

# Neurotech<sup>EU</sup><sub>++</sub>

The European University of Brain and Technology



Joint Mission Statement

**European universities****Neurotech<sup>EU++</sup> – Joint Mission Statement**

The European University Alliance of Brain and Technology, **Neurotech<sup>EU</sup>**, envisions Neurotechnology as providing strategic bridges between various disciplines, including neuroscience, medicine, engineering, artificial intelligence, cognitive science, robotics, social sciences, and the humanities arranged along 8 different dimensions, or technology **from** the brain, **for** the brain, and **with** the brain. Neurotech<sup>EU</sup> constitutes the backbone of this vision by bringing together 8 leading universities across Europe and a significant amount of relevant associated partners, including partner research institutions, (SME) companies, societal stakeholders, and (non) governmental organizations, to create a unique educational environment where the next generation of European researchers and citizens can cooperate and work across different European and global cultures, in different languages, and across borders, sectors and academic disciplines. Collectively we will enable deep institutional transformation by providing innovative learning processes grounded in the emergent field of Neurotechnology. This transformation will foster the next generation of multidisciplinary scientists and engineers with access to cutting-edge avant-garde infrastructure. Within the 2<sup>nd</sup> phase of the European University of Brain and Technology (awarded under the 2020 Erasmus+ call for proposals), 6 of the 8 founding Universities and two new full partners will build upon the foundation established and further deepen and intensify the collaboration to advance Neurotechnology in the service of European society.

**NeurotechEU values**

The NeurotechEU alliance is built on the common values and general principles of the European Union; respect for human dignity, freedom, democracy, equality, the rule of law, and respect for human rights, including the rights of persons belonging to minorities. We value and protect academic freedom and integrity, institutional autonomy, inclusive governance, and high standards of ethics in research and education as laid down in the Bologna process, the Paris Communiqué, and the Magna Charta Universitatum. Every partner commits to promoting and protecting these fundamental principles, within their own community, in the NeurotechEU alliance, and towards society as a whole.

Since NeurotechEU is an alliance of 8 universities from different countries with geographical coverage across all of Europe, the alliance has committed to developing a common understanding of the core values that must permeate the alliance's activities. This allows us to live up to the vision of a strong coherent alliance with shared values rather than several loosely connected universities, departments, and administrative units. Our common values were already established during the 1<sup>st</sup> phase of the NeurotechEU alliance, but will be a permanent and continuously evolving feature of the Alliance, engaging staff and students and embedding them across the network and its activities emphasizing:

- **Integrity:** be authentic, empathic, transparent, open, and honest; foster a culture of mutual respect and reciprocity;
- **Commitment and responsibility:** be loyal and take full ownership and responsibility for the challenges the collective is facing; engage in professional, respectful, and collaborative interactions; contribute to a professional culture; engage in professional and ethical interactions with students and staff, respecting professional boundaries; promote equity, diversity, and inclusivity;
- **Creativity:** proactively engage, intending to improve operations and impact continuously; fully embrace cross-disciplinary interactions; always seek innovation in activities; do not shy away from disruption if it serves advancement.

**NeurotechEU vision**

The NeurotechEU University Alliance has a common long-term vision summarized as:

- Realizing a joint long-term strategy for education and research capitalizing on the synergy of the eight dimensions of Neurotechnology;
- Increasing the competitiveness of European education, research, economy, and society in the high-impact research-intense domain of Neurotechnology;
- Transforming universities with a joint long-term vision and action plan that is modular and scalable, that crosses academic, faculty and organizational boundaries;



- Seamless mobility for students, researchers, and staff to study, train, teach, research, and innovate, reaching 50% of students through innovative mobility programs, including both physical, virtual, and blended mobility programs driven by curiosity and opportunity;
- Flexible curricula tailored to each student's needs, de-constrained from institutional and/or national capabilities and borders;
- Promoting European identity among students and researchers through delivering multicultural, multilingual, international, and intersectoral academic experiences across the European continent;
- Lasting close collaboration between partners for a trans-European network of excellence in brain and technology, further removing borders and obstacles in mobility and exchange;
- Creation of the European Neurotech ecosystem, supporting our students during their formative years in the university, and afterward to transition into becoming responsible, ethical, and global citizens with an impact on society overall;
- Actively contributing to reducing inequalities within the European Research Area and society by promoting excellence in education and research throughout Europe and strengthening research and innovation capacity to mitigate brain drain and strengthen brain capital;
- To educate about the ethical, legal, and societal challenges and potential of neurotechnology.

This mission statement is accompanied by the NeurotechEU2040 action plan which is added as an appendix to this document.

**This mission statement is endorsed by all of our universities:**



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**NAME OF YOUR INSTITUTION (ACRONYM):** Radboud University

Signature(s)

Name(s): J.H.J.M. van Krieken

Title(s): prof. dr. Rector Magnificus

Date: 23-01-2023



**NAME OF YOUR INSTITUTION (ACRONYM)**    **UNIVERSIDAD MIGUEL HERNÁNDEZ DE ELCHE (UMH)**

Signature(s)

Name(s)    Prof. Juan José Ruiz Martínez

Title(s)    Rector

Date    23/01/2023





## Karolinska Institutet

Ole Petter Ottersen  
President, Karolinska Institutet

Stockholm 2023/19/01

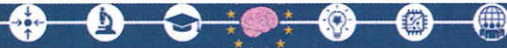


**Rheinische Friedrich-Wilhelms-Universität Bonn (UBO)**

Michael Hoch  
Prof. Dr. Dr. h.c., Rector

19.01.2023





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**NAME OF YOUR INSTITUTION (ACRONYM): Bogazici University (BOUN)**

Signature(s)

Name: Prof. Dr. Mehmet Naci inci

Title: Rector

Date: 20/01/2023





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**NAME OF YOUR INSTITUTION (ACRONYM) UMF**

Signature(s)

Name(s) Anca Dana Buzoianu

Title(s) Rector

Date 18.01.2023





Université de Lille, France (ULille)

Pr. Régis BORDET

Président de l'Université de Lille

19 Janvier 2023





Reykjavík University (HR)

*Ragnhildur Helgadóttir*

Dr Ragnhildur Helgadóttir, President.

19.01.2023



### ***Appendix NeurotechEU2040 Action Plan: Designed by students for students***

Our action plan to realize our shared vision is based on broad consultation with our students while preparing the 2020 Erasmus+ proposal and subsequently through the NeurotechEU student council. We have asked them to articulate what they would need to succeed both during their education and to start their professional life. More than 3,500+ students responded to the survey, and we built on these responses to design a three-phase action plan to realize the NeurotechEU vision. Using the first round of the University Alliance Erasmus+ programme we have realized a strong foundation for NeurotechEU. The consortium is ready to deepen its institutional and transnational collaboration to advance our mid- and long-term vision.

#### ***Phase 1 (2021-2023) Foundations***

During this phase, we will establish the necessary conceptual framework and digital infrastructure, initiate collaborative inter-campus programs, form sustainable exchange and mobility programs, launch joint educational programs (starting with summer schools and certificate programs), and lay the foundations for the realization of our common vision, starting with:

**NeurotechEU Campus+** is a shared virtual space, an extension of the partnering organizations, where students at all levels (bachelor, master, and graduate), teachers, and administrators work together without administrative, cultural, and societal obstacles supporting and delivering physical, digital and blended training. The CAMPUS+ platform development process started in 2021, and with contributions from staff and students from all partner universities, we have our first pilot version of **CAMPUS+** up and running. Our digital campus will empower students to customize their curriculum from the well-structured and comprehensive course catalogs of the partnering universities to build their individual learning trajectories through the 8 dimensions we have defined for neurotechnology (Empirical and clinical neuroscience, Theoretical neuroscience, Neuromorphic computing, Neuromorphic control /neurorobotics, Neuroinformatics, Neuroprosthetics, Clinical neurotechnology, and Neurometaphysics). Benefiting from the strengths of each university and taking advantage of the best traditions in each country's culture, CAMPUS+ will integrate popular, multi-disciplinary, and academic cultures, creating a hub for collective European academic identity.

**NeurotechEU Graduate School** will provide co-tutelage masters and doctoral scholarships to train top-flight researchers in a multidisciplinary and intersectoral setting. In the short term, the Graduate School will function as an umbrella of content already available at the partner universities. In the mid-term, it will be elaborated to fill the eight-dimensional neurotechnology space. While in the long term, the Graduate School will have its own funding for students, a defined scientific scope and program, and a fixed curriculum anchored in neurotechnology research and innovation programs at the partner universities. Once completed, students will be offered co-supervision by a team of experts from participating academic organizations and industry, benefiting from the partners' unique knowledge, expertise, and capabilities, including through mobility, within the NeurotechEU network.

**NeurotechEU Life-long Learning Center** will support the continued training of its graduates and society at large, also boosted by advanced neurotechnologies. It will provide the necessary knowledge, skill sets, competencies, and values for individuals to adapt to the changing personal, civic, societal, and employment-related needs and provide them opportunities in brain research and technologies. It will help to develop public engagement and redress inequalities, e.g., due to past educational background and lack of inclusive higher education, to attract and shape new talent facilitating new career paths. With the realization of the CAMPUS+ virtual space, of which the Life-long Learning Center is a part, the roll-out of the center has commenced and will be further scaled.

#### ***Phase 2 (2024-2030): Scaling and removing borders***

Within phase 2, we aim to build further on the achievement made in phase 1 by scaling the efforts, individualizing the learning experience and learning paths, removing existing borders, and further amplifying the impact of NeurotechEU. By bringing together our departments, faculties, and institutes and removing the borders between organizational units and partnering universities, we will transform the organization of traditional university structures also by capitalizing on new and disruptive educational digital platforms. To aid in this process, and link education, research, innovation, and society, we will establish NeurotechEU Master, and Doctorate Degrees following European learning certificates and shared degree programmes including in specializations that are at the intersection of Neurotechnology and other involved disciplines, spanning all campuses and faculties including Robotics, Mechatronics, Neuroethics, Neurolaw, Brain & Mind, Cognitive Neuroscience, Brain-inspired smart design, Bioactuation and Control, Neurodiversity and Society, Health and Smart Aging, Life-style medicine. To maximize our innovation potential, align research interests, and assist students in navigating the research offerings of the participating universities, we will form the NeurotechEU research center, which will be an online platform complementing CAMPUS+. The outcome of this phase is also a creative disruption of research domains affiliated with neurotechnology, identifying frontiers and moving them forward.

#### ***Phase 3 (2031-2040): NeurotechEU unfolded***

With a mature organizational structure, a catalog of education, research, and innovation programs, and an ever-growing number of partners and students in the NeurotechEU Alliance, we will be in a prime position to act as a role model for universities, multi-organizational initiatives, large-scale programs that bring together universities,



industry, and societal stakeholders. By training the next generation of researchers and innovators, NeurotechEU will impact each of its stakeholders, setting in motion a virtuous cycle of education, research, innovation, and impact. Taking an active role in transforming our partnership, we will establish a Global campus, helping Europe to be competitive on the global stage, and promoting talent development worldwide. To achieve this goal, we will have to continually revise the NeurotechEU initiatives based on current and future demands under the consideration that the shaping and conservation of talent ask from us to offer them intellectually challenging, nurturing, and creative environments that are relevant and impactful. This will be achieved by our think tank Neurotech2040, which will imagine the world and its societal needs in 2040 and beyond. This NeurotechEU futurology will feed into the design of further NeurotechEU programs and innovative action plans that will maximize the benefits of the developed technologies and interventions for the European economy and society at large for the decades to come. Seamless integration of Neurotech2040 with the defined Neurochallenges in Education & Research, Technological Innovation, and Societal Innovation will ensure that NeurotechEU will continuously evolve to meet the needs of students, researchers, the economy and society at large and become a fully-fledged European University embedded in Europe and its culture, values, and challenges.

### ***Transforming institutional cooperation: NeurotechEU's vision***

There has never been a branch of study that is as inter- and multi-disciplinary as Neurotechnology. From neuroscience, computation, and robotics to the humanities, social sciences, and law to medical sciences, engineering, and management. Indeed, practically all traditional disciplines in modern universities require content **from** the brain, **for** the brain, and **with** the brain, including pedagogy itself. NeurotechEU takes advantage of this unique position of neurotechnology to transform institutional cooperation between universities and bring it to the next level of integration and collaboration. By further building on our established ecosystem of XX universities, research organizations, industrial partners, societal partners, cities, governmental and non-governmental organizations, and other interest groups, we will not only remove the borders between universities but also anchor their position within society by always demonstrating relevance through impact. A direct outcome of this approach is that the students of NeurotechEU will have uninterrupted access to an Alliance that will support them throughout their careers, as they themselves will, in turn, take over the lead in the process of shaping neurotechnology. As a result, collaborations on topics beyond Neurotechnology will evolve, which will make use of NeurotechEU as a model to rapidly implement a sustainable strategy for inter-campus cooperation and the creation of self-propelled future-oriented higher-education programs.