scientist. HPP Global 2026 2026.
3. Kitano, H.
サイバネティック・サイエンティスト: AIとロボティクスによる人間の科学者の能力拡張と補完が実現する科学的発見の加速. 第52回日本毒性学会学術年会（特別賞受講者講演） 2025.
4. Kitano, H.
Cybernetic Scientist: AI and Robotics to Revolutionize the Process of Scientific Discovery by Augmenting and Complementing Human Capabilities. IRCN Neuro-inspired Computation Course2025 2025.
5. Kitano, H.
The Machine Scientist "Building AI That Can Make Nobel-Worthy Discoveries. *Converge* \OIST 2025.

- Kitano, H.
Overview and Highlights of COVID-19 AI & Simulation Project. FoPM 4PM Seminar 2025.

Seminars

- Kitano, H.
日本の研究開発体制再構築への戦略的ブループリント：ランドスケープ・デザインからエコシステムの実装まで. 2025.
- Kitano, H.
Let AI Be a Scientist. 2025.
- Kitano, H.
人工知能による産業変革、そして日本の戦略. 2026.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Publisher	Year Pub
Shunichi Kasahara	Book Chapter	The Interaction Between Self-Recognition of a 'Moving Face' and the Sense of Agency	Seita no Kagaku (June 2025), The Science of Faces	IGAKU SHOIN	2025
Hirotsugu Shiroma	Poster Presentation at Conference	Development of automation system for microbiome research	Labratory Automation Developers Conference 2025		
Kenichiro Arakaki	Poster Presentation at Conference	Evaluation of Regional Energy Self-Sufficiency Using Hydrogen Energy	Japan Solar Energy Society Conferance 2025		
Shunichi Kasahara	Presentation at Conference	Conversational Agents on Your Behalf: Opportunities and Challenges of Shared Autonomy in Voice Communication for Multitasking	ACM CHI 2025	ACM	4-26-2025
Shunichi Kasahara	Presentation at Conference	Realism Drives Interpersonal Reciprocity but Yields to AI-Assisted Egocentrism in a Coordination Experiment	ACM CHI 2025	ACM	4-26-2025
Shunichi Kasahara	Presentation at Conference	Cybernetic humanity: exploring the new humanity emerging from the integration of humans and computers	Vision Society of Japan 2025 Symposium	Vision Society of Japan	1-23-2025
Hirotsugu Shiroma	Presentation at Conference	Development of the robot-based automation system for microbiome research and its application study	IIBMP2025		
Hirotsugu Shiroma	Presentation at Conference	Development of automation system for microbiome research	Laboratory Automation Monthly Workshops		
Shunichi Kasahara	Seminars	NII Shonan Meeting No.216: Human-Computer-Interfaces × Neuroscience	NII Shonan Meeting	National Institute of Informatics	2025
Moreno Zolfo	Seminars	Towards a fully automated lab for human gut microbiome research: the MANTA project	Microbiome Research Workshop, Institute of Science Tokyo		
Moreno Zolfo	Seminars	TBD	Bridging Excellence in AI Science – India-Japan		

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Meeting on the Nobel
Turing Challenge

Honors, Awards & Fellowships

Term 3 2025 - Term 3 2025	特別賞, 2025, 第52回日本毒性学会学術年会 [Fiscal Year: 2025-07-03]
Term 1 2019 - Ongoing	Recognition in the Good Design Awards 2019 (Best 100) and Good Focus Award, 2019, Good Design Awards 2019

Honors, Awards & Fellowships [By Unit Members Only]

Term 1 2025 - Term 1 2025	Hirotsugu Shiroma, Best poster prize, 最優秀ポスター賞, 2025, Laboratory Automation Suppliers' Association, 最優秀ポスター賞 [Fiscal Year: 2025-09-25]
Term 3 2025 - Ongoing	Shunichi Kasahara, Best Paper Prize, Best Paper Prize, 2025, ACM CHI2025, NA [Fiscal Year: 2025]

External Service

Term 2 2025 - Term 2 2026	客員教授, 国立大学法人山口大学 [Fiscal Year: 2025-04-01]
Term 3 2023 - Term 2 2025	生命機能科学研究センター (BDR) アドバイザリー・カウンシル 委員, 国立研究開発法人理化学研究所 [Fiscal Year: 2023-08-10]
Term 2 2023 - Ongoing	「パンデミックに対してレジリエントな社会・技術基盤の構築」領域アドバイザー, JST [Fiscal Year: 2023-04-01]

Outreach Activities [For Unit Members Only]

Term 2 2026	Hirotsugu Shiroma, Laboratory Automation Monthly Workshops [Fiscal Year: 2026-01-23]
Term 2 2026	Yume Takahashi, IST x SWY Roundtable Meetup, OIST [Fiscal Year: 2026-03-11]
Term 2 2026	Naoyuki Taira, Creating a Sustainable Society based on Scientific Research, JST [Fiscal Year: 2025-06-17]
Term 1 2025	Shunichi Kasahara, Panel Discussion in Asia Society Policy Salon Tokyo, OIST [Fiscal Year: 2025]
Term 1 2025	Shunichi Kasahara, OIST Exhibition & Experiment "Nature Resonance, Urban Echoes", OIST [Fiscal Year: 2025]
Term 3 2025	Shunichi Kasahara, Talk and demo tour at Converge Meeting 2025, OIST [Fiscal Year: 2025]
Term 3 2025	Shunichi Kasahara, Public Experiment at Miraikan: "AI Clone Science Communicator", OIST [Fiscal Year: 2025]
Term 3 2025	Kenichiro Arakaki, Creating a Sustainable Society based on Scientific Research, SHIMA2025 [Fiscal Year: 2025-08-22]
Term 2 2025	Moreno Zolfo, Workshop co-host, Microbiome Virtual International Forum APS [Fiscal Year: 2025-04-01]

Term 2 2025 Kenichiro Arakaki, Lecture, "What is comfortable living with 100% renewable energy? - Sustainable Living Architecture", HiSci Lab 2025, OIST [Fiscal Year: 2025-01-13]

Term 2 2025 Hirotsugu Shiroma, Introduction about research and career path, OIST [Fiscal Year: 2025-02-05]

Workshops and Seminars [Organized and Hosted by Faculty/Units]

Title	Location	Co-Organizers	Date
Augmented Humans 2026	OIST		2026-03-16
Laboratory Automation Monthly Workshops	OIST	Laboratory Automation Suppliers' Association	2026-01-23