

e-ASIA Joint Research Program (e-ASIA JRP)
Joint Research Project Urgent Call for Proposals on the topic of
“Countermeasures for COVID-19 in Non-medical Research”.

It is our great pleasure to announce the selected projects of the e-ASIA Joint Research Program (e-ASIA JRP)*¹ COVID-19 Urgent Call for Proposals on the topic of “Countermeasures for COVID-19 in Non-medical Research”.

A total of 15 proposals was submitted in response to the Urgent Call for proposals. After careful consideration based on the peer review results by the 5 funding organizations from 4 countries participating in the call*², the following 6 collaborative projects were selected for support with the approval of the e-ASIA JRP Board.

“Mathematical modelling of heterogeneous contact and movement patterns for preventing COVID-19”

to be conducted jointly by:

Japan: Hiroshi Nishiura, Professor, Kyoto University

Thailand: Saranath Lawpoolsri, Associate Professor, Mahidol University

This cooperative research project aims to devise mathematical models that capture the heterogeneous contact patterns as well as distant movement rate, intending to formulate scientific basis to plan prevention programs including forthcoming immunization strategies and non-pharmaceutical behavioral interventions. Mutually compensating modelling techniques for capturing temporal and spatial transmission dynamics, we answer policy-relevant questions via mathematical modelling.

“Comprehensive investigation of SARS-CoV-2-like coronavirus infection in horseshoe bats (a natural host of SARS-CoV-2) and its effect on bat immunity and behavior”

to be conducted jointly by:

Japan: Kei Sato, Associate Professor, The University of Tokyo

Vietnam: Thong Vu Dinh, Associate Professor, Institute of Ecology and Biological Resources, VAST

This collaborative research aims to reveal the infection of SARS-CoV-2-like coronaviruses in horseshoe bats, a putative natural host of SARS-CoV-2. Our international interdisciplinary study of virology, molecular phylogenetic, bioinformatics, ecology and ethology reveals the effect of virus infection on bat immunity and behavior, which shows the dynamics of virus infection in bats and the risk of viral spillover to humans.

“Development of a Simulation Model for Prediction of the Next Outbreak of Bat derived Coronavirus Infection in Human”

to be conducted jointly by:

Japan: Tsutomu Omatsu, Associate Professor, Tokyo University of Agriculture and Technology

Philippines: Phillip Alviola, Associate Professor 7, University of the Philippines Los Banos (UPLB)

Vietnam: Ngan Pham, Associate Professor, Vietnam National University of Agriculture (VNUA)

This collaborative research aims to develop a simulation model for prediction of the next outbreak of the bat derived coronavirus infection in human. To this aim, we will collect epidemiological information on coronavirus on bats in the Philippines and Vietnam and develop a simulation model coupled them together with meteorological data, vegetation data, land use data, and bat ecological data to develop a simulation model.

“Research and development on Media literacy and anxiety reduction during Covid-19 pandemic by using Inquiry Based Instruction with Instructional Package for Thailand and Vietnam Undergraduates”

to be conducted jointly by:

Thailand: Tasanee Sathaphong, Lecturer, Suan Sunandha Rajabhat University

Vietnam: Tan Dat Nguyen, Vice Dean, Can Tho University of Medicine and Pharmacy

This cooperative research project aims to

1. To study the condition Problems and opinions of tertiary educators and students in Thailand and Vietnam regarding media literacy and COVID-19 anxiety.
2. To develop a learning management model, investigation process with a series of activities to promote media literacy and reduce COVID-19 anxiety of tertiary level students.
3. To study the effectiveness of the learning management model, the investigation process together with the activity package by the results of the experiment using the teaching model.
4. To present the media knowledgeable solutions to the COVID-19 crisis and alleviate the anxiety of tertiary level students in Thailand and Vietnam.

“Multidisciplinary Collaborative Research for Developing a COVID-19 Policy Risk Index (COV19PRI) to Overcome the Impact of COVID-19 Pandemic in 3 Asian Megacities”

to be conducted jointly by:

Japan: Akira Mukaida, General Manager, Remote Sensing Technology Center of Japan (RESTEC)

Philippines: Marlon Era, Associate Professor, De La Salle University
Thailand: Voranop Viyakarn, Associate Professor, Chulalongkorn University

This research aims to first develop a multicriteria risk index considering multiple factors affecting the spread of COVID-19 to provide policymakers with insights for a timely pandemic response and then to use the developed index to evaluate government responses in three Asian megacities of Tokyo, Bangkok, and Manila. The Japanese team provides policy analysis and geospatial insights to the project using promising remote sensing data and technologies. The Filipino team supports the establishment of behavioral-linked indicators as one of the multiple factors that would pose risk from epidemics such as that of COVID-19. One Thai team aims to assess the possible association of atmospheric components such as PM 2.5 and COVID records. The other Thai team will carry out research using data from social media.

“Development of MiByo prevention method by AI proteomics”

to be conducted jointly by:

Japan: Nobuhiro HAYASHI, Associate Professor, Tokyo Institute of Technology
Philippines: Neil Andrew Bascos, Assistant Professor, University of the Philippines
Thailand: Sittiruk Roytrakul, Researcher, National Center for Genetic Engineering and Biotechnology

This collaborative research aims to develop a method to prevent adverse health condition including infectious diseases like COVID-19 through the detection of pre-illness ("MiByo") state. It is realized based on the combination of ① knowledge obtained from the integration of AI processing technology with proteomics image data obtained from high-performance two-dimensional electrophoresis technology developed in Japan (Tokyo Institute of Technology), ② ultimate mass spectrometry-based proteomics approach from Thailand, and ③ genomics approach from the Philippines.

On behalf of the e-ASIA JRP, we would like to offer our sincerest congratulations to the project teams, and look forward to the significant impact their results will bring to our society in the future.

*1 The e-ASIA Joint Research Program (e-ASIA JRP)

Through exchange and collaboration, the e-ASIA Joint Research Program (e-ASIA JRP) aims to strengthen scientific and technological research and development capabilities towards resolving shared challenges across the East Asia region. These include challenges associated with materials, alternative energy, agriculture, health research, disaster risk reduction and management, advanced interdisciplinary research towards innovation, and environment.

As part of that objective, the e-ASIA JRP is intended to support collaborative research among three or more of its member countries, in principle. Through joint research among participating countries in agreed fields, it is the goal of the e-ASIA JRP to contribute to economic and human resource development, and to the resolution of various challenges in the region.

e-ASIA JRP's homepage: <http://www.the-easia.org/jrp/>

*2 The list of organizations participating in the COVID-19 Urgent Call for proposals on the topic of "Countermeasures for COVID-19 in Non-medical Research":

- Japan: Japan Science and Technology Agency (JST), Japan
URL: <https://www.jst.go.jp/EN/>
- Department of Science and Technology (DOST-PCHRD), Philippines
URL: <http://www.pchrd.dost.gov.ph/>
- National Research Council of Thailand (NRCT), Thailand
URL: <https://www.nrct.go.th/en>
- Agricultural Research Development Agency (ARDA), Thailand
URL: <http://www.arda.or.th/eng/index.php/en/>
- Ministry of Science and Technology (MOST), Vietnam
URL: <http://www.most.gov.vn/Desktop.aspx/Home-EN/>

Contact

Yoshihide Kobayashi (Mr.)

e-ASIA Special Program Coordinator

e-ASIAJRP Secretariat

Tel: +66 (0)2 564 7713

HP: +66 (0)61 421 0316

E-mail: easia_secretariat@jst.go.jp

<https://www.the-easia.org/jrp/>