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Japan Science and Technology Agency
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JST announces 16 additional Project Managers selected for three goals of the Moonshot Research and Development Program

The Japan Science and Technology Agency (JST) has announced the Project Managers (PMs) selected for the three Moonshot Goals handled by JST under the Moonshot Research and Development Program.

The program pursues challenging R&D concepts set by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in order to solve issues facing our future society such as super-aging populations and global warming. Each of the Moonshot Goals has a Program Director (PD), under which PMs each formulate an R&D scenario, design a project, and plan and manage the organization of R&D to achieve their respective Moonshot Goals.

R&D for Moonshot Goals 1, 3 and 6 started in FY2020, but in order to achieve each Moonshot Goal, additional R&D projects have now been added.

Open calls were held for each Moonshot Goal, and applications were reviewed by PDs in cooperation with external experts. A total of 42 applications were received, after which document and interview screening was conducted to make a final selection of 16 PMs.

Under the direction of their PD, selected PMs will refine their plans to achieve their Moonshot Goal so that the R&D will be more effective and efficient. Once they have received PD approval, each PM can begin their R&D project.

For details, please refer to the website below.
https://www.jst.go.jp/moonshot/en/index.html

Appendix 1: Number of applications and selected PMs
Appendix 2: Selected PMs and projects
Appendix 3: Evaluating experts
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Number of applications and selected PMs

Moonshot Goal	Application	Selected
Moonshot Goal 1 Realization of a society in which human beings can be free from limitations of body, brain, space, and time by 2050. (PD: HAGITA Norihiro)	1 1	4
Moonshot Goal 3 Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings, by 2050. (PD: FUKUDA Toshio)	2 0	7
Moonshot Goal 6 Realization of a fault-tolerant universal quantum computer that will revolutionize economy, industry, and security by 2050. (PD: KITAGAWA Masahiro)	1 1	5
Total	4 2	1 6

Selected PMs and projects

Moonshot Goal 1: Realization of a society in which human beings can be free from limitations of body, brain, space, and time by 2050.

Project Manager	Affiliation	Project Title
ARAI Fumihito	Professor, Graduate School of Engineering, The University of Tokyo	Cybernetic Avatar inside the human body for health and medical care
SHIMPO Fumio	Professor, Faculty of Policy Management, Keio University	Realization of Society where Cybernetic-Avatars will be Used Safely and with Trust
MATSUMURA Takeshi	Director, Wireless Systems Laboratory, Wireless Networks Research Center, Network Research Institute, National Institute of Information and Communications Technology	Research and Development of M×N Multi-pairing Wireless Platform
YAMANISHI Yoko	Professor, Faculty of Engineering, Kyushu University	Interdisciplinary Frontier of Bio-order Extended by Nano- and Micro-bio Avatars

Moonshot Goal 3: Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings, by 2050.

Project Manager	Affiliation	Project Title
UENO Munetaka	Research and Engineering leader, Space Exploration Innovation Hub Center, Japan Aerospace Exploration Agency	New Life Spheres opened up by AI Robots
USHIKU Yoshitaka	Principal Investigator, OMRON SINIC X Corporation	AI & Robots that harmonize with humans to create knowledge and cross its borders
OTAKE Mihoko	Team Leader, RIKEN Center for Advanced Intelligence Project	AI robots which help to envision promising future together with users and encourage action toward it

Project Manager	Affiliation	Project Title
KUNII Yasuharu	Professor, Faculty of Science and Engineering, Chuo University	Evolutionary Swarm Intelligence for Probabilistic Spatial Recognition and Collaborative Construction Scheme in Lunar Future Town
SHIMODA Shingo	Unit Leader, RIKEN Center of Brain Science	Awareness AI Robot System for leading proactive behavior improvement
MORISHIMA Keisuke	Professor, Graduate School of Engineering, Osaka University	New World of inspiration by co-evolution of humans, AI Robots, and Biological Cyborgs
YOSHIDA Kazuya	Professor, Graduate School of Engineering, Tohoku University	Self-Evolving AI Robot System for Lunar Exploration and Human Outpost Construction

Moonshot Goal 6: Realization of a fault-tolerant universal quantum computer that will revolutionize economy, industry, and security by 2050.

Project Manager	Affiliation	Project Title
AOKI Takao	Professor, Faculty of Science and Engineering, Waseda University	Large-scale quantum hardware based on nanofiber cavity QED
OHMORI Kenji	Professor and Chairman, Institute for Molecular Science, National Institutes of Natural Sciences	Large-scale and high-coherence fault-tolerant quantum computer with dynamical atom arrays
KOBAYASHI Kazutoshi	Professor, Organization of Electrical and Electronic Engineering, Kyoto Institute of Technology	Development of a Scalable, Highly Integrated Quantum Error Correction System
TARUCHA Seigo	Group Director, RIKEN Center for Emergent Matter Science and Team Leader, RIKEN Center for Quantum Computing	Development of scalable Silicon quantum computer technology
NAGAYAMA Shota	Project Associate Professor, Graduate School of Media and Governance, Keio University	Scalable and Robust Integrated Quantum Communication System

※The titles of the projects are subject to change after refinement.

Evaluating experts

Moonshot Goal 1 : Realization of a society in which human beings can be free from limitations of body, brain, space, and time by 2050.

	Name	Affiliation
Program Director (PD)	HAGITA Norihiro	Chair and Professor, Art Science Department, Osaka University of Arts
External Experts	INAMI Masahiko	Professor, Research Center for Advanced Science and Technology, The University of Tokyo
	OCHIAI Hiroyuki	Professor, Institute of Mathematics for Industry, Kyushu University
	KANOH Toshiyuki	Senior Chief Engineer, Data Science Research Laboratories, NEC Corporation
	KITANO Hiroaki	President & CEO, Sony Computer Science Laboratories, Inc.
	KOBAYASHI Masahiro	President, HANAMIZUKI LAW OFFICE
	TSUBOI Takashi	Professor, Department of Mathematical Engineering, Faculty of Engineering, Musashino University
	DOI Miwako	Auditor, National Institute of Information and Communications Technology / Executive Vice President, Tohoku University
	TOKUDA Hideyuki	President, National Institution of Information and Communications Technology
	NOHARA Sawako	President & CEO, IPSe Marketing, Inc.
	HIGASHINO Teruo	Vice President, Kyoto Tachibana University
	FUJISAWA Kumi	Chairperson, Institute for International Socio-Economic Studies
	FUKUDA Toshio	Visiting Professor, Institute of Innovation for Future Society, Nagoya University

Moonshot Goal 3: Realization of AI robots that autonomously learn, adapt to their environment, evolve in intelligence and act alongside human beings, by 2050.

	Name	Affiliation
Program Director (PD)	FUKUDA Toshio	Visiting Professor, Institute of Innovation for Future Society, Nagoya University
External Experts	ISHIZUKA Mitsuru	Professor Emeritus, The University of Tokyo
	UEKI Miwa	Project Manager, Conversing Technologies Laboratory, Fujitsu Limited
	UEDA Naonori	Fellow, NTT Communication Science Laboratories / Deputy Director, RIKEN Center for Advanced Intelligence Project
	OKURA Michiko	Professor, S.I.T. Research Laboratories, Shibaura Institute of Technology
	OKUNO Hiroshi G.	Professor Emeritus, Kyoto University
	OBATA Nobuaki	Professor, Graduate School of Information Sciences, Tohoku University
	KASAHARA Hironori	Senior Executive Vice President for Research, Waseda University
	KUBOTA Takashi	Professor, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (JAXA)
	KOKUBU Hiroshi	Professor, Graduate School of Science, Kyoto University
	SHIOZAWA Keiko	Director, Product Service Division, AdIn Research, Inc.
	TATEYAMA Kazuyoshi	Professor, Research Organization of Science and Technology, Ritsumeikan University
	TOMOEDA Toshio	Dean, School of Sociology, Kansai University of International Studies
	NAKASUKA Shinichi	Professor, Graduate School of Engineering, The University of Tokyo

	HASHIMOTO Hideki	Professor, Faculty of Science and Engineering, Chuo University
	MIYASHITA Tomoyuki	Professor, Faculty of Science and Engineering, Waseda University

Moonshot Goal 6: Realization of a fault-tolerant universal quantum computer that will revolutionize economy, industry, and security by 2050.

	Name	Affiliation
Program Director (PD)	KITAGAWA Masahiro	Professor, Graduate School of Engineering Science, Osaka University
External Experts	ISHIUCHI Hidemi	Former President, Evolving nano process Infrastructure Development Center, Inc., EIDEC
	IMOTO Nobuyuki	Project Professor, Office of Senior Professor, The University of Tokyo
	OZAWA Masanao	Designated Professor, Center for Mathematical Science and Artificial Intelligence, Chubu University
	KAWABATA Shiro	Deputy Director, Research Center for Emerging Computing Technologies, National Institute of Advanced Industrial Science and Technology
	KOZUMA Mikio	Professor, Institute of Innovative Research, Tokyo Institute of Technology
	SASAKI Masahide	Director General, Quantum ICT Collaboration Center, National Institute of Information and Communications Technology
	SHIGEMOTO Isamu	Chief Research Associate, Advanced Materials Research Laboratories, Toray Industries, Inc.
	NAKAMURA Yasunobu	Professor, School of Engineering, The University of Tokyo
	MURAO Mio	Professor, Graduate School of Science, The University of Tokyo
	YAMASHITA Shigeru	Professor, College of Information Science and Engineering, Ritsumeikan University
	WAKAYAMA Masato	Fundamental Mathematics Research Principal, NTT Institute for Fundamental Mathematics, Nippon Telegraph and Telephone Corporation/Professor Emeritus, Kyushu University

Viewpoints in Selection

Our selection was based on the following viewpoints and made in a comprehensive manner.

① Nature as a PM

○ To have a wide human network of relevant researchers within and outside of Japan and to possess specialized knowledge

○ To have the ability for management to construct an optimum R&D institution and review the organization proactively, depending on the status of the progress (including those in relation to the management and usage of research data) and to have leadership ability

② R&D projects proposed by PM

○ The target and/or the contents of the project proposed by the PM (referred to as "proposal contents" from here) must be based on a bolder idea than conventional ones and be a challenging one and must be an innovative one with which a strong impact is expected in the future industry and/or society.

○ The proposal contents must be able to clearly explain the adequate scenario (the hypothesis of the success) from the viewpoint of social implementation including the viewpoint of technology and the assignments of the roles to governmental bodies and private sectors for the achievement of the goal in 2050.

○ The proposal contents must entail collecting the knowledge of researches and developments and ideas at a high level, regardless of their geographical location within or outside of Japan.