Harvard University/McLean Hospital Center Overview

Core A. Administration, O. Isacson, PI * Cooperation of Projects 1-3, Core B and Core C * Education seminars and training for PD research Core B. Imaging, A.-L. Brownell, PI * PET: 11C-CFT * 11C-Raclopride * MRI Hemodynamics * DA Receptor Supersensitivity * MRI: Anatomical primate atlas * MRS: Neurochemicals Lactate/Choline/Creatine/NAA Core C. Clinical Histology, R.-S. Pernaute, PI, N. Lange, Co-PI * Human studies of A9/A10 distinction * Human genomic analysis of normal A9/A10 markers * Human transplants post-mortem PD cases Nat'l Udall Ctr resource * Biostatistics of human DA markers for therapeutic development * Human stem cell development marker to DA neuron library Project 3: Dopamine neuron Project 1: fate, differentiation and **Novel protective** stem cell transplantation molecules and PI: Dr. Kwang-Soo Kim pathological prevention * Nurr1 (+/-) SN/DA neurogenesis PI: Dr. Ole Isacson **Novel Therapeutic** ES cell genetic engineering with **Approaches for** Nurr1/Pitx3 * Genomics DA A9/A10 analysis DA differentiation and transcription * Biological resilience factors **Parkinsons Disease** factors * Biological vulnerability factors * Neuroprotective paradigms DA stem cell transplantation * Rodent models of PD stem cell * DA neurotox in vitro models applications * DA transgenic degenerative Normal vs pathological stem cell in vivo models repair mechanisms in PD models MPTP primate PD model * Human stem cells to DA neurons Project 2: Stem cell derived DA cell transplantation in primates PI: Dr. Rosario-Sanchez Pernaute Co-PI: Dr. Craig van Horne * Cell replacement in MPTP model by primate DA stem cell * Dyskinesia model * MRI/MRS imaging * Novel functional testing paradigms * Human stem cell to DA neuron transplants * Primate models to clinical applications