IRPA Bulletin

For RP professionals, by RP Professionals

MARCH 2025 ISSUE #45

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EXECUTIVE COUNCIL MESSAGE

CLAIRE-LOUISE CHAPPLE

It is slightly daunting to be asked to write one of the first IRPA Exec messages for the new term, and be given complete freedom as to topic, but what has been uppermost in my mind recently is how we on the Executive Council can be sure we are picking up on the issues you want us to take forward, and how we are communicating effectively with you all. I am thus going to try to share some of the feedback we received from the Associate Societies at the end of last term, and the ways in which we hope to start addressing these issues over the next few years.

The greatest number of comments received concerned IRPA communications, with a mixture of appreciation for progress made over recent years (thank you Comms team 😊) and suggestions for further improvement. The latter included aspects of the website – keeping material up to date and allowing greater interaction for members – and also increased use of social media, including YouTube. Webinars and information on progress with Task Groups were also in demand. The good news is that a Communications Workplan is being drawn up to try to address Members' concerns and ideas, and you will hopefully already have noticed some changes in the Bulletin, including a focus on TG activity and profiles of both Exec Members and our Young Generation Network. Some of the other changes planned will inevitably take a little time, so please be patient while these are worked through.

Only slightly behind communications in terms of AS concerns is the increasingly important area of training, education and retention of radiation protection professionals. As well as highlighting concerns in these areas, there were a number of good suggestions as to the role IRPA can play, including sharing of best practice and provision of more training and guidance material. All of these ideas will be reviewed by our new TG on Education and Training which is due to be launched imminently – watch out for more news on this soon.

Closely linked with education and training were a number of comments and requests in relation to the IRPA Young Generation Network, including a desire for more opportunities for YGN members to engage in IRPA activities. The Mentoring TG, initiated towards the end of last term will hopefully play an important role in this, and other suggestions will be shared with the YGN.

Finally, there was quite a bit of feedback on issues relating to specific regions, or even countries, and a noticeable desire for IRPA both to provide targeted support and to facilitate more collaborative work, both between Associate Societies, and between IRPA Societies and other organisations. These are fundamental areas of IRPA's role, and we will be looking at how to develop them more effectively over the rest of this term.

Please don't think you need to wait until the next survey is launched to let us know what is going well, or with suggestions & requests for doing things differently. Just get in touch – we are always glad to hear from you!

FOSTERING GLOBAL COLLABORATION: YOUNG PROFESSIONAL DISCUSSIONS AT THE IARP 2025 NATIONAL CONFERENCE

Riya Dey, Clinton S A Fernandes
Health Physics Division, Bhabha Atomic Research Centre, Mumbai, India

The 35th Indian Association for Radiation Protection (IARP) National Conference was held on January 29 – 31, 2025 at Mangalore University, Mangaluru, India with the theme “Radiation Protection for Sustainable Nuclear Energy: Adapting to Climate and Technological Changes”. On the last day of the conference, there was a session on the “IARP-YPG Discussion Forum with the Young Generation Network from IARP Associate Societies”. The goal of the session was to share youth perspectives on radiation protection (RP) and its challenges, and to discuss the activities of various young generation groups in spreading awareness. The session was conducted in a hybrid mode with a panel of speakers that included:

- Mr. Takahiko Kono from the Japan Health Physics Society (JHPS)
- Ms. Viktoria Herzner from the Austrian Association for Radiation Protection (ÖVS)
- Mr. Edwin Kagai from the Radiation Protection and Nuclear Safety Youth Network (RPNS-YN), Kenya
- Ms. Riya Dey and Mr. Clinton S. A. Fernandes from the Indian Association for Radiation Protection (IARP).

The session began with welcome remarks by Dr. S Anand, Secretary, IARP, who explained the objectives of the Young Generation Network of the International Radiation Protection Association (IRPA-YGN) and the Young Professionals Group of IARP (IARP YPG), setting the tone for the discussion.

Next, Mr. Takahiko Kono, Chair of the IRPA-YGN Leadership Committee, shared his views on “The Future of Radiation Protection for Young Professionals with experiences of the IRPA-YGN”. He described the recent activities of the IRPA-YGN, followed by a presentation on the “Recent Activities of the Young Researchers Association (YRA) of JHPS and the Future of Our Radiation Protection”. As of January 2025, the YRA has about 30 engineers and researchers under the age of 40 working in private companies, research institutes, and academia. He shared a photo of the first joint study meeting held by JHPS and the Young Research Biologists’ Association of Japan in 2018 and explained their journey from that initial point. They have organized extensive study sessions related to ICRP publications and have also participated in outreach activities. Volunteers from JHPS have been providing accurate information on radiation and radioactivity via an internet-based website since the Fukushima accident. They have also organized joint JHPS-SRP-KARP YGN workshops in December 2019 in Sendai, Japan, and in October 2022 online. Thus, he explained how YRA contributes to the field of radiation protection by exchanging information and discussing the latest knowledge.

Following that, Ms. Viktoria Herzner from the Austrian Association for Radiation Protection (ÖVS) presented her views on radiation protection (RP) and the activities of Young Scientists and Professionals (YS&P) in this domain. She explained that currently, YS&P has 62 members, and they have received scholarships, as well as research and travel grants from ÖVS. They organize four online meetings and webinars per year and hold at least one in-person meeting annually. They also engage in group discussions, hiking, and other activities that serve as special bonding moments, along with excursions to different institutes to enrich their experience and knowledge. They won first place in the IRPA-YGN Movie Contest in 2023, which highlighted the importance of radiation and focused on spreading awareness among the public.

Fig 1: IARP-YPG Discussion Forum with the Young Generation Network from IARP associated societies at IARPNC, 2025 (Hybrid mode)

Mr. Edwin Kagai from the Radiation Protection and Nuclear Safety Youth Network (RPNS-YN), Kenya discussed the activities of young professionals in promoting nuclear energy as a solution to carbon emissions and climate change caused by conventional energy sources. He mentioned that RPNS-YN engages in safety advocacy through formal and informal interactions with experts, policymakers, and the general public. They have organized several webinars to date. He explained in detail why such conferences are essential for the growth of the community in addressing global challenges and described their future activities and ambitions.

Lastly, Ms. Riya Dey from the Indian Association for Radiation Protection (IARP) presented a talk on “Global Perspectives: Empowering Young Professionals in Radiation Protection” with a focus on the theme of the conference. She explained key focus areas that are critical at present, namely, global energy demand, challenges related to climate change, and how nuclear energy can provide a sustainable solution. The contribution of young professionals to this field was emphasized, along with the role of the Young Professionals Group of IARP (IARP-YPG), which aligns with the objectives of IRPA-YGN. IARP-YPG is a national network of “Young Researchers” in the field of radiation protection (RP) and its allied fields. This was formed on March, 2023, soon after the AOCRP6 Conference at Mumbai, and presently, there are 22 members from different scientific domain working in the field of Radiation Protection.

Ms. Riya Day went on to list the activities of IARP YPG so far which include monthly lectures by eminent experts (available on the "IARP India" YouTube channel), lecture series by YPG members to enhance communication skills through group discussions, presentations, and interactive activities. YPG also has a dedicated page in the Radiation Protection and Environment (RPE) journal, where members can share their thoughts, ongoing research, achievements, awards, and publication summaries. She highlighted the potential for further innovation in RP through AI-driven tools, robotics and advances in detection systems. In addition, methodological improvements that improve the fundamental understanding of radiation physics, biology and chemistry were a key focus of her discussion. She also outlined the outreach programmes undertaken by IARP members to inspire students and raise awareness of career opportunities and developments in this expanding field. These initiatives include interactive workshops, science exhibitions, and educational talks aimed at dispelling myths about radiation and promoting informed discussions.

Several challenges in the field were identified and possible solutions proposed. The need for more online mentorship programmes and webinars to support young professionals and students in radiation protection and nuclear science was highlighted. Existing initiatives such as ICRP, IAEA and IARP mentorship programmes, as well as HBNI webinars on career opportunities and alumni talks, have been instrumental in guiding early career researchers. It was emphasised that expanding these efforts to include more virtual events would increase accessibility and global participation.

The panel also addressed the queries raised by the audience and participants. Mr. Clinton S. A. Fernandes contributed to the panel discussion by moderating the Q&A sessions and providing valuable insights and answering questions specifically related to India's initiatives and involvement in radiation protection, further enriching the conversation. The concluding remarks of the session were that extensive public awareness is needed, and a greater number of dedicated young researchers from engineering and basic sciences are required to foster a collaborative environment for a future built on sustainable solutions.

Acknowledgements

We deeply appreciate the invaluable support and guidance provided by Shri Probal Chaudhury, President of IARP, Dr. S. Anand, Secretary of IARP, and Dr. D.K. Aswal, Director of the Health, Safety & Environment Group (HS&EG), Bhabha Atomic Research Centre (BARC), Trombay, India. We also thank the members of IRPA-YGN and the speakers for making the session a success.

MONTREAL FUND: 2024 SUMMARY

The Montreal Fund is a vital IRPA initiative that supports the attendance of young RP professionals at IRPA Congresses. We would like to recognize and thank the Associate Societies and individual IRPA members who have made contributions to help keep the Montreal Fund going strong.

BRONZE – UP TO USD 249

Anonymous
Sara de Souza Zanotta Dumit, USA
Shaheen Dewji, USA
M Mahathy, USA
Amber Bolen, USA

SILVER – USD 250 - 499

Australasian Radiation Protection Society, Australia, New Zealand
Spanish Society of Radiological Protection, Spain

GOLD – USD 500 - 999

Elizabeth Brackett, USA
Sigurdur Magnusson, Iceland
Belgian Association for Radiological Protection, Belgium
Nordic Society for Radiation Protection, Denmark, Finland, Iceland, Norway, Sweden

PLATINUM – USD 1000 – 2499

Anonymous
Chris Clement, Canada
Dutch Society for Radiation Protection, Netherlands
Italian Association of Radioprotection, Italy

DIAMOND – USD 2 000 – 4 999

Health Physics Society, USA
Society for Radiological Protection, UK

URANIUM – USD 5000+

YOUR NAME HERE NEXT YEAR!

TOTAL DONATIONS TO THE MONTREAL FUND IN 2024 WERE USD 14.562

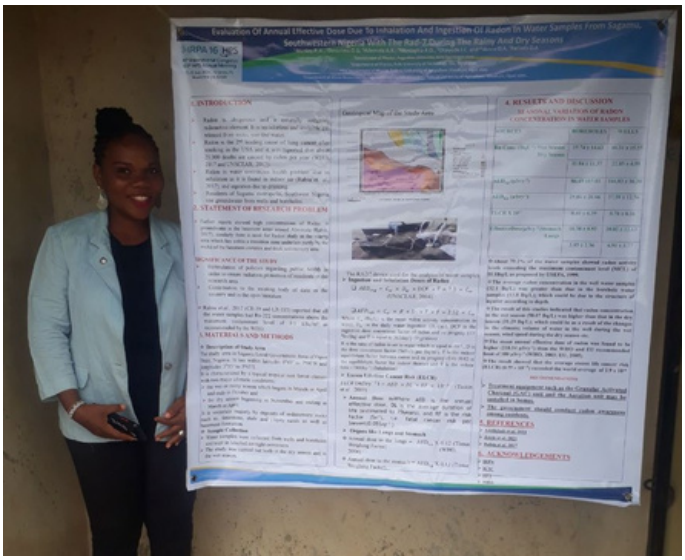
MONTREAL FUND: 2024 SUMMARY

And yes, you read that right - individuals as well as Associate Societies! Starting last year, we've made it even easier to donate to the Montreal Fund as an individual. Simply click on the donate button below to make a donation via PayPal.

All donations will help increase participation at future IRPA Congresses, such as the IRPA Regional Congresses in 2026 and the IRPA 17 International Congress in 2028, by those who may not otherwise be able to attend. The need for support is increasing and your contributions are urgently needed.

With help from the Montreal Fund, I was able to connect with scientists and researchers from around the globe and loved the friendly participants as well as the serene environment in which the congress took place. The Montreal Fund is a commendable and wonderful support for early career scientists and those from developing countries. I am most grateful for the opportunity to be a beneficiary of the Montreal Funds.

-Dr. Pauline Ayoola Atanley, Augustine University, Ilara, Epe, Lagos, Nigeria



MEET THE NEW EC MEMBERS: MICHIYA SASAKI

The next few issues of the IRPA Bulletin will have profiles on our newest Executive Committee Members. For this issue, we turn to Michiya Sasaki!

How did you end up in this field of radiation protection?

From 2012 to 2014, I worked at the Scientific Secretariat of ICRP. At the ICRP, I gained in-depth knowledge about the system of radiological protection by joining and supporting the ICRP activities, mainly in Fukushima dialogue initiatives. From 2014, my main research interests were risk assessment and its application to the system of radiological protection.

Why did you want to join the IRPA Executive Council?

Since 2014, I have been involved in research on radiation risk assessment, as well as in society activities, to disseminate opinions to society and to engage in international collaboration. IRPA plays an important role in the framework of radiation protection by bringing the voice of practice to international organisations. As the ICRP General Recommendations are currently being revised, I believe that IRPA members need to bring their experiences to the ICRP and continue to communicate and work together to improve the ICRP's next General Recommendation. I thought I would be very happy if I could support this important task of IRPA for the coming years.

What would you like to see IRPA accomplish over your term?

As a member of the IRPA EC, I'd like to tackle the following three main points:

- Input to a new framework for radiation protection from Japan on the basis of experience in Fukushima.
- Involvement in the consideration of a graded approach, using my expertise and experience.
- Strengthening IRPA-AOARP cooperation, supporting non-AOARP societies and fostering YGN activities, with the aim of developing radiation protection societies in the Asia-Oceania region.

IRPA

AOARP
Asian and Oceanic Association
for Radiation Protection

MEET THE NEW EC MEMBERS: MICHIYA SASAKI

What was the first survey meter you ever used?

I think it was a GM survey meter to measure the surface contamination when removing items from radiation-controlled area. However, my memory is very fuzzy.

Are you team Rem or team Sv?

I'm in Sv team; however, name of "remcounter" is familiar for neutron dose rate measurements. I was involved in research related to the development of personal neutron dosimeters when I was in Tohoku University. I have a thesis that I created using LaTex with Tgif and gnuplot on the Sun OS that was in the lab at the time, and I can see many words of "remcounter" in it.

If you could be any radionuclide, which would you be, and why?

I never thought about which radionuclide I wanted to be. I am afraid my answer is not very humorous, but I think I might be helpful if I was F-18, which is used as a radiopharmaceutical.

Is there anything else you'd like to say to the IRPA membership?

Let's work together! IRPA provides nice opportunities to work together beyond generations.

HOW IRPA'S TASK GROUP SYSTEM WORKS

ANA MARIA BOMBEN & ANDY KARAM

IRPA Task Groups (IRPA TGs) are an important part of promoting international cooperation among those engaged in radiation protection work. Each Task Group allows IRPA to expand awareness, disseminate information and collect feedback on topics of interest to the radiation protection community. A member of the IRPA Executive Council acts either as chair or a liaison to each group. The work of the TGs is mainly conducted via email and online meetings. Face-to-face or hybrid meetings could be considered on the occasion of Regional or International IRPA Congresses, as they provide a good opportunity to demonstrate the activities of the TGs and share the documents they produce.

IRPA's Task Groups are:

Task Group	Objective	Chair/EC Liaison
Education & Training	To provide feedback and promote the development of guidance material (e.g., certification and/or mutual recognition of Radiation Protection Experts); to promote Continuous Professional Development (CPD) for Radiation Protection Experts; to support – together with IRPA liaised organizations – local, national and regional initiatives to establish and maintain a system of education and training in radiation protection and also educational initiatives aimed at attracting and mentoring (young) people in the field of radiation protection.	Hielke Freerk Boersma
Mentoring	To work on mentoring activities with a support scheme based on a special relationship of reciprocity and good will between an experienced and less-experienced professional to foster career development for the junior professional.	Sylvain Andresz / Kevin Nelson
Public Understanding	To encourage and support the Associate Societies in the development of effective means of enhancing public understanding of radiation risk through the sharing of good practice, ideas and resource material. This TG released the IRPA Practical Guidance for Engagement with the Public on Radiation and Risk that was published in October 2020.	Dave Niven

HOW IRPA'S TASK GROUP SYSTEM WORKS

ANA MARIA BOMBEN

Task Group	Objective	Chair/EC Liaison
Non-ionising radiation	To work on the aspects, proposals and expectations documented in the answers to the IRPA EC questionnaire in 2016/17, including: • Support IRPA AS in informing the general public about health risks of NIR • Explanation of the recommendations by ICNIRP on exposure limits • Support the organizers of Regional Congresses in order to contribute to a substantial NIR programme.	Julien Modolo & Alexandre Legros (Deceased)
Naturally Occurring Radioactive Materials	To develop, as a key activity, a practical handbook on NORM, with the aims to: • Increase awareness about NORM around the world, • Develop a common understanding of requirements for the safe and appropriate management of NORM, • Develop of a library of good practice documents, • Support countries which are new to NORM, • Network between practitioners and sharing existing and good practices.	Rainer Gellermann & Jim Hondros / Cameron Jeffries
Radiation Safety Culture in Healthcare	Following IRPA Publication of Guiding Principles on Establishing a Radiation Protection Culture (2014), an initiative was developed by WHO, IOMP, IAEA and IRPA to address enhancing radiation safety culture in health care settings. The resulting publication (in press) provides guidance on and proposes a framework for creating a sustainable radiation safety culture in health care facilities. The remit of the TG was to look at practical implementation of IRPA-WHO-IOMP-IAEA Guidance document. This was effected through participants working on individual projects, either assessing or improving radiation safety culture in their local healthcare settings.	Bernard Le Guen & Claire-Louise Chapple

HOW IRPA'S TASK GROUP SYSTEM WORKS

ANA MARIA BOMBEN

Task Group	Objective	Chair/EC Liaison
Review of the System of Radiological Protection	To collate and present feedback relating to ICRP proposals for review and revision of the System of Radiological Protection that will lead to new General Recommendations; refining and, eventually, superseding, the 1007 recommendations (ICRP Publication 103). Initially this involved a review of the ICRP "Keeping the ICRP Recommendations Fit for Purpose'" paper followed by feedback on the three key issues for the revision of the System of Radiological Protection. Then, a request was made for specific practical examples that may be of use in illustrating some of the issues and concerns previously raised. The feedback from the IRPA Associate Societies was presented at ICRP meetings, identifying both areas of consensus and topics with divergent views. All the feedback and the resultant paper are available on the IRPA website.	Claire-Louise Chapple
Women in Radiation	• To promote global dialogue on gender equity in radiation protection. • To carry out surveys and data collection to identify barriers and strategies for gender equity and disseminate findings in workshops and congresses presentations. • To develop an IRPA Statement on Women in Radiation Protection with the aim to: ◦ address systemic challenges and opportunities for women in the field. ◦ commit to drive transformative change by integrating gender equity into radiation protection, through data-driven advocacy, policy development, and stakeholder engagement. ◦ create a more inclusive profession, in alignment with IRPA's mission of equity, inclusivity, and intersectionality.	Marina di Giorgio / Ana Marie Bomben

ASSOCIATE SOCIETY UPDATE: BRAZILIAN SOCIETY OF RADIATION PROTECTION

Commitment to professional development and communication throughout Brazil
Denise Levy

Founded in 1986, the Brazilian Society of Radiation Protection (SBPR) is a technical-scientific entity affiliated with the International Radiation Protection Association (IRPA) and the Federación de Radioprotección de América Latina y el Caribe (FRALC). According to its statute, the main objective of the Society is to promote the dissemination of all aspects of radiological protection, nuclear safety and standards criteria, not only to the scientific, technical and academic environment, but also to society in general. It is quite a challenge to promote high-quality communication in a country with continental dimensions and more than 1850 licensed radioactive facilities, including facilities for medical applications, industrial applications and research. Currently, SBPR has more than 900 members throughout Brazil.

This article highlights SBPR´s experience in the dissemination of knowledge, hoping that our Society's mission inspires and encourages other colleagues and Societies. To overcome the above challenges and achieve our goals, since 2020 SBPR has invested in different communication strategies, considering their impacts on three spheres of Brazilian society: scientific community, public perception and government's policies.

Regarding the scientific community, communication actions include an institutional website with periodic newsletters and a strong presence on social media, publishing the latest news about nuclear technology. Moreover, SBPR publishes a high-quality scientific journal, the Brazilian Journal of Radiation Sciences, with both a national and international audience. This well-indexed journal provides professionals with updates on the multiple areas of ionizing and non-ionizing radiation.

To establish forums for discussion and knowledge exchange, the Society promotes scientific events. Some conferences meet the plural interests of the Brazilian community, such as the traditional International Joint Conference RADIO, that covers all sectors and practices on radiological protection. In 2024, the 8th edition of RADIO had more than 450 in-person participants, 8 plenary sessions, 27 round tables and six professional refresher courses. Other conferences are designed to discuss specific practices, bringing together professionals from all over the country for professional development. The periodical Workshop on Radioprotection in Industry is a good example. The most recent edition, organized by SBPR with institutional support from CNEN and FRALChad, welcomed 207 delegates from all over the country and 11 sponsors from the private sector.

In addition, SBPR takes into account current social demands, such as valuing the role women play in science. To promote this issue, SBPR has promoted, together with WiN Brazil, the I National Meeting of Women in the Nuclear Sector (2022 in Minas Gerais) and the II National Meeting of Women in the Nuclear Sector (2024 in Rio de Janeiro).

ASSOCIATE SOCIETY UPDATE: BRAZILIAN SOCIETY OF RADIATION PROTECTION

Commitment to professional development: Radiation Protection Supervisors with more than 20 years of experience, who attended the V Workshop on Radioprotection in Industry.

Communicating with the public involves different challenges. There is a huge difference in perceived risk between experts and non-experts. The communication involves demystifying nuclear technology and highlighting the value of the radiation protection professional. In this case, SBPR promotes educational activities for opinion makers in Brazil, such as journalists, teachers and the food industry. Over the past four years, in partnership with well-known Brazilian institutions, SBPR has promoted a basic physics course for journalists, a seminar on food irradiation for professionals from agribusiness and the food industry, and a workshop for high school teachers, to encourage and inspire the new generations, and attract new talents towards nuclear science (a major contemporary challenge in Brazil and worldwide). All events are organized to provide tools to a non-scientific audience, encouraging reflections and dialogues about the applications of radiation in medicine, industry, agriculture and scientific research.

Communicating with the public: Workshop for Basic school teachers, in partnership with the Nuclear and Energy Research Institute (IPEN) and University of São Paulo (USP).

ASSOCIATE SOCIETY UPDATE: BRAZILIAN SOCIETY OF RADIATION PROTECTION

Regarding the presence in public policies, SBPR representatives participate as invited members in different governmental initiatives to demystify nuclear energy and highlight its benefits for society, such as:

- The Communicating Network of the Brazilian Nuclear Sector, which is a network promoted and coordinated by the Institutional Security Cabinet of the Presidency of the Republic of Brazil (represented by Denise Levy, Institutional Communication Director of SBPR).
- The Nuclear Communication Technical Group, which is a network coordinated by the Government Secretariat for Energy and Marine Economy of Rio de Janeiro (Represented by Josilto de Aquino, President of SBPR).

SBPR´s director board highlights the educational role of scientific societies. National scientific societies are expected to communicate trustworthy information for the scientific community and can play a major role in the communication of radiation protection and nuclear safety to the public. National Societies can develop actions to provide trustfully information, promote professional growth and value the important role of the radiological protection professionals.

Participation in governmental initiatives to inform the general public: The Nuclear Communication Technical Group, in Rio de Janeiro.

A JOINT IRPA-IAEA PROJECT IN HEALTHCARE

BERNARD LE GUEN

At the IRPA16 congress in Orlando, we celebrated the joint publication by IRPA, IOMP, IAEA, and WHO: Enhancing Radiation Safety Culture in Healthcare: Guidance for Healthcare Providers (WHO website).

On this occasion, I met with Hildegarde Vandenhove, Director of the Radiation, Transport, and Waste Safety Division (NRSW) at the IAEA, and we agreed to meet again during the IAEA General Conference in Vienna to discuss a joint project.

On behalf of IRPA, I expressed my wish to organize a three-day workshop on Radiation Safety Culture in Healthcare in an African country, in collaboration with the IAEA's Rays of Hope initiative. Thanks to the Memorandum of Understanding signed between IRPA and the IAEA, and the help of Ola Holmberg this project is now becoming a reality.

The IAEA Department of Technical Cooperation (TC), Division of Africa, has approved the Regional Training Course on Strengthening Radiation Safety Culture in Medicine, which will take place in Brazzaville, Republic of Congo, from June 9 to June 13, 2025. The course will be conducted in English.

The workshop will feature presentations, facilitated discussions, and practical exercises. Our shared goal is to exchange experiences, discuss feedback on what works in fostering a strong radiation safety culture—and what doesn't—by presenting concrete examples.

Bernard Le Guen and Hildegarde Vandenhove

This initiative will provide IRPA's medical radiation protection professionals with an opportunity to collaborate with their African colleagues, exchange insights, and jointly develop training courses with the IAEA on radiation safety culture. I am thrilled to prepare this event with Ola.

Furthermore, this project aligns fully with IRPA's 2024-2028 Task Group (TG) Action Plan on Radiation Safety Culture in Healthcare, which I co-chair with Claire Louise Chapple.

PENGUINS, WHALES, GLACIERS, SPECTRA, AND SURVEYS: RADIATION MEASUREMENTS DURING A TRIP TO THE SOUTH ATLANTIC OCEAN AND ANTARCTICA

Andrew Karam, Bulletin Editor

In January, 2025 I was able to fulfil a lifelong dream to visit Antarctica, as well as the Falkland (Malvinas) and South Georgia Islands. I was excited to have a chance to visit a place I'd dreamed about for over a half-century, as well as to see icebergs, penguins, glaciers, whales, albatrosses, and so much more. The details would fill pages, which is more than I can do here – if you're interested in what we did day-to-day feel free to visit a blog I kept at www.brouhahaak.blogspot.com or to view some great videos made by some YouTubers who were on the same cruise I took (https://www.youtube.com/@Cruisewith/videos). Having said that, I will mention that it was a wonderful trip with all the wildlife I'd hoped to see, icy vistas, rough seas, the largest iceberg in the world (charmingly named A023a), whales, seals, and so much more. And on top of that, I took some radiation detectors with me and collected dose rate readings from my home in New York City to Buenos Aires to Ushuaia (both in Argentina), to the islands, and on to the Antarctic Peninsula…mostly because, having done my MS and doctoral work studying natural radiation and radioactivity, I was curious.

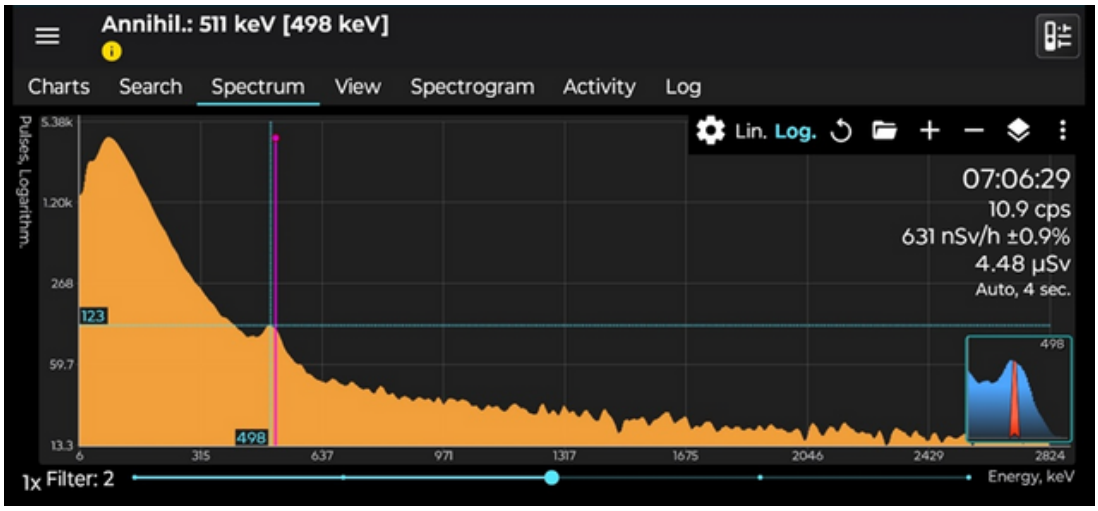
It did not surprise me to see that radiation dose rates at altitude were higher than on the ground, nor did it surprise me that, even at altitude, dose rates were lower near the equator than at high latitudes. What did surprise me, though, was to see a distinct gamma peak at 511 keV – a little thought, however, suggested that this was likely due to cosmic ray interactions in the upper atmosphere, which a literature search confirmed.

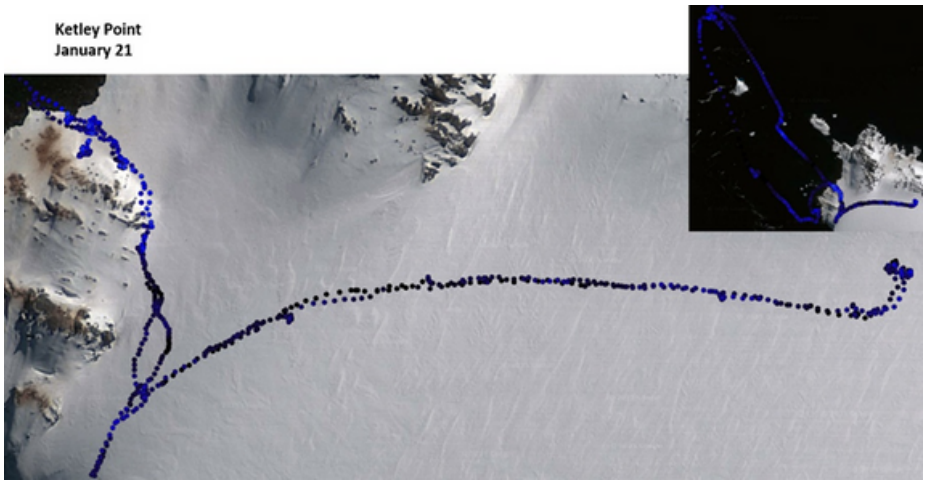
What surprised me more, and was completely unexpected, was that I saw the same 511 keV annihilation gamma when we were at sea. My suspicion is that this might be due to charged particles being able to penetrate more deeply into our atmosphere at high latitudes, undergoing interactions (e.g. initiating cosmic ray air showers) that we simply don't see at lower geomagnetic latitudes; a colleague suggested that this might simply be due to the fact that background radiation levels are so low at sea (where we only see dose from cosmic radiation) that the annihilation gammas were visible. I have to admit I'm not sure I agree – as of this writing I've been collecting a spectrum for more than a month and still don't see anything like a peak at 511 keV.

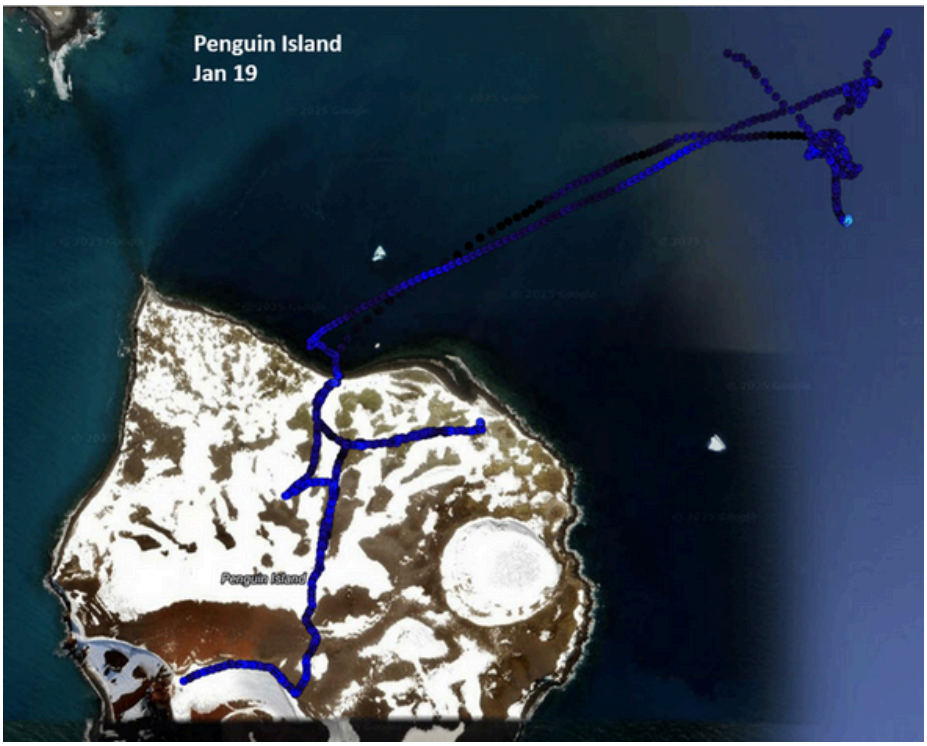
The whole time I was on this trip I was collecting radiation dose rates with a bGeigieZen (pancake GM) and a RadiaCode CsI(Tl) radiation detector. I brought some "professional" instruments with me as well, but they were harder to link to and weren't as good at collecting data that could be analyzed and mapped on my phone or computer.

The graphics that follow are maps, mostly from my bGeigieZen radiation detector (a pancake GM); the aerial dose rates and spectra were collected from my RadiaCode instrument.

PENGUINS, WHALES, GLACIERS, SPECTRA, AND SURVEYS: RADIATION MEASUREMENTS DURING A TRIP TO THE SOUTH ATLANTIC OCEAN AND ANTARCTICA







REMEMBERING ALEXANDRE LEGROS

Dr. Alexandre Legros, a scientist studying the effects of non-ionizing radiation and magnetic fields on human health, passed away on February 20, 2025 at the age of 49 following a lengthy illness.

Dr. Legros was born in Versailles, France in 1976. Dr. Legros received his Ph.D. in Human Movement Sciences in 2004 and completed a first postdoctoral fellowship on Electrical Deep Brain Stimulation (DBS) and motor symptoms in dystonic syndromes in the Neurosurgery Unit of the Guy de Chauliac Hospital in Montpellier, France. He completed a second postdoctoral fellowship (2005-2007) in the Bioelectromagnetics group at Lawson, where he was recruited as a scientist in September 2007.

Dr. Alexandre Legros was a Principal Investigator and Director of the Bioelectromagnetics and Human Threshold Research Group at the Lawson Health Research Institute (LHRI – London, Ontario, Canada). In the context of developing EuroStim, Dr. Alexandre Legros was coordinating research agreements between multiple institutions (Lawson, EuroMov, the University of Montpellier, EuroStim, EDF, RTE, Hydro-Québec, National Grid, EPRI). Dr. Legros had expertise in the fields of neurosciences, kinesiology, biophysics applied to the study of the interaction between time-varying magnetics field induced electric fields and currents in conductive tissues. His research interests mainly related to the effects of specific electric and magnetic stimuli (DBS; Transcranial Magnetic Stimulation; time-varying magnetic fields) on human brain processing, motor control and cognitive functions.

He was a board member (2013-2015) and was secretary of the board of directors of the Bioelectromagnetics Society (BEMS), was the Technical Program Committee co-chair for BioEM2018 and was the Chair of the Local Organising committee for BioEM2019, and also as the co-chair of the Local Organizing Committee BioEM 2025 in Rennes. Dr. Legros was the Canadian chair for URSI commission K and he was chairing the Non-Ionizing Radiations Task Group of the IRPA (International Radio Protection Association).

Joint AIRP-EUTERP Train-the-Trainer event, June 2025 in Milan, Italy

The Italian radiation protection association (AIRP) and the European foundation for Education and Training in Radiation Protection (EUTERP) jointly organize a train-the-trainer event in Milan, Italy from 24th to 27th June 2025. This event will focus on rapidly developing training methodologies such as augmented and virtual reality (AR and VR).

Background

Nuclear and radiological applications are part of daily life in our society, where they represent a stable energy source, enable the effective diagnoses and treatments in a medical context and optimize industrial processes. As numerous countries have expressed their ambition to expand these practices, it is important that ample professionals have the necessary knowledge, skills and competences to ensure the safe use of ionizing radiation. In particular, professionals in radiation protection such as radiation protection experts (RPE), radiation protection officers (RPO) ensure the protection of workers, the public and the environment against detrimental effects associated with an exposure to ionizing radiation. Dedicated education and training activities for these profiles are in place in most countries, but must be made future proof to anticipate to the rapid changing evolutions and applications. In line with the ICRP Vancouver Call for Action to strengthen expertise in radiological protection worldwide, EUTERP and AIRP are undertaking concrete actions to support the education and training community in radiation protection.

Although the European Union has a shared framework for radiation protection, the enforcement and focus of national regulations vary, with some prioritizing specific areas such as medical exposure, nuclear safety, or radon mitigation. Given the broad impact of radiation risks across multiple sectors, a common approach to training helps to support the maintenance of consistent safety standards between countries. Using modern training methodologies such as AR and VR also allows for behavioral training in safe conditions, underlining the ALARA methodology. In addition, common tools, including specialized software and protective equipment, enhance communication and coordination, particularly during emergencies, where swift and unified responses are critical to mitigating radiation hazards.

Joint AIRP-EUTERP Train-the-Trainer event, June 2025 in Milan, Italy (continued)

Aim and objectives

The objective of this event is helping to equip participants with modern and effective training methods and tools to ensure consistent radiation protection training, support cross-border collaboration and mobility. The event, which will be conducted in English, will include theoretical classes and hands-on practical training.

Practical training methodologies will focus on the use of advanced virtual reality (VR) equipment, selected online resources and artificial intelligence.

Augmented-reality applications to teach the basics of radiation protection (such as the properties of different types of radiation) or Virtual-Reality environments to determine the half-life of radionuclides will be explored and tested. Virtual laboratories for checking radiation protection measures in these laboratories or for carrying out radiochemical experiments will also be explored.

Target audience

This event is targeted to students and professionals in radiation protection who wish to explore modern teaching methodologies and tools.

Venue

The classes will take place at the former Sala del Consiglio of the Polytechnic of Milan, whereas the practical sessions will take place in two state-of-the-art VR Lab classrooms.

Information and registration

More details on this event will soon be accessible via the upcoming events page on the website of EUTERP.

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