

Report of the APRU Multi-Hazards Program 04.2020-03.2021

Takako Izumi, IRIDeS, Tohoku University

Introduction and overview of the APRU Multi-Hazards Program

The Multi-Hazards (MH) program was initiated in April 2013 in collaboration with APRU and Tohoku University. The International Research Institute of Disaster Science (IRIDeS) hosts its program hub, provides the secretariat service as well as coordinates the activities and programs. The Program mainly aims to:

- A. Harness the collective capabilities of APRU universities for cutting-edge research on disaster management and,
- B. Contribute to international policy-making processes to steadily improve disaster management.

The major and regular activities under the MH program include the summer school, the research symposium, and the campus safety program. In addition to these regular activities, it has also actively involved in discussions on DRR policies and strategies at regional and international levels with focus on strengthening the application of science and technology through the Asian Ministerial Conference on DRR, the Global Platform on DRR, the UNISDR Science and Technology Conference on DRR, the World Bosai Forum and so on. Dr. Takako Izumi, Associate Professor of IRIDeS, Tohoku University and Program Director of the APRU Multi-Hazards Program has been appointed as a member of the UNDRR Asia-Pacific Science, Technology and Academia Advisory Group (APSTAAG) since May 2015.

The year of 2021 was challenging for higher educational institutions. We were required to change our educational mode to online from face to face. Most of field activities and exchange programs with overseas had to be canceled. Under this kind of circumstances, the MH program also needed to shift its regular activities to online education such as the virtual summer school. The program organized nine webinars attended total by 2,238 (3861 registered). It was a positive impact to be able to reach such a large number of audience through the online program, and it will continue through the year of 2021 and early 2022.

Major activities, accomplishments, and outputs

A. Contribution to international and regional discussions for policy influence

- **Virtual 2020 Asia Pacific Science and Technology Conference for Disaster Risk Reduction: Science and Technology for Building Resilience of Communities and Infrastructure** (15 October 2020): This event was organized by UNDRR, the Integrated Research on Disaster Risk (IRDR), and the International Science Council, and Asian Network on Climate Science and

Technology (ANCST), and hosted by Government of Malaysia (NADMA), Akademi Sains Malaysia and the South-East Asia Disaster Prevention Research Initiative (seadpri) under Universiti Kebangsaan Malaysia (UKM). The MH program 'program director, Takako Izumi, has been a member of the APSTAAG since 2015, and was invited to introduce and share the publication of **30 innovations for DRR linking with SDGs** developed by the MH Program together with United Nations University, University of Tokyo, Keio University, and CWS Japan.

The APSTAAG plays a crucial role in strengthening regional networking and providing advice and insight to boost national science and technology capacities. This virtual conference aimed to provide an opportunity to the science, technology, and academia community in Asia and the Pacific to continue the much-needed science-policy dialogue to ensure that implementation of disaster risk reduction measures is based on reliable science, technology and innovation. Successful applications of science and technology in preventing and mitigating risks from different types of hazards including flood, earthquake, drought, health and other climate-related hazards will be showcased. In this way, the participation of the MH program is considered important and valuable to apply science and innovations in the development of national strategies and share the research findings by the APRU member universities and advocate together with other international organizations and academic institutions to make the research results the best use of practices to improve the DRR capacity on the ground.



ANNOUNCEMENT: ONLINE WEBINAR

UNDRR
UNITED NATIONS OFFICE OF DISASTER RISK REDUCTION

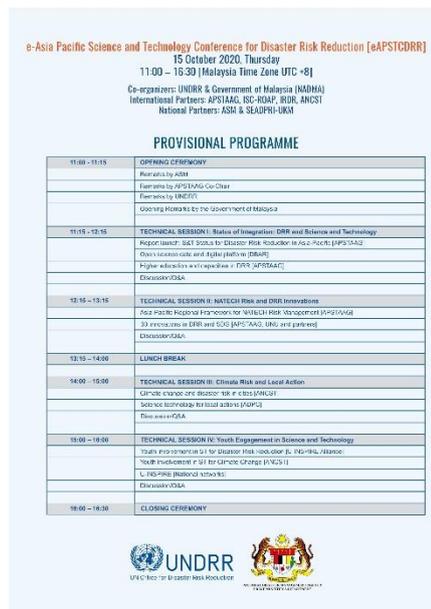
IRDR
INTERNATIONAL DISASTER RISK REDUCTION

VIRTUAL 2020 ASIA PACIFIC SCIENCE AND TECHNOLOGY CONFERENCE FOR DISASTER RISK REDUCTION
"Science and Technology for Building Resilience of Communities and Infrastructure"

Save the date!!!
15 October 2020
Webinar Platform (via Zoom Meeting)

International Partners:
APSTAAG, IRDR, International Disaster Risk Reduction, etc.

National Partners:
Akademi Sains Malaysia, seadpri, etc.



e-Asia Pacific Science and Technology Conference for Disaster Risk Reduction [eAPSTCDRR]
15 October 2020, Thursday
11:00 – 18:30 (Malaysia Time Zone UTC +8)

Co-organizers: UNDRR & Government of Malaysia (NADMA)
International Partners: APSTAAG, ISC-RDAP, IRDR, ANCST
National Partners: ASMA & SEADPRI-UKM

PROVISIONAL PROGRAMME

11:00 – 11:15	OPENING CEREMONY Remarks by ASMA Remarks by APSTAAG Co-Chair Remarks by UNDRR Closing Remarks by the Government of Malaysia
11:15 – 12:15	TECHNICAL SESSION I: Status of Integration: DRR and Science and Technology Topic Lead: SET Status for Disaster Risk Reduction in Asia-Pacific (APSTAAG) Chair: Suresh Kishor and Rishi Prasad (ISDR) Topic Introduction and Introduction of PPTs (APSTAAG) Discussion/DQA
12:15 – 13:15	TECHNICAL SESSION II: Integrated Risk and DRR Initiatives Asia Pacific Regional Framework for Multi-Hazard Assessment (APSTAAG) 33 Innovations in DRR and SDG (APSTAAG, UNDRR and partners) Discussion/DQA
13:15 – 14:00	LUNCH BREAK
14:00 – 15:00	TECHNICAL SESSION III: Climate Risk and Local Action Climate Change Resilience for Asia-Pacific Science Technology for Local Action (SAPCA) Discussion/DQA
15:00 – 16:00	TECHNICAL SESSION IV: Youth Engagement in Science and Technology Youth Engagement in Disaster Risk Reduction (UNDRR, ASEAN) Youth Engagement in SET for Climate Change (UNESCO) Discussion/DQA
16:00 – 16:30	CLOSING CEREMONY

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B. Education

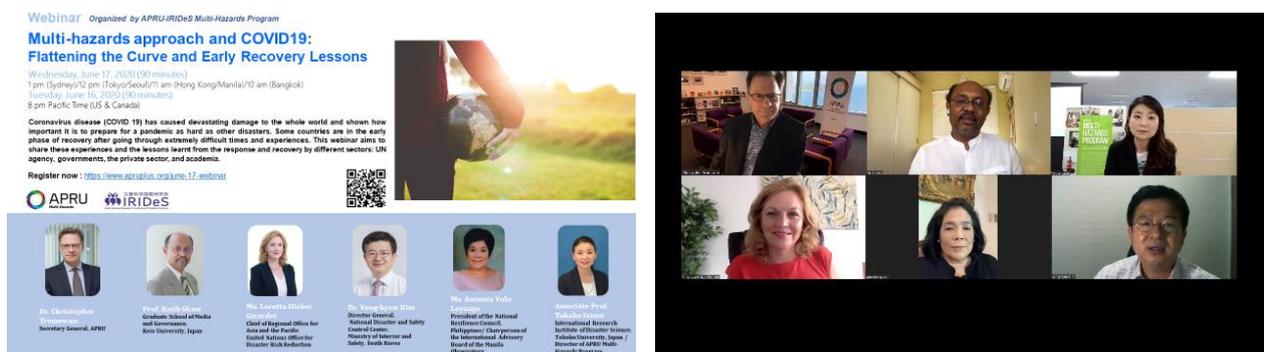
● APRU Multi-Hazards Webinar series

Total nine webinars were conducted for April 2020-March 2021. They were attended by 2,238 and registered by 3,861 in total. The details of each webinar series are as follows:

1) Multi-hazards approach and COVID-19: Flattening the Curve and Early Recovery Lessons (17 June 2020) (263 actual participation/427 registration)

Speakers: Dr. Christopher Tremewan (APRU), Prof. Rajib Shaw (Keio University), Ms. Loretta Hieber Girardet (UNDRR), Dr. Yong-kyun Kim (Ministry of Interior and Safety, South Korea), Ms. Antonio Yulo Loyzaga (National Resilience Council/Manila Observatory)

Moderator: Dr. Takako Izumi (Tohoku University)



The image shows a promotional poster for the webinar "Multi-hazards approach and COVID-19: Flattening the Curve and Early Recovery Lessons" held on Wednesday, June 17, 2020. The poster lists the speakers: Dr. Christopher Tremewan (APRU), Prof. Rajib Shaw (Keio University), Ms. Loretta Hieber Girardet (UNDRR), Dr. Yong-kyun Kim (Ministry of Interior and Safety, South Korea), and Ms. Antonio Yulo Loyzaga (National Resilience Council/Manila Observatory). It also includes a QR code and registration information. To the right is a screenshot of the webinar session showing five participants in a video conference grid.

The 8th MH Virtual Summer School (3 webinars)



The image is a promotional poster for "The 8th APRU-IRIDeS Multi-Hazards Virtual Summer School 2020". It details the schedule for three days of webinars:

- Day 1 (July 14):** Theme: Lessons learned from the Great East Japan Earthquake and Tsunami. Time slots: 7 pm (San Francisco & Vancouver), 9 pm (Mexico City & Quito), 10 am (Hong Kong & Manila), 11 am (Tokyo & Seoul).
- Day 2 (July 21):** Theme: Role of various stakeholders in disaster risk reduction. Time slots: 7 pm (San Francisco & Vancouver), 9 pm (Mexico City & Quito), 10 am (Hong Kong & Manila), 11 am (Tokyo & Seoul).
- Day 3 (July 28):** Theme: Latest research in disaster science. Time slots: 7 pm (San Francisco & Vancouver), 9 pm (Mexico City & Quito), 10 am (Hong Kong & Manila), 11 am (Tokyo & Seoul).

The poster also includes a registration link: <https://apru.org/event/apru-irides-mh-hazards-summer-school-2020/> and logos for partner organizations like CWS JAPAN, UCDAVIS, and UNDRR.

2) Lessons learned from the Great East Japan Earthquake and Tsunami (15 July 2020) (299/416)

Speakers: Prof. Toshiya Ueki (Tohoku University), Dr. Christopher Tremewan (APRU), Dr. Sebastian Boret (Tohoku University), Prof. Shinichi Egawa (Tohoku University), Prof. Osamu Murao (Tohoku University)

Moderator: Takako Izumi



3) Role of various stakeholders in disaster risk reduction (22 July 2020) (280/433)

Speakers: Prof. Fumihiko Imamura (Tohoku University), Prof. Mikio Ishiwatari (University of Tokyo), Dr. Takako Izumi (Tohoku University), Mr. Takeshi Komino (CWS Japan), Ms. Christina Schonleber (APRU)



4) Latest research in disaster science (29 July 2020) (270/443)

Speakers: Dr. Riyanti Djarante (UNU), Prof. Benito M. Pacheco (University of the Philippines Diliman), Prof. John Randle (UC Davis)

Moderator: Takako Izumi



[A new approach for disaster risk management after COVID-19 \(3 webinars\)](#)



5) Understanding and addressing different types of hazard risks (30 September 2020) (350/669)

Speakers: Prof. Fatma Lestari (University of Indonesia), Mr. Martin Krottmayer (IFRC), Mr. Jeff Walker (JKG Consulting), Mr. Andrin Raj (CBRNE-Natech Asian Disaster Risk Initiative)

Moderator: Dr. Takako Izumi



6) Strengthening disaster management strategies through multi-stakeholder partnerships (14 October 2020) (324/585)

Speakers: Prof. Abdul Haris (University of Indonesia), Dr. Alexander Hamilton (UNICRI), Dr. Takako Izumi (Tohoku University), Dr. Animesh Kumar (UNDRR), Mr. Rober Eryanto Tumanggong (Indonesian Army Engineers Corps)

Moderator: Prof. Agustín Kusumayati (University of Indonesia)



APRU Multi-Hazard Webinar Series:
A new approach for disaster risk management after COVID-19
APRU MH program, Universitas Indonesia, and the CBRNe-Natech Asian Disaster Risk Initiative (CnADRI)

SESSION II: Strengthening disaster management strategies through multi-stakeholder partnerships
October 14 (Wed) (2 hours):
9 am (Jakarta) / 10 am (Hong Kong) / 11 am (Tokyo & Seoul) / 12 pm (Sydney)
This session invites speakers from international and regional organizations, government and academia in Asia to discuss their role in adopting the all hazards approach.

Register here:
https://us02web.zoom.us/join/register/WN_F7DESdCHQYxRUIQPYLg

Free & e-certificate provided
DRRC UI

Opening Speech Moderator

Abdul Haris
Vice Rector of Research and Innovation Universitas Indonesia

Agustín Kusumayati
APRU Co-Chairman of the Indonesian Public Health School Association (IPHS)

Alexander Hamilton
Regional Coordinator for South East Asia under the UN/ISDR and CBRNe-Natech Asian Disaster Risk Initiative (CnADRI)

Takako Izumi
Associate Professor, International Research Institute of Disaster Science, Tohoku University

Animesh Kumar
Deputy Chief of the United Nations Office for Disaster Risk Reduction (UNDRR), Regional Office for Asia and the Pacific

Robert Eryanto Tumanggong
MC Staff Officer of Indonesian Army Engineers Corps

Contact:
Debby Paramitasari
Email: drcc@ui.ac.id



The APRU Multi-Hazard Webinar Series:
A new approach for disaster risk management after COVID-19
SESSION II: Strengthening disaster management strategies through multi-stakeholder partnerships
October 14th (Wed), 2020

7) Developing innovative tools and approaches for disaster preparedness and response (28 October 2020) (110/260)

Speakers: Dr. Ranit Chatterjee (Kyoto University), Mr. ISroil Samihardjo (Indonesian State College), Mr. Andrin Raj (CBRNe-Natech Asian Disaster Risk Initiative), Mr. Jere Peltonen (Ministry of Foreign Affairs, Finland)

Moderator: Dr. Takako Izumi (Tohoku University)



The APRU Multi-Hazard Webinar Series:
A new approach for disaster risk management after COVID-19
APRU MH Program, CBRNe-NATECH Asia Disaster Risk Initiative (CnADRI) and Universitas Indonesia

Session III: Developing innovative tools and approaches for disaster preparedness and response
This session invites experts as speakers from different sectors to share innovative products and approaches to overcome issues related to risk identification and understanding, assessment etc.

October 28th (Wed) (1 hrs)
9:30am (Helsinki) / 2:30 pm (Jakarta) / 3:30 pm (Hong Kong) / 4:30 pm (Tokyo)

Registration: www.surveymonkey.com/r/DJ6XYCN
Limit 300 participants only

CONTACT: Andrin Raj
(ajr.ra@gmail.com)

Moderator

Takako Izumi
Associate Professor, Tohoku University, Program Director, APRU MH Program

Ranit Chatterjee
JST Foundational Fellow, Kyoto University

Isroil Samihardjo
Senior Lecturer, Indonesian State College / Former Head of CBRN Indonesia

Andrin Raj
Chairperson, CnADRI

Jere Peltonen
Deputy Director, NCTN



The APRU Multi-Hazard Webinar Series:
A new approach for disaster risk management after COVID-19
Session III: Developing innovative tools and approaches for disaster preparedness and response
October 28th (Wed), 2020

10 Years after the Great East Japan Earthquake and Tsunami: insights and perspectives based on science and experience (2 webinars)



APRU Multi-Hazards Webinar Series:
10 years after the Great East Japan Earthquake and Tsunami:
Insights and perspectives based on science and experience

SESSION 1
Message to the future:
learning from research and practice

SESSION 2
Recovery lessons:
Multi-stakeholder perspectives

This event page: <https://apru.org/event/10-years-after-the-great-east-japan-earthquake-and-tsunami-insights-and-perspectives-based-on-science-and-experience/>

Logos for APRU, Tohoku University, Harvard University, and Keio University.

8) Message to the future: learning from research and practice (12 March 2021) (217/356)

Speakers: Dr. Christopher Tremewan (APRU), Prof. Fumihiko Imamura (Tohoku University), Prof. Andrew Gordon (Harvard University), Dr. Kanako Iuchi (Tohoku University), Prof. Shunichi Koshimura (Tohoku University)

Moderator: Dr. Takako Izumi (Tohoku University)



APRU Multi-Hazards Webinar Series:
10 years after the Great East Japan Earthquake and Tsunami:
insights and perspectives based on science and experience

SESSION 1 **Message to the future:**
learning from research and practice

<https://apru.org/event/10-years-after-the-great-east-japan-earthquake-and-tsunami-insights-and-perspectives-based-on-science-and-experience/>

Americas: March 11 (Thu) (2 hours)
 4 pm (San Francisco & Vancouver) / 8 pm (Mexico City) / 9 pm (Boston)

Asia and the Pacific: March 12 (Fri) (2 hours)
 9 am (Jakarta) / 10 am (Hong Kong) / 11 am (Tokyo) / 1 pm (Sydney)

Register here:
<https://www.webinar.moutikom.com/>

Speakers:
 Fumihiko Imamura (Professor, Institute of Disaster Science (IDS), Tohoku University)
 Andrew Gordon (Professor, Harvard University)
 Kanako Iuchi (Assistant Professor, IDS, Tohoku University)
 Shunichi Koshimura (Professor, IDS, Tohoku University)
 Takako Izumi (Assistant Professor, IDS, Tohoku University)

Moderator:
 Takako Izumi (Assistant Professor, IDS, Tohoku University)

Contact:
 Dr. Takako Izumi, M. Sasaki, K. Iuchi, IDS, Tohoku University
 Email: apru@ids.tohoku.ac.jp



9) Recovery lessons: multi-stakeholder perspectives (19 March 2021) (125/272)

Speakers: Dr. Animesh Kumar (UNDRR), Prof. Rajib Shaw (Keio University), Dr. Anders Karlsson (Elsevier), Ms. Suvendrini Kakuchi (Journalist), Mr. Takeshi Komino (CWS Japan)

Moderator: Dr. Takako Izumi (Tohoku University)

APRU Multi-Hazards Webinar Series:
10 years after the Great East Japan Earthquake and Tsunami:
insights and perspectives based on science and experience

SESSION 2 Recovery lessons: Multi-stakeholder perspectives

<https://apru.org/webinar/10-years-after-the-great-east-japan-earthquake-and-tsunami-insights-and-perspectives-based-on-science-and-experience/>

Americas: March 18 (Thu) (2 hours)
6 pm (San Francisco & Vancouver) / 8 pm (Mexico City) / 9 pm (Boston)

Asia and the Pacific: March 19 (Fri) (2 hours)
9 am (Jakarta) / 10 am (Hong Kong) / 11 am (Tokyo) / 2 pm (Sydney)

Register here:
<https://apru.org/zoom-joiner/https://apru.org/webinar/10-years-after-the-great-east-japan-earthquake-and-tsunami-insights-and-perspectives-based-on-science-and-experience/>

Speakers:

- Ashwath Kumar, DCE & Deputy Chief of the Disaster Resilience Centre for Science East Pakistan, UNDRR, Regional Office for Asia and the Pacific
- Rajib Shaw, Professor, Disaster Sociologists and Governance, Kansai University
- Anders Karlsson, Vice President, EDRS Strategic Networks, EDRSnet
- Sureshchandra Kaluochi, Journalist and Author
- Takashi Kamina, General Secretary, DRR Japan
- Takako Izumi, Associate Professor, School of Disaster Science, Director of APRU Multi-Hazards Program

Moderator:
Dr. Takashi Izumi, School of Disaster Science, Tohoku University
E-MAIL: takashi.izumi@disaster.tohoku.ac.jp





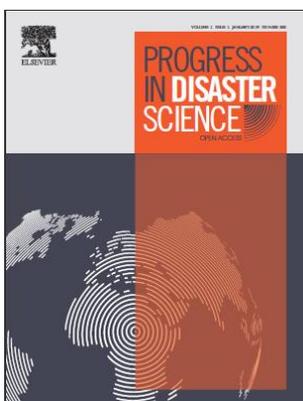





C. RESEARCH

Academic journal: Progress in Disaster Science

- **Progress in Disaster Science (Elsevier):** “Progress in Disaster Science” was launched in May 2019 at the Global Platform for DRR in Geneva. Dr Takako Izumi (the MH program director) plays a role of Associate editor. This journal focuses on integrating research and policy in disaster research, and publishes original research papers and invited viewpoint articles on disaster risk reduction; response; emergency management and recovery. So far more than 130 papers were published in 10 volumes by end of March 2020. The core group members of the MH program have been involved in developing this journal as its editorial board members.



Survey conducted

1) COVID-19 response by HEIs:

The survey was conducted among the APRU member universities, and other universities networks on the key challenges being faced by the HEIs during the ongoing COVID-19 pandemic. The responses were obtained by 150 people from 65 universities located in 29 countries who belong to teaching and research professionals.

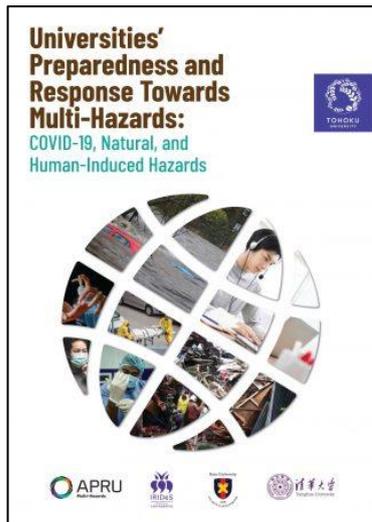
The result was highlighted and analyzed in a paper **“Managing and responding to pandemics in higher educational institutions: initial learning from COVID-19”**, International Journal of Disaster Resilience in the Built Environment (DOI 10.1108/IJDRBE-06-2020-0054).

2) Campus safety minimum checklist:

Another survey was conducted among the APRU member universities, and other university networks. The campus safety minimum checklist was developed at the APRU MH campus safety workshop in 2018 and 2020. This survey aimed to analyze the current status of the HEIs’ disaster preparedness capacity, identify challenges and understand the priorities of the improvement based on the minimum checklist. 23 universities responded to this survey. The result will be shared in a book chapter included in a book **“Safety and Resilience of HEIs: a post pandemic analysis”** to be published by Springer Nature at the end of 2021 or early 2022.

D. Publication

- **Universities’ Preparedness and Response towards Multi-Hazards** (MH program, Tohoku University, Keio University, and Tsinghua University): COVID-19, Natural, and Human-Induced Hazards”: The case studies aimed to collect the efforts made by universities in the response and preparedness toward the COVID-19 pandemic as well as other hazards such as earthquakes, fires, and anthropogenic hazards. This compilation includes 26 case studies from 13 countries and region to keep a record of what happened and success and failures to learn from the experience and prepare for the next hazardous events. The authors hope that this publication will be useful for universities in strengthening their current strategy and plan to reduce multiple disaster risks and respond efficiently.
- **Virtual summer school report:** This report includes the slides and summaries of nine presentations given during the virtual summer school (3 sessions) and two opening remarks. Due to the impact of COVID-19, this year’s summer school was conducted virtually.



E. New project and initiative

- **Architecture and Urban Design for DRR and Resilience (ArcDR3)**

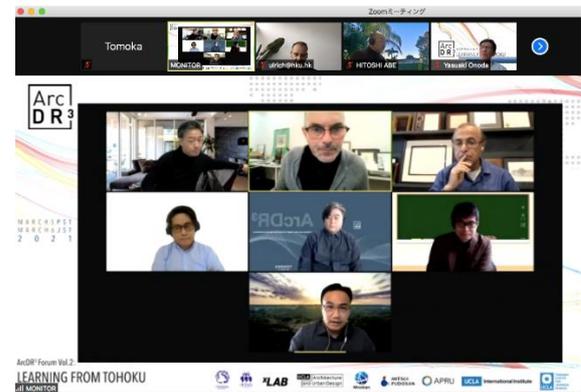
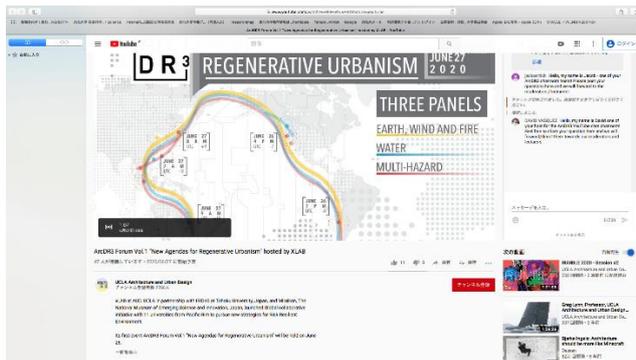
The MH program started a new project ArcDR3 together with UCLA, and other nine universities. This project aims to create a more effective integration of theory and practice by creating an international platform for producing and exchanging knowledge on environmental design that reduces the risk of recurring disasters and enhances resilience. This initiative consists of research, symposia, and exhibitions linked to a design studio using existing programs by participating universities. It will organize the project, including the creation of studio themes shared by participating universities. The studio theme is appropriately selected from research topics and recent disaster sciences, and links research design studio and symposium.

Forum 1: New agendas for regenerative urbanism was organized on 27 June 2020

This was the first event in the series of research, symposia, and exhibitions planned by ArcDR3 initiative. The 11 participating universities presented their syllabi for their context-specific design studios. Discussions were divided into three panels: 1) Earth, wind and fire, 2) Water and 3) Multi-hazards. It aimed to address the projected theme of regenerative urbanism and its implications for the design studios at each of the participating universities, and to recognize the changes in learning environments and teaching processes that have been redefined by the global crisis and explore opportunities for participants to expand their research skills by collaborating on a global scale through the ArcDR3 network.

Forum 2: Learning from Tohoku on 6 March 2021

The aims of this forum were to share experiences of the Great East Japan Earthquake and Tsunami and the first 10 years of the recovery process in the Tohoku region of Japan, and to create a venue for the active exchange of information and discussion with ArCDR3 members from the 11 participating universities.



● Forming Working Group

The MH program attempts to form working groups under several DRR key topics, such as urban planning, early warning, all-hazards, and etc. The discussion of the working groups was initiated at the core group meeting held in July 2020. Any concrete activities have not been stated yet, but hopefully the collaboration related to the working groups will be incorporated in the activities planned in 2021-2022.

Key Objectives for April 2021 to March 2022

The MH program continues working for strengthening the research capacity of the APRU member universities on DRR, and contributing to international and regional policy making discussions to improve DRR. However, due to the impact of the COVID 19, the plan for 2021-2022 is very uncertain at this moment. The annual symposium will be online and hosted by University of Indonesia in November 2021. The summer school will be also online, however, its scheme and structure has not been decided yet.

Planned Activities for April 2021 to March 2022

Events to be organized

- APRU MH annual symposium: November 2021 hosted by University of Indonesia
- APRU MH core group meeting at Tohoku University (virtual): the timing is not confirmed yet.
- ArcDR3 exhibition and symposium in Tokyo: November 2021
- APRU MH summer school or distance course: the timing and themes are not confirmed yet.
- APRU MH campus safety workshop: the timing, virtual or face to face – not yet confirmed

Publication

- Report of the APRU-IRIDEs summer school (if it is organized in a different format)
- A book: “Safety and Resilience of Higher Educational Institutions: A post pandemic analysis” will be published by Springer Nature at the end of 2021 or early 2022.
- Some research papers related to COVID-19 and DRR etc.

The Multi-Hazards core group members

Prof. Osamu Murao (Chair) (Tohoku University)

Prof. Fumihiko Imamura (Tohoku University)

Prof. John Rundle (UC Davis)

Prof. Hung Chi Kuo (National Taiwan University)

Prof. Supot Teachavorasinskun (Chulalongkorn University)

Prof. Hugo Romero (University of Chile)

Prof. Hui Zhang (Tsinghua University)

Prof. Kuniyoshi Takeuchi (Professor emeritus of Yamanashi University)

Prof. Benito M. Pacheco (University of the Philippines)

Prof. Denise Konan (University of Hawaii, Manoa)

Dr Takako Izumi (Associate Professor, Tohoku University)