

International Radiation Protection Association

IRPA

IRPA's recommendations and contributions to enhance RP culture through educational activities

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EUTERP Workshop

Optimising radiation protection training

April 10 - 12, 2019

Qawra, Malta



IRPA's Mission

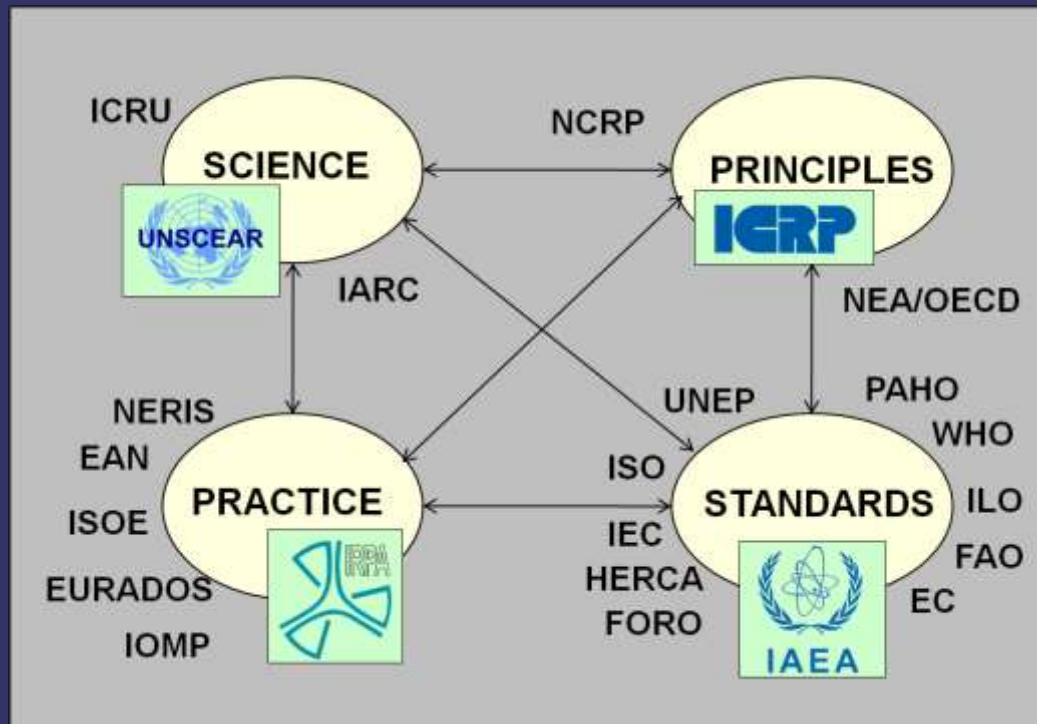
Through Associate Societies, IRPA:

- **Promotes excellence in RP by**
 - providing benchmarks of good practice
 - enhancing professional competence and networking
- **Encourages the highest standards of professional conduct, skills and knowledge**

For the benefit of individuals and society



IRPA's Vision



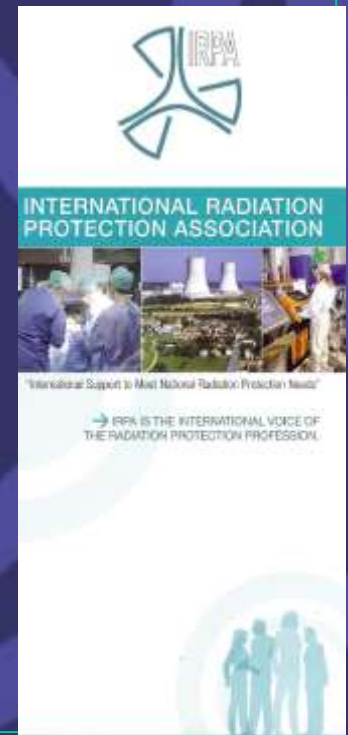
IRPA recognized by its members and stakeholders as the ***international voice of the radiation protection profession*** in the enhancement of radiation protection culture and practice worldwide.

The Principal Challenge: Making this Vision a reality



IRPA membership

- **Value and strength of IRPA: NGO**
- Enormous resources of **practical knowledge and experience** in radiation protection and neighboring specialist fields
- **IRPA members come through the 52 national and regional associate societies (67 countries) that involve over 19,000 individual members worldwide**
 - Percentage of female: 30% ; male: 70%
 - Percentages of members by sectors:
 - **University/Research/Teaching: 18%**
 - **Medical physics: 17%**
 - **Other medical: 10%**
 - **Nuclear industry: 17%**
 - **Other industry: 7%**
 - **Regulatory authorities: 6%**
 - **Government and advisory bodies: 8%**
 - **Consultancy: 7%**
 - **Others: 10%**





Role of IRPA

The international voice of RP professionals

IRPA provides a medium for communication and advancement of radiation protection throughout the world

We encompass the full spectrum of national experiences, from large developed countries through to practitioners working in small developing nations





IRPA Strategic Priorities 2016 - 2020

- To promote our role as the international voice of the RP profession through engagement with other international organisations and professional bodies on the development of the system of protection, giving emphasis to impacts on practical implementation.
- To support the needs of the Associate Societies by developing, enhancing and sharing good practice and high standards of professionalism.
- **To support the education and training of RP professionals**
- To enhance IRPA Governance and the interface with the Associate Societies.



Selected IRPA Priorities

- The development of the System of Protection
- Public understanding
- **Radiation protection culture**
- The future of our profession – **Young Professionals Network**
- **Recognition of competence**
- Implementation of the eye lens dose limit
- Security of radioactive sources
- **Education and training**



IRPA Guiding Principles for Establishing a RP Culture

- Project commenced at IRPA12 2008
- Collaborative approach through Workshops and Working Groups
- Published in 2014



IRPA
INTERNATIONAL RADIATION PROTECTION ASSOCIATION

IRPA GUIDING PRINCIPLES FOR ESTABLISHING A RADIATION PROTECTION CULTURE



1st IRPA Workshop on Radiation Protection Culture

organised by
ICRP
International Radiation Commission

Monday 14 and Tuesday 15 December 2009

UNION INTERNATIONALE DES CHIMIQUES DE FER
Société des Chimistes de France
Toulon, France



U.S. NRC
Nuclear Regulatory Commission
Protecting People and the Environment

United States Department of Health & Human Services
Working together to protect people, families and the future

Image gently
IMAGE
WISELY

FDA

ACR
AMERICAN COLLEGE OF RADIOLOGY

INTERNATIONAL RADIATION PROTECTION ASSOCIATION

2nd IRPA Workshop on Radiation Protection Culture
Thursday 10 and Friday 11 February 2011

방사선안전문화 아시아 국제워크숍

INTERNATIONAL RADIATION PROTECTION ASSOCIATION

Image gently
IMAGE
WISELY

FDA

ACR
AMERICAN COLLEGE OF RADIOLOGY

Jornada de Cultura de la Protección Radiológica

Día 15 de junio de 2009

Centro Rafael Marín de la Facultad de Ingeniería de España - Madrid

UNION INTERNATIONALE DES CHIMIQUES DE FER
Société des Chimistes de France
Toulon, France

COWILLAS

France 2009 S.A.



IRPA Guiding Principles for Establishing a RP Culture

4.2 CULTURE DEVELOPMENT AND IMPROVEMENT

There are at least four ways to impact RP culture:

- **Strong leadership** focusing on operational RP culture, and modelling, reinforcing and coaching safety behaviours;
- **Educating and training the people involved in RP applications;**
- Creating **positive** and total **awareness** about RP at working places;
- Establishing adequate and **proper communication** processes among all the practitioners involved in RP applications.



IRPA Guiding Principles for Establishing a RP Culture

4.2 CULTURE DEVELOPMENT AND IMPROVEMENT

How **Education and training** contribute to a high level of RP culture:

- continued proactive updating for professionals and the general staff, on the **evolution of scientific knowledge and related judgments of relevance in RP**. Such information can be presented by different means, e.g. newsletters, discussions, etc.;
- **raising** an adequate **awareness** among people directly or indirectly involved in RP.
- making sure that all radiological aspects are well known to workers, and everybody has the **correct training** to take care, prevent unnecessary exposure and evaluate RP aspects;
- (...)



IRPA Guiding Principles for Establishing a RP Culture

4.2 CULTURE DEVELOPMENT AND IMPROVEMENT

How **Education and training** contribute to a high level of RP culture:

- (...)
- emphasizing that radiation protection culture is not an established area of knowledge, but one of continuous change and update, not only in its contents, but also in its approaches.
- Training is undertaken and updated periodically, and testing is done to evaluate training efficacy.
- Learning from events, incidents and near misses is an important part of culture development.
 - The pace of retraining should be based on problem severity, and lessons learned are used for future training.



IRPA Guiding Principles for Establishing a RP Culture

The importance of education:

“Radiation protection culture is a learned way of life”

- It is obvious that a way of life starts with a proper education
- RP Culture must be present in all the academic curricula on radiation applications
- IRPA Associate Societies can contribute significantly to continuous education of their members / IRPA can help!



RP Culture – current steps

- Each Associate Society is encouraged to prepare local guidance and support, and promote its application
- IRPA is working with IOMP, WHO and IAEA, to provide additional **guidance for the medical sector: to work for a joint publication**
- **6 Regional Workshops** between April 2015 and February 2019
- Looking at guidance for other sectors – eg **Higher Education and Training (university sector et al)**



STRATEGIC PRIORITY

Education and Training of RP Professionals

- Education and training practices.
 - Cooperation with international and regional organizations dealing with E&T in Radiation Protection: IAEA, ETRAP conferences, ENETRAP/ EUTERP, AAHP
- **IRPA Congresses: Refresher Courses. Highly demanded!**
- Scientific developments update (and RP horizon scanning)
- Coordination and promotion of Associate Societies training activities and associated events
- **Objective: Database of training events ←→ connected with EUTERP DB**



Education and Training of RP Professionals

What role can play the IRPA Associate Societies?

- To contribute to **professionals continuous education**;
- to organize and promote **coordinated activities**;
- to **share E&T resources**;
- to create **E&T networks** sharing language or regional proximity;
- to organize activities to **attract young generations** to the profession
- to create a **young professionals network**;

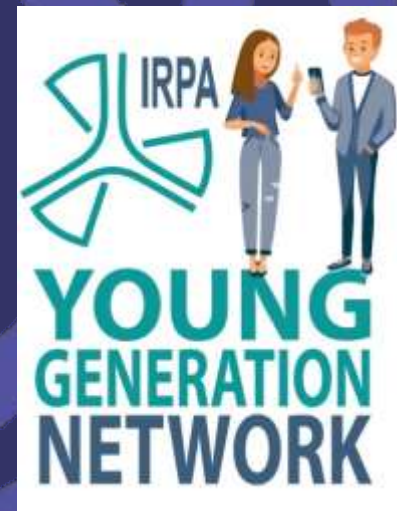


The future of our profession – finding and supporting the next generation

Many countries/societies report a concern over ‘**where are the next generation, and how do we transfer our knowledge?**’

The IRPA programme:

- Share good ideas on informing and enthusing students on RP as a career
- **Young Generation Network**, linking national association groups and sharing good ideas
- Every **IRPA congress** has a **Young Persons programme:**
 - including YP Prize for best presentation
 - engagement in the full scientific programme (eg session co-chairs)
 - networking opportunities





Recognition of Competence

There is an increasing expectation of formal recognition of competency to practice – especially for the **Radiation Protection Expert** (or Qualified Expert)

Recognition schemes may be a legal requirement or voluntary: in either case the national RP Society should play a lead role

There is no 'single best way' to arrange a scheme – local practice, culture and legal requirements require differing approaches

IRPA has published guidance on the key components and strengths and weaknesses of various options for certification





The IRPA Guidance on Certification of a Radiation Protection Expert. Table of Contents

- Introduction
- Underpinning Basis of a Certification Scheme
- Regulatory Background
- Key Attributes of a Certification Scheme
- Conclusions
- Annexes
 - IAEA and EU Basic Safety Standards
 - IRPA Definition of Radiation Protection Expert
 - Model RPE Knowledge and Skills Syllabus
 - The RPE Training Scheme (ENETRAP projects)
 - Model Code of Practice
 - Accreditation Standards for Certification Boards
 - Representative Certification Schemes: USA, UK, Canada, Slovenia, Netherlands, Spain, Australasia, Italy, Germany



Key Attributes of a Certification Scheme

- Scheme Management and Governance
- Scope of the Role to be Certified
- Requirements for Certification as an RPE
- Assessment methods
- Renewals of Certifications
- Code of Conduct
- Appeals, Disciplinary Aspects, Withdrawal of Certification, Insurance Cover
- Accreditation
- Reciprocity



International and Regional Congresses

- The IRPA Congresses are a major and well-recognised part of our role:
 - They provide training opportunities for professionals
 - Facilitate the exchange of ideas between societies and individuals
 - Provide a platform for the principal international organisations (such as ICRP, IAEA, EC and UNSCEAR) to interact with the wider RP community

LATIN AMERICA

Havana · Cuba · 23-27 April 2018

ASIA / OCEANIA

Melbourne · Australia · 20-24 May 2018

EUROPE

The Hague · Netherlands · 4-8 June 2018

AFRICA

Tunis · Tunisia · 6-9 September 2018



IRPA 15

11-15 May 2020 | COEX, Seoul, Korea



Bridging Radiation Protection Culture and Science -
Widening Public Empathy

www.irpa2020.org



Education and Training.

International and Regional Congresses

- Traditionally, every IRPA congress includes a number of **refresher courses (RC)**
- RC provide participants with the opportunity to update their knowledge in specific areas of **RP science and practice**
- RC are aimed either at providing a broad overview of the current state of a given topic, or at giving experienced practitioners a more detailed understanding of up-to-date developments in a field
- Obvious benefits in terms of **RP culture enhancement**
- The number of RC in the last few years is quite large. They constitute a valuable asset for all RP professionals, which IRPA wishes to preserve properly on its website, making them accessible to everyone



Education and Training. International and Regional Congresses

20 Refresher Courses

3 Seminars: 9 – 7 – 12 presentations

[Go to the main IRPA website](#)

The screenshot shows the IRPA 12 website interface. At the top, it says "IRPA 12 BUENOS AIRES - ARGENTINA" and "12TH INTERNATIONAL CONGRESS OF THE INTERNATIONAL RADIATION PROTECTION ASSOCIATION". The main navigation menu includes: Home, Presentation, Committees, Sponsors, Congress Schedule, Conclusions, Opening/Closing Ceremony, Plenary Sessions, Keynote Lectures, Special Technical Sessions, Technical Sessions, Refresher Courses, Seminars, Full Papers, List Of Participants, Photo Gallery, and Contact Us. The "Seminars" section is highlighted, showing three seminars:

- Seminar 1: Radiological Protection of Patients
- Seminar 2: Radiation Protection in NORM industries
- Seminar 3: Radiation Protection in the nuclear industry

Below this, a table lists specific seminar presentations:

File Name	Topic	Presenter
Cousins.pdf	ICRP and Protection of Patients	Claire Cousins (UK)
Vano.pdf	ICRP and Diagnostic Reference Levels	Eliseo Vañó (ES)
Borras.pdf	The IOMP and RP of Patients	Caridad Borras (ES)
Buzzi.pdf	Why medical doctors could be interested in RP of patients.	Alfredo Buzzi (AR)
Miranda.pdf	Radiation Protection in Pediatric Cardiology.	Patricia Miranda (CL)
Duran.pdf	Radiation Protection in Interventional Cardiology	Ariel Duran (UY)



Education and Training. International and Regional Congresses

www.irpa2010europe.com

Third European Nuclear Safety Forum
14 – 18 June 2010, Helsinki, Finland

13 Refresher Courses

- Home
- News and Updates
- Organisers
- Programme
- Abstracts
- Proceedings
- Posters
- Young Scientist Award
- Exhibition / Sponsors
- Congress Venue
- Registration



R Refresher courses		
Oral presentations		
R01	ICRP Publication 103 and beyond <i>Clement, Christopher</i>	2904
R02	Radiation protection metrology and measurements <i>Mannner, Ernst Josef</i>	2914
R03	External dosimetry and individual monitoring <i>Stadnisen, Harise</i>	2925
R04	Radiobiology – Evaluation of health risks after ionising radiation (ABSTRACT) <i>Steffler, Christian</i>	2935
R05	Clinical auditing and quality assurance <i>Jarvinen, Hanny</i>	2936
R06	Natural radiation environment and NORM <i>Markkanen, Mika</i>	2946
R07	Internal dosimetry and individual monitoring <i>Ehennington, George</i>	2953
R08	Optimisation of radiation protection for pediatric and adult patients in radiography and computed tomography <i>Gelgina, Jacob</i>	2972
R09	Radiation epidemiology (No written presentation) <i>Balcer, Maria</i>	2981
R10	Radioecology and environmental exposure pathways <i>Strand, Per, Oostdal, Mark</i>	2982
R11	Malicious events: scenarios, consequences and response (ABSTRACT) <i>Pronser, Leobas</i>	2990
R12	Indoor radon sources, remediation and prevention in new construction <i>Arvola, Hanna</i>	2991
R13	Radiation exposure of space and aircrew <i>Hajek, Michael</i>	3014
R14	Stakeholder involvement and engagement <i>Koskela, Markku</i>	3024
R15	Decommissioning and waste management <i>Theurwald, Stefan</i>	3033
R16	Non-ionising radiation <i>Matthes, Rüdiger</i>	3054



Education and Training. International and Regional Congresses

www.irpa.net/page.asp?id=54518

IRPA - INTERNATIONAL RADIATION PROTECTION ASSOCIATION
HOME NEWS SOCIETIES CONGRESSES DOCUMENTS TOPICS ORGANISATION

IRPA 13 MENU

IRPA 13 - Glasgow > Refresher Courses

Refresher Courses

21 Refresher Courses

Refresher Course	Title	Authors	Presentation
RC1	Biological effects of radiation.	Professor Mary Helen Barcellos-Hoff	Powerpoint with Audio
RC2	An Effective Communication Tool for the Public: The International Nuclear and Radiological Event Scale - INES.	Dr. Cynthia Jones	Powerpoint with Audio
RC3	Radiation detriment: evolution of its estimation and its role in the RP system.	Dr. Thierry Schneider	Powerpoint with Audio
RC4	Optical radiation safety.	Dr. John O'Hagan	Material Unavailable
RC5	Design of medical facilities: radiotherapy shielding design.	Dr. John Harrison	Powerpoint with Audio
RC6	Conducting effective stakeholder involvement.	Dr. Helen Grogan	Powerpoint with Audio
RC7	Fundamental principles and recent developments in internal dosimetry.	Dr. George Etherington	Powerpoint with Audio
RC8	Training workers in RP for a safer work environment.	Mrs Vivra Nilsson	Powerpoint



Education and Training. International and Regional Congresses

3. REFRESHER COURSES PROGRAMME

Tuesday, June 24, 2014 – 8:00 - 9:00

Refresher Course 1-1 Radiation biology <i>by Wolfgang Müller</i>	Room 18
Refresher Course 2-1 Internal dosimetry and individual monitoring <i>by George Etherington</i>	Room 15

Wednesday, June 25, 2014 – 8:00 - 9:00

Refresher Course 1-2 Clinical auditing and quality assurance <i>by Hannu Jarvinen</i>	Room 7
Refresher Course 2-2 Optical safety <i>by Werner Horak</i>	Room 15
Refresher Course 3-2 Radiation epidemiology <i>by Linda Walsh</i>	Room 18

Thursday, June 26, 2014 – 8:00 - 9:00

Refresher Course 1-3 Optical radiation risk assessment in the working environment <i>by Hans-Dieter Reidenbach</i>	Room 15
Refresher Course 3-3 Radiation protection metrology and measurements <i>by Claude Bailat</i>	Room 18

Friday, June 27, 2014 – 8:00 - 9:00

Refresher Course 1-4 The role of medical physicist in optimizing protection of patients in medicine <i>by Francis Verdun</i>	Room 15
Refresher Course 2-4 Radiation protection in NORM industries <i>by Wouter Schroevers</i>	Room 18
Refresher Course 3-4 EMF Safety <i>by Ralf Bodemann</i>	Room 7

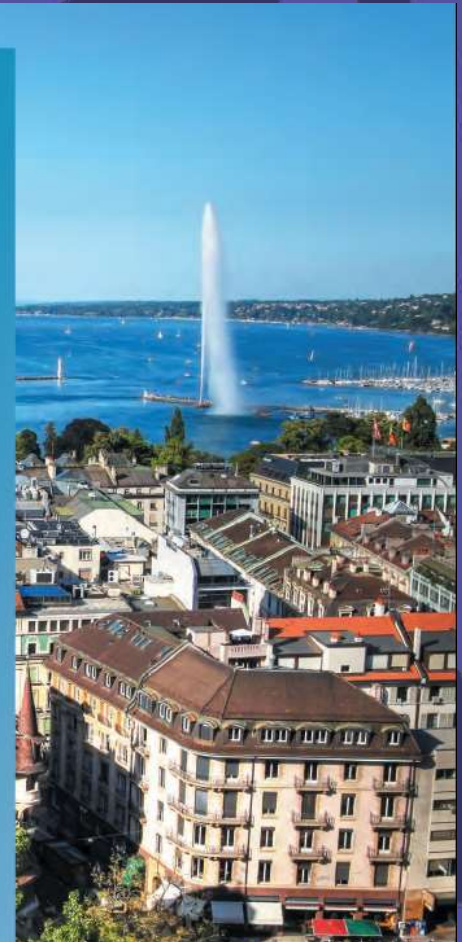
10 Refresher Courses



FOURTH EUROPEAN
IRPA CONGRESS

Radiation Protection
Culture -
A global challenge

JUNE 23-27, 2014
Geneva, Switzerland





Education and Training. International and Regional Congresses

Refresher Courses

The Refresher Course programme provides delegates with the opportunity to update their knowledge in specific areas of radiation protection science and practice. The courses are aimed at providing a broad overview of the current state of a given topic, thereby giving delegates not working directly in that field a sound understanding of the current status, and at giving experienced practitioners a more detailed understanding of up-to-date developments in a field.

Twenty refresher courses are scheduled to be delivered by selected instructors according to their outstanding expertise and competence in teaching. The courses are offered in five parallel sessions each morning, Monday through Thursday, beginning at 07:30.

The list below presents outline information on the course schedule.

Refresher Course Programme

MONDAY, 9 MAY 2016 – 07:30 – 08:30				
No	Title	Lecturer	Meeting Room	Description
RC 1	Biological effects and individual human radio-susceptibility	Michel Bourguignon <i>IRSN</i>	1.4	Regarding the biological effects of ionising radiation there is evidence of some degree of individual susceptibility in humans (up to 25 % of the population). Individual susceptibility to ionising radiation has 3 features which are related to different mechanisms and pathways: 1- sensitivity with the complications of radiation therapy in the absence of error in the dose delivery, 2- esthesia which is a radiation related cancer proneness, and 3- degeneration with late effects on tissues, i.e., cataracts. Modern radiation biology means of investigation allow to identify those persons, especially patients, and may help in the near future the screening of people for preventive and personalized medicine.
RC2	Dosimetry and optimisation in computed tomography	Christoph Trauernicht <i>UCT</i>	1.6	This course will give an overview of current CT dosimetry techniques, including recent developments for modern wide beam scanners. Optimisation methods for patient exposures will be reviewed, including both equipment & technique factors, and the correct utilisation of new dose-saving features on modern CT equipment will be discussed.
RC3	Management systems for radiation safety	Phil Metcalf <i>ENSTTI</i>	2.41	The management systems concept for radiation safety has evolved over a number of years. The concept has developed from quality control through quality assurance and quality management to the present day integrated management system. The concept involves systematic planning, controlled implementation and continuous review and assessment to assure high levels of quality in radiation safety and protection operations and supporting services. The course presents and discusses the management system for radiation safety and its evolution.

18 Refresher Courses

IRPA14 Programme

Education and Training. International and Regional Congresses



www.irpacuba.com/es/courses/info

IRPACUBA 2018
XI Congreso Regional de Seguridad Radiológica y Nuclear
"Congreso Regional IRPA"
"Cultura de Seguridad, un compromiso compartido"

8 Refresher Courses

Palacio de Convenciones de La Habana, Cuba, del 16 al 20 de abril de 2018

GUÍA DE CUBA DESTINOS DE CUBA PREGUNTAS FRECUENTES CONTACTOS

Noticias !!!
Informe Técnico Final del congreso
Relatoría Final Cursos
Memorias

Relatoría Final Cursos

1. CA1. Comunicación sobre los riesgos de la radiación en la imagenología pediátrica
2. CA3. Métodos para Evaluación del Impacto Radiológico en el Público y el Ambiente
3. Curso 04 SEVRA
4. CA6. Liderazgo y Cultura de Seguridad I
5. CA6. Liderazgo y Cultura de Seguridad II
6. CA7. Accidentes en gammagrafía industrial
7. CA9. Protección Radiológica en Procedimientos Intervencionistas: Aspectos básicos a considerar
8. CA10. Sistemas de Gestión de la Calidad para los servicios técnicos de Protección Radiológica





Education and Training. International and Regional Congresses



https://irpa2018europe.com/programme-2/refreshers-we 50% ... Buscar

+31 85 90 22 833 info@irpa2018europe.com

Home Congress information Programme Exhibitors Contact Login

5th European IRPA Congress
4 - 8 June 2018
The Hague, The Netherlands

Encouraging Sustainability
in Radiation Protection



Refresher courses - Wednesday

08.30 hr - 09.30 hr

Applied radiological risk communication for the 21st century	Learning objectives	Recommended reading
Lecturer: Tanja Perko		

Optical radiation - eye protection	Learning objectives	Recommended reading
Lecturer: Per Söderberg		
Affiliation: Uppsala University		

From fundamental safety principles to operational radiation protection programmes	Learning objectives
Recommended reading	
Lecturer: Amgad Shokr	
Affiliation: IAEA	

26 Refresher Courses



Education and Training. International and Regional Congresses

afripa05.org/index.php/refresher-courses/ 67%



5th African IRPA Congress 6-9 Septembre 2018 Tunis - TUNISIA

Home Congress information **Programme** Practical info

Refresher courses

A variety of refresher courses across a number of disciplines will be available during AFRIRPA5; Refresher courses will be held prior the opening plenary session each day of the congress please view the schedule below for all the information on the courses available, speakers and contents

*- Friday 7th September, Saturday 8th September and Sunday 9th September 2018
*- 08:00 am – 09:00 am
*- Program:

Day 1: Friday 7th September 2018
□ Medical refresher courses RC1: Prevention of Accidents in RT (D Gilley/ Chris SA)
□ Other RC2: How to establish clearance levels (Z. Zituta)

Day 2: Saturday 8th September 2018
□ Medical refresher courses RC3: Computational dosimetry
□ Other RC4: Radioactivity in Food and Water (T Colgan/ M Perez)

Day 3 : Sunday 9th September 2018
□ Medical refresher courses RC 5: DRLs in relation with image quality (J Damilakis)
□ Other RC 6: NORM Characterization (RG Tenorio)

6 Refresher Courses



Education and Training.

International and Regional Congresses

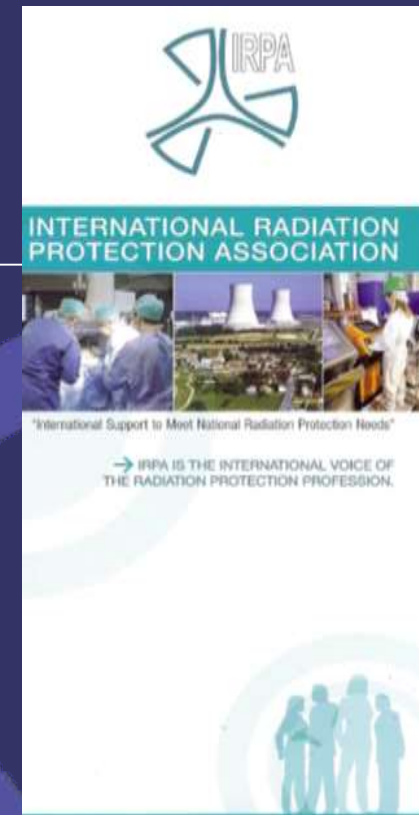
Main Fields	Scientific Areas	Number of RC(2008-2018)
I Science	I.1 Characterization of radiation exposure	3+4+2+2+4+--+2
	I.2 Biological effects of radiation exposure and epidemiology	2+1+--+2+1+--+2
II Radiation protection Principles and Standards	II.1 Developing the Radiation Protection Framework	3+1+1+--+--+1+1+2
	II.2 Developing protection policies, criteria, methods and culture	3+1+4+--+1+1+4+5
	II.3 Emergency planning, preparedness & response	2+1+1+--+1+--+
III Radiation protection and safety in practice	III.1 Nuclear installations	1+12(S)+1+4+--+3+
	III.2 Medicine	2+9(S)+2+5+2+3+2+3+3
	III.3 Natural radiation and NORM	1+7(S)+2+2+1+1+4+1
	III.4 Other applications and practices	2+1+2+--+1+4+2+34
	III.5 NIRs	1+1+--+3+1--+1

150 Refresher Courses



Conclusions

- IRPA has an extensive programme of activities to support **good practice, enhancing professional competence and networking**, and encouraging the **application of the highest standards of professional conduct, skills and knowledge** in the profession.
- Giving **support to Education and Training of the RP professionals** is one of the main strategic priorities of IRPA since its creation.
- The IRPA RC have given RP professionals –young and veterans– an opportunity to **improve their knowledge** on given subjects.
- All that knowledge must be **preserved at the IRPA website**





**International Radiation Protection
Association**

<http://www.irpa.net>