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Brain Mappings Society, USA

Integration of nanotechnology, device, imaging, cellular stem cell therapeutics are key components of President Obama's BRAIN initiative as well as SBMT G20 World brain mapping & therapeutics initiative

CME Learning Objectives of the talk:

1. Define Brain Mapping, nanoneuroscience, nanoneurosurgery and nanobioelectronics
2. Provide examples of Nanoneuroscience, Nanoneurosurgery and nanobioelectronics
3. Define parameters of the BRAIN initiative by President Obama
4. What is the best approach to study the brain through future large government initiatives

The field of Brain Mapping has been evolved rapidly in last few years. The field went from being defined by imaging to include, imaging, molecular/cellular and nano level mapping with detailed genetic and connectomic map. Today the Society for Brain Mapping & Therapeutics (SBMT) defines Brain Mapping as: The study of the anatomy and function of the brain and spinal cord through the use of imaging (including intra-operative, Microscopic, Endoscopic and Multi-Modality imaging), Immunohistochemistry, Molecular & optogenetics, Stem cell and Cellular Biology, Engineering (material, electrical and biomedical), Neurophysiology and Nanotechnology. In 2013 SBMT, Brain Mapping Foundation (BMF) along with few other organizations successfully helped the White House to formulate Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative. The initiative is aimed at increasing our understanding of brain structure and function from imaging to nanoscale. BMF has been funding major partnership with NASA in order to integrate Nanotechnology, device, imaging and cellular, molecular and stem cell therapeutics. In this presentation, I will be defining the nanoneuroscience, nanoneurosurgery and nanobioelectronics and their relationship with brain mapping while producing few examples.

Biography

Babak Kateb is a neuroscientist with more than 15 years of research experience. His research has been focused on introduction of advance diagnostics and therapeutics into clinical neuroscience in order to rapidly identify and introduce game changing technologies to treat neurological disorders such as brain cancer, Alzheimer's disease, Parkinson's disease, brain and spinal disorders. He did his Research fellowship at USC department of neurosurgery and also studied Neuroengineering at USC Ming Hsieh Institute. He established Society for Brain Mapping and Therapeutics (SBMT) while doing his fellowship 13 years ago at USC. Currently, he is the founding chairman of the board of directors & CEO Society for Brain Mapping and Therapeutics (SBMT), President and Scientific Director of the Brain Mapping Foundation and Director of National Center for Nano-Bio-Electronics; the center is focused on integration of nanotechnology, cellular therapeutics/ stem cell, medical device and imaging.

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