

No.	Center/Division	Host laboratory	Overview of research and projects the REF will participate in	Mathematical, computational, and/or IT skills required of the REF * Applicants are not required to have all of the following skills; applying with knowledge, technical skills, or experience in any of them is acceptable.	Laboratory Head	Contact
1	TRIP-CoRe	Research DX Foundation Team	Collaborate with various research sites within RIKEN, from physics to biology, to promote the acceleration and innovation of research through digital technology, including the collection, management, and sharing of research data, data analysis, automation, and the promotion of collaboration. The REF will be involved in research engineering and interdisciplinary research communication across multiple projects, including research fields different from their previous expertise. Through these experiences, they are expected to become an individual capable of playing an active role across fields.	Those who possess any of the following research engineering skills and wish to tackle problem-solving in combination with knowledge of their specialized field, or those who are eager to challenge new fields using these skills: – Research digitalization (research data management, electronic lab notebooks, etc.) – Research efficiency (automation, simulation, optimization, etc.) – Data analysis (statistics, machine learning, image analysis, etc.) – IT (applications, networks, DB, devices, etc.)	Shuichi Onami	onami-sec@riken.jp
2	IMS	Laboratory for Large-Scale Biomedical Data Technology	To contribute to the understanding of genomic transcriptional regulation mechanisms, the REF will conduct cutting-edge technological development to construct ground-truth datasets that can be used for AI and machine learning from various omics data. In addition, in large-scale data production projects such as FANTOM, the REF will participate data coordination group utilizing advanced technologies such as AI and lead the integrated analysis of large-scale life science data.	It is desirable to have skills or experience in any of the following: data engineering, data science, AI technology utilization/application, data standardization/ontology, data quality evaluation, dataset design, etc.	Takeya Kasukawa	takeya.kasukawa@riken.jp
3	IMS	Data Informatics Collaborative Project	Support cutting-edge analysis of multi-layered omics information such as genome, transcriptome, epigenome, and spatial omics information in human and model organisms. The REF will participate in data-driven research directly linked to the elucidation of diverse life phenomena, and will lead next-generation life sciences through the construction of an advanced analytical platform that integrally interprets complex multi-omics data.	We welcome applicants with skills in any of the following: general bioinformatics analysis technology, machine learning algorithm development, mathematical statistical analysis technology, and genome/omics information analysis.	Yukinori Okada	yokada@riken.jp
4	IMS	Genomics and Transcriptomics Unit	We are collaborating with research teams to advance disease research—including region-specific pathophysiology in neurodegenerative diseases and immune escape mechanisms in cancer. Building on this work, we are developing a platform for quantitative functional prediction of genomic variants through multi-omics data integration and causal inference, establishing a data analysis infrastructure that supports direct translation into medical applications.	Candidates are expected to possess expertise or experience in at least one of the following areas: modeling skills to integrate microscopic images and spatial omics data using advanced AI techniques to elucidate the mechanisms of the tissue microenvironment, or algorithm optimization skills to quantitatively predict the functional impacts of genetic variants using causal AI models.	Yukihide Momozawa	momozawa@riken.jp
5	BDR	Genomics Research and Analysis Support Team	The REF will participate in genomics research projects centered on next-generation sequencing (NGS), contributing from experimental design through data analysis and biological interpretation. The work will include diverse omics approaches, including single-cell and spatial analyses. The REF will also develop analytical methods, analysis pipelines, computational environments, and data management frameworks, and is expected to play a leading role in advancing cutting-edge life science research through AI and advanced computational approaches.	Relevant skills and experience include bioinformatics, particularly DNA sequence and omics data analysis, together with a basic understanding of life sciences. Experience working collaboratively with researchers and adapting analytical approaches to diverse research questions is also desirable. Additional strengths include experience or interest in managing computational environments and research data, as well as the ability to independently learn and apply emerging AI/machine-learning, statistical, and mathematical methods to specific research needs.	Takefumi Kondo	takefumi.kondo@riken.jp
6	BDR	Data Management Team	Integrate and manage imaging, omics, and other research data, while contributing to data analysis support and database development. The REF will work with individual laboratories to develop research data infrastructure and promote data-driven research. The role will involve organizing, standardizing, and sharing data; developing analysis pipelines; and supporting database development and public release. Through involvement in multiple laboratory projects, the REF is expected to gain practical expertise in handling diverse data types and analytical challenges.	Practical skills in data analysis using Python or R, Linux environments, and workflow automation are required. Familiarity with image, omics, and tabular data, databases, and metadata management is desirable. The ability to apply statistical analysis, machine learning, image analysis, and visualization to research tasks is also important. We value the ability to understand life science research contexts, identify issues with researchers, and implement appropriate technical solutions.	Shuichi Onami	onami-sec@riken.jp

7	CBS	Neuroinformatics Unit	Promote the construction of a data repository system responsible for the collection and sharing of diverse neuroscience data, and the cutting-edge development of domain-specific metadata annotation technologies. The REF will play a central role in driving open science and creating interdisciplinary fusion of neuroscience, AI, and mathematical sciences. Through the introduction of the latest generative AI and advanced technical support, the REF will play a role in supporting the next-generation research infrastructure.	Advanced mathematical and mathematical science knowledge to appropriately interpret AI outputs is essential. Additionally, data management skills, such as constructing repository systems that promote the use and application of research data and developing domain-specific metadata annotation technologies, are emphasized. Furthermore, a wide range of specialized knowledge and practical skills related to overall information infrastructure, including support for the introduction of the latest AI technology, operation of network security, and database maintenance and management, are required.	Tomomi Shimogori	tomomi.shimogori@riken.jp
8	BRC	Integrated Bioresource Information Division	To expand the use and application of bioresources (mice, cell lines, etc.), the REF will lead the advancement of cutting-edge information systems utilizing AI technology. In addition, the REF will participate in the development of cutting-edge foundation models for animal behavior in the RIKEN AGIS project. Through the information analysis of large-scale data on various biological species, the REF will promote data-driven research that supports the foundation of life sciences.	We welcome applicants with skills in any of the following: development of databases/knowledge graphs, genome analysis, machine learning, image analysis, and time-series analysis/prediction.	Hiroshi Masuya	hiroshi.masuya@riken.jp
9	CSRS	Metabolome Informatics Research Team	Organize comprehensive data on metabolites, called metabolome or lipidome, based on mass spectra and measurement conditions to construct a complete picture of the compounds. The REF will also be involved in constructing decentralized networks, including standardization and database linkages for integration.	An interest in molecular structures and compositional formulas. Because there is a lot of interaction with overseas counterparts, communication in English is a plus. Understanding of technical aspects such as server management, networking, and security.	Masanori Arita	masanori.arita@riken.jp
10	RAP	Image Processing Research Team	Participate in creative research and development to construct innovative simulation shape models from measurement images in cutting-edge fields such as advanced semiconductors, robot CT, and organoid cell recognition. Through the practice of converting complex real-world images into advanced mathematical models, the REF will promote data science research that fuses image analysis and simulation.	Image recognition, deep learning, generative AI, multimodal integration.	Hideo Yokota	iprt_sec@ml.riken.jp
11	RNC	Data System Team	To support cutting-edge physics experiments, the REF will promote (a) the acceleration of signal processing and data analysis algorithms, and advanced offloading to hardware accelerators such as GPUs and FPGAs. Furthermore, the REF will participate in (b) cutting-edge research and development for low-latency and wide-bandwidth networks and storage for next-generation infrastructure.	For both (a) and (b), experience and skills in data processing and analysis in physics. For (a), understanding of analytical or data science-based algorithms. For (b), basic knowledge of networks and storage.	Hidetada Baba	baba@ribf.riken.jp
12	RNC	Heavy Element RI Data Team	The REF will take on the challenge of fully automating beam tuning and experiments at the Radioactive Isotope Beam Factory (RIBF), one of the world's most powerful RI beam facilities; drive the development and operational deployment of BYACO, a world-leading, innovative platform integrating advanced data analysis with large-scale experimental apparatus; and lead cutting-edge system integration technologies—including AI agents and digital twins—along with a data analysis infrastructure with an innovative interface for real-time situational awareness.	Required skills include experience in data analysis for nuclear/particle physics experiments, program development for experiment automation, or program development utilizing the latest information technologies such as AI, as well as development experience in Python, C++, or JavaScript. Preferred skills include experience in system or framework development, and hands-on experience developing or applying technologies related to experiment automation, such as AI agents, digital twins, predictive maintenance, and anomaly detection.	Toshiyuki Sumikama	toshiyuki.sumikama@riken.jp
13	RSC	Control System and Data Infrastructure Group	The following projects conducted jointly with other centers within RIKEN and the Argonne National Laboratory in the US: 1) Real-time processing of Tbps-class data by near-sensor edge logic circuits for the X-ray detector CITIUS; 2) Smart beamlines where AI agents autonomously conduct experiments; 3) High-security, ultra-wideband data infrastructure using IOWN; 4) AI-based advancement of sequential analysis methods in data analysis for advanced semiconductor samples, etc.	It is desirable to have research and development experience in any of the following: experiment control or data analysis for synchrotron X-ray analysis, image reconstruction/mathematical optimization, high-speed digital circuits using FPGAs, AI/machine learning, control software, networks, or storage. In addition, the ability to collaborate with researchers from different fields and both domestic and international researchers to drive research and development is essential.	Takaki Hatsui	hatsui@spring8.or.jp

14	RSC	AI-Assisted Beam Control Development Team	Research and develop innovative AI agents and ML tools toward the autonomous optimization and high performance of the accelerators of the world-class synchrotron radiation facility SPring-8/SACLA. By developing and integrating autonomous exploration systems for real-time control and hardware design using digital twins and generative AI, the REF will contribute to next-generation accelerator design innovation and the strengthening of the research infrastructure for synchrotron radiation science.	Theoretically: Specialized knowledge in machine learning such as DNN, Transformer, Bayesian learning, and optimization theory, as well as physics/mathematics such as electromagnetism, analytical mechanics, linear algebra, numerical analysis, statistics, and beam optics. Technically: In addition to proficiency in C++, Python, CUDA, and Linux environments, advanced implementation and development skills in PyTorch, MPI, container technology, DB, HPC workflows, data visualization, etc., are required.	Hirokazu Maesaka	hirokazu.maesaka@riken.jp
15	RQC	Quantum Computer System Design Research Team	Participate in innovative software development that supports hardware/software co-design and system modeling toward the realization of fault-tolerant quantum computers (FTQC), which will be responsible for next-generation computational science. As a member of the development team leading the development of large-scale quantum computer systems domestically and internationally, the REF will promote the construction of an open software stack.	– Skills to design and develop large-scale software – Skills to investigate trends in technologies required for quantum computers in the future and formulate plans – Skills to select appropriate technologies and designs according to the intended use and purpose	Yasunari Suzuki	yasunari.suzuki@riken.jp
16	R-CCS	Facility Operations and Development Unit	Participate in the research and development of cutting-edge facility infrastructure technologies supporting ultra-large-scale supercomputers such as “Fugaku” and next-generation flagship machines. Lead innovative conceptual design and equipment update planning that comprehensively optimizes everything from information equipment to electrical, cooling, and air-conditioning facilities, responding to the increasing density and heat generation of computer systems.	Practical knowledge and experience in the following are welcomed. In particular, an aptitude for conceptual design that consistently grasps the entire facility infrastructure from the requirements of information equipment is emphasized. – Understanding of power and heat generation characteristics of information equipment and facility requirements – Knowledge of the configuration of electrical and cooling facilities in data centers, etc., and conceptual design ability – Overall conceptual ability to optimize equipment and facility infrastructure – Experience in creating specifications and cost estimation documents, and knowledge of related laws and regulations – Performance evaluation and data analysis skills, and technical negotiation skills in Japanese	Shinichi Miura	shinichi.miura@riken.jp
17	R-CCS	System Operations and Development Unit	Participate in research and development to innovate the operation technology of large-scale systems such as the world’s premier supercomputer “Fugaku”. Implement utilization methods that realize stable and efficient operation based on a deep technical understanding of the hardware and software of the system. Understand the objectives of the users and lead the introduction and development of new technologies to further advance system provision services.	– Basic understanding of hardware and software constituting computer systems – Understanding of programming languages and programming experience using any programming language – Experience as a member in executing projects with multiple people, and experience in building consensus through negotiations with stakeholders	Yuji Iguchi	yuji.iguchi@riken.jp
18	R-CCS	Software Development Technology Unit	Lead the creative research, development, and advanced preparation of next-generation programming environments for GPUs supporting cutting-edge computational science. Participate in the development of foundational technologies that maximize the performance of the latest hardware architectures, and promote innovative system research in the HPC (High-Performance Computing) field.	Software development on Linux, program development using AI, HPC programming including GPUs and performance evaluation, knowledge of compilers and programming environments.	Hitoshi Murai	h-murai@riken.jp
19	R-CCS	Data Integration Technology Unit	Leveraging the overwhelming data processing power of “Fugaku,” lead the research, development, and operation of a cutting-edge data utilization platform that links with diverse computing resources and observation equipment. Furthermore, participate in the innovative construction of advanced research management platforms, pre/post-processing including visualization, and complex workflow processing, strongly supporting next-generation data-driven science.	Skills in the information field to operate systems, verify operations, and measure performance, along with knowledge of foundational technologies such as OS, hardware, networks, and storage.	Toshihiko Kai	toshihiko.kai@riken.jp
20	R-CCS	Advanced Operation Technologies Unit	To innovate the operation of ultra-large-scale systems such as “Fugaku”, lead the advancement of computer operation technology and the development of new services utilizing the latest AI. Lead research and development on data center operation optimization, analytical platform design for massive operational big data, autonomous system improvement, and new methods of utilizing supercomputers utilizing virtualization and the cloud.	– Basic understanding of hardware and software composing computer systems. – Programming experience using any programming language. – Experience in, or willingness to, actively utilize Agentic AI to promote tasks such as programming, documentation, system design, and operation.	Keiji Yamamoto	keiji.yamamoto@riken.jp

21	R-CCS	AI Operation Technologies Unit	Lead research and development toward innovative advancement of large-scale computing services and extreme efficiency of operations by fully utilizing the latest AI technology. Participate in the construction of an intelligent and autonomous service platform in the next-generation HPC environment, and promote cutting-edge system operation and development that integrates AI and supercomputing.	– Basic knowledge of Large Language Models (LLM) and generative AI technologies, programming experience, basic operations in Linux/UNIX environments, spontaneous learning motivation, and flexible communication skills. – Experience utilizing generative AI, especially code development using AI agents, in business operations.	Satoshi Matsuoka	shoji@riken.jp
22	R-IH	Data Knowledge Organization Unit	The laboratory integrates a wide range of research data based on the scientific concepts they represent and their broader research contexts, thereby building a next-generation research knowledge infrastructure that accelerates scientific progress. By leveraging state-of-the-art AI technologies that support the transformation of data into knowledge, the laboratory leads the design and generation of metadata, the organization of metadata into coherent frameworks, and the development of advanced search and discovery technologies. It structures research outputs into an innovative knowledge base and pioneers the development of capabilities that enable the search, discovery, and reuse of research data.	Candidates should have expertise or research experience in one or more of the following areas of information science: semantic technologies; the deployment and use of large language models in local computing environments; and research data management.	Norio Kobayashi	isc-dko-secretary@ml.riken.jp
23	R-IH	Data Management System Unit	Conduct research and development on innovative data management methods necessary for collaboration with AI agents and advanced system operation technologies incorporating AI in RIKEN's research data management system. Establish functions and environments where AI agents can autonomously utilize research data and metadata, and establish a next-generation research data management infrastructure supporting AI-driven data science.	– Basic operations in Linux, including tasks with administrator privileges. – Knowledge of SSH, Web Server, docker/VM (not strictly required at the start). – Experience using at least one programming or scripting language. – Ability to conduct research using open source communities and public documents.	Hideyuki Jitsumoto	isc-dms-secretary@ml.riken.jp
24	R-IH	Advanced Networking Technology Unit	Research and development to support scientific activities through better use of networks and information systems, including network performance improvement, system and application optimization, and the design and improvement of research IT infrastructure.	Operation and user support of network or cloud computing systems, and software development.	Katsushi Kobayashi	ikob@riken.jp
25	R-IH	Life Science Data Sharing Unit	The REF will play a leading role in developing innovative technologies for an integrated data infrastructure that brings together massive, multi-scale and multimodal life science datasets, enabling integrative analyses and predictive research. The REF will work at the core of a cutting-edge initiative to strengthen interoperability and integration among data infrastructures operated at multiple sites and to advance data-driven life science research through the use of state-of-the-art AI technologies.	We are seeking candidates who possess one or more of the following research engineering skills and are eager to apply them, in combination with their domain expertise, to solving research challenges, or who are motivated to leverage these skills to explore and contribute to new research fields. –Research digitalization: research data management, electronic lab notebooks, and related technologies –Research efficiency and acceleration: automation, simulation, optimization, and related technologies –Data analysis: statistics, machine learning, image analysis, and related technologies –Information technology (IT): applications, networks, databases, devices, and related technologies	Shuichi Onami	onami-sec@riken.jp
26	R-IH	Medical Data Sharing Unit	Participate in research and development on mechanisms to safely and smoothly promote research using sensitive data subject to the Personal Information Protection Law. In the fields of medical AI and "AI for Science", lead the formulation and implementation of AI safety and AI governance, which are highly regarded globally, and build a secure data infrastructure that will become increasingly important in the future.	Linux, Personal Information Protection Law, 3 Ministries & 2 Guidelines (MHLW "Guidelines for Safety Management of Medical Information Systems", METI/MIC "Safety Management Guidelines for Information System/Service Providers Handling Medical Information"), Next Generation Medical Infrastructure Law, on-premises operation of Large Language Models, and red teaming.	Jun Seita	jun.seita@riken.jp
27	R-IH	Fundamental Physics Data Sharing Unit	Lead open science at the forefront of fundamental physics, including particle, nuclear, and astrophysics. Drive data curation technologies for large-scale, complex physics datasets, develop related software, and build a next-generation data-sharing infrastructure.	"Ability to translate mathematical formulas in physics into computational code" or "Digital twin technology linking experimental data with physics simulations"	Hidetada Baba	fpdsu@ml.riken.jp