

November 21-22, 2018

# ACSEL 2018 at OIST, Okinawa, Japan

The 5th Asian Conference on Safety and Education in Laboratory

**“Promoting Innovation and Advanced Interdisciplinarity  
through Environmental Safety Science”**

Co-organized by



THE UNIVERSITY OF TOKYO



The Academic Association of  
Environmental Safety and Waste Management, Japan



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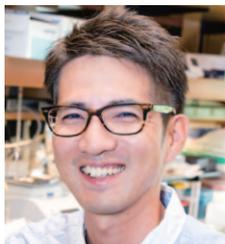
Ministry of Education, Culture, Sports, Science and Technology  
Japan Science and Technology Agency  
Science Council of Japan  
The Japan Association of National Universities  
Federation of Japanese Private Colleges and Universities Associations  
Okinawa Prefecture



The Asian Conference  
on Safety and Education in Laboratory



## Plenary talk



Prof. Chuya Shinzato,  
Japan



Dr. Jürgen Steck,  
Germany



Dr. Mary Collins,  
Japan



Mr. Bruce White,  
New Zealand



Prof. David Koh,  
Brunei



Prof. Puji Lestari,  
Indonesia



Prof. Seung Hyeok Seok,  
Korea



Mr. Saravanan s/o Gunaratam,  
Singapore



Prof. Dra. Fatma Lestari,  
Indonesia

## Keynote lecture

## Special session

***“How should we harmonize the safety education with diversity in research site”***

The diversity of the research site is not limited to the complexity and sophistication of the research and the interdisciplinarity of the research field, but also includes the internationalization / gender of the members, the differences in the cultural background, and the types of equipment and chemicals used in the experiment. Though these issues likely depend on individual circumstances, they are still common issues in every country, and it is expected that the safety education methods that are effective at each site will also have high commonality. This session will introduce the current situation of diverse research sites and various advanced initiatives of safety management and education based on diversity, and will discuss the importance of harmonization for sharing and cooperating on an innovative way of safety management and education methods.



URL <http://www.acsel.esc.u-tokyo.ac.jp/2018/index.html>

## Tuesday - November 20, 2018

12:00-15:00	<b>Registration</b> <i>Location: Entrance Hall, Conference Center</i>
13:00-14:30	<b>Lab. Tour</b>

## Wednesday - November 21, 2018

8:15	<b>Welcome Coffee</b> <b>Registration</b> <i>Location: Entrance Hall, Conference Center</i>
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### Opening *Location: Auditorium*

**Chair Ms. Naoko Kiyan**

9:00	<b>Opening remarks</b> Prof. Shizuaki Murata, Chair of ACSEL2018, Nagoya University, Japan
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9:10	<b>Welcome address</b> Dr. Peter Gruss, President / CEO, Okinawa Institute of Science and Technology Graduate University, Japan
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9:15	<b>Congratulatory address</b> Mr. Hiroshi Yoshimoto, Director General, Higher Education Bureau, Ministry of Education, Culture, Sports, Science and Technology, Japan
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### Plenary Session *Location: Auditorium*

**Chair Mr. Saravanan s/o Gunaratam**

9:20 <b>PI-11</b>	<b>Safety and emergency management at OIST: lessons learned</b> Dr. Mary Collins, Provost, Okinawa Institute of Science and Technology Graduate University, Japan
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10:00 <b>PI-12</b>	<b>Conservation and restoration of coral reefs: the most diverse marine ecosystems</b> Prof. Chuya Shinzato, The University of Tokyo, Japan
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**Chair Prof. Teppei Nunoura**

10:40 <b>PI-13</b>	<b>Never waste a good crisis: lessons from the 2011 Christchurch earthquake</b> Mr. Bruce White, Deputy Registrar, University of Canterbury, New Zealand
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11:20 <b>PI-14</b>	<b>Hazardous wastes treatment and disposal at the University of Freiburg</b> Dr. Jürgen Steck, Albert-Ludwigs-Universität Freiburg, Germany
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12:00-13:00	<b>Lunch Buffet</b> <i>Location: Entrance Hall, Meeting Room 1, 2, 3, Lawn Field</i>
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### Technical Session Poster Presentation *Location: Spacious Lobby Area*

13:00-13:45	<b>odd numbered presentation</b>
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13:45-14:30	<b>even-numbered presentation</b>
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14:30-15:00	<b>Free discussion</b>
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<b>P-01</b>	<b>Risk assessment and application cases in research laboratory in Korea</b> K. W. Lee* and Y. R. Chio, KOSHA
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<b>P-02</b>	<b>Emergency preparedness &amp; response in biomedical research facilities</b> C. J. E. Goh*, Singapore Health Services Pte Ltd
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<b>P-03</b>	<b>Accident prevention analysis on traffic management at Universitas Indonesia</b> Y. Kusminanti*, F. Lestari* and A. Attahiroh*, Universitas Indonesia
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<b>P-04</b>	<b>Analysis on event risk management at Universitas Indonesia</b> Y. Kusminanti* and F. Lestari*, Universitas Indonesia
<b>P-05</b>	<b>Questionnaire survey on consciousness and behavior of students to achieve SDGs in Kyoto University</b> Y. Ando, M. Tsuchimura, R. C. Baars and M. Asari*, Kyoto University
<b>P-06</b>	<b>Water quality control of wastewater from laboratories and educational effect</b> Y. Hamada* and T. Tomiyasu, Kagoshima University
<b>P-07</b>	<b>OIST campus, the challenge for symbiosis with Nature</b> T. Okamoto, Nikken Sekkei Ltd.
<b>P-08</b>	<b>Global overview of scientific diving standards</b> S. Kinjo* and T. Tanaka, Okinawa Institute of Science and Technology Graduate University
<b>P-09</b>	<b>Challenges on radiation safety culture improvement in UTokyo -Kick-off activities led by radiation safety promotion Manager (RSPM)-</b> T. Iimoto*, S. Kukita, K. Tanoi and T. Terai, The University of Tokyo
<b>P-10</b>	<b>Workplace inspection reporting system</b> S. Bito*, J. M. Wells, F. Moriyama and T. Tanaka, Okinawa Institute of Science and Technology Graduate University
<b>P-11</b>	<b>An evaluation of a laboratory safety program that integrates construction-derived toolbox meeting to prevent laboratory exposure to high risk microorganisms</b> B. C. Khoo, F. H. Tahar, B. Y. Wee and J. H. C. Sim*, Singapore General Hospital
<b>P-12</b>	<b>The counseling service for developing the occupational safety and health management system in colleges and universities in Taiwan</b> Y. C. Kuo* and P. J. Tsai, National Cheng Kung University
<b>P-13</b>	<b>Just scan! Effective chemical stocktake</b> T. Harada*, F. Moriyama and T. Tanaka, Okinawa Institute of Science and Technology Graduate University
<b>P-14</b>	<b>Integrated safety management system for laboratory in Seoul National University</b> J. H. Lee, Seoul National University
<b>P-15</b>	<b>Efforts for safe use of gene drive technology in Japan</b> T. Tanaka* <sup>1</sup> , N. Tanaka <sup>2</sup> , Y. Nagano <sup>3</sup> , H. Kanuka <sup>4</sup> , D. S. Yamamoto <sup>5</sup> , N. Yamamoto <sup>6</sup> , E. Nanba <sup>7</sup> and T. Nishiuchi <sup>8</sup> , <sup>1</sup> Okinawa Institute of Science and Technology Graduate University, <sup>2</sup> Hiroshima University, <sup>3</sup> Saga University, <sup>4</sup> The Jikei University School of Medicine, <sup>5</sup> Jichi Medical University, <sup>6</sup> Osaka University, <sup>7</sup> Tottori University, <sup>8</sup> Kanawaza University
<b>P-16</b>	<b>A study on the establishment of chemical substance registration system in the university for autonomous safety management of laboratories in Korea</b> M.R Shin, I.M Lee*, Y.W Hwang and Y.W Chun, Inha University
<b>P-17</b>	<b>Tips for animal experiments in the small radioisotope facility</b> F. Moriyama* and T. Tanaka, Okinawa Institute of Science and Technology
<b>P-18</b>	<b>Investigation on the status of personal protective equipment usage in laboratory and study on improvement direction</b> H. J. Jeon*, S. P. Chung, H. W. Lee and Y. H. Roh, National Research Safety Headquarters
<b>P-19</b>	<b>Study on accident management improvement through analysis of research lab accidents in Korea</b> M. H. Lee*, M. H. Kim, K. H. Choi and Y. H. Roh, National Research Safety Headquarters
<b>P-20</b>	<b>Internal audit project for laboratory safety management</b> P. Zong*, H. Chen, Q. Liu and Y.-H. Xie, Xi' an Jiaotong University Suzhou Academy
<b>P-21</b>	<b>Measurement of particulate matter concentrations in the working place</b> M. Ono* <sup>1</sup> , K. Tonokura <sup>1</sup> and Y. Matsumi <sup>2</sup> , <sup>1</sup> The University of Tokyo, <sup>2</sup> Nagoya University

<b>P-22</b>	<b>Evaluation of implementation measures for safety eye protection at NUS medicine laboratories</b> T.S. Sim*, S. Tay, J.J. Lim and Y.H. Lim*, National University of Singapore
<b>P-23</b>	<b>A study to strengthen the compensation for laboratory accidents</b> H. S. Song <sup>1</sup> , N. H. Yee <sup>2</sup> , J. G. Choi <sup>3</sup> , S. H. Chun <sup>4</sup> and J. J. Kim* <sup>5</sup> , <sup>1</sup> U1 University, <sup>2</sup> Korea Institute for Health and Social Affairs, <sup>3</sup> Hanyang University, <sup>4</sup> Konkuk University, <sup>5</sup> Seoyeong University
<b>P-24</b>	<b>Radiation workers management system renewal at The University of Tokyo</b> R. Senna*, K. Kimura, M. Tanikawa, H. Takiguchi, K. Tanoi and T. Iimoto, The University of Tokyo
<b>P-25</b>	<b>Influence of airflow generated by supply air diffuser and door motion on products contamination in the biological safety cabinet</b> H. Tani* <sup>1</sup> , K. Amano <sup>1</sup> , Y. Chiba <sup>1</sup> , T. Hidaka <sup>1</sup> , D. Sone <sup>1</sup> , Y. Terajima <sup>2</sup> , H. Motegi <sup>2</sup> and M. Kubota <sup>2</sup> , <sup>1</sup> Takenaka Corporation, <sup>2</sup> Okamura Corporation
<b>P-26</b>	<b>Improvement of workplace by reuse of the unnecessary chemical substances at the university.</b> A. Kashiwagi*, M. Yoshida and Y. Hirooka, Tottori University
<b>P-27</b>	<b>Novel feedstock recycling of polyvinyl chloride with chemical modification using aromatic and aliphatic reagents</b> L. Lihui, S. Kumagai, Y. Saito, T. Kameda and T. Yoshioka*, Tohoku University
<b>P-28</b>	<b>Overwork factor survey among university researchers in Japan</b> R. Kuroda* <sup>1</sup> , T. Kawamura <sup>2</sup> , T. Irokawa <sup>3</sup> , S. Dohi <sup>4</sup> , I. Kabe <sup>5</sup> , K. Yamamoto <sup>1</sup> and Y. Okubo <sup>1</sup> , <sup>1</sup> The University of Tokyo, <sup>2</sup> Kyoto University, <sup>3</sup> Tohoku University, <sup>4</sup> Mitsui Chemicals, INC, <sup>5</sup> Furukawa Electric Corporation
<b>P-29</b>	<b>Radiation safety communication system in Seoul National University</b> G. G. Yang and K. C. Lee*, Seoul National University
<b>P-30</b>	<b>Biosecurity in SGH research laboratories</b> H. J. Oon*, L. H. Yeong, N. S. Jamil and C. T. H. Chuah, Singapore General Hospital
<b>P-31</b>	<b>Laboratory safety management (liquid nitrogen)</b> B. L. Tan* and S. H. Tan, National University of Singapore
<b>P-32</b>	<b>Importance of eye safety in laboratories</b> V. Chandrasekaran*, M. S. Cheng, A. X. Y. Lee and S. W. Koh, National University of Singapore
<b>P-33</b>	<b>Mental health assessment in higher education</b> R. Modjo* and F. Lestari, Universitas Indonesia
<b>P-34</b>	<b>Development of educational materials on environment and safety for international students and researchers</b> A. Shuhara* and Y. Oshima, The University of Tokyo
<b>P-35</b>	<b>The development of occupational safety and health lectures for technological universities in Myanmar</b> T. Tanaka* <sup>1</sup> , K. T. Lwin <sup>3</sup> , K. Ito <sup>1</sup> , S. Okano <sup>1</sup> , R. Vergin <sup>1</sup> , M. Kawakami <sup>2</sup> and T. Miyazaki <sup>2</sup> , <sup>1</sup> Ehime University, <sup>2</sup> Okayama University, <sup>3</sup> Technological University Hmawbi
<b>P-36</b>	<b>What is necessary in the primary report of an accident at a university</b> S. Murata*, K. Tomita, R. Hayashi and T. Nishikimi, Nagoya University
<b>P-37</b>	<b>Development of radiation literacy among secondary school students in Sri Lanka</b> N. C. Ranasinghe * <sup>1,2</sup> , U. Perera <sup>2</sup> , P. Mahakumara <sup>2</sup> , N. G. Rathnaweera <sup>2</sup> , T. Toda <sup>3</sup> and T. Iimoto <sup>2</sup> , <sup>1</sup> Sri Lanka Atomic Energy Board, <sup>2</sup> The University of Tokyo, <sup>3</sup> RADO co. Ltd.
<b>P-38</b>	<b>Safety education course for electricity handling at the University of Tokyo</b> C. Kurosawa, E. Sakai and Y. Tsuji*, The University of Tokyo
<b>P-39</b>	<b>A study on the improvement of safety education for university laboratory in Korea for foreign researchers</b> J.C. Park, Y.W. Hwang* , I.M. Lee and Y.W. Kim, Inha University

<b>P-40</b>	<b>Fire safety education for fire response and emergency evacuation at Nagoya University</b> K. Tomita*, T. Nishikimi, R. Hayashi <sup>1</sup> , T. Mishina and S. Murata, Nagoya University
<b>P-41</b>	<b>Management and training course for hazardous material under the Fire Service Act at Graduate School of Engineering</b> Y. Kizaki*, T. Kato, H. Takiguchi and T. Mogi, The University of Tokyo
<b>P-42</b>	<b>Oxygen concentration monitoring in enclosed space at leakage of cryogen or nitrogen gas</b> E. Sakai, C. Kurosawa and Y. Tsuji*, The University of Tokyo
<b>P-43</b>	<b>Analysis of laboratory accidents in the University of Tokyo</b> M. Tarui*, R. Kuroda, K. Yamamoto, T. Umekage, S. Yanagimoto, and Y. Okubo, The University of Tokyo
<b>P-44</b>	<b>Risk analysis based on the relationship between characteristics of experimental works and indoor airflow in experimental laboratories</b> R. Yamaguchi* <sup>1</sup> , Y. Nezu <sup>1</sup> , A. Nishida <sup>2</sup> , H. Yamamoto <sup>3</sup> and Y. Oshima <sup>1</sup> , <sup>1</sup> The University of Tokyo, <sup>2</sup> Kajima Corporation, <sup>3</sup> Osaka University
<b>P-45</b>	<b>Numerical simulation for exposure risk of hazardous substances by leak accident in laboratory</b> H. Momose* and H. Yamamoto, Osaka University
<b>P-46</b>	<b>Visualization of activity in university laboratory for experimental accidents/incidents prevention using non-empirical approach</b> Y. Nezu* <sup>1</sup> , R. Hayashi <sup>2</sup> , H. Yamamoto <sup>3</sup> and Y. Oshima <sup>1</sup> , <sup>1</sup> The University of Tokyo, <sup>2</sup> Nagoya University, <sup>3</sup> Osaka University
<b>P-47</b>	<b>Recovery system of waste materials containing mercury</b> S. Matsubara*, Nomura Kohsan Co., Ltd
<b>P-48</b>	<b>Detection of fine particles of microbial origin in activated sludge by fluorescent staining and flow cytometry</b> N. Yamaguchi, T. Tobino*, F. Nakajima and K. Yamamoto, The University of Tokyo
<b>P-49</b>	<b>Creation and utilization of database on unknown chemical waste for safe treatment and analysis</b> H. Takiguchi*, K. Iino and T. Odake, The University of Tokyo
<b>P-50</b>	<b>Generation mechanism of 1,4-dioxane in the exhaust gas from an industrial waste incineration facility</b> Y. Fuse* <sup>1</sup> , T. Nagaya <sup>2</sup> and I. Aizawa <sup>2</sup> , <sup>1</sup> Kyoto Institute of Technology, <sup>2</sup> IZAK CO., LTD.

**Networking Session by Sponsored Companies** *Location: Spacious Lobby Area and Mutipurpose Space*

13:00-15:00

14:30-15:00 **Coffee Break** *Location: Spacious Lobby Area and Mutipurpose Space*

**Plenary Session** *Location: Auditorium*

**Chair** Dr. Iino Kenji

15:00 **Field measurement and composition of particulate matter in Indonesia**

**PI-15**

Prof. Puji Lestari, Bandung Institute of Technology, Indonesia

15:40 **Laboratory-safety management and education in Seoul National University**

**PI-16**

Prof. Seung Hyeok Seok, Seoul National University, South Korea

16:20 **Benchmarking strategies for ensuring successful university safety and health programmes**

**PI-17**

Mr. Saravanan So Gunaratam, National University of Singapore, Singapore

**Banquet**

17:30

*Location: Grano B level of Center Building*

## Thursday - November 22, 2018

8:30

**Welcome Coffee  
Registration**

Location: Entrance Hall, Conference Center

### Technical Session Oral Presentation

*Location: Auditorium*

Theoretical analysis of environmental safety in laboratory

**Chair Prof. Sun-Young Bae**

9:15  
**KY-11**

**[Keynote] Sedentary behaviour in laboratories as an occupational hazard**

D. Koh, Universiti Brunei Darussalam

9:45  
**O-11**

**Analysis of ampoule bottle opening operation among researchers with expert differences**

Y. Tsuji\* and C. Kurosawa, The University of Tokyo

Laboratory Safety Management

**Chair Prof. Anom Bowolaksono  
Prof. David Koh**

10:00  
**O-31**

**How to assess the safety management system of university in a comprehensive manner? – A preliminary study for Korean universities**

S. Bae\*<sup>1</sup>, J. Park<sup>2</sup> and J. Suh<sup>3</sup>, <sup>1</sup>Seoul Women's University, <sup>2</sup>Soon Chun Hyang University, <sup>3</sup>Science and Technology Policy Institute

10:15  
**O-32**

**Development and implementation of the comprehensive scheme for risk assessment of chemicals in academic/industrial research laboratories**

H. Hashimoto\*, H. Kato, C. Ishiyama and S. Daiten, Tokyo Institute of Technology

10:30  
**O-33**

**Characteristic features of fires and related accidents in an academic campus**

S. Murata\*, K. Tomita, T. Mishina and R. Hayashi, Nagoya University

10:45  
**O-34**

**Injury risk estimation for students involved in experimental work**

T. Nishikimi\*, R. Hayashi, K. Tomita and S. Murata, Nagoya University

11:00  
**O-35**

**Principles of effective safety management at university laboratories**

M. Tavassov, Nazarbayev University

11:15  
**O-36**

**Introduction of preliminary risk hazard assessment system and measures to establish the system in laboratory - Focusing on R&DSA**

S.-Y. Choi, J.-B. Lee, D.-H. Shin, Y.-M. Kim and Y.-D. Oh\*, Metropolitan Research Safety Center

*Location: Meeting Room 1*

Field work

**Chair Prof. Kennichi Tonokura**

9:15  
**O-21**

**Predicting the unpredictable-managing hazards in field activities**

S. Reuben\*, C. P. Lim and S. Gunaratnam, National University of Singapore

Emergency and disaster management

**Chair Dr. Toshinori Tanaka**

9:30  
**O-41**

**curcurPlate for real time whereabouts information**

K. Iino, T. Mogi, H. Takiguchi and M. Nakao\*, The University of Tokyo

9:45  
**O-42**

**Designing emergency response role-playing game for university students**

M. Kumasaki\* and T. Shoji, Yokohama National University

Safety and health protection

**Chair Mr. Marcos Esteban Aguilar Ventura**

10:00  
**KY-61**

**[Keynote] Analysis on the implementation of Contractor Safety, Health & Environmental Management System (CSHEMS) in Universitas Indonesia**

F. Lestari\* and Y. Kusminanti, Universitas Indonesia

10:30  
**O-62**

**Text analytics of contents described in accident and disaster reports of Nagoya University**

R. Hayashi\*, K. Shinkawa, K. Tomita, T. Nishikimi, S. Murata and H. Kurimoto, Nagoya University

10:45  
**O-63**

**Physical hazard evaluation method for chemicals**

M. Arai, The University of Tokyo

11:00  
**O-64**

**Concrete cases of physical hazards that occur in a chemical laboratory**

T. Matsunaga, National Institute of Advanced Industrial Science and Technology

Environmental protection

**Chair Prof. Tomohiro Tobino**

11:15  
**O-81**

**Monitoring of volatile organic compounds in laboratory drainage system at Kyoto University**

N. T. Dien\*, Y. Hirai, Y. Honda and S. Sakai, Kyoto University

11:30 <b>O-37</b>	<b>Implementing the Departmental and PI Safety Management System in a growing interdisciplinary research environment –The journey and success factors of NUS</b> J. Karuppasamy, National University of Singapore	11:30 <b>O-82</b>	<b>Achieving energy efficiency in laboratories using a risk assessment approach</b> T. C. Hui, National University of Singapore
Safety education <b>Chair Mr. Francis Zheng</b>		11:45 <b>O-83</b>	<b>Save the Okinawan tofu - Effective utilization of industrial waste</b> H. Kawamitsu, S. Aragaki, N. Shingaki and S. Ikematsu*, National Institute of Technology, Okinawa College
11:45 <b>O-51</b>	<b>Online laboratory safety training at Universitas Indonesia increase the biosafety knowledge and decrease the laboratory incidence</b> B. Anom*, S. S. Andani, K. Yuni and L. Fatma, Universitas Indonesia		
12:00-13:00	<b>Lunch Buffet</b> <i>Location: Entrance Hall, Meeting Room 1, 2, 3, Lawn Field</i>		
<b>Technical Special Session</b> <i>Location: Auditorium</i>			
<b>Chair Prof. Yoshito Oshima</b>			
13:05 <b>S-11</b>	<b>Introduction</b> Prof. Yoshiko Tsuji, The University of Tokyo, Japan		
13:15 <b>S-12</b>	<b>Intradisciplinary diversity in interdisciplinary excellence medical research</b> Prof. Shogo Ehata, The University of Tokyo, Japan		
13:30 <b>S-13</b>	<b>Implementing safety programs at KAUST</b> Mr. Marcos Esteban Aguilar, King Abdullah University of Science and Technology, Saudi Arabia		
13:45 <b>S-14</b>	<b>A study on improvement of safety education in laboratory in preparation for the changes in research environment</b> Dr. Dong-Kyu Hwang, National Research Safety Headquarters, Republic of Korea		
14:00 <b>S-15</b>	<b>A multi-pronged approach to safety &amp; health training and education in tertiary institutions</b> Mr. Francis Zheng, National University of Singapore, Singapore		
14:15 <b>S-16</b>	<b>Summary</b> Mr. Saravanan s/o Gunaratam, National University of Singapore, Singapore		
<b>Closing</b> <i>Location: Auditorium</i>			
<b>Chair Ms. Yuki Sanaka</b>			
14:30	<b>Poster Awards Ceremony</b>		
14:45	<b>Announcement</b>		
14:55	<b>Closing remarks</b>		

## Organizing committees

### Advisory committee

Hansoo Kim, Gangneung-Wonju National University  
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Yoshito Oshima, The University of Tokyo (Treasure Chair)  
Jeongim Park, Soon Chun Hyang University  
Yoshiko Tsuji, The University of Tokyo  
(Program Chair, Conference Secretary General)

### Local organizing committee

Tomohiro Tobino, The University of Tokyo  
Kengo Tomita, Nagoya University  
Toshiaki Yoshioka, Tohoku University  
Hajime Yoshiki, Riken (Publication Chair)

## Venue



Conference Center, Okinawa Institute of Science and  
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