Quick Research Project for Safeguarding People and Society

Preparing for the Next Societal Crisis

At the Institute of Innovative Research, we launched the "Research Project for Overcoming Coronavirus Disasters" in June 2020, promoting research across 21 themes. In response to the transition to Category 5 under the Infectious Diseases Control Law in May 2023, we expanded the project's scope and initiated the "Quick Research Project for Protecting People and Society" (abbreviated as QR Project) to prepare for the next societal crisis.

In the QR Project, we will gather experts with the scientific and technological seeds necessary for solving societal issues, regardless of their affiliation within or outside the university. We will conduct research in a short-term, intensive manner to swiftly address the pressing issues.

Research Focus

The research focus of the QR Project encompasses societal issues that require swift solutions, including unknown infectious diseases, unpredictable major earthquakes, and natural disasters, all of which demand urgent resolution, even within a day. When urgent societal issues arise, the university harnesses its research capabilities to promptly engage in studies aimed at safeguarding people's lives and society. Additionally, ten research themes previously pursued under the "Research Project for Overcoming Coronavirus Disasters" will continue to be investigated in the QR Project.

Current Research Themes

Medical Devices

- Magnetically levitated centrifugal blood pumps for ECMO
- Development of flexible near-infrared image sensors
- Remote vital sensing (Detection of human posture in a closed room)

Virus Removal and Inactivation

- Fast and non-contact sterilization/virus inactivation using atmospheric plasmas
- An air purification device with large capacity
- Deposition and evaluation of antibacterial and antiviral properties of DLC films

Diagnostics and Vaccines

- Platform for rapid development of one-pot diagnostics for combating future pandemics
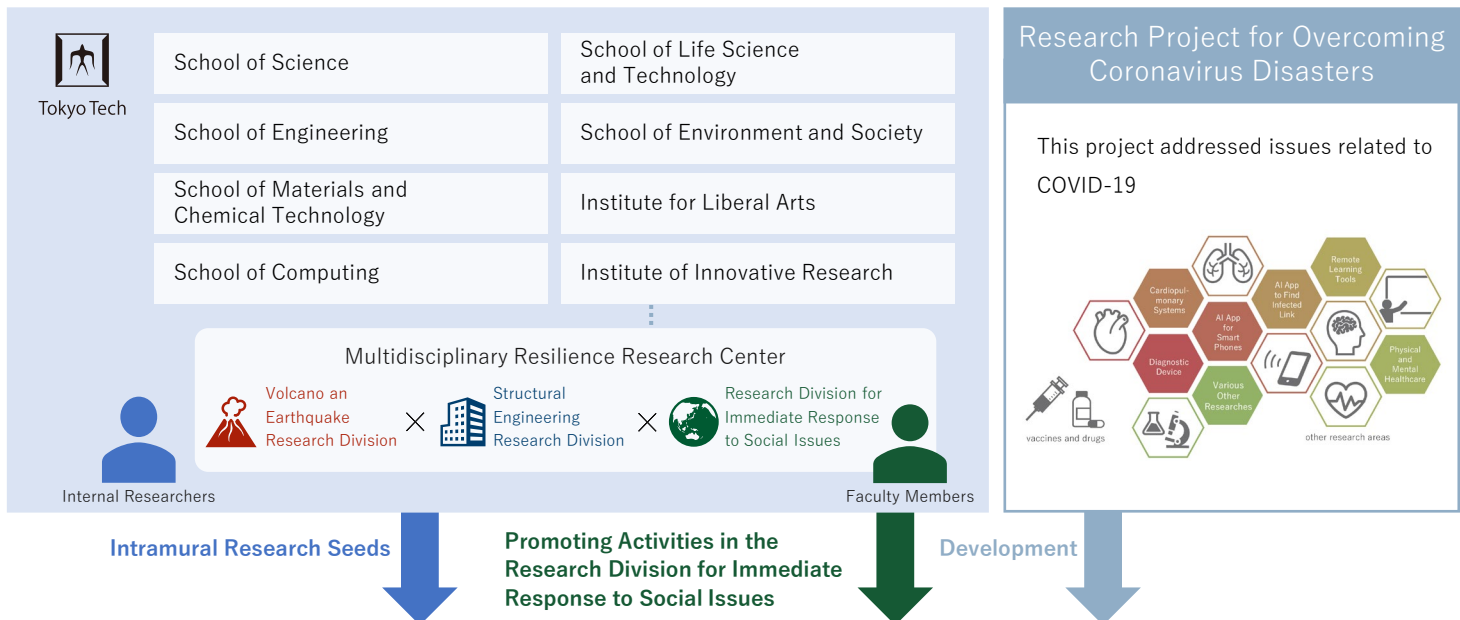- Innovative PCR method for SARS-CoV-2

Future Projections

- Observation of social and economic phenomena and future predictions based on mathematical models

Work Style Reform

- Video conferencing service that allows multiple conversations

QR Project is conducting research within the "Research Division for Immediate Response to Social Issues" at the Multidisciplinary Resilience Research Center. In times of urgent social issues, faculty members from the Research Division for Immediate Response to Social Issues, along with experts necessary for issue resolution, gather wisdom from both within and outside the university. They promptly initiate research to address the issues. Depending on the specific social issue, collaboration with the Structural Engineering Research Division and the Volcano and Earthquake Research Division is sought to aim for the selection of safe evacuation locations and the enhancement of facility safety.

Tokyo Tech

School of Science	School of Life Science and Technology
School of Engineering	School of Environment and Society
School of Materials and Chemical Technology	Institute for Liberal Arts
School of Computing	Institute of Innovative Research

Multidisciplinary Resilience Research Center

Volcano an Earthquake Research Division ✕ Structural Engineering Research Division ✕ Research Division for Immediate Response to Social Issues

Internal Researchers

Faculty Members

Research Project for Overcoming Coronavirus Disasters

This project addressed issues related to COVID-19

Cardiopulmonary Systems · AI App to Find Infected Link · Remote Learning Tools · Diagnostic Device · AI App for Smart Phones · Physical and Mental Healthcare · Various Other Researches

vaccines and drugs · other research areas

Intramural Research Seeds

Promoting Activities in the Research Division for Immediate Response to Social Issues

Development

Quick Research Project

Project Leader：
Director-General, Institute of Innovative Research (IIR)

Quick Research

Research to Safeguard Lives and Society

· Research Themes on Urgent societal issues

· Themes for Continued Research from the "Research Project for Overcoming Coronavirus Disasters"

Extramural Research Seeds

External Researchers

Tokyo Medical and Dental University *

*Tokyo Tech and TMDU will integrate in October 2024. New University Name "Institute of Science Tokyo"

Medical Field

Industry Academic Sectors

Society Local Government

Social Crisis

Social Needs
Rapid Problem Solving

QR Project Fund
Rapid Support for Research Funding

Use of Fund

The fund will be prudently allocated for research expenses.

· **Research funds for swiftly conducting short-term, intensive studies when urgent social issues arise.**

· Presentation of research outcomes to widely contribute to society.

· Outreach activities for the development of young researchers and the promotion of research activities through research presentations.

Tokyo Tech Fund　Fund Application Form