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REGIONAL STRATEGY FOR MEDICAL RESPONSE AS PART OF THE DISASTER MANAGEMENT IN CASE OF RADIATION EMERGENCY CAUSED BY THE WAR IN UKRAINE

NATO SPS Advanced Research Workshop
Bucharest, Hotel Marshall Garden,
September 19-21, 2023

This workshop will address a potential radiation incident caused by the war in Ukraine, from an interdisciplinary approach of medical, nuclear safety and security, nuclear research, geostrategic and population's resilience perspectives. the workshop will also address the key role played by NATO in identifying new solutions for stabilizing the region, while also focusing on the emergency preparedness in order to ensure that adequate capabilities and capacity are in place which can be mobilized in response to a radiation emergency.

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PRESIDENTS OF THE SCIENTIFIC COMMITTEE

Prof. univ. dr. **Florin-Catalin CIRSTOIU**

Prof. univ. dr. **Victor JUC**

SCIENTIFIC COMMITTEE

Medical Section	Foreign Relations & Security Studies Section	Nuclear & Radiological Safety Section
Prof. univ. dr. Corina Silvia POP	Prof. univ. dr. Dan DUNGACIU	Cantemir CIUREA-ERCAU, PhD
Prof. univ. dr. Lucian NEGREANU	Prof. univ. dr. Cristian BARNA	Petre MIN, PhD
Prof. univ. dr. Horia BUMBEA	Prof. univ. dr. Natalia ALBU	Natalia PETROV, PhD
Asist. univ. Silvia NICA	Prof. univ. dr. Darie CRISTEA	Dan SERBANESCU, PhD
Colonel (r) Ion APOSTOL	Prof. univ. dr. Adrian LESENCIUC	Alexandr GOTEANSCHII, PhD
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SUMMARY

Russia's military invasion in Ukraine is considered the most serious security crisis in Central and Eastern Europe since the end of the Cold War, with major implications for the regional security environment and NATO.

Since the very beginning of Russia's illegal military invasion in Ukraine the Heads of State and Government of the member countries of the North Atlantic Alliance condemned the invasion and demand that Russia should stop and withdraw its forces from Ukraine, being deeply concerned that the violence and insecurity in the region caused by Russia are determining a critical humanitarian situation and material destruction all over Ukraine.

Moreover, after invading Ukraine, Russian army took control of the Zaporizhzhia nuclear power plant, in early March, 2022. Since then, Russian military units guard the facility and, after Russian President Vladimir Putin annexed up to 18% of Ukraine, including the area where the nuclear plant is located, he signed a decree to formalize Russian control over the plant.

In this respect, we must underline that each of Ukraine's operating nuclear power reactors and the high-level radioactive waste stored near them contain massive amounts of hazardous and long-lived radioactive material. Direct attack to their operation, including interruption of the electrical power and water needed for constant cooling of both reactors and spent fuel ponds, would risk fires and explosions that could cause a radiation accident.

Also, a series of civil institutions - such as hospitals, research institutes or factories that legally used radioactive sources, were bombed and devastated, raising legitimate concerns about environmental contamination, theft or mishandling of the radioactive sources.

In the case of a major accident, radioactive debris would likely spread to countries surrounding Ukraine and depending on weather patterns, that could well include Russia, as well as to the rest of Europe, possibly even to the Middle East and North Africa.

Given the above mentioned, this workshop will address a potential radiation incident caused by the war in Ukraine, from an interdisciplinary approach of medical, nuclear safety and security, nuclear research, geostrategic and population's resilience perspectives. the workshop will also address the key role played by NATO in identifying new solutions for stabilizing the region, while also focusing on the emergency preparedness in order to ensure that adequate capabilities and capacity are in place which can be mobilized in response to a radiation emergency

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WORKSHOP AGENDA

Day 1

09:00 - Registration
09.00 - 12.00 - **Welcome and Keynote Speeches** of NATO SPS ARW, back-to-back with National Commission for the Control of Nuclear Activities (CNCAN) Valahia 2023 National Exercise (https://nuclearpreparedness.net/en/home/)
Moderators: Cantemir CIUREA-ERCAU, State Secretary, President of National Commission for Nuclear Activities Control, Romania,
Corina Silvia POP, Medical Director of Bucharest University Emergency Hospital
Keynote Speech by: E.S Mircea Geoana, NATO Deputy General Secretary *(on-line),* Representative of the **Ministry of External Affairs, Raed ARAFAT** *(on-line)*, State Secretary, Head of Emergency Situations Department, Ministry of Internal Affairs, Romania, **Simona PARVU**, General Director of National Institute of Public Health, E.S. **Kathleen KAVALEC**, Ambassador of the United States of America in Romania, Keynote Speech by E.S. **Victor CHIRILA**, Ambassador of the Republic of Moldova in Romania
12.30 – Lunch

1st Panel
The risk of a radiation incident generated by war in Ukraine. Implications for international actors and regional security

Moderator: Professor **Dan DUNGACIU,** Director, Institute of Political Sciences and International Relations, Romanian Academy
Discussant: Associate Professor **Darie CRISTEA**, Vice-Dean of Faculty of Sociology and Social Assistance, Bucharest University, Romania

14:00 - ***End of the War – The worse scenario***, Gl. (r.) **Stefan DANILA**, Former Chief of Staff Romanian Army, Founder of I2DS2 - Integrated Intelligence Defence and Security Solutions, Romania
14.15 - ***Hybrid Threats for Republic of Moldova Generated by the Russian Military Invasion in Ukraine***, Associate Professor **Natalia ALBU,** Executive Director of Platform for Security and Defense Initiatives, Republic of Moldova
14.30 - ***Enhancing Moldova's Resilience to Geopolitical Threats State of Play and Future Prospects***, Associate Professor **Ludmila COADA**, Free International University, Republic of Moldova

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14.45 - ***Nuclear Geopolitics in the Context of Redefining the Great Strategic Game***, PhD **Veaceslav UNGUREANU,** Scientific Researcher, Institute for Legal, Political and Sociological Researches, Moldova State University
15.00 - ***Russian Fake News and Black Propaganda Related to Nuclear Weapons' Use in Ukraine***, **Marius ILIE**, Security Studies Master Programme from Bucharest University, Romania
15.15 - Questions and comments
15.30 - Discussant's conclusions
15.45 - Coffee break

2nd Panel
Shelling Ukraine's nuclear power plant, radioactive waste storage, hospitals, research institutes or factories that use radioactive sources: how to deal with environmental contamination

Moderator: PhD **Petre MIN,** National Commission for Nuclear Activities Control, Romania
Discussant: PhD **Roland KOVACS**, Senior Adviser at Norwegian Radiation Safety Authority, Norway

16.00 – ***Report of the HERCA-WG Emergencies (WGE) Task Force supporting Ukraine and neighboring countries - Coordinating planning and implementation of radiological emergency protective actions between countries during the war***, **Gareth THOMAS**, The Office for Nuclear Regulation, United Kingdom and Chair of HERCA WGE
16.15 - ***Scientific and Evidence-Based Support in Emergency Preparedness And Resilience Strengthening, Under Volatility And Uncertainty***, **Bogdan VAMANU**, Scientific Researcher 'Horia Hulubei' National Institute of Physics and Nuclear Engineering, Romania
16.30 - ***Specifics of Emergency Planning for multi-risk unregulated radioactive sources: study case***, **Dan SERBANESCU** Nuclear safety and risk specialist at Nuclearelectrica and Director of Engineering and Safety at RoPower.
16.45 - ***The Role of European Union in Dealing with Radiological Incidents*** (online)**, Bharat PATEL**, D3 Unit, DG Energy, European Commission
17.00 - Questions and comments
17.15 - Discussant's conclusions
17.30 - Visit to Palace of Parliament
20.00 – Dinner

Day 2

09:00 - **Participants' arrival, welcome coffee**

3rd **Panel - Raising population's resilience and reaching medical preparedness for a radiation emergency**

Moderator: Professor **Carmen ORBAN,** Bucharest University Emergency Hospital
Professor **Lucian NEGREANU**, Bucharest University Emergency Hospital
Discussants: Mr. **Ovidiu RAETCHI**, Director of Euro-Atlantic Resilience Centre Romania
Mr. **Andrei MARFIN**, Head of Defense Ministry Health Care Department, Republic of Moldova

09:15 - ***Nuclear and Radiological Incidents: Should We Consider Individual Factors?*** Professor **Nicolas FORAY**, Unit of French Institute of Health and Medical Research, **Michel BOURGUIGNON,** Professor Emeritus of the University of Paris Saclay, medical director of INSERM UMR 1296, France
09.30 - ***Fukushima Nuclear Power Plant Disaster. Lessons Learnt for Japan Medical Units***, Professor **Tsubokura MASAHARU**, Fukushima Medical University, Department of Radiation Health Management, Japan
09.45 - ***Public health preparedness for and medical response to radiation accidents and nuclear incidents,*** Professor **István TURAI**, Senior Counsellor of the Directorate, „Frederic Joliot-Curie" National Research Institute for Radiobiology and Radiohygiene (NRIRR), Hungary
10.00 - ***Evaluating the risk of the evacuation and shelter in a nuclear disaster: lessons learned from previous incidents,*** Ph.D. **Cosmin DUGAN**, **Lacramioara BORDEA,** Bucharest University Emergency Hospital, **Cristian VIZITIU,** Head of Space Applications for Human Health and Safety Department, Institute of Space Science, Romania
10.15 - Questions and comments
10.30 - Discussant's conclusions
10.45 – Coffee break

4th Panel - Using coercive diplomacy to deter an attack with tactical nuclear weapon or targeting nuclear facilities in Ukraine

Moderator: Gl mr (r) **Adrian PARLOG,** Intelligence Analyst, Former Deputy Director of Romanian Military Directorate, Ministry of Defense
Discussant: Șerban Georgescu, Director of the Department of Asian Studies at the Romanian-American University

11.00 - ***Probabilistic Foundations of Nuclear Risk Assessment***, **Davide BARBIERI,** Visiting Professor Università degli Studi di Ferrara, Italy
11.15 - ***Russian provoked nuclear disaster, attack or accident: scenarios, probability and consequences***, Professor **Iulian CHIFU**, "Carol I" National Defence University, Romania
11.30 - ***Risks of nuclear threats in modern war*** (online) Professor **Andriy STAVYTSKYY**, Taras Shevchenko National University of Kyiv, Ukraine
11.45 - ***Crisis Communication Strategy in Case of Nuclear Incident in Ukraine***, Ph.D. **Marin GHERMAN**, Director of Institute of Political Studies and Social Capital, Ukraine
12.00 - ***Ukraine's Fight for Erasing Putin's Geostrategic Red Lines*** (online), **Mykhailo SAMUS**, Chief of The New Geopolitics Research Network, Ukraine
12.15 - ***The triadic relationship strategic communication – security culture- societal resilience***, Professor **Adrian LESENCIUC**, "Henri Coandă" Air Force Academy, Romania
12.30 - Questions and comments
12.45 - Discussant's conclusions
13.00 – Lunch

5th Panel - Radiation incident: medical management plans and response capacity on-site and in healthcare facilities

Moderators: Professor **Corina POP,** Medical Director of Bucharest University Emergency Hospital
Professor **Catalina POIANA,** President of the Medical College Bucharest
Discussants: Associated Professor **Silvia NICA**, Bucharest University Emergency Hospital
Dr. **Caroline CLARINVAL**, PhD, WHO Country Office Representative, Romania

14.00 - **Overview WHO Resources**. **Resilience / Preparedness / Response for a Nuclear Event, Dr Silvia Gatscher,** Health Operations Manager, WHO Country Office in Romania
14.15 - **ITB *(Iodine Thyroid Blocking) Implementation for Nuclear Emergency*, Marc Benderitter,** Deputy director of the Health Division of Institut de Radioprotection et de Sûreté Nucléaire, France
14.30 - ***Medical preparedness and response to nuclear and radiological emergencies in Moldova***, colonel (r) Ion APOSTOL, National Agency for Public Health, Republic of Moldova

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14.45 - ***Medical Units' Strategic Management in Case of CBRN Incidents in Republic of Moldova***, Dr. **Sergiu CÎRLAN**, "Alexandru cel Bun" Military Academy and **Andrei MARFIN**, Head of Defence Ministry Health Care Department, Republic of Moldova
15.00 - ***WHO's role in global preparedness and response to radiation emergencies*** (online), PhD **Zhanat CARR,** Radiation Emergency Medical Preparedness and Assistance Department of Environment, Climate Change and Health, World Health Organisation
15.00 - Questions and comments
15.15 - Discussant's conclusions
15.30 – Coffee break

6th Panel - Contingency planning for haematologists in radiologic and nuclear events

Moderators: Adjunct Professor **Leif Stenke,** Haematology and Internal Medicine at the Department of Medicine, Solna, Sweden.
Professor **Horia BUMBEA,** Bucharest University Emergency Hospital
Discussants: Professor **Anca Colita**, Fundeni Clinical Institute
Professor **Tsubokura MASAHARU**, Fukushima Medical University, Department of Radiation Health Management, Japan

15.45 - ***Ukraine Resilience/Response to a Major Radiation Incident. The European Blood and Marrow Transplant Society EBMT Nuclear Accident Committee NAC Collaboration*****, Ray Powles** Head of Haemato-oncology and Bone Marrow transplantation at Nuffield Cancer Centre London UK
16.00 - ***Ukraine under 2022 Russian Invasion: How Ready for a Nuclear Catastrophe Is a Country that Has Previously Experienced a Large-Scale Radiation Accident*** (online)**, Sergiy Klymenko,** Head of the Center of Hematology, Hemoblastosis Chemotherapy and Bone Marrow Transplantation at "Feofaniya" Clinical Hospital, Ukraine
16.15 - ***Hematopoietic Stem Cell Transplantation Activity in Romania, and the Capacity to Receive Patients in Case of Radiation Emergency*****, Alina Tanase**, MD, PhD Head of the Bone Marrow Transplantation Unit of Fundeni Clinical Institute, Bucharest
16.30 - ***Diagnosis and Medical Management of ARS*****, Marc Benderitter,** Deputy director of the Health Division of Institut de Radioprotection et de Sûreté Nucléaire, France
16.45 - Questions and comments
17.00 - Discussant's conclusions
17.15 - Visit to "Dimitrie Gusti" National Village Museum, city-guided tour
20.00 - Dinner

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Day 3

09:00 - **Participants' arrival, welcome coffee**

7th Panel
Radiological incident: plans for response and intervention, including decontamination strategies

Moderator: Cosmin GHITA, Head of Nuclearelectrica, Romania
Discussant: Mihaita GAINA, General Director of Nuclear and Waste Radioactive Agency, Romania

09.15 - ***The Importance of Effective Communication between Radiation Protection Professionals and Medical Care Providers*****, Stephen L. (Steve) SUGARMAN,** CHP, Vice President and Corporate Health Physicist, SummitET – Summit Exercises and Training LLC, US DOE Office of Nuclear Incident Policy and Cooperation
09.30 - ***Why We Need Republic of Moldova's Former and Volunteer Military in Case of a Nuclear Incident in Ukraine,*** Brigadier General (r) **Vitalie MARINUTA,** President of Retired Officers Association, former Ministry of Defense, Republic of Moldova**,** Brigadier General (r) **Vitalie STOIAN,** Head of Military Training Department Moldova Technical University, Former Chief of Staff, Republic of Moldova
09.45 - ***The Role of Immigration Service from Republic of Moldova in Case of Nuclear Incident in Ukraine***, **Alexandr GOTEANSCHII**, Head of Radioactive and Chemical Department, Border Police Inspectorate, Republic of Moldova
10.00 - ***Hybrid Nuclear Compellence: Intentions and Consequences***, Ph.D. **Valeriia HESSE**, fellow at the Odesa Center for Nonproliferation, Ukraine
10.15 - ***Emergency preparedness and response arrangements in case of nuclear or radiological accidents in Bulgaria***, Dr. **Lyudmila SIMEONOVA**, Acting Head of Emergency planning and preparedness section, Bulgaria
10.30 - Questions and comments
10.45 - Discussant's conclusions
11.00 – Coffee break

11:15 - ***Roundtable on measures needed on a simulated radiation incident.***

Moderator: Professor **Cristian BARNA**, Bucharest University
Discussant: Professor **Șerban Georgescu**, Director of the Department of Asian Studies at the Romanian-American University

Facilitators*:* H. E. **Hiroshi UEDA** (TBC)**,** Ambassador of Japan in Romania, H.E. **Kap-Soo RIM** (TBC), Ambassador of the Republic of Korea in Romania, representative of the **Romanian Ministry of Foreign Affairs**, Lieutenant colonel **Lucian BOIURU**, Chief of WMD Nonproliferation and Nuclear Consultation Office, National Military Command Center/Defence Staff, Ministry of Defense, Romania, PhD **Vasile SIMILEANU**, Director Geopolitica Magazine, Colonel (r) **Ion PETRESCU,** Military Analyst, Former Director of Military Press Trust, Ministry of Defense, Romania
12:45 - Lunch

14:00 - ***Working groups session: elaboration of actionable recommendations for policy makers and relevant stakeholders.***
15:00 - ***Presentation of ARW Key findings and recommendations. Strengthening the network to build upon further: ways and opportunities under NATO SPS programme and/or different instruments,*** PhD **Cristian FELEA**, Former Intelligence Manager, Columnist RepublikaNews, Colonel (r) **Niculae IANCU** President of Integrated Intelligence, Defense and Security Solutions Association, Former Rector at the National Intelligence Academy
15:30 - ***ARW harvesting letter: participants' consensus. Delivering printed harvesting letter to participants and Conclusion remarks by ARW Co-Directors.***
16:00 - Participants' departure

BOOK OF ABSTRACTS

WELCOME SPEECH OF CO-DIRECTOR OF NATO SPS ARW, Florin-Catalin CIRSTOIU, Acting Manager of Bucharest University Emergency Hospital, Bucharest

"Black swans" are a subject of academic research and intellectual dispute. As professionals in the field of health, however, we have learned to accept these "very improbable but high-impact" phenomena as part of our professional life. Although we usually refer to clinical cases, recent events on a global scale, such as the COVID-19 pandemic, "a pandemic that happens once in a century", forces us to accept other public health emergencies of interest in the field of our perception that will probably appear without warning signs. Far from being pessimistic or alarmist, we know that in critical moments, our society and states will rely on the good functioning of national health systems, on the efficiency of international cooperation and on our professionalism. We must not disappoint, because for many we will be the "last hope".

The Russian Federation's aggression in Ukraine remains a great humanitarian tragedy, incomprehensible for the beginning of the 21st century, born with the hope of understanding the dramatic lessons of the previous century. However, it represents a reality that we cannot reject and which brings back to the fore the ghosts of the Cold War - the use of weapons of mass destruction and especially the nuclear conflict. Although radiation is part of the history of life on Earth, living beings are powerless in the face of nuclear weapons. However, we have to think proactively and preventively about the possibility of a terrible "black swan" materializing - what if another extreme radiological or even nuclear disaster will take place in Europe? How ready are we?

The role of this workshop is primarily to promote anticipatory thinking and reason with the aim of generating connections between experts, institutions, organizations that represent a nucleus of expertise that will generate solutions in the event of a nuclear or radiological disaster. Expertise from several fields - medicine, nuclear and radiological security, international relations and security studies - allows us to approach this risk from different perspectives and perceptions, schools of thought, theories, institutional cultures or personal experiences.

Distinguished ladies and gentlemen, dear colleagues, at the end of my speech, I thank you for your effort to come to this NATO-ARW and I wish you success in your activity.

WELCOME SPEECH OF CO-DIRECTOR OF NATO SPS ARW, Victor JUC, Institute for Legal, Political and Sociological Researches, Moldova State University

I have a special pleasure and honor to greet the participants of the workshop „Regional strategy for medical response in case of radiation emergency in Ukraine". In the same context, I am honored to convey greetings and wishes of well-being, health and fruitful results from the rector of the State University of Moldova, Associated Professor PhD Igor Sarov.
Legal, Political and Sociological Research Institute of Moldova State University is an university-academic institution, its activity is channeled on the scientific research, preparation of high qualification professionals and experts of law projects and others normative acts, to the demand of state powers.
The subjects that we will discuss and analyze are of particular relevance and importance, especially in the context of the unprovoked and senseless war of the Russian Federation against Ukraine. For the first time after 1949, atomic weapons are used not only for deterrence, but also for intimidation and pressure, even if the "guaranteed mutual destruction" is not denied by anyone.
The proliferation of nuclear weapons, threats to its applicability as a component of conventional war, man-made dangers represent not risks (potential dangers), but threats (real dangers) to international security. In this sense, the scientific management of security risks, including human ones, gives relevance and value to the results, which I am sure we will obtain through the workshop works.

1st Panel: The risk of a radiation incident generated by war in Ukraine. Implications for international actors and regional security

END OF THE WAR – THE WORSE SCENARIO FOR EU AND ROMANIA, Ştefan Dănilă, Integrated Intelligence Defense and Security Solutions, Romania
The war triggered by Russia by invading Crimea is far from over, the outcome of this war is uncertain, although there are many predictions and assumptions. The scenarios regarding the evolution of the war and the expected ends differ from the current of thought to another, from individual to individual, depending on vision, evaluation model, involvement and interest.
From the beginning, the US decided to take joint, firm action, in conjunction with those of its allies (mainly the democracies of the world), to keep the war at the level of a limited conflict. The positioning on Ukraine's side, namely the aggressed side, did not imply direct involvement, and this decision implied a special effort, with modest but encouraging results. Overcoming evil by non-lethal means, economic and political measures became the main objective of the US, but realist thinkers saw in this decision a weakness, an inability of the US to impose its role as world leader.

After several assessments, since the first six months of the conflict, we have identified at least seven scenarios, some similar to others, but differentiated by consequences.
I will expose the determining hypotheses of the production of each scenario, as well as the consequences of each resulting end in order to understand which is the most desirable scenario (the optimistic version), but also the worst scenario for the European Union, implicitly for Romania, but also the worst for Romania, without an implicit Community variant. I consider it very important to know what future we expect and to identify the best actions to achieve a high level of national security under the new conditions.
My conclusion, not necessarily that of all those who follow the unfolding of events, is that Romania is not yet ready for a neighborhood with a democratic Ukraine, partner (future member of the EU and/or NATO), but it must be. A different choice could push Romania into isolation and hostility at the border.

HYBRID THREATS FOR REPUBLIC OF MOLDOVA GENERATED BY THE RUSSIAN MILITARY INVASION IN UKRAINE, **Natalia ALBU,** Institute for Legal, Political and Sociological Researches, Moldova State University
Since the start of the war in Ukraine 2022, the Republic of Moldova has seen increasing attempts by Russia to destabilize the country through hybrid actions – energy, political and disinformation pressures. While the presence of Russian troops in Transnistria is often mentioned as the main potential source of destabilization, hybrid threats and the role of Kremlin proxies, such as Ilan Shor's party, are much more of a threat to stability than the Tiraspol authorities.
A significant part of the population of the country is Russian-speaking, and consequently the main target group of Russia's information attacks and its main tool in hybrid war. Regular pro-Russian information stuffing of propaganda rhetoric aimed at supporting Putin regime and justifying the Russian aggression is a destabilizing factor for the Moldovan society. Information security has been severely affected in recent years by disinformation and the propagation of disinformation, both in printed media and online spaces.
In this context it is important to present a review of the current impact and trends of hybrid threats in the Republic of Moldova, as well as to analyze the existing framework in terms of strengthening resilience to disinformation. In order to enhance the resilience of Moldova's security sector, the Council of the EU mandated the new civilian partnership mission EUPM Moldova. The mission has a project cell to provide targeted operational support in line with the integrated approach and, as far as possible, in close coordination with other actors. AI tools to counter the hybrid threat should work quickly to assess the failings in Ukraine that emboldened Russia to invade and implement these lessons in Moldova, with the accompanying funding and political support to provide a true deterrent.

At the same time, the key instruments that Russia can use to achieve its political objectives in the Republic of Moldova must be continuously on the security agenda to help policymakers to understand the logic guiding Russian decision-making on states such as Moldova.

ENHANCING MOLDOVA'S RESILIENCE TO GEOPOLITICAL THREATS: STATES OF PLAY AND FUTURE PROSPECTS, Ludmila COADA, Free International University, Republic of Moldova

During the last three decades of independence, the Republic of Moldova has sought to consolidate its sovereignty and to integrate into the international community. However, different internal and external factors had prevented its affirmation as a strong and a stabilizing actor. Its Soviet legacy, the existence of a breakaway region within its territory, internal division on both political and society level, and Russia's long-held influence as a former metropolis – all have contributed to the transformation of Moldova into a weak and unsecured state. The conflict in Ukraine, generated by the Russian invasion, has deepened Moldova's vulnerability. The problem of state's security and stability becoming even more acute, especially in the context of Russia's attempts of destabilizing Moldova through various hybrid subversive campaigns.

In response to the existing and emerging threats, the Republic of Moldova needs to strengthen its resilience at government and society level, in the central and peripheral regions. The pro-European government in Chisinau, with the support of the EU and western partners, is taking optimal measures that aim at enhancing country's capacity to resist and to continue democratic transformations, but there is still a lot of work that needs to be done.

The paper examines the recent trends and prospects for strengthening Moldova's resilience, considering the fact that resilience is the key condition for security. It focuses on several aspects, among them being the role of the government, the role of the EU and western partners, the position of society toward the action taken/to be taken in order to counter internal and external (from Russia) threats.

RUSSIAN FAKE NEWS AND BLACK PROPAGANDA RELATED TO NUCLEAR WEAPONS' USE IN UKRAINE, Marius ILIE, Security Studies Master Programme from Bucharest University, Romania

The spread of false information is not a new phenomenon, but it is a phenomenon that has gained considerable potency with the emergence and spread of digital social networks (such as social media). Social networks have the ability to disseminate information in a much more efficient way than traditional communication channels. The virality potential of the content on social networks makes this environment very attractive for actors who pursue the dissemination of false information. There are many causes and reasons that can explain the spread of false information on social media. Among the reasons for the spread of misinformation on social media platforms can be the difficulty of moderating false content. This difficulty arises from the high volume of content published and shared by users.

In this paper, scrappers were used as the main tool for data collection. The paper sought to identify the possible false narratives that are spreading on the largest social media platforms in Romania (Facebook and TikTok). At the same time, it sought to identify the common characteristics of pages and users that spread false information. Several overlapping features between posts or accounts have been identified. In numerous posts identified, it was observed that there is overlap in the religious characteristic and misinformation.

The main false narratives identified are pro-Russian and often contain religious or conspiratorial messages. For example, on Facebook, a popular narrative found in the analyzed cases is that Putin represents a savior, a true leader, defender of Orthodox values who is fighting against the decadence of the collective West.

NUCLEAR GEOPOLITICS IN THE CONTEXT OF REDEFINING THE GREAT STRATEGIC GAME, Veaceslav UNGUREANU, Institute for Legal, Political and Sociological Researches, Moldova State University

The geopolitical structure of the post-cold war international system is determined by the arrangements of the world geopolitical architecture of the international security that shows itself as a process where different geopolitical configurations of the international relations alternate by reshaping the spheres of geopolitical influence expressed as some geopolitical interests and values promoted by the state international actors and by carrying out actions and individual or collective interactions by the geopolitical subjects to ensure a sustainable geopolitical structure of the international security. In conditions of the global anarchy of the international relations that determines the world hierarchy of the power, it is a quite natural thing to have a competition between the major actors for the nuclear geopolitical hegemony. This is conditioned by the need to participate in the process of ensuring the international security both alone and through political and military alliances, developing its own nuclear geopolitical management of the international security that determines the geopolitical configuration of the post-cold war international system, ensuring or undermining at the same time the process of guaranteeing international security by further keeping the tendency to enlarge its spheres of geopolitical influence and intensifying the role of military and nuclear factor that has not decisively lost its relevance and actuality, but on the contrary has strengthened.

The dynamic of redefining the geopolitical interests by the great powers has intensified the resizing of the world geopolitical architecture of the international security that, in turn, has influenced the process of reshaping the post-cold war international system. At the same time, in order to ensure the nuclear geopolitical dimension of the international security, the great powers continue to pursue the achievement of ensuring the geopolitical balance of the international security system both on the account of the major nuclear actors and through some medium and small nuclear international actors, thus enlarging the spheres of geopolitical influence, but avoiding as much as possible their interference

that may trigger a nuclear military conflict between the rival geopolitical actors. It is certain that strengthening the resilience of the international security system on the nuclear geopolitical dimension largely depends on the degree of the nuclear powers' involvement into the geopolitical processes of ensuring regional nuclear security, which determines the level of complexity and antagonism of the geopolitical interests promoted by all geopolitical actors interested in a regional geopolitical space, being released the opportunities and the constraints of geopolitical nature for the development policies of the nuclear programs of the satellite states in the sphere of regional geopolitical influence.

2nd Panel: Shelling Ukraine's nuclear power plant, radioactive waste storage, hospitals, research institutes or factories that use radioactive sources: how to deal with environmental contamination

SCIENTIFIC AND EVIDENCE-BASED SUPPORT IN EMERGENCY PREPAREDNESS AND RESILIENCE STRENGTHENING, UNDER VOLATILITY AND UNCERTAINTY, Bogdan VAMANU, 'Horia Hulubei' National Institute of Research and Development for Physics and Nuclear Engineering **Petre MIN,** National Commission for Nuclear Activities Control, **Valentin T. ACASANDREI,** 'Horia Hulubei' National Institute of Research and Development for Physics and Nuclear Engineering, **Alexandru O. PAVELESCU,** 'Horia Hulubei' National Institute of Research and Development for Physics and Nuclear Engineering

Conflicts always involve volatile and uncertain situations, and military actions can often result in unforeseen and undesirable consequences. Nowadays, more than ever due to the influence of social-media and other communication channels, strategic objectives are pursued not only through traditional means but also through 'soft' tactics like disinformation, half-truths, panic-induction, and fake news. In both war and peace, the potential impact of nuclear accidents has been a topic of debate and a significant concern for the public. It was somehow predictable that, from the beginning of the Russian-Ukrainian conflict, the situation of the five (four operational) nuclear power plants (NPPs) on Ukrainian territory would become a major point of interest for the public and a prominent sensitive issue for national policymakers and emergency responders.

In this context, starting on February 24, 2022, teams from the 'Horia Hulubei' National Institute of Research and Development for Physics and Nuclear Engineering (IFIN-HH) and the National Commission for Nuclear Activities Control (CNCAN) conducted a series of comprehensive radiological situation forecasting activities. The primary objective was to provide a plausible, well-founded, objective, and scientifically defendable assessment of the national territorial vulnerability to a hypothetical radiological accident (as defined by IAEA) at any of the Ukrainian NPPs. Specifically, these activities aimed to answer questions such as 'What is the most likely scenario? Are we (Romania) likely to be affected, and if so, where and to what extent? Are we prepared?'

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The assessments were carried out using two distinct dose-projection and radiological assessment platforms: jRodos (Real-Time Online Decision Support System for the Management of Nuclear Emergencies) and CBRNE-Software, an IFIN-HH in-house solution, to ensure consistency of the results. In the absence of pertinent and confirmed information, several scenarios deemed plausible were developed based on situational awareness and expert judgment. Appropriate accident source terms were constructed using methods validated and approved by international organizations in the field, or referred to, by well-known design-based accident safety studies.

The endeavor resulted in more than 75 reports in total, including 50 daily situational reports covering all Ukrainian NPPs from February to May 2022, and over 25 reports specifically focused on individual NPPs between August and December 2022. Some of the reports were also used to substantiate and support public communication through mainstream media channels, both by CNCAN and NIPNE.

This presentation offers an overview of the undertaking, addressing key topics such as situational awareness, expert judgment, basic assumptions, scenario development, and the methods of producing and effectively communicating meaningful results. It will also highlight some particularly significant and intriguing findings and conclude with final thoughts and observations."

REPORT OF THE HERCA-WG EMERGENCIES (WGE) TASK FORCE SUPPORTING UKRAINE AND NEIGHBOURING COUNTRIES - COORDINATING PLANNING AND IMPLEMENTATION OF RADIOLOGICAL EMERGENCY PROTECTIVE ACTIONS BETWEEN COUNTRIES DURING THE WAR, Gareth THOMAS, Office for Nuclear Regulation, United Kingdom and HERCA WGE

This presentation describes the work of the HERCA WGE Task Force that supports Ukraine and neighboring countries coordinate emergency planning should war in Ukraine create a radiological or nuclear event.

The application of urgent protective actions, namely evacuation, sheltering and stable iodine, are the primary tools of emergency planners in the event of a radiological or nuclear event that leads to a release of radioactivity. These are supported by other protective actions such as food & feed restrictions, additional action concerning the public, protection of transport and protection of property. Countries have their own radiological and civic protection criteria and priorities for when and how these urgent and other protective actions are implemented to best protect their citizens.

However, the effects of a such accidents may cross national borders and, as all emergency planners are very aware, the consistency of messages from governments to the public is vitally important to securing overall public protection. There were many examples of non-consistent messaging during the Covid-19 pandemic.

HERCA Working Group - Emergencies (WGE) consists of emergency planning experts from most European regulators and works to improve the application of protective actions in national emergency planning and also to promote consistent and compatible emergency preparedness and response

arrangements within and between European countries for nuclear emergencies occurring both within Europe and elsewhere. An important document produced is the “HERCA-WENRA Approach for a better cross-border coordination of protective actions during the early phase of a nuclear accident”.
Following the start of the war in Ukraine in 2022, WGE created the HERCA Task Force to support competent authorities in Ukraine and neighboring countries during the war with the purpose of providing a forum where these countries, supported by other European countries, could share information on the war, consider how their national emergency plans relate to each other, know who to contact in neighboring countries and beyond, and seek common positions on how or when the protective actions may be applied or are unlikely to be required in response to potential events in Ukraine.

POTENTIAL NUCLEAR INCIDENTS CAUSED BY THE WAR IN UKRAINE. ROMANIA’S APPROACH REGARDING DECONTAMINATION STRATEGY, Alexandru TOMA, Technologies for Nuclear Energy State Owned Company (RATEN), **Cristian Nicolae DULAMA,** Institute for Nuclear Research (RATEN ICN)
The Institute for Nuclear Research (RATEN ICN) is the only research entity in Romania operating a research reactor, having a unique infrastructure and great experience in the areas of reactor safe operation and operational radiation protection, including emergency preparedness. Due to its experience and proven capabilities, RATEN ICN acts as Technical Support Organization (TSO) for the National Commission for Nuclear Activities Control (CNCAN) and other authorities providing expertise in the area of nuclear safety and security. The main responsibilities of RATEN ICN in this regard are to provide training and technical assistance to CNCAN staff and first responders concerning preparedness for response in case of nuclear accidents and radiological emergencies. Also, RATEN ICN has declared capabilities to support CNCAN in the emergency response, mainly in gathering monitoring data and evaluation of radiological consequences as part of the process of decision support. The paper presents arrangements and actions performed by RATEN ICN to ensure and improve its capabilities as TSO and its involvements in some national and international events related to the emergency preparedness and response.

SPECIFICS OF EMERGENCY PLANNING FOR MULTI RISK UNREGULATED RADIOACTIVE SOURCES. CASE STUDY UKRAINE, Dan SERBANESCU, Nuclearelectrica**, Petre MIN,** National Commission for Nuclear Activities Control
Emergency Planning is developed in very well-defined tasks, starting from the identification of the risk sources, continuing with the definition of the technical basis of the scenarios to be considered and including the management systems of the emergency categories.
EP has a well-structured and regulated set of norms and guidelines. However, the current environment has some limitations on which developments are in development and for some new ones need to be

initiated. For instance, there is an ongoing trend to search common technical background and adopt unitary description from emergency point of view for all aspects with risk impact (safety, security medical etc.) in the definition of the scenarios (Emergency Action Levels) based on which the Emergency categories are to be defined. From the other side a systematic modeling of the emergency management system is developed and connected to the EAL in a structured hierarchical model and prepared for real life implementation. Recent events for nuclear installations and radioactive sources in asymmetric states and challenges, totally unforeseen in the design basis threats and not coordinated with the safety scenarios require an improved approach in preparing new models to be used in EP. The multi-risk unregulated radioactive sources have some specifics for EP and the paper highlights some of them and suggests actions and models to be considered.

THE ROLE OF EUROPEAN UNION IN DEALING WITH RADIOLOGICAL CONSEQUENCES, Bharat PATEL, D3 Unit, DG Energy, European Commission

Adopted under the Euratom Treaty, the Basic Safety Standards (BSS), Directive 2013/59/Euratom provides a comprehensive set of provisions at the EU-level to ensure the highest level of protection of workers and members of the public against dangers arising from ionising radiation, including radiological emergency situations.

The BSS Directive is complemented by Council Directive 2013/51/Euratom defining quality standards for drinking water, as well as instruments ensuring food and feed safety after a nuclear accident or radiological emergency based on Council Regulation (Euratom) 2016/52 laying down maximum permitted levels of radioactive contamination of food and feed following a nuclear accident or any other case of radiological emergency. The European Commission operates ECURIE, the EU system to provide early notification and exchange information between member State competent authorities in case of a radiological or nuclear accident. In addition, the EURDEP system provides regular monitoring data on radioactivity in the environment.

The EU has provided assistance to the nuclear safety regulatory authority of Ukraine since the beginning of the Russian invasion. Continuous material support has been provided, including nuclear safety and radiological items under EU's dedicated civil protection mechanisms (UCPM and rescEU).

In addition, the European Instrument for International Nuclear Safety Cooperation (INSC) has the been used to deliver direct material assistance.

The European Commission has been closely monitoring the situation with the nuclear facilities in Ukraine, particularly at the Zaporizhzhia Nuclear Power Plant in close coordination with the regulatory authority of Ukraine (SNRIU) and the International Atomic Energy Agency (IAEA). The Commission has mobilised the scientific expertise of its Joint Research Centre to assess the implication of any nuclear accident and strengthen the emergency, preparedness and response capabilities. The Commission has also been working with the European nuclear safety and radiation protection regulatory authorities in

Europe, including to exchange on modelling and preparedness for radiological and nuclear accidents.

3rd Panel: Raising population's resilience and reaching medical preparedness for a radiation emergency

NUCLEAR AND RADIOLOGICAL INCIDENTS: SHOULD WE CONSIDER INDIVIDUAL FACTORS?
Professor **Nicolas FORAY**, Unit of French Institute of Health and Medical Research, **Michel BOURGUIGNON,** Professor Emeritus of the University of Paris Saclay, medical director of INSERM UMR 1296, France
One of the crucial questions about nuclear and radiological incidents is the influence of the individual factor (individual radiosensitivity or radio-susceptibility) in the medical response and the follow up of exposed people. There are about 20% individuals who may show 2 to 3 times higher radiosensitivity reactions and risk cancer, even at low doses. In other terms, a significant subset of individuals may be at the same risk at low dose as radioresistant people exposed to 2-3 times higher doses. Their detection during a crisis is therefore important and data from Hiroshima demonstrate their existence.

OVERVIEWS OF SECONDARY HEALTH ISSUES AFTER THE FUKUSHIMA INCIDENT, Tsubokura MASAHARU, Fukushima Medical University, Department of Radiation Health Management, Japan
The threat to the lives and health of those affected by nuclear emergencies are not limited to radiation. The threats are multifaceted as well as being short- and long-term. In this presentation we provide a brief overview of secondary health issues arising after the Fukushima triple disaster - other than radiation exposure.
While the most serious problem during the early stages was the impact of the evacuation of the local population, especially among vulnerable groups such as the elderly, maintaining basic health services as well as providing adequate human and material resources were all key to mitigating the negative impacts on the physical and mental health and wellbeing of all.
In the medium- to long-term, various post-disaster health issues need to be carefully considered, including breakdowns in medical infrastructure and services, deterioration in lifestyle diseases, increased psychological burdens, decline in motor functions, disruption of patient treatment regimes and practices, and the local elderly population requiring drastically increased nursing care.
Many of these problems are thought to have been created or exacerbated as a result of the lack of social support systems and changes in the local environment rather than due to an individual's risk perception towards radiation exposure or to poor decision-making. Consideration of these various interconnected health risks in a well-balanced manner and implementing long-term countermeasures are necessary to best cope with the aftermath of a nuclear emergency.

MEDICAL PREPAREDNESS AND RESPONSE TO RADIATION EMERGENCIES, István TURAI, Doctoral School of ELTE University, Budapest

Compiling and disseminating related publications and training course materials is an essential prerequisite of the effective actions by the responsible medical specialists following a radiation emergency to prevent significant health consequences of accidental radiation exposure to human. Actions made in these fields in the last quarter century long professional activity – with my contribution - at the international and national levels are to be introduced at the end of the medical session of the NATO ARW.

EVALUATING THE RISK OF THE EVACUATION AND SHELTER IN A NUCLEAR DISASTER: LESSONS LEARNED FROM PREVIOUS INCIDENTS, Cosmin DUGAN, **Lacramioara BORDEA,** Bucharest University Emergency Hospital, **Cristian VIZITIU,** Institute of Space Science, Romania

Due to decreased functional capacity, physical and cognitive impairment, chronic health factors, and socioeconomic limitations (e.g., high reliance on social support and fewer transportation options and opportunities), geriatric, disabled, and/or patients are more vulnerable and less resilient to hazardous events like natural and man-made disasters. For institutionalized patients (in hospitals, nursing and retirement homes), disasters often pose significant safety challenges to healthcare providers and disaster relief responders, such as whether they should be evacuated in response to disasters, a widespread lack of basic healthcare resources due to overwhelming demand, infrastructure collapse, or power failures, or a government proclamation. The studies of the last decades draw attention to the risk of death, deterioration of the health condition and decrease in the quality of life in the case of these vulnerable populations if indiscriminate evacuation is pursued. An adequate balance between health hazards (and benefits) of evacuation and sheltering-in-place should decide urgent evacuation of vulnerable persons and evacuation or shelter-in-place should be based on evidence. Unfortunately, little is known about the health effects of sheltering-in-place in nuclear disasters or the capacity of health institutions to provide healthcare and other essential services.

4th Panel: Using coercive diplomacy to deter an attack with tactical nuclear weapon or targeting nuclear facilities in Ukraine

UKRAINE'S FIGHT FOR ERASING PUTIN'S GEOSTRATEGIC RED LINES, Mykhailo SAMUS, New Geopolitics Research Network, Ukraine

The situation on the battlefield at the moment is characterized by extreme peak of tension and confrontation. Ukrainian Armed Forces now is conducting counteroffensive operations on the southern and eastern theaters. These operations including shaping actions with high-precision long range strikes and artillery fire against Russian command posts, control and communications systems, ammunition

depots, logistics centers, and other Russian military infrastructure do not allow Russian forces to conduct effective defense activities. The main task of the UAF offensive operation is to reach the administrative border of the occupied Crimean Peninsula and Azov Sea. Such a scenario would mean the final collapse of the southern grouping of the Russin forces at the southern theater. In contrary, Russia is going do exhaust Ukrainian offence and try to prepare own offensive operation in the winter 2023-2024 after new wave of the mobilization, probably, in September-October this year.

It`s possible to discuss 3 basic scenarios which could be developed as a result of Summer-Autumn 2023 campaign:

1. Successful Ukrainian offensive operations with de-occupation of Ukrainian territory of southern Kherson and Zaporizhzhia oblasts and, probably, part of occupied Donbas. This scenario means decisive progress of Ukrainian forces at the battlefield even the final operations (de-occupation of Crimea and Donbas) could be conducted in 2024.
2. Frozen war (Minsk-3)
3. Endless war

Second and third scenarios actually are beneficial for Russia, since Moscow could use strategic stalemate as an opportunity to gain time, to concentrate new capabilities and try to repeat strategic offensive in couple years as we see it since 2014. Therefore, for Ukraine now is very crucial period to get strategic initiative, conduct decisive offensive operations and deoccupy Ukrainian territories with next preparations for negotiations with Russia on the compensations for damages and punishment of war criminals. The critical importance of the military support and support from our allies, including F-16, GLSDB, ammunition, repair and maintenance of artillery, armor, Air/Missile Defence.

PROBABILISTIC FOUNDATIONS OF NUCLEAR RISK ASSESSMENT, **Davide BARBIERI,** Università degli Studi di Ferrara, Italy

Risk analysis is a fundamental task of intelligence analysts and engineers, as it assesses the possibility of some threat to the safety and security of a country and of its critical infrastructures. Unfortunatelly though, when risk analysis is performed with a qualitative approach, it is often ambiguous and vague. Therefore, a more structured and quantitative method is required in order to assess the risk in a way that it is immediately understandable and actionable for decision and policy makers. This is particularly true for nuclear risk, as it is one of the major threats to the security and safety of the national community. For these reasons, a probabilistic framework for risk assessment is presented, adopting techniques and methods from both descriptive and inferential statistics.

RUSSIAN PROVOKED NUCLEAR DISASTER, ATTACK OR ACCIDENT: SCENARIOS, PROBABILITY AND CONSEQUENCES, Iulian CHIFU, “Carol I” National Defence University, Romania

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Nobody in good faith cannot rule out the possibility to use a nuke in Ukraine or to have a type of nuclear disaster. But the probability of such a scenario is quite low, except if there is a (improbable) side effect of such a us in the perception of Ukrainian public. What we have learnt up to now is that the societal resilience as well as the intangibles of war are showing that Ukraine will not give up. In this situation accidents can happen and an event could be a rare one with very low probability. The presentation explores both nuclear attack, attack at a nuclear power plant or nuclear waste deposit, the probability and the possible consequences in each case.

RISKS OF NUCLEAR THREATS IN MODERN WAR, Andriy STAVYTSKYY, Kiev National Taras Shevchenko University, Ukraine

The war in Ukraine became the largest military conflict since the Second World War and increased the risks of controlled or uncontrolled radiation contamination of a large area. First of all, the risks are related to the use of strategic nuclear weapons, which is guaranteed to lead to the death of hundreds of thousands of people and radiation contamination of a large area. The second risk is the use of tactical nuclear weapons, which have a rather limited radius of effect. Unlike the military strategies of the Second World War, this will not lead to huge losses, because the density of troops in the modern war has become an order of magnitude smaller. The third risk is related to the accidental or non-accidental fall of missiles or other weapons into nuclear plants. The probability of the destruction of the nuclear power plant under such conditions is definitely not high, but in the case of at least a partial destruction of the working nuclear station, the consequences will be similar to the Chernobyl accident in 1986.

At that time, an accident at a station that is in a state of cold shutdown (for example, Zaporizhzhya NPP) will not have devastating consequences. Finally, another risk is rockets or projectiles hitting scientific laboratories where experiments with uranium were conducted. However, Ukrainian laboratories have never had significant volumes of nuclear fuel, so the damage will be local. In general, it should be stated that currently the war is being waged mostly by conventional means, and therefore the probability of a transition to a nuclear scenario should be considered relatively small. On the other hand, the analysis of historical events shows that the current war will not be the last on the European continent, if Russia remains, which permanently starts or gets involved in new wars.

Thus, Europe's strategic response to radiation threats is the demand to divide Russia into 7-10 states, at least half of which will adhere to democratic values, and the rest will be devoid of nuclear weapons. If this goal fails, European countries should prepare for a possible nuclear war in 10-15 years. Under such conditions, the entire system of medical provision and resolution of mass emergencies, which demonstrated its ineffectiveness in 2020 during the pandemic, should be reviewed. One of the factors of the reform should be the autonomy of all medical institutions and the distribution of protective equipment and medicines.

CRISIS COMMUNICATION IN THE CONTEXT OF A POTENTIAL NUCLEAR THREAT IN UKRAINE, **Marin GHERMAN**, Institute of Political Studies and Social Capital, Ukraine

A potential nuclear threat in Ukraine in the context of Russia's full-scale invasion has generated pre-crisis communication by the Government and the media. The press in Ukraine published a series of recommendations for survival in the event of a nuclear attack from Russia or an explosion at one of the nuclear power plants. "The nuclear weapon should not be considered a magic weapon," according to Ukrainian newspapers, trying to maintain calm and social optimism. "Ukrainska Pravda" and other media agencies published a series of recommendations on the behavior of civilians after a nuclear strike: what they should do first, how to protect their children, where to hide. In 2022, television and radio stations broadcast information in the context of the danger of explosions at the Zaporozhye nuclear power plant; and in 2023 the recommendations addressed to civilians refer to possible nuclear attacks.

At the same time, the authorities are trying to use this topic to encourage resistance. "There is such a risk, it cannot be ruled out, but the use of nuclear weapons will open the last big front, which will be destructive for the aggressor state," said Ukrainian Defense Minister Oleksii Reznikov.

Among the factors that ease the government's crisis communication in the context of a potential nuclear threat is the war itself, which has made Ukrainians much more resistant to some shock waves. The Ukrainian military appears to be prepared for the worst scenarios, including a nuclear strike. Also, the Ukrainian army has demonstrated that it can overcome a number of major crises in the context of war. This is an indication of Ukraine's resilience.

Among the factors that could represent a barrier to effective crisis communication we mention the growing war fatigue in society, a possible atypical pressure on the border services, which will have to not only allow people to leave the country as at the beginning of the invasion on a large scale, but also to ensure a radiological check. A series of technical problems that could arise in the context of the act of communication cannot be excluded. Crisis communication in the context of this danger also depends a lot on maintaining citizens' trust in the authorities, which is systematically attacked by Russia through fake news, propaganda and disinformation.

THE TRIADIC RELATIONSHIP STRATEGIC COMMUNICATION – SECURITY CULTURE-SOCIETAL RESILIENCE, **Adrian LESENCIUC**, "Henri Coandă" Air Force Academy, Romania

Hybrid threats are an immediate reality. The effective response to these threats does not depend on the promptness of a specialized structure in the national security system. Once the gibridnaya voyna type of challenges presuppose hybridization on the level of soft powers (Lesenciuc, 2003:129-132), by going beyond the ethical and legal norms that establish the application framework of hard power, the entire society against which the hostile actions are directed is affected. Obviously, this response must be built on the basic directions of an effective strategic communication (StratCom) and implies a prior

preparation of the population for this response, i.e. a minimum level af security culture, a minimum accepted of cognitive and evaluative standards, i.e. a set of norms, values, attitudes and actions (Siedschlag, 2018:14) consonant with the aforementioned basic directions of strategic communication. Only in these conditions, the minimum necessary level of societal resilience - the main concept of the current National Defence Strategy (2020) - can be achieved. Therefore, the effective response to hybrid threats is configured in relation to a triadic relationship: strategic communication - security culture - societal resilience.

5th **Panel: Radiation incident - medical management plans and response capacity on-site and in healthcare facilities**

ITB (IODINE THYROID BLOCKING) IMPLEMENTATION FOR NUCLEAR EMERGENCY, Marc Benderitter, Health Division at the Institute de Radioprotection et de Sûreté Nucléaire
During a nuclear accident, radioactive iodine may be released to the environment in a plume or cloud and subsequently contaminate soil, surfaces, food and water. When radioactive iodine enters the body, it accumulates in the thyroid gland in the same way non-radioactive stable iodine would be due to the natural biokinetic pathway of iodine in the human body. In the absence of appropriate protective measures, uptake of radioactive iodine may increase the risk of thyroid cancer, particularly in children. The thyroid gland can be protected from radioactive iodine by saturating it with stable (non-radioactive) iodine. This protective measure known as iodine thyroid blocking (ITB) consists of administering potassium iodide (KI) tablets before or at the beginning of exposure to radioactive iodine. When taken at the appropriate dosage and within the correct time interval around exposure to radioactive iodine, KI saturates the thyroid gland with stable (non-radioactive) iodine and offer efficient thyroid protection. Nuclear emergency preparedness is based on three key measures: 1) taking shelter, 2) administration of stable iodine and 3) evacuation depending on conditions. Usually plans are implemented to ensure that KI tablets are readily accessible. This can mean they are pre-distributed to strategic sites such as households, schools, hospitals, pharmacies, fire and police stations, and evacuation and civil defense centres. When the implementation of iodine thyroid blocking with KI is warranted, public health authorities should define the geographic area in which the population should take KI tablets, as well as when, how and by whom. These instructions may be given through the radio, TV, internet, loudspeakers and other available channels and should be carefully followed. National authorities decide on the methods of pre-positioning and pre-distribution of KI pills in their countries. This presentation will present WHO guidelines for planning for and responding to radiological and nuclear emergencies.

MEDICAL PREPAREDNESS AND RESPONSE TO NUCLEAR AND RADIOLOGICAL EMERGENCIES IN THE REPUBLIC OF MOLDOVA, Ion APOSTOL, National Agency for Public

Health, Republic of Moldova

Organization of Civil Protection system in the Republic of Moldova is built and periodically updated in accordance to the requests of National Security Strategy, Military-political Doctrine and National Defense Strategy and is based on risk assessment. As the risks connected with the war in Ukraine are very high and quite specific, emergency preparedness and response system is updated in Moldova accordingly.

The national system of emergency preparedness and response to natural and manmade disasters is regulated by the Law on Civil Protection #271 from 28.03.1995 and a set of other legal and regulatory acts.

The Ministry of Health has an important role in the national EPR system including medical response to any largescale disasters, including the assistance to overexposed people and casualties. Also, the Civil Protection Law requests using of “allhazard approach” in the EPR planning, contingency plans for nuclear and radiologic scenarios are requested as well. This is imposed by nuclear risks connected to the war in Ukraine.

3 types of medical response teams are identified, equipped and trained in Moldova: 1) medical primary and specialized teams; 2) public health general and specialized teams; 3) voluntary sanitary teams. Reference hospitals for providing qualified medical assistance to overexposed patients are in process of preparedness in Moldova now.

MEDICAL UNITS’ STRATEGIC MANAGEMENT IN CASE OF CBRN INCIDENTS IN REPUBLIC OF MOLDOVA, Andrei MARFIN, Defense Ministry Health Care Department, **Sergiu CIRLAN** “Alexandru cel Bun” Military Academy, Republic of Moldova

CBRN emergency can occur as a result of industrial disaster, occupational exposure, natural catastrophe, warfare, or acts of terrorism. Medical support is one significant component of nuclear and radiological emergencies.

Nuclear and radiological events - an emergency in which there is, or is perceived to be, a hazard due to: the energy resulting from a (1) nuclear chain reaction or from the decay of the products of a chain reaction and (2) radiation exposure. Potential radiation exposures: External exposure to an individual from a source in very close proximity, External exposure from an unshielded source, Exposure following rupture of source casing. Casualties classified by the clinical effects are: Radiological casualty, Nuclear casualty, Combined casualty, Psychological casualty. Casualty hazard management: Management of external and wound contamination; Management of internal contamination (decorporation); Reverse isolation (barrier nursing) to protect a neutropenic patient.

For Republic of Moldova is not excluded the risk of nuclear disaster, in the context of incidents at the nuclear power plant in the city Zaporizhia in Ukraine. (2) It is necessary to review the National Army Emergency assistance plan in case of a nuclear incident.

6th Panel: Contingency planning for haematologists in radiologic and nuclear events

UKRAINE UNDER 2022 RUSSIAN INVASION: HOW READY FOR A NUCLEAR CATASTROPHE IS A COUNTRY THAT HAS PREVIOUSLY EXPERIENCED A LARGE-SCALE RADIATION ACCIDENT, Sergiy KLYMENKO, Center of Hematology, Hemoblastosis Chemotherapy and Bone Marrow Transplantation at "Feofaniya" Clinical Hospital, Ukraine

Soon after Russia invaded Ukraine in 2022, the risks of nuclear catastrophe like a-bombing or NPP accident became obvious. We will discuss how experience in studying the consequences and treating the victims of previous radiation accident at Chernobyl NPP helped Ukraine to get prepared for a possible another nuclear disaster.

UKRAINE RESILIENCE/RESPONSE TO A MAJOR RADIATION INCIDENT. THE EUROPEAN BLOOD AND MARROW TRANSPLANT SOCIETY EBMT NUCLEAR ACCIDENT COMMITTEE NAC COLLABORATION, Ray POWLES, Nuffield Cancer Centre London UK

We will discuss the background of the ongoing work of the European Blood and Marrow Transplant Society EBMT Nuclear Accident Committee NAC in relation to the work being done to establish a pragmatic pathway for triage of victims from a major radiation incident in the Ukraine, with emphasis on defining those victims that may benefit from haemopoetic support. To this end we will particularly give background to the work currently ongoing to the particular needs of this occurring within a war zone.

HEMATOPOIETIC STEM CELL TRANSPLANTATION ACTIVITY IN ROMANIA, AND THE CAPACITY TO RECEIVE PATIENTS IN CASE OF RADIATION EMERGENCY, Alina TANASE, Bone Marrow Transplantation Unit of Fundeni Clinical Institute, Bucharest

Hematopoietic stem cell transplantation (HSCT) is a medical procedure used to treat various hematologic disorders, such as bone marrow failure, leukemia, lymphoma, and certain genetic disorders. Romania, like many other countries, has healthcare facilities that offer HSCT as a treatment option. HSCT can play a crucial role in the medical response to a nuclear accident or radiation emergency. When individuals are exposed to high levels of ionizing radiation, their bone marrow can be severely damaged, leading to a decrease in blood cell production. In such cases, HSCT may be a lifesaving treatment option to restore the patient's hematopoietic system. Romania has several health institutions, especially in large cities such as Bucharest, that offer HSCT services.

Notable medical centers include the Fundeni Clinical Institute in Bucharest, the Iasi Oncology Institute or the Timisoara Children's Hospital. HSCT centers usually have specialized facilities and experienced medical teams to perform transplant procedures. In the context of a nuclear accident, these facilities

can be essential in providing life-saving treatment to people exposed to radiation. Usually, in Romania, around 300 BMT procedures are performed per year in six accredited centers.
In the event of a radiological emergency or nuclear accident, the ability to receive and treat patients is a critical component of disaster response. Romania, like other countries, must have an emergency response plan that also describes the transplant units available for receiving patients.

DIAGNOSIS AND MEDICAL MANAGEMENT OF ARS, Marc BENDERITTER, Health Division at the Institute de Radioprotection et de Sûreté Nucléaire
In the aftermath of a nuclear detonation, United Nations and other organizations could well be called upon to assist victims and governments of affected states. Any conflict in countries that process nuclear power plants or countries threatened by the use of nuclear weapons raises concerns of the potential health impact to the people in that region and beyond such as the current conflict in Ukraine. Societies should prepare for the potential scenarios of nuclear incidents. In this presentation, we discuss the risks of radiation exposure (acute radiation syndrome – ARS), current guidelines, scientific evidence on hematopoietic support, including the role of hematopoietic stem cell transplant (HCT) for those exposed to nuclear radiation, stockpiling and the role that the European Bone Marrow Transplantation societies can play in triaging and managing people suffering from ARS. In medical terms, we also report here the management of 8 overexposed patients to ionizing radiation suffering from ARS. The recovery of bone marrow function after myelosuppression was accelerated using growth factors, optimized by multiple-line combinations.

7th Panel: Radiological incident: plans for response and intervention, including decontamination strategies

THE IMPORTANCE OF EFFECTIVE COMMUNICATION BETWEEN RADIATION PROTECTION PROFESSIONALS AND MEDICAL CARE PROVIDERS, Stephen L. (Steve) SUGARMAN, SummitET – Summit Exercises and Training LLC, US DOE Office of Nuclear Incident Policy and Cooperation
Providing information and effectively communicating are not the same thing. Communication implies a basic understanding of the message by the receiver. Effective communication between health physicists and healthcare providers during a radiological emergency is critical to achieving positive treatment outcomes. Many people may be apprehensive about working with radioactive materials. Those tasked with medically managing victims of radiological incidents may be expected to have the same concerns as other members of the general public when faced with a radiation event. While health physicists understand their roles include dose estimation, contamination control, etc., many do not

understand their communication roles and/or how to develop their messages for an audience that may not be familiar with radiation protection principles or its potential biological effects. Radiation protection professionals should take the time to craft what they want to say to healthcare personnel so that it is useful to the receiver. This is not intended to mean simply providing the technical details, but relaying the details in such a way that they can be understood and applied by the target audience. Questions that may need to be answered include, but are not limited to: What are the risks associated with treatment of irradiated patients? Is it safe to admit a contaminated patient into the hospital? What are the priorities when treating a contaminated injured patient? How can I protect myself from radioactive materials? Taking the time to develop good messages and effectively communicate will ensure the healthcare provider understands the risks and priorities associated with a radiological response. This will result in him/her being able to concentrate on providing proper medical care as opposed to being unduly distracted by radiological concerns, therefore creating the opportunity for the optimal medical outcome.

EMERGENCY PREPAREDNESS AND RESPONSE ARRANGEMENTS IN CASE OF NUCLEAR OR RADIOLOGICAL ACCIDENTS IN BULGARIA, Lyudmila SIMEONOVA, Acting Head of Emergency planning and preparedness section, Bulgaria

The goal of this presentation is to present to the participants of the Workshop the EPR arrangements in the Republic of Bulgaria in case of a nuclear and radiation emergency, including nuclear or radiological emergency caused by an accident in a nuclear facility located outside the territory of our country.

The presentation will describe the main national planning documents in the field of disaster response, the competent authorities and their duties and responsibilities, the national procedures for notifying the population and neighboring countries in case of RN emergency, as well as the process of requesting and providing assistance to other countries. The decision making and implementation of protective actions (including medical response) in case of a nuclear or radiological emergency will also be presented. By the end of the presentation the bilateral agreements with other countries will be presented, including an agreement with Ukraine.

HYBRID NUCLEAR COMPELLENCE: INTENTIONS AND CONSEQUENCES, Valeria HESSE, Odesa Center for Nonproliferation

Intimidation, employing fear as a means to achieve desired outcomes, manifested in various ways during Russia's war against Ukraine. The methods encompassed grave atrocities against the civilian populace, extensive missile and drone attacks, and destructive strikes on energy infrastructure. These actions aimed to compel civilians to exert pressure on their authorities to capitulate. Notably, two of these tactics featured a nuclear component exploiting radiophobia: threats involving nuclear weapons

and the manipulation of radiological emergency risks. While it is important to distinguish that attacks on nuclear power plants do not equate to nuclear weapons threats, the mere inclusion of the word "nuclear" triggers similar fears. However, it is evident from the reactions of the Ukrainian population that Russian hybrid nuclear threats did not yield the intended results. The actual result is a product of Russia's genocidal rhetoric and Ukraine's traumatic history. Ukrainians view this war as a matter of national survival. While they reasonably believe that the state and culture as a whole can endure a limited nuclear attack or another catastrophe like the 1986 Chornobyl nuclear power plant disaster, they do not harbor the same confidence in surviving full-scale Russian occupation.

WHY WE NEED REPUBLIC OF MOLDOVA'S FORMER AND VOLUNTEER MILITARY IN CASE OF A NUCLEAR INCIDENT IN UKRAINE, Vitalie MARINUTA, Retired Officers Association, **Vitalie STOIAN,** Military Training Department Moldova Technical University, Republic of Moldova

In the last period of the war of aggression of Russia against Ukraine, Kremlin officials and Russian opinion makers use more and more the threat to use nuclear weapon in that war. Most of the specialist agree that even a detonation of tactical nuclear weapon at surface-level in Ukraine, may not only cause significant casualties in the area of detonation, but also radioactively contaminate large territories, including the surrounding countries. As Republic of Moldova is only few hundred kilometers from the war zone, the risk of being significantly affected in the event of the use of NBC weapons in Ukraine, especially in the southern part, increases substantially.

In that contest, officials from the Republic of Moldova as well as from other surrounding countries should take in consideration all the necessary measures to protect their population. In order do minimalize the casualties between civilian population, the governments need to inform and train it on how correctly to act in such cases. Having trained personal within civilian institution, at all levels of the administration and conducting periodically elementary trainings, aimed at creating certain behavior of the population, as well as informing correctly the population about CBRN treats is crucial for saving people's lives.

Besides few specialists from the General Inspectorate for Emergency Situations, that are directly responsible for dealing with those situations, one of the basic categories of specialists that have minimal necessary training in the Republic of Moldova to deal with the consequences of the use of CBRN agents and could be effectively used in those situations are active reserve of the Armed Forces. This category of citizens is getting their specialized training in the framework of military conscription service, during military exercises with reservists, organized by the National Army and at the military departments of the Universities.

In current security situation in the region and with increasing threat of the use by Russian Federation of the nuclear weapons in the war of aggression against Ukraine, the government of the Republic of Moldova have to use the potential and the experience of the reserve and retired officers from the Military departments of the Universities to teach the population basic principles of protection against CBRN

treats.

THE ROLE OF IMMIGRATION SERVICE FROM REPUBLIC OF MOLDOVA IN CASE OF NUCLEAR INCIDENT IN UKRAINE, **Alexandr GOTEANSCHII**, **Natalia PETROV**, Radioactive and Chemical Department, Border Police Inspectorate, Republic of Moldova

The neighborhood of the Republic of Moldova with European Union (EU) conditioned reconfiguration of the local security policies in conformity with EU standards. As the member of the European Neighborhood Policy, the Republic of Moldova is making substantial efforts to secure the eastern borders of the Union and effectively manage potential crisis situations. For example, the refugee's crisis from Ukraine generated by the intensive military actions highlighted the vulnerabilities faced by the state institutions affected by a large number of foreigners who sought shelter on the territory of the Republic of Moldova. Both, EU member states and the Republic of Moldova have observed the security gaps that persist and that must be removed. We realize that the necessary changes will be an arduous process that will require time and resources, and especially in case of a massive traffic of refugees it will require prompt and efficient measures. To mention that in case of potential exceptional situation caused by radioactive incident on the territory of Ukraine the immediate necessary response in order to manage the respective threats will put the authorities of the Republic of Moldova to a real difficult test. Taking into consideration the possible threats related to ongoing War in Ukraine our presentation consists in assessing national resilience in relation to potential radioactive security challenges.

The purpose of this article is to highlight the role of the Moldovan Border Police and the necessary actions to be taken in the context of the vulnerability of the Republic of Moldova in the face of a refugee's flow generated by a radioactive hazard.

OVERVIEW WHO RESOURCES. RESILIENCE/ PREPAREDNESS/ RESPONSE FOR A NUCLEAR EVENT, **Dr Silvia Gatscher,** Health Operations Manager, WHO Country Office in Romania

Radio-nuclear hazards represent a catastrophic threat to population health. The current geopolitical landscape has further enhanced this risk, emphasizing the growing need for countries to develop comprehensive mechanisms to build resilience to all health emergencies, including nuclear events.

The World Health Organization has developed several resources to support national authorities, policy makers, and healthcare workers to prepare for and respond to public health emergencies such as those resulting from radiation exposure.

The presentation provides an overview of WHO's role in supporting nations to plan for and respond to radio-nuclear threats and discusses the most important aspects of the available guidelines and resources including guidance on planning, preparation & resilience building, emergency response, and community engagement & risk communication in case of a nuclear event.

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PRESENTATION OF PARTICIPANTS

Prof. dr. **Florin Cătălin CÎRSTOIU** MD, PhD is a Professor of Orthopedics and Traumatology and Dean of Medicine Faculty at "Carol Davila" University of Medicine and Pharmacy Bucharest since 2016. Furthermore, he is the Chief of the Orthopedics and Traumatology Department at Bucharest Emergency University Hospital where he conducts an extensive surgical activity centered on bone defects reconstruction using various methods after tumor resection surgery, but also after failed total hip or knee arthroplasty and osteolysis caused by specific or nonspecific osteoarticular septic complications. From 2013 to 2015 Professor Cîrstoiu was the President of the Romanian Society of Orthopedics and Traumatology (SOROT) and since then he is the Romanian representative at the International Society of Orthopedic Surgery and Traumatology (SICOT). The only Romanian orthopedic surgeon member of the European Musculo-Skeletal Oncology Society (EMSOS) he is the founding member of the Romanian Society of Musculoskeletal Oncology (ROMSOS) and an European Examiner for the European Board of Orthopedics and Traumatology (EBOT) and European Federation of National Associations of Orthopedics and Traumatology (EFORT). In the Orthopedics and Traumatology of Bucharest University Emergency Hospital Professor Cîrstoiu runs the national program for severe bone defects reconstruction. He is main author, coauthor and collaborator for ten medical specialty books, monographs and medical textbooks and also for an extensive number of original, in extenso articles published and indexed in Thomson-Reuters ISI, International Data Base or CNCISI.

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Victor JUC is Head of the Legal, Political and Sociological Research Institute, Moldova State University, doctor, professor, corresponding member of the Academy of Sciences of Moldova, scientific profile International Relations. Professor Victor JUC is author of 310 scientific publications (monographs, chapters in collections, articles in scientific journals, materials of national and foreign scientific conferences).

Scientific interests focus on international relations, European studies, security studies, the history of Romanian philosophical and socio-political thought. In particular, scientific interests are referring to post-cold war world order, and post bipolar international security architecture. A separate chapter is concerning the relations between the Republic of Moldova and some international intergovernmental organizations, with predilections for European Union and North Atlantic Treaty Organization.

Professor Victor JUC is participant as coordinator and staff member in the realization of national and international scientific research projects between the Republic of Moldova and Romania, the Republic of Moldova and Italy.

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Professor **Ray POWLES** is Head of Haemato-oncology and Bone Marrow transplantation at Nuffield Cancer Centre London UK and also Chairman of the European Blood and Marrow Transplant Society EBMT Nuclear Accident Committee. Mr. Powles has written 1200 published articles, papers and abstracts. He was on the WHO Post Cherobly1986 Protocol writing Committee in Oblinsk Russia. After the EBMT NAC formed in 2003, he was centrally involved with in the international response to the Fukushima disaster in 2011. He was a leader in the UK Resilience/Response planning and exercises for the possibility of a Terrorist Radiation Incident at the UK 2012 0lypics. More recently the EBMT NAC has had a key role in a collaboration with WHO (Zhanat Carr) and the Ukraine Haematology/BMT groups led by Prof Sergiy Klymenko, to establish lines of communication, and pragmatic pathways of responses to a major radiation incident in the Ukraine and how this might link with international assistance if needed. This work collaborates with key players particularly in France Germany Sweden the UK and the US, and is actively current work in progress.

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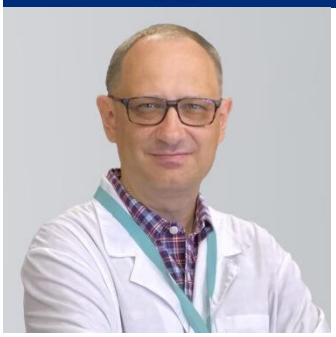

Prof. **Sergiy KLYMENKO** is Head of the Center of Hematology, Hemoblastosis Chemotherapy and Bone Marrow Transplantation at "Feofaniya" Clinical Hospital of State Management of Affairs and Head of the Chair of Clinical Laboratory Diagnostics of Shupyk National Healthcare University of Ukraine in Kyiv, Ukraine. He serves as Main Hematologist and Expert Hematologist of Ministry of Health of Ukraine since 2014. He received his M.D. from the Kyiv Medical University, Ukraine (1991) and is certified in Hematology (1993) and Genetics (2015). He obtained his M.Sc. in Radiation Biology (2003), with distinction, from University College London, UK, and holds Ph.D. (2000) and Sc.D. (2006) in Hematology from Institute of Hematology and Blood Transfusion, Kyiv, Ukraine. Before current appointments, he held several positions in Clinic and Institutes of National Research Center for Radiation Medicine of National Academy of Medical Sciences of Ukraine, and position of Postdoctoral Researcher in Institute of Pathology, GSF, Neuherberg, Germany. His main research interests are myeloid malignancies and molecular genetics of radiation-induced tumors. He was a Member of National Radiation Protection Board of Supreme Council of Ukraine since 2010 through 2019. He is Deputy Chairman of the Commission of Ministry of Health and National Academy of Medical Sciences of Ukraine in Hematology and Transfusiology. He acted as leader in numerous scientific projects in the field of radiobiology, genetics and hematology. He is author of more than 250 scientific publications in books, international and national scientific journals. He received Public Service Award from American Society of Transplantation and Cellular Therapy in 2023.

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Nicolas FORAY - radiobiologist, Director of Research as Inserm, has a long experience in the field of the individual response to ionizing radiation. Since 2019, he is the director of an Inserm Unit devoted to the radiation research, the U1296 Unit « Radiation: Defense, Health and Environment », supported by Inserm, Health Service of French Army and University of Lyon. He has published more than 140 peer-reviewed papers. He is the coordinator to a National Scale radiobiology project (Future Investment National Projects) that focuses on individual radiosensitivity. He has also been and is coordinator or partner of a number of radiobiological studies. He is also involved as partner in EU projects related to ionizing radiation. He was President of the French Speaking Society of Radiobiology for 8 years. He is Editor in European Radiation Experimentals since 2017, Biomolecules since 2020, Radioprotection since 2022.

Michel BOURGUIGNON is a French Medical Doctor (1978) specialist in nuclear medicine (1983), a PhD in Physics (1995) and a university Professor of Biophysics and Nuclear Medicine and Hospital Practitioner (1996). He is now Professor Emeritus of the University of Paris Saclay, medical director of INSERM UMR 1296 and Editor in chief of the peer review journal Radioprotection. From 1978 to 1980, Michel Bourguignon followed a post-doctoral research fellowship at the Johns Hopkins University Hospital in Baltimore, United States. From 1981 to 1996, Michel Bourguignon was a nuclear medicine physician and tenured researcher at the French Atomic Energy Commission (CEA), assigned to the

Frédéric Joliot Hospital department (SHFJ) in Orsay. In 1996, Michel Bourguignon joined the Faculty of Medicine of Paris Ile-de-France Ouest as the head of the biophysics department with the position of Medical Director at the Office for Protection against Ionizing Radiation of the Ministry for Health and the Ministry of Labor. In 2002, he became Deputy Head of the Nuclear safety authority (Autorité de sûreté nucléaire – ASN) and then nominated by the President of France as a ASN commissioner in 2006 till 2014. Michel Bourguignon has been active in different scientific bodies: SFMN, SFRP, EANM, UNSCEAR, ICRP. He is a French Delegate to the Scientific and Technical Committee of Euratom. Michel Bourguignon has published more than 150 scientific articles in peer review journals and 21 chapters for scientific books. He also holds 3 patents. In 1990 Michel Bourguignon was awarded the International Jean Debiesse Prize.

Professor **Corina Silvia POP** - Professor of Internal Medicine and Gastroenterology at Carol Davila University of Medicine and Pharmacy Bucharest - over twenty years of clinical and academic experience Medical Director of University Emergency Hospital Bucharest Secretary of State at Ministry of Health 2015-2018 Senior adviser of Ministry of Health Senior advisor health projects Ministry of European Funds Between 2015-2018 she coordinated National Health Programmes financed by European Social Funds EU Commision on Communicable and Non-Communicable Diseases screening and prevention. Member of the Steering Group on Health Promotion, Disease Prevention and Management of Non-Communicable Diseases SGPP DG-Sante European Commission The interest in public health came naturally to complement the interest in helping the people in need. From patients to an entire community was just a thought that became reality. She has been involved for several years in numerous prevention and screening projects for vulnerable populations. Last but not least is the passion for knowledge, teaching and training young students and doctors in this unique and special profession. The openness and joy of working with young doctors at the patient's bedside but also in academic projects brought her great professional and spiritual satisfaction.

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Universitatea de Stat din Moldova

Dr. Simona PÂRVU, PhD is the Head of the National Institute of Public Health and a Head of work at the Faculty of Medicine of the „Carol Davila" University of Medicine and Pharmacy (UMFCD) in Bucharest, the discipline of Hygiene and Medical Ecology. In the period 2021-2022 Dr. Simona Pârvu was chief physician, Bucharest Regional Public Health Center and in the period 2016-2019 he was Head of Service - State Sanitary Inspection, Ministry of Health.

Dr. Zhanat CARR has more than 20 years of experience in the area of radiation protection, radiation health, and radiation emergencies preparedness, response, and recovery management with the focus on public health and medical aspects. As WHO's focal point for matters pertaining to preparedness and response to radiation emergencies, Dr Carr was a technical lead for the WHO response to Fukushima nuclear accident in 2011. Today, she is leading the radio-nuclear hazards area of the Organization's response to Ukraine crisis. Dr Carr coordinates two WHO global expert networks – Radiation Emergency Medical Preparedness and Assistance Network (REMPAN) since 2004 and BioDoseNet. Her work is related to development and implementation coordination of projects related to evidence-based health policy development (including norms, guides and recommendations and tools for capacity building), to strengthening countries preparedness for radiation emergencies through training and exercise, and to risk communication and advocacy.

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Prof **Alina TANASE**, MD, PhD is head of the Bone Marrow Transplantation Unit of Fundeni Clinical Institute, Bucharest, Medical Director of Fundeni Clinical Institute, Vice President of the National Committee of Hematology of Ministry of Health and President of Romanian Society of Bone Marrow Transplantation. She graduated the Faculty of Medicine in Craiova in 1994; obtained the specialization in hematology in 1999, the superspecialization in bone marrow transplantation in 2003, the PhD title in 2004, and a postdoctoral scholarship in 2010.

Prof. A. Tanase has received intensive training in bone marrow transplant in several centers, including Institute of Haematology Seràgnoli, Bologna, Italy, University Hospital of Regensburg, Germany and MD Anderson Cancer Center, Houston, University of Texas, the United States. The field of research activity is hematopoietic stem cell transplant, with emphasis on lymphomas and graft versus host disease. Prof. A. Tanase has successfully led national and international projects on hematopoietic stem cell transplantation, she developed collaborations with international research centers such as MD Anderson Cancer Center, Houston, USA, and Lymphoma Working Party from European Bone Marrow Transplantation Association. She is part of Nuclear Accident Committee and participated to the NAC Meeting during the EBMT Annual Meeting, April 2023. She succeeded to implement CAR-T therapies in adult patients in Fundeni Clinical Institute, in 2022, opening a new stage in the treatment of patients with malignant hemopathies.

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Tsubokura MASAHARU, Professor, Department of Radiation Health Management, Fukushima Medical University School of Medicine, Director, Research Center for Community Health, Minamisoma Municipal General Hospital, Fukushima. After the Fukushima nuclear power plant accident in 2011, he worked with local municipalities in Fukushima, and played an important role in the establishment of the internal radiation exposure screening programs for the local residents. He is also a member of the committee on radiation protection and public health in Minamisoma and Soma Cities, and has actively sought to provide radiation seminars to the public, to respond to public worries about the effects of radiation exposure on health.

Dr. **Caroline CLARINVAL** is Head of WHO Country Office in Romania since August 2022. Prior to this, Caroline has led the WHO Office in Kazakhstan and managed the emergency operations for WHO in Ukraine. In her capacity as WHO Regional Adviser, Emergency Response and Operations, Caroline supported 14 countries and territories across the Middle Eastern Region responding to health emergencies, including Iraq, Yemen, Syria, Libya and Somalia. Serving for a decade in the International Committee of the Red Cross, Caroline assisted populations affected by conflict, managing large-scale relief operations in Africa, Asia and the Middle East. While working for the Federal Office of Public Health in Switzerland, Caroline was responsible for the national strategy on rare diseases and was a Member-State delegate to WHO. Caroline holds a PhD in Biomedical Ethics and Law, Master's degrees in Public Health and Human Rights Law. She also teaches biomedical ethics and humanitarian ethics

at the Massachusetts Institute of Technology (MIT) in Boston, London School of Hygiene and Tropical Medicine in London, at Kings College in London and at the University of Zurich.

Professor **Catalina POIANA,** University Professor, Head of the Endocrinology Discipline "C. I. Parhon", Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy; Primary physician endocrinologist, National Institute of Endocrinology "C. I. Parhon"; Vice-rector for postgraduate education, "Carol Davila" University of Medicine and Pharmacy, Bucharest since March 2016; President of the College of Doctors from the Municipality of Bucharest, since December 2015; Corresponding Member of the Romanian Academy of Medical Sciences since 2017.

Assoc. Prof. **Istvan TURAI** currently teaches "Radiobiology and Environmental Radiohygiene" at the Doctoral School of Environmental Sciences of the Eötvös Lóránd University (ELTE), Budapest. He reads lectures mainly in English and also in Hungarian, and takes exams of his PhD students residents of Hungary on one hand and arriving from different countries of Africa, S-America and Asia on the other hand, to complete their PhD studies. He is Hon.Sen.Scientific Advisor of Dept. for Radiobiology and Radiohygiene of the National Institute for Public Health (OKI), Budapest. Istvan contributes to Adult Education and International Education (as an invited lecturer). He is consultant of IAEA/IEC project on updating IAEA publications on Medical Preparedness and Response to Radiation Emergencies.

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Universitatea de Stat din Moldova

Marc BENDERITTER (PhD, h-index 38) is Deputy director of the Health Division of Institut de Radioprotection et de Sûreté Nucléaire and Head of the WHO Collaborating Centre-IRSN and IAEA Capacity Building Centre-IRSN for Medical preparedness and response to radiological and nuclear emergency. Mr. Benderitter is expert/team leader of 9 IAEA medical assistance missions for radiological accident (Chili-2011, Bulgaria-2011, Peru-2012, Peru-2014, South Africa-2018, Peru-2018, Georgia-2019, Thailand 2021, Peru-2022).

University lecturer **Carmen ORBAN** is the head of the Anesthesia-Intensive Care Department within the Bucharest University Emergency Hospital and from 2023 she was appointed State Counselor within the Prime Minister's Chancellery. University lecturer Carmen Orban conducts PhD thesis since 2019. She has a vast managerial experience in the Romanian medical system with exceptional results. She was manager of the Clinical Emergency Hospital for Reparative Plastic Surgery and Burns between 2009 and 2011, Manager of the Fundeni Clinical Institute between 2011 and 2019, general director of the Monza private medical group. University lecturer Carmen Orban has published dozens of scientific articles, university manuals and reference books in the field of Anesthesia-Intensive Care.

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Dr. **Silvia GATSCHER** worked as a pediatric neurosurgeon in the UK, Germany, and the US. After receiving her MBA from Hult International Business School in 2016, she became a consultant for the WHO Emergency Response Office (WHO EMRO). In this role, she supported relief projects in Northern Syria and later in Somalia. She then worked for the UNICEF Somalia and East Africa office as a health manager, supporting the capacity building of Somali government officials and helping to improve the resilience of East African health systems, so that these services can better withstand and cope with future stresses. As health operations manager for the WHO Poland country office she coordinated the Ukraine refugee response of national and international health partners in support of the Polish Ministry of Health and in her current position with WHO Romania she is supporting refugee response, emergency preparedness and BCA activities.

Andrei MARFIN is Head of Outpatient Center of Ministry of Defense, Republic of Moldova and also university assistant at the Department of Military and Disaster Medicine, "Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova. Fields of interest: prehospital care of the military; medical management in disasters. Dr. Andrei Marfin is a graduate of the Doctoral School in Medical Sciences at the "Nicolae Testemitanu" State University of Medicine and Pharmacy of the

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Republic of Moldova, Social Medicine and Management (2021); Postgraduate Training Course "Current Issues of National Security", Military Academy, Chisinau (2020); Managing Defence in the Wider Security Context Course, Defence Academy of the United Kingdom (2019); Medical Strategic Leadership Program Course, Fort Sam Houston, Texas, USA (2014).

Prof. univ. dr. Lucian NEGREANU is Vice-Dean of International Cooperation, Professor of Internal Medicine and Gastroenterology and IBD unit coordinator at the University of Medicine and Pharmacy “Carol Davila” Bucharest, Romania, Head of Gastroenterology II Department at the Emergency University Hospital Bucharest.
After graduating Carol Davila University, prof. Negreanu followed a formation in Internal Medicine and Gastroenterology at the Emergency University Hospital in Bucharest. Mr. Negreanu completed stages of formation in Gastroenterology with Prof. E.H. Metman in Tours, France and several ESGE and WEO trainings in therapeutic endoscopy with dr. J.F. Rey, in St Laurent du Var, France. Mr. Negreanu’s interests are: Inflammatory Bowel Diseases, advanced endoscopy and capsule endoscopy, colon cancer screening and esophageal motility disorders. Mr. Negreanu is author and co-author of over 50 scientific articles in the field of gastroenterology with an HI of 19.

Horia BUMBEA MD, PhD, Professor, Senior Specialist in Haematology Blood and Marrow Transplant Unit Coordinator, Vice-president of the College of Physicians in Bucharest, President of Romanian Association of Cytometry, Vice-president of Romanian Society of Haematology

Ion APOSTOL is Retired Medical Colonel, Public Health Management Direction, National Agency for Public Health, Ministry of Health of the Republic of Moldova.
Colonel Ion Apostol went into reserve from the position of Deputy Director of the Department of Emergency Situations under the Government of Moldova, being nominated in different civilian positions as Director of the National Agency for Regulation of Nuclear and Radiological Activities.
Deputy Minister of Environmental Protection and Natural Resources, Acting Minister if Environment. Fields of interest: radiation protection, nuclear and radiological safety and security; emergency preparedness and response to nuclear and radiological accidents. Dr. Apostol represents Republic of Moldova in coordination group of WHO's REMPAN; represents the Ministry of Health in working groups responsible for elaboration of National Military Strategy, National Contingency Plan of emergency preparedness and response to nuclear and radiological emergencies. In 2002-2003 Dr. Ion Apostol activated as an inspector of the United Nations Monitoring, Verification and Inspection Commission in Irak.

Associate Professor **Silvia NICA**, MD, PhD, Head of "Emergency Medicine and First Care" Discipline at the "Carol Davila" University of Medicine and Pharmacy Bucharest. Since 2014, she is the Head of Emergency Department at the University Emergency Hospital of Bucharest. She contributed to the

realization of numerous national projects for the training of medical personnel in the field of emergency medicine.

Dr. **Lacramioara BORDEA** is Consultant in Emergency Medicine and specialist in Anestesiology and Critical Care, experienced doctor with demonstrated history of working in hospital and health care industry. Dr.Bordea graduated Gr.T.Popa Faculty of Medicine and Stomatology, trained in Clinical Emergency Hospital Floreasca Bucharest, working in Emergency Department of University Emergency Hospital Bucharest since the foundation, the biggest and challenging department in Romania, level 1 hospital. Experience in teaching by leading as Director the program for continuing training in Emergency Medicine for doctors, " certificate in Emergency Medicine" and also in residency training activity.

Sergiu CIRLAN is Medical Chief at “Alexandru cel Bun” Military Academy of the Republic of Moldova, and also university assistant at the Department of Military and Disaster Medicine "Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova. Fields of interest: modern approaches to medical support planning in military operation; Medical management in disasters. Dr. Sergiu Cirlan is a graduate of the Doctoral School in Medical Sciences at the "Nicolae Testemitanu" State University of Medicine and Pharmacy of the Republic of Moldova, Social Medicine and

Management (2021); Strategic Health Management Course, Military Medical Institute, Bucuresti, Romania (2019); Postgraduate Training Course "Current Issues of National Security", Military Academy, Chisinau (2018); Medical Strategic Leadership Program Course, Fort Sam Houston, Texas, USA (2016); Medical Management of CBRN Casualties Course, Fort Sam Houston, Texas, USA (2010).

Dr. **Cosmin DUGAN** is Geriatrics-Gerontology senior physician at Medicala II Clinic Bucharest University Emergency Hospital, resident in Physical Medicine and Recovery, PhD student in Neurology, Master in Medical and Clinical Engineering, Master in International Relations and Geopolitics, Master in Security and Information Analysis, Executive Director of the Black Sea University Foundation "Mircea Malița".

Cantemir CIUREA-ERCAU is the President of the Romanian Nuclear Regulatory Authority in nuclear field, the National Commission for Nuclear Activities Control.
Mr. Ciurea graduated from the Power Engineering Faculty, University “POLITEHNICA” of Bucharest, Romania with a B.Sc. degree in Power Generation Systems in 1996, followed in 1997 by a M.Sc. degree in Computed Aided Modelling of Power Generation Systems.
Between 1996 and 2000 he was working as engineer within the Energy Research and Modernization Institute (ICEMENERG) and from 2000 he begins his career in nuclear field within the Nuclear

Regulatory Body, CNCAN, as a safety analyst until 2004, followed by Head of the Nuclear Safety Section from 2004 until 2009 and Director of the Nuclear Fuel Cycle Division from 2009 till 2021. In February 2021 he was appointed as Interim President of CNCAN and from January 2022 until now he is President of CNCAN, acting as State Secretary.

Stephen L. (Steve) SUGARMAN, Vice President and Corporate Health Physicist for SummitET (Summit Exercises and Training), has been working in the health physics field for more than 35 years. He is certified by the American Board of Health Physics and has a master's degree in Safety Education and Service from the University of Tennessee. His primary areas of interest are the integration of health physics into radiation emergency response and improving communications as they relate to radiological incidents. Prior to coming to SummitET, Steve was the Health Physics Project Manager for REAC/TS, where during his 18 years of service he responded to numerous real-world radiation events. With numerous peer-reviewed publications to his credit, Steve has provided training or invited lectures on radiation emergency response throughout the US and in over 20 foreign countries.

Dan SERBANESCU is a nuclear safety and risk specialist at Nuclearelectrica and Director of Engineering and Safety at Ropower. His background is nuclear physics and nuclear engineering, with PhD on nuclear engineering and worked on risk, safety and emergency planning for large and small reactors. He has experience in security of energy supply and more than four decades in all nuclear fields at various executive and managerial positions, of which half in Romania, connected with CANDU

and recently NUSCALE and half abroad, as PRA project manager of PBMR Ltd in South Africa and as European Commission nuclear staff member in JRC and DG ENER. He is scientific secretary of the Division of Logic and Models of the Romanian Academy and member EREDA. He has academic experience and is author/coauthor of more than 50 papers and of several books on safety, risk and models in complex energy systems, including nuclear.

Gareth THOMAS Is the professional lead/ head for the department for regulation of radiation protection at 35 nuclear sites in the UK. The department regulate all aspects of radiation protection and includes experts in the fields of health physics, emergency planning, criticality, shielding, radiation consequences and transport of radioactive materials.

Gareth is also chair of the Chair of the Heads of European Radiation protection Competent Authorities (HERCA) Working Group on Emergencies (WGE) which consists of emergency planning experts from all European regulators who work to improve the application of protective actions in national emergency planning and also to promote consistent and compatible emergency preparedness and response arrangements within and between European countries for nuclear emergencies occurring both within Europe and elsewhere. An important document produced is the “HERCA-WENRA Approach for a better cross-border coordination of protective actions during the early phase of a nuclear accident”. Gareth chairs the HERCA Task Force supporting Ukraine and neighboring countries during the war; the topic of his presentation today.

Gareth has been a radiation protection and emergency planning regulator for 23 years where he has experience of most radiological and nuclear practices. He is the UK representative for radiation protection at IAEA, EC and HERCA and played a role in developing both the IAEA and EC Basic Safety Standards Directives. He supports development of UK legislation and has participated in IAEA IRRS Missions to help other countries strengthen and enhance the effectiveness of their regulatory infrastructure for nuclear, radiation, radioactive waste and transport safety. Prior to becoming a regulator, he worked in radiation protection in the non-nuclear sector and was also head of professional training at the UK NRPB/HPA/UKHSA in the 1990s.

Spitalul Universitar de Urgenta Bucuresti

Universitatea de Stat din Moldova

Roland KOVÁCS is Senior Adviser at Norwegian Radiation and Nuclear Safety Authority with 21 years of military experience. Mr. Kovács uses his Chemical engineer and Environmental engineer degrees within the Chemical Biological Radiological and Nuclear Defense area. Mr. Kovács has a long experience in team work in a multinational and multicultural environment, in domains such as: planning education and training, predicting and analyzing Hazards, using Emergency Response Guide, decontamination, radiation detection, working with radioactive isotopes, teaching and instructing, Early Warning and Reporting Systems, document controlling and exercise planning.

Cosmin GHITA is a graduate of Bates College in the United States of America, majoring in international political economy. He started his career in the USA in Chevron, Washington, then contributing to the company's efforts in Romania. In the period 2015-2017, he was a partner in the private energy investment fund Amerocap, based in New York, supporting transactions and efforts to attract capital in the field of energy and mineral resources, in Romania, Ukraine and Great Britain. He later held the position of adviser to the Prime Minister of Romania on energy security and energy policy issues. Since September 2017, he holds the position of General Director within Nuclearelectrica.

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Mr. Cosmin Ghita is the first Romanian elected to the Main Governing Board of the World Association of Nuclear Operators, contributing to the fulfillment of the objectives of this international association of strengthening nuclear security and nuclear security culture.

Lyudmila SIMEONOVA is Head of Emergency Planning and Preparedness Division in Nuclear Regulatory Agency, Bulgaria. She has worked on CBRN Planning and Preparedness field since 2001. From 2008 until 2017 Ms Simeonova works as a Head of CBRN Sector in Fire Safety and Civil protection General Directorate in MoI and responsible for development of the national emergency plan and CBRN operational procedures; Management of radiological and nuclear incidents; Organization and conduction of Training of first responders. She is a NATO civil expert of Management of consequences in case of radiological emergency since 2012. Ms Simeonova has participated as a trainer in a couple of training of first responders under the NATO CBRN training curriculum program. In 2017 Ms Lyudmila Simeonova was appointed Head of Emergency Planning and Preparedness Division in Nuclear Regulatory Agency. She has a Masters's degree from Sofia University "St. KlimentOhridski", specialty Chemistry and Masters's degree from Sofia University "St. KlimentOhridski", speciality nuclear physics.

Mihăiță GĂINĂ is President of Nuclear and Radioactive Waste Agency with experience in the public and private sector in the field of environmental protection, management of hazardous and non-

hazardous waste, alternative energies, protected areas and projects with external financing and projects with European financing.
Consultant, member of project teams and project manager within environmental projects with non-refundable financing from public funds. Experience in environmental project management and evaluation various aspects related to the impact of development on the environment.
Experience in the legislative field: a senatorial mandate (2008-2012) and two mandates as deputy (2012-2020), member of the labor and social protection commissions. Legislative initiatives in the field environment and health at work.
Expert evaluator of risk, health and safety at work. Auditor in field of quality and quality management systems.

Valeriia HESSE is a researcher at the Odesa Center for Nonproliferation (OdCNP), a research consultant at Open Nuclear Network (ONN), and a management and research consultant at Atomic Reporters (AR). Her professional focus is nuclear diplomacy, including international organizations and regimes in nonproliferation, nuclear risk reduction, nuclear security, arms control, and disarmament. Valeriia is also interested in futures and foresight.She is a certified PRINCE2 project manager with extensive experience in international educational event and conference management, eager to improve and innovate.
Ms. Hesse was a visiting researcher at the James Martin Center for Nonproliferation Studies (CNS), a consultant at the World Institute for Nuclear Security (WINS), and an intern at the Division of Concepts and Planning at the International Atomic Energy Agency (IAEA) Department of Safeguards and Carnegie Endowment for International Peace. Valeriia is a Fulbright scholar. She obtained her Master's degree in Nonproliferation and International Security from the University of Georgia (USA) and has a Bachelor's and a Master's in International Relations from Odesa I.I. Mechnykov National University (Ukraine).
Ms. Hesse is the Annual Meeting Plenary Committee Chair at the Institute for Nuclear Materials Management (INMM), a member of Women in Nuclear (WiN) IAEA, Young Generation European Leadership Network (YGLN), Black Sea Women in Nuclear Network (BSWN), and US-Black Sea Nonproliferation Professional Exchange.

Petre MIN, PhD is a nuclear power plants engineer, with an MSc in radiation protection and nuclear safety and a PhD in NPP accident management and 19 years working experience. His duties at the regulatory authority included the coordination of Emergency Preparedness and Response activities, implementation of Emergency Preparedness and Response projects, elaboration of regulatory requirements in Emergency Preparedness and Response, Radiation Protection and Nuclear Safety, elaboration of plans and procedures, national representation at international organizations (EC, IAEA) Over the years Mr. Min has participated in numerous international activities and projects in the area of RP and EPR, being the CNCAN representative in EU "Heads of European Radiological Protection Competent Authorities (HERCA)", and at the IAEA Emergency Preparedness and Response Standards Committee (EPReSC). Since 2019 he is an IAEA external consultant supporting projects from the Technical Cooperation Program.

Alexandru TOMA is Strategy and Development Director at Technologies for Nuclear Energy State-Owned Company (RATEN). Throughout his career at RATEN, Mr. Toma has been involved in numerous projects as coordinator or technical expert, including worker radiation exposure evaluation projects; with over 35 years of experience in the field, he currently holds the position of Strategy and Development Director of RATEN, being chiefly responsible for the coordination of RATEN's R&D strategy development and for monitoring its implementation.
Mr. Toma coordinates RD&T research programme development, in accordance with RATEN's strategy, and activities pertaining to technology transfer and dissemination of RD&T results. Mr. Toma ensures

the necessary scientific and technical support for all research and development projects carried out at RATEN's nuclear and radiological facilities and represents RATEN in relation to the European Commission, within the framework of EURATOM projects.

Brigadier General (r) Vitalie MARINUȚA is Former Minister of Defense of the Republic of Moldova and currently Chairman of the Veterans and Reservists Association. He played a key role in the development of cooperation of Moldovan National Army with NATO and in raising its's readiness to NATO's standards.

He served in different commanding and staff positions within Moldovan Armed Forces and one year within US Army Central Command as a strategic planner for the war on terrorism. For his outstanding service, Br. Gen. (r) V. Marinuta was decorated with many military awards, including US Army "Meritorious Service Medal".

Mr. Marinuta is licensed in International Relations, from Chisinau Institute of European Studies, master's Degree in International Security from Naval Postgraduate School (USA) and graduated from US. Army Command and General Staff College and a special course for top International Security Managers from Harvard University. Br. Gen (r) V. Marinuta has publications on civil-military relations and regional security issues, including articles on the Transnistrian conflict.

Brigadier General (r) Vitalie STOIAN is War veteran, awarded the Military Merit Medal, Order of the Faith of the Fatherland class III and the Medal for Bravery, National Army distinctions, foreign countries distinctions. Mr. Stoian is Former Commander of the National Army of Republic of Moldova and Acting Head of Military Training Department, Technical University of Moldova

He had performed several military missions such demining of the Republic of Moldova national territory in the period 1994-2008, peacekeeping mission in the security zone of the Republic of Moldova, mine clearance mission in Pohrebea and demining missions as part of the Multinational Forces in Iraq in Tikrit, Asraf and Mosul.

Mr.Stoian had graduated Military High School, Chisinau, Republic of Moldova, Higher Military School of Command of Engineer Troops, Kamenets-Podolskii, Ukraine, National Defence University, Bucharest, Romania, Academy of Public Administration, Chisinau, Republic of Moldova.

Cristian **VIZITIU** has built his career within R&D and management space field perspectives, currently being the Head of Space Applications for Human Health and Safety Department, Institute of Space

Science, Bucharest Magurele, Romania and Associate Professor in Systems Engineering related disciplines.

With an engineering background in vehicle based engineering, a Master of Business Administration (MBA), and an international master in complex system architectures certified by Massachusetts Institute of Technology (MIT), Cristian Vizitiu has gained his first PhD title within Systems Engineering (SE) methodology according to space working standards (ESA ECSS, INCOSE) and now in the course of fulfilling the 2nd PhD Programme in Computer Science and Information Technologies in human performance applications.

Involved in numerous national and international R&D projects, Cristian Vizitiu performs in designing and developing integrated applications with space related technologies and expertise for space or terrestrial use, as telemedicine, countermeasures for human spaceflight, assistive technologies, as well contributes in experiments within Ground-Based Analogs for Human Spaceflight.

Lieutenant colonel **Lucian BOIURU** is Chief of WMD Nonproliferation and Nuclear Consultation Office, National Military Command Center/Defence Staff. In his previous assignment, Lieutenant colonel Lucian Boiuru served as Chief of planning Office/S3 at 2nd Mountain Brigade, Romanian Land Forces. Lieutenant colonel Lucian Boiuru began his military career as a CBRN Reconnaisance Platoon leader/ CBRN company/ 2nd Mountain Brigade, Romanian Land Forces. Lieutenant colonel Lucian Boiuru held various leadership and staff positions on CBRN Defence field at company, battalion and brigade level, all related to CBRN field. He is a graduate of the Romanian Land Forces Academy, class 2002 and of the Command and General Staff College at the Romanian National Defence Academy, class 2020. The officer has a wide experience in military operation planning, including in Afghanistan and multiple courses and exercises in multinational environmnent. Regarding the CBRN domain, in the last three years after graduating from the Command and General Staff College at the Romanian National Defence Academy, lieutenant colonel Lucian Boiuru acquired vast experience, being assigned to work as a

Project Officer within multiple CBRN training activities including major interinstitutional exercises at the national or allied level oriented towards mitigating the effects of various CBRN events.

Bogdan VAMANU is currently a researcher with 'Horia Hulubei' National Institute for Research and Development in Physics and Nuclear Engineering (NIPNE), Bucharest, Romania. He possesses a strong educational background, holding an MSc in Intelligent Systems and a PhD in Industrial Engineering, which he earned in 2007. Dr. Vamanu has an extensive track record within the Department of Life and Environmental Physics at NIPNE, where he acted as a Modeler and IT developer within the projects engaged with by the Environment group (2001-2007, 2011-2014, 2020-). The main topics addressed in his research as member of these projects include the health and environmental impact of man-made activities and natural events, with focus on societal Nuclear and Chemical risks and vulnerability assessment. On the same topics of safety, risks, and vulnerability, Dr. Vamanu activated over the years either in collaboration or temporary relocation with international fora, such as the Swiss Federal Institute of Technology, ETH-Zurich – dwelling in the risks and vulnerabilities induced by hazardous material transportation, or the European Commission Joint Research Centre (EC-JRC) on assessment models and software design and development, addressing the vulnerability of complex systems and critical infrastructures (2008-2011) and safety of the European off-shore oil and gas industry (2014-2020). Throughout his career, Dr. Vamanu build a solid expertise in the design and development of integrated Decision Support Systems – software platforms accommodating the modeling and simulation engines, with geographical information systems (either developed 'in-house' to serve specific purposes, or full-fledged commercial or open-source GIS solutions), and various means of results communication, as well as design and development of complex web applications for data acquisition, processing and communication.

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Universitatea de Stat din Moldova

Alexandr GOTEANSCHII is Chief of the Radiologic and Chemical Control Service, General Inspectorate of the Border Police, the Republic of Moldova. Mr. Alexandr Goteanschii is professional military, over 30 years of experience in border protection, surveillance and control. Was graduated by National Academy of Border Guards, Khmelnitsky, Ukraine (1999) and later completed specialized Border Guard/Military Master's Degree (2007).

Fields of activity: detection, deterrence and interdiction of illegal traffic of radioactive and nuclear materials; interdiction of illegal traffic of chemical materials; nonproliferation of the weapons of mass destruction.

Mr. Goteanschii is responsible officer for cooperation with DOE/NSDD, IAEA, Interpol in the field of radiologic security at the border. Also, he is the DOE/NSDD certified trainer for radiation detection handheld, mobile and portal equipment.

Natalia PETROV is principal officer at General Inspectorate of Border Police is carrying out the service duties in the field of radiological and chemical control at the border as well as ensuring the implementation of national legislation in the field by the border units. Participation in seminars, institutional and interinstitutional work groups in the field of radiological and chemical control at the border. Provide trainings as well as on the job trainings in the field of radiological and chemical control at the border. Fields of interest: challenges and prospects of regional and international security environment; Black Sea regional security; current problems of national security policy in the field of detecting and combating radiological and nuclear trafficking. Mrs. Petrov holds a Diploma in Chemistry

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the State University of the Republic of Moldova, and Diploma Master's in Chemistry the University of the Science Academy of the Republic of Moldova.

Bharat Patel works as a policy offer in DG ENERGY of the European Commission in Luxembourg, where he is in the unit dealing with nuclear safety, radiation protection matters at the European level.

Dan DUNGACIU is Professor at the Faculty of Sociology and Social Work of the University of Bucharest, director of the Institute of Political Sciences and International Relations of the Romanian Academy and President of the Black Sea University Foundation. He also coordinates LARICS – The Information Warfare and Strategic Communication Laboratory. Mr. Dungaciu held the position of Under-secretary of State at the Ministry for Foreign Affairs, Romania and of president adviser for European integration for the president of Moldova. He is holder of the special state distinction "Merit of Honor" in Republic of Moldova (2010).

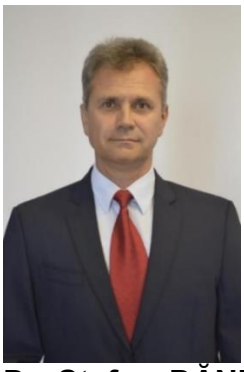
Mr. Dungaciu studied and worked as associate researcher in many Western academic institutions: Fernand Braudel Institute (Binghamton, USA), Max Weber Centre for Advanced Cultural and Social Study (Erfurt, Germany), Department of Political Sciences and Public Administration – Law, Economics and Political Sciences School of Athens (Athens, Greece), Central European University (Budapest, Hungary), Department of Social Sciences – Great Britain, Polytechnic University (Cambridge, Great

Britain), Institut für die Wissenschaften vom Menschen (Vienna, Austria), Max Planck Institute for Social Anthropology (Halle, Germany), Triangle Research Center (North Carolina, USA).

Natalia ALBU is Director of Strategic Research Centre of the Legal, Political and Sociological Research Institute, State University of Moldova. Dr. Natalia Albu is also associate professor at the Military Academy of Armed Forces of the Republic of Moldova. Her fields of interest include: challenges and prospects of regional and international security environment; Black Sea regional security; current problems of national security policy, analysis and evaluation of vulnerabilities and threats; integration gender perspective in the security and defense sector. She has contributed as a member of the group of experts in charge of the development of the Public Policy Proposals on security issues, “National Defense Strategy” of the Republic of Moldova and she was member of working group that elaborated National Action Plan on implementing of UNSCR 1325 Women, Peace and Security for 2018-2021. Dr. Albu was invited as a guest speaker at the GCMC Seminar on Regional Security.

Ovidiu RAEȚCHI holds the rank of Secretary of State in the Ministry of Foreign Affairs, as president of the Euro-Atlantic Center for Resilience. Previously, he was vice-president of the Committee for Defense, Public Order and National Security in the Chamber of Deputies and deputy in the Romanian Parliament for the Diaspora (2012-2016), respectively for Bucharest (2016-2020). Columnist for Libertatea, Adevărul, Digi 24 and Ziare.com.

Mr. Raetchi is a doctor in history (Faculty of History of the University of Bucharest) and a doctor in political science (SNSPA). He holds a master's degree in Arabic Culture (Faculty of Foreign Languages and Literatures of the University of Bucharest) and a master's degree in Jewish Civilization (Faculty of Letters of the University of Bucharest).



Dr. **Ştefan DĂNILĂ** is military pilot and retired general (four stars). General Dănilă has previously served as Chief of the General Staff of the Romanian Army (2011 - 2014) and the first aviation general that held this position. General Dănilă also served as State Counselor and Head of the Defense Department at the Chancellery of the Prime Minister of Romania (2015-2016) and military adviser of the Minister of National Defense (2016-2017). General Dănilă has been awarded the National Order "Steaua României" in the rank of Officer; the Order of "Aeronautical Virtue" in the rank of Commander; Emblem of the Romanian Army's Honor; Emblem of Honor of the General Staff. He has also been awarded with l'Ordre de Légion d'Honneur in the rank of officer (France) and the Medal "Consolidarea Frăției de Arme" (Republic of Moldova).

Professor dr. **Iulian CHIFU** is the president of the Conflict Prevention and Early Warning Center Bucharest, since 2002. He is a professor at the National Defense University Bucharest and an associate professor to the National University for Political and Administrative Studies. He serves as advisor to the President of the Romanian Senate for foreign policy, security and strategic affairs.

Between 2021-2023(July) he was State Counsellor for Foreign Affairs, Security and Strategic Affairs of the Romanian Prime-Minister. He acts now as Counsellor of the President of the Romanian Senate.
Mr. Iulian Chifu is specialised in Conflict Analysis, Crisis Decision-making and Post/Conflict Reconstruction, Intelligence and National Security. He has a PhD in contemporary History of the International Relations in 2004 and one in Intelligence and National Security 2021. He conducts PhD thesis since 2022. He is author or co-author of more than 58 books and hundreds of articles.
He is alumni of International Visitors Leadership Program, Conflict Prevention at the US State Department, Washington. He graduated Senior Course on Crisis Management and Civil Emergency Planning at the Institute for National Defense and Security Policy Studies, Swedish National Defense College, Stockholm (Sweden). He graduated multiple high-level courses in Intelligence Analysis, Psychological operations and “Intelligence and Civil Society" at the Center for Civil-Military Relations, Naval Post-Graduate School, Monterrey, California.

Associate Professor PhD **Darie CRISTEA** is Vice-Dean at the Faculty of Sociology and Social Work of the University of Bucharest and scientific researcher at the Institute of Political Sciences and International Relations (Romanian Academy). He is also a project coordinator at Inscop Research. Author or co-author of several volumes and articles, both scientific and for the general public. At the University of Bucharest, he teaches courses in Political Sociology, Sociological Research Methods and Techniques and Security Studies Methodology.

Mykhailo SAMUS is chief of The New Geopolitics Research Network https://www.newgeopolitics.org/, an independent and nonpartisan initiative and director, New Geopolitics Research Network (Ukraine). After 20 years in media as well as in security and defense analysis and consultancy, Mykhailo is an experienced researcher in the sphere of international relations, national resilience and new generation warfare. Served 12 years in the Ukrainian Armed Forces, he gained his Master's Degree in International Journalism from the Institute of Journalism, Kyiv Shevchenko National University, Ukraine (2007). Having started his career as a journalist at Defense Express Magazine, he became the Editor-in-Chief of the Export Control Newsletter Magazine, and then the Deputy Director of the Center for Army, Conversion and Disarmament Studies. He was the founder (2009) of the EU CACDS office in Prague (Czech Republic), and was the member of the editorial border of the CACDS Analytical Bulletin Challenges and Risks.

Davide BARBIERI is a computer scientist with extensive professional, teaching and research experience in intelligence analysis and cybersecurity, especially in personal data protection. He worked at the European Commission for the evaluation of project proposals (ICT, Intelligence and Security). He holds a PhD in Biomedical Sciences (Ferrara, Italy), a MSc in Software Engineering (Oxford, UK) and a MEng in Information Technology (Modena, Italy). He is a chartered engineer and an Iraq veteran.

Andriy STAVYTSKYY is Dr Hab in Economics, Professor of Economic Cybernetics Department at Economic Faculty, Taras Shevchenko National University of Kyiv, National Expert on Higher Education Reform in the Bologna Process, Member of the Scientific and Methodological Council and ECTS Coordinator of University. Visiting professor at Edinburgh Business School, Vilnius University (Lithuania). Editor of the journal "Ekonomika" (Lithuania) and reviewer of economic journals in Ukraine and worldwide. Author of more than 150 scientific papers, 30 textbooks, manuals, monographs. Areas of research interests: economic security of the state, geopolitics, economic and mathematical modelling, econometric forecasting, information systems in economics, microeconomic modelling, methods of machine learning, reform of higher education in Ukraine within the Bologna process. Teaches courses: "Economic information processing systems", "Econometrics", “Economics for Business”, "Modeling of microeconomic processes", "Economics", "Econometric Analysis", "Quantitative methods", "Applied micro-econometrics".

Veaceslav UNGUREANU is Doctor in Political Science, Leading Scientific Researcher within the Center for Political Researches and International Relations of the Institute of Legal, Political and Sociological Research of the State University of Moldova.
He is participating actively in national and international scientific projects. The spheres of scientific interest: geopolitics, securitology, international relations, European integration, Euro-Atlantic integration, international organizations, foreign policy of the Great Powers. Dr. Veaceslav Ungureanu is a prolific author with more than 60 scientifical works published in the Republic of Moldova and abroad, including 2 monographies. He attended over 40 national and international scientifical conferences and workshops.
Dr. Veaceslav Ungureanu is member of the editorial board of the Philosophy, Sociology and Political Science Journal of the Institute of Legal, Political and Sociological Research of the State University of Moldova and an assessment expert in the research and innovation field at the National Agency for Quality Assurance in Education and Research.

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Marin GHERMAN is Director of the Institute of Political Studies and Social Capital (Cernăuți, Ukraine), doctor of political sciences, lecturer at the "Ștefan cel Mare" University in Suceava (Romania).
In 2010 had graduated with honors from the "Iuri Fedkovici" National University in Cernăuți, and in 2014 had defended his doctoral thesis, with the research topic "Theories of social capital in the study of European integration processes within post-socialist societies (case study Ukraine, Romania)".
Mr. Gherman is columnist at the newspaper "Libertatea" and "Veridica", Founding President of the BucPress Media Center, which includes four Romanian-language media outlets: BucPress News Agency, Radio Chernauti, BucPress TV and BucPress magazine. He is also Deputy Editor-in-chief at the history and culture magazine "Glasul Bucovinei" (Cernăuți - Bucharest) and Member of the Union of Writers from the Republic of Moldova and the Society of Romanian Writers from Cernăuți.

PhD **Niculae IANCU** is former Rector at the National Intelligence Academy and currently is President of Integrated Intelligence, Defence and Security Solutions Association (I2DS2) in Bucharest. Mr. Iancu also serves as Constanta's Vice-President of the Board for the Maritime Cybersecurity Centre of Excellence (MARCYSCOE). Mr. Iancu is also affiliated with InnovX as Chief Strategy Officer and a mentor, focusing on strategy, risk management, and business and competitive intelligence, passionately disseminating knowledge to the private sector, aiming to instill a solid analytical and critical thinking culture among emerging businesses and startups.

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Apart from these roles, Mr. Iancu is an expert in national security with extensive experience in intelligence, defense, and related policy-making and an educator, teaching subjects like Security Studies, Strategic Studies, and Risk Management.
Mr. Iancu's expertise spans areas like national security policy, strategic planning, NATO, the European Union, and regional and global security. With over two decades in intelligence and defense research and higher education, Dr. Iancu's credentials are robust.
Mr Iancu's interests cover world politics, overarching strategic approaches, global and regional security, cybersecurity, and defense and security research and innovation.

Ludmila COADA is an historian and Associate Professor at the Free International University of Moldova (ULIM), teaching courses on Regional History and Politics (Post-Soviet Eurasian Politics; European Integration; EU Foreign Policy; European Union Enlargement and Neighborhood, among others).
Dr. Coada's research interests and expertise include Bassarabian history/Bassarabian Zemstvo, Soviet and post-Soviet history and politics, European integration / European Union's relations with the Eastern neighbors, politics of memory and historical politics. She is the author of various scholarly articles dealing with Bassarabian history and Moldova's domestic and foreign policy.
Ludmila Coada currently coordinates the Center for European Studies at ULIM which promotes Moldova's European Integration and provides an interdisciplinary approach to teaching and learning of European history, politics, policies, and societies.
Between 2015-2020, Dr. Coada served as the Director of the Doctoral School in Humanities, Political and Communication Sciences, from 2013 to 2014 - as Vice Provost for Research at the Free International University of Moldova, and from 2007 to 2014 - as Dean of the Faculty of History and International Relations. For the period 2010-2011, Dr. Coada had been a Fulbright Scholar at IERES/ George Washington University in Washington, DC.

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Universitatea de Stat din Moldova

PhD **Cristian Marcel FELEA** is former intelligence manager within Romanian Intelligence Service, focused on energy, energy policy and hybrid threats (the use of energy as a weapon). Mr. Felea is also former security manager, head of department at the Nuclearelectrica and acting publicist and columnist at HotNews and RepublikaNews, documenting and publishing analyzes on energy policies and asymmetric and hybrid conflicts and also a trainer in the Intelligence4All Project.
Mr. Felea had graduated from the University of Petroșani, the only polytechnic university center in Romania that trains engineers in the mining field, where he had completed bachelor, master and doctorate courses in mining engineering. He is also an alumnus of "Carol I" National Defense University and "Alexandru Ioan Cuza" Police Academy.

Adrian PARLOG is Former Deputy Director of Military Intelligence Directorate and Defense Attache in the Kingdom of Norway and currently President of Integrated Corporate Strategic Services and Visiting Professor at Academy of Economic Studies and “Carol I” National Defense University from Bucharest. Mr. Parlog holds a PhD from “Carol I” National Defense University, and post-graduate course in Modeling and simulation of economic and social phenomena and Cybernetics and Statistics and trainning courses in Intelligence and Democracy – The Center for Civil Military Relations - Naval Postgraduate School, Monterey, California, International Intelligence Director's Course, Defense Intelligence and Security School, Center for Defense Studies and King's College London, UK, Black Sea Security Program, Harvard University/John F. Kennedy School of Government, Boston, USA and Intelligence analysis course – Defense Intelligence Service, UK.

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Vasile SIMILEANU is former intelligence specialist in Ministry of Defense from Romania, Founding President of the Ion Conea Geopolitics Association and Founding director and editor GeoPolitica Magazine. Mr Simileanu is also Visiting professor at the Military Technical Academy, National Defense College, Yuriy Fercovich University Chernivtsi and Academy of Economic Studies, Bucharest. Mr. Simileanu holds a PhD from Faculty of Geography, University of Bucharest with the thesis "Geopolitics of Islamic Space" and he also graduated Faculty of Law, University of Bucharest, Faculty of Communication and Public Relations, National School of Political and Administrative Studies, and Military School of Engineering, Construction and Railways.

Adrian LESENCIUC is a Professor of Communication and Military Sciences in the Department of Fundamental Sciences and Dean of the Faculty of Air Systems Security at ‘Henri Coandă’ Air Force Academy in Brașov, Romania. His major interest in research concerns intercultural communication and communication in military and security sciences. He published numerous articles inacademic journals.

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He designed the international conference Redefining Community in Intercultural Context (starting with 2011), quoted in important scientific databases. Recent publications include: Hybrid Warfare or the return through doctrinal dissimulation to absolute war (2023); The Theory of Concept-Holes (2020); The Romanian Military Thinking under Clausewitzian Influence (2019); Theories of Communication, 3rd edition (2017); Information Warfare (2016); Intercultural Communication within the Romanian Village (2015), Communicative Foundation of Military Sciences (first author) (2013). Adrian Lesenciuc is also a Romanian writer, president of the Brașov branch of the Romanian Writers Union, author of many books of novels, poetry and essays.

Professor **Șerban GEORGESCU** is the director of the Department of Asian Studies at the Romanian-American University (since 2013), and the coordinator of the Center for Romanian-Japanese Studies "Angela Hondru" (since 2005). He teaches business communication with Asian partners at the Faculty of International Business (RAU), and was an expert advisor at the Faculty of European Economic Studies at the same university.

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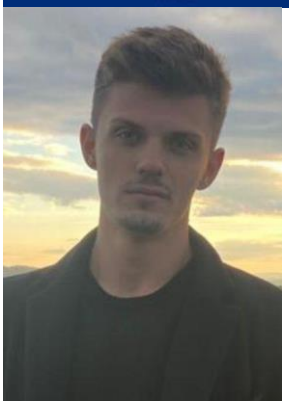
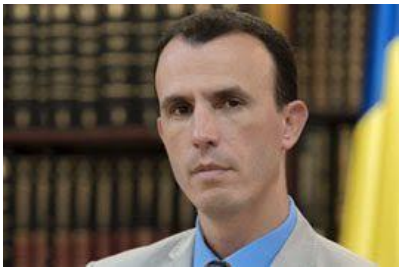


Marius ILIE is general manager, UX/UI designer, programmer and analyst of a web development and advertising company. Mr. Ilie has the opportunity to use a variety of technologies to develop and implement digital solutions for both clients from various countries and partners company.
In parallel with professional activity, Ilie Marius develops his knowledge and skills in the field of security studies, from 2021 to 2023 attending and graduating "Security Studies" Master's program within the Faculty of Sociology and Social Work, Bucharest University. Mr. Ilie is passionate about exploring and understanding the phenomenon of disinformation, approaching it from multiple perspectives, including from the perspective of security and intelligence, and applying the sociological knowledge acquired during his studies.



Cristian BARNA is Training Manager at Intelligene4ALL, visiting Professor at “Babes-Bolyai” University from Cluj-Napoca and Bucharest University and former Vice-Rector and PhD coordinator of “Mihai Viteazul” National Intelligence Academy from Bucharest. Cristian Barna holds a PhD in Sociology and his area of expertise are applied sociology, intelligence and security studies, geopolitics, security organizations, organized crime and terrorism studies.

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