2019 Advanced Institute on Health Investigation and Air Sensing for Asian Pollution (AI on Hi-ASAP)

September 2 – 6, 2019
Academia Sinica, Taipei, Taiwan

Organizers:

Academia Sinica

IRDR
Integrated Research on Disaster Risk

Taipei CoE

International Science Council
Regional Office for Asia and the Pacific

Taipei

Regional Centre for Future Earth in Asia

IGAC
International Global Atmospheric Chemistry

MANGO
Monsoon Asia and Oceania Networking Group

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Organized by

Integrated Research on Disaster Risk, International Centre of Excellence-Taipei
(IRDR ICoE-Taipei)
Center for Sustainability Science, Academia Sinica, Taiwan
International Science Council Regional Office for Asia and the Pacific (ISC-ROAP)
Future Earth, Taipei
Regional Centre for Future Earth in Asia
International Global Atmospheric Chemistry – Monsoon Asia and Oceania Working Group
(IGAC-MANGO)

BACKGROUND

Air pollution, especially aerosols and particulate matters, contributes to the greatest uncertainty to climate change projection. Aerosols affect cloud formation, atmospheric radiation, and thus regional climate. Therefore, air pollution is one of the major root causes of current climate disasters. Moreover, air pollutants and particulate matters with an aerodynamic diameter equal to or less than 2.5μm ($PM_{2.5}$), greatly contribute to human health risks. Millions of deaths worldwide were attributable to $PM_{2.5}$ which is a human carcinogen. This is especially true for Asian areas as rapid economic growth has taken its toll on human health. It was estimated that 2.2 million of the world's 7 million premature deaths each year from air pollution are in Asia and the Pacific area (WHO 2018). Applying new sensing technologies to access the exposure sources and health impacts of $PM_{2.5}$ in Asia is urgently needed in order to reduce the health risks due to this manmade disaster. That is the focus of this series of Advanced Institute (AI).

Health Investigation and Air Sensing for Asian Pollution (Hi-ASAP) is a regional transdisciplinary research initiative which is developed under the umbrella of International Global Atmospheric Chemistry project – Monsoon Asia and Oceania Networking Group (IGAC-MANGO). The main goal of this Hi-ASAP is to provide scientific evidence to support effective policy actions to reduce air pollution levels, in particular $PM_{2.5}$, in this region by applying newly developed low-cost sensing devices. Research groups from 17 different areas in the Asia and the Pacific (AP) region have expressed their interests in collaboration under the framework of Hi-ASAP. The first phase of Hi-ASAP spans five years, including preparation (2019), start-up (2020), intensive monitoring (2021), data analysis (2022), and publication (2023) periods. In order to conduct international comparisons and further synthesis, these research groups have agreed to take on a common methodology to assess the exposure levels, sources, patterns, and health impacts of $PM_{2.5}$. Therefore, a series of training workshops are needed to transfer the theory, knowledge, and application niches to researchers in Asia to allow them to apply these common methodologies which are originally rooted from the developed countries (ex. Harvard T.H. Chan School of Public Health).

Training workshops or meetings for Hi-ASAP are planned in each of the next five years so that the research groups will carry out the same methodologies across different study areas, stimulate multidisciplinary interactions, and streamline international collaboration. Recognizing air pollution is a severe manmade disaster in Asian areas, IRDR ICoE-Taipei has collaborated with Future Earth, IGAC, and IGAC-MANGO in 2017 to organize " Advanced Institute on Disaster Risk Reduction with Systems Approach for Slow-Onset Climate Disasters (AI-SOCD) -- Air Pollution, Sensors, and Big Data". As a continuous collaboration and support for research on air pollution health risk reduction, IRDR ICoE-Taipei has planned to organize this series of AI on HI-ASAP (start from 2019) as the capacity building component of Hi-ASAP, with different focuses each year. For example, the first AI will focus on data collection protocols for the environment, exposure and health; the second one on data analysis methods to link for environmental, exposure, and health data (scheduled in 2020); etc. The first AI is planned to be held on September 2-6, 2019 in Academia Sinica, Taipei, Taiwan.

OBJECTIVES

The objective of the AI on Hi-ASAP is to provide young to mid-career practitioners and researchers **from the research groups interested in the Hi-ASAP initiative in Asia and the Pacific region** with the knowledge, experience, and hands-on practices about the techniques and methodologies required to conduct comparative research on air pollution sensing and health risks. At the end of the AI, the participants should have:

a) *Developed an understanding of the concepts, principles, and practices of low-cost sensing technologies for $PM_{2.5}$ and health indicators;*

b) *Enhanced comprehension of the applications of systems thinking on collaboration focusing on environmental sensing and health evaluation among scientists of different fields and between scientists and stakeholders;*

c) *Developed capacity on the application of the sensor technology on regional pollution transport, community source contribution quantification, exposure assessment, and health-indicator evaluation to design a study to reduce air pollution health risks.*

Training Course Programme

Day 1 (Monday, 2 September 2019)		
09:00 – 09:20	**Registration**	
09:20 – 09:50	**Opening Ceremony** Opening Remarks Academia Sinica: Mei-Yin Chou Future Earth, Taipei: Chao-Han Liu IRDR ICoE-Taipei: Jian-Cheng Lee ISC ROAP: Ahmad Sufyan Mohamed Aslam IGAC MANGO: Mohd Talib Latif Group Photo	MC: Ying-Hsuan Lin
09:50 – 10:30	Self-introduction	SC Candice Lung
10:30 – 10:50	**Coffee Break**	
10:50 – 11:30	Introduction of Hi-ASAP Initiative / Research Framework and Seed Grant	SC Candice Lung
11:30 – 12:30	**Session 1:** Systems Thinking and Systems Approach	SC Candice Lung
12:30 – 13:30	**Lunch**	
13:30 – 14:30	**Session 2:** Quality Control and Quality Assurance protocols	WC Vincent Wang, SC Candice Lung
14:30 – 15:30	**Session 3:** Introduction of AS-LUNG-P, AS-LUNG-O, and other environmental sensors	SC Candice Lung, Chun-Hu Liu
15:30 – 15:50	**Coffee Break**	
15:50 – 17:50	**Session 4:** Hands-on Session for Environmental Sensors	WC Vincent Wang, Chun-Hu Liu, MC Mark Tsou, Kyle Shui, Cheng-Hsin Yeh
18:00 – 20:30	**Welcome Banquet**	

Day 2 (Tuesday, 3 September 2019)		
09:20 – 10:30	**Session 5:** Regional Environmental Monitoring	Mohd Talib Latif
10:30 – 10:50	**Coffee Break**	
10:50 – 12:00	**Session 6:** Community Source Quantification	SC Candice Lung
12:00 – 13:30	**Lunch**	
13:30 – 14:30	**Session 7:** Exposure Assessment	SC Candice Lung / Kiyoung Lee (via Skype)
14:30 – 17:30	**Session 8:** Hands-on Session for Health Sensors	Michael Li, Peter Jhou, Eric Yang, C.H Lee, Joanne Hu, Chih-Hui Cheng

Day 3 (Wednesday, 4 September 2019)		
09:20 – 10:30	**Session 9:** Subject Recruitment	Joanne Hu, SC Candice Lung
10:30 – 10:50	**Coffee Break**	
10:50 – 12:00	**Session 10:** Questionnaire and Time-activity Diary (TAD)	SC Candice Lung
12:00 – 13:30	**Lunch**	
13:30 – 14:30	**Session 11:** Exposure-Health Evaluation	SC Candice Lung

14:30 – 17:30	**Session 12:** First Practices on TAD, PM and Health Sensors	SC Candice Lung, WC Vincent Wang, MC Mark Tsou, Joanne Hu, Chih-Hui Cheng, C.H. Lee
18:00-20:00	**Field trip with PM and Health Sensors**	WC Vincent Wang, MC Mark Tsou, CH Jeffery Lee, Chih-Hui Cheng

Day 4 (Thursday, 5 September 2019)		
09:20 – 10:30	**Session 13:** Data uploading and demonstration of data analysis for field trip	SC Candice Lung, C.H Lee, WC Vincent Wang, MC Mark Tsou Joanne Hu
10:30 – 10:50	**Coffee Break**	
10:50 – 12:00	**Session 14:** Practices on TADs and Survey	SC Candice Lung, Joanne Hu
12:00 – 13:30	**Lunch**	
13:30 – 14:30	**Session 15:** Systems Thinking for Stakeholder Engagement	SC Candice Lung
14:30 – 15:50	**Session 16:** Source Characterization (via Skype)	Kin Fai Ho, Fabienne Reisen
15:50 – 16:10	**Coffee Break**	
16:10 – 17:30	**Session 17:** Second Practice on TAD, PM and Health Sensors	WC Vincent Wang, MC Mark Tsou, Joanne Hu, Chih-Hui Cheng

Day 5 (Friday, 6 September 2019)		
09:20 – 10:20	**Group Presentation for Field Trips (I)** Each Group for 10 minutes, 5 Groups	SC Candice Lung, Shih-Yu Lee, WC Vincent Wang, MC Mark Tsou
10:20 – 10:40	**Coffee Break**	
10:40 – 11:40	**Group Presentation for Field Trips (II)** Each Group for 10 minutes, another 5 Groups	SC Candice Lung, Shih-Yu Lee, WC Vincent Wang, MC Mark Tsou
11:40 – 12:10	**Closing Ceremony** Closing remarks Future Earth, Taipei / Center for Sustainability Science: SC Candice Lung IRDR ICoE-Taipei: Jian-Cheng Lee ISC ROAP: Ahmad Sufyan Mohamed Aslam Certificate Awarding	MC: Ying-Hsuan Lin
12:10 – 14:30	**Farewell Banquet**	

Lecturers, Moderators, Guests

Chao-Han Liu
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Chao-Han Liu became Vice President of Academia Sinica on October, 2006 after serving as President of the National Central University in Taiwan for 12 years and as Chancellor of the University System of Taiwan for 4 years. He started his academic career at the University of Illinois at Urbana-Champaign in 1965 where he taught Electrical Engineering for 25 years before returning to Taiwan in 1990. He is an internationally recognized leader in Solar Terrestrial Physics. From 1981 to 1999, he played important leadership roles in the Scientific Committee on Solar Terrestrial Physics (SCOSTEP) of ICSU, first as its Scientific Secretary and later as the President. Since the mid-90's, he led a group of scientists with different disciplinary background to carry out global change research in Taiwan and established Taiwan as a regional leader in this field internationally.

Chia-Hsing Jeffery Lee
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Dr. Chia-Hsing Jeffery Lee received his Ph.D. from the Department of Agricultural Chemistry, National Taiwan University, and his research focuses were soil and groundwater pollution, sustainable agriculture, and agricultural ecosystem. Dr. Lee had collaborated with other researchers to conduct multidisciplinary research for more than 15 years during college and postdoctoral research. He joined the Center for Sustainability Science in Academia Sinica and worked on Integrated Research on Disaster Risk (IRDR) International Centre of Excellence (ICoE-Taipei) as a science officer in 2016. Currently, Dr. Lee works on Future Earth, Taipei (since 2018) to promote interdisciplinary and solution-oriented research for domestic transformation toward sustainability and also to establish local-international networks for regional collaborations on sustainability science.

Chih-Hui Cheng
Research Assistant
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Chih-Hui graduated from National Taipei University of Technology receiving a Master's degree in Environmental Engineering and Management. She studied indoor air quality purification technology, air cleaners, and test systems of clean air technology. She also applied simulation software and models to estimate the future trend of pollution concentrations. In addition, she worked as an environmental engineer at an environmental consulting firm in 2017, to review and analyze observations from Air Quality Monitoring Stations of Taiwan EPA. She is currently working for Dr. Candice LUNG since 2018. She has rich experiences in field works related to $PM_{2.5}$ and health sensors. She loves to participate in field campaigns and work on data analysis.

Chun-Hu Liu
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Mr. Chun-Hu Liu received BS from the Department of Public Health, Chung Shun Medical University in 1999 and then received his M.S. degree from Department of Environmental and Occupational Health Medical College, National Chen Kung University in 2002. Mr. Liu is experienced in air-sensor related research. He is currently a research technical contract-based employee at the Research Center for Environmental Changes in Academia Sinica.

Fabienne Reisen
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Fabienne Reisen received her Ph.D. in Environmental Toxicology from the University of California Riverside, USA in 2003. Fabienne joined CSIRO in 2004 as a Bushfire Cooperative Research Centre funded post-doctoral research fellow. She was offered a research scientist position at CSIRO in 2010 and was promoted to senior research scientist in 2014 and to principal research scientist in 2018. Fabienne has a strong research expertise in atmospheric and analytical chemistry, ambient air quality measurements of gases and particles, and personal and population exposures to toxic hazards. Her primary research focus is on biomass burning emissions and improving our understanding of the chemical composition of smoke plumes and how these impact air quality and public health.

Faith Ying-Hsuan Lin
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Ying-Hsuan Lin (Faith) is a Science Officer of international programs in the Center for Sustainability Science, Academia Sinica and voluntary serves in some societies which promote human well-being via greenness. She received her Ph.D. in the Department of Horticulture and Landscape Architecture of National Taiwan University in 2015 and had worked as postdoctoral researcher in National Taiwan University and Taiwan Forestry Research Institute. Dr. Lin is an experienced researcher on environmental effects on cognitive psychology, she explored how emotional bonds mediate the restorative effect of greenness. Her current research interests lie on how communities could be happier and stay connected to the green infrastructure with the proper landscape design and recreational accessibility.

Jian-Cheng Lee
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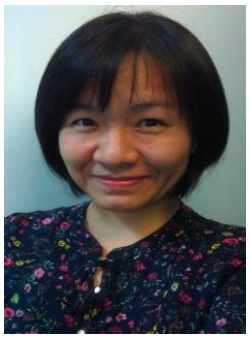
Dr. Lee graduated from Université Pierre et Marie Curie, Paris, France in 1994. His research major is in geoscience. His research interests include active fault, earthquake geology, structural geology and geomorphology. He has made significant scientific contributions on characterizing the northern ends of the Chelungpu fault with relation with inherited regional geological fold structure during the 1999 Chi-Chi earthquake. He also made a great effort on studying the Longitudinal Valley Fault system in eastern Taiwan, in particular on its fault architecture, slip behaviors, fault kinematics, mechanical properties in 2D and 3D. His research results provide insights on better understanding the active faults and their relationships with large earthquakes, which plays an important role on seismic mitigation for society. Dr. Lee obtained the young scientist "Ting-Ing Ma" award of Geological Society of China in 2002 and the final candidate "Outstanding research award" of the National Science Council in 2001, 2003, and 2006. He has been served as Panel member for Earth Science division, National Science Council in 2004-2007, Associate Editor of TAO (2001-2002; 2008-2009), and Deputy Director of Institute of Earth Sciences, Academia Sinica (2008-2010). He now serves as Editor of Geology for TAO (2009-2011) and Correspondent of France-Taiwan collaboration in Earth Sciences, LIA-National Science Council (2010-present), Executive Director of the IRDR ICoE-Taipei (2017-present).



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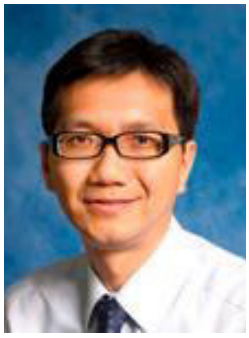
Joanne's research interests are public health and air pollution. She received her Bachelor of Science from the Department of Public Health, Chung Shan Medical University in 2000 and Master of Science in Environmental and Occupational Health in the Medical College at National Cheng Kung University in 2002. Then, she worked as an environmental chemist, project manager and freelance designer in some private cooperation and governmental organizations. Now she has worked for Dr. Candice LUNG since 2013. She has rich experiences in recruiting volunteers from the public and interviewing subjects with questionnaires. And she loves to do data analysis and always takes eco actions as much as possible.



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Prof. Kin-fai HO received his Ph.D. in environmental engineering from the The Hong Kong Polytechnic University in 2003. After a year working as a post-doctoral scholar at School of Geography, Earth and Environmental Sciences, The University of Birmingham, UK, he returned to Hong Kong to work at JC School of Public Health and Primary Care, The Chinese University of Hong. His research interests' center on developing exposure assessment techniques and modifying chemical/ toxicological characterization methods to quantify the personal exposure and health impacts of air pollution. These techniques concentrate on bridging the gap from air pollution sources to health. His study targets from sources to exposure to health sciences, to identify any adverse human health and try to reduce the uncertainties across the source-to-health effects paradigm which can help to support the development of control strategies to reduce the adverse health effects of air pollution in Hong Kong, mainland China and Southeast Asia.

Kiyoung Lee
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Prof. Kiyoung Lee received his ScD in Environmental Science and Engineering from Harvard University, Boston. He received a BS and MPH degrees from the Seoul National University, Korea and MS degree in industrial hygiene from the University of Michigan, Ann Arbor. Before current position at Seoul National University, he was a faculty at University of Kentucky, University of California at Davis and Queensland University of Technology, Australia. He was Board of Directors member of the International Society of Exposure Science (ISES). He is a Fellow of International Society of Indoor Air Quality and Climate (ISIAQ) Academy. He is a Certified Industrial Hygienist (CIH). He has published over 131 peer-reviewed manuscripts in international journals and 68 peer-reviewed domestic manuscripts.

Mei-Yin Chou
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Dr. Mei-Yin Chou works in the field of theoretical condensed matter physics, with a research focus on the electronic properties of novel materials of fundamental and technological interest. In the past few decades, she has established herself as one of the leading figures in first-principles electronic-structure calculations. She obtained her Ph.D. in Theoretical Condensed Matter Physics from the University of California at Berkeley in 1986. She was promoted to Associate Professor in 1993 and to Professor in 1998. In addition, she was the ADVANCE Professor of Science at Georgia Tech in 2002-2006, and Chair of the School of Physics in 2005-2010. She became Director and a Distinguished Research Fellow of the Institute of Atomic and Molecular Sciences at Academia Sinica in January 2011, and an Adjunct Professor at National Taiwan University in August 2011. Professor Chou received the Alfred P. Sloan Research Fellowship in 1990-1992, the David and Lucile Packard Fellowship in 1990-1995, and the Presidential Young Investigator Award from National Science Foundation in 1991-1996. She was elected Fellow of the American Physical Society in 2002 and Academician of Academia Sinica in 2014, and won the Taiwan Outstanding Woman Scientist Award in 2013.

Mohd Talib Latif
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Prof Mohd Talib Latif completed his PhD at the School of Environmental Science, University of East Anglia, United Kingdom in 2006. His main research work includes the composition of inorganic and organic substances in atmospheric aerosols. He also works on the composition of gases particularly surface ozone and volatile organic compounds (VOCs) including from sea-surface microlayer. Mohd Talib is actively involved with research community within Asian continent trough International Global on Atmospheric Chemistry- Monsoon Asia (IGAC-Mango). He has been appointed as one of the international scientific steering committee for Surface Ocean Lower Atmosphere Study (SOLAS). In 2018, Mohd Talib has received a Top Research Scientist Malaysia (TRSM) Award from Academy of Sciences Malaysia.

Ming-Chien Tsou
Postdoctoral Research Fellow
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Dr. Ming-Chien TSOU received his Ph.D. in public health from Taipei Medical University, Taiwan in 2017. During the doctoral period, his research focused on assessing the soil/dust exposure factors and the establishment of soil and dust ingestion model for Taiwan children. After six months working as a post-doctoral research at the School of Pharmacy, Taipei Medical University, he work at the Research Center for Environmental Changes, Academia Sinica. His work focuses on the exposure assessment of the fine particulate matter and their effect on heart rate variability.

Sufyan Aslam
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Sufyan leads programmes addressing disaster risk reduction and climate change. Having joined the Office in 2017, Sufyan collaborates closely with internal and external stakeholders in furthering the goals of the Office. Sufyan has a background in Biomedical Science with a Masters degree from the University of Melbourne.

Shih-Chun Candice Lung
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Professor Shih-Chun Candice Lung received her doctoral degree from School of Public Health, Harvard University, double majored in Environmental Pollution and Environmental Health Management. She is currently a Research Fellow at the Research Center for Environmental Changes and the Director of International Affairs at the Center for Sustainability Science which hosts the Integrated Research on Disaster Risk International Centre of Excellence (IRDR ICoE-Taipei) and assists the operation of Future Earth, Taipei in Academia Sinica, Taipei, Taiwan. Professor Lung's research interests are heat stress and air pollution risk reduction, health adaptation, and environmental health management. She is actively participating in science-policy dialogue and has been invited to join various committees in several agencies in both central and city governments regarding pollution control, health adaptation, and sustainable planning.

Shih-Yu Lee
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Dr. Lee received her Ph.D. in Oceanography from University of Michigan, Ann Arbor, MI, USA in 2008. After few years working as a post-doctoral scholar at Department of Geophysics, Yale University and Climate Center/Department of Geography, University of California, Berkeley, she joined Research Center for Environmental Changes in 2011. Her research expertises are in the field of climate dynamics and long-term climate projection using both general circulation climate model and observational data. She works on climate change of the past and future. She is particularly interested in how changing future climate will impact the environment and society from a transdisciplinary approach.

W.C. Vincent Wang
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Dr. W.C. Vincent Wang received his Ph.D. in Environmental Engineering from National Sun Yat-Sen University, Kaohsiung, Taiwan. He worked as a post-doctoral scholar at Research Center for Environmental Changes, Academia Sinica, Taiwan from 2012. His major research expertise is in the field of air pollution exposure assessment, urban heat risk assessment, and small sensors-device development, machine learning for environmental monitoring, and aerosol sampling.

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Yue-Gau Chen is a professor in the Department of Geosciences at the National Taiwan University. He received his Ph.D. degree in Geosciences from the National Taiwan University. He had been a visiting scholar at Purdue University, U.S.A. He had also been Research Associates at Geosciences of National Taiwan University during 1997-2003. He was the Committee Member of International Lithosphere Program in Taiwan during 2001-2005, and NSC Panel committee of Earth Sciences Study during 2004-2005. He also was the Convener of NSC Panel committee of Earth Sciences Study during 2006-2009. Dr. Chen research interests include Neotectonics, Quaternary Geochronology, Stable Isotope Geochemistry and Quaternary Geology. Dr. Chen received NSC outstanding research award from 2003 to 2006. Dr. Chen also received the GSA fellow elected in 2008, and he is the only scholar from Asia. Dr. Chen is currently Executive Secretary of Center for Sustainability Science, Academia Sinica.

Participants

BANGLADESH

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Riad is currently pursuing his masters researching on 'Atmospheric Partitioning and the air-water exchange of polycyclic aromatic hydrocarbons in Buriganga river'. He recently completed graduated from the Department of Chemistry, University of Dhaka under the supervision of Dr. Abdus Salam.

Shahid Uz Zaman
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Shahid is currently working on his MS thesis work and his topic is "Seasonal Variation of Air Quality in Hospital Environment of Dhaka City." He has recently graduated in Department of Chemistry, University of Dhaka, Bangladesh. Shahid conducted research under the supervision of Dr. Abdus Salam, Professor, Department of Chemistry, University of Dhaka. His research topic was "Investigation of Gaseous indoor and Outdoor Air Pollution and Health Impact in Different Schools of Dhaka City"

INDONESIA

Haryo Satriyo Tomo
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Haryo Satriyo Tomo currently is working in air particulate identification and monitoring. He is a member of research team under Prof. Puji Lestari, PhD to investigate aerosol optical depth (AOD), PM2.5/ PM10 characteristics and to develop an affordable particulate monitoring device. He is also involved as a professional engineer related to air pollution control and waste combustor design. As a lecturer, he is teaching in subjects: Fluid Mechanics and Engineering Mathematics for undergraduate student in ITB since 1999.

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Trianing graduated with a degree in 2012 as a bachelor of Animal Husbandry. In the same year, she received a scholarship from the Indonesian Government to continue her study to master degree. Two years later, she completed her master degree from environmental science study programme at Universitas Padjadajran. Her major research is about environmental health, with environmental pollution around the leather industry, recycle solid leather waste, microbiology, sanitation hygiene in community and food industry as subject research. She currently works as lecturer in departement of public health, Faculty of Medicine at Universitas Padajadjaran.

JAPAN

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Dr. Madaniyazi received her bachelor's degree in medicine in 2010 and master's degree in science in 2012 from Peking University, China. Then she obtained her Ph.D. in public health from Queensland University of Technology, Australia in 2016. She was then involved in Japan Environment and Children's Study and worked as a research fellow for two years at the National Institute for Environmental Studies, Japan. She moved to Nagasaki University in 2018 to work as an assistant professor in Institute of Tropical Medicine. Her major research interest is the health impact assessment of air pollution and climate change by using statistical modelling.

Tomoki Nakayama
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He received his Doctorate in Atmospheric Chemistry from Nagoya University in 2006. He was Research Associate/Assistant Professor at Kyoto University and Assistant Professor/ Lecturer at Nagoya University before moving to Nagasaki University in 2018. He received the Asian Young Aerosol Scientist Award (AYASA) by the Asian Aerosol Research Assembly (AARA) in 2019. He is studying on source/sink/transformation and properties of atmospheric gaseous compounds and aerosol particles such as PM2.5, based on observations and laboratory experiments, to understand their impacts on climate change, atmospheric environment, and human health. Recently, he developed a compact optical PM2.5 sensor in collaboration with Panasonic Corporation and Nagoya University. He is interested in applying this sensor to monitoring outdoor/indoor air pollution, especially in developing countries and personal exposure to study health effect of PM2.5.

MALAYSIA

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Dr Ismarul received her BSc Biomed from Universiti Kebangsaan Malaysia (UKM) and Ph.D in Community Health from Faculty of Medicine, UKM in 2006. She works as a lecturer at the Department of Biomedical Sciences, Faculty of Health Science, UKM from 2006 until now. She teach Biostatistics, research method and epidemiology courses. Her major research expertise is in the fields of Community Health especially micronutrient epidemiology. She received many awards in teaching innovation include the Gold Medal award from UKM in Knovasi 2018.

Mazrura Sahani
Medical Lecturer,
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Dr Mazrura Sahani received her Medical Degree from the Catholic University of Leuven in Belgium in 1990. She obtained Master of Public Health in 1997 from the National University of Malaysia (UKM) and PhD in Environmental Management for Health from University of Western Sydney, Richmond Australia in 2004. She specializes in environmental and occupational epidemiology. She is the founding president of Malaysia Society of Environmental Epidemiology (MySEE) established in 2011. She is one of the pioneers in the Southeast Asian (SEA) Region to assess the potential health impact of air and transboundary biomass air pollution in Malaysia. She worked in the Institute for Medical Research, Ministry of Health Malaysia in 1994 to 2006. She was in the National Outbreak investigation team when Malaysia encountered emerging disease outbreak ie. the Epstein Barr virus on HFMD in 1997 and Nipah virus outbreak in 1999. She became an academic member of the UKM in 2006. Her research interests are environmental and occupational epidemiology, health impact assessment, climate change impact to public health, emerging and re-emerging diseases.

MONGOLIA

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At IESE, Dr Khokhar is the team leader of C-CARGO. He is motivated to explore the atmospheric composition over Pakistan and to prepare regional database of different green house and trace gases by exploiting both satellite and ground-based observations. Main focus of his research are climate change mitigation and adaptation, air quality monitoring and assessment.

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Mr. Tran Cong Thanh has worked as a lecturer at Faculty of Environment since 2010. Mr. Thanh has been responsible for certain disciplines such as Environmental health, Environmental epidemiology, Environmental economics, a part of Fundamental environmental sciences as well as guiding students during field trip. He has grown great interest in effects of environmental issues on human health. Currently, he has conducted a study to assess effects of ambient air pollution on the risk of cardiovascular diseases in Ho Chi Minh City. His selected honors and awards include the Best Oral Presentation in Environmental section at the 8th Conference and the Research Excellence Award from University of Science, the Outstanding Young Officer & Lecturer Award from VNU-HCMC.

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