American Society of Stereotactic & Functional Neurosurgery Research Grant – Mentor List

1) William Stan Anderson MD, PhD
Associate Professor, Johns Hopkins University School of Medicine
Email: wanders5@jhmi.edu
Lab webpage: https://stanandersonlab.org/?page_id=159

Research interests: Computational modeling of neural systems and neuromodulation development.

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2) Ausaf Bari MD, PhD
Assistant Professor, UCLA medical center
Email: abari@mednet.ucla.edu
Lab webpage: https://www.uclahealth.org/neurosurgery/bari-lab-team

Research interests: Dr. Bari's research focuses on the application of deep brain stimulation and brain mapping for the treatment of psychiatric conditions. His lab focuses on applying direct human neuronal recordings to study the circuits underlying neuropsychiatric disorders such as reward, emotions and decision-making. Major projects include DBS and other forms of surgical neuromodulation for addiction, depression and chronic pain."

Projects:

1. Amygdala and orbitofrontal cortex neuronal recordings in human decision-making and reward
2. Limbic biomarkers of pain-related affect
3. Psychiatric applications of FUS
4. DBS for chronic pain conditions
5. Neuromodulation for substance abuse and addiction

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3) J. Nicole Bentley, MD
Assistant Professor, University of Alabama-Birmingham (UAB)
Email: jbentley@uabmc.edu

Research Interests: We propose to investigate the electrophysiology of cognitive networks in PD and to deliver low-frequency deep brain stimulation (DBS), a stimulation pattern with promising early results on cognition, while assessing the effects on a cognitively demanding inhibitory control task and prefrontal-subcortical electrophysiology.

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4) H. Isaac Chen, MD
Assistant Professor, University of Pennsylvania
Email: Isaac.Chen@pennmedicine.upenn.edu

Research Interests: Development and translation of novel neurosurgical strategies for restoring brain function, Rebuilding brain circuitry using techniques and principles drawn from stem cell biology, neural tissue engineering, and neural interface technologies, Restoring the nigrostriatal pathway in Parkinson's disease using engineered dopaminergic axon pathways, IND-enabling toxicology studies, exploratory studies of new gene therapy indications and surgical targets, and the development and optimization of new technologies for gene therapy delivery to the brain

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5) Antonios El Helou, M.D, M.Sc
Assistant Professor, Dalhousie University
Email: Dr.Antonios.ElHelou@HorizonNB.ca

Research interests: My main expertise is pain, spasticity but we are finalizing the work to build a full Functional Unit, the first in our Province including DBS and Epilepsy surgery program, expected starting date January 2022. For the coming year, research interest will be focused on pain, neuromodulation and physiology behind the responders to neuromodulation. I applied with the pain clinic colleagues for grants towards identification of objective radiological signs in persistent pain syndrome in patients responding to neuromodulation.

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6) Dario Englot MD, PhD
Assistant Professor, Vanderbilt University
Email: dario.englot@vumc.org
Lab webpage: https://my.vanderbilt.edu/bien/

Research interests: Dr. Englot's clinical interests include epilepsy, neuromodulation, movement disorders, pain disorders, and general neurosurgery. He also leads an active research laboratory studying brain networks in neurological disorders using neuroimaging and electrophysiology, with a particular focus in epilepsy. Investigating brain network abnormalities in epilepsy will help us understand the behavioral and cognitive effects of seizures over time, and may lead to better treatments, including surgical procedures and neuromodulation. Our current research projects include functional magnetic resonance imaging (fMRI), diffusion tensor imaging (DTI), and intracranial electroencephalography (iEEG) studies in epilepsy and other neurological disorders.

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7) Jaimie M. Henderson, MD
Professor, Stanford University School of Medicine
Email: henderj@stanford.edu

Research interests: My research interests lie mainly in the area of intracortical brain-machine interfaces to restore movement and communication for people with neurological diseases and injuries.

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8) Suneil Kalia MD, PhD
Assistant Professor, University of Toronto
Email: suneil.kalia@gmail.com
Lab webpage: kalialabs.org

Research interests: Neuromodulation with a focus on Movement Disorders Molecular biology of neurodegeneration in Parkinson's Delivery of molecular therapeutics.

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9) Zelma Kiss MD, PhD
Professor, University of Calgary
Email: zkiss@ucalgary.ca

Research interests: Cellular and network mechanisms of action of DBS, mechanisms of neuromodulation with FUS; somatosensory restoration and plasticity; neuroethics & patenting of brain stimulation systems

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10) Brian Kopell, MD
Professor, Icahn School of Medicine at Mount Sinai
Email: brian.kopell@mountsinai.org
Lab Webpage: https://icahn.mssm.edu/research/advanced-circuit-therapeutics

Research Interests:
1. Application of tractography in DBS surgery
2. Neuromodulation for non-motor aspects of movement disorders
3. Neuromodulation for psychiatric disorders

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11) Adam Mamelak, MD
Professor, Cedars-Sinai Medical Center
Email: Adam.Mamelak@cshs.org

Research interests: Research interest centers around recording human single unit extracellular action potentials in epilepsy and DBS patients and correlating neuronal activity with response to behavioral paradigms. The heavy focus of the lab has been on learning and memory, but we have also studied facial recognition, novelty responses, and motor pathway selectivity in the STN. I have been heavily funded by NIH and other private foundations over the years.

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12) Peter Pahapill MD, PhD
Professor, Medical College of Wisconsin (MCW)
Email: ppahapill@mcw.edu

Research Interests:

1. Functional connectivity MRI studies in neuromodulation patients
2. Studies on quality control/improvement and minimizing complications in neuromodulation patients
3. Investigating novel indications for neuromodulation therapies
4. Investigating outcomes in neuromodulation patients.

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13) Parag Patil MD, PhD
Associate Professor, University of Michigan
Email: pgpatil@med.umich.edu
Lab webpage: https://www.neuroengineer.org

Research interests: I am a clinician-scientist with longstanding interests in electrophysiology, mathematical modeling, and the development of therapies for the treatment of paralysis, movement disorders, and psychiatric conditions using neural-interface devices. I have a strong interest in brain-machine interfaces, and their restorative potential. My academic goal is to utilize engineering and mathematical techniques, along with interdisciplinary collaboration, to improve neuroprosthetics and to perform translational neuroscience research.

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14) Julie Pilitsis MD, PhD
Professor, Albany Medical Center (AMC)
Email: PilitsJ@amc.edu

Research Interests: Development of MRI guided robotic assistance for stereotactic procedures; improve delivery of focused ultrasound for treatment of chronic pain and Parkinson's Disease; characterization of electrophysiological neural markers using invasive and non-invasive approaches and neuromodulation techniques (e.g., SCS, DBS) in chronic pain and neurological disorders; application of bioinformatics and machine learning algorithms in neuromodulation field to various disorders such as chronic pain

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15) Nader Pouratian MD, PhD
Professor, University of Texas-Southwestern
Email: Nader.Pouratian@UTSouthwestern.edu
Lab Webpage: https://utsouthwestern.edu/labs/pouratian/?_ga=2.241164741.752015552.1636739142-1529804355.1636739142

Research Interests:

1. Visual prostheses to provide artificial vision for the blind
2. Developing novel brain stimulation therapies for chronic pain and depression
3. Characterizing activity-related electrophysiological changes in the human motor system (using both deep brain field potential and electrocorticography)
4. Developing personalized maps of deep brain structures using diffusion tractography (DTI) to target therapeutic interventions
5. Determining electrophysiologic signatures of optimal sites of DBS stimulation and efficacious therapy (LFPs)
6. Exploring the physiological changes in the brain associated with loss of consciousness

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16) R. Mark Richardson MD, PhD
Associate Professor, Harvard University/Massachusetts General Hospital
Email: Mark.Richardson@MGH.HARVARD.EDU
Lab Webpage: https://www.brainmodulationlab.org/

Research Interests: The study of brain electrophysiology and behavior in patients undergoing surgery for epilepsy, movement disorders. Basal ganglia-thalamocortical loop function in speech production, novel approaches to closed-loop DBS, and responsive neurostimulation for epilepsy.

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17) John Rolston MD, PhD
Assistant Professor, University of Utah
Email: john.rolston@hsc.utah.edu
Lab Webpage: https://www.rolstonlab.com/

Research Interests: Dr. Rolston's lab investigates how electrical stimulation can be used to map and ultimately rewire the diseased brain. These neural engineering tools are used to better understand neural information processing and how it is disordered in illnesses like epilepsy, Parkinson's, and psychiatric disease.

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18) Sepehr Sani. MD
Associate Professor, Rush University
Email: Sepehr_Sani2@rush.edu

Research interests: Electrophysiology, intraoperative imaging, computational neuroimaging. Clinical trials with gene therapy for treatment of Parkinson's disease, deep brain stimulation for treatment of gait disorders in Parkinsonian patients, deep brain stimulation for treatment of morbid obesity.

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19) Sameer Sheth MD, PhD
Associate Professor, Baylor College of Medicine
Email: Sameer.Sheth@bcm.edu
Lab Webpage: https://www.bcm.edu/research/faculty-labs/functional-and-cognitive-neurophysiology-laboratory

Research Interests: One focus area of his research leverages the unique opportunities available from neurosurgical procedures to study human neurophysiology. By recording from individual or populations of neurons during these procedures, one can learn about complex cognitive functions such as controlled decision-making and emotional regulation, using single-neuron and LFP recordings. The second focus is on improving our understanding and treatment of severe, refractory psychiatric disorders. A deeper appreciation of the physiological underpinnings of mood and anxiety disorders will lead to more effective treatments using surgical neuromodulation.

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20) Konstantin Slavin, MD
Professor, University of Illinois Chicago

Research interests: Dr. Slavin's research interests parallel his clinical expertise and include practical aspects of neuromodulation, a multitude of prospective clinical studies and pioneering research in spinal cord stimulation for cerebral vasospasm, surgical treatment for migraines, and deep brain stimulation for tremor, Parkinson's disease, and depression.

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21) Jennifer Sweet, MD
Assistant Professor, Case Western Reserve University/ University Hospitals
Email: jennifer.sweet@uhhospitals.org

Research Interests: Brain connectivity in bipolar disorder using MR-based tractography to identify a bipolar-specific target in the brain for deep brain stimulation

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22) Nestor Tomycz, MD
Associate Professor, Allegheny General Hospital/ Drexel University
Email: Nestor.TOMYCZ@ahn.org

Research Interests: Deep brain stimulation for new indications (e.g. opioid addiction, obesity, Alzheimer's disease), deep brain stimulation for movement disorders, spinal cord stimulation for chronic pain, spinal cord stimulation for new indications (e.g. facial pain, Parkinson's disease, neurodegenerative disorders), and dorsal root ganglion stimulation.

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23) Peter C. Warnke, MD
Professor, University of Chicago
Email: pcwarnke@hotmail.com

Research interests: Brain Machine Interface (NIH Brain Inititive-funded), DTI-guided psychiatric Neurosurgery, Physiology of Interstitial Laser Ablations for Epilepsy (Industry-funded), Connectomics in Movement Disorder Surgery (Argonne National Laboratory-funded)

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24) Jon T. Willie MD, PhD
Associate Professor, Washington University in St. Louis.
Email: jontwillie@wustl.edu

Research interests: The focus of the Willie lab is to characterize the function of brain circuits that control memory and arousal in normal and disease states. His studies leverage direct access to sampling and stimulating brain circuits in awake behaving neurosurgery patients and have direct implications for engineering novel neuromodulation strategies. His team is actively developing novel brain stimulation strategies treat epilepsy, cognitive impairments, post-traumatic stress disorder (PTSD), and sleep disorders. Students working with Dr. Willie will have contact with patients and work as part of a multidisciplinary collaboration of physicians, engineers, and neurophysiologists. Students will learn about disease processes such as epilepsy, PTSD, depression, and narcolepsy. They will also learn behavioral task coding and implementation, neurophysiology signal processing, and closed-loop responsive neuromodulation techniques.
