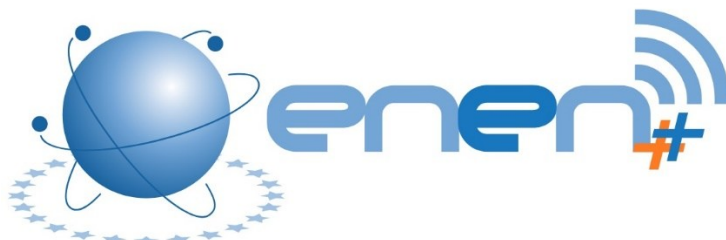




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Table of Contents

EXECUTIVE SUMMARY	4
1 KICKING-OFF THE CROSS-YGN INITIATIVE AND I CROSS-YGN WORKSHOP	5
2 “NUCLEAR AROUND US” - THE CROSS-YGN SOCIAL MEDIA COMPETITION	6
3 CROSS-YGN WORKSHOPS – MEETING STUDENTS AND EARLY CAREER PROFESSIONALS (PART I) 7	
3.1 II CROSS-YGN WORKSHOP – “ <i>YOUTH AT THE CORE</i> ”, BRATISLAVA, JULY 1, 2024, 1 ST ENEN2PLUS BSc AND MSc NUCLEAR COMPETITION AND SUMMER SCHOOL.....	7
3.2 III CROSS-YGN WORKSHOPS – “ <i>NUCLEAR FOR HEALTH - THE ROLE OF NUCLEAR SCIENCE FROM THE TARGET TO THE HOSPITAL</i> ” & “ <i>A NETWORK OF EUROPEAN YGNs</i> ” – MUNICH, SEPTEMBER 11, 2024, ENEN PhD EVENT & ECMP2024..	8
4 “POWERED BY PASSION” – THE CROSS-YGN PODCAST	9
5 CROSS-YGN WORKSHOPS – MEETING STUDENTS AND YOUNG PROFESSIONALS (PART II)	10
5.1 IV CROSS-YGN WORKSHOP - “ <i>AI IN ACTION: POWERING INNOVATION ACROSS NUCLEAR FIELDS</i> ” – ZAGREB, JUNE 3, 2025, ENYGF2025.....	10
5.2 V CROSS-YGN WORKSHOP - “ <i>NUCLEAR PATHS: EDUCATION, NETWORKS AND CAREERS OPPORTUNITIES</i> ” – BUDAPEST, JUNE 30, 2025, 2 ND ENEN2PLUS BSc AND MSc NUCLEAR COMPETITION AND SUMMER SCHOOL.....	10
5.3 VI CROSS-YGN WORKSHOP - “ <i>MY FUTURES IN NUCLEAR - FROM CURIOSITY TO CAREERS</i> ” – BOLOGNA, JULY 17, 2025, 4 TH ENEN EUROPEAN NUCLEAR COMPETITION FOR SECONDARY SCHOOL PUPILS.....	11
6 NESTET2026 – MEETING YGN PERSPECTIVES AND E&T EXPERTS	13
6.1 CROSS-YGN SURVEY - “ <i>LEARNING TOOLS AND STUDY HABITS IN NUCLEAR SCIENCE AND TECHNOLOGIES</i> ”, DECEMBER 2025 – FEBRUARY 2026, ONLINE	13
6.2 VII CROSS-YGN WORKSHOP - “ <i>EVOLVING SKILLS AND LEARNING TOOLS FOR A CHANGING NUCLEAR WORKFORCE</i> ”, MARCH 3, 2026, BRUSSELS.....	13
7 FOSTERING COLLABORATION ACROSS CONTINENTS	15
7.1 CROSS-YGN WEBINAR - “ <i>NUCLEAR EDUCATION & TRAINING IN AFRICA & EUROPE</i> ”, DECEMBER 4, 2025, ONLINE 15	
7.2 CROSS-YGN WEBINAR - “ <i>FROM TRAINING TO PRACTICE: EARLY CAREER MEDICAL PHYSICS IN AFRICA & EUROPE</i> ”, FEBRUARY 26, 2026, ONLINE	15
7.3 CROSS-YGN WEBINAR - “ <i>FUSION ENERGY: SHARED PERSPECTIVES FROM EUROPE AND AFRICA</i> ”, MAY 5, 2026, ONLINE 16	
CONCLUSIONS.....	17
ANNEX I - “NUCLEAR AROUND US” - THE CROSS-YGN SOCIAL MEDIA COMPETITION	19
ANNEX II - THE CROSS-YGN WORKSHOPS (2024-2026).....	20
ANNEX III – “POWERED BY PASSION” - THE CROSS-YGN PODCAST SERIES.....	25
ANNEX IV- NESTET 2026 – MEETING YGN PERSPECTIVES & E&T EXPERTS	26
ANNEX V- FOSTERING COLLABORATION ACROSS CONTINENTS.....	27
ANNEX VI – “I CHOSE THE NUCLEAR FIELD, BECAUSE...”	30

EXECUTIVE SUMMARY

In the framework of WP 3 T3.4 – ENS was responsible for setting up networking cross-Young Generation (YG) and cross-professional organizations.

This task focuses on bringing together junior nuclear professionals in order to strengthen them by broadening their views and facilitating cross-fertilization between different nuclear disciplines. We will also link to new junior networking actions foreseen in other projects, such as Pianoforte (NRT-09). In this way, we strengthen the support base of a common vision and strategy on how to attract next generation to nuclear studies and professions.

In order to achieve its goals, the cross-YG collaboration has been developed by exploring opportunities in other ENEN2Plus WPs and tasks, supporting them with cross-professionals contributions.

In the framework of WP 2 T2.4 – “Outreach towards pupils and teachers” – ENS is a partner of Outreach towards pupils and teachers activities.

BME as the WP2 lead co-organised a first pan-European video contest designed for secondary school pupils. Their task was to create a 3-minute short video on nuclear science. ENS was actively promoting the video contest among different secondary schools in Poland and Switzerland, and was part of the jury, who evaluated the videos (online and physically for the final stage).

Similarly, ENS supported ENEA in the organization of the second pan-European video contest, heading to the Secondary School Pupils Summer School in Bologna. Again, the students’ task was to create a 3-minute short video explaining nuclear science and applications. ENS actively promoted the competition online, was part of the jury, and supported the organization of a Cross-Young Generation Network (YGN) workshop among pupils and early career professionals in nuclear (WP 3.4)

In the framework of WP 3 T3.3 “Organizing events for BSc, MSc and PhD students” – ENS is a partner in organising events for BSc, MSc and PhD students.

In particular, ENS organised workshops involving the Cross-YGN initiative (WP 3 T3.4) in the framework of BSc and MSc competitions, summer camps, and ENEN PhD competitions, specifically targeting BSc, MSc and PhD students. These events aimed at highlight the multiple educational and career path that the nuclear sector offers better, as well as the strong cross-disciplinarity and collaboration among the different nuclear fields

Note – This document has been jointly reviewed and approved by all the YGNs involved in the project. The final review, and an additional brainstorming on potential proposals and new ideas for future call for projects, took place in hybrid mode in Leiden, on 21st April, during the IRIS 2026 - International Radioisotope Supply Chain Meeting, organised by ENS.

- In-person attendees: Mattia Baldoni (ENS), Letizia Canziani (ENS-YGN) and Miia Hurskainen (EFOM Early Career SIG), who also attended the IRIS conference
- Online attendees: Albert Civit Bertran (Fusenet), Carlos Vazquez Rodriguez (ENS-YGN) and Viktoria Herzner (IRPA-YGN)

1 KICKING-OFF THE CROSS-YGN INITIATIVE AND I CROSS-YGN WORKSHOP

In the first phase of the task ENS identified with a help of ENEN2Plus partners the networks and right contact persons of Young Generation Networks (YGNs), who could be invited for first brainstorming sessions.

After internal meetings (conducted in December 2022) with ENS-YGN to explain the scope of the activities and presentation of different ideas, a first kick-off call with YGN representatives was organised on February 9, 2023. The following networks were present:

- EFOMP Early Career Group, represented by Leticia Irazola Rosales
- FuseNet Student Council, represented by Jan Čečrdle
- IRPA YGN, represented by Sylvain Andresz
- ENS -YGN, represented by Andrea Kozlowski and Francisco Suarez Ortiz

At the first meeting ENS explained the purpose of the meeting including the goals of ENEN2Plus. Within the Tour de Table the networks explained the profiles of networks and members and expressed an interest in participating in cross-sectoral YGN collaborations activities.

On March 1, 2023 YGN representatives participated in brainstorming session targeting common subjects, where the Mural application was used. The following clusters dedicated to:

- Communications
- Education
- Cross sectoral working groups
- Climate

were identified as common subjects valid for all YGNs. The conclusions showed a high need to meet in person first.

On July 5, 2023, the first in person cross-sectoral YGNs took place in the framework of the ENEN2Plus Summer School for Pupils and Secondary Schools (see Deliverable 2.4) in Budapest, where the 1st cross-YGN workshop took place. There, the YGN representatives had the opportunity to have a first interaction with participating students, giving them an idea not only of the upcoming challenges and progress in the nuclear sector, but also of potential experiences and careers from multiple backgrounds (educational and professional). Moreover, the representatives from networks explained the ENEN2plus project and Task 3.4. goals, clarified their missions and decided to organise a pan-European contest run on social media in order to demystify the “nuclear” word.

2 “NUCLEAR AROUND US” - THE CROSS-YGN SOCIAL MEDIA COMPETITION

In Autumn 2023, the discussion on the Cross-YGN collaboration was resumed as Mattia Baldoni took over Emilia Janisz's roles representing ENS in the ENEN2Plus project. Moreover, the IRPA-YGN representative Sylvain Andresz was replaced by Joel Piechotka. Restarting the brainstorming session that took place in Budapest, the members discussed possible projects such as meetings, sponsorships, working groups, etc.

The first one to be realised has been the Social Media competition “Nuclear around us – Demystifying the words “nuclear” and “radiation” (See [ANNEX I](#)). The contest called for students and young professionals (under 35) to elaborate creative contents (visual, video, posts, multimedia...) to demystify the terms ‘nuclear’ and ‘radiation’, presenting a science-based contribution. From 11th January to 18th February 2024, participants had to submit their artworks to the working group by email. After having received almost 30 applications, the jury made up of members of each YGN - Leticia Irazola Rosales (EFOMP Early Career Group), Jan Čečrdle (FuseNet Student Council), Joel Piechotka (IRPA YGN), Andrea Kozłowski and Francisco Suarez Ortiz (ENS -YGN) - selected the ten finalists to go through to the second round. The final stage has been the public online voting for the best contribution, which has widely been shared on social networks and channels by all members of the collaboration.

The vote, open from March 5 to 13, 2024, collected more than 1.100 preferences. The winner of the contest was Jishant Talwar (35.5% of preferences), MSc student in Fusion Energy and Physics Engineering at the University of Stuttgart, who submitted [a short videoclip](#) explaining the basics of fission and fusion energy.

The winner was awarded with the publication of his contribution on all the young sections' social media platforms, a travel and participation grant to the European Research Reactor Conference (RRFM) in Warsaw, Poland, from April 21 to 25, 2024, and an Amazon voucher. The student appreciated the opportunity to attend the event in Warsaw, highlighting the engaging sessions and the many chances he had to network with fellow delegates, students, and experts in nuclear research.

3 CROSS-YGN WORKSHOPS – MEETING STUDENTS AND EARLY CAREER PROFESSIONALS (PART I)

Alongside the online competition, the cross-YGN cooperation started discussing multiple opportunities for in-person meetings and events. In particular, the idea of continuing creating workshops with students and early career professionals was considered as the most effective way to develop the cross-sectorial collaboration, while contributing also to the accomplishment of other ENEN2Plus tasks.

3.1 II Cross-YGN Workshop – “Youth at the core”, Bratislava, July 1, 2024, 1st ENEN2Plus BSc and MSc Nuclear Competition and Summer School

The first of a series of workshops took place in Bratislava, Slovakia, on July, 1 2024, during the 1st ENEN2Plus BSc and MSc Nuclear Competition and Summer School 2024.

Hosted by the Slovak Technical University (STUBA), the event “Youth at the Core” has been a great occasion to meet almost 40 BSc and MSc students from 19 countries, participating in the competition and representing different nuclear disciplines, like Nuclear Physics and Engineering, Medical Physics, Nuclear Waste Management and Safety, and Radiation Protection and Nuclear Fusion (See [ANNEX II – Section A](#))

Among the representatives of the YGNs involved in the project, Leticia Irazola Rosales (EFOMP SG), Francisco Suarez Ortiz (ENS-YGN), and Jan Čečrdle (Fusenet) shared their stories and experiences with the students attending the event, letting them explore the multiple opportunities that nuclear education paths can offer, as well as to present the active networks that gather nuclear youth all over Europe. The workshop was organised in two parts:

- *Workshop I – Your Future in Nuclear: Exploring a World of Career Opportunities* was indeed aimed to present the several job opportunities that the nuclear sector offers, sharing the personal experiences and stories of the YGNs representatives. By learning more about speakers’ professions, we wanted to highlight multiple education paths, different career opportunities, but also the interconnections between the many sectors of nuclear science and technology.

After the speakers’ presentations, students have been actively engaged with an interactive survey to explore their motivations, their expectations, and their goals for a career in nuclear (See [ANNEX VI](#) annex Vi). Among the outcomes, the choice of the nuclear field is mainly motivated by students’ passion and curiosity, which made them choose disciplines with highly innovative potential. In addition, the “social-added value” of nuclear sciences, their impact in shaping the future and making the difference, play an important role in motivating their choices. Looking at STEM subjects, physics (including nuclear, medical, subatomic, reactor) was the one which influenced them the most in their study and careers choices (+60 % of answers). Finally, asking about the most important factors while searching for a job opportunity, participants ranked at the top *good work-life balance*, followed by an *inspiring work environment* and *professional growth opportunities*.

- *Workshop II - YGNs in Nuclear* introduced the presence and the activities of YGNs, which gather nuclear students and early career professionals all over Europe. The session aimed to inform the students about these organisations and their role in supporting and activating young generations.

After the presentations, students have been distributed in working groups, to discuss separately, and then together, the challenges that YGNs could face in reaching out new members and be more visible, suggesting possible solutions and strategies. The debate of this final session has been particularly active, and fruitful for the organisers, who took note of the audience's opinions.

Over the summer 2024, Fusenet Student Council representative Jan Čečrdle has been replaced by James Tufnail, newly appointed chair.

3.2 III Cross-YGN Workshops – “Nuclear for Health - The role of nuclear science from the target to the hospital” & “A Network of European YGNs” – Munich, September 11, 2024, ENEN PhD Event & ECMP2024

The initiative then organised a new, double workshop, during the 5th European Congress for Medical Physics (ECMP) and the parallel ENEN PhD Event & Prize, on September 11, 2024 in Munich (See [ANNEX II – Section B](#)).

In the first part – “Nuclear for Health - The role of nuclear science from the target to the hospital”, Gawel Madejowski (ENS-YGN), Leticia Irazola Rosales (EFOMP) and Joel Piechotka (IRPA YGN) gave many insights on the supply chain of radioisotopes, from the targets irradiation and their transportation, to the application in hospitals and their waste management. By mixing work and personal experiences, our speakers highlighted the passion of young professionals in this crucial sector, stressing also the cross-disciplinary approach that characterises it.

Then, in the session “A Network of European YGNs”, Carlos Vázquez-Rodríguez (ENS-YGN), James Tufnail (Fusenet), together with Joel and Leticia presented the large network of the European YGNs, their opportunities, projects, and networking activities. The event attracted both the ENEN PhD finalists and several ECMP participants keen to learn more about the topics presented.

4 “POWERED BY PASSION” – THE CROSS-YGN PODCAST

In order to give continuity to the Cross-YGN activities beyond in-person meetings, the group started discussing other formats for the online engagement and finally opted for starting a podcast. “Powered by Passion” is a series of short interviews with early career professionals in different nuclear fields, aiming at sharing their paths, their experiences, and their motivations leading their careers and daily work.

With this podcast, the group wanted to highlight once again the multiple opportunities that nuclear sector can offer, as well as the big passion driving the professionals of this large community. So far, four episodes have been recorded:

- Episode 1 - Welcome To the Control Room: Matija Pisk (ENS-YGN)
- Episode 2 - A Key to Safe Medical Care: Nefeli Tzoumi (EFOMP)
- Episode 3 - Advancing Fusion on the International Stage: Laura Wheatley (Fusenet)
- Episode 4 - Saving Lives with Proton Beams: Jesús Garcia Ovejero (EFOMP)

The podcast series is online on [YouTube](#) and [Spotify](#), and has been promoted on social media channels and newsletters.

A second series has been recorded early 2026, with new episodes to be launched on social media channels in April-June 2026:

- Episode 1 – Finding Your Place in Medical Physics: Leticia Irazola Rosales (EFOMP)
- Episode 2 – "The Email That Started It All" | The Power of Mentoring: Anže Mihelčič (ENS-YGN)
- Episode 3 – Working with Radiation | Science, Safety, and Passion: Giuseppe Della Peruta (IRPA-YGN)
- Episode 4 – Innovation and Community in Medical Physics: Antonio Jreije (EFOMP)

See [ANNEX III](#)

5 CROSS-YGN WORKSHOPS – MEETING STUDENTS AND YOUNG PROFESSIONALS (PART II)

5.1 IV Cross-YGN Workshop - “*AI in Action: Powering Innovation Across Nuclear Fields*” – Zagreb, June 3, 2025, ENYGF2025

On the occasion of ENYGF2025, the Cross-YGN initiative decided to propose a thematic workshop targeting the large audience of the European Nuclear Young Generations Forum, which took place in Zagreb from June 2 to 6, 2025 (See [ANNEX II – Section C](#)).

The workshop, welcomed by the conference’s organisers, was titled “*AI in Action: Powering Innovation Across Nuclear Fields*”. The aim of this event was to highlight the cross-disciplinarity of innovation in nuclear, presenting in particular the advancements that AI is bringing to several fields. The speakers were:

- Fabian Paischer (Austria - Fusenet Student Council / AI for Fusion)
- Ivan Pribanic (Croatia – EFOMP Early Career Group / AI for Nuclear Medicine)
- Gabriel Pavel (Belgium – ENEN / AI and E&T)

Through dynamic presentations and open discussions, the speakers presented a clearer picture of current developments, practical use cases, and the challenges ahead. So, the audience had the opportunity to learn what are the benefits and the obstacles for implementing AI in a European framework, especially in the nuclear E&T (ENEN), but also the promising evolution of medical imaging due to the application of AI models (EFOMP) and the current applications in the study of plasma physics and fusion energy development (Fusetnet).

Furthermore, we conducted a survey with the audience to understand its perception and approaches to AI. When thinking about AI, “*future*”, “*innovation*” and “*computer*” are the most chosen words written by the respondents, 82 % of which also believe that, in the next five years, AI will *positively* change their works. Answering about the main expected benefits, participants highlighted an increased efficiency, improved data management and a lighter workload.

5.2 V Cross-YGN Workshop - “*Nuclear Paths: Education, Networks and Careers Opportunities*” – Budapest, June 30, 2025, 2nd ENEN2Plus BSc and MSc Nuclear Competition and Summer School

Upon the invitation of the Budapest University of Technology and Economics (BME), the organiser of this Summer School, the cross-YGN initiative decided to replicate the successful format offered the previous year in Bratislava (See [ANNEX II – Section D](#)).

All the YGNs involved in the initiative participated in the event with their volunteers:

- Zsófia Szállási and Adam Both (MNT FINE - Hungarian YGN / ENS-YGN)
- Albert Civit Bertran (Fusetnet Student Council)
- Viktoria Herzner (ÖVS / IRPA YGN)
- Antonio Jreije (EFOMP Early Careers Group)

Engaging with a similar target audience (international BSc and MSc graduates), the collaboration opted for structuring the workshop in two sub-sessions, tackling two different aspects of the life in the nuclear community:

Workshop I – “Nuclear Futures - A World of Career Opportunities” focused on showcasing the wide range of career opportunities available in the nuclear sector, while also giving space to the personal stories and experiences of YGN representatives. Through insights into the speakers' professional journeys, the session aimed to illustrate the diversity of educational backgrounds, the variety of career paths, and the strong links between different areas within nuclear science and technology.

Speakers' presentations have been followed by a very active Q&A session, with the students inspired by the stories and the careers paths they heard. The volunteers received multiple questions about their personal experiences, challenges they had to face, and suggestions on how to take the first steps into the job market.

In order to compare the audience's feedback with the results collected in the previous edition (See [ANNEX VI](#) annex Vi), we started the session with a new survey, investigating again the participants' expectations, and their goals for a career

in nuclear. “*Passion*”, “*interest*” and “*innovation*” are the main key words shared when asking why they chose the “nuclear field” at school, showing again the great motivation that nuclear disciplines inspire in young students. *Physics* is leading again the list of STEM subjects which influenced them the most in their study and careers choices (+75 % of answers). Finally, asking about the most important factors while searching for a job opportunity, participants equally ranked at the top *good work-life balance* and *professional growth opportunities*, while a *competitive salary* overtook *inspiring work environment* compared to the previous edition.

Workshop II – “Nuclear Families - Networking in the nuclear field” aimed at presenting the different YGNs in Europe, their projects and networking opportunities. This year, it has been positive to see an increased awareness about YGNs among the students. Indeed, some of them already got in touch with them and get involved in the YGNs activities and events. The interest in learning more about these nuclear networks made the audience asking for further info and direct contacts. The exchange with the speakers continued during the following welcome cocktail.

5.3 VI Cross-YGN Workshop - “My Futures in Nuclear - From Curiosity to Careers” – Bologna, July 17, 2025, 4th ENEN European Nuclear Competition for Secondary School Pupils

ENS also supported the organisation of the 4th Nuclear Competition for Secondary Schools, the preparation of which started on October 8, 2024. ENS actively contributed to discussions on evaluation criteria and agenda. In particular, ENS proposed the organisation of a workshop targeting the pupils, inviting early career professionals to share their education and career paths to meet and engage with them. The workshop took place at the ENEA research centre in Brasimone, Italy, co-organised within the cross-YGN initiative.

The jury, of which ENS was a member, finally selected 15 finalists teams out of 150 submissions. An audience of 30 students (and 15 teachers) from 9 different countries gathered in Bologna for a one-week summer camp, from July 14 to 18.

For the first time, the cross-YGN collaboration had to engage with this kind of audience (12-16 years old), a challenge that required the group additional brainstorming and work on how to approach the pupils, how structure the workshop, and how to adapt our message. Young finalists submitted impressive works explaining nuclear subjects in a 3-minute creative video, led by their interests in the subjects and supported by their teachers. Therefore, we decided to capitalise on the momentum and mainly invest on the pupils' passion and interest in nuclear science, technologies and applications.

Following some online meetings with the cross-YGN representatives and volunteers who had previous experiences in projects with secondary schools, we decided to plan the workshop as a mix of gamification and interactive presentations (See [ANNEX II – Section E](#))

The call for volunteers speaking at this event was welcomed by all the associations, which opted for mostly involving national branches, representing both local and international networks:

- Andrea Di Ronco (Italian Nuclear YG, ENS-Young Generation Network)
- Elena Cantoni & Francesca Punzetti (Italian Medical Physics Association | Youth - EFOMP)
- Giorgia Stendardo & Andrea Cirillo (Italian Radioprotection Association | Youth – IRPA)
- James Tufnail (FuseNet Student Council)

The workshop took place as follows:

- Icebreaker – *First Words, First Thoughts: Write the first word that comes to mind when you hear about ...* Open questions to the audience - before starting exploring potential careers in nuclear, we asked them their first ideas when talking about a nuclear engineer, a radiation protection expert, a medical physicist, and a fusion researcher
- Game – *Guess who / Who are the young professionals behind the clues?* – Inspired by the homonymous board game, we let the pupils slowly discover the identity of the volunteers, kept secret until then. Each speaker had to share three clues about his/her job, and the students, organised into five teams, had to guess the nuclear profession as fast as possible.
- Presentations – *My path in the nuclear sector...* Each speaker shared with the audience the personal experiences they had to become the nuclear professionals they are today. Where did they were at the pupils' age? How did they enter the nuclear community? Mixing fun facts and practical suggestions, the speakers inspired the audience of passionate students, who asked several questions after each presentation. The active engagement and participation of the pupils recognised the success of this format.

The day after, closing the Summer School, we received several positive feedback from the students and their teachers, who particularly appreciated the meeting with the early career professionals and the insights they got during the workshop.

6 NESTET2026 – MEETING YGN PERSPECTIVES AND E&T EXPERTS

6.1 Cross-YGN Survey - “Learning Tools and Study Habits in Nuclear Science and Technologies”, December 2025 – February 2026, Online

NESTet2026, organised by ENS with the support of ENEN, is the meeting point designed to facilitate the exchange of information, collaboration and the sharing of best practices in nuclear E&T in engineering science and technology. It represents an important networking opportunity for better coordination and collaboration between different stakeholders, responsible for human resources and skills development, as well as for the development of E&T programmes in the nuclear sector.

The event, which took place in Brussels from March 2 to 4, 2026, represented a great opportunity for the Cross-YGN initiative to join the discussion, meet nuclear E&T experts, and share the voice and positions of early career professionals in the nuclear sector.

Led by this purpose, the initiative started preparing a survey made for the YGs in nuclear. Each YGN invited current students and early career professionals to share how they approached (or are still approaching) learning in nuclear science, technologies and radiation-related fields. By capturing experiences across different study generations, the survey aimed to understand how tools, habits, and learning styles have evolved over time across different generations, and its results eventually supported the Cross-YGN contribution to the NESTet 2026 Conference.

The survey “Learning Tools and Study Habits in Nuclear Science and Technologies”, has been structured on 21 questions (18 closed, 3 open) and distributed within the YGN networks, and has been left open from December 2025 to early February 2026. Globally, the initiative collected 80 submissions from participants representing nuclear fission and fusion engineering, radiation protection, and medical physics from 16 different countries.

The main results, then presented at NESTet 2026, are also illustrated in the [ANNEX IV \(PDF Presentation – Main Results\)](#).

6.2 VII Cross-YGN Workshop - “Evolving Skills and Learning Tools for a Changing Nuclear Workforce”, March 3, 2026, Brussels

Alongside the work on the survey, the Cross-YGN initiative continued the discussion around the organisation of a workshop at NESTet2026 in Brussels, entitled “Evolving Skills and Learning Tools for a Changing Nuclear Workforce”.

The workshop has been moderated by the YGN representatives invited to Brussels:

- Viktoria Herzner (IRPA YGN)
- Alber Civit Bertran (Fusenet Student Council)
- Carlos Vazquez Rodriguez (ENS-YGN)
- Miia Hurskainen (EFOMP Early Career SIG)

and

- Mattia Baldoni (ENS)

The session, one hour and a half long, has been structured in two parts:

- Presentation of the Cross-YGN Survey main results (see [ANNEX IV - PDF Presentation – Main Results](#)PDF Presentation – Main Results), offering a first-hand, evidence-based insight into how early career professionals from multiple nuclear fields (engineering, medical physics, fusion, radiation protection) experience today's learning ecosystems, what has changed compared to “previous generations,” and how the sector can adapt to remain attractive and effective.
- Interactive session with the audience – “From Challenges to Solutions: Rethinking Nuclear Education & Skills” (see [ANNEX IV – Workshop Exercise](#)PDF Presentation – Main Results)

For the second part, the Cross-YGN initiative created a dedicated exercise for small working groups based on realistic scenarios, linked to current trends and evolution in the nuclear sector, E&T, and workforce. By analysing the different cases, each group should highlight barriers, priorities and potential solutions to the following topics:

- Generational Shift in Learning Styles & Expectations
- Digitalisation, AI & New Learning Tools
- Aligning Academic Education and Industry Needs (Skills Mismatch & Workforce Forecasting Challenges + University–Industry Disconnection)
- Attractiveness & Perception of Nuclear Careers

Following very active exchanges within the groups, facilitated by the YGN representatives, we collected the main outcomes and discussed them with the participants.

The discussions highlighted a shared recognition that nuclear E&T is undergoing significant transformation, driven by generational shifts, digitalisation, and evolving workforce needs. Participants emphasised changes in learning behaviours, including reduced attention spans, increased reliance on digital tools, and greater expectations for flexibility and immediacy.

At the same time, structural tensions persist, notably between traditional education models and emerging learning styles, as well as between the pace of academia and the rapidly evolving demands of industry. Across groups, a common concern was maintaining depth, rigour, and safety culture while adapting to these changes.

Building on these observations, participants identified a range of practical actions to strengthen the nuclear skills ecosystem. These included increasing hands-on, real-world learning experiences and earlier exposure to industry, integrating digital tools and AI in a structured and critically informed way, and fostering stronger collaboration between academia and industry in curriculum design and research activities. Improving the attractiveness of nuclear careers also emerged as a key priority, with a focus on more effective communication, exposure to real applications, and highlighting the societal value of nuclear technologies. Overall, the workshop underscored the need for adaptable, collaborative, and forward-looking approaches to ensure a resilient and future-ready nuclear workforce.

Motivated by the appreciation and the positive feedback received from the experts participating in the workshop, the Cross-YGN initiative decided to continue working

together on this topic, preparing a paper based on this experience. The abstract “From Learning to Workforce: A Cross-YGN Approach to Rethinking Nuclear Education and Skills”, has been submitted and accepted for the International Youth Nuclear Congress – IYNC 2026, taking place in Avignon (France), from October 4 to 9, 2026.

7 FOSTERING COLLABORATION ACROSS CONTINENTS

7.1 Cross-YGN Webinar - “Nuclear Education & Training in Africa & Europe”, December 4, 2025, Online

Following the input of the IRPA YGN, the cross-YGN initiative got in touch with an international collaboration between Women in Nuclear Global – Innovation Department (WiNI), and the Radiation Protection and Nuclear Safety-YGN (RPNS-YGN), which is currently hosting a webinar series on holistic approaches to nuclear science and technology.

After the first exchanges, both initiatives agreed on co-organise a first online session, focusing on education and training (E&T) opportunities and needs between Europe and Africa. The webinar, finally planned for December 4, 2025 at 12:00 CET, attracted more than 200 registrations and it has been streamed via Zoom (See [ANNEX V – Section A](#))

“Nuclear Education & Training in Africa & Europe” – this is the title of the successful session, which hosted on stage:

- Margaret Chege (Lecturer, Kenyatta University, Kenya Patron, RPNS-YN, Kenya) and Mattia Baldoni (Communications and Project Manager, European Nuclear Society) for the welcome speeches
- Raphael Chesori (Africa Young Generation in Nuclear (AYGN)
- Raul Marques (Vice-Chair European Nuclear Society-YGN) and Pau Aragon Grabiell (Chair, Jovenes Nucleares)
- Florencia Renteria (WiNI) and Viktoria Herzner (IRPA YGN) – Moderators
- Edwin Kagai (Secretary, RPNS-YN, Kenya) and Mattia Baldoni (ENS) for the closing remarks

This webinar has been particularly appreciated for the exploration of the nuclear E&T landscapes across the continents, the mutual exchange on programmes, opportunities, and collaborative pathways for students and early career professionals interested in joining the nuclear sector.

Speakers have shared insights on the European E&T framework in nuclear disciplines, key networks and organizations supporting international mobility and career development, outreach activities and accessible opportunities for engagement in nuclear science, the African perspective on current educational frameworks, emerging needs, and collaboration opportunities.

The session has been recorded, and it is [available on YouTube](#).

7.2 Cross-YGN Webinar - “From Training to Practice: Early Career Medical Physics in Africa & Europe”, February 26, 2026, Online

Built on the success of the first episode, the international collaboration prepared and delivered a new session, this time focused on medical physics.

“From Training to Practice: Early Career Medical Physics in Africa & Europe”, scheduled on February 26, 2026 at 12:00 CET, collected again more than 200 registrations and it has been streamed via Zoom (See [ANNEX V – Section B](#))

On stage:

- Margaret Chege (Lecturer, Kenyatta University, Kenya Patron, RPNS-YN, Kenya) and Mattia Baldoni (Communications and Project Manager, European Nuclear Society) for the welcome speeches
- Raphael Chesori (Africa Young Generation in Nuclear (AYGN)
- Anna Maria Fanou and Leticia Irazola Rosales (EFOMP Early Career Group)
- Hazel Ropafadzo Ruzani (Young medical physicist from Zimbabwe)
- Florencia Renteria (WiNI) and Viktoria Herzner (IRPA YGN) – Moderators
- Edwin Kagai (Secretary, RPNS-YN, Kenya) and Mattia Baldoni (ENS) for the closing remarks

Also, this webinar focused on mutual learning, knowledge exchange, and practical recommendations, and explored E&T structures, early-career challenges and opportunities, the status of the access to clinical practice, equipment, and mentorship, and how can a stronger Africa–Europe collaboration support young professionals in the field and patient care.

The session has been recorded, and it is [available on YouTube](#).

7.3 Cross-YGN Webinar - “Fusion Energy: Shared Perspectives from Europe and Africa”, May 5, 2026, Online

The final episode of this series explored the field of fusion energy and technologies, showing how research and innovation are advancing at the international level.

“Fusion Energy: Shared Perspectives from Europe and Africa”, scheduled on May 5, 2026 at 13:00 CET, attracted more than 200 registrations and it has been streamed via Zoom (See [ANNEX V - Section C](#))

On stage:

- Edwin Kagai (Secretary, RPNS-YN, Kenya) and Mattia Baldoni (Communications and Project Manager, European Nuclear Society) for the welcome speeches
- Arsene Tema Biwole (MIT Researcher, Cameroon-USA) & Darío Cruz (FuseNet Executive Officer)
- Umar Farouk Ahmad (PhD Student & Nuclear Research Fellow, China-Nigeria)
- Florencia Renteria (WiNI) and Viktoria Herzner (IRPA YGN) – Moderators
- Fadhili Konzi (Coordinator of RPNS-YN, Kenya) and Mattia Baldoni (ENS) for the closing remarks

The webinar opened with an introduction on basics & applications of fusion technologies, followed by an overview of the main projects under development in Europe, as well as of E&T projects, especially explaining the role of FuseNet and the opportunities it offers. The second part moved towards the personal experience of the speaker, who started his

trip into fusion world from Nigeria, then presenting a broader perspective on what's going on in Africa, with a special focus on the Africa Fusion Energy Hub.

The session has been recorded, and it is [available on YouTube](#).

CONCLUSIONS

The Cross-YGN initiative has successfully demonstrated the value and impact of structured collaboration among Young Generation Networks across different nuclear disciplines. By bringing together organisations representing nuclear engineering, medical physics, radiation protection, and fusion, the initiative has created a unique platform for cross-sectoral exchange, enabling early career professionals and students to broaden their perspectives, better understand the diversity of the nuclear field, and actively engage in shaping its future.

Over the course of the project, a wide range of activities have been successfully implemented, combining outreach, engagement, and knowledge-sharing formats, which have also reached diverse audiences (from secondary school pupils to PhD candidates and early-career professionals) and have contributed to increasing the visibility, accessibility, and attractiveness of nuclear careers.

A key achievement of the initiative lies in its ability to create meaningful, two-way engagement with its target audiences. The workshops, in particular, proved highly effective in fostering interaction, encouraging participants to reflect on their learning paths, career expectations, and the evolving needs of the nuclear sector. The integration of interactive formats, including surveys, group discussions, and scenario-based exercises, allowed the initiative not only to disseminate information, but also to collect valuable, first-hand insights. These insights culminated in the Cross-YGN survey and the NESTet2026 workshop, which provided an evidence-based perspective on generational shifts in learning, the role of digitalisation and AI, and the alignment between education and workforce needs.

The collaboration among YGNs has been a central strength of the initiative. It enabled the combining of complementary expertise, networks, and communication channels, significantly amplifying outreach and impact. Importantly, it fostered a culture of mutual learning and cross-fertilisation between disciplines that often operate in parallel. This interdisciplinary dimension proved particularly valuable in highlighting shared challenges, such as skills gaps, perception issues, and the integration of new technologies, while also identifying common opportunities for improvement.

Furthermore, the collaboration strengthened connections not only within Europe but also beyond, as illustrated by the joint webinars with African partners, opening pathways for broader international dialogue and cooperation.

Beyond its immediate outputs, the Cross-YGN initiative has laid the foundations for a more structured and sustainable engagement of young generations within the nuclear sector. The positive feedback received across all activities, the continued interest from participants, and the follow-up actions already initiated (e.g. scientific dissemination at international conferences) demonstrate the relevance and potential of this approach.

The initiative has shown that early career professionals are not only beneficiaries of education and training systems, but also active contributors to their evolution, capable

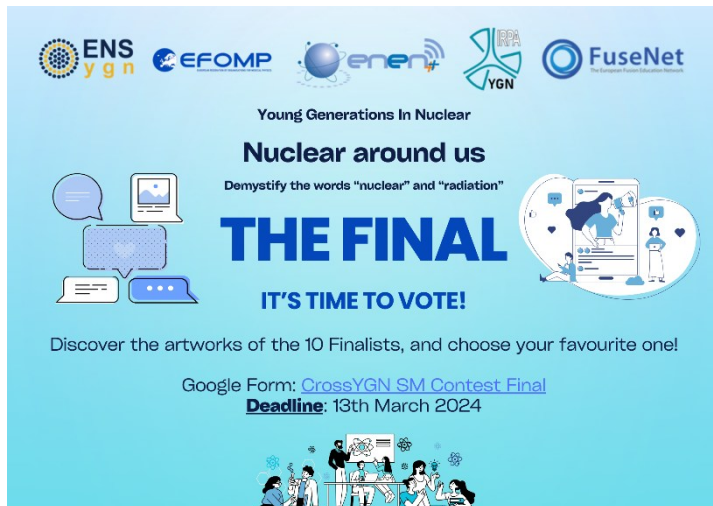
of providing valuable insights and driving innovation in how knowledge is shared and developed.

Looking ahead, several perspectives emerge for the continuation of this work. The Cross-YGN experience highlights the benefit of maintaining structured exchanges among Young Generation Networks, building on the connections and practices established during the project. There is scope to continue organising joint activities, sharing experiences across disciplines, and progressively strengthening links with academia and industry.

At the same time, some of the challenges identified, such as skills alignment, visibility of career pathways, and access to learning resources, would benefit from further exploration on a broader scale. The approaches tested within this initiative, particularly interactive workshops and targeted surveys, could be reused and expanded to gather more comprehensive evidence and support future reflections at European level.

In this context, a continuation under a future EU framework could provide an opportunity to consolidate these efforts, while keeping a pragmatic and incremental approach. The Cross-YGN initiative has shown that well-coordinated actions at youth level can generate meaningful engagement and insights, offering a useful starting point for future developments.

ANNEX I - “Nuclear Around Us” - The Cross-YGN Social Media Competition



Social Media Contest „Nuclear around us“ Poster & the award winner at RRFM2024

Link to the winner's video publication: [YouTube](#)

ANNEX II - The Cross-YGN Workshops (2024-2026)

- a) II Cross-YGN Workshop – “Youth at the core”, Bratislava, July 1, 2024 1st BSc and MSc Nuclear Competition and Summer School



BSc and MSc Nuclear Competition and Summer School, Bratislava, July 1-5, 2024



Cross-YGN Workshop Poster



Participants and Speakers in Bratislava

- b) III Cross-YGN Workshops – “Nuclear for Health - The role of nuclear science from the target to the hospital” & “A Network of European YGNs” – Munich, September 11, 2024, ENEN PhD Event & ECMP2024







Cross-YGN Workshops

11 September 2024, 16:00 - 18:00
Science Congress Center Munich, Germany

Nuclear for Health

The role of nuclear science from the target to the hospital



JOIN US, explore the radioisotope supply chain and discover how young professionals are driving innovation & research in nuclear disciplines, from production to patient care.

Registration:
Link in the post

A Network of European YGNs

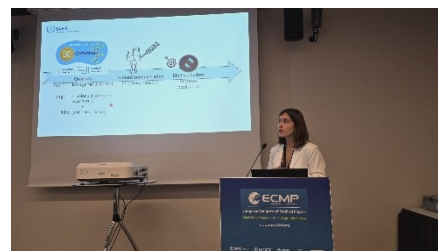
Opportunities for young scientists and their mentors



YGNs will present their activities and the opportunities they offer, addressing PhDs, junior professionals, or senior experts, who could share them with younger colleagues or mentees.

Funded by the European Union

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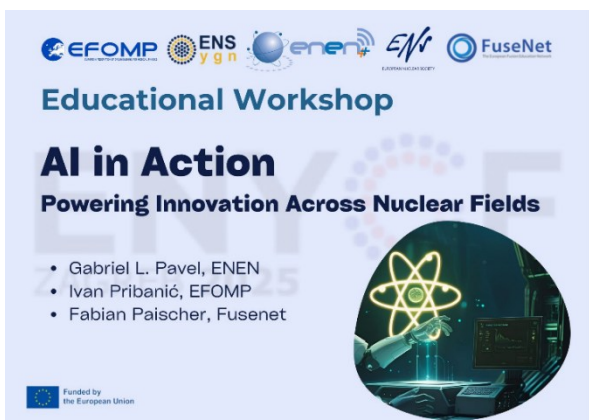


Cross-YGN Workshops Posters



YGN Speakers and Moderator in Munich

c) IV Cross-YGN Workshop - “AI in Action: Powering Innovation Across Nuclear Fields”
– Zagreb, June 3, 2025, ENYGF2025



*Cross-YGN Workshop Poster
and Speakers in Zagreb*

d) V Cross-YGN Workshop - “Nuclear Paths: Education, Networks and Careers Opportunities” – Budapest, June 30, 2025, 2nd BSc and MSc Nuclear Competition and Summer School



Cross-YGN Workshop and Speakers in Budapest

- e) VI Cross-YGN Workshop - “My FutureS in Nuclear - From Curiosity to CareerS” – Bologna, July 17, 2025, 4th ENEN European Nuclear Competition for Secondary School Pupils



ANNEX III – “Powered by Passion” - The Cross-YGN Podcast Series



Cross-YGN Podcast and some episodes' covers - Season 1 and 2

ANNEX IV– NESTet 2026 – Meeting YGN Perspectives & E&T Experts

- a. Cross-YGN Survey - “Learning Tools and Study Habits in Nuclear Science and Technologies”, December 2025 – February 2026
 - i) [PDF Presentation – Main Results](#)
 - ii) [Workshop Exercise - Scenarios](#)
 - iii) Pictures from the VII cross-YNG Workshop “From Challenges to Solutions: Rethinking Nuclear Education & Skills” (below)



ANNEX V- Fostering Collaboration Across Continents

- a. Cross-YGN Webinar - “Nuclear Education & Training in Africa & Europe”, December 4, 2025, Online










Cross-YGN Webinar

Nuclear Education & Training in African and European Landscape

4th December 2025,
12:00 CET / 14:00 EAT

 **Online**



Register now!

WIN
Windsor is Windsor

WORLD NUCLEAR
ASSOCIATION

ENS

ENEA

YOUNG
NUCLEAR
NETWORK

AYGN

Cross-YGN Webinar

Nuclear Education & Training in Africa and Europe Landscape

December 4th, 2025

Participants visible in the Zoom grid:

- Wakiba Hironori
- Eni
- Yusuf Saifullah
- Enrico Di Stefano, IAEA
- Enrico Di Stefano, IAEA
- Enrico Di Stefano, IAEA

AYGN Strategic Role

- **Awareness & Outreach:** Webinars, school/university programs, Student Competition
- **Capacity Building:**
 - Training & mentorship with IAEA, AECOT, ADB, WHO, Generation Atomic
 - AYGN Support Student Exchange Programmes through bilateral cooperations
- **Knowledge Transfer Platforms:** African Youth Nuclear Summit/ Regional Stakeholders foras
- **Policy Engagement:** African representation at IAEA GCT, NP Conferences, UNFCCC COP
- **Projects members involve in:** Radiotherapy, radiopharmacy, isotope hydrology, pest control, Radiation protection, Environmental monitoring, NOT etc



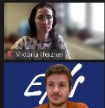
Welcome speech and remarks



Margaret Chege, PhD
Lecturer, Kenyatta University, Kenya
Patron, NPNS-VN, Kenya



Mattia Baldoni
Communications and Project Manager, European Nuclear Society



(SOME OF) OUR ACTIVITIES

JOVENES NUCLEARES

- SE ORABAMOS
- TRABAJAMOS EN EQUIPO
- USAMOS TECH-CAE
- CONFERENCIAS
- CARRERAS DE BOMBEROS
- JUEGOS DE EQUIPO
- JUEGOS DE BOMBEROS
- JUEGOS DE EQUIPO
- JUEGOS DE BOMBEROS
- JUEGOS DE EQUIPO
- JUEGOS DE BOMBEROS

DERIBANDO MITOS



European Nuclear Society Young Generation Network

30 years of connecting students and young professionals





Raul Tacanho Marques

Raul Tacanho Marques, ENS-YGN Vice-chair, raul.marques@ensygn.org
 Nuclear Education & Training in Africa and Europe Landscape Webinar

Other opportunities



• **Education Hubs:**



Nuclear Education



- <https://nuclear-education.eu/>
- Courses
- Job offers
- List of institutions

• **International Programmes:**





b. Cross-YGN Webinar - “From Training to Practice: Early Career Medical Physics in Africa & Europe”, February 26, 2026, Online

Cross-YGN Webinar
From Training to Practice: Early Career Medical Physics in Africa and Europe
 26th February 2026
 12:00 CET / 14:00 EAT
 Online
 Register now!

Cross-YGN Webinar
From Training to Practice: Early Career Medical Physics in Africa and Europe
 February 26th, 2026

TRUE TALES OF AN EARLY CAREER MEDICAL PHYSICS
Navigating Scarcity through Innovation, Research, and Community

Professionals Vision and Experiences

Florencia Renteria, PhD WINI Co-leader Women in Nuclear Global (Moderator)	Anna Maria Fanou EFOMP Early Career Medical Physicists SIG, Greece (Speaker)	Letizia Irazola PhD in Medical Physics, Spain (Speaker)	Hazel Ropafadzo Ruzani University of Zimbabwe Zimbabwe (Speaker)
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Participant grid including: Gattia Baldoni, Maria Konzi, Fadhilli Konzi, Francisca Gyam..., Mohammed Sa..., Wasim Akram B, Vincent David..., Alkaterini Fanou, Laurie Bradley, Nkateko Malule...

Our activities

- Attempt to map in each country:
 - Medical Physics Training
 - How to obtain the specialization/license in Medical Physics
- A survey was conducted in July 2024.

How to become an MPE in Europe?

Focus Group: European EC

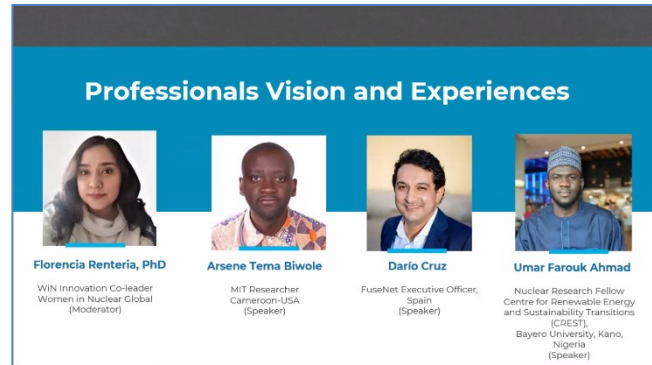
SIG

c. Cross-YGN Webinar - “Fusion Energy: Shared Perspectives from Europe and Africa”,
May 5, 2026, Online



Cross-YGN Webinar
Fusion Energy: Shared Perspectives from Europe and Africa
5th May 2026
13:00 CEST / 14:00 EAT
Online

Register now!

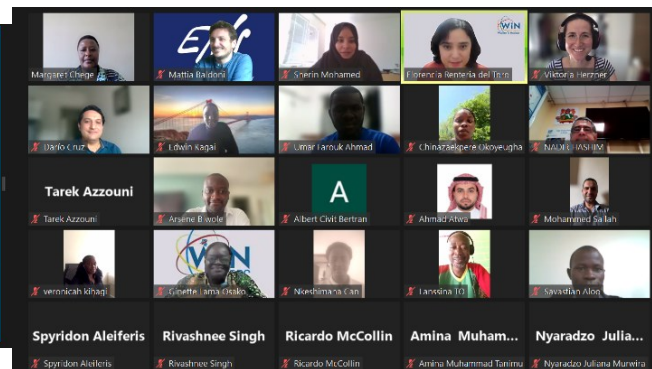


Professionals Vision and Experiences

			
Florescia Renteria, PhD WIN Innovation Co-leader Women in Nuclear Global (Moderator)	Arsene Tema Biwole MIT Researcher Cameroon-USA (Speaker)	Dario Cruz FuseNet Executive Officer, Spain (Speaker)	Umar Farouk Ahmad Nuclear Research Fellow Centre for Renewable Energy and Sustainability Transitions (CREST), Bayero University, Kano, Nigeria (Speaker)

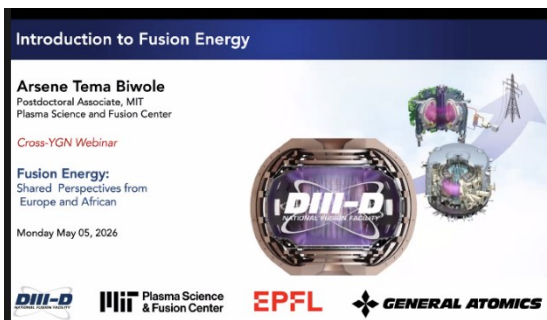


My Path Toward Fusion Research and The Africa Fusion Energy Research Consortium (AFERC)
Umar Farouk Ahmad
Cross-YGN Webinar
Fusion Energy: Shared Perspectives from Europe and Africa
5th May 2026



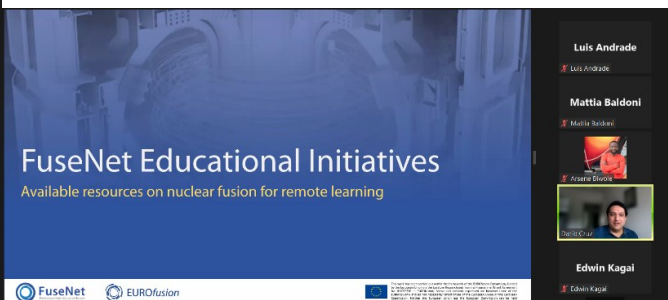
Attendee Grid (20 participants):

- Margaret Obeng, Mattia Baldoni, Shenn Mohamed, Florescia Renteria del Toro, Victor Hernandez
- Dario Cruz, Edwin Kagal, Umar Farouk Ahmad, Chinasabera ukonye-gha, Numa WSM
- Tarek Azzouni, Arsene Biwole, Albert Civi Bertran, Ahmad Alwa, Mohammed Salah
- Yemichah Khag, Girette Juma Chaka, Nwemaka Can, Lareina D, Savitran Alor
- Spyridon Aleiferis, Rivashnee Singh, Ricardo McCollin, Amina Muham..., Nyaradzo Julia...



Introduction to Fusion Energy
Arsene Tema Biwole
Postdoctoral Associate, MIT
Plasma Science and Fusion Center
Cross-YGN Webinar
Fusion Energy:
Shared Perspectives from
Europe and African
Monday May 05, 2026



FuseNet Educational Initiatives
Available resources on nuclear fusion for remote learning

Attendee Grid (5 participants):

- Luis Andrade
- Mattia Baldoni
- Amina Muham...
- Edwin Kagal

ANNEX VI – “I chose the nuclear field, because...”

Survey Reflections from BSc and MSc Students at Cross-YGN Events

Introduction

In the framework of the *ENEN2Plus Working Package 3 / Task 3.4* – a cross-YGN initiative has been established to bring together junior nuclear researchers and professionals in order to strengthen them by broadening their views and facilitating cross-fertilisation between different nuclear disciplines.

The **European Nuclear Society** (ENS) is the leading partner of this Task, which involves:

- **European Nuclear Society Young Generation Network** (ENS-YGN)
- **European Federation of Organisations for Medical Physics** (EFOMP) **Early Careers Group**
- **International Radiation Protection Association Young Generation Network** (IRPA YGN)
- **Fusenet Student Council**

In order to achieve its goals, the cross-YG collaboration has been developed by exploring opportunities in other ENEN2Plus WPs and Tasks, supporting them with cross-sectorial contributions.

In particular, the cross-YGN initiative organised several workshops linked to the Task 3.3, focusing on the organisation of competitions and summer schools specifically targeting BSc, MSc and PhD students.

The cross-YGN workshops have mainly aimed at **highlighting the multiple educational and career paths that the nuclear sector offers**, as well as **the strong cross-disciplinarity and collaboration among the different nuclear fields**.

Surveys with BSc and MSc nuclear graduates

The cross-YGN organised a couple of workshops opening two editions of the ENEN2Plus BSc and MSc Nuclear Competition and Summer School:

- **1st July 2024 - Cross-YGN Workshop – “Youth at the core”, Bratislava** (1st BSc and MSc Nuclear Competition and Summer School)
- **30th June 2025 - Cross-YGN Workshop - “Nuclear Paths: Education, Networks and Careers Opportunities” – Budapest**, (2nd BSc and MSc Nuclear Competition and Summer School)

More details are available in the Deliverables 3.4.

Both events gave the initiative the opportunity to engage with participants already shaping their education, and potentially their future, in the nuclear field, ranging from engineering to medical physics, from radiation protection to fusion and beyond. Considering this target audience, the cross-YGN collaboration decided to develop its workshops on two levels:

- **Presenting YGNs in Nuclear** – YGNs gathers nuclear students and young professionals all over Europe, but sometimes they have to face challenges related to engagement and visibility. That’s why these sessions aimed at informing the participants about these organisations, their activities and their role in supporting and activating young generations in the nuclear community.

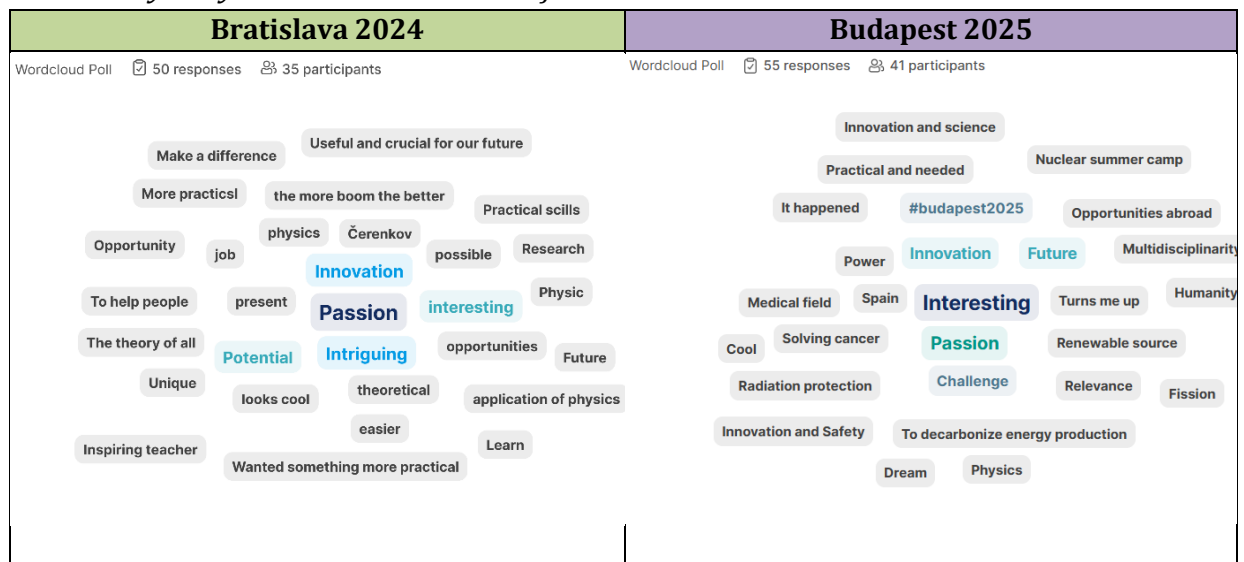
- **Exploring multiple career paths in nuclear from the real experiences of young professionals in nuclear**, representing the YGNs involved in the initiative. Talking to an audience approaching the job market, the speakers shared their stories to inspire them, and highlight multiple education and career opportunities, but also the interconnections between the many sectors of nuclear science and technology.

Regarding this part, the cross-YGN initiative decided to open both workshops with short survey, asking both audiences the same questions each year, to investigate the motivations and the expectations behind the choice of an education and career path in the nuclear sector.

The surveys have been created and performed on the online platform **Slido**, and involved totally **78 respondents** (36 in Bratislava, and 42 in Budapest).

Here below you can find the questions and the results from both editions:

I. Why did you choose the “nuclear field” at school?

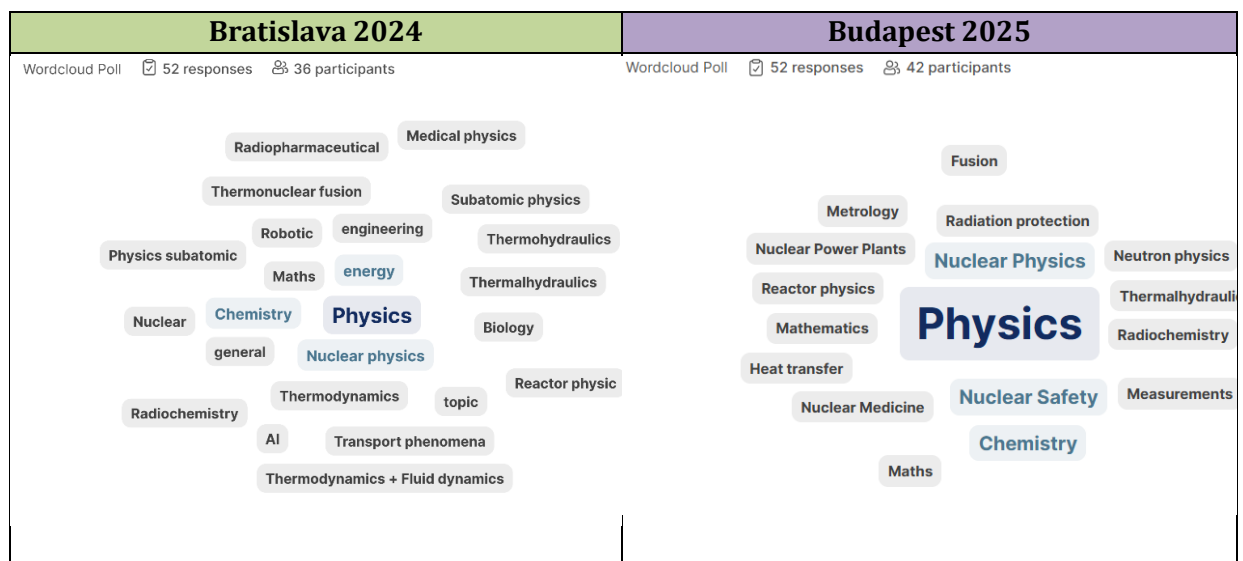


Results

- Across both editions, students consistently mentioned **personal passion and interest**, **intellectual curiosity**, and the sense of **working on something innovative and meaningful** as their key motivations. Words like *"intriguing"*, *"fascinating"*, *"cool"*, and *"innovative"* frequently appeared.
- In addition, many students highlighted **socially valuable goals**, such as:
 - Contributing to **decarbonisation**
 - **Fighting cancer** and advancing medical applications
 - Supporting a **safer and more sustainable future**

This indicates that many young applicants are not only technically driven, but also **motivated by impact**, seeing nuclear as a tool for **positive societal change**.
- Interestingly, several responses also framed nuclear as a **practical and skill-based field**, with **good career prospects** and **hands-on opportunities**. This combination of **intellectual challenge**, **real-world impact**, and **job potential** appears to be a compelling factor.

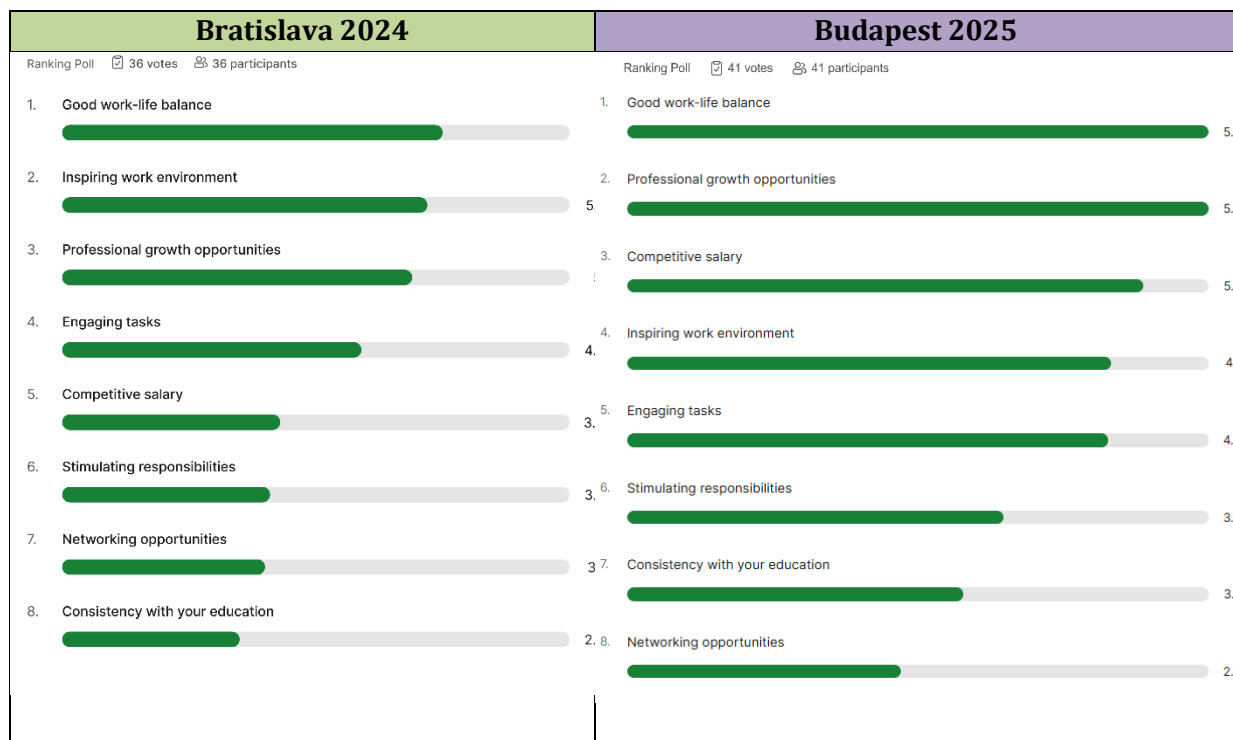
II. Which STEM subject influenced you the most?



Results

- **Physics is the anchor, but not alone.**
In both years, **Physics** — including subcategories such as **nuclear physics**, **medical physics**, and **reactor physics** — was the most influential subject, selected by a large majority (+60 % in Bratislava, +75 % in Budapest). This confirms that physics remains the **primary entry point** into the nuclear field.
- However, there were also frequent mentions of:
 - **Mathematics** and **thermodynamics**
 - **Radiochemistry**, **chemistry**, and **radiation protection**
 - **Fusion science** and interdisciplinary topics
- This diversity reflects the **cross-disciplinary nature** of nuclear education and training — and validates the cross-YGN initiative's focus on **bringing together students from different fields**. It suggests an appetite for continued **integration across domains**, especially where medical, energy, and research applications cross.

III. What is most important for you when searching for your first job? Rank these points from 1 (most important) to 8 (less important)



Results

When asked to rank factors that matter most in their first job search, students across both surveys shared **clear, consistent priorities**:

- **Top priorities:**
 - **Work-life balance**
 - **Opportunities for professional growth**
 - **Inspiring work environment** (high in Bratislava, still strong in Budapest)
- **Shifting emphasis:**
 - In Budapest, **competitive salary** moved up in importance, overtaking workplace culture.
 - This may reflect a **greater awareness of real-world constraints** (e.g., inflation, housing, relocation), especially as students approach graduation.
- **Lower priorities:**
 - **“Consistency with education path”** was ranked low — suggesting many students are open to **exploring roles beyond their specific study track**.
 - **“Networking opportunities”** also ranked near the bottom — possibly reflecting a **lack of understanding of their value**, or a need for clearer guidance on how networks translate into real opportunities.

This aligns with one of the key challenges the Cross-YGN is aiming to address: **making networking more visible and accessible** for graduates at the beginning of their careers.

Final Remarks

The survey responses show a student cohort that is **motivated, multidimensional, and impact-oriented**. While grounded in strong technical interests, these young professionals are looking for:

- Meaningful work that aligns with **societal needs**
- **Interdisciplinary connections** beyond their degree programs
- Career paths that balance **growth, wellbeing, and purpose**

The cross-YGN initiative can continue to play an important role in helping them discover these pathways — not only by showcasing the diversity of nuclear careers, but by actively **connecting the next generation across sectors, disciplines, and countries**.