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Japan Science and Technology Agency (JST)
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JST to fund nine research projects for COVID-19 Research in Non-Medical Sciences under the Strategic International Collaborative Research Program (SICORP) framework

The Japan Science and Technology Agency (JST) has decided to fund nine projects under the theme of COVID-19 Research in Non-Medical Sciences as a part of the Strategic International Collaborative Research Program (SICORP[1]) (Appendix 1).

Through this call JST is funding COVID-19-related collaborative international research outside the medical field with collaborators already receiving or expecting to be funded by the National Science Foundation (NSF) of the United States, UK Research and Innovation (UKRI) of the United Kingdom, Agence nationale de la recherche (ANR) of France or the National Research Council of Canada (NRC) (Appendix 2).

The call saw a total of 12 proposals submitted, out of which 9 were selected for funding following an expert evaluation and consultation with participating partner funding agencies (Appendix 3).

The research period is scheduled to end in March 2022.

1) SICORP: https://www.jst.go.jp/inter/english/

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Contact

SATO Masaki
Department of International Affairs
Japan Science and Technology Agency (JST)
K's Gobancho, 7 Gobancho, Chiyoda-ku, Tokyo 102-0076
Tel: +81-3-5214-7375
E-mail: intl-joint[at]jst.go.jp

Appendix 1

List of Awarded Projects

1. Projects in collaboration with National Science Foundation (NSF) (United States)

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
1	Comparison of sampling methods for airborne SARS-CoV-2	UETAKE Jun (Japan)	Associate Professor, Hokkaido University	This research investigates the viability of various approaches, including a novel highly-sensitive PCR method, to airborne SARS-CoV-2 detection under controlled conditions with the goal to improve early viral detection in public spaces where viral concentrations may be low. The research is expected to contribute to improved early detection which can contribute to mitigating infection risk in public spaces.
		Thomas Hill (United States)	Research Scientist, Colorado State University	

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
2	Molecular vibrational signatures of SARS-CoV-2 spike protein binding to the ACE2 receptor	Izabela Irena Rzeznicka (Japan)	Professor, Shibaura Institute of Technology	The purpose of this study is to understand the interaction between the SARS-CoV-2 spike protein and the angiotensin-converting enzyme 2 (ACE2) cell receptor. This will be achieved by anchoring the ACE-2 enzyme to the substrate surface and measuring molecular vibrations using the Raman technique with a high spatial resolution. The results of this research will contribute to the development of portable optical platforms and microfluidic devices for real-time viral detection.
		Yin-Ting Yeh (United States)	Assistant Research Professor, The Pennsylvania State University	
3	Development of the key reaction and the mechanistic studies towards discovery of new anti-COVID-19 drugs	NIWAYAMA Satomi (Japan)	Professor, Muroran Institute of Technology	This research aims to synthetically and mechanistically investigate water-mediated desymmetrization reactions as a green chemistry approach to key reactions that play a role in efficient drug candidate production. Results are anticipated to contribute not only to anti-COVID-19 drugs but to the green chemistry field in general.
		Kendall Houk (United States)	Professor, University of California, Los Angeles	

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
4	The effect of testing strategies and public health measures to avert COVID-19 outbreaks	MIZUMOTO Kenji (Japan)	Project Assistant Professor, Kyoto University	This research aims to apply compartment model analyses to airport quarantine and PCR testing strategies used in Okinawa as a case study to investigate cost-effective public health strategies for minimizing COVID-19 infection risks. By investigating the temporal course of infectivity at the individual level through different scenarios, the findings of this research will be of value to decreasing infection rates in various public settings like schools, nursing homes and businesses.
		Gerardo Chowell (United States)	Professor, Georgia State University	

2. Projects in collaboration with UK Research and Innovation (UKRI) (United Kingdom)

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
5	Elucidation of the molecural characteristics of bats to be the natural hosts of human pathogenic viruses including SARS-CoV-2	SATO Kei (Japan)	Associate Professor, The University of Tokyo	This research aims to investigate the molecular principle involved in bats being natural hosts of human pathogenic viruses such as SARS-CoV-2. By understanding the molecular properties of bat cells, including their genetic backgrounds, this research aims to gain a better understanding of cross-species transmission of bat-borne viruses and thus contribute to combating novel emerging viruses in the future.
		Sam Wilson (United Kingdom)	Principal Investigator, MRC-University of Glasgow Centre for Virus Research	
6	Assessing cross-cultural difference and similarities of influences to adolescents in the COVID-19 pandemic: a mixed-method analysis	MORISAKI Naho (Japan)	Chief Researcher, National Center for Child Health and Development	This research builds on ongoing research to investigate cross-cultural differences in risks facing adolescents in a context of the COVID-19 pandemic. Mail, web and social media-based surveys are both quantitatively and qualitatively analyzed to gain a better understanding of how the pandemic affects children and young people's lives, health and well-being and family needs by employing a cross-cultural comparative perspective.
		Polly Waite (United Kingdom)	Senior Clinical Research Psychologist, University of Oxford	

3. Projects in collaboration with Agence nationale de la recherche (ANR) (France)

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
7	Tracing and understanding the origin of SARS-CoV-2 in Asian bats	Christian Vincenot (Japan)	Assistant Professor, Kyoto University	This research aims to gain a better understanding of the origins of SARS-CoV-2 by investigating virus-bat co-evolution dynamics giving rise to different coronavirus lineages. This will be achieved by employing phylogenetic analysis, viral detection and sequencing methods to samples from Rhinolophus bats to map the historical biogeographical origin and spread of such viruses through East and South East Asia. The findings of this research will contribute to our understanding of coronaviruses and in turn inform public health policies by potentially identifying new zoonotic pathways.
		Alexandre Hassanin (France)	Maître de conferences, Sorbonne University	

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
8	How healthcare financing responses to the COVID-19 pandemic vary in different health care financing models – a comparative study of Brazil, Canada, France and Japan	HONDA Ayako (Japan)	Professor, Hitotsubashi Institute for Advanced Study, Hitotsubashi University	This comparative study investigates healthcare financing policies and practices in healthcare service delivery during the COVID-19 pandemic. By analyzing and comparing the institutional arrangements used to fund COVID-19-related health services and sources of funding for the services in different health system contexts, this study will help inform health system policy in anticipation of future similar challenges and will contribute to the debate in countries currently undertaking healthcare financing reform for universal health coverage (UHC).
		Valéry Ridde (France)	Research Director, Centre Population et Développement (CEPED), IRD, Université de Paris	

4. Projects in collaboration with National Research Council Canada (NRC) (Canada)

#	Project Title	Principal Investigators	Position and Institution	Project Abstract
9	MD and 3D-RISM study of the allosteric effects on the interaction between COVID-19 spike and ACE2 protein	YOSHIDA Norio (Japan)	Associate Professor, Kyushu University	This research employs molecular dynamics (MD) simulations and the three-dimensional reference interaction site model (3D-RISM) method to investigate the allosteric effect of ligand binding in the interaction between receptor-binding domain (RBD) and angiotensin-converting enzyme 2 (ACE2) in the virus-cell fusion process of SARS-CoV-2. The research will contribute to efficient screening for drugs which work to inhibit RBD-ACE2 binding in the virus-cell fusion process of SARS-CoV-2.
		Sergey Gusarov (Canada)	Senior Research Officer, National Research Council Canada	

Appendix 2

Call Outline

(1) Application Requirements

International research collaboration with researchers who are receiving or expected to receive research funding by one of the eligible partner funding agencies.

(2) Applicant Eligibility (JST)

Any independent researcher affiliated with, and actively conducting research at, a domestic Japanese research institution, regardless of nationality, is eligible.

(3) Research Period

The research period is expected to last from May 2021 until March 2022.

(4) Amount of Funding (JST)

Up to 7.8 million yen per project (JST-funded side), inclusive of overhead costs (30 percent of direct costs).

(5) Evaluation Method

Proposals are evaluated through an expert evaluation.

(6) Evaluation Criteria

1) Relevance to the call research topic
2) Expected results and impact of research
3) Potential synergy effects of joint research activities
4) Perceived economic and social impacts
5) Potential for continuity in collaboration
6) Feasibility of research implementation (plan, participants, mode of collaboration, budget allocation, etc.)

Appendix 3

List of Evaluators

Name	Position and Institution	Role
KOYANAGI Yoshio	Professor, Kyoto University	Program Officer
AIZAWA Masuo	Professor Emeritus, Tokyo Institute of Technology	Advisor
IWAMOTO Aikichi	Director, Office of Project Management, Japan Agency for Medical Research and Development	Advisor
IWAMOTO Yasushi	Professor, The University of Tokyo	Advisor
AOKI Shin	Professor, Tokyo University of Science	Advisor
KAMEDA Tomoshi	Senior Researcher, National Institute of Advanced Industrial Science and Technology	Advisor
KOHARA Satoshi	CEO, Ecotribute, Inc.	Advisor
TAIJI Makoto	Deputy Director, RIKEN Center for Biosystems Dynamics Research	Advisor
TAKADA Ayato	Professor, Hokkaido University	Advisor
TANAKA Yuzuru	Professor Emeritus, Hokkaido University	Advisor
TSUMOTO Kohei	Professor, The University of Tokyo	Advisor
DOI Miwako	Auditor, National Institute of Information and Communications Technology	Advisor
NAKAZAWA Minato	Professor, Kobe University	Advisor
FUJIMAKI Makoto	Deputy Director, National Institute of Advanced Industrial Science and Technology	Advisor
YAMAMOTO Taro	Professor, Nagasaki University	Advisor
YOKOZAWA Masayuki	Professor, Waseda University	Advisor
WATASHI Koichi	Senior Researcher, National Institute of Infectious Diseases	Advisor