

5TH INTERNATIONAL SYMPOSIUM ON THE SYSTEM OF RADIOLOGICAL PROTECTION



ICRP 2019

MINES • MEDICINE • MARS

PROGRAM



Hosted by



Australian Government
Australian Radiation Protection
and Nuclear Safety Agency



SUNDAY 17 NOVEMBER 2019

1500-1600 **ARPS ANNUAL GENERAL MEETING**

All ARPS Members Welcome

📍 RIVERBANK ROOM 1

1700-1830 Registration Desk Open

📍 FOYER M

1800-2000 **JOINT ICRP SYMPOSIUM & ARPS FORUM WELCOME RECEPTION**

Please note, the Welcome Reception is included in the cost of a full registration.

Additional tickets may be purchased at a cost of \$85 per person

📍 FOYER A-B, ADELAIDE CONVENTION CENTRE



MONDAY 18 NOVEMBER 2019

SESSION 1 - OPENING PLENARY

Chair/s: Jim Hondros, Cameron Jeffries

0730-1700 Registration Desk Open

FOYER M

0830-0840 **WELCOME FROM ARPS AND OPENING REMARKS**

PANORAMA 1-3

0840-0850 **Dr Carl-Magnus Larsson, ARPANSA (Australia)**

0850-0900 **REFLECTIONS ON ICRP 2017**

Jean-Christophe Niel, Director General of IRSN

0900-0910 **WELCOME FROM ICRP AND INTRODUCTION OF THE 2019 AWARDEE OF THE BO LINDELL MEDAL FOR THE PROMOTION OF RADIOLOGICAL PROTECTION**

Dr Claire Cousins, ICRP Chair

0910-0945 **BO LINDELL MEDAL FOR THE PROMOTION OF RADIOLOGICAL PROTECTION RECIPIENT**

INTERDISCIPLINARY RADIATION PROTECTION RESEARCH IN SUPPORT OF MEDICAL USES OF IONISING RADIATION

Dr Elizabeth Ainsbury, Principal Radiation Protection Scientist and Cytogenetics Group Leader at Public Health England's (PHE) Centre for Radiation (United Kingdom)

0950-1030 **BOYCE WORTHLEY ORATION**

A CONTROVERSY THAT NEEDS TO BE RESOLVED

Don Higson (Australia)

1030-1100 Morning Refreshments, Trade Exhibition & Poster Display

HALL N/O

SESSION 2.1

FUTURE CHALLENGES

PANORAMA 1

SESSION 2.2

NORM AND NATURAL RADIATION (1)

PANORAMA 2

SESSION 2.3

RADIATION BIOLOGY AND PROTECTION

PANORAMA 3

Chair/s: Peter Thomas

Keith Baldry

Chris Boyd

1100-1115 *LOW DOSE RADIATION-SCIENCE, POLICY, AND PUBLIC OPINION*

Charlotta Sanders, World Nuclear Association (United Kingdom)

CAVE RADON EXPOSURE, DOSE, DYNAMICS AND MITIGATION

Chris Waring, ANSTO (Australia)

DMAPT IS AN EFFECTIVE RADIOPROTECTOR OF NORMAL TISSUES FROM SHORT- AND LONG-TERM RADIATION-INDUCED DAMAGE WHILE RADIOSENSITISING PROSTATE TUMOUR TISSUE

Pamela Sykes, Flinders University (Australia)

1115-1130 *ALL SOLID CANCER INCIDENCE AND MORTALITY DOSE-RESPONSE IN THE LIFE SPAN STUDY OF ATOMIC BOMB SURVIVORS*

Alina Brenner, Radiation Research Effects Foundation (United States)

RADON DISTRIBUTION AND APPRAISAL OF ITS RADIATION DOSE IN THE GROUNDWATER OF A SMALL TROPICAL RIVER BASIN, KERALA, INDIA

Sukanya Srinivasa Raghavan, University of Kerala (India)

ANALYTIC ESTIMATION OF THE ANATOMICAL DATA FOR MALAYSIAN RADIATION ADULT PHANTOM

Olaseni Bello, University Technology Malaysia (Malaysia)

1130-1145 *CANCER RISKS FOLLOWING LOW-DOSE RADIATION: WHAT DO WE KNOW ABOUT THE DOSE-RESPONSE CURVE?*

John Mathews, University of Melbourne (Australia)

A DISCUSSION ON THE POTENTIAL IMPACT OF RESIDENTIAL RADON EXPOSURE ON RADON RISK ASSESSMENT FOR URANIUM MINERS

Jing Chen, Health Canada (Canada)

IS PARTICLE THERAPY THE ANSWER FOR PANCREATIC CANCER?

Mikaela Dell'Oro, University of South Australia (Australia)



1145-1200	<i>THE TRUTH, THE WHOLE TRUTH, AND NOTHING BUT THE TRUTH</i> Richard O'Brien (Australia)	<i>RADON PROGENY AND URANIUM ORE DUST PERSONAL ALPHA DOSIMETRY IN URANIUM MINES – THE CANADIAN EXPERIENCE</i> Brian Bjorndal, Radiation Safety Institute of Canada (Canada)	<i>RADIOSENSITIVITY CHANGES IN HPV+ AND HPV- HEAD AND NECK CANCERS FOLLOWING FRACTIONATED IRRADIATION</i> Paul Reid, University of South Australia (Australia)
1200-1215	<i>ACHIEVING HARMONISATION OF RADIATION PROTECTION LEGISLATION ACROSS AUSTRALIAN JURISDICTIONS</i> Ian Furness, University of South Australia (Australia)	<i>DESIGN AND DEVELOPMENT OF A RADON CALIBRATION CHAMBER FOR CANADA</i> Brian Bjorndal, Radiation Safety Institute of Canada (Canada)	<i>ARE CLINICAL NUCLEAR MEDICINE SETTINGS COMPLIANT WITH PROPOSED NEW ICRP LENS OF EYE DOSE LIMITS?</i> Sandor Demeter, Shared Health – Manitoba (Canada)
1220-1320	Lunch, Trade Exhibition & Poster Display		📍 HALL N/O
	SESSION 3.1 AVIATION AND BEYOND 📍 PANORAMA 1	SESSION 3.2 NORM AND NATURAL RADIATION (2) 📍 PANORAMA 2	SESSION 3.3 NUCLEAR FACILITIES AND TRAINING 📍 PANORAMA 3
Chair/s:	Chris Boyd	Ian Furness	Andrew Popp
1320-1335	<i>HOW CAN WE MANAGE THE COSMIC RADIATION EXPOSURES OF FREQUENT FLYERS?</i> Hiroshi Yasuda, Hiroshima University (Japan)	<i>RADIATION MONITORING OF URANIUM MINING SITES IN THE ALLIGATOR RIVERS REGION, NORTHERN TERRITORY, AUSTRALIA</i> Scott McMaster, Department of the Environment and Energy (Australia)	<i>THE SAFETY CONTROL SYSTEM AT A NUCLEAR FUSION EXPERIMENTAL FACILITY</i> Sandro Sandri, Enea (Italy)
1335-1350	<i>SPACE RADIATION EFFECTS, SPACE HEALTH AND HUMAN RADIOSENSITIVITY</i> Melanie Ferlazzo, CNES INSERM ANSTO (Australia)	<i>A NEW DIFFUSION BATTERY FOR THE ASSESSMENT OF AEROSOL CHARACTERISTICS</i> Robert Fairchild, Nebraska Wesleyan University (United States)	<i>SIMPLE CONTAMINATION, COMPREHENSIVE SOLUTION-A CASE STUDY</i> Mikkel Øberg, Danish Decommissioning (Denmark)
1350-1405	<i>EXPERIMENTAL MICRODOSIMETRY FOR RADIATION RISK ASSESSMENT OF PARTICLE THERAPY PATIENTS AND ASTRONAUTS USING A NOVEL PASSIVE MICRODOSIMETER</i> Bhaskar Mukherjee, University of Sydney (Australia)	<i>VALIDATION OF AN EFFECTIVE DOSIMETER FOR RADON DECAY PRODUCTS</i> Andrew Yule, ARPANSA (Australia)	<i>RETHINKING THE CHALLENGE OF RADIOACTIVE CONTAMINATION AT THE OPAL MULTIPURPOSE REACTOR</i> John Bus, ANSTO (Australia)
1405-1420	<i>DEVELOPMENT OF A NEW RADIATION SAFETY STANDARD IN VICTORIA-CT BASED UNITS FOR SECURITY OR QUALITY CONTROL PURPOSES.</i> Simon Robertshaw, DHHS (Australia)	<i>REVIEW OF URANIUM OXIDE TRANSPORT IN SOUTH AUSTRALIA</i> Daniel Bellifemine, Environment Protection Authority South Australia (Australia)	<i>2019 CHALLENGES FACING THE WASTE ISOLATION PILOT PLANT</i> George Anastas, GA and Associates (United States)
1420-1435	<i>A SOLID-STATE MICRODOSIMETER FOR RADIATION PROTECTION FOR ASTRONAUTS IN SPACE</i> Linh Tran, University of Wollongong (Australia)	<i>IMPLEMENTING ENVIRONMENTAL RADIATION PROTECTION AT A RADIOPHARMACEUTICAL FACILITY: A CASE STUDY IN AUSTRALIA THAT INCLUDES TERRESTRIAL AND MARINE PATHWAYS</i> Mathew Johansen, ANSTO (Australia)	<i>SUCCESSFULLY WORKING TOGETHER – NUCLEAR POWER AND RADIATION SAFETY</i> Mark Sanders, International Nuclear Law Association (United States)
1435-1450	<i>ADDITIONAL QUESTION TIME</i>	<i>A SMALL ANIMAL RADON CHAMBER FOR ENVIRONMENTALLY RELEVANT EXPOSURES</i> Tony Hooker, University of Adelaide (Australia)	<i>RADIATION PROTECTION PERFORMANCE AND CHALLENGES AT US NUCLEAR POWER PLANTS</i> Ellen Anderson, Nuclear Energy Institute (United States)



1455-1525 Afternoon Refreshments, Trade Exhibition & Poster Display

📍 HALL N/O

SESSION 4.1
RADIATION EFFECTS

SESSION 4.2
NORM AND NATURAL RADIATION (3)

ICRP MEMBER PLENARY

📍 PANORAMA 1

📍 PANORAMA 2

📍 PANORAMA 3

Chair/s: Nobuyuki Hamada, Cameron Jeffries

Ian Furness

1530-1545 *SCIENTIFIC INSIGHTS INTO THE CURRENT ICRP JUDGMENTS FOR RADIATION EFFECTS ON THE LENS OF THE EYE*
Nobuyuki Hamada, CRIEPI (Japan)

NORM: A PLANNED OR EXISTING EXPOSURE SITUATION?
Fiona Charalambous, ARPANSA (Australia)

ICRP MEMBERS ONLY

1545-1600 *RADIATION EFFECTS ON THE LENS OF THE EYE: ASSESSING THE RISK LEVEL FOR CATARACTOGENESIS*
Christopher Thome, Northern Ontario School of Medicine (Canada)

DEVELOPING INTERNATIONAL RADIOLOGICAL RISK ASSESSMENT TOOLS AND APPROACHES FOR AUSTRALIAN ARID ENVIRONMENTS
Rachel Popelka-Filcoff, Flinders University (Australia)

1600-1615 *THE REPAIR PROJECT: A DEEP UNDERGROUND EXPERIMENT INVESTIGATING THE BIOLOGICAL SIGNIFICANCE OF TERRESTRIAL AND GALACTIC COSMIC NATURAL BACKGROUND RADIATION*
Jake Pirkkanen, Laurentian University (Canada)

THE IAEA FORUM FOR REGULATORS OF URANIUM AND NORM ACTIVITIES
Keith Baldry, Environment Protection Authority (Australia)

1615-1630 *EXPLORING THE EFFECTS OF IONIZING RADIATION BEYOND EARTH'S ORBIT AND DEEP UNDERGROUND IN A NOVEL YEAST MODEL SYSTEM*
Douglas Boreham, Northern Ontario School of Medicine (Canada)

USE OF CASE STUDIES IN PROGRESSING GUIDANCE ON THE APPLICATION OF RECOMMENDATIONS ON RADIOLOGICAL PROTECTION IN THE EXISTING EXPOSURE SITUATIONS
Malgorzata Sneve, Norwegian Radiation Protection and Nuclear Safety Authority (Norway)

1630-1645 *A MULTI-TARGET DIETARY INTERVENTION PROTECTS FROM RADIATION-INDUCED COGNITIVE IMPAIRMENT AND NORMAL TISSUE INJURY*
Douglas Boreham, Northern Ontario School of Medicine (Canada)

FINDING A SOLUTION FOR MANAGING OUR LOW-LEVEL RADIOACTIVE WASTE AND BRINGING STAKEHOLDERS ALONG ON THE JOURNEY
Annelize Van Rooyen, Tellus Holdings (Australia)

1730-1900 **VIP FUNCTION (INVITATION ONLY)**

📍 GILBERT SUITE, ACC

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TUESDAY 19 NOVEMBER 2019

0800-1700 Registration Desk Open

📍 FOYER M

0845-0850 **WELCOME AND OPENING REMARKS**

📍 HALL M

0850-0925 **MINES KEYNOTE SPEAKER**

OLYMPIC DAM: BHP THINKING BIG ABOUT THE FUTURE

Paul Cuthbert – General Manager Mine BHP (Australia)

MINES

ARPS FORUM - MEDICAL

MINING AND OTHER NATURAL SOURCES

SESSION 5.1

RADIOLOGICAL PROTECTION OF WORKERS,
PUBLIC AND ENVIRONMENT

📍 HALL M

SESSION 5.2

RADIATION PROTECTION IN MEDICINE (1)

📍 RIVERBANK ROOM 8

Chair/s: Jacques Lochard & John Takala

Peter Harty

0930-1000 *RADIATION MANAGEMENT AT OLYMPIC DAM*
Zoe Dryger, Martin Smith, Neil Camillo, BHP (Australia)

0930-0945 *RADIATION SAFETY CULTURE*
Vyoma Shukla, University Hospitals of Leicester NHS Trust (United Kingdom)

0945-1000 *EVALUATION OF BASIC PERFORMANCE OF REAL-TIME WIRELESS DOSIMETRY SYSTEM FOR INTERVENTIONAL RADIOLOGY*
Takayuki Yamamoto, Kyushu University (Japan)

1000-1030 *THE CHALLENGES OF MINING, PROCESSING, AND TRANSPORTING NATURALLY OCCURRING RADIOACTIVE MATERIALS*
Frank Harris, Rio Tinto (Australia)

1000-1015 *IMPROVEMENT OF THE USE RATE OF THE PERSONAL DOSIMETER & PROTECTOR BY INTERVENTIONAL RADIOLOGISTS WITH RADIOLOGICAL TECHNOLOGIST LEADERSHIP*
Satoru Matsuzaki, Shinkomonji Hospital (Japan)

1015-1030 *ARE LIGHTWEIGHT LEAD GARMENTS THE EMPEROR'S NEW CLOTHES OF THE ANGIOGRAPHY SUITE?*
Chris Boyd, South Australia Medical Imaging (Australia)

1030-1100 *PROTECTION OF THE ENVIRONMENT*
David Copplestone, University of Stirling (United Kingdom)

1030-1045 *UNSHACKLING VASCULAR SURGERY FROM IONISING RADIATION: A REVIEW OF INNOVATIVE NO-RADIATION AND LOW-RADIATION ('NO-LO') IMAGING TECHNIQUES*
Li Yu, Royal Adelaide Hospital (Australia)

1045-1100 *ADDITIONAL QUESTION TIME*

1100-1130 Morning Refreshments, Trade Exhibition & Poster Display

📍 HALL N/O



SESSION 6.1

RADON IN MINING AND BEYOND

📍 HALL M

SESSION 6.2

RADIATION PROTECTION IN MEDICINE (2)

📍 RIVERBANK ROOM 8

Chair/s:

Michael Gilhen

1130-1200 *MINERS' STUDIES AND RADIATION PROTECTION AGAINST RADON*
Dominique Laurier, IRSN (France)

1130-1145 *ANALYSIS OF MAMMOGRAPHY DOSES IN WESTERN AUSTRALIA*
Cameron Storm, MTP (Australia)

1145-1200 *ARPANSA'S NATIONAL DIAGNOSTIC REFERENCE LEVEL SERVICE – PROVIDING GUIDANCE ON TYPICAL DOSES IN MEDICAL IMAGING*
Peter Thomas, Australian Radiation Protection and Nuclear Safety Agency (Australia)

1200-1230 *ICRP RECOMMENDATIONS ON RADON*
John Harrison, Oxford Brookes University (United Kingdom)

1200-1215 *CT SCAN EXPOSURE BEFORE AGE 20 AND CANCER RISK: USING PROPENSITY SCORES TO ACCOUNT FOR CONFOUNDING BY INDICATION*
Jasmine McBain-Miller, University of Melbourne (Australia)

1215-1230 *PATIENT-SPECIFIC ORGAN DOSE ESTIMATION IN PAEDIATRIC CHEST CT: THE MEDIRAD PROJECT*
John Damilakis, University of Crete (Greece)

1230-1300 *AUSTRALIAN ACTIONS TO REDUCE HEALTH RISKS FROM RADON*
Rick Tinker, ARPANSA (Australia)

1230-1245 *CALIBRATION OF AN INTERNAL EXPOSURE MEASUREMENT DEVICE USING COMPUTATIONAL HUMAN PHANTOMS*
Jooyub Lee, Sejong University (South Korea)

1245-1300 *ADDITIONAL QUESTION TIME*

1300-1400 Lunch, Trade Exhibition & Poster Display

📍 HALL N/O

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SESSION 7.1 OTHER NORM INDUSTRIES		SESSION 7.2 RADIATION PROTECTION IN MEDICINE (3)	
📍 HALL M		📍 RIVERBANK ROOM 8	
Chair/s:		Peter Thomas	
1400-1430	<i>ICRP APPROACH FOR RADIOLOGICAL PROTECTION FROM NORM IN INDUSTRIAL PROCESSES</i> Jean-Francois Lecomte, IRSN (France)	1400-1415	<i>LEARNING FROM THE AUSTRALIAN RADIATION INCIDENT REGISTER</i> Chris Nickel, ARPANSA (Australia)
		1415-1430	<i>POTENTIAL FOR NUCLEAR MEDICINE SOURCE TRACKING AND LICENSING ON A BLOCKCHAIN – LESSONS FROM PILOT STUDIES IN NUCLEAR SAFEGUARDS</i> Edward Obbard, University of New South Wales (Australia)
1430-1500	<i>TREND OF STRENGTHENING CLEARANCE REGULATION IN JAPAN AND CONCERNS ABOUT ITS WORLDWIDE EFFECTS ON REGULATIONS FOR NATURAL AND ARTIFICIAL RADIONUCLIDES</i> Takatoshi Hattori, CRIEPI (Japan)	1430-1445	<i>ADVANTAGES FOR A PRIMARY STANDARDS DOSIMETRY LABORATORY IN HAVING A MEDICAL LINEAR ACCELERATOR</i> Peter Harty, ARPANSA (Australia)
		1445-1500	<i>CONSERVATISM IN LINEAR ACCELERATOR BUNKER SHIELDING</i> James Rijken, Genesiscare (Australia)
1500-1530	<i>NORM AND NORM WASTE MANAGEMENT IN CHINA</i> Senlin Liu, China Institute of Atomic Energy (China)	1500-1515	<i>AGE DEPENDENT DYNAMIC ABSORBED DOSE CALCULATIONS TO THE URINARY BLADDER WALL FOR ICRP COMPARTMENTAL MODELS OF RADIOPHARMACEUTICALS</i> Augusto Giussani, Lund University (Sweden)
		1515-1530	<i>ADDITIONAL QUESTION TIME</i>
1530-1600	Afternoon Refreshments, Trade Exhibition & Poster Display		📍 HALL N/O
MINES - PANEL DISCUSSION			📍 HALL M
1600-1730	NORM, MINES, AND FUTURE TRENDS		
	Moderator: Keith Baldry, South Australian Environmental Protection Authority (Australia)		
	Panelists: Analia Canoba, ICRP/ Autoridad Regulatoria Nuclear (Argentina)		
	Donald Cool, ICRP/ Electric Power Research Institute (United States)		
	Jim Hondros, JRHC Enterprises (Australia)		
	John Takala, ICRP/Cameco Corporation (Canada)		
	Stephen Long, ARPANSA (Australia)		
	Daniel Zavattiero, Minerals Council of Australia (Australia)		
1900-2300	SYMPOSIUM GALA DINNER		📍 PANORAMA BALLROOM
	Please note, the Gala Dinner is included in the cost of a full registration.		
	Additional tickets may be purchased at a cost of \$150 per person		



WEDNESDAY 20 NOVEMBER 2019

MEDICINE

RADIOLOGICAL PROTECTION CHALLENGES IN CUTTING-EDGE MEDICINE

Chair/s: Dr Claire Cousins & Maria Perez

0800-1700 Registration Desk Open

FOYER M

0845-0850 **WELCOME AND OPENING REMARKS**

HALL M

0850-0930 *AUSTRALIAN HEALTHCARE: HOW DOES RADIATION SAFETY FIT IN?*
Professor Brendan Murphy, Chief Medical Officer (Australia)

SESSION 8

HEALTHCARE PRACTITIONERS

HALL M

0930-1000 *AUSTRALASIAN EXPERIENCE*
Ivan Williams, ARPANSA (Australia)

1000-1030 *USE OF ARTIFICIAL INTELLIGENCE IN CT DOSE OPTIMISATION*
Cynthia McCollough, Mayo Clinic (United States)

1030-1100 *EFFECTIVE DOSE IN MEDICINE*
Colin Martin, ICRP (United Kingdom)

1100-1130 Morning Refreshments, Trade Exhibition & Poster Display

HALL N/O

SESSION 9

ROLE OF EQUIPMENT MANUFACTURERS IN RADIOLOGICAL PROTECTION

HALL M

1130-1200 *WHAT'S THE POINT OF INNOVATION IN PATIENT DOSE MONITORING?*
Jacqui Hislop-Jambrich, Canon Medical ANZ (Australia)

1200-1230 *GLOBAL SPREAD OF PARTICLE THERAPY AND CONSIDERATION OF RADIATION SAFETY*
Kazuo Tomida, Hitachi (Japan)

1230-1300 *TECHNICAL DEVELOPMENTS IN PET/CT IMAGING AND THEIR IMPACT ON RADIATION DOSE REDUCTION*
Tim Lagana, Siemens Healthineers (Australia)

1300-1400 Lunch, Trade Exhibition & Poster Display

HALL N/O

SESSION 10

PATIENT FOCUS

HALL M

1400-1430 *ETHICS IN RADIOLOGICAL PROTECTION FOR MEDICAL DIAGNOSIS AND TREATMENT: AN UPDATE*
Francois Bochud (Switzerland) & Marie-Claire Cantone (Italy)

1430-1500 *PATIENTS' PERSPECTIVES ON RADIATION IN HEALTHCARE*
Lee Hunt, Patient Advocate (Australia)

1500-1530 *RADIATION PROTECTION CHALLENGES IN APPLICATION OF IONISING RADIATION ON ANIMALS IN VETERINARY PRACTICES*
Nicole Martinez (United States) & Lodewijk Van Bladel (Belgium)



1530-1600 Afternoon Refreshments, Trade Exhibition & Poster Display

HALL N/O

MEDICINE – PANEL DISCUSSION

HALL M

1600-1730 **RAISING AWARENESS OF RP IN MEDICINE**

Moderator: Cameron Jeffries (Australia)

Panelists: Kimberly Applegate, ICRP (United States)

Lee Hunt, Patient Advocate (Australia)

Keon Kang, ICRP / Seoul National University (South Korea)

Maria Perez, World Health Organisation

Marie-Claire Cantone, ICRP / University Milano (Italy)

Lodewijk van Bladel, ICRP / Federal Agency for Nuclear Control (Belgium)

1930-2230 **MOVIE NIGHT**

HALL M

CHERNOBYL FUKUSHIMA: LIVING WITH THE LEGACY

30 years after the Chernobyl catastrophe, and 5 years after Fukushima, it is time to see what has been happening in the “exclusion zones”, where the radioactivity rate is far above normal. This film will offer a unique access to those territories, which gather millions of people within thousands of km². The viewers will immerse themselves into the daily life of people living there – in Byelorussia, Norway and Japan. Through people’s testimonies and encounters with the scientists working in these open laboratories, the documentary intends to point out the substantial consequences of those nuclear catastrophes. You may be surprised...

Hosted by ICRP Vice-Chair Jacques Lochard

Tickets: This event is complimentary to full delegates, registered partners and exhibitors.

THANK YOU TO OUR EXHIBITORS





THURSDAY 21 NOVEMBER 2019

MARS

RADIOLOGICAL PROTECTION IN SPACE

Chair/s: Christopher Clement & Dr Gordon Cable

0800-1700 Registration Desk Open

0845-0850 **WELCOME AND OPENING REMARKS**

📍 HALL M

0850-0930 **MARS KEYNOTE LECTURE**

HEALTHCARE FOR DEEP SPACE EXPLORERS

Dr Robert Thirsk, Canadian Space Agency (Canada)

SESSION 11

📍 HALL M

RADIOLOGICAL PROTECTION IN SPACE

0930-1000 *20 YEARS OF RADIATION PROTECTION EXPERIENCE WITH THE INTERNATIONAL SPACE STATION*

Mark Shavers, NASA (United States)

1000-1030 *RADIATION ENVIRONMENT IN SPACE AND RECENT PROGRESS ON SPACE WEATHER RESEARCH FOR COSMIC RAY DOSIMETRY*

Tatsuhiko Sato, Japan Atomic Energy Agency (Japan)

1030-1100 *OPERATIONAL RADIATION PROTECTION FOR HUMAN SPACE FLIGHT, THE FLIGHT SURGEONS PERSPECTIVE*

Ulrich Straube, European Space Agency (Germany)

1100-1130 Morning Refreshments, Trade Exhibition & Poster Display

📍 HALL N/O

SESSION 12

📍 HALL M

CURRENT PRACTICE

1130-1200 *CURRENT CANADIAN SPACE AGENCY PRACTICE AND ACTIVITIES IN THE AREA OF RADIATION HEALTH PROTECTION*

Leena Tomi, Canadian Space Agency (Canada)

1200-1230 *ETHICS OF RADIATION PROTECTION IN SPACE*

Nikki Coleman, Royal Australian Air Force (Australia)

1230-1300 *PRACTICALITIES OF DOSE MANAGEMENT FOR JAPANESE ISS ASTRONAUTS*

Tatsuto Komiyama, Japan Aerospace Exploration Agency (Japan)

1300-1400 Lunch, Trade Exhibition & Poster Display

📍 HALL N/O

SESSION 13

📍 HALL M

FUTURE CHALLENGES

1400-1430 *LIFETIME RADIATION RISK OF STOCHASTIC EFFECTS—PROSPECTIVE EVALUATION FOR SPACE FLIGHT OR MEDICINE*

Alexander Ulanowski, IAEA (Vienna)

1430-1500 *RECENT PROGRESS ON CHINESE SPACE PROGRAM AND RADIATION RESEARCH*

Guangming Zhou, Soochow University (China)

1500-1530 *RADIATION PROTECTION CHALLENGES FOR EXPLORATION*

Eddie Semones, NASA (United States)



1530-1600 Afternoon Refreshments, Trade Exhibition & Poster Display

HALL N/O

MARS PANEL DISCUSSION

HALL M

1600-1730 **NEXT STEPS FOR RP IN SPACE**

Moderator: Gillian Hirth, ARPANSA (Australia)

Panelists: Gordon Cable, Australasian Society of Aerospace Medicine

Mélanie Ferlazzo, ANSTO (Australia)

Werner Rühm, ICRP / Helmholtz Centre Munich (Germany)

Samy El-Jaby, Canadian Nuclear Laboratories (Canada)

Wesley Bolch, ICRP /University of Florida (United States)

CLOSING CEREMONY

1730-1740 **CLOSING REMARKS**

Dr Claire Cousins, ICRP Chair

1740-1800 **INVITATION TO ICRP 2021 – VANCOUVER**

Mike Rinker

The ICRP 2019 reserves the right to amend or alter any advertised details relating to dates, program and speakers if necessary, without notice, as a result of circumstances beyond their control. All attempts have been made to keep any changes to an absolute minimum.

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