

Established in Stockholm 27 July 1928



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CHAIR'S FOREWORD

In 2023, our global outreach surged through diverse initiatives.

Our Mentorship Programme advanced with 62 university students and early-career professionals worldwide benefiting from guidance by senior ICRP members. In return, they are bolstering our Task Groups with youthful energy and ideas. We hosted 9 digital webinars and workshops all freely accessible for those eager to learn and engage. We also played a key role in two in-person events that were at little-to-no cost for attendees. In March 2023, the ICRP Main Commission participated in the UAE Radiation Protection Week in Abu Dhabi, uniting regional and international radiological protection experts to showcase the latest developments and research in radiological protection. September saw our annual meeting with organisations in formal relations with ICRP in Bristol, UK, where discussions on the ICRP Vancouver Call for Action highlighted the global need to enhance radiological protection expertise. Concurrently, a two-day workshop hosted by the World Nuclear Association addressed optimisation, communication, and stakeholder engagement.

ICRP 2023, the 7th International Symposium on the System of Radiological Protection in Tokyo, surpassed all previous symposia in attendance and international representation. With 626 onsite and 80 online participants from 58 countries, the symposium featured 86 oral presentations and 277 posters, showcasing advancements in radiological protection. Hosted by the National Institutes for Quantum Sciences and Technology (QST), in collaboration with the Japanese Radiation Research Society (JRRS), Japan Health Physics Society (JHPS), and other esteemed Japanese organisations, the event left a lasting impact.

As we embarked on reviewing and revising the System of Radiological Protection, we anticipated a substantial endeavour. Yet, the enthusiasm and contributions from numerous individuals and organisations have been truly inspiring as we expand our outreach and transparency. Looking ahead, we are eager to broaden our collaborations globally, spanning various industries and disciplines.

It is often said that we are the managers, not owners, of the System of Radiological Protection. With great responsibility, we are committed to shaping the next General Recommendations, aiming to provide universally applicable guidance on radiological protection for years to come.

Thank you for your continued involvement.

Yours sincerely,

W. The

Werner Rühm ICRP Chair



Highlights in 2023

- ICRP Symposium in Tokyo breaks attendance records
- Free the Annals' delivers more publications free to access this year
- ICRP mentorship programme a great success, surpassing 50 mentees
- Review and revision of the System of RP expands
- ICRP Webinars continue to attract large audiences

ICRP AND THE SYSTEM OF RADIOLOGICAL PROTECTION

Originally established at the Second International Congress of Radiology in 1928 as the International X-ray and Radium Protection Committee, today ICRP is an independent international charity registered in the UK, relying on financial contributions and support from governments, industry, agencies, foundations, and individuals from around the world.

ICRP consists of the Main Commission, the Scientific Secretariat, four standing Committees, and Task Groups established as needed to undertake specific work. Members come from over 40 countries and all disciplines relevant to radiological protection. They are invited to join ICRP as independent experts on a volunteer basis for four-year terms. Representatives of organisations in formal relations with ICRP are regularly invited to both advise the Main Commission and to participate in meetings of the Committees. Individuals from these organisations may be invited to be members of Task Groups or to review drafts of work in progress where their expertise is particularly relevant.

This structure supports a rigorous system of peer review. The work of Task Groups is reviewed by the relevant Committee(s), and then reviewed and approved by the Main Commission. During development, most reports are circulated to several organisations and individual experts for critical review and all are posted for public consultation through the ICRP website.

The objective of the System is to contribute to an appropriate level of protection for people and the environment against the harmful effects of ionising radiation exposure without unduly limiting the individual or societal benefits of activities involving radiation.

ICRP develops the System for the public benefit. It is based on the latest science, social and ethical values, and over a century of experience since the discovery of ionising radiation.

The System is the basis of standards, regulations, guidance, programmes, and practice worldwide. It is used by intergovernmental and nongovernmental advisory and standard setting agencies; regulatory authorities; educational, scientific, and healthcare institutions; operators; individual professionals; and others with an interest in radiological protection.



MEMBERSHIP



TOTAL: 396 (AS OF 31 DECEMBER 2023) Mentees are also members, but counted separately here to highlight them.



AS OF 31 DECEMBER 2023

MENTORSHIPS

Task Group 99 Reference Animal and Plant (RAP) Monogram

Task Group 103Mesh-type Reference Computational Phantoms(MRCP)

Task Group 105 Considering the Environment when Applying the System of Radiological Protection

Task Group 106 Application of the Commission's Recommendations to Activities Involving Mobile High Activity Sources

Task Group 110Radiological Protection in Veterinary Practice

Task Group 111 Factors Governing the Individual Response of Humans to Ionising Radiation

Task Group 113 Reference Organ and Effective Dose Coefficients for Common Diagnostic X-ray Imaging Examinations

Task Group 114 Reasonableness and Tolerability in the System of Radiological Protection

Task Group 116 Radiological Protection Aspects of Imaging in Radiotherapy **Katherine Raines**

Keith Tchadwick Griffin Hyeonil Kim Jaehyo Kim Gahee Son Sungho Moon

Megan Cook

Yael Fried Yang Jie

Tony Davila

Stephen Barnard Andreas K Breitbarth Sasha Jande Julie Leblanc Prabal Subedi

Yumi Lee Wyatt Smither

Momo Takada

Abdullah Abuhaimed Habib Abdulmohsen Alsaleh Buthaina Al Ameri Zakiya Al Rahbi Abdelhai Ben Ali Mario Djukelic Mirta Dumancic Hein Fourie Sebastien Gros

MENTORSHIPS

Task Group 116

Radiological Protection Aspects of Imaging in Radiotherapy

Task Group 119

Effects of Ionising Radiation on Diseases of the Circulatory System and their Consideration in the System of Radiological Protection

Task Group 120

Radiological Protection for Radiation Emergencies and Malicious Events

Task Group 121

Effects of Ionising Radiation Exposure in Offspring and Next Generations

Task Group 123

Classification of Harmful Radiation-induced Effects on Human Health for Radiological Protection Purposes

Task Group 126

Radiological Protection in Human Biomedical Research

Marianna Koutrouli Runcheng Liang Anja Lazovic Aliaksandr Miadzvetski Francisco Mosquera-Pena Sánchez Lavanya Murugan Isabelle Nilsson Piotr Pankowski Maria Cristina Plazas Samara Prass dos Santos Hossam Ragab Shaaban Yiannis Roussakis Ana Cravo Sá Snezana Vostinic Anson Cheung Ho Yin

Suryakanta Acharya Juancong Dong Yumi Saigusa Bhanu Prasad Venkatesulu

Maren Gruss David Sibenaler

Aidana Amrenova Ämilie Degenhardt Sara Dumit Liudmila Liutsko Shayen Sreetharan

Heloise Esther Harriet Carpenter Hafsa Essop Varsha Hande Marta Kocemba Julie Lopes Anna Valianti Andreas Wörner

Abraham Adewale Aremu Isabel Adorio Elona Altay Myssayev Luz Eliana Franco Olarte Venkatraman Pitchaikannu Benjamin Puzantian Kirti Tyagi Mohammed sani Umar

GLOBAL ENGAGEMENT

In 2023, ICRP engaged with stakeholders through many events world-wide. The largest was the ICRP 2023 Symposium in Tokyo.

Others included a series of webinars and workshops and meetings or other activities with, for example:

- International Atomic Energy Agency (IAEA)
- International Radiation Protection Association (IRPA)
- Organisation for Economic Co-operation and Development - Nuclear Energy Agency (OECD NEA)
- World Health Organization (WHO)
- United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)
- World Nuclear Association
- Department of Energy (USA)
- Federal Authority for Nuclear Regulation (UAE)

- Interagency Steering Committee on Radiation Standards (USA)
- Korea Institute of Nuclear Safety
- Nuclear Radiological and Regulatory Commission (Saudi Arabia)
- Swedish Radiation Safety Authority
- Bruce Power (Canada)
- Japan NUS Co. (JANUS)
- Radiation Effects Association (Japan)

ICRP also participated actively in the Asian and Oceanic Congress on RP (India), International Congress for Radiation Research (Canada), and International Symposium on Radiation Safety and Detection Technology (Korea).



2023 EVENTS



In-Person Events **UAE Radiation Protection Week** Abu Dhabi, United Arab Emirates

ICRP-WNA Workshop Bristol, United Kingdom



Digital Events **Introducing ICRP Publication 145** Adult Mesh-type Reference Computational Phantoms

Task Group 108 Workshop: Part 2 Optimisation of Radiological Protection in Digital Radiology Techniques for Medical Imaging

Task Group 124 WorkshopApplication of Justification Principle: Setting the Scene

Task Group 109 Workshop Ethics in Radiological Protection for Medical Diagnosis and Treatment

ICRP-SSM Webinar: The Role of ICRP and Stakeholders in the Future of Radiological Protection Emergency Dosimetry

Introducing ICRP Publication 153 Radiological Protection in Veterinary Practice

Task Group 117 Workshop Radiological Protection in PET and PET/CT

ICRP-WNA Workshop Radiological Protection in PET and PET/CT

Task Group 95 Webinar

Presenting Report on Production of Dose Coefficients For the Assessment of Internal Exposure of Workers and Members of the Public



6-9 NOVEMBER 2023 • TOKYO, JAPAN



ICRP 2023, the 7th International Symposium on the System of Radiological Protection took place in Tokyo, Japan from 6-9 November 2023. Our host, the National Institutes for Quantum Sciences and Technology (QST), special partners at the Japanese Radiation Research Society (JRRS), Japan Health Physics Society (JHPS), as well as several other local Japanese organisations put on a world-class symposium alongside over a dozen other related events around the country.

There were 700+ delegates from almost 60 countries who attended in-person, both a new record for an ICRP symposium.

LEFT: Ludovic Vaillant (CEPN, France) received the 2023 Bo Lindell Medal for the Promotion of Radiological Protection from Werner Rühm (ICRP Chair) and Christopher Clement (ICRP CEO & Scientific Secretary) during the opening session of ICRP 2023.

RIGHT: Symposium attendees flocked to see over 200 posters in between sessions. ICRP 2023 also featured joint poster sessions with the Japanese Radiation Research Society (JRRS) and the Japan Health Physics Society (JHPS).









ABOVE: [From left to right] Masaharu Tsubokura (Fukushima Medical Univeristy), Michio Murakami (Osaka University), and Ryoko Ando (NPO Fukushima Dialogue) answer audience questions during the Q&A period for Session 4: How Experience of the Fukushima Daiichi Accident is Improving Radiological Protection.

LEFT: Hafsa Essop (University of Pretoria, South Africa) received the 2023 Cousins Award for Young Scientists and Professional for her presentation on "PregiDose: A Mobile Application Designed Through a User-Centered Approach to Enhance Fetal Dosimetry and Wellbeing Among Pregnant Radiographers."

Event Statistics



Through nine dedicated sessions, ICRP 2023 focused on developments on several specific topics currently being addressed by ICRP Task Groups as part of the review and revision of the System of Radiological Protection. In addition to that, there were nine other sessions that dealt with a range of broader topics of importance to radiological protection. In all cases, the objectives were to share information on ICRP's current work, and to get feedback from the broader community to guide this and future work.



RADIOLOGICAL PROTECTION FOR THE NEXT GENERATION

While the System of Radiological Protection is robust and has performed well, it must adapt to address changes in science and society to remain fit for purpose for the next generation.

ICRP is in the process of review and revision of the System that will update the 2007 General Recommendations in ICRP Publication 103. This will take several years, involving open and transparent engagement with organisations and individuals world-wide.

Identify topics ('building blocks') for review Develop building blocks through ICRP ask Groups Prepare the next General Recommendations using the building blocks

Status

Based on extensive feedback received, identification of the topics that would benefit from review is now essentially complete. Nonetheless, we will continue to be on the lookout for additional areas that may arise. Similarly, it appears that the areas of research that could benefit the System of Radiological Protection are clear.

The focus is now on addressing each of the identified topics, principally through Task Groups. A record number of Task Groups, listed on the ICRP website, are addressing dozens of individual topics. Many Task Groups are holding open workshops to get feedback from the broader community as work progresses. In addition, we welcome comments on all draft documents through our public consultation portal, and sometimes during open online workshops held during the public consultation period. We anticipate initiating several more Task Groups in the coming years to address additional topics important to the review and revision of the System of RP. Each is formed through an open call for experts.

VANCOUVER CALL FOR ACTION

At ICRP2021+1 in Vancouver, ICRP Chair Werner Rühm announced the Vancouver Call for Action to Strengthen **Expertise in Radiological Protection** Worldwide, to address concerns that a shortage of investment in training, education, research, and infrastructure will compromise society's ability to manage radiation risks. This could lead to unjustified exposure to or unwarranted fear of radiation, impacting physical, mental, and social well-being. It could also unduly limit the potential for research and development in new radiation technologies (for example, in healthcare, energy, and the environment) for beneficial purposes. ICRP calls for action to strengthen expertise in radiological protection worldwide through:



National governments and funding agencies strengthening resources for radiological protection research allocated by governments and international organisations.



National research laboratories and other institutions launching and sustaining long-term research programmes.



Universities developing undergraduate and graduate university programmes and making students aware of job opportunities in radiation-related fields.



Using plain language when interacting with the public and decision makers about radiological protection.



Fostering general awareness of proper uses of radiation and radiological protection through education and training of information multipliers.

SUSTAINABILITY

In 2022, ICRP prioritised sustainability, a key feature of the Vancouver Call for Action, by starting to assess its own carbon footprint, the vast majority of which is due to travel for international meetings. Although some inperson meetings remain important and will continue, online meetings are now preferred. In 2023, ICRP Task Groups held about 50 meetings virtually and 8 meetings in-person. However, most of the in-person meetings were combined with ICRP 2023 in Tokyo, which allowed for both an efficient use of resources and a reduced carbon footprint.



MAIN COMMISSION

The Main Commission consists of the Chair and up to twelve other members. The Main Commission is the governing body, setting the policy and programme of work, and approving all official publications.



Werner Rühm Chair



Simon Bouffler Vice-chair



Donald Cool Vice-chair^{*}



Dominique Laurier Committee 1 Chair



François Bochud Committee 2 Chair



Kimberly Applegate Committee 3 Chair



Thierry Schneider Committee 4 Chair



Kun Woo Cho Member



Senlin Liu Member



Gillian Hirth Member



Sergey Romanov Member

*Member until May 2023



Michiaki Kai Member



Andrzej Wojcik Member

SCIENTIFIC SECRETARIAT

The Scientific Secretariat manages the daily business of ICRP. The core group is based in Ottawa, Canada.



Christopher Clement Scientific Secretary & CEO Editor-in-Chief of Annals of the ICRP



Olga German Deputy Scientific Secretary



Lynn Lemaire Executive Administrator



Kelsey Cloutier Head of Stakeholder Engagement and Communications





Takashi Yasumune Assistant Scientific Secretary Associate Editor of Annals of the ICRP



Hyungjoon Yu Assistant Scientific Secretary Associate Editor of Annals of the ICRP



Charlotte White Brand and Digital Media Specialist

Other members work part-time from their home countries.



Toshihiro Higuchi _{Historian}



Adrienne Ethier Technical Secretary



Suryakanta Acharya Technical Writer



Franklin Eze Technical Secretary



Barrington Brevitt Technical Writer



Abdulkadir Alaydarous Technical Secretary



Camille Pacher Technical Secretary



Luana Hafner



Anna Denisova Technical Secretary



Constantinos Zervides Technical Secretary



COMMITTEE 1

Considers the effects of radiation action from the subcellular to population and ecosystem levels, and assesses implications for protection of people and the environment

READ NOW 2023 Committee 1 Meeting Summary



- Dominique Laurier Chair Gayle Woloschak Vice-Chair Elizabeth Ainsbury Secretary Christelle Adam-Guillermin Tamara Azizova Christophe Badie Dimitry Bazyka
- Agnès Francois Michael Hauptmann Manoor Prakash Hande Kotaro Ozasa Preetha Rajaraman David Richardson
- Yoshiya Shimada Mikhail Sokolnikov Quanfu Sun Ludovic Vaillant Richard Wakeford Luana Hafner Intern

COMMITTEE 2

Develops dosimetric methodology for the assessment of internal and external radiation exposures for use in the protection of people and the environment

> 2023 Committee 2 Meeting Summary



- François Bochud Chair Francois Paquet Vice-Chair Maria Antonia Lopez Secretary Martin Andersson Volodymyr Berkovskyy Denison de Souza Santos
- Augusto Giussani Derek Jokisch Chan Hyeong Kim Mukund Shrinivas Kulkarni Stephanie Lamart Choonsik Lee
- Junli Li James W. Marsh Nina Petoussi-Henss Tatsuhiko Sato Tracy Smith Alexander Ulanowski

READ

NOW

COMMITTEE 3

Addresses protection of persons and unborn children when ionising radiation is used in medical diagnosis, therapy, and biomedical research, as well as protection in veterinary medicine

READ NOW 2023 Committee 3 Meeting Summary



- Kimberly Applegate Chair Colin Martin Vice-Chair David Sutton Secretary Marie-Claire Cantone John Damilakis Makoto Hosono
- Aurelie Isambert Mika Kortesniemi Mahadevappa Mahesh Josep M Martí-Climent Jin Chul Paeng Claudia E. Ruebe
- William Small Åste Søvik Isabelle Thierry-Chef Ivan Williams Weihai Zhuo

COMMITTEE 4

Provides advice on the application of the Commission's recommendations for the protection of people and the environment in an integrated manner for all exposure situations

READ NOW

2023 Committee 4 Meeting Summary



- Thierry Schneider Chair Nicole Martinez Vice-Chair Jacqueline Garnier-Laplace Secretary Min Baek Nobuhiko Ban Yann Billarand
- Julie Burtt Analia Canoba Eduardo Gallego Daniele Giuffrida Catrin Baureus Koch Yahong Mao
- Andy Mayall Anne Nisbet Sergey Shinkarev John Takala Hiroko Yoshida Friedo Zölzer



TASK GROUPS

Active as of 31 December 2023

Task Group 36 Radiation Dose and Patients in Diagnostic Nuclear Medicine

Task Group 91 Radiation Risk Inference at Low-dose and Low-dose Rate Exposure for Radiological Protection Purposes

Task Group 95 Internal Dose Coefficients

Task Group 96 Computational Phantoms and Radiation Transport

Task Group 97 Application of the Commission's Recommendations for Surface and Near Surface Disposal of Solid Radioactive Waste

Task Group 98

Task Group 99

Application of the Commission's Recommendations to Exposures Resulting from Contaminated Sites from Past Industrial, Military and Nuclear Activities

Reference Animal and Plant (RAP) Monographs **Task Group 103**

Mesh-type Reference Computational Phantoms (MRCP)

Task Group 105 Considering the Environment when Applying the System of Radiological Protection

Task Group 106 Application of the Commission's Recommendations to Activities involving Mobile **High Activity Sources**

Task Group 108 Optimisation of Radiological Protection in Digital Radiography, Fluoroscopy, and CT in Medical Imaging

Task Group 109 Ethics in Radiological Protection for Medical Diagnosis and Treatment

Task Group 111 Factors Governing the Individual Response of Humans to Ionising Radiation

Task Group 112 Emergency Dosimetry

Task Group 113 Reference Organ and Effective Dose Coefficients for Common Diagnostic X-ray Imaging Examinations

TASK GROUPS

Active as of 31 December 2023

Task Group 114Reasonableness and Tolerability in the System of Radiological Protection

Task Group 115 Risk and Dose Assessment for Radiological Protection of Astronauts

Task Group 116Radiological Protection Aspects of Imaging in Radiotherapy

Task Group 117Radiological Protection in PET and PET/CT

Task Group 118 Relative Biological Effectiveness (RBE), Quality Factor (Q), and Radiation Weighting Factor (wR)

Task Group 119

Effects of Ionising Radiation on Diseases of the Circulatory System and their Consideration in the System of Radiological Protection

Task Group 120Radiological Protection for Radiation Emergencies and Malicious Events

Task Group 121Effects of Ionising Radiation Exposure in Offspring and Next Generations

Task Group 122Update of Detriment Calculation for Cancer

Task Group 123 Classification of Harmful Radiation-induced Effects on Human Health for Radiological Protection Purposes

Task Group 124Application of the Principle of Justification

Task Group 125Ecosystem Services in Environmental Radiological Protection

Task Group 126Radiological Protection in Human Biomedical Research

Task Group 127Exposure Situations and Categories of Exposure

Task Group 128Individualisation and Stratification in Radiological Protection: Implications and
Areas of Application











RELEASED IN 2023

The journal Annals of the ICRP is the authoritative source for recommendations and guidance of the International Commission on Radiological Protection. It was established in 1977 and is published by SAGE UK.



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Authors on behalf of ICRP

N. Martinez, L. Van Bladel, Å. Søvik, L. Balogh, J. Benoit, A. Davila, S. Dorling, J. Gambino, M. Natsuhori, R.J. Pentreath, K. Peremans, E. Randall, C. Roy, I. Tanaka

FREE THE ANNALS

Thanks to the many organisations and individuals that supported the Free The Annals initiative on the occasion of ICRP's 90th anniversary in 2018, the publications shown below became free to download in 2023. The latest issues are available by subscription or can be purchased individually from SAGE.



GLOBAL SUPPORTERS

The contributions from these organisations allow ICRP to further our programme of work, paving the way for the advancement of the System of Radiological Protection globally. Want to join this growing list of organisations at the forefront of radiological protection? Contact us.



Danish Radiation Protection Authority (SIS)

FORMAL RELATIONS

ICRP maintains formal relations with other organisations with an interest in radiological protection through specific agreements, or by granting Special Liaison status to organisations whose work is relevant to ICRP's mandate. Organisations in formal relations with ICRP in 2022 are shown below.



FINANCES	2020	2021	2022	2023
INCOMING RESOURCES				
Contributions Received	761 044	864 963	844 415	1 145 239
Royalties	189 793	226 562	149 461	159 475
Other	86 143	111 500	6 622	5 566
Total Incoming Resources	1 036 980	1203025	1000498	1 310 280
RESOURCES EXPENDED				
Promotion of RP	315 982	379 066	614 023	767 658
Governance Costs	438 986	482 716	479 443	533 958
Other Resources Expended	4 744	52 326	17 200	36 641
Total Resources Expended	759 712	914 108	1 110 665	1358256
Net Gains/(Losses) on Investments	3 136	16 671	(35 118)	17 052
	280 404	305 588	(145 285)	(30 924)
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TOTAL FUNDS	770 011	1074000	001114	000 100
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CARRIED FORWARD **22**

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CONTACT

International Commission on Radiological Protection 350 Albert Street, Suite 410 Ottawa, Ontario, K1P 5S9 CANADA

admin@icrp.org

BTH INTERNATIONAL SYMPOSIUM ON THE SYSTEM OF RADIOLOGICAL PROTECTION 6-9 OCTOBER 2025 • ABU DHABI, UAE

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