SPONSOR/CO-SPONSOR BIOGRAPHICAL SKETCH

Provide the following information for the sponsor (co-sponsor). **DO NOT EXCEED FOUR PAGES.**

NAME OF SPONSOR (CO-SPONSOR) D. James Surmeier	POSITION TITLE Nathan Smith Davis Professor and Chair, Physiology
eRA COMMONS USER NAME JSURMEIER	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Idaho, Moscow, ID	B.S	1975	Mathematics/Psychology
University of Oregon, Eugene, OR	M.S.	1976	Mathematics
University of Washington, Seattle, WA	Ph.D.	1983	Physiology/Psychology
Marine Biomedical Institute, Galveston, TX	Postdoc.	1983-85	Neurophysiology
University of Tennessee, Memphis, TN	Postdoc.	1986-88	Cellular neurophysiology

A. Personal Statement

I direct a research program focusing on cellular and network mechanisms governing the basal ganglia in health and disease states. One of our main missions is to identify the mechanisms underlying selective neuronal vulnerability in Parkinson's disease. These studies have led to the identification of L-type Cav1.3 channels as drug targets for disease-modifying therapies. These studies rely upon a combination of electrophysiological, optical and molecular approaches. My research is supported by NINDS, NIMH, DOD and private foundations. I have been at Northwestern University since 1998, serving as Chair of the Department of Physiology since 2001. My leadership experience also includes directing The Morris K. Udall Center of Excellence for Parkinson's Disease Research at Northwestern University and an NINDS-sponsored P30 program in support of Northwestern's Multiphoton Imaging Core. I participate in the Northwestern University Interdepartmental Neuroscience program (NUIN) and serve on a number of advisory and editorial boards.

B. Positions and Honors

Honors

Davis Bros. Scholar, Regents Scholar, Phi Kappa Phi, University of Oregon Graduate Fellow, ARCS Foundation Scholar, N.I.H. Pre-doctoral Fellow, Post-doctoral National Research Service Award, NARSAD Established Investigator, Marie de Paris Professor, Jacob Javits Neuroscience Investigator Award, Fellow AAAS, Chair Gordon Conference on the Basal Ganglia.

Public Service Activity

Editorial positions (present): Neuron; Current Opinion in Neurobiology; Molecular and Cellular Neuroscience; Synapse; Open Neuroscience Journal; *Past editorial positions:* Associate Editor of The Journal of Neuroscience; Journal of Pharmacology and Experimental Therapeutics; Developmental Neuroscience.

National Advisory positions: N.I.N.D.S. Neurological Disorders Program Project Review B Committee, 1997-/01; 2008-present; Tourette Syndrome Association Scientific Advisory Board, 1996-00; Hereditary Disease Foundation Advisory Board, 2000-08; Dystonia Foundation Scientific Advisory Board, 2001-present. Co-chair, Parkinson's Disease Consortium, NIH, 2002; SFN Program Committee, 2004-2006; Hartman Foundation, 2006-2012; Bachmann-Strauss Dystonia and Parkinson's Disease Foundation, 2007-; Udall Centers of Excellence for Parkinson's Disease Research, Executive Committee Member (2009 – 2010).

University Appointments (since 1990)

7/90-7/93	Assistant Professor, Department of Anatomy and Neurobiology, University of Tennessee, Memphis, TN 38163.
7/93-6/96	Associate Professor (tenured), Department of Anatomy and Neurobiology, University of Tennessee, Memphis, Tennessee 38163.
7/96-6/98	Professor, Department of Anatomy and Neurobiology, University of Tennessee, Memphis, TN 38163.
6/98-5/01	Professor, Department of Physiology, Northwestern University, Feinberg School of Medicine, Chicago, IL 60611.
5/01-	Nathan Smith Davis Professor and Chair, Department of Physiology, Northwestern University, Feinberg School of Medicine, Chicago, IL 60611.

C. Selected Subset of Peer-reviewed Publications relevant to the current proposal (selected subset of 151 since 2007)

1. Kang S, Cooper G, Dunne SF, Dusel B, Luan CH, Surmeier DJ, Silverman RB (2012) Ca(V)1.3-selective L-type calcium channel antagonists as potential new therapeutics for Parkinson's disease. Nature communications 3:1146. PMCID: PMC In-Process
2. Surmeier DJ, Schumacker PT (2012) Calcium, bioenergetics and neuronal vulnerability in Parkinsons disease. The Journal of biological chemistry. PMCID: PMC In-Process
3. Fan KY, Baufreton J, Surmeier DJ, Chan CS, Bevan MD (2012) Proliferation of External Globus Pallidus-Subthalamic Nucleus Synapses following Degeneration of Midbrain Dopamine Neurons. The Journal of neuroscience : the official journal of the Society for Neuroscience 32:13718-13728. PMCID: PMC In-Process
4. Goldberg JA, Guzman JN, Estep CM, Ilijic E, Kondapalli J, Sanchez-Padilla J, Surmeier DJ (2012) Calcium entry induces mitochondrial oxidant stress in vagal neurons at risk in Parkinson's disease. Nature neuroscience 15:1414-1421. PMCID: PMC In-Process
5. Sulzer D, Surmeier DJ (2012) Neuronal vulnerability, pathogenesis, and Parkinson's disease. Movement disorders: official journal of the Movement Disorder Society. PMCID: PMC In-Process
6. Cooper O et al. (2012) Pharmacological rescue of mitochondrial deficits in iPSC-derived neural cells from patients with familial Parkinson's disease. Science translational medicine 4:141ra190. PMCID: PMC In-Process
7. Surmeier DJ, Guzman JN, Sanchez J, Schumacker PT (2012) Physiological phenotype and vulnerability in Parkinson's disease. Cold Spring Harbor perspectives in medicine 2:a009290. PMCID: PMC In-Process
8. Kriks S, Shim JW, Piao J, Ganat YM, Wakeman DR, Xie Z, Carrillo-Reid L, Auyeung G, Antonacci C, Buch A, Yang L, Beal MF, Surmeier DJ, Kordower JH, Tabar V, Studer L (2011) Dopamine neurons derived from human ES cells efficiently engraft in animal models of Parkinson's disease. Nature 480:547-551. PMCID: PMC3245796
9. Surmeier DJ, Guzman JN, Sanchez-Padilla J, Schumacker PT (2011) The role of calcium and mitochondrial oxidant stress in the loss of substantia nigra pars compacta dopaminergic neurons in Parkinson's disease. Neuroscience 198:221-231. PMCID: PMC3244353
10. Ilijic E, Guzman JN, Surmeier DJ (2011) The L-type channel antagonist isradipine is neuroprotective in a mouse model of Parkinson's disease. Neurobiology of disease 43:364-371. PMCID: PMC3235730
11. Chan CS, Glajch KE, Gertler TS, Guzman JN, Mercer JN, Lewis AS, Goldberg AB, Tkatch T, Shigemoto R, Fleming SM, Chetkovich DM, Osten P, Kita H, Surmeier DJ (2011) HCN channelopathy in external globus pallidus neurons in models of Parkinson's disease. Nature neuroscience 14:85-92. PMCID: PMC3058391
12. Guzman JN, Sanchez-Padilla J, Wokosin D, Kondapalli J, Ilijic E, Schumacker PT, Surmeier DJ (2010) Oxidant stress evoked by pacemaking in dopaminergic neurons is attenuated by DJ-1. Nature 468:696-700. PMCID: PMC In-Process
13. Simuni T, Borushko E, Avram MJ, Miskevics S, Martel A, Zadikoff C, Videnovic A, Weaver FM, Williams K, Surmeier DJ (2010) Tolerability of isradipine in early Parkinson's disease: a pilot dose escalation study. Movement disorders : official journal of the Movement Disorder Society 25:2863-2866. PMCID: PMC In-Process
14. Guzman JN, Sanchez-Padilla J, Chan CS, Surmeier DJ (2009) Robust pacemaking in substantia nigra dopaminergic neurons. The Journal of neuroscience : the official journal of the Society for Neuroscience 29:11011-11019. PMCID: PMC2784968
15. Chan CS, Guzman JN, Ilijic E, Mercer JN, Rick C, Tkatch T, Meredith GE, Surmeier DJ (2007) 'Rejuvenation' protects neurons in mouse models of Parkinson's disease. Nature 447:1081-1086.

D. RESEARCH

ACTIVE

P50 NS047085 (Surmeier) 8/1/08-7/31/13
NINDS
Rhythmicity and Synchrony in the Basal Ganglia

P50 NS047085-10S1 8/1/12-7/31/13
NIH/NINDS
Rhythmicity and Synchrony in the Basal Ganglia
This is an administrative supplement to the parent award.

P30 NS054850 (Surmeier) 5/1/07-11/30/12
NINDS (NCE to 11/30/13)
Interdepartmental two-photon imaging center

P50 MH090963 (Greengard, Rockefeller University) 9/29/10-6/30/15
NIMH
Identification of Cell Type-Specific Actions of Antipsychotic Drugs
Role: Project Leader – Project 5

U.S. Army Medical Research and Materiel Command (Surmeier) 12/1/10-11/30/13
W81XWH-11-1-0051
Glutamate signaling and mitochondrial dysfunction in models of Parkinson's disease

U.S. Army Medical Research and Materiel Command (Surmeier) 11/1/12-11/30/15
W81XWH-13-1-0018
Adaptations in Locus Ceruleus induced by Post Traumatic Stress Disorder

T32 NS041234 Surmeier, D. James (Director) 7/1/11-6/30/16
NINDS
General motor control mechanisms and disease training grant.

R01 NS034696 (Surmeier) 7/15/09-6/30/14
NINDS
Dopaminergic and muscarinic signaling in the striatum

3 R01 NS034696-17S1 7/1/12-6/30/13
NIH/NINDS
Dopaminergic and muscarinic signaling in the striatum
This is an administrative supplement to the parent award.

CHDI (Surmeier) 4/1/12-3/31/13
Agrmnt Ltr 4/1/12
Neural Adaptations in Huntington's Disease

Teva Neuroscience (Surmeier) 3/1/11-12/31/13
Agrmnt 2/7/11
Rasagiline modulation of oxidative stress in dopaminergic neurons of the substantia nigra pars compacta

U01 NS080409 (Surmeier) 9/1/12-8/31/17
NIH/NINDS
A novel calcium channel antagonist for neuroprotection in Parkinson's disease

Agrmnt Ltr 9/1/12
JBP Foundation (Surmeier) 9/1/12-8/31/13
Molecular and Cellular Mechanisms of Parkinson's Disease

R01 DE022748 (Apkarian) 7/1/12-6/30/17
Cortico-striatal plasticity in the transition to chronic pain
Role: Co-I

P30 NS081774 (Kessler, J.) 9/30/12-6/30/17
Induced Pluripotent Stem Cell Core for NINDS Investigators
Role: Core Director

Completed:
Thomas Hartman Foundation (Surmeier) 6/1/10-8/31/12
Determinants of neuronal vulnerability in Parkinson's disease

1 RC2 NS070276-01 (Isaacson, Harvard University) 10/1/09-9/30/11
NINDS (ARRA GO Grant)
Parkinson's Disease iPS Cell Line Research Consortium
Role: Subcontract PI (project 4)

RJG Research Foundation (Surmeier) 11/1/08-10/31/11
Identification of a novel L-type calcium channel antagonist for neuroprotection in PD

The MJ Fox Foundation (Surmeier) 12/1/08-5/31/12
Identification of a novel calcium channel antagonist for neuroprotection in PD

JBP Foundation (Surmeier) 10/15/11-10/31/12
Molecular and Cellular Mechanisms of Parkinson's Disease