



October 2024

Autumn issue



A COMPREHENSIVE NETWORK AGAINST BRAIN CANCER

Dear Net4Brain Consortium Members,

It is my pleasure to summarize our collective achievements over the past 12 months and express my deep gratitude for your engagement and support. Since its inception in November 2023, the Net4Brain network has grown remarkably, now comprising 368 members from 13 ITC and 16 non-ITC COST countries, as well as 3 NNCs. Your active participation has been instrumental in driving the success of our collaborative efforts.

Over the past year, we have organized several key events to enhance collaboration, training, and knowledge-sharing across the network:

- 8 Online Working Group Meetings: These meetings facilitated in-depth discussions within our working groups, advancing key research areas and projects.
- Training School in Prague: Our first in-person event provided invaluable training, fostering the development of both junior and senior members alike.
- Workshop in Berlin: This workshop focused on pre-clinical modeling in brain cancer research, sparking important discussions and insights.
- Annual Meeting in Ljubljana: Our most recent event brought together over 70 participants for a wonderful 3-day gathering. It offered an opportunity to reflect on our progress, engage in stimulating scientific discussions, and lay the groundwork for future collaborations. Attendees benefited from expert-led sessions on cutting-edge topics in brain cancer research and methodologies. The positive feedback and enthusiasm from attendees were truly inspiring.

In addition to these major events, we supported 4 Short-Term Scientific Missions (STSMs) and sponsored 3 ITC conferences, further contributing to capacity building and the dissemination of new knowledge across the network.

Looking ahead, the Net4Brain consortium is poised for another exciting year. Our goals include:

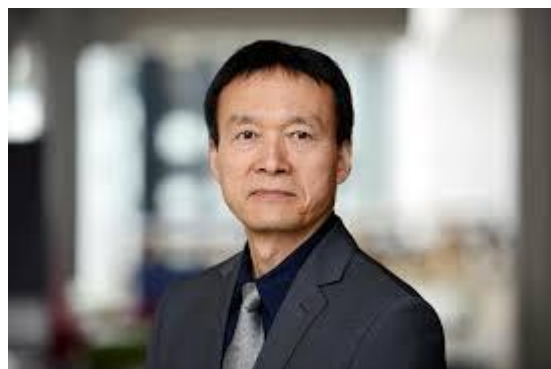
- Strengthening collaborations between members and exploring new avenues for joint research projects. We are already seeing collaborations in writing papers or grant applications either submitted or in preparations.
- Increasing the number of STSMs and ITC conferences, providing more opportunities for junior members—such as postdocs and PhD students—to advance their research and share their findings.

With your continued support and dedication, I am confident that we will achieve great things together in the year ahead.

In closing, I extend my deepest thanks to each of you for your contributions to the network. Whether you participated in meetings, attended workshops, or contributed to working groups, your involvement has been crucial to the success of the Net4Brain consortium. Together, we are making meaningful strides in the fight against brain cancer, and I look forward to the year ahead with optimism and excitement.

Best regards,

Prof. Xinzhong Li
Action Chair





Experiences from STSMs

Ema Lupsic

Home institution: University of Belgrade Institute for Biological Research Sinisa Stankovic National Institute of the Republic of Serbia

Host institution: University of Thessaly, Medical School, Department of Pharmacology, Larissa, Greece

Over the summer of 2024, I had the opportunity to participate in a Short-Term Scientific Mission (STSM) under the title, "The Anticancer Potential of Novel Sclareol Derivatives in Glioblastoma Xenografts," at the Laboratory of Pharmacology, Faculty of Medicine, University of Thessaly, in Larissa, Greece. This two-and-a-half-month research stay was conducted in collaboration with Dr. Konstantinos Dimas and was part of the COST Action CA22103 initiative. As a third-year PhD student from the University of Belgrade, with a research focus on multidrug resistance in glioblastoma, this STSM was an invaluable step in extending my research from in vitro models to in vivo systems. The experience was invaluable, providing me with the opportunity to engage with a new research environment, exchange ideas with fellow scientists, and learn new methodologies directly applicable to my work. I had the pleasure of staying in the charming city of Larissa. It's a welcoming place, full of life and energy, where I enjoyed exploring its lively streets and experiencing the warmth of the local culture. The Greek hospitality made my stay even more memorable, as I met many wonderful people and formed great connections with my colleagues from the laboratory. Our shared experiences, both in and outside of the lab, added a personal touch to this scientific journey, making it an experience I'll always cherish.



Tereza Šváblová

Home institution: Institute of Biochemistry and Experimental Oncology, Medical University, Prague, Czech Republic

Host institution: Norlux laboratory, Luxembourg

During my time in Luxembourg, I had a wonderful cultural and scientific experience that truly exceeded my expectations. The beauty of the city and the stunning landscapes around me added so much to my stay. I was especially struck by how open-minded and welcoming the local people were, which made it easy for me to connect with the community and feel at home.

On the scientific side, my experience at the Norlux laboratory was incredibly rewarding. I had the chance to work with an amazing international team of researchers led by Dr. Golebiewska. Their diverse backgrounds and expertise created a vibrant atmosphere where everyone shared ideas and collaborated freely. Exposure to different research methods left me with fresh insights and inspired me to think critically about my own work in brain tumor research.

Overall, my time in Luxembourg blended cultural immersion with scientific exploration perfectly, allowing me to grow both personally and professionally. I truly hope to return to this beautiful country and the fantastic lab in the future.



Hooman Taleban

The development of a cancer-on-chip preclinical model for glioblastoma

Home institution: Teesside University (Middlesbrough, United Kingdom)

Host institution: University of Twente, Enschede, NL



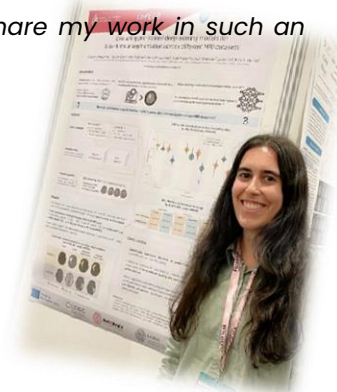
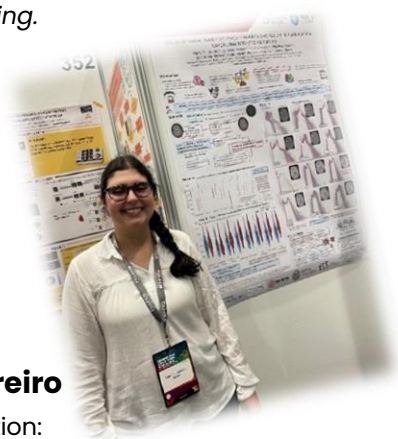
During my sabbatical, I engaged in activities aimed at enhancing my understanding of biological cell culture techniques, particularly in the context of glioma-on-chip research. I took part in practical work at Prof. Jai Prakash's lab at Twente University, where I focused on learning about 3D cell culture, organoids, and spheroids. Although Prof. Prakash's previous glioma-on-chip projects had concluded, I had the opportunity to work on breast cancer cell culture projects, which provided valuable insights into related techniques.

Catarina Passarinho

Home institution: Institute for Systems and Robotics (ISRLisboa), Portugal

Host institution: Event: The European Society for Magnetic Resonance in Medicine and Biology – ESMRMB2024

The 2024 edition of the ESMRMB took place in the beautiful city of Barcelona, Spain. Attending this conference was a great opportunity to share my work with fellow PhD students and experts in the MRI community, and to engage in talks and lectures about novel advances in my research subjects of interest. As a PhD student, participating in conferences like this promotes important interactions with researchers from other centres and results in valuable feedback and potential collaborations. Outside the conference sessions, this experience gave me the chance to explore the city and appreciate iconic landmarks like the architecture of Antoni Gaudí and the Gothic Quarter. I am grateful for the opportunity to share my work in such an inspiring setting.



Marta Loureiro

Home institution:

Event: The European Society for Magnetic Resonance in Medicine and Biology – ESMRMB2024

As for my experience, it was a privilege to attend a European conference (ESMRMB) in Barcelona. I thank Net4Brain for the opportunity. I was able to meet several bright researchers working on the same topic as myself, that gave me invaluable feedback to further improve my work. Furthermore, I could attend several interesting talks, many of which mentioned brain tumours. On the other hand, I had some time to explore Barcelona, from the El Gòtic to Gaudí's Sagrada Família. The typical tapas were also delicious. Overall, it was an amazing experience both culturally and academically.



Calls

ITC grants

ITC Conference Grants are aimed at supporting Early Career Investigator and PhD students from Participating ITC to attend related conferences, events or conduct activities on the topic of the Action that are not organized by the COST Action.

WHO CAN APPLY?

Conference Grants are Open to Young Researches and Innovators (individuals <40 years old) with a primary affiliation in an institution located in Inclusive Target Countries (ITC) and Near Neighbor Countries (NNC), participating in our COST Action.

The applicant must make an oral/poster presentation at the conference in question and must be listed in the official event/conference program. The main subject of the oral presentation / poster presentation / speech at the approved conference must be on the topic of the Action and must acknowledge COST (see Section 10).

The participation of each applicant must be pre-approved by the Action Management Committee.

Short term scientific mission

Short Term Scientific Missions (STSM) aim to support individual mobility and strengthen the existing networks and foster collaborations by allowing scientists to visit an institution in another participating COST country or an approved NNC or IPC institution.

The eligibility of grantees will be based on the following criteria:

Scientists (who have preferably not previously received a grant for a STSM) involved in the burden-eu Action, and either:

- a) affiliated in a Participating COST Full/Cooperating Member,
- b) affiliated in a Near-Neighbor Country, or
- c) affiliated in an approved European RTD organization.

Inclusiveness criteria (geography, gender, age) may be taken into consideration when evaluating STSM applications.

Highest priority will be given to encourage participation of Young Researchers and Innovators (YRI) in the COST Action activities. An applicant can be considered as being an YRI when they are younger than 40.

Priority will also be given to applicants coming from Inclusiveness Target Countries (ITC). The list of COST ITCs is available [here](#).

For more details, contact our STSM coordinator: **Dr Milica PESIC** (camala@ibiss.bg.ac.rs)

Who is who?



Carla Vitorino

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Working Group(s) in CA22103: WG2

My expertise in pharmaceutical development and nanotechnology perfectly aligns with the goals of the COST action "A Comprehensive Network Against Brain Cancer" and specifically frames within the Working Group 2 directed to Preclinical Modelling. As a researcher specialized in nanotechnology, I understand the importance of using in vitro and in vivo models to address pathological features of brain cancer and their impact on cellular processes. By integrating in vitro and in vivo modelling information, we can gain valuable insights into the underlying mechanisms of brain cancer and enable a more precise design of formulations to tackle the key therapeutic challenges

imposed by this particular type of cancers.

Materials/Methods that could be shared with other members of this COST Action: High-Pressure homogenization, Microfluidics-on-a-a-chip, MIVO dynamic cell culture, Bioprinting technologies



Yasin Kaymaz

yasinkaymaz@gmail.com

Bioengineering Department
Ege University
Izmir Turkey

Working Group(s) in CA22103: WG1, WG3 (co-leader), and WG4

Through collaboration, we are working on writing a research grant proposal involving radio-genomics as it can be a promising non-invasive diagnostic approach in the near future, especially with the applications of AI tools (deep learning such as neural networks). We are also establishing a scRNAseq protocol, SeqWell, to produce single-cell comics data from fresh tumor biopsies in our wet lab with a major research grant. This method can be easily adapted to investigate the tumor microenvironments of brain cancer (WG3) pre-post treatment. As our main expertise in bioinformatics, we believe we

can contribute to the WG4 in data integration and modeling activities. We have published machine learning-based single-cell sequencing data analysis methods.

Materials/Methods that could be shared with other members of this COST Action: Mostly computational infrastructures.

Please, don't forget to finish your biosketch and send it to terezia.kiskova@upjs.sk

Past scientific events

1st Net4Brain Annual Meeting

"Closing the translational gap in brain cancer treatment"



1st Net4Brain Annual Meeting entitled "Closing the translational gap in brain cancer treatment" was held on 4-6 September 2024 at National Institute of Biology in Ljubljana, Slovenia.

The conference consisted of a scientific program on non-invasive biomarker discovery, preclinical modelling, pathogenesis and tumor profiling, mathematical & computational modelling and clinical treatment recommendation, all related to brain cancer treatment. Attendees shared their latest research, addressed challenges, and explored innovative strategies for advancing brain cancer research and translating experimental findings into clinical practice. Net4Brain activities and plans to strengthen the COST action network and accomplished the network goals were discussed in core group and management committee meetings. The meeting was organized by chairs of the local organizing committee, dr. Barbara Breznik and dr. Metka Novak. The video was made by dr. Terezia Kiskova and dr. Maruricio Reyes.

Scientific contributions are collected in Abstract book that is available on line: https://net4brain-cost.eu/Abstract%20book%20Net4Brain_final_6%20Sept%202024.pdf

Huge thanks to all participants for their active contributions and fruitful discussions to beat brain cancer together!



WG5 1st webinar

NET4BRAIN WG5 1st WEBINAR

BRIDGING DISCOVERY AND MODELLING WITH CLINICAL TREATMENT OF BRAIN CANCER - WHAT CAN CLINICIANS EXPECT?



Friday October 11th
17:00 – 19:00 Brussels Time (GMT+2)

Talks:

- 1) 15 min – Dr Aida HAJDARPASIC (WG1 Co-Leader)
Non-invasive biomarker discovery state of the art in high grade gliomas
- 2) 15 min – Dr Barbara BREZNIK (WG2 Co-Leader)
Advances in preclinical modelling in high grade gliomas
- 3) 15min – Dr Dr Yasin KAYMAZ (WG3 Co-Leader)
Tumour profiling with implications to patient stratification
- 4) 15min – Prof Gabriel FERNANDEZ CALVO (WG4 Leader)
Computational modelling-driven targeted radiotherapy for high-grade gliomas
- 5) 15min – Prof Sebastian BRANDNER (WG5 Leader)
Current brain cancer diagnostics
- 6) 10min – Prof Susan SHORT (EANO President)
What do clinicians want from basic research in brain cancer?
- 7) 10 min – Dr Marija Skoblar VIDMAR
Radiotherapy treatment strategies in need of optimization
- 8) 25min – Discussion, Q&A

Moderators:
Prof. BRADNER,
Prof HANEMANN,
Assist. Prof. ATHANASIOU

Join Zoom Meeting
<https://authgr.zoom.us/j/97166722437?pwd=BCL7T4NlhlPmUL10a9dx8lueeVR.1>

Meeting ID: 971 6672 2437
Passcode: 516959

Find your local number: <https://authgr.zoom.us/j/97166722437?pwd=BCL7T4NlhlPmUL10a9dx8lueeVR.1>

Friday Oct 11, 2024 8pm – 8pm (Eastern European Time – Athens)
Friday Oct 11, 2024 5pm – 7pm (Central European Time – Brussels)

The first WG5 webinar was held on Friday, October 11. The webinar consisted of a scientific program dealing with biomarker discovery, preclinical modelling, tumor profiling, diagnostic, treatment strategies and computational modelling.

European Researchers Night in the sign of Net4Brain

The European Researchers' Night

- brings research and researchers closer to the public, attracting over 1.5 million visitors across Europe and beyond each year
- promotes excellent research projects across Europe and beyond
- increases the interest of young people in science and research careers
- shows how researchers' work affects our daily lives

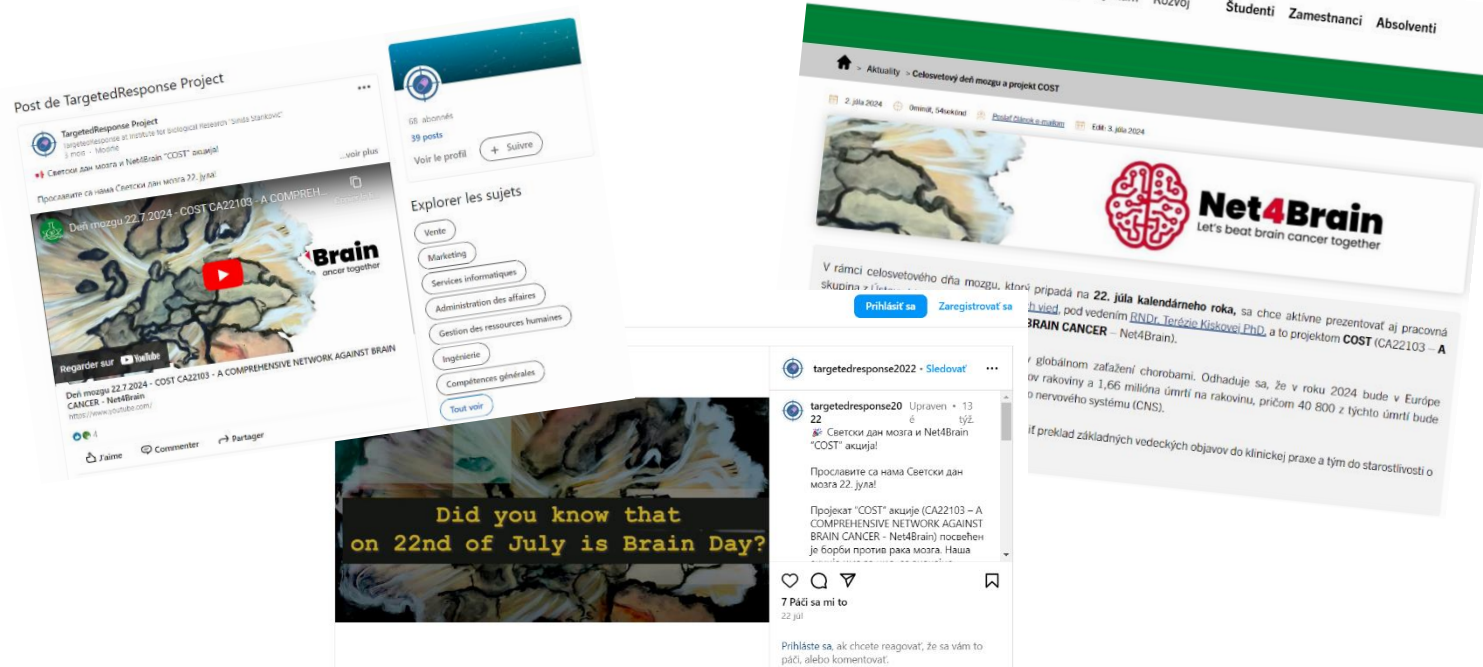
This year was the community of Net4Brain active in Slovakia and Portugal!



Brain day

The World Federation of Neurology announced Brain Health and Prevention as the theme for the 2024 World Brain Day, held on Monday, July 22. During this day, our Brain Day video was shared (https://www.youtube.com/watch?v=R4a_NUDkANG).

The information about our action was shared in local media.



Contacts

Chair: Prof Xinzhong Li x.li@tees.ac.uk

Further contacts see:

<https://www.cost.eu/actions/CA22103/#tabs+Name:Main%20Contacts%20and%20Leadership>

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