

# JPIAMR Regional Workshop Asia

Clinical Epidemiology, AMR policy, Therapeutics and Diagnostics  
Suwon, South Korea, 4-5 December 2019



**Organized by Sungkyunkwan University School of Medicine**

**Supported by JPIAMR, NRF, IAMRT and AMED**



Joint Programming Initiative  
on Antimicrobial Resistance



# **Regional JPIAMR Workshop in Asia: Fostering Knowledge on Clinical Epidemiology, AMR Policy, Therapeutics and Diagnostics to Combat AMR in Asia**

## **Agenda**

The workshop will bring together experts and researchers from Asia to give insight into Antimicrobial Resistance in Asia with a focus on therapeutics and diagnostics. The workshop will be held in Sungkyunkwan University, Suwon, Republic of Korea on the 4<sup>th</sup> and 5<sup>th</sup> of December, 2019.

## **Organizers and Supporters**

The workshop is organized by Sungkyunkwan University School of Medicine, Republic of Korea and supported by the National Research Foundation of Korea (NRF), the Japan Agency for Medical Research and Development (AMED) and by Joint Programming Initiative on Antimicrobial Resistance (JPIAMR).

## **Sungkyunkwan University School of Medicine (SKKUSOM)**

Sungkyunkwan University (SKKU) was founded in 1398 during the Joseon Dynasty but the school was officially reformed into a modern university in 1895. SKKU was promoted to a comprehensive university with the opening of its graduate school in 1953. In 1996, Samsung Group joined the University Foundation which was the beginning of an era of unbridled growth for SKKU. SKKU currently consists of 17 colleges and 47 departments with 4,700 faculties, 20,000 undergraduate students, and 7,000 graduate students. The SKKU School of Medicine was established in 1997 with Samsung Medical Centre (SMC) as an education hospital. The SKKU School of Medicine is ranked 37<sup>th</sup> in the world, and No.1 in Korea in the field of Clinical, Pre-Clinical & Health 2019 by Times Higher Education.

## **Joint Programming Initiative on Antimicrobial Resistance (JPIAMR)**

The Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) is a global collaborative platform and has engaged 27 nations to curb antibiotic resistance (AMR) with a “One Health” approach. The initiative coordinates national funding to support transnational research and activities within the six priority areas of the shared JPIAMR Strategic Research and Innovation Agenda – therapeutics, diagnostics, surveillance, transmission, environment and interventions. The JPIAMR is currently developing a platform to extend shared research capabilities on a global scale through the Virtual Research Institute (JPIAMR-VRI).

## **National Research Foundation of Korea (NRF)**

The National Research Foundation of Korea (NRF), supported from the ministry of science and Information and communications technology (ICT), was established in 2009 as a merger of Korea Science and Engineering Foundation (KOSEF), Korea Research Foundation (KRF), and Korea Foundation for International Cooperation of Science and Technology (KICOS) with the mission of “Contributing to the advancement of knowledge and improvement of quality of life through supporting creative research and fostering human resource”. The total budget in 2019 was 5,236 million US dollars, which supports the basic research in science engineering (1,579 million USD), academic research in humanities and social sciences (205 million USD), national strategic R&D (1,669 million USD), academic promotion and cultivation of human resources (1,639 million USD), international affairs (73 million USD), other (71 million USD).

## **Japan Agency for Medical Research and Development (AMED)**

The Japan Agency for Medical Research and Development (AMED) was established in 2015 for the advancement of medical discoveries that make life better for everyone. Working beneath the Prime Minister’s Cabinet and national ministries, AMED promotes integrated research and development in the field of medicine, from basic research to clinical trials. Currently, 2,416 projects are supported by AMED. The total budget in 2019 was approximately 1,155 million USD.

## **Institute of Antimicrobial Resistance Research and Therapeutics (IAMRT-SKKU)**

Institute of Antimicrobial Resistance Research and Therapeutics (IAMRT-SKKU) was launched at Sungkyunkwan University in 2018 with aims to understand the principle of antibiotic resistance and to develop novel antimicrobial therapeutics. A key assignment for IAMRT-SKKU is conveying to and from international communities working on AMR about important research outputs and policy shifts. Another key assignment of the center will be bringing in all relevant research activities carried out by various ministries and agencies under one umbrella, subsequently leading to coordination not solely on a domestic level but on an international one.

## **Organizing Committee**

Dr. Kyeong Kyu Kim, SKKUSOM, Republic of Korea  
Dr. Shoji Miyagawa, AMED, Japan  
Dr. Yumiko Miyashita, AMED, Japan  
Dr. Seon-Won Kim, NRF, Republic of Korea  
Dr. Akhilesh K. Chaurasia, SKKUSOM & IAMRT, Republic of Korea  
Dr. Laura Plant, JPIAMR, Sweden  
Dr. Jie-ming Qu, Medical School of Shanghai Jiaotong University, China

## **Program Committee**

Dr. Marc Lemonnier, JPIAMR Scientific Advisory Board, France  
Dr. You-Hee Cho, CHA University, Republic of Korea  
Dr. Kunihiko Nishino, Osaka University, Japan  
Dr. Xinshan Ye, Peking University, China  
Dr. Aixin Yan, University of Hong Kong, Hong Kong

## **Local Organizing Committee**

Ms. Sun Hee Kim, SKKUSOM, Republic of Korea  
Ms. Nayab Batool, SKKUSOM, Republic of Korea  
Dr. Truc Kim, SKKUSOM, Republic of Korea  
Dr. Rekha Arya, SKKUSOM, Republic of Korea  
Dr. Changsuk Oh, SKKUSOM, Republic of Korea

## **Contact for Help\***

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Ms. Nayab Batool (Pakistan): +82-10-5707-5925  
Ms. Yi Wei Song (Chinese): +82-10-6450-1123 / wetchat: 1045521497

\* When you need help for the workshop in Korea, please contact the members. All can speak in English with their national languages.

## **Program at a Glance**

Time: AM 9:00 December 4, 2019 to PM 4:20 December 5, 2019

Venue: Medical Building 3<sup>rd</sup> floor, Rm #713304 (Multimedia Room), Sungkyunkwan University

(Please see the map in page 10 and 11)

<b>Day 1 (Dec 4<sup>th</sup>, Wednesday, 2019)</b>		
<b>Registration AM 9:00-10:30</b>		
<b>Welcome Address</b>	10:30-10:40	Dr. Seon-Won Kim
<b>Keynote 1 &amp; 2 (Chair: Dr. Kyeong Kyu Kim)</b>		
K1	10:40-11:10	Dr. Socorro Escalante
K2	11:10-11:40	Dr. Laura Plant
Lunch 11:40-13:00		
<b>Session 1: Clinical Epidemiology of AMR in Asia (Chair: Dr. Jae-Seok Kim)</b>		
S1-1	13:00-13:25	Dr. Jie Ming Qu
S1-2	13:25-13:50	Dr. Yohei Doi
S1-3	13:50-14:15	Dr. Seok Hoon Jeong
S1-4	14:15-14:40	Dr. Hoa Thi Ngo
Break 14:40-15:00		
<b>Session 2: AMR Policy and Funding in Asian Countries (Chair: Dr. Akhilesh K. Chaurasia)</b>		
S2-1	15:00-15:25	Dr. Isabel Frost
S2-2	15:25-15:50	Dr. Yuxing Ni
S2-3	15:50-16:15	Dr. Shoji Miyagawa
S2-4	16:15-16:40	Dr. Kwang Jun Lee
Break 16:40:17:00		
<b>Round Table Discussion 1 (Chair: Dr. Laura Plant)</b>		
R1	17:00-18:00	
<b>Day 2 (Dec 5<sup>th</sup>, Thursday, 2019)</b>		
<b>Registration AM 8:30-9:00</b>		
<b>Keynote 3 &amp; 4 (Chair: Dr. Sang Hee Lee)</b>		
K3	09:00-09:30	Dr. Marc Lemonnier
K4	09:30-10:00	Dr. Choong-Min Ryu
Break 10:00-10:20		
<b>Session 3: Novel Approaches for AMR Infections (Chair: Dr. Jae Hoon Yu)</b>		
S3-1	10:20-10:45	Dr. Aixin Yan
S3-2	10:45-11:10	Dr. Young Lag Cho
S3-3	11:10-11:35	Dr. Kunihiko Nishino
S3-4	11:35-12:00	Dr. Cai-Guang Yang
S3-5	12:00-12:25	Dr. Xin-Shan Ye
Lunch 12:25-13:30		
<b>Session 4: New Technologies in AMR Diagnostics (Chair: Dr. Kin-Ming (Clement) Tsui)</b>		
S4-1	13:30-13:55	Dr. YongKeun Park
S4-2	13:55-14:20	Dr. Margaret Ip
S4-3	14:20-14:45	Dr. Makoto Kuroda
Break 14:45-15:00		
<b>Round Table Discussion 2 (Chair: Dr. Marc Lemonnier)</b>		
R2	15:00-16:00	
<b>Closing Remarks</b>	16:00-16:20	Dr. Laura Plant

\* Full information in page 18-20

## **Program of Workshop**

Medical Building 3<sup>rd</sup> floor, Rm #713304 (Multimedia Room), Sungkyunkwan University School of Medicine (Please, see the map page 10 and 11).

### **Day 1: December 4, 2019**

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
09:00-10:30	<b><i>Registration</i></b>	
10:30-10:40	Dr. Seon-Won Kim National Research Foundation, Korea	Welcome address
10:40-11:40	<b><i>Keynote 1 &amp; 2</i></b> <b><i>Chair: Dr. Kyeong Kyu Kim (Sungkyunkwan University School of Medicine)</i></b>	
10:40-11:10	Dr. Socorro Escalante World Health Organization	Medicines policies and health systems
11:10-11:40	Dr. Laura Plant JPIAMR	JPIAMR: Global coordination of AMR research funding and activities
11:40-11:45	<b><i>Group Photograph</i></b>	
11:45-13:00	<b><i>Lunch</i></b>	
13:00-14:40	<b><i>Session 1, Clinical Epidemiology of AMR in Asia,</i></b> <b><i>Chair: Dr. Jae-Seok Kim (Department of Laboratory Medicine, Kangdong Sacred Heart Hospital)</i></b>	
13:00-13:25	Dr. Jie-Ming Qu Rui Jin Hospital, Shanghai Jiaotong University School of Medicine, China	Clinical and molecular characteristics of rapid-spreading carbapenem-resistant Enterobacteriaceae in China
13:25-13:50	Dr. Yohei Doi Fujita Health University School of Medicine, Japan	Antimicrobial resistance (AMR) in Japan
13:50-14:15	Dr. Seok Hoon Jeong Department of Laboratory Medicine, Yonsei University Severance Hospital, Korea	Current status of AMR in humans in South Korea: a report from Kor-GLASS
14:15-14:40	Dr. Hoa Thi Ngo Zoonoses Group Oxford University Clinical Research Unit Vietnam	National action plans to combat antimicrobial resistance (AMR) in Vietnam and the high prevalence of AMR bacteria in community
14:45-15:00	<b><i>Break</i></b>	

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
15:00-16:40	<b>Session 2, AMR Policy and Funding in Asian Countries, Chair: Akhilesh K. Chaurasia (Sungkyunkwan University School of Medicine)</b>	
15:00-15:25	Dr. Isabel Frost The Center for Disease Dynamics, Economics & Policy (CDDEP), India	Antimicrobial resistance (AMR) policy update in Asia
15:25-15:50	Dr. Yuxing Ni Dept. of Clinical Microbiology and Infection Control, Rui Jin Hospital, China	Containing AMR, China's action
15:50-16:15	Dr Shoji Miyagawa The Japan Agency for Medical Research and Development, Japan	AMR Action plan and funding in Japan
16:15-16:40	Dr. Kwang-Jun Lee Centres for Disease Control and Prevention, Korea	National strategies for the reduction of antimicrobial resistance: One Health
16:40-17:00	<b>Break</b>	
17:00-18:00	<b>Round Table Discussion 1, One Health in Asia, Chair: Laura Plant (JPIAMR)</b> Representative speakers in CDDEP, China, India, Japan, Republic of Korea and Vietnam	

## **Day 2: December 5, 2019**

<b>Time</b>	<b>Speaker</b>	<b>Title</b>
08:30-09:00	<b>Registration</b>	
09:00-10:00	<b>Keynote 3 &amp;4 Chair: Dr. Sang Hee Lee (Myongji University)</b>	
09:00-09:30	Dr. Marc Lemonnier Antabio, France	Novel antibacterials targeting WHO's critical priority pathogens: challenges and opportunities from discovery to commercialization
09:30-10:00	Dr. Choong-Min Ryu Korean Research Institute for Bioscience and Biotechnology, Republic of Korea	Diagnosis and combi-therapy against super- bacteria
10:00-10:20	<b>Break</b>	



<b>Time</b>	<b>Speaker</b>	<b>Title</b>
10:20-12:25	<b><i>Session 3, Novel approaches for AMR Infections, Chair: Dr. Jae Hoon Yu (Seoul National University)</i></b>	
10:20-10:45	Dr. Aixin Yan University of Hong Kong, Hong Kong	Native CRISPR-Cas mediated genome editing facilitates the treatment of clinical multidrug resistant <i>Pseudomonas aeruginosa</i> based on collateral sensitivity
10:45-11:10	Dr. Young Lag Cho Legochem Biosciences, Republic of Korea	Antibiotics pipeline for infectious diseases and development strategy of LegoChem Biosciences, Inc
11:10-11:35	Dr. Kunihiko Nishino Osaka University, Japan	Multidrug efflux pumps in Gram-negative bacteria
11:35-12:00	Dr. Cai-Guang Yang Shanghai Institute of Materia Medica, China	From antibiotic to antivirulence for AMR infection
12:00-12:25	Dr. Xin-Shan Ye Peking University, China	Chemical modifications of aminoglycoside antibiotics and beyond
12:25-13:30	<b><i>Lunch</i></b>	
13:30-14:45	<b><i>Session 4, New technologies in AMR diagnostics Chair: Dr. Kin-Ming (Clement) Tsui (Weill Cornell Medicine - Qatar; Sidra Medicine)</i></b>	
13:30-13:55	Dr. YongKeun Park KAIST and Tomocube Inc, Republic of Korea	Holotomography and artificial intelligence: label-free 3D imaging and analysis of individual live cells
13:55-14:20	Dr. Margaret Ip The Chinese University of Hong Kong, Hong Kong	Diagnostic Stewardship: The way forward to combating antimicrobial resistance
14:20-14:45	Dr. Makoto Kuroda National Institute of Infectious Diseases, Japan	Global genome epidemiology database (gGENEPID)
14:45-15:00	<b><i>Break</i></b>	
15:00-16:00	<b><i>Round Table Discussion 2, Research collaboration in Asia Chair: Marc Lemonnier (Antabio)</i></b> Representative speakers in China, Hong Kong, Japan, and Republic of Korea with industrial and academic backgrounds.	
16:00-16:20	Dr. Laura Plant JPIAMR	Closing remarks

## **Chairs**

### **Dr. Kyeong Kyu Kim**

Director & Professor, Institute of Antimicrobial Resistance Research and Therapeutics (IAMRT), School of Medicine, Sungkyunkwan University, Suwon, Samsung Medical Centre, Seoul, Republic of Korea

#### ***Research Interests***

- 1) Structural and functional studies of noncanonical DNAs
- 2) Alternative strategies to combat against AMR

### **Dr. Jae-Seok Kim**

Professor of Laboratory Medicine and Director of Clinical Microbiology in Kangdong Sacred Heart Hospital, Seoul, Republic of Korea

#### ***Research Interests***

- 1) Clinical diagnostic testing method for rapid, sensitive detection of pathogens
- 2) Molecular epidemiology and antimicrobial resistance of *Staphylococcus aureus*

### **Dr. Akhilesh K. Chaurasia**

Research Professor, Institute of Antimicrobial Resistance Research and Therapeutics (IAMRT), School of Medicine, Sungkyunkwan University, Suwon, Republic of Korea

#### ***Research Interests***

- 1) Decoding the antimicrobial resistance using x-omics approach
- 2) Novel physical and mechanochemical approach to treat AMR infections

### **Dr. Sang Hee Lee**

Professor, Division of Biosciences and Bioinformatics, Myongji University, Seoul, Republic of Korea

#### ***Research Interests***

- 1) Structural Proteomics of extended-spectrum  $\beta$ -lactamases, AmpCs, and carbapenemases
- 2) Structure-based drug design and target-oriented structural genomics

### **Dr. Laura Plant**

Research Officer, Joint Programming Initiative on Antimicrobial Resistance (JPIAMR), Stockholm, Sweden

#### ***Research Interests***

- 1) Coordination of multi-sectorial One Health AMR research on a global scale
- 2) Funding research on the six priority areas of the JPIAMR Strategic Research and Innovation Agenda

### **Dr. Jae Hoon Yu**

Director & Professor, Department of Chemistry & Education, Seoul National University, Seoul, Republic of Korea

#### ***Research Interests***

- 1) Cell penetrating peptides to increase passive permeability of larger cyclic peptides
- 2) Inhibition of protein-protein interaction

### **Dr. Kin-Ming (Clement) Tsui**

Assistant Professor of Department of Pathology and Laboratory Medicine, Weill Cornell Medicine - Qatar; Pathology Sciences, Department of Pathology, Sidra Medicine, Doha, Qatar

#### ***Research Interests***

- 1) Population genetics and molecular epidemiology of pathogens to plants, animals and humans
- 2) Bioinformatic and molecular genetics approach to understand the evolution and antimicrobial resistance mechanisms of bacteria

### **Dr. Marc Lemonnier**

Founding Chief Executive Officer (CEO) of Antabio, France; Scientific Advisor to JPIAMR

#### ***Research Interests***

- 1) Developing novel and proprietary anti-infectives targeting WHO's critical priority pathogens
- 2) Focus on small molecule inhibitors of carbapenemases to be combined with carbapenems for treating life-threatening infections

## Participating Countries



Members from 11 countries: Australia, China, France, Hong Kong, India, Japan, Pakistan, Qatar, Republic of Korea, Sweden and Vietnam