



Brain Innovation Days

13-14 October 2020
Brussels, Belgium

Disrupt and Rewire: How Brain Innovation is changing Europe

Thomas Edison, one of the great minds of the second industrial revolution, once said that “the chief function of the body is to carry the brain around”. Understanding the human brain – how it works, and how it is afflicted by diseases and disorders – is an important frontier in science and society today.

OVERARCHING TOPICS

Topic 1: The Brain and The Machine



Is your brain a machine? Are machines intelligent? Can they think? Nowadays, we can connect our brains to technologies through artificial intelligence, robots, and brain computer interfaces. But can they help to overcome our human limitations?

Keywords: Aging; Artificial Intelligence; Behaviour; Biofeedback; Bionics; Brain Computer Interface; Brain Imaging; Brain Machine Interface; Clinical Decisions; Cognition; Computation; Consciousness; EEG; Intelligence; Machine Learning; Memory; Model; Monitoring; Motor Disorder; Motor Rehabilitation; Neurofeedback; Neurophysiology; Neuromorphic; Neurosurgery; Parkinson; Regulation; Robotics; Robotic Arm; Sensory; Stroke; Simulation; Technologies; Virtual reality

Topic 2: United for brain innovation



Costs of brain diseases are increasing. The brain is still a mystery and its complexity hinders the pace of innovation. How can partnerships accelerate the translation of our huge amounts of knowledge into novel interventions and improve the lives of millions of brain patients and of our society as a whole?

Keywords: Advocacy; Association; Barriers; Biotech; Brain Projects and Initiatives; Business; Caregivers; Challenges; Clinicians; Community; Coordination; Decision-Making; Engagement; Europe; Exploitation; Families; Funders; Future; Global; Government; Industry; Infrastructure; Innovation; Investment; Hospital; Multi-stakeholder; Neurology; Opportunities; Pandemic; Partnerships; Patients; Pharmaceutical Companies; Psychiatry; Public Institutions; Public-Private; Research; Science; SME's; Stakeholders; Start-ups; Society; Streamline; Telemedicine; Telemonitoring; Value

Topic 3: Personalised brain care for all?



There is no such thing as a one-size-fits-all approach to brain health. Considering the side effect of common brain health interventions, how can we provide more personalised healthcare? Is precision medicine the future of brain health?

Keywords: Alzheimer; Artificial Intelligence; Biomarkers; Brain Disorders; Clinical Trial; Co-morbidity; Detection; Digital Tool; Early Diagnosis; Electronic Medical Records; Environment; Epigenetics; Genetic testing; Health Literacy; Monitoring; Multiple Sclerosis; Neurology; Patient Care; Patient Pathways; Patient Stem Cell Models; Patient Stratification; Personalized Healthcare; Precision Medicine; Prediction; Prediction Algorithms; Pre-Symptomatic Stage; Prevention; Progression Markers; Psychiatry; Side Effects; Targeted Therapies; Therapeutic Response; Treatment

Topic 4: Creative brain interventions



From medication to meditation, new pharmaceutical and non-pharmaceutical interventions are continuously popping up to treat brain diseases. How can they be combined? Novel technologies provide hope for more effective therapies.

Keywords: Administration Modes; Aging; Anxiety; Application; Autism; Blood-Brain-Barrier; Brain-Body; Brain Health; Brain Stimulation; Clinical Trial; Cognition; Dementia; Depression; Device; Digital Health; Digital Therapeutics; Drugs; EEG; Emotion; Epilepsy; Exosomes; Headache; Home; Inflammation; Intervention; Lifestyle; Markers; Market Access; Medication; Mental Health; Migraine; Mindfulness; Molecules; Multiple Sclerosis; Nano Medicine; Neurofeedback; Neurophysiology; Neuromodulation; Neuroprotection; Neurorehabilitation; Neurostimulation; Optoelectronics; Parkinson; Plasticity; Psychotherapy; Quality of Life; Resilience; Schizophrenia; Sleep; Social; Spray; Stress; Stroke; TBI; Tele-monitoring; Telemedicine; Therapy; Training; Treatment; Wellbeing

Topic 5: Societal and (neuro)ethical responsibilities



Rapid advances in neuroscience, diagnosis and interventions of brain diseases raise critical questions. How do we decide how far to go? How do we ensure that brain innovations will help and not harm society? How will they be accessible to those who need them? How to protect and use personal data collected by these technologies?

Keywords: Access; Capacity; Challenges; Community; Cost; Data; Data Sharing; Decisions; Diversity; Equality; Ethics; Gender; Good Practice; Good Use; Governance; Health System; Implications; Infrastructure; Neuro-Ethic; Neuro-Marketing; Opportunities; Pandemic; Patients; Patient Needs; Privacy; Protection; Quality Assurance; Reflection; Regulation; Resilience; Responsibility; Risk; Sharing; Social; Society; Transformation; Validation