

# Summary of 2021 AI on "Health Investigation and Air Sensing for Asian Pollution (Hi-ASAP)"

#### **Shih-Chun Candice Lung**

Chair, Science Steering Committee of the Hi-ASAP Research Center for Environmental Changes, Academia Sinica, Taipei, Taiwan Center for Sustainability Science, Academia Sinica, Taipei, Taiwan

#### Summary of 2021 Al on Hi-ASAP

- •Reports on the current progress of Hi-ASAP in each research groups
- •Updates the current advancement of PM<sub>2.5</sub> and health sensors
- Review on the data analysis techniques
- Learn how to write joint papers
- Progress of Hi-ASAP
  - Keep conducting researches on source characterization, exposure assessment and exposure-health evaluation
    - One addition: long-term AS-LUNG-O monitoring combining with hospital data
  - Combine LCS devices with filter-based measurements to evaluate aerosol compositions for source characterization
    - Biomass burning, incense-burning, etc...

## Discussion on joint papers

Lead author	topic	collaborator	Deadline
Candice	Review	All	November 2021
Kim	Cooking	Hien, Salam, Candice	December 2021
Talib	Biomass burning	Fabienne	
Mark & Candice	Transportation	Kraichat, Hien	
Salam	24-hr exposure	Talib, Candice	
Ohnmar	Occupational exposure	Mazrura, Obie	
Hien	Incense-burning	Candice	
Vincent & Candice	Sensor comparison	Hien, Ohnmar, Talib, Salam, Obie	
Obie	Firework, Volcano?	Salam, Candice	

#### Action items (1)

- Writing joint papers
  - To facilitate information exchange, create Google drive (<a href="https://drive.google.com/drive/folders/1A7eWWWOHJ7ZC2oqme7biCEAawIT8-a7C?usp">https://drive.google.com/drive/folders/1A7eWWWOHJ7ZC2oqme7biCEAawIT8-a7C?usp</a>) with the following titles:
    - review, biomass burning, transportation, occupational exposure, 24-hour exposure, cooking, and incense-burning
    - Under these directories, you may find sub-directories: manuscript, dataset, reference, and others
  - Lead authors will be responsible for the follow-up discussion to facilitate paper-writing

#### Action items (2)

- •For the review paper, please put the paragraphs you write in the current version and email to me indicating your country and date
  - Review-TW-1019 means revised manuscript from Taiwan on the date of Oct. 19
  - Country code: BD, ID, MY, MM, PH, TW, TH, and VE
  - The first deadline is October 29, 2021
    - Fill Table 1 and references plus paragraphs to describe current publications on PM2.5 sensor application in your country for ambient levels (one paragraph for sensor only, one for sensor plus chemical analysis)
    - Candice will provide Introduction and Materials and Methods for others to revise
  - The second deadline is November 15, 2021
    - Provide all paragraphs and references in the Results session
  - Combined draft will be shared in the Google drive by November 30, 2021 with Discussion and Conclusion
    - Provide your revisions and comments on Google drive by December 7, 2021

### Action items (3)

- MOU signing
- AS-LUNG shipment
- •Sustainability Research and Innovation (SRI) 2022 (June, hybrid), Asian Aerosol Conference (June in Taipei), or AOGS
  - May organize sessions to present our progress
- 2022 Al on Hi-ASAP
  - Data analysis for PM2.5 data and health data from hospitals or large governmental database
  - Systems approaches
  - Discussion on joint papers



# Any suggestions and comments?

#### Science Steering Committee (SSC) of the Hi-ASAP

Study Area	Full Name	Role	Organization
Dangladash	Abdus Salam	Leader / AC	Department of Chemistry, University of Dhaka
Bangladesh	Mahbuba Yesmin	Health	Internal Medicine Department, Apollo Hospital Dhaka
Hong Kong	Kin-fai Ho	AC &Health	The Chinese University of Hong Kong
la de menio	Puji Lestari	Leader / AC & Health	Faculty of Civil and Environmental Engineering, Institute Teknology Bandung
Indonesia	Dwi Agustian	Health	Department of Public Health, Faculty of Medicine, Universitas Padjadjaran
Korea	Kiyoung Lee	Leader / AC & Health	Seoul National University
Malaysia	Mohd Talib Latif	Leader / AC; Co-Chair of SSC	School of Environmental and Natural Resource Sciences, Universiti Kebangsaan Malaysia
	Mazrura Sahani	Health	National University of Malaysia
Mongolia	Chonokhuu Sonomdagva	AC	National University of Mongolia
Mongolia	Enkhjargal Altangere	Health	Public health, Ach Medical University

	Study Area	Full Name	Role	Organization
	Myanmar	Ohnmar May Tin Hlaing	Leader / AC & Health; Co-Chair of SSC	Environmental Quality Management Co., Ltd
_	Philippines	Maria Obiminda L. Cambaliza	Leader / AC	School of Science and Engineering, Ateneo de Manila University
		John Q. Wong	Health	Ateneo De Manila University
Thaila	Taiwan	SC Candice Lung	Leader / AC & Health; <b>Chair of SSC</b>	Research Center for Environmental Changes, Academia Sinica
		WC Vincent Wang	AC	Academia Sinica
	Thailand	Kim Oanh	Leader / AC	School of Environment, Resources and Development, Asian Institute of Technology
		Kraichat Tantrakarnapa	Health	Faculty of Tropical Medicine, MAHIDOL Medicine
	Vietnam	Thi Hien To	Leader / AC	University of Science, Vietnam National University Ho Chi Minh City
	vietnam	Tran Ngoc Dang	Health	University of Medicine and Pharmacy at Ho Chi Minh City (UMP HCMC)
	Australia	Fabienne Reisen	Analysis	Commonwealth Scientific and Industrial Research Organisation (CSIRO)

#### Hi-ASAP

- Specific Aims
  - To conduct research providing policy-relevant findings to reduce PM<sub>2.5</sub>-associated health risks at national levels
- •Take advantage of the new sensor technology to tackle the health threats brought by severe PM<sub>2.5</sub> pollution in Asia
  - Low-cost sensing (LCS) devices are applied to evaluate  $PM_{2.5}$  sources, exposures, and exposure-health relationships in high tempo-spatial resolution with much lower expenses