



IRPA 15

15th International Congress of the International Radiation Protection Association

Bridging Radiation Protection Culture and Science – Widening Public Empathy

11(Mon) - 15(Fri) May 2020 | COEX, Seoul, Korea

ART



Nongak

NATURE



Jeju, UNESCO World National Heritage

TRADITION



Bukchon Korean Traditional
Village, Seoul

POLITIC



Joint Security Area, DMZ

Second Announcement



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www.irpa2020.org

Organised in Collaboration with:



International
Labour
Organization



**WORLD NUCLEAR
ASSOCIATION**



**National Council on Radiation
Protection and Measurements**

IRPA

The international voice of the radiation protection profession in the enhancement of radiation protection culture and practice worldwide.

The International Radiation Protection Association (IRPA) is the International Professional Society for Radiation Protection. It promotes excellence in the practice of radiation protection through national and regional associate societies for radiation protection professionals by providing benchmarks of good practice and enhancing professional competence and networking.

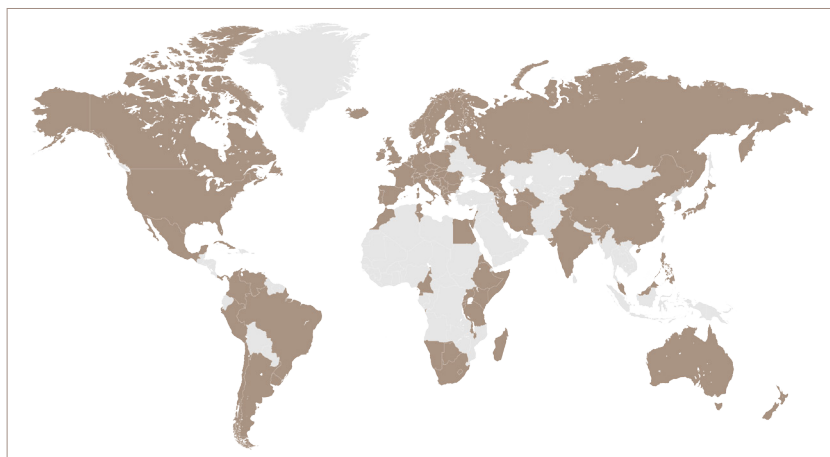
The primary purpose of IRPA is to provide a medium whereby those engaged in radiation protection activities in all countries may communicate more readily with each other and through this process advance radiation protection in many parts of the world. This includes relevant aspects of such branches of knowledge as science, medicine, engineering, technology and law, to provide for the protection of people and the environment from the hazards caused by radiation, and to thereby facilitate the safe use of medical, scientific and industrial radiological practices for the benefit of mankind.

The IRPA membership comprises about 18,000 individual members representing 52 national and regional Associate Societies in 66 countries.

■ IRPA Executive Council

President	Roger Coates (SRP), United Kingdom
Vice-President	Eduardo Gallego (SEPR), Spain
Vice-President Congress Affairs	Jong Kyung Kim (KARP), Korea Rep. of
Executive Officer	Bernard le Guen (SFRP), France
Publications Director	Christopher Clement (CRPA, HPS, JHPS, SRP), Canada
Treasurer	Richard (Dick) Toohey (HPS), USA
Executive Council Member	Ana-Maria Bomben (SAR), Argentina
	Marie-Claire Cantone (AIRP), Italy
	Alfred Hefner (ÖVS), Austria
	Klaus Henrichs (FS), Germany
	Sigurdur Magnusson (NSFS), Iceland
	Hiroko Yoshida (JHPS), Japan

■ IRPA Countries



It is a major task for IRPA to provide for and support international meetings for the discussion of radiation protection. The International Congresses of IRPA are the most important of these meetings. These have been held about every four years since 1966, in between these events there are also a series of regional congresses.

For all Associate Societies of IRPA and individual members, it is an important objective to attend the next international

IRPA Congress. For many other related professions it is an excellent opportunity to communicate on the achievements, scientific knowledge and operational experience in radiation protection.

Welcome Message *from IRPA President*

Dear Colleagues,

IRPA's International Congresses are a major event in the world of radiation protection, and are held every four years. IRPA15 in Seoul, May 2020, will be the first such congress to be held in Asia since the Hiroshima congress in 2000, and will be a great opportunity for radiation protection professionals from Asia and around the world to meet and discuss the key issues of our time.

We will be sharing our experiences, both as individual practitioners and as radiation protection organisations and societies, from the past four years of practice. We will have the opportunity to hear from the key international players, including ICRP, IAEA, WHO, NEA and many others, on their current programmes and priorities, with an opportunity to influence their progress. The Scientific Programme Committee is committed to ensuring that all the current 'hot topics' will be addressed at this exciting time as many are beginning to think about the future of the system of protection and of our profession.

And of course, there is the magic of Korea and Seoul – a magnificent blend of the old and the new, of historical culture and high technology. This will be 'the place to be' in May 2020, and please bring your partners who will be able to enjoy a full programme in this wonderful country.

I look forward to meeting as many colleagues as possible at IRPA15 Seoul. See you there!

Roger Coates

Roger Coates

IRPA President



Welcome Message *from IRPA15 Congress President*

Dear Delegates and Friends,

On behalf of the IRPA15 International Congress Organising Committee (ICOC), it is my great pleasure to invite you to the 15th International Congress of the International Radiation Protection Association (IRPA) to be held on May 11-15, 2020 in Seoul, Korea.

The Organising Committee has put in a tremendous effort to make the most highly acclaimed congress in radiation protection even more rewarding and enjoyable, with a comprehensive and inspiring scientific Programme while maintaining the IRPA traditions and promoting mutual friendship.

Under the theme of "Bridging Radiation Protection Culture and Science - Widening Public Empathy", IRPA 15 will provide invaluable opportunities to discuss and strengthen the correlation between radiation protection culture and science, and share developing scientific knowledge and related experiences in radiation protection not only among experts but also with the public.

In light of the Fukushima Daiichi nuclear disaster, the significance of radiation protection and the focus on it is growing day by day. At the same time, irrational perceptions of radiation exposure are spreading fast. At such a moment, our duty as radiation protection professionals to disseminate accurate information and cultivate a more reasonable perception is more important than ever before, so that the public can empathize with the issue of radiation risk and protection.

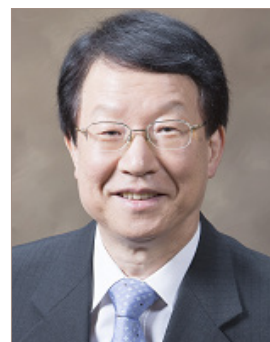
As a city with more than a 600-year history, Seoul, the nation's capital and the venue city of this Congress, possesses a wealth of historical monuments, tourist attractions and vivid lifestyles in an exceptionally safe environment. Excellent hotels and the attractive meeting venue (COEX), which is the most modern, high-tech facility in Asia, will make your participation as easy and comfortable as possible.

I would like to express my heartfelt appreciation for your interest in IRPA 15, and I look forward to welcoming you to Seoul in 2020 for the IRPA15.



Jong Kyung Kim

Chairman, IRPA15 International Congress Organising Committee
IRPA Vice President for Congress Affairs



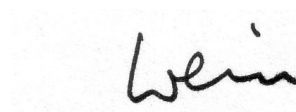
Welcome Message *from ICPC Chair*

Dear Friends,

It is my pleasure to invite you to contribute in an active fashion to the Programme of the IRPA 15 conference, which will be held in Seoul in May 2020. I am convinced that the overarching theme of the conference "Bridging Radiation Protection Culture and Science - Widening Public Empathy" will provide many opportunities for the discussion and further development of key scientific issues of the radiological protection system as well as for the interaction between members of the scientific community and the society. I am convinced that IRPA15 will provide excellent opportunities to further develop the radiation protection culture, which is a key element to achieve trust as well as tangible protection results. I am very glad that IRPA is continuing to engage with the young scientist. This initiative does not only pave the way to the next generation but also includes the ideas and views of this age group in the discussions to establish and further develop a radiation protection culture.

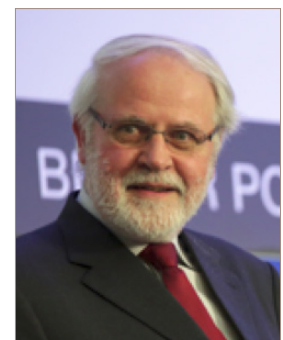
Together with the members of the ICPC, the presidents of the conference and of IRPA we have developed a comprehensive outline of the scientific Programme, which includes 8 Topical and 4 Thematic Areas; the Topical Areas are: "Underpinning Science; Dosimetry and Measurement; System of Protection, Standards and Regulation; Practical Implementation: Medical Sector; Practical Implementation: Industry and Research; Emergency Preparedness and Response; Existing Exposures, Non-ionizing Radiation". For each of these Topical Areas considerations are invited to address thematic aspects of "Ethics; Communication, Public Understanding; Human Capital & Competency and Culture".

The process for "Abstract Submission" has been started on June 1, 2019, and I do rely on your active contributions to the Programme.



Wolfgang Weiss

Chairman, International Congress Programme Committee



Welcome Message *from the Host, KARP*

It is my honor for the Korean Association for Radiation Protection (KARP) to host the IRPA15 and to invite many prestigious international organisations and experts related to radiation safety. As the president of KARP, I welcome your active participation and your visit to Seoul, Korea with my warm heart.

KARP was established in 1977 and is currently a leading academic society in the field of radiation of Korea. Since its inauguration, KARP has devoted considerable efforts to radiation protection, measurement and disaster prevention, radiation effect on human body and social acceptability of radiation for the past 40 years. Through various efforts for internationalization, we have engaged actively in the relevant international communities and the discussions on the various issues related to radiation protection and safety.

As we are facing many concurrent challenges and missions in radiation protection area, I hope this event will help to promote cooperation among specialists, expand opportunities for open discussion among experts, and promote cooperation and collaborative researches.

Making a step further, I would like to inform the scientific evidence about the radiation protection and safety and its current status to the public. It is our obligation to help them find out and rely on scientific and professional safety management supervision by the deliberation of the Congresses.

Please join the IRPA15 to share your up-to-date professional knowledge and experience, and to have a great time together with rich and abundant culture and entertainment of beautiful Seoul, Korea, too.



Woo-Yoon Park

The 22nd President

The Korean Association of Radiation Protection



Congress Overview

■ Congress

15th International Congress of the International Radiation Protection Association (IRPA15)

■ Date

11(Mon) – 15(Fri) May 2020

■ Venue

COEX, Seoul, Korea

■ Official Language

English

■ Expected Participants

2,500 participants from over 90 countries

■ Website

www.irpa2020.org

■ Host

The Korean Association of Radiation Protection (KARP) was founded in 1977 and is one of the representative academic organisations in the radiation field of Korea with over 1,600 members. Since its foundation, KARP has made efforts to improve radiation protection, measurement, disaster prevention, medical use of radiation, radiation effect on human body, social acceptability of radiation and etc.

Radiation is a component of the cosmic environment and is indispensable to human lives, such as diagnosis and treatment of diseases as well as nuclear power generation. Therefore, it is our role and mission to promote public understanding of radiation and to make safe use of radiation.

Congress Theme

Bridging Radiation Protection Culture and Science – Widening Public Empathy

After the Fukushima Daiichi nuclear power plant accident in 2011, the importance of radiation protection culture and public empathy as well as radiation protection science has emerged and is widely accepted as one of essential elements for the sound, practical, and effective implementation of the radiation protection principles and technologies in the international radiation protection community.

Science is a basic and essential element of radiation protection. Despite the recent rapid development of radiation protection science, ethical and social value judgments as well as practical field experiences have gradually emerged and are important elements in the international system of radiation protection.

As witnessed at the Fukushima Daiichi nuclear power plant accident in 2011, an apparent gap of understanding between experts and the public resulted in difficulties in the proper implementation of radiation protection measures and strategies. Experience from radiological emergencies highlights the importance of public communication and empathy as one of the most important challenges in radiation protection. Sometimes, an event is not considered to be a danger to experts but is perceived otherwise by the public. Also, the public intends to strongly make their own arguments when considering and facing the risk of radiation exposure.

“Empathy” implies a connection, which goes beyond communication – it means that there must be an emotional engagement, a full understanding and recognition of how the parties feel about the issue, which must be central to an ability to move forward. Without public empathy, a decision for implementation of radiation protection criteria, though it is based on sound science, has to go through lots of difficulties. Indeed, the public empathy includes comprehensive natures such as transparency, stakeholder involvement, self-help protection and an informed consent/decision.

The adoption of the theme “Bridging Radiation Protection Culture and Science – Widening Public Empathy” for the IRPA15 Congress reflects the strong commitment of the IRPA15 Organising Committee to provide invaluable opportunities to discuss and strengthen the correlation between Radiation Protection culture and science, and share various scientific knowledge and experiences on radiation protection not only among experts but also with the public. The IRPA15 Congress will certainly contribute to opening a new pathway to the development of future system of radiation protection, which is to be based on public empathy.

Organisation

■ IRPA15 ICOC (International Congress Organising Committee)

Chairman	Jong Kyung Kim Hanyang University, Korea Rep. of
Vice-Chairman	Kun-Woo Cho Korea Institute of Nuclear Safety, Korea Rep. of
General Secretary	Tae-Suk Suh The Catholic University of Korea, Korea Rep. of
Deputy General Secretary	Hee-Seock Lee Pohang University of Science and Technology, Korea Rep. of
Secretary	Hee Seo Chonbuk National University, Korea Rep. of
Treasury Committee Chair	Ho Sin Choi Korea Institute of Nuclear Safety, Korea Rep. of
Treasury Committee General Secretary	Sung Hwan Kim The Catholic University of Korea, Korea Rep. of
Promotion & Marketing Committee Chair	Yong Kyun Kim Hanyang University, Korea Rep. of
Promotion & Marketing Committee General Secretary	Keon Wook Kang Seoul National University, Korea Rep. of
Exhibition Committee Chair	Chan Hyeong Kim Hanyang University, Korea Rep. of
Technical Visit Committee Chair	Bong-Hwan Kim Korea Atomic Energy Research Institute, Korea Rep. of
Social Event Committee Chair	Eun-Ok Han Korea Academy of Nuclear Safety, Korea Rep. of
Young Scientist Awards	Jin-Sung Kim Yonsei University, Korea Rep. of

■ IRPA15 ICPC (International Congress Programme Committee)

Chairman	Wolfgang Weiss German-Swiss Association for Radiation Protection, Germany
IRPA President	Roger Coates International Radiation Protection Association, UK
Core Group	Mike Boyd Health Physics Society, USA
	Marina Di Giorgio Sociedad Argentina de Radioprotección, Argentina
	Sisko Salomaa Nordic Society for Radiation Protection, Finland
	John Takala Canadian Radiation Protection Association, Canada
	Jim Thurston Society for Radiological Protection, UK
	Shinji Tokonami Japan Health Physics Society, Japan
	Ludovic Vaillant Société Française de Radioprotection, France
Corresponding Group*	59 Members from 29 Countries
Scientific Secretary	Moon Hee Han Korea Atomic Energy Research Institute, Korea Rep. of
Deputy Scientific Secretary	Geehyun Kim Sejong University, Korea Rep. of
Abstract Review	Juyoul Kim KEPCO International Nuclear Graduate School, Korea Rep. of
Oral & Poster Review	Seonyoung Nam Korea Hydro & Nuclear Power Co., Ltd., Korea Rep. of
Refresher Courses	Yong-Min Kim Catholic University of Daegu, Korea Rep. of
Proceedings & Publications	Chul Hee Min Yonsei University, Korea Rep. of

■ IRPA15 ICSC (International Congress Support Committee)

Chairman	Steven King Health Physics Society, USA
General Secretary	Kwang Pyo Kim Kyunghee University, Korea Rep. of
Secretary	Eui Kyu Chie Seoul National University, Korea Rep. of

■ IRPA15 Advisory Committee

Chairman	Myung-Chul Lee The Korean Academy of Science and Technology, Korea Rep. of
General Secretary	Woo Yoon Park The Korean Association for Radiation Protection, Korea Rep. of
International Advisor	Jacques Lochard Société Française de Radioprotection, France



Organisation (continued)

■ ICPC Corresponding Group*

Daniel Nii Adje, Ghana
Frik Beeslaar, Republic of South Africa
Jean-Marc Bertho, France
Hielke Freerk Boersma, The Netherlands
Peter Bryant, United Kingdom
Juan Carlos Mora Ca adas, Spain
Anal a Cecilia Canoba, Argentina
Val rie Chambrette, France
Sudhir Chandna, India
Renate Czarwinski, German-Swiss
David Dommett, United Kingdom
Wolfgang Dörr, Austria
Isabelle Dublineau, France
Lucas Gomes Padilha Filho, Brazil
Toshioh Fujibuchi, Japan
Jacqueline Garnier-Laplace, France
Daniele Giuffrida, UAE
Mohamed Ahmed Mahmoud Gomaa, Egypt
Harvey Grant, United Kingdom
Jens Søgaard-Hansen, Denmark
Jason Harris, USA
Cameron Jeffries, Australia
Shahed Khan, United Kingdom
Geehyun Kim, Korea Rep. of
Yongmin Kim, Korea Rep. of
Sergey M. Kiselev, Russia
Chunsheng Li, Canada
Mario Marengo, Italy
eljka Kne evi Medija, Croatia

Chul Hee Min, Korea Rep. of
Sun Young Nam, Korea Rep. of
Tanya Neretljak, Canada
Francis Otoo, Ghana
Kotaro Ozasa, Japan
Alegr a Montoro Pastor, Spain
Margarita V. Pustovalova, Russia
Preetha Rajaraman, India
Subramaniyan Ramanathan, United Kingdom
Juan Camilo Ocampo Ramos, Colombia
SA DOU, Cameroon
Isa Sambo, Nigeria
Navneet Sandhu, United Kingdom
Ruxandra S poi, Romania
Michiya Sasaki, Japan
Gabriela Siraky, Argentina
Mehdi Sohrabi, Iran
Mikhail Sokolnikov, Russia
Shogo Takahara, Japan
Catherine Taylor, United Kingdom
Van Dillen Teun, The Netherlands
Katharine Thomson, United Kingdom
Jan-Willem Vahlbruch, German-Swiss
Richard Wakeford, United Kingdom
Wei-Hsung Wang, USA
Charles Wilson, USA
Andrzej Wojcik, Sweden
Gayle Woloschak, USA
Michael David Wood, United Kingdom
Constantinos Zervides, United Kingdom

Key Information

■ Important Dates

Category	Dates
Abstract Submission Open	1 June 2019
Abstract Submission Deadline	Oral Presentation: 30 September 2019 Poster Presentation: 31 December 2019
Abstract Acceptance Notification	Oral Presentation: 31 December 2019 Poster Presentation: 31 January 2020
Full Papers (proceedings) Submission Deadline	31 March 2020
Poster Presentation File (PDF) Submission Deadline	30 April 2020
Early Registration Deadline	14 February 2020
Standard Registration Deadline	26 April 2020

Awards

■ Rolf M. Sievert Award

Commencing with the 1973 IRPA Congress, each congress has been opened by the Sievert Lecture, which is presented by the winner of the Sievert Award. This award is in honour of the pioneer in radiation physics and radiation protection, Prof. Rolf M. Sievert.

The recipient must have made outstanding contribution in the field of radiation protection and will deliver the Sievert Lecture at the opening of the Congress. The Sievert Lecture will be published.

The recipients of the Sievert Award have been:

1973 Prof. Bo Lindell (Sweden), 1977 Prof. W.V. Mayeord (UK), 1980 Dr. Lauriston S. Taylor (USA), 1984 Sir. Edward Pochin (UK), 1988 Prof. Dr. Wolfgang Jacobi (Germany), 1992 Dr. Giovanni Silini (Italy), 1996 Dr. Dan Beninson (Argentina), 2000 Prof. I. Shigematsu (Japan), 2004 Dr. Adel J. González (Austria), 2008 Prof. Christian Streffer (Germany), 2012 Dr. Richard V Osborne (Canada), 2016 Dr. John Boice (USA)

■ The Gold Medal for Radiation Protection of the Royal Swedish Academy of Sciences

This medal was established in 1962 to be given to persons who have made highly valuable contributions to international radiation protection work during the preceding 10 years period. Recipients are nominated by the International Commission on Radiological Protection (ICRP) and chosen by the Academy. Previous recipients include W. Binks, K. Z. Morgan, W. V. Mayeord, L.S Taylor, E. E. Pochin, S. Takahashi, B. Lindell, I. Shigematsu, A. Guskova, Richard Doll, K. Sankaranarayanan, Keith Eckerman and Ethyl Gilbert.

■ Young Scientists Awards

The 15th International Congress of the International Radiation Protection Association (IRPA15) will offer prizes for the best and highly qualified presentations by young scientists and professionals.

The Congress issues a special invitation and encouragement to younger scientists and professionals to attend as delegates. Whilst there is no formal definition of 'young' in this context, it is intended to apply to students and persons in the first ten years of their career in radiation protection, and as such they will only exceed the mid-30s age in exceptional circumstances. The Congress will offer a prize for the best presentation by a Young Professional or Scientist. To be eligible for entry, the candidate must be selected and nominated by his/her relevant IRPA Associate Society. Societies are encouraged to set up selection processes to support this award, and then ideally to support financially their selected candidate for attendance at the Congress. The selected candidate from each society will be guaranteed an oral presentation of their paper at the Congress.

All delegates who meet the 'young persons' criteria are requested to tick the relevant box on the registration form.



www.irpa2020.org

Congress Programme (programme at a glance)

	10 May (Sun)	11 May (Mon)	12 May (Tue)	13 May (Wed)	14 May (Thu)	15 May (Fri)
8:00		Refresher Courses Beginner/Expert 8:00-9:00	Refresher Courses Beginner/Expert 8:00-9:00	Refresher Courses Beginner/Expert 8:00-9:00	Refresher Courses Beginner/Expert 8:00-9:00	Refresher Courses Beginner/Expert 8:00-9:00
9:00		Opening Ceremony 9:00-9:30	Plenary Session 2A 9:00-10:00	Plenary Session 3A 9:00-10:00	Plenary Session 4A 9:00-10:00	The Gold Medal for Radiation Protection of the Royal Swedish Academy of sciences 9:00-9:45
10:00		Plenary Session 1A (Sievert Awards) 9:30-10:30	Coffee Break 10:00-10:30	Coffee Break 10:00-10:30	Coffee Break 10:00-10:30	Plenary Session 5A 9:45-10:45
11:00		Coffee Break 10:30-11:00	Oral Session/ Special Session(2A) 10:30-12:00	Oral Session/ Special Session(3A) 10:30-12:00	Oral Session/ Special Session(4A) 10:30-12:00	Coffee Break 10:45-11:15
12:00		Oral Session/ Special Session(1A) 11:00-12:30	Lunch 12:00-13:30	Lunch 12:00-13:30	Lunch 12:00-13:30	Oral Session/ Special Session(5A) 11:15-12:45
13:00		Lunch 12:30-14:00	Plenary Session 2B 13:30-14:30	Plenary Session 3B 13:30-14:30		Congress Conclusion & Closing Ceremony 12:45-14:15
14:00		Plenary Session 1B 14:00-15:00	Oral Session/ Special Session(2B) 14:30-16:00	Oral Session/ Special Session(3B) 14:30-16:00		
15:00		Oral Session/ Special Session(1B) 15:00-16:30	Coffee Break 16:00-16:30	Coffee Break 16:00-16:30		
16:00		Coffee Break 16:30-17:00	Poster Session 16:30-17:00	Poster Session 16:30-17:00		
17:00		Poster Session 17:00-17:30	Oral Session/ Special Session(2C) 17:00-18:30	Oral Session/ Special Session(3C) 17:00-18:30		
18:00	Welcome Reception 18:00-	Oral Session/ Special Session(1C) 17:30-19:00				
19:00				Gala Dinner 19:00-		

Congress Programme (continued)

I. Plenary Sessions

No.	Topic
1	Sievert Lecture
2	Health Effects and Inference of Risks Due to Radiation Exposure
3	Future of the System of Radiological Protection
4	Radiation Protection Culture
5	Non-ionising Radiation: Developing the System of Protection
6	Public Understanding and Communication
7	Fukushima: Radiation Risk and Public Health
8	Ethics

II. Special Sessions

No.	Title
1	Open Session: Widening Public Empathy (Open to the Public)
2	Panel Discussion on Woman in Radiation (WIR)
3	Developing Practical Radiological Protection Culture in Society: A Challenge for Professionals
4	Joint IAEA-ICRP-ICRU-IRPA Session: Post Accident Dose Monitoring and Decision Making
5	Joint WHO REMPAN - IRPA Session on Radiation Emergency Public Health Response / Medical Monitoring in Emergencies
6	Non-ionising Radiation (NIR)
7	Radioactive Waste Management
8	Fukushima Issues
9	Health Effects of Radiation & Low Dose Epidemiology
10	Innovation in Radiation Protection
11	Tolerability and Reasonableness
12	Radiation Protection Infrastructure: Challenges in Developing Countries
13	Control of Radioactivity in Food and Commodities
14	Radon Update: Including Implementation of New Dose Coefficients and Underpinning Science
15	Bonn Call for Action Update



Congress Programme (continued)

* Thematic Sessions

No.	Theme	No.	Theme
1	Ethics	3	Future of the RP Profession
2	Risk Communication and Public Understanding	4	RP Culture

III. ETS (Enhanced Topic Session)

No.	Topic	No.	Topic
1	Advance in Human Phantom Technology and Applications	6	Safety Culture in Healthcare
2	Dose Quantities for External Exposure	7	Recovery and Legacy Management
3	Eye Lens Exposure	8	Follow-up on IAEA/ILO Occupational Exposure Conference
4	Safety/Security Interface Issues in Facilities and Source Control	9	Prevention and Mitigation of Incidents in Medical Practice
5	NORM in Industry	10	RPE/MPE in Healthcare



Congress Programme (continued)

IV. Refresher Courses

Courses are aimed at Beginners (B) or 'Experts' – people with some knowledge of the topic (E)
Beginner level courses will be offered for free to congress participants, to share fundamental knowledge on radiation protection and to promote education and training of young generation.

No.	Topic	Type
1	ALARA in Nuclear Power Plants	B
2	Iodine Thyroid Blocking and Thyroid Monitoring in Nuclear Emergencies	B
3	Applied Radiological Risk Communication for the 21st Century	E
4	Fundamentals of Ethics and How They Relate to the ICRP Principles	E
5	Understanding and Applying Reference Levels, Constraints and Limits within Existing Regulatory Structures	E
6	An Overview of the 2014 International BSS	B
7	How to Write a Scientific Paper	B
8	Low Dose Radiation Effects: Mechanisms and Dose-Responsive Curves	B
9	Residential Radon Lung Cancer Risk	E
10	Introduction to Radiation Shielding Modelling / Calculations	B
11	Life Span Study in RERF, Japan	B
12	Optical Radiation - Eye Protection	B
13	Conceptual Basis of Graded Approach in Radiological Protection	B
14	Calculation of Radiation Detriment	B
15	Radiation Safety Culture in Medicine	B
16	The New ICRU Recommendations for Neutron Dose Coefficients and the Impacts of Neutron Resonances	B/E
17	Radiation Effect on Pregnancy	E
18	Diagnostic Reference Levels in Medical Imaging	E
19	Use of Dosimeters and Basic Knowledge of Measurements and Instrumentation in Radiological Protection	B
20	Management of Radiation Injuries (Acute Radiation Syndrome, Local Injuries, Combined Injuries)	E
21	Overview of Biological and Physical Dosimetry Techniques for Radiological Emergency Situations	B
22	Introduction to Radiation Dose Modelling in the Human and Non-Human Environment	B
23	The System of Radiation Protection and the Different Exposure Situation	B
24	Environmental Remediation: from Site Characterization to the End State	E
25	Role of RP and its Regulatory Control in Waste Management Safety	E

* TBC (To be confirmed)



Congress Programme (continued)

V. Related Meetings

(1) 9th International NIR Workshop

- **Date:** 7-8 May 2020
- **Place:** University in downtown
- **Organiser:** International Commission on Non-Ionizing Radiation Protection (ICNIRP), organised by the ICNIRP NIR Workshop Committee including Nam Kim (Chungbuk National University, Korea), Ae-Kyoung Lee (Electronics and Telecommunications Research Institute, Korea) and Yun-Sil Lee (Ewha Womans University, Korea)
- **Expected Number of Participants:** Approximately 150 people from all around the globe
- **Remarks:**
 - ① Open for public (with due registration at www.icnirp.org)
 - ② Programme is set up by ICNIRP separately from IRPA
 - ③ Agenda will cover all NIR frequency ranges (see www.icnirp.org)

(2) The Associate Societies' Forum

- **Date:** 10 May 2020
- **Time:** 10:00 – 17:45
- **Place:** 3F Auditorium in COEX Convention Center
- **Remarks:** All IRPA Associate Societies are encouraged to be represented, and the meeting is open to all persons who are interested in IRPA's activities and the liaison between IRPA and the Societies. Persons who have no Associate Society in their country are particularly welcome to attend

(3) 2020 REMPAN (2020 Radiation Emergency Medical Preparedness and Assistant Network)

- **Date:** 12-14 May 2020
- **Place:** Room 203 in COEX Convention Center
- **Organiser:** Zhanat Carr (World Health Organisation), Young Woo Jin (Korea Institute of Radiological & Medical Sciences)
- **Expected Number of Participants:** Approximately 100 people from 40 countries
- **Participants Category:** Medical and research institutions involved in radiation emergency
- **Remarks:**
 - ① Not open for public but open for IRPA15 participants
 - ② Programme for REMPAN is separated from IRPA15
 - ③ Agenda will be prepared by REMPAN by collecting the knowledge from the network's expertise and experience

(4) 2020 Spring ICRP Main Commission Meeting

- **Full Name:** 2020 Spring International Commission on Radiological Protection (ICRP) Main Commission Meeting
- **Date:** 16-19 May 2020
- **Place:** Inter Continental Hotel Meeting Room
- **Organiser:** Kun-Woo Cho (Korea Institute of Nuclear Safety)
- **Expected Number of Participants:** Approximately 14 people
- **Participants Category:** ICRP Main Commission
- **Remarks:** Private Meeting

(5) UNSCEAR Workshop on Data Collection for Medical, Occupational and Public Exposure

(organised by UNSCEAR in cooperation with IRPA, IAEA, ILO and WHO)

- **Date:** TBC (duration 1.5 hours)
- **Place:** TBC
- **Organiser:** Ferid Shannoun (UNSCEAR)
- **Expected Number of Participants:** Approximately 100 people from about 40 countries
- **Participants Category:** National contact persons, regulators, licensees and experts working in the field of medical, occupational and public exposures
- **Remarks:**
 - ① Not open for public but open for IRPA15 participants
 - ② Programme for the Workshop is separated from IRPA15
 - ③ Agenda will be prepared by UNSCEAR in cooperation with IRPA, IAEA, ILO and WHO

Congress Programme (continued)

VII. Oral/Poster Sessions

■ Topic 1. Underpinning Science

T1.1	Dose and dose rate dependence of cancer risk including biological mechanisms, health risk assessment and exposure characteristics
T1.2	Non-cancer effects of ionising radiation including biological mechanisms, health risk assessment and exposure characteristics
T1.3	Individual radiation sensitivity including biological mechanisms, health risk assessment and exposure characteristics
T1.4	Processes influencing radionuclide transfers and exposure of humans and wildlife
T1.5	Ecological consequences of exposure of biota
T1.6	Social, psychological and economic impacts of radiation exposure situations

■ Topic 2. Dosimetry and Measurement

T2.1	Measurement of radiation dose: external, internal, biological and patient dosimetry
T2.2	Numerical and computational dosimetry: mathematical methods and models applied to radiation dosimetry
T2.3	Instrumentation and metrology
T2.4	Retrospective dosimetry
T2.5	Environmental monitoring and modelling
T2.6	Tools and quality criteria for epidemiology and radiation risk assessment

■ Topic 3. System of Protection, Standards and Regulation

T3.1	Experience in the implementation of the system of radiological protection
T3.2	The application of justification in the system of protection (including its use in medical exposures of patients)
T3.3	The application of optimisation in the system of protection
T3.4	Protection standards for special populations (including pregnant women, children, carers and comforters)
T3.5	Influence of dose response models on standards and regulations (assessing risks at low doses and dose rates)
T3.6	Managing the natural environment, including the protection of biota
T3.7	Future developments in the system of radiological protection
T3.8	Education, training, human capital in RP

■ Topic 4. Practical Implementation: Medical Sector

T4.1	Design of medical radiation facilities
T4.2	Radiation safety of staff in the medical facilities
T4.3	Patient radiation safety
T4.4	Radiation safety in the implementation of advances in medical radiation technology and techniques

■ Topic 5. Practical Implementation: Industry and Research

T5.1	Mining and mineral processing
T5.2	Nuclear fuel cycle
T5.3	Nuclear power plants
T5.4	Industrial and research applications (including sealed sources)
T5.5	Transport
T5.6	Decommissioning and decontamination
T5.7	Waste management and disposal

■ Topic 6. Emergency Preparedness and Response

T6.1	Implementation of international standards and of national regulations for emergency preparedness, response, and recovery
T6.2	Assessment of the radiological and public health consequences, management of occupational and public exposures, including lessons learned from Chernobyl and Fukushima
T6.3	Emergency exposures assessment and management (occupational and public)
T6.4	Human health consequences and countermeasures (medical and public health)
T6.5	Management of contaminated goods and waste, remediation strategies and the transition from an emergency to an existing exposure situation

■ Topic 7. Existing Exposures

T7.1	Radon and thoron
T7.2	Terrestrial radiation and radionuclides
T7.3	Cosmic radiation including space
T7.4	Public exposures from naturally occurring radioactive materials (NORM) and technically enhanced naturally occurring radioactive materials (TENORM)
T7.5	Sites contaminated by past activities

■ Topic 8. Non-ionising Radiation

T8.1	International standards and national regulations
T8.2	Protection of the public including solar UV
T8.3	NIR safety in medical and cosmetic applications
T8.4	Industrial uses of NIR
T8.5	Health impact of new devices



Call for Papers

International Congress Programme Committee (ICPC) of the 15th International Congress of the International Radiation Protection Association (IRPA15) cordially invites you to submit abstract to IRPA15 to be held on 11-15 May 2020 in Seoul, Korea.

All abstracts must be submitted electronically through the website only. Abstracts submitted via e-mail, fax or regular mail will neither be accepted nor acknowledged. Submitted abstracts can be revised on the website during the abstract submission period.

All submitted abstracts will be reviewed and assigned to appropriate session. Notification on acceptance will be sent to the submitter by e-mail.

Abstract templates will be provided. Please refer to the following for details about abstract and paper submission.

■ Key Dates

Abstract Submission Open	1 June 2019
Abstract Submission Deadline	· Oral Presentation: 30 September 2019 · Poster Presentation: 31 December 2019
Abstract Acceptance Notification	· Oral Presentation: 31 December 2019 · Poster Presentation: 31 January 2020
Full Papers Submission Deadline	31 March 2020

■ Topics

IRPA15 would also like to cover “Thematic” areas for each topic as shown below:

Topic Areas	Themes
T1. Underpinning Science T2. Dosimetry and Measurement T3. System of Protection, Standards and Regulation T4. Practical Implementation: Medical Sector T5. Practical Implementation: Industry and Research T6. Emergency Preparedness and Response T7. Existing Exposures T8. Non-ionising Radiation	A. Ethics B. Communication, Public Understanding C. Human Capital & Competency D. Culture

If your paper rather presents a broader scope of view and effectively covers thematic issues above in each topical area, please submit your paper to the thematic categories in each topic, such as T1A, T1B, T1C, etc.

(For details, please visit: www.irpa2020.org)

Call for Papers (continued)

■ Affirmations

In order to proceed with the abstract submission, you must agree to the following statements.

- 1) The presenting author of the abstract must be one of the authors listed in the abstract.
- 2) Only up to 2 abstracts can be submitted per author.
- 3) If accepted for poster/oral presentation, the presenting author is recommended to register to the Congress by Feb 14, 2020 (early registration date). If the presenter does not register, the presentation will be cancelled.
- 4) The abstract will be published as submitted and no language or scientific editing will be done.

■ Abstract Form

- 1) Presentation Type: Oral/Poster
- 2) The title must be less than 30 words
- 3) The main body of abstract must not exceed 500 words
- 4) If you have a Table, Figure, Graphic, and Special Character, please embed it all at once in the Abstract and make a PDF file and upload.

Publication

Full proceedings will be published as IRPA15 Congress Proceedings and some selected papers will also be published in the Journal of Radiological Protection.

Registration

Online registration is available through website (www.irpa2020.org) from October 2019

Category	Early Registration	Standard Registration	On-site Registration
	1 Oct 2019 – 31 Jan 2020	1 Feb 2020 – 26 April 2020	11 May 2020 – 15 May 2020
Regular	USD 1,000	USD 1,250	USD 1,400
YP*	USD 750	USD 940	USD 1,050
Student	USD 500	USD 625	USD 700
One-day	USD 560	USD 560	USD 560
Gala Dinner Guest Ticket	USD 100	USD 100	USD 100

* YP: Young Professionals under the age of 35

There will be a \$100 fee to attend the Gala Dinner, and the excursions will be charged.

Bursary Support

IRPA will provide bursary support from the Montreal Fund to support attendance at IRPA15 of participants, specifically young professionals preferably from developing countries. The detailed process for the application will be announced on the website (www.irpa2020.org).



Sponsorship & Exhibition

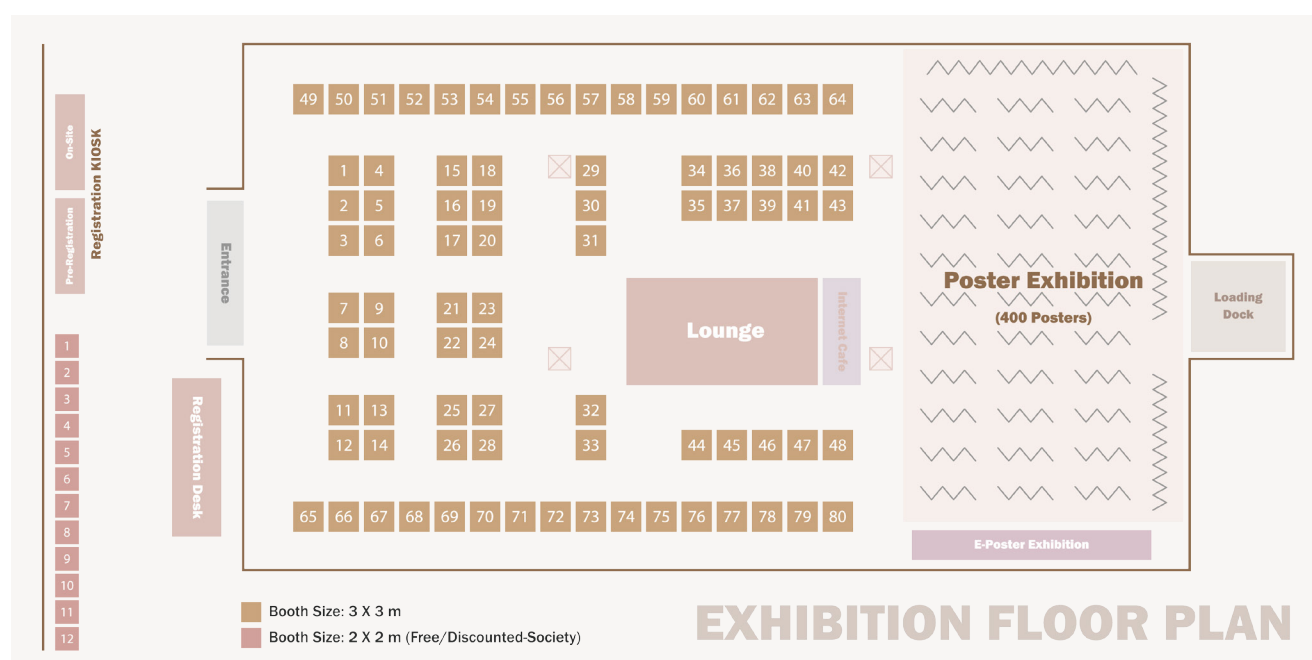
A trade exhibition at which both local and international suppliers will showcase the latest in product development and related services will take place concurrently with the Congress and the times are as follows:

Build Up	10 May 2020	08:00 – 20:00
Welcome Reception	10 May 2020	18:00 – 21:00
Exhibition Times	11-14 May 2020	09:00 – 17:00
	15 May 2020	09:00 – 14:00
Breakdown	15 May 2020	14:00 – 18:00

For further information about the exhibition please visit www.irpa2020.org

There are various different support opportunities available for those companies/organisations wishing to exhibit or sponsor IRPA15. To request your copy of our Exhibition and Sponsorship Prospectus, please visit our website or contact our Exhibition and Sponsorship Manager, Seokin Hong on es@irpa2020.org

■ Exhibition Floor Plan



Accommodation

For full details of the hotels please visit the official website at www.irpa2020.org

The following hotels have been especially reserved for the Congress and preferential rates have been negotiated for participants.

Grade	Name	Distance (from COEX)
5	Intercontinental Seoul Coex (*Designated Hotel)	5 min by walk
	Oakwood Premier Coex Center	5 min by walk
	Park Hyatt Seoul	10 min by walk
4	L7 Gangnam	12 min by bus
	Hotel Newv	16 min by subway
	Mercure Seoul Ambassador Gangnam Sodowe	17 min by subway
	Four Points by Sheraton Seoul, Gangnam	24 min by bus
	Hotel Samjung	24 min by subway
	Novotel Ambassador Seoul Gangnam	25 min by subway
	GLAD Gangnam COEX Center	8 min by walk
3	Peyto Hotel Samsung	11 min by walk
	Hotel Uri&	13 min by walk
	Ibis Styles Ambassador Seoul Gangnam	17 min by walk
	Aloft Seoul Gangnam	13 min by bus
	Hotel Riviera	16 min by bus
	GLAD LIVE Gangnam	18 min by bus
	Hotel Prima Seoul	18 min by bus
	Hotel Soulhada	21 min by bus
	Hotel ENTRA Gangnam	26 min by bus
	Shilla Stay Yeoksam	26 min by subway
	Boree Hotel	27 min by subway



www.irpa2020.org

Social Programme

The following Social Events will enhance delegates' visits and allow the Korea to demonstrate their warm hospitality.

Date	Social Event	Location	Price
Sunday 10 May	Welcome Reception	COEX 3F Auditorium Lobby	Included in Registration Fee
Monday 11 May	Opening Ceremony	COEX 1F B1 Hall	Included in Registration Fee
Wednesday 13 May	Gala Dinner	Grand Intercontinental Seoul Parnas 5F Grand ballroom	100 USD per person
Friday 15 May	Closing Ceremony	COEX 3F Auditorium	Included in Registration Fee

■ Welcome Reception

Sunday 10 May 2020 at the COEX 3F Auditorium Lobby at 18:00

The Welcome Reception will be held in the early evening at the COEX 3F Auditorium Lobby. The evening will allow delegates to relax and socialise, renewing old friendships and making new ones prior to the Congress week commencing. Accompanying persons will be welcomed with compliments.

■ Opening Ceremony

Monday 11 May 2020 at the COEX 1F B1 Hall at 09:00

The Opening Ceremony will take place at the COEX 1F B1 Hall.

■ Gala Dinner

Wednesday 13 May 2020 in Grand ballroom 5F, the Grand Intercontinental Seoul Parnas at 19:00

The IRPA15 will be hosted in Grand Intercontinental Seoul Parnas. On arrival delegates will be received with a welcome drink prior to being seated and served with a course menu. A bar will be available after the meal, providing delegates with ample opportunity to socialise and make new acquaintances. Entertainment will be provided during the evening.

Please note tickets are limited, so book your place early to avoid disappointment.

* Price: USD100



Technical Tour Programme

The schedule is subject to change. Please visit the Congress Website for updates.

Half Day Tours

1

2

3

4

1 National Radiation Emergency Medical Center (Seoul)

2 Seoul National University Hospital + Changgyeonggung Palace (Seoul)

3 Radiation Health Institute of KHNP (Seongnam city, Gyeonggi-do)

4 SIM; Samsung Innovation Museum (Suwon city, Gyeonggi-do)

Full Day Tours

5

6

7

5 Korea Atomic Energy Research Institute - HANARO, KURT (Daejeon)

6 Korea Research Institute of Standards and Science (Radiation Standard) (Daejeon)

7 Cyclotron-Proton Therapy Center of National Cancer Center + DMZ Tour (Goyang city, Gyeonggi-do)

3 Days Tour

9

10

11

9 Day1: Go to Gyeongju City (Gyeongju National Museum)

10 Day2 : Technical Tour Korea Radioactive Waste Agency Environment-Friendly Complex-KORAD and Wolsong Nuclear Power Site

11 Day3 : Bulguksa + Seokguram

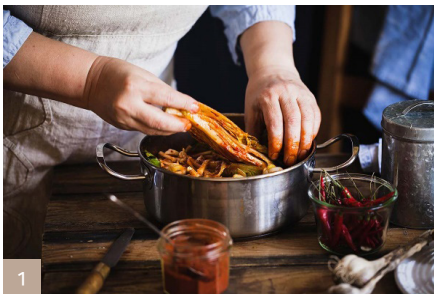
Sightseeing Tour Programme

Delegates and accompanying persons may purchase tickets for the Tours at the time of registration. Please note that registration for optional tours and events will be confirmed upon payment on a first come-first served basis. A minimum, and maximum number of delegates booked onto tours may be necessary. Delegates and accompanying persons will be able to book tours on site at the conference, if there is still availability.

For more information about the tours that are offered, please check the website www.irpa2020.org

The schedule is subject to change. Please visit the Congress Website for updates.

■ Half Day Tours



1 Kimchi Making Morning Tour (Seoul)



2 Korean Tradition Liquor Tasting Programme (Seoul)

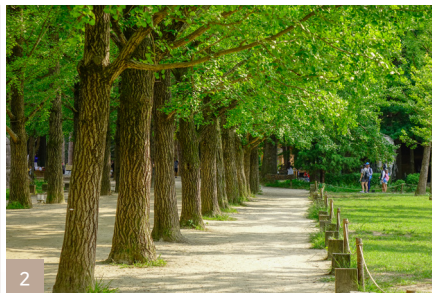


3 Bongeunsa Templelife Programme (Seoul)

■ Full Day Tours



1 Demilitarized Zone (DMZ) Tour



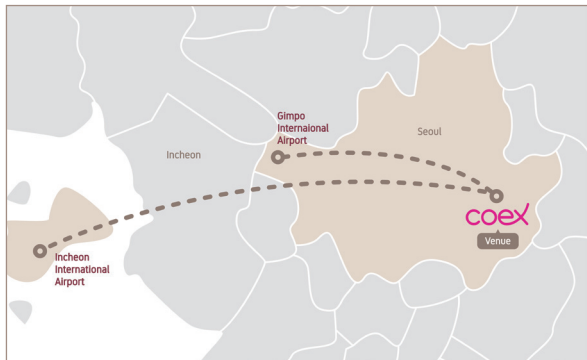
2 Nami Island Tour



3 Yeongdong Wine & Korean Classical Music Tour



Getting to the Congress

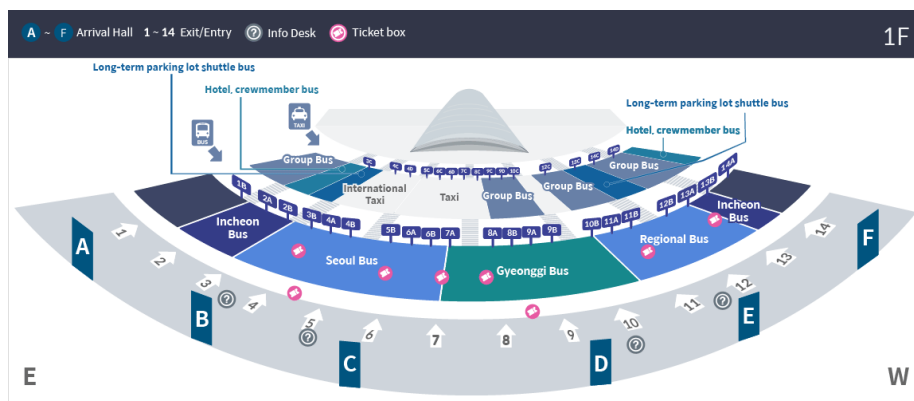


Seoul is serviced by two airports – the Incheon International Airport (approximately 68km to COEX) and Gimpo International Airport (approximately 35km to COEX). Please arrange your own transfers from the airport to your hotel and return and see below for more information.

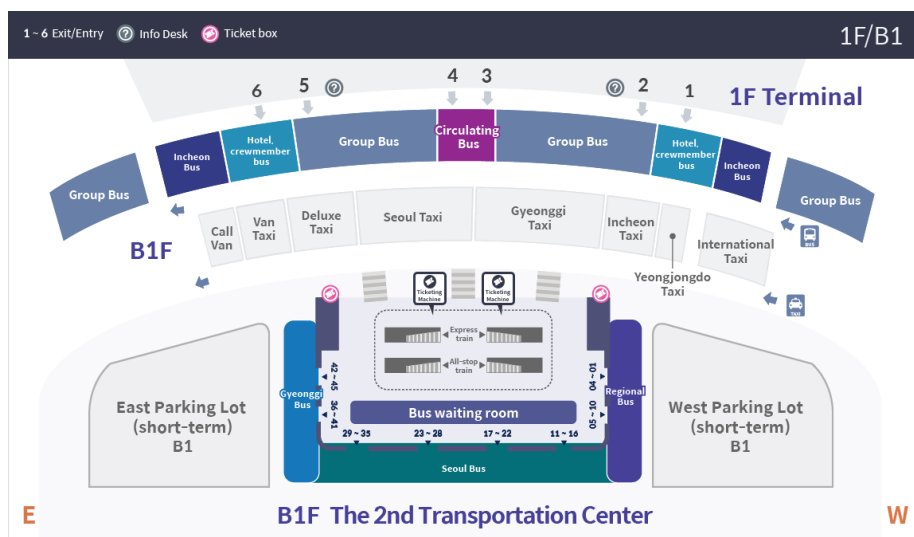
■ From Incheon International Airport

Incheon International Airport is one of the main transport hubs of Northeast Asia. The airport is consistently ranked in the Top 10 airports worldwide and was acknowledged as the 'Best Airport in the World' by Global Traveller for four consecutive years. It is the second busiest airport in the world in the terms of cargo and freight and one of the busiest airports in terms of international passengers. For detailed information on the airport facilities and transportation, please refer to the official at www.airport.kr/ap/en/index.do

■ Terminal 1



■ Terminal 2



Getting to the Congress (continued)

■ Limousine Bus

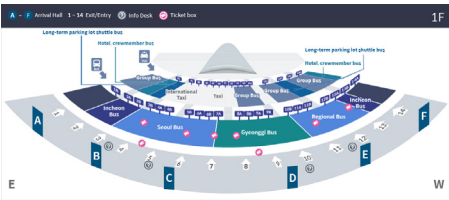
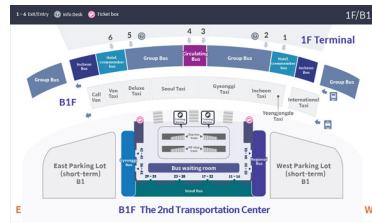
Terminal 1

Ticket offices are located next to Exit 4 and 9 (Indoor) and Exit 4, 6, 7, 8, 9C, and 13 (Outdoor) on 1F (Arrival Hall)

Terminal 2

Ticket offices are located on Traffic Center (B1)

■ Airport Railway Express (AREX) & Subway

Type	Operating Hours		Travel Time	Interval	Fare
	Incheon→Seoul	Seoul→Incheon			
Subway	05:18-22:55	5:53-23:17	Approx. 100 min	12 min	KRW 4,850 (USD 5)
Route	Incheon International Airport Station (AREX) → Gimpo Airport Station (Transfer to Subway Line 9) → Bongeunsa Station (Subway Line 9)				
Location	Terminal 1		Terminal 2		
					

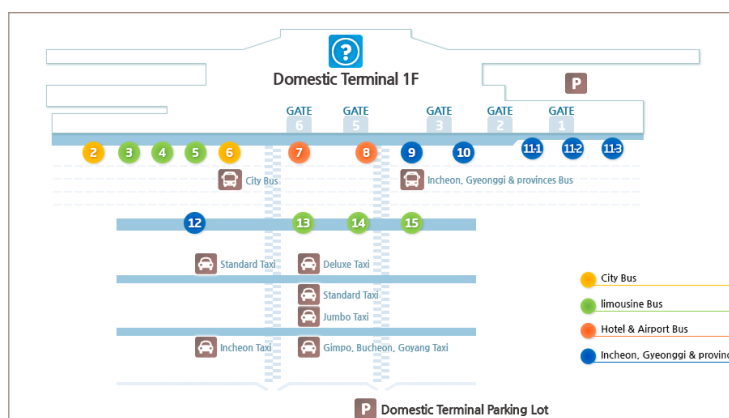
■ Taxi

Airport	Travel Time	Estimated Fare	
		Standard Taxi	Luxury/Large Taxi
Incheon International Airport	Approx. 80 min	KRW 75,000 (USD 69)	KRW 110,000 (USD 101)

* International Taxi

International taxi drivers speak English and Japanese. Travel between Incheon International Airport and Seoul is based on the flat fare system by section including toll fees. These taxis operate on 100% reservations basis. Reservations can be made by calling the call center 1644-2255 or via email at reserve@intltaxi.co.kr For detailed information please click [here \(www.intltaxi.co.kr\)](http://www.intltaxi.co.kr).

Getting to the Congress (continued)



■ From Gimpo International Airport

Gimpo International Airport (GMP) is located 17 km away from Seoul CBD. The airport served Seoul as the major airport until the launch of Incheon International Airport (ICN), and still serves the city as the largest domestic airport and subsidiary international airport, connecting major cities in Korea and Asia. For information, please visit the official website at www.airport.co.kr/wwweng/main.do

■ Limousine Bus

Type	Bus No.	Operating Hours		Travel Time	Interval	Fare
		Gimpo→Seoul	Seoul→Gimpo			
Limousine	6000	05:30~23:00	05:00~24:10	Approx. 60 min.	40-50 min.	KRW 7,000 (USD 6)
Location	Bus Stop: No.7, 1F					

■ Subway

Type	Operating Hours		Travel Time	Interval	Fare
	Gimpo→Seoul	Seoul→Gimpo			
Subway	05:40~23:57	05:32~00:29	Approx. 35 min	6 min	KRW 1,650 (USD 2)
Route	Gimpo Airport Station (Line 9) → Bongeunsa Station (Line 9)				

■ Taxi

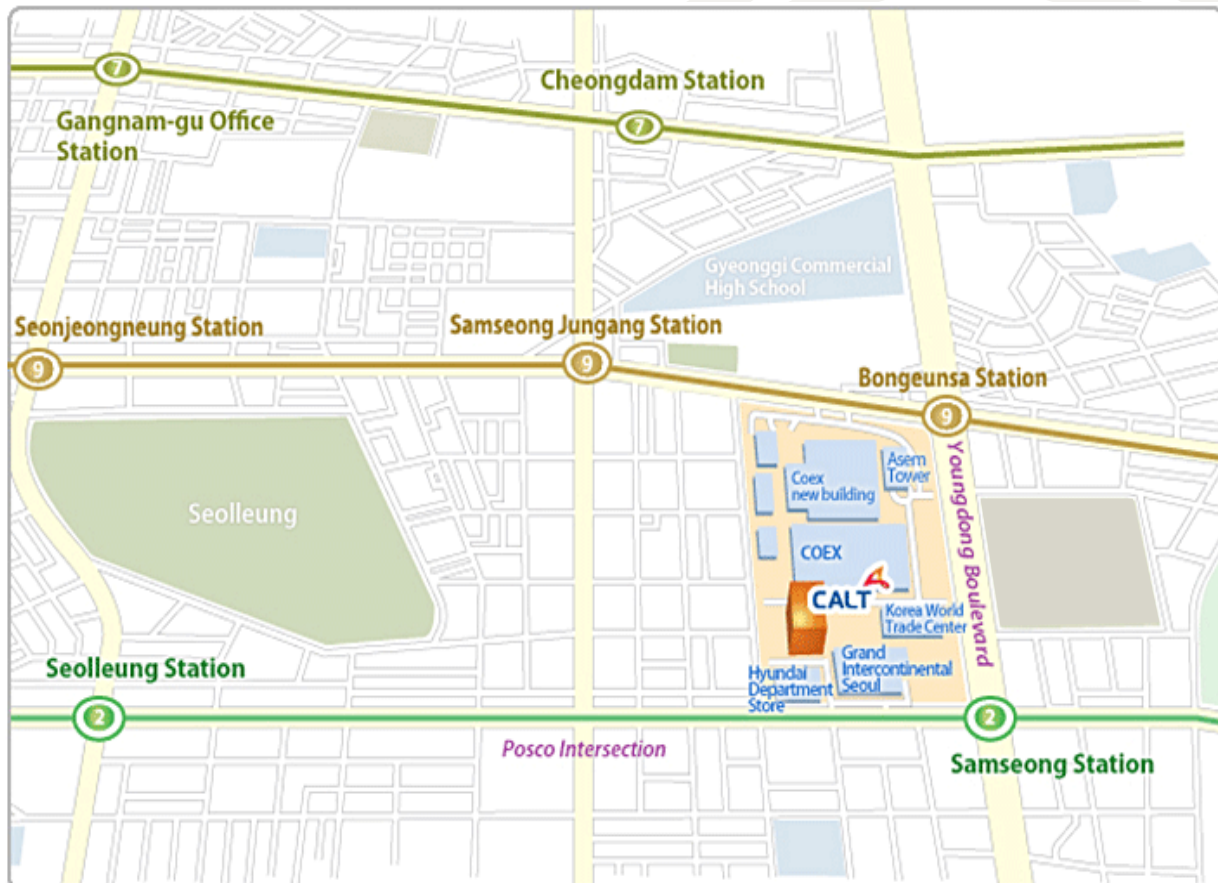
Airport	Travel Time	Estimated Fare	
		Standard Taxi	Luxury/Large Taxi
Gimpo International Airport	Approx. 40 min.	KRW 38,000 (USD 35)	KRW 60,000 (USD 55)



Getting to the Congress (continued)

■ City Airport Terminal (CALT)

Seoul's City Airport Terminal is conveniently located at COEX where passengers flying with 17 major international airlines can check-in and travel to the airports baggage-free. Inexpensive and well-directed public transportations including non-stop limousine buses and subways connected to the Airport Express Trains (AREX) will take passengers to the destined airport without any troubles.



General Information

Seoul

Seoul is an intriguing unique meetings destination with a fascinating dual character where ancient traditions meet ultramodern technological styles. It is home to the captivating UNESCO World Heritage-listed palaces and shrines as well as the gleaming futuristic skyscrapers. Along the way, you'll meet many fun-loving and professional people and discover an ancient capital powered by some of the most modern technology on earth before your Seoul-based event is over. This is because Seoul is a place of boundless discoveries, where no two visits are alike; the traditions of centuries have blended together with the fast-paced dynamism of the 21st century; and the people who live here are as serious about making your business events a success as they are committed to the enjoyment of life.

Currency and Banks

Korea's official monetary unit is Korean Won (KRW).

Credit Card

Most of the businesses in Korea widely use and accept payment by credit cards, including at major hotels, department stores, and general shops. Visa, Master Card, American Express and other credit cards can be used; however check the service availability before making purchases as some stores may not provide this service.

Money Exchange

When you need to exchange your foreign currency into Korean Won, visit a bank or authorized exchange service center. Banks are generally open 09:00-16:00 on weekdays, with the exceptions of Standard Chartered Bank, operating 09:30-16:30, and EVERRICH Bank, with hours of 09:00-16:30.

Electricity Supply

The standard voltage in South Korea is 220 volts and 60Hz.

South Korea uses two types of plugs, Plug Type C (Europlug) and Plug Type F (German Schuko). These types of plugs have two round pins that are placed 19mm apart from each other. The pins fit into two 4.0mm to 4.8mm round holes. These types of plugs and outlets are the same used in almost all of Europe except for a few countries.

Passports and Visas

Any foreign visitors wishing to enter the Republic of Korea must have a valid passport and obtain a Korean visa before coming. However, people of 99 countries who want to visit Korea temporarily are permitted to enter without a visa according to visa-exemption agreements, or in accordance with principles reciprocity of national interest.

Ministry of Foreign Affairs	www.mofa.go.kr/eng/index.do
Immigration Service	www.immigration.go.kr/immigration_eng/index.do

Shopping in Seoul

Seoul, South Korea has many shopping areas and markets throughout the city, such as the fashions of Myeong-dong, the luxury of Cheongdam-dong, the indie and vintage of Hongdae area, or the whole-sale of Dongdaemun and Namdaemun markets.

VAT/Tax Refunds

Actual tax refund value subject to amount spent and Terms and Conditions.

Shoppers Eligible for Vat/Sales Tax Refund:

Any non-resident of Korea, or any foreigner not staying in Korea for 6 months or longer. Any Korean residing in overseas for 2 years or longer, or alien that does not stay in Korea for 3 months or longer after coming to Korea. Any non-resident that does not have any income in Korea nor engaged in any business activity.

Currency: KRW **VAT rate:** 10% **Minimum spend:** 30,000 KRW
Time limit for customs approval: Within 3 months from date of purchase

Weather

Unlike many other Asian destinations, South Korean weather is fairly straightforward and easy to understand. There are only minimal regional variations throughout the country, and the year divides neatly into four distinct seasons.

Among them, May is one of the best month of the year to travel Korea. Because average temperatures are comfortable and spring is prevalent. How about experience the spring of Korea?

Register Your Interest

To register your interest in the 15th International Congress of the International Radiation Protection Association, please go online to www.irpa2020.org and complete the online form.

We will then send to newsletters and information on the progress and development of the Congress.





KOREA E&Ex Inc.



Elekta



IRPA15 Secretariat

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