The RNS System: how a direct brain-responsive neurostimulator has opened a window to the brain

Abstract: Neurostimulation is a rapidly evolving treatment modality for disorders of the nervous system. NeuroPace is a venture-funded company formed in 1997 to develop the first direct-brain responsive neurostimulator. This system is now approved for treatment of partial onset seizures in adults based on 9 years of prospective follow-up. Cranially-implanted electrodes directly stimulate the patient’s seizure focus only when abnormal electrocorticographic activity occurs. The neurostimulator also collects continuous electrophysiological data that are used to individualize detection and stimulation. Data obtained by the RNS System during the clinical trials comprise the largest brain neurophysiologic dataset ever obtained in persons living their usual lives. Dr. Morrell will discuss how the responsive neuromodulation approach and this chronic ambulatory human brain data have the potential to advance the treatment and scientific understanding of epilepsy and other neuropsychiatric disorders.

Biography: Dr. Morrell became Chief Medical Officer of NeuroPace, Inc. in July 2004, as well as a Clinical Professor of Neurology at Stanford University. Before joining NeuroPace, she was the Caitlin Tynan Doyle Professor of Clinical Neurology at Columbia University and Director of the Columbia Comprehensive Epilepsy Center at New York Presbyterian Hospital in New York City. She has more than 150 publications on epilepsy and has spoken extensively on epilepsy nationally as well as internationally. She has been a member of the Board of Directors of the American Epilepsy Society and a member and Chair of the Board of the Epilepsy Foundation. Dr Morrell received her MD from Stanford University School of Medicine.