ETRAP
27-30 June 2023
Groningen, The Netherlands

The ICRP Vancouver Call for Action

W. Rühm, U. Kulka

Federal Office for Radiation Protection, Germany

Bundesamt
für Strahlenschutz

- Concerns that a shortage of investment in training, education, research, and infrastructure will compromise society's ability to manage radiation risks.

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- ICRP call for action worldwide to strengthen expertise in radiological protection over Vancouver call for action to strengthen expertise in radiological protection worldwide

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- Announced at the 6th ICRP Symposium on the System of Radiological Protection, Vancouver, Canada 2022

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Radiation and Environmental Biophysics (2023) 62:175–180
https://doi.org/10.1007/s00411-023-01024-5

REVIEW

Check for updates

Vancouver call for action to strengthen expertise in radiological protection worldwide

W. Rühm[1] · K. Cho[2] · C.-M. Larsson[3] · A. Wojcik[4,5] · C. Clement[6] · K. Applegate[7] · F. Bochud[8] · S. Bouffler[9] · D. Cool[6] · G. Hirth[3] · M. Kai[10] · D. Laurier[11] · S. Liu[12] · S. Romanov[13] · T. Schneider[14]

- Radiological protection
- Radiation research
- Education and training
- Competence

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- **Open Access**
- **View of the current ICRP Main Commission**

Motivation – analysed literature

- **IAEA-WHO (2012) Bonn Call-for-Action**: 10 Actions to **Improve Radiation Protection in Medicine** in the Next Decade. International Atomic Energy and Agency (IAEA), Vienna and World Health Organisation (WHO), Geneva. https://www.iaea.org/sites/default/files/documents/rpop/bonn-call-for-action-statement.pdf.
- **NCRP (2015) Where are the Radiation Professionals** (WARP)? NCRP Statement No. 12, December 17, 2015. https://ncrponline.org/wp-content/themes/ncrp/PDFs/Statement_12.pdf
- Salomaa S et al. (2017) **Multidisciplinary European low dose initiative**: an update of the MELODI program. Int J Radiat Biol 93: 1035-1039.
  Ottolenghi A, et al. (2019) **Education and training to support radiation protection research in Europe**: The DoReMi experience. Int J Radiat Biol 95: 90-96.
- Cho K, Imaoka T, Klokov D, Paunesku T, Salomaa S, Birschwilks M, Bouffler S, Brooks AL, Hei TK, Iwasaki T, Ono T, Sakai K, Wojcik A, Woloschak GE, Yamada Y, Hamada N (2019) **Funding for radiation research**: past, present and future. Int J Radiat Biol 95: 816-840. https://doi.org/10.1080/09553002.2018.1558303.
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- Vassileva J et al. (2021) **Strengthening radiation protection education and training** of health professionals: conclusions from an IAEA meeting. J Radiol Prot 42 011504
- Linet M, et al. (2022) A Multimedia Strategy to Integrate Introductory Broad-Based **Radiation Science Education in US Medical Schools**. J Amer Coll Radiol. DOI 10.1016/j.jacr.2022.08.010
- SSK (2022) German Radiation Protection Commission: Langfristige Sicherung der Kompetenz auf dem Gebiet der Strahlenforschung und -anwendung in Deutschland); **Long-term assurance of competence** in radiation research and application in Germany – Most important scientific disciplines and major scientific actors (in German) involved.
- AS (2022) Leveraging Advances in Modern Science to Revitalize Low-Dose Radiation Research in the United States. Committee on **Developing a Long-Term Strategy for Low-Dose Radiation Research in the United States**, Nuclear and Radiation Studies Board, Division on Earth and Life Studies, 2022. Washington, DC: The National Academies Press. https://nap.nationalacademies.org/26434.

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Includes information on the situation in individual countries (US, Germany), Europe, and worldwide

Motivation – comments

"**Need for a holistic approach** which includes partnership of national governments, civil society, international agencies, researchers, educators, institutions and professional associations … " (IAEA-WHO (2012))

"… looming **shortage of radiation professionals represents a serious threat** to the United States: … " (NCRP (2015))

"… **investment in education and training is essential**" (Salomaa et al. (2017)

Many states "have **lost key competences … with implications for effectively fulfilling operational and policy needs** and obligations" (Ottolenghi et al. 2019)

"… **better understanding of the biological consequences of radiation exposure** is becoming more important with increasing public concerns on radiation risks …" (Cho et al. 2019)

German research would **greatly benefit if scientific competence in those research areas … be rebuilt, kept, and strengthened** (SSK (2022)

Call for "**radiation science and protection education for all undergraduates in health sciences** (Vassileva et al. 2021; Linet et al. 2022)

Evaluation of the status and needs for increased resources for **restarting the federal low-dose radiation research program in the United States** (National Academies of Sciences 2022)

ICRP calls for action to strengthen expertise in radiological protection worldwide through

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

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

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

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

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

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UN Sustainable Development Goals: Establishment of an electronic ‘collection’ of papers published in Radiation and Environmental Biophysics

Blueprint for peace and prosperity for people and the planet, now and into the future.
Development of Sustainable Goals

- urgent call for action by all countries
- developed and developing - in a global partnership.

https://sdgs.un.org/goals

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2015 Adoption of a resolution on transforming our world:

17 “Sustainable Development Goals”, e.g.

- SDG #3: ensure healthy lives and promote well-being for all at all ages
- SDG #4: ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG #7: ensure access to affordable, reliable, sustainable and modern energy for all

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2030 Agenda for sustainable Development

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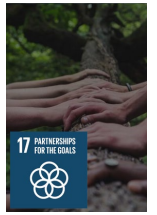
This also applies to Radiation Protection

Resolution has 17 "Sustainable Development Goals", e.g.

- SDG #3: ensure healthy lives and promote well-being for all at all ages
- SDG #4: ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG #7: ensure access to affordable, reliable, sustainable and modern energy for all



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https://sdgs.un.org/goals

The Call supports several United Nations Sustainable Development Goals

United Nations | Department of Economic and Social Affairs
Sustainable Development

Home | SDG Knowledge | Intergovernmental Processes | HLPF | SIDS | SDG Actions | Engage | News | About

THE 17 GOALS

169	3818	1344	7548
Targets	Events	Publications	Actions

The ICRP Vancouver Call for Action adresses

“Good Health and Well-being”

“Quality Education”

“Reduced Inequalities”

“Life Below Water”

“Life on Land”

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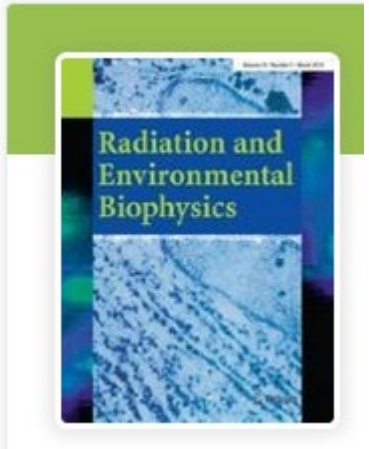
New initiative by Radiation and Environmental Biophysics



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EDITORIAL

UN Sustainable Development Goals: establishment of an electronic 'collection' of papers published in Radiation and Environmental Biophysics

Werner Rühm · Anna A. Friedl · Andrzej Wojcik

Collection

Radiation Research and the UN Sustainable Development Goals

Submission status	Open for submission from	Submission deadline
Open	22 May 2023	Ongoing

In September 2015, the member states of the United Nations adopted a resolution on "Transforming our World: the 2030 Agenda for Sustainable Development" (UN General Assembly 2015). The resolution includes 17 "Sustainable Development Goals" (SDGs) complemented by 169 Targets, and represents — show all

Editors

Werner Rühm, Jing Chen, Anna A. Friedl, Emilie van Deventer & Andrzej Wojcik

From DoReMi to Pianoforte - Development of a research and training program for sustainable radiation protection in Europe

addressing also E&T
and infrastructure

The goals of the European Atomic Energy Community (EURATOM Treaty) include:

- Promotion of research and dissemination of technical information
- Definition of uniform safety standards to protect the pupulation and workers
- Research support

In order to implement this in the best possible way, a research and training program was gradually set up in Europe under EURATOM, which identifies key research topics, determines the necessary infrastructure and interests and trains young scientists in this topic. The BfS was significantly involved right from the start and played a decisive role in shaping the radiation protection activities in all areas.

HLEG — High Level Expert Group on European Low Dose Risk Assessment (FP 7) — 2008 – 2009

The expert group was created on the initiative of the European Commission (EURATOM) and six European institutions with the aim of enabling knowledge-based policy advice on the health risks of ionizing radiation in the low dose range. Experts from the research field were also involved to identify research priorities and training needs. The results included the establishment of the European science platform "Multidisciplinary European Low Dose Initiative" (MELODI) and the initiation of strategic research planning in Europe

DoReMi-Network of Excellence (NoE)—Low Dose Research towards Multidisciplinary Integration (FP 7) — 2010 – 2015

The aim of the excellence network was the development of research strategies that can be used to effectively investigate fundamental issues in radiation research. For this purpose, the MELODI platform was set up based on the large European national institutions and research programs. The focal points included the development of a joint research program for the low-dose range, as well as the development of strategies for recording and ensuring the radiation-related infrastructure and training and further education of future radiation researchers.

OPERRA — Open Project for the European Radiation Research Area (FP 7) — 2013 – 2017

Building on the previous activities, further structures were developed in order to be able to manage long-term European research programs in radiation protection. The focus on low-dose risk research was expanded to include radioecology and nuclear emergency management, with the platforms ALLIANCE and NERIS being included in addition to MELODI. In addition, synergies between EURATOM and other EC programs were used and connections to national funding programs were established. In addition to research and education and training, the maintenance of and access to relevant infrastructure were also important priorities.

CONCERT—European Joint Programme for the Integration of Radiation Protection Research (Horizon 2020) — 2015 – 2020

The project is considered the first of its kind in radiation protection research. It initiated and supported the development of Strategic Research Agendas (SRAs), recommendations for research priorities and the creation of roadmaps in all major areas of radiation protection research. The European research platforms ALLIANCE (radioecology), EURADOS (radiation dosimetry), EURAMED (medical radiation protection), MELODI (low-dose research), NERIS (emergency protection) and SHARE (social sciences and humanity), as well as European and international organizations in radiation protection, were significantly involved.

"Bridging project" RadoNorm — Towards effective radiation protection based on improved scientific evidence and social considerations - focus on radon and NORM (Horizon 2020) — 2020 – 2025

The research project also serves to bridge the gap between CONCERT EJP and PIANOFORTE. The aim of the project coordinated by the BfS is to consolidate scientifically based policy recommendations to decision-makers in the field of radiation protection, here with a focus on radon and NORM. The project also includes training for students and young scientists, and involves citizens in scientific investigations.

PIANOFORTE — Partnership for European research in radiation protection and detection of ionising radiation: towards a safer use and improved protection of the environment and human health — 2022 – 2027

Continue work under CONCERT to improve radiation protection for the public, patients, workers and the environment in all exposure scenarios. Solutions and recommendations are provided for optimized protection in accordance with the International Basic Safety Standards for Protection against Radiation. Priority will be given to medical applications as medical exposures are the largest source of artificial exposure and the fight against cancer is one of the European Commission's top priorities.

Situation in Germany

- **2021 Needs analysis for maintaining and expanding radiation protection expertise** in Germany. Elaboration of the project team "Prospective preservation of expertise and capacities in the field of nuclear safety and radiation protection.
  Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Federal Office for the Safety of Nuclear Wastsitore Management, Federal Office for Radiation Protection, Federal Society for Final repository mbH, Society for Interim Storage mbH (BMUV, BASE, BfS, BGE, BGZ).

- **2022 Long-term safeguarding of competence** in the field of radiation research and application in Germany. Identification of the most important scientific disciplines and key players in research. Adopted at the 312th meeting of the SSK (Radiation Protection Commission) 2021. Announcement in 2022.

- **2023 currently SSK Working Group is developing Recommendations**
  Long-term safeguarding and expansion of competence in the field of radiation research and application in Germany

In 2023 Establishment of Staff Unit on the Future of Radiation Protection at BfS

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Thank you for your attention