

CONFERENCE PROGRAM



ARPS2016



ADELAIDE CONVENTION CENTRE, SOUTH AUSTRALIA, 11-14 SEPTEMBER 2016
PERCEPTIONS, RISKS AND OPPORTUNITIES

SUNDAY 11 SEPTEMBER

1.00pm-5.00pm Registration Desk Open
Attendees are encouraged to register early if you are in the vicinity of the Convention Centre

12.00pm-2.00pm **ARPS Executive Meeting** 📍 CITY SUITE 3

2.00pm-5.00pm **PRE CONFERENCE WORKSHOP** 📍 PANORAMA ROOM 2

WHEN SCIENCE COMMUNICATION MEETS PUBLIC CONTROVERSY

Facilitated by Dr Paul Willis, Director, RiAus

Dr Paul Willis is an experienced science communicator who will challenge what you thought you knew about science communication. Well-accustomed to facilitating debate on controversial scientific issues he will share some of the skills he has acquired over his long career in the field. Don't expect us to predict what he will cover, only to say it will be a lively discussion which could lead anywhere according to whatever communication challenges participants wish to raise. Remember to contribute what you've found from your own experiences as a scientist or practitioner.

5.30pm-7.30pm **WELCOME RECEPTION** 📍 RIVERBANK PROMENADE, ADELAIDE CONVENTION CENTRE

MONDAY 12 SEPTEMBER

7.30am-5.00pm Registration Desk Open

PLENARY SESSION 1 📍 PANORAMA 1, 2, 3
LONG TERM MANAGEMENT OF RADIOACTIVE WASTE Chair: Ian Furness

8.45am **Convenor Opening Comments & Welcome, Ian Furness**

9.00am-9.30am **Official Conference Opening**
Dr Leanna Read, Chief Scientist of South Australia

9.30am-10.25am **Keynote Speaker**
PERCEPTIONS, RISKS AND OPPORTUNITIES – THE ROLE OF THE RADIATION PROTECTION PROFESSIONAL
Dr Roger Coates OBE, President, International Radiation Protection Association

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10.30am-11.00am **Morning Refreshments & Trade Exhibition**
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PLENARY SESSION 2 📍 PANORAMA 1, 2, 3
HIGH LEVEL WASTE FACILITIES: PROGRESS IN OTHER COUNTRIES Chair: Chuong Pham

11.00am-11.30am **Invited Speaker**
INTERNATIONAL SAFETY STANDARDS
Dr Marcus Grzechnik, Senior Scientist, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

11.30am-12.15pm **Keynote Speaker**
SPENT NUCLEAR FUEL DISPOSAL – THE FINNISH STORY
Dr Sami Hautakangas, Fortum, Finland

12.15pm-1.00pm **Keynote Speaker**
CANADIAN NUCLEAR TECHNOLOGY AND MANAGING SPENT NUCLEAR FUEL
Professor Doug Boreham, Bruce Power, Canada

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1.00pm-2.00pm **Lunch & Trade Exhibition**
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PLENARY SESSION 3 📍 PANORAMA 1, 2, 3
NUCLEAR MATERIALS IN AUSTRALIA Chair: Keith Baldry

2.00pm-3.00pm **Invited Speaker**
AUSTRALIAN NATIONAL RADIOACTIVE WASTE MANAGEMENT FACILITY – TECHNICAL AND COMMUNITY ENGAGEMENT: CHALLENGES AND LESSONS LEARNT
Mr Bruce Wilson, Head of Resources Division, Department of Industry, Innovation and Science, Australia and Jonathon Armstrong, Frazer-Nash Consultancy, Hefin Griffiths, ANSTO

3.00pm-3.30pm **Invited Speaker**
GLOBAL NUCLEAR NON-PROLIFERATION AND NUCLEAR SECURITY REGIMES - IMPLICATIONS FOR NUCLEAR FUEL CYCLE ACTIVITIES IN AUSTRALIA
Dr Robert Floyd, Director-General, Australian Safeguards and Non-Proliferation Office (ASNO), Australia

3.30pm-3.40pm **Closing Summary, Ian Furness**

3.40pm-4.00pm **Afternoon Refreshments & Trade Exhibition**
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CONCLUSION OF SYMPOSIUM & DAY 1 OF ARPS CONFERENCE

4.00pm-6.00pm ARPS Annual General Meeting 📍 PANORAMA ROOM 2

6.30pm-8.30pm **PUBLIC EVENT – RiAus HYPOTHETICAL** 📍 55 EXCHANGE PLACE
OPTIONAL EVENT Exploring the issues surrounding long term disposal of high level nuclear wastes in South Australia. Draws on the views of a range of local and international experts including invited speakers from ARPS2016. Hosted by RiAus in collaboration with ARPS2016



TUESDAY 13 SEPTEMBER

8.00am-5.00pm Registration Desk Open

PLENARY SESSION 4

EFFECTS OF LOW DOSE RADIATION

PANORAMA 1, 2, 3

Chair: Assoc Prof Tony Hooker

8:50am-9:00am **Opening Comments, Assoc Prof Tony Hooker**

9.00am-9.50am **Keynote Speaker**

MINIMISING THE HEALTH CONSEQUENCES OF NUCLEAR ACCIDENTS - DO WE NEED TO REASSESS OUR RESPONSE?
Professor Geraldine Thomas, Imperial College of London, UK

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9.50am-10.20am

Morning Refreshments & Trade Exhibition

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PLENARY SESSION 5

EFFECTS OF LOW DOSE RADIATION

PANORAMA 1, 2, 3

Chair: Professor Pam Sykes

10.20am-11.05am **Keynote Speaker**

TECHNOLOGIES AND MODELS FOR STUDYING THE RADIOBIOLOGY OF LOW-DOSE EFFECTS
Professor Kevin Prise, Queens University, Belfast

11.05am-11.50am **Invited Speaker**

UNDERSTANDING ADAPTATION FOLLOWING EXPOSURE TO RADIATION- WHAT DO WE REALLY KNOW?
Dr Benjamin Blyth, Peter MacCallum Cancer Centre

11.50am-12.20pm **Questions to panel**

12.20pm-12.30pm **Major Sponsor Presentation**

BHP Billiton, Chuong Pham



12.30pm-1.30pm

Lunch, Trade Exhibition & Poster Session

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SESSION 1

MEDICAL RADIATION RADIOBIOLOGY

Chair: Prof Pam Sykes

PANORAMA 1

SESSION 2

MINING/CLEAN AIR

Chair: Alice Jagger

PANORAMA 2

SESSION 3

NON-IONISING

Chair: Ian Furness

PANORAMA 3

1.30pm-1.50pm

LOW-DOSE RADIATION RESPONSE IN THE LUNGS AND SPLEEN: A HEALTHY ANIMAL MODEL
Stacy Muise, McMaster University

E-RADIATION MONITORING USED IN THE HEATHGATE RESOURCES IN-SITU RECOVERY URANIUM OPERATION
Martin Jane, Heathgate Resources

PERCEPTIONS REGARDING PATIENT SAFETY AND IPLS AND LASERS IN THE MEDICAL AESTHETIC INDUSTRY. WHAT ARE THE RISKS AND OPPORTUNITIES?
Mr Kane Hammond, The Global Beauty Group

1.50pm-2.10pm

PARTHENOLIDE PROTECTS HEALTHY TISSUES WHILE SENSITISING PROSTATE TUMOURS TO RADIOTHERAPY IN VIVO
Katherine Morel, Flinders University

MINERAL SAND MINING IN VICTORIA - RADIATION EXPOSURE AND MANAGEMENT OF COMMUNITY CONCERNS
Morrie Facci, Department of Health & Human Services

WHAT DOES THE RESEARCH TELL US ABOUT THE RISK OF ELECTROMAGNETIC RADIATION (EMR)?
Victor Leach, Oceania Radiofrequency Scientific Advisory Association (ORSAA)

2.10pm-2.30pm

RISK OF MICRONUCLEI FORMATION AMONG EMPLOYEES AND RESIDENTS IN THE VICINITY OF A MONAZITE PROCESSING PLANT IN SRI LANKA
Dr Tania Warnakulasuriya, Faculty Of Medicine, University Of Kelaniya

MODELLING ATMOSPHERIC DISPERSION OF RADON EXHALATION
Dr Matthew Pickett, Jacobs

RADIOFREQUENCY ELECTROMAGNETIC FIELD EXPOSURES IN KINDERGARTEN CHILDREN
Chhavi Raj Bhatt, Monash University

2.30pm-2.50pm

HEAD AND NECK CANCER STEM CELLS: PROLIFERATION UNDER X-RAYS
Paul Reid, ICAHE University Of South Australia

REGULATING RESIDUES FROM URANIUM PRODUCTION AND OTHER NORM ACTIVITIES TO INTERNATIONAL STANDARDS
Daniel Bellifemine, South Australian Environment Protection Authority

NON-IONIZING RADIATION PROTECTION: SUMMARY OF RESEARCH AND POLICY OPTIONS; DEVELOPMENT OF A NEW TEXT BOOK TO PROMOTE NIR EDUCATION
David Urban, ARPANSA

2.50pm-3.10pm

Afternoon Refreshments & Trade Exhibition

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SESSION 4 MEDICAL RADIATIONS		SESSION 5 NORM/ENVIRONMENTAL IMPACT		SESSION 6 DEVELOPMENTS	
Chair: Brent Rogers		Chair: Brad Cassels		Chairs: Daniel Bellifemine, A/Prof Tony Hooker	
📍 PANORAMA 1		📍 PANORAMA 2		📍 PANORAMA 3	
3.10pm-3.30pm	OPTIMISATION OF IMAGE QUALITY AND PATIENT DOSE IN RADIOGRAPHS OF PAEDIATRIC EXTREMITIES USING DIRECT DIGITAL RADIOGRAPHY <i>Adam Jones, Western Sydney Local Health District</i>	AN IMPROVED NORM BASED PLANAR RADIATION CALIBRATION FACILITY <i>Dr John Wallace, Radiation & Nuclear Science Unit, QLD Health</i>	ENVIRONMENTAL DOSIMETRY AND LUMINESCENCE RESEARCH AT THE UNIVERSITY OF ADELAIDE <i>Dr Nigel Spooner, University of Adelaide</i>		
3:30pm-3.50pm	RADIATION DOSE LEVELS IN PAEDIATRIC CONGENITAL HEART DISEASE <i>Terry Jones, The University of Sydney</i>	RADON MEASUREMENTS AT AUSTRALIAN ANTARCTIC STATIONS <i>Brendan Tate, ARPANSA</i>	INTRODUCTION TO GAMMA SPECTROSCOPY ON A BUDGET <i>Daniel Emes, SA Radiation</i>		
3:50pm-4.10pm	SHIELDING X-RAY ROOMS THE SOUTH AUSTRALIAN WAY <i>Dr Giovanni Bibbo, Women's and Children's Hospital</i>	CASE STUDIES ON EXISTING EXPOSURE SITUATIONS <i>Dr Fiona Charalambous, ARPANSA</i>	REAL-TIME AREA GAMMA MONITORING DATA: THE ONLY WAY TO MANAGE OPERATIONAL EXPOSURES. <i>Simon Turner, Queensland University of Technology</i>		
4:10pm-4.30pm	UTILISING COMMONLY AVAILABLE LONG-LIVED RADIOISOTOPES AND FILTERS TO CHECK CONTAMINATION PROBE RESPONSE FOR SHORT-LIVED NUCLEAR MEDICINE RADIOISOTOPES <i>Ata-ur-rehman Bhatti and Phil Allanson, Safe Radiation</i>	ALPHA SPECTROSCOPY OF RADON DAUGHTERS AND URANIUM DUST BY THE YALO3:CE SCINTILLATION DETECTOR <i>Dr Jiri Kvasnicka, Radiation Detection Systems</i>	MONITORING OF RADIATION EXPOSURE ADJACENT TO A LINEAR ACCELERATOR TREATMENT BUNKER WITH A HIGHLIGHT WINDOW <i>Cameron Jeffries, St Vincent's Hospital Sydney</i>		
6.00pm-7.00pm	ADELAIDE OVAL TOUR This tour is available to those attendees who have pre-booked. Please make your way to the Adelaide Oval to arrive at 5.55pm and meet at the Concierge Desk in the South Gate entrance. Following the tour, you will be guided to pre-dinner drinks.			📍 ADELAIDE OVAL	
7.00pm-11.00pm	ARPS CONFERENCE DINNER Guests are asked to make their own way to Adelaide Oval, your hotel will provide you with directions. Adelaide Oval is accessible via the Riverbank Footbridge, entering from the Telstra Plaza on War Memorial Drive. For local attendees, parking is available at the Wilson East Car Park, entry via King William Road. Special rate is \$13.00 for the evening, with tickets validated before leaving the Oval.			📍 ADELAIDE OVAL, CATHEDRAL ROOM	

WEDNESDAY 14 SEPTEMBER

8.00am-5.00pm Registration Desk Open

PLENARY SESSION 6

📍 PANORAMA 1, 2, 3
Chair: Jim Hondros

8.50am-9.00am **Opening Comments, Jim Hondros**

9.00am-9.45am **Boyce Worthley Oration** *Sharon Paulka MARPS*

9.45am-10.30am **Keynote Speaker**

RESHAPING LIVES AFTER THE FUKUSHIMA ACCIDENT *Ms Ryoko Ando, Ethos in Fukushima and Tazuko Arai, Translator*

10.30am-11.00am **Morning Refreshments & Trade Exhibition**

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📍 PANORAMA FOYER

SESSION 7

COMMUNICATION & CONSULTATION

Chair: Cameron Jeffries

📍 PANORAMA 1

SESSION 8

INDUSTRIAL

Chair: Bill Bartolo

📍 PANORAMA 2

SESSION 9

DOSIMETRY

Chair: David Kruss

📍 PANORAMA 3

11.00am-11.20am COMMUNICATION OF RADIATION RISKS FROM DIAGNOSTIC MEDICAL RADIATION
Dr Giovanni Bibbo, Women's & Children's Hospital

CONTAMINATED SITE REMEDIATION: BUSINESS INTERESTS AND RADIATION SAFETY
Jayant Raj, Safe Radiation

EXTRAPOLATED SKIN DOSE ASSESSMENT WITH OPTICALLY STIMULATED LUMINESCENT DOSIMETERS (OSLD)
Dr Mamun Haque, Rad Oncology, Chris O'Brien Lifehouse

11:20am-11.40am CONSULTATION AND ENGAGEMENT – PRACTICAL CONSIDERATIONS
Jim Hondros, JRHC Enterprises

DETECTION OF RADIONUCLIDES FROM RADIATION MEDICAL TREATMENTS WITHIN SOUTH AUSTRALIA'S WASTEWATER
Samantha Pandelus, Flinders University

ENERGY DEPENDENCE OF 6LIF AND 7LIF TLD RESPONSE TO NEUTRON RADIATION
Stephanie Keehan, ACDS, ARPANSA

11:40am-12.00pm A "WORKING COUNCIL" IS A COUNCIL THAT WORKS! HOW THE RHSAC SUPPORTS ARPANSA
Dr Marcus Grzechnik, ARPANSA

DESIGNING AN INDUSTRIAL FACILITY FOR ASSAY OF GOLD AND OTHER ELEMENTS IN MINERAL SAMPLES USING GAMMA ACTIVATION ANALYSIS
Chanel Tissot, CSIRO

THE MATHEMATICS OF RADIATION DOSE REDUCTION IN MEDICAL X-RAY IMAGING
Dr Xiaoming Zheng, Charles Sturt University

12.00pm-12.20pm THE CONSULTATION PROCESS IN DETERMINING A NATIONAL REFERENCE LEVEL FOR EMERGENCY PREPAREDNESS AND RESPONSE
Dr Marcus Grzechnik, ARPANSA

DST GROUP'S PHILOSOPHICAL APPROACH TO RADIATION SAFETY
Dr Vladimiro Devrelis, DST Group

CASE STUDY - CT VIEWING WINDOW
Cameron Storm, Sir Charles Gairdner Hospital

12.30pm-1.30pm **Lunch, Trade Exhibition & Poster Session**

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SESSION 10

SAFEGUARDS

Chair: Hef Griffiths

📍 PANORAMA 1

SESSION 11

MINING/ORES

Chair: Andrew Johnston

📍 PANORAMA 2

SESSION 12

RADIATION PROTECTION

Chair: Daniel Bellifemine

📍 PANORAMA 3

1.30pm-1.50pm PERCEPTIONS, RISKS AND OPPORTUNITIES OF TRANSPORTING MAJOR PROJECTS THROUGH THE PUBLIC DOMAIN
Gary Lux, ANSTO

A PATHWAY TO IMPROVING METHODS FOR REMEDIATION OF URANIUM AND DAUGHTER PRODUCTS FROM SOUTH AUSTRALIAN IRON OXIDE-COPPER-GOLD (IOCG) DEPOSITS
Mark Rollog, University of Adelaide

RELOCATION OF A RADIATION MONITOR CALIBRATION FACILITY
Glenn Riley, SGS Radiation Services

1.50pm-2.10pm PATH TO BEST-PRACTICE NUCLEAR SAFEGUARDS REGULATION IN AUSTRALIA
Ms Lyndell Evans, ASNO

ELEMENTAL AND ISOTOPIC CHARACTERISATION OF AUSTRALIAN AND INTERNATIONAL URANIUM ORE CONCENTRATES AND URANIUM ORES FOR MATERIALS PROVENANCING IN NUCLEAR FORENSICS
Tim Ditcham, Flinders University

THE BIOLOGICAL EFFECTS OF EXPOSURE TO IONISING RADIATION
Dr Donald Higson, Retired

2.10pm-2.30pm LEARNING FROM INCIDENTS – INTRODUCING CHANGES TO THE AUSTRALIAN RADIATION INCIDENT REGISTER (ARIR)
Chris Nickel, ARPANSA

RADIONUCLIDE DETECTION IN SOLID AND LIQUID-PHASE MATERIALS CONTAINING URANIUM
Dr David Ottaway, University of Adelaide and ARC Research Hub for Australian Copper-Uranium

THE AUSTRALIAN CLINICAL DOSIMETRY SERVICE: NATIONAL REFERENCE LEVELS
Stephanie Keehan, ACDS, ARPANSA

2.30pm-2.50pm

NORM AND NORM MANAGEMENT
Dr Richard O'Brien, Retired

RADIATION PROTECTION IN INDUSTRIAL APPLICATIONS IN INDIA
Dr Ramanathan Ganesan, ex-BARC (Bhabha Atomic Research Centre), India

2.50pm-3.20pm **Afternoon Refreshments & Trade Exhibition**

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📍 PANORAMA FOYER

PLENARY SESSION 7

📍 PANORAMA 1, 2, 3
Chair: Ian Furness

3.20pm-4.00pm **Invited Speaker**

RADIUM HILL: FIRST HAND EXPERIENCES OF AUSTRALIA'S FIRST URANIUM MINE FROM THE PERSPECTIVE OF KEVIN KAKOSCHKE
Mr Kevin Kakoschke OAM, President, Radium Hill Historical Association

4.00pm-4.30pm **CONFERENCE AWARDS, PRIZES AND CLOSE**