CURRICULUM VITAE
Thomas B. Freeman, M.D., F.A.A.N.S., F.A.C.S

ADDRESS
University of South Florida
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PERSONAL DATA

Date of Birth:	September 24, 1955
Place of Birth:	Detroit, Michigan
Marital Status:	Married; Susan S. Freeman
Children:	Daniel H., Andrew B. and Jonathan S. Freeman

EDUCATION

1973 - 1977	S.B., Massachusetts Institute of Technology
1977 - 198l	M.D., Johns Hopkins University School of Medicine

INTERNSHIP AND RESIDENCY

1982 - 1988	Resident and Chief Resident, Department of Neurosurgery, New York University Medical Center, New York, N.Y.
1983	Honorary Registrar, Department of Neurology, National Hospital at Queens Square, London, England.
198l - 1982	Intern, Department of Surgery, Columbia Presbyterian Medical Center, New York, N.Y.

UNIVERSITY APPOINTMENTS

2007 – 2008	Co-Director, Biomechanics Laboratory, Department of Neurosurgery and Brain Repair, University of South Florida
2006 – Present	Member, Executive Committee, Neuroscience Signature Research Program, University of South Florida
2006 – Present	Director of Clinical Research, University of South Florida Department of Neurosurgery and Brain Repair
2005 – Present	Faculty, University of South Florida Parkinson's Disease and Movement Disorders Program, National Parkinson's Foundation Center of Excellence, Tampa, Florida
2004 – Present	Steering Committee, Huntington's disease Center of Excellence, Tampa, Florida
2003 – 2004	Director, Biomechanics Laboratory, Department of Neurosurgery, University of South Florida
2000 - Present	Medical Director, Center of Excellence for Aging and Brain Repair, University of South Florida
1999 - Present	Professor with tenure, Department of Neurosurgery and Brain Repair
1999 – 2007	Professor with tenure, Department of Pharmacology and Experimental Therapeutics, University of South Florida, College of Medicine, Tampa, Florida

UNIVERSITY APPOINTMENTS (Continued)

1997 - 1999	Co-Director, Division of Neural Reconstruction and Gene Therapy, the Neuroscience Program, University of South Florida
1997 - Present	Founding Faculty Member, the Neuroscience Program, and University of South Florida Health Science Center, Tampa, Florida
1997 - Present	Consultant, James A. Haley Veterans Hospital, Tampa, Florida
1996 - Present	Member, University of South Florida, Institute on Aging
1995 - 1999	Associate Professor with tenure, Division of Neurosurgery, Department of Pharmacology and Experimental Therapeutics and Division of Surgical Research, University of South Florida, College of Medicine, Tampa, Florida
l993 - Present	Graduate Faculty, University of South Florida Tampa, Florida
l989 - 1995	Assistant Professor of Pharmacology and Experimental Therapeutics, University of South Florida College of Medicine, Tampa, Florida
l988 - l995	Assistant Professor of Neurosurgery, University of South Florida College of Medicine, Tampa, Florida
l987 - l988	Teaching Assistant in Neurosurgery, Department of Neurosurgery, New York University Medical Center, New York, N.Y.

HOSPITAL APPOINTMENTS

l988 - Present	Department of Neurosurgery Tampa General Hospital, Tampa, Florida
l988 - 2014	Department of Neurosurgery H. Lee Moffitt Cancer Center, Associate Staff, Tampa, Florida
l992 - Present	Department of Neurosurgery James A. Haley Veterans Hospital, Tampa, Florida
l988 - l992	Chief, Division of Neurosurgery James A. Haley Veterans Hospital, Tampa, Florida
1998 - Present	Adjunct Staff Cleveland Clinic Florida, Weston, Florida

BOARD CERTIFICATIONS

l993	Diplomat, American Board of Neurological Surgery
l985	Passed: Written Primary Examination, The American Board of Neurological Surgery

LICENSES

l988	Florida
l98l	New York

EDITORIAL ACTIVITIES

1991 - 1994	Cell Transplantation (Pergamon Press), Editorial Board
1994 - 2003	Cell Transplantation (Pergamon Press), Ad Hoc Referee
1992 - 2002	Experimental Neurology (Academic Press), Ad Hoc Referee
1993 - 1995	Journal of Neuroimaging (Little, Brown Company), Ad Hoc Referee
1994	National Institutes of Health, Extramural Reviewer

EDITORIAL ACTIVITIES (Continued)

1996	The Parkinson Foundation of Canada, Extramural Reviewer
1996 - Present	Medical Research Council of Canada, Extramural Reviewer
1996 - Present	The Lancet (Williams & Wilkins), Ad Hoc Referee
1999 - 2001	Consulting Editor, YourDoctor.com, Sausalito, Ca.
1999 - 2001	Editor, Brain and Spine Repair, YourDoctor.com, Sausalito, Ca.
2000 - 2001	Content Senior Editor, Neurosurgery Section. YourDoctor.com, Sausalito, Ca.
2000	Study Section, National Institutes of Health, RFA: "Consortium on deep brain stimulation for the treatment of Parkinson's disease and other neurological disorders. "
2003 – Present	Editorial Board, Neuroscience Section, Cell Transplantation.
2003	Ad Hoc Reviewer, Human Gene Therapy
2005	Ad Hoc Reviewer, Brain
2006	Ad Hoc Reviewer, Neuroscience
2009	Ad Hoc Reviewer, Journal Comparative Neurology
2009	Ad Hoc Reviewer, Gene Therapy
2011	Ad Hoc Reviewer, Neurotherapeutics
2011	Ad Hoc Reviewer, Experimental Neurology

CORPORATE, FOUNDATION AND GOVERNMENTAL ACTIVITIES

1986 - 1991	Scientific Advisory Board, Hana Biologics, Inc., Alameda, Ca.
1991 - l992	Scientific Advisory Board, Somatix, Inc. (Formerly Hana Biologics), Alameda, Ca.
1995 - 1999	Consultant, Theracell, Inc., Somerville, N.J.
1996 - 2000	Scientific Advisory Board, The American Parkinson Disease Association, Staten Island, N.Y.
1996 - 1998	Consultant, Diacrin, Charlestown, Ma.
1998 - 2002	Consultant, Diacrin/Genzyme LLC, Cambridge Ma.
1998 - 2002	Consultant, Layton Bioscience, Inc., Atherton, Ca.
1999 - 2006	Consultant, Titan Pharmaceuticals, Inc., Somerville, N.J.
2000	Consultant, Center for Biologics Evaluation and Research of The Food and Drug Administration, Biological Response Modifiers Advisory Committee, Bethesda, Md.
2000 - 2004	Special Government Employee, Center for Biologics Evaluation and Research of the Food and Drug Administration, Washington, D.C.
2000 - 2004	Medical Director, Saneron CCEL Therapeutics, Inc., Tampa, Fl.
2000 - 2005	Medical Advisory Board, Image-Guided Neurologics, Inc., Melbourne, Fl.
2002	Clinical Development Consultant, Geron Corporation, Menlo Park, Ca.
2002 - Present	Founding Scientist, President, Chairman of the Board, Secretary, Treasurer, Ciracell Corporation, Tampa, Fl.
2004 – 2005	Advisory Board, Huntington's disease Society of America, Tampa, Fl.
2005 – 2007	Clinical Advisory Board, Reneuron, London, England
2005 – Present	Scientific Advisory Board, NeuralStem, Inc., Gaithersburg, Md.
2006 – Present	Medical Director, Saneron CCEL Therapeutics, Tampa, Fl.
2007 – 2008	Consultant, Globus Medical, Inc., Audubon, Pa.
2007 – 2008	Consultant, DePuy Spine, Raynham, Ma.
2008 – 2009	Consultant, Bonesupport, Inc., Warsaw, IN.
2008 – Present	Consultant, Signus Medical LLC, Chanhassen, MN.
2009 - Present	Consultant, Medtronic, Inc. (Neuromodulation), Minneapolis, Mn.
2009 – 2011	Consultant, Alnylam Pharmaceuticals, Cambridge, Ma.
2009 – 2010	Consultant, NeuroPhage Pharmaceuticals, Inc., Cambridge, Ma.
2010 – 2011	Consultant, CNS Delivery Sciences, Encinatas, Ca.

CORPORATE, FOUNDATION AND GOVERNMENTAL ACTIVITIES (Continued)

2010 – Present	Consultant, SanBio, Inc., Mountain View, Ca.
2010 – Present	Consultant, SpineGuard, San Francisco, Ca.
2010 – 2011	Consultant, Synthes Spine, West Chester, Pa.
2011 – Present	Member, California Institute for Regenerative Medicine (CIRM) Scientific Grants Section Working Group, San Francisco, Ca.
2012 – Present	Member, Neurosurgical Advisory Team, K2M Inc., Leesburg, VA
2013 – Present	Consultant, DePuy Synthes Corp., Raynham, MA.
2013 – Present	Consultant & Developer, Amedica Corp, Salt Lake City, UT.
2013 – Present	Consultant, LifeSpine, Inc., Hoffman Estates, IL.

CLINICAL TRIAL OVERSIGHT

1995 - 2002	Data Safety Monitoring Board, Double-blind controlled trial of nigral grafting in Parkinson's disease. Sponsor: NINDS
2000 - 2002	Data Safety Monitoring Board, Single-center, open label observer - blinded safety and effectiveness, long-term evaluation of the cerebral placement of LBS-neurons in 12 patients with substantial fixed motor deficit following cerebral infarction. Sponsor: Layton Bioscience, Inc.
2009 – 2010	Ad Hoc Reviewer, NIH Recombinant DNA Advisory Committee. Discussion of Human Gene Transfer Protocol #0904-981: A Phase 1/2 trial assessing the safety and efficacy of bilateral intraputaminal and intranigral administration of CERE-120 (adeno-associated virus serotype 2 (AAV2)-Neurturin (NTN) in subjects with idiopathic Parkinson's disease.
2010 – 2013	Data Safety Monitoring Board, A phase I, open-label first-in-human, feasibility and safety study of human spinal cord derived neural stem cell transplantation for the treatment of amyotrophic lateral sclerosis #NS2008-1. Sponsor: Neuralstem
2010 – Present	Data Safety Monitoring Board, A phase 1/2A study and efficacy of modified stromal cells (SB623) in patients with stable ischemic stroke. Sponsor: SanBio, Inc.
2013 – Present	Data Safety Monitoring Board, #NS2012-3: A Phase II, Open-Label, Dose Escalation and Safety Study of Human Spinal Cord Derived Neural Stem Cell Transplantation for the Treatment of ALS. Sponsor: Neuralstem, Inc.

SOCIETY COMMITTEES

	International Behavioral Neuroscience Society:
1993 - 1996	Member, Clinical Liaison Task Force Committee
1993 - 1996	Member, Local Organizing Committee
	American Society for Neural Therapeutics and Repair:
1994 - 1995	Member, Scientific Program Committee, Annual Meetings
1994 - 2001	Co-Chair, Practice Committee
1994 - Present	Member, Local Organizing Committee, Annual Meetings
1997 - Present	Member, Practice Committee
1997 - Present	Chair, Ethics Committee
1994 - 1996	Co-Chair, Ethics Committee
1997	Fellow
1997 - 2000	Councilor
1998 - 2000	Chair, Publicity Committee
2002 - 2003	President Elect
2003 - 2004	President

SOCIETY COMMITTEES (continued)

2003 – Present Council Member
2014 – Present Chair, Practice Committee

UNIVERSITY COMMITTEES

University of South Florida
1994 - 1999 Member, Research Committee, Department of Surgery
The Neuroscience Program
1997 - 2002 Co-Chair, Neural Reconstruction and Gene Therapy Study Group
1997 - l998 Member, Development Committee
2000 - Present Director, Promotion and Tenure Committee, Department of Neurosurgery
2001 – 2003 Conflict of Interest Task Group, College of Medicine
2003 – 2005 Member, Neurosciences Clinical Work Group
2006 – Present Director, Resident Research Committee, Department of Neurosurgery
2006 – Present Department Director, AIMS Salary Committee, Department of Neurosurgery
2011 – 2012 Member, Billing Integrity and Privacy Committee, College of Medicine

HOSPITAL COMMITTEES

Tampa General Hospital
1989 - 1992 Vice Chief, Section of Neurosurgery
1994 Secretary, Section of Neurosurgery
1995 - 1996 Member, Medical Staff Library and Educational Resource Committee
1999 - 2001 Member, Research Advisory Committee, Clinical Research Center

PROFESSIONAL MEMBERSHIPS

1987 New York Academy of Sciences
1988 Society for Neuroscience
1989 Johns Hopkins Medical and Surgical Association
1989 American Association for the Advancement of Science
1989 American Association of Neurological Surgeons
1989 Florida Neurosurgical Society
1992 United Parkinson Foundation
1993 Cell Transplant Society
1994 American Society for Neural Transplantation (Charter Member)
1995 The Parkinson's Disease Gene Therapy Consortium (Charter Member)
1995 American Society for Stereotactic and Functional Neurosurgery
1996 Florida Spine Study Group
1997 Fellow, American College of Surgeons
1997 Congress of Neurological Surgeons
2005 Florida Medical Association
2008 Member, North American Spine Society
2009 Charter Member, Academy of Inventors, College of Medicine
2010 Charter Member Institution, National Academy of Inventors

10 ISSUED PATENTS AND PROVISIONAL PATENTS

2000 Neuroprotection of dopamine neurons by the transplantation of hNT neurons as a treatment for Parkinson’s disease.

10 ISSUED PATENTS AND PROVISIONAL PATENTS (continued)

2001 Patent: Putamen grid. Freeman, T.B., O'Conner, J.

2002 U.S. Provisional Patent: Putamen grid. Freeman, T.B., Pub. App-No. 20060009788.

2003 U.S. Provisional patent: Proliferated cell lines and uses thereof. Freeman, T.B., Caviedes, P., Caviedes R., Sanberg, P.R., Cameron, D.F. Pub. App. No. 20030232752.

2003 U.S. Patent: Bone marrow cells as a source of neurons for brain and spinal cord repair. Patent #6,528,245 awarded March 4, 2003.

2003 U.S. Provisional Patent: Materials and methods for regulation process formation in cell culture. Caviedes, Pablo, et al. Pub. App. No. 20040219666.

2004 U.S. Provisional Patent: Trajectory guide with angled or patterned guide lumens or height adjustment. Mazzocchi, R.A., Solar, M.S., Freeman, T.B. Pub. App. No. 20060195119

2005 U.S. Provisional Patent: Bone fusion compressor and method of use. Freeman, T.B., Johnson, W.M., Guiot, B.

2005 U.S. Provisional Patent: Multi-Purpose Irrigator. Freeman, T.B., Johnson, W.M.

2005 U.S. Provisional Patent: Prosthesis for spine discs having fusion capability. Johnson, W.M., Freeman, T.B. Pub. App. No. 20060052874.

2006 U.S. Provisional. Patent: Bone marrow-derived neuronal cells. Sanchez-Ramos, Juan; Song, Shijjie; Jansson, Williams; Sanberg, Paul; Freeman, Thomas. Pub. App. No. 20060194316

2008 U.S. Patent: Proliferated cell lines and uses thereof. Freeman, T.B., Caviedes, P., Caviedes, R. Pub. App. No. 20030232752. Patent #7416885 issued Aug. 26, 2008.

2010 U.S. Provisional Patent: Asymmetrical Disc Distracting Cage. Freeman, T.B., Johnson, W. Publication #0152857. June 17, 2010.

2010 U.S. Patent: Trajectory guide with angled or patterned guide lumens or height adjustment. Mazzocchi, R.A., Solar, M.S., Freeman, T.B. Patent #7699854. April 10, 2010.

2010 U.S. Provisional Patent: Vertebral Body Cage. Johnson, W.M., Freeman, T.B., Publication #0179658. July 15, 2010.

2010 U.S. Provisional Patent: Translational Manipulation Polyaxial Screw Head. Freeman, T.B., Johnson, W.M. Publication #0234891. September 16, 2010.

2011 U.S. Patent: Trajectory guide with angled or patterned guide lumens or height adjustment. Mazzocchi, R.A., Solar, M.S., Freeman, T.B. Patent #7896889. March 1, 2011

PATENTS AND PROVISIONAL PATENTS (Continued)

2011	U.S. Patent: Trajectory guide with angled or patterned guide lumens or height adjustment. Mazzocchi, R.A., Solar, M.S., Freeman, T.B. Patent #7,981,120 issued July 19, 2011
2011	U.S. Patent: Cervical plate system. Freeman, T.B., Johnson, W.M. Patent #7,963,980, June 21, 2011
2011	U.S. Patent: Putamen Grid. Freeman, T.B.; O'Connor, J.P. Patent #8,012,159, issued September 6, 2011.
2012	U.S. Patent: Prostheses for spine discs having fusion capability. Freeman, T.B., Johnson, W.M., Patent #8,110,003, issued February 7, 2012
2012	U.S. Patent: Proliferated Cell Lines and Uses Thereof, Freeman, T.B., Caviedes, P.A.; Patent #8,137,662, issued March 20, 2012.
2012	U.S. Patent:
2012	U.S.Patent: Translational Manipulation Polyaxial Screw Head. Freeman, T.B., Johnson, W.M. Patent #8,277,490, issued October 2, 2012.
2013	U.S. Patent: Prostheses for Spine Discs Having Fusion Capability. Johnson, W.M., Freeman, T.B., Patent #8,540,771, issued September 24,2013.
2013	U.S. Patent: Bone Fusion Material Compressor and Method of Use. Freeman, T.B., Johnson, W. M., Guiot, B., Patent #8,579,986, issued November 12, 2013.
2014	U.S. Patent: Asymmetric Disc Distracting Cage. Freeman, T.B., Johnson, W.M. Patent # 8,734,521, issued May 27, 2014.

HONORS

2016	Castle Connolly's Top Doctors 2016
2015	Best Doctors in America 2015-2016
2013	American Society of Neural Therapy and Repair. The Molly & Bernard Sanberg Memorial Award for Brain Repair—"in recognition of significant contributions to the field of brain repair."
2012	US. News and World Reports. Top 1% of Neurosurgeons in the U.S.
2011	Best Doctors in America
2010	Recipient, USF Platinum Dean's Recognition Award for "Exemplary service and excellence in teaching and research."
2010 - Present	Fellow, American Association of Neurological Surgeons
2004	International Scientist of the Year – International Biographical Centre
2003 – Present	Who's Who in Finance and Industry
2003 – Present	Marquis Who's Who in American Education
2002 - Present	ABMS Directory of Board Certified Medical Specialists
2002 - Present	Who's Who in Medicine and Healthcare

2002 - Present	Who's Who in America
2001 - Present	America's Registry of Outstanding Professionals
2001 - Present	Outstanding People of the 21st Century - International Biographical Centre - First Edition
2001 - Present	America's Top Doctors, Castle Connolly Medical LTD
2000 - Present	Strathmore's Who's Who
1998 - Present	Fellow, American College of Surgeons
1997 - Present	Who's Who in the South and Southwest

HONORS (continued)

1995 - Present	Who's Who of American Board of Certified Medical Specialists
1995 - Present	Who's Who in the World
1994 - Present	Fellow, American Society for Neural Transplantation and Repair
1993 - Present	Men of Achievement
1992 - Present	Who's Who in Science and Engineering
1986	Winner, Elsberg Award for outstanding resident research, New York Society of Neurosurgery
198l	Luce Scholars Program, Finalist
1980	Recipient: National Institute of Health Medical Student Clinical Research Training Grant

RESEARCH FUNDING

2012- 2015	Source:	SIGNUS Medical, LLC
	Type:	Device
	Title:	DIANA™ Sacroiliac Joint Fixation
	Role:	Principal Investigator
	Total Costs:	$11,008
	% of time:	1%
2006 – 2009	Source:	Florida High Tech Corridor Council
	Type:	USF Connect Industry Seed Grant
	Title:	Purification and characterization of a transformation factor secreted by a rat thyroid tumor cell line
	Role:	Co-Principal Investigator
	Total Costs:	$200,000
	% of time:	5%
2007	Source:	Saneron CCEL Therapeutics, Inc.
	Type:	Phase I
	Title:	Measuring inflammation after stroke in man: towards development of new therapies
	Role:	Co-Investigator
	% of time:	<1%
	Dept. costs:	0
2006 – 2007	Source:	International Organization of Glutaric Acidemia
	Type:	Foundation
	Title:	Evaluation of long-term neural graft survival and development in a patient with Huntington's disease.
	Role:	Principal Investigator

% of time: 2%
Total Costs: $10,000

RESEARCH FUNDING (Continued)

2006 - 2007
Source: Huntington Society of Canada
Type: Foundation
Title: In depth analysis of graft implants in a Huntington's disease patient: lead into long-term graft survival, development and connectivity
Role: Collaborator
% of time: 3%
Total Costs: $76,000 (Canadian)
USF Costs: 0

2005 - 2006
Source: NIH/NINDS
Type NIH R01 NS408883-01
Title: Ethical and policy challenges in the study and use of DBS
Role: Consultant
% of time: 1%
Dept. Costs: $5,000
Total Costs: $7,969

2005 - 2006
Source: Cyrus Nucci Foundation
Type: Foundation
Title: Understanding subsidence in the cervical spine
Role: Co-Investigator
% of Time: 1%
Total Costs: $22,000

2005 - 2006
Source: Confluent Surgical, Inc.
Type: Device
Title: A prospective, multi-center, randomized controlled study to compare the spinal sealant system as an adjunct to sutured dual repair with standard of care during spinal surgery.
Role: Co-Investigator
% of Time: < 1%

2003 - 2008
Source: Schering AG/Berlex/Titan Pharmaceuticals
Type: Pharmaceutical
Title: Study of the safety, tolerability and efficacy of Spheramine

implanted bilaterally into the post-commissural putamen of patients with advanced Parkinson's disease.
Role: Institutional Principal Investigator
% of time: 5%
USF Direct Costs $1,328,000
Indirect Costs 2,000
Total Costs $1,330.000

RESEARCH FUNDING (Continued)

2003 - 2006
Source: Michael J. Fox Foundation for Parkinson's Research
Type: Basic Science Research
Title: The role of subclinical rejection in graft-mediated dyskinesia
Role: Consultant
% of Time: 1%

2003 - 2004
Source: Eunoe (formally CSFluids, Inc.)
Type: Device
Title: Long-term follow-up safety evaluation of the CogniShunt™ CNS fluid shunt system implanted under pivotal study 2000-01 in subjects with Alzheimer's disease.
Role: Institutional Principal Investigator
% Time: Study Closed
USF Direct Costs $2,500.00
USF Indirect Costs 0.00
Total Costs $2,500.00

2001 - 2003
Source: CSFluids, Inc.
Type: Device
Title: A prospective randomized start, multi-center, double-blinded, concurrently placebo-controlled study to evaluate the effect of flow-regulated ventriculoperitoneal shunting on progression of Alzheimer's disease: an investigation of the safety and effectiveness of the COGNIShunt™ CNS fluid shunt system
Role: Institutional Principal Investigator
% Time: 5%
USF Direct Costs $329,347
USF Indirect Costs $19,761
USF Total Costs $349,108

2000 - 2005
Source: National Institutes of Health
Grant #: NS40883-01
Type: NIH R01
Title: Ethical and policy challenges in the study and use of deep brain stimulation
Role: Co-Investigator
% Time: 5%
Amount: $1,250,000
USF Direct Costs: $31,250

USF Indirect Costs: $8,595
USF Total Costs $39,845

RESEARCH FUNDING (Continued)

1999 - 2004
Source: National Institutes of Health
Grant #: NS33772
Type: NIH 2-RO1
Title: Double-blind controlled trial of nigral grafting in Parkinson's disease.
Role: Institutional Principal Investigator
% Time: 20%
Amount: $2,326,894
USF Direct Costs: $364,559
USF Indirect Costs: $31,266
USF Total Costs: $395,825

1999
Source: Layton Bioscience, Inc.
Type: Pharmaceutical
Title: Transplantation of hNT neurons for the treatment of stroke.
Role: Principal Investigator
% Time: 5%
Amount: $40,000
USF Direct Costs: $33,333
USF Indirect Costs: $6,667

1998 - 2000
Source: International Organization of Glutaric Acidemia
Type: Basic Science Research Grant
Title: Neural reconstruction of the brain in glutaric acidemia
Role: Principal Investigator
Amount: $25,000

1998 - 1999
Source: Hereditary Disease Foundation
Type: Basic Science Research Grant
Title: Pathologic analysis following fetal striatal transplantation in a patient with Huntington’s disease.
Role: Principal Investigator
Amount: $18,500
USF Total Costs: $653,652

1998 - 2001
Source: Diacrin/Genzyme, LLC
Type: Pharmaceutical
Title: A double blind, controlled multicenter clinical trial of the safety and efficacy of transplanted fetal porcine cells in patients with Parkinson's disease.

Role: Institutional Principal Investigator
% Time: 10% (1998-1999)
USF Direct Costs: $616,653
USF Indirect Costs: $36,999

RESEARCH FUNDING (Continued)

1997 - 1999
Source: Tampa General Hospital
Grant#: 4117
Type: Hospital/Patient funded
Title: Transplantation of human embryonic striatal tissue for the treatment of Huntington's disease.
Role: Co-Principal Investigator
Amount: $240,000

1997
Source: Office for Research and Graduate Affairs
Type: Medical Student Teaching Fellowship
Title: Studies on human fetal neural grafts in rat models of Huntington's and Parkinson's diseases.
Amount: $2000
USF Total Costs: $1,672,473

l995 - 2000
Source: National Institutes of Health (NINDS)
Grant #: R01 NS32842
Type: RO1 (Rank: 6.8th percentile)
Title: Double-blind controlled trial of nigral grafting in Parkinson's disease.
Role: Institutional Principal Investigator
% Time: 20%
Amount: $4,776,122
USF Direct Costs: $1,536,838
USF Indirect Costs: $135,635

1995
Source: Institute on Aging Summer Research Awards
Type: Basic Science Research Grant
Title: Age dependent neuropathological effects of 3-nitrotrotionic acid on neuronal cells
Amount: $3,000
Role: Principal Investigator

199l - 1992
Source: United Parkinson Foundation
Type: Basic Science Research Grant
Title: The effect of dopaminergic cell density within human embryonic nigral grafts on behavior in parkinsonian rodents.
Role: Principal Investigator
Amount: $25,000

1990 - 1991	Source:	United Parkinson Foundation
	Type:	Basic Science Research Grant
	Title:	Comparison of methods of storage of embryonic human cadaver dopaminergic neurons for transplantation in the treatment of Parkinson's disease.
	Role:	Principal Investigator
	Amount:	$25,000

RESEARCH FUNDING (CONTINUED)

1989 - 1990	Source:	United Parkinson Foundation
	Type:	Basic Science Research Grant
	Title:	Determination of feasibility of solid intraparenchymal grafts of embryonic human dopaminergic neurons.
	Role:	Principal Investigator
	Amount:	$25,000
1984 - 1985	Source:	American Parkinson Disease Foundation
	Type:	Basic Science Research Grant
	Title:	Cross-species transplantation of dopaminergic neurons in a rodent model of Parkinson's disease.
	Role:	Principal Investigator
	Amount:	$5,000
1980 - 198l	Source:	National Institutes of Health
	Type:	Medical Student Clinical Research Training Grant
	Title:	The effect of naloxone on pain relief induced by electrical stimulation in man.
	Role:	Principal Investigator
	Amount:	$2,000

UNIVERSITY TEACHING

1988	General Surgery Course, "Overview of Neurosurgery," Surgical Clerkship, Course #BCC 6l60.
1989-1990	Grand Rounds, University of South Florida, Department of Surgery. "Overview of Neurosurgery."
1989-1990	Medical student preceptorships: Advised David McKalip, M.D. during medical student career at USF and worked extensively (greater than 50 hours) with him on authoritative review article.
1989-1993	Teach medical students yearly in Surgical Clerkship Course #BCC 6l60. "Overview of Neurosurgery."
199l	Seminar, Department of Pharmacology and Therapeutics, University of South Florida, Tampa, Fl. "Graft efficiency: a quantitative analysis of neurografts for Parkinson's disease."

199l, 1994	Teach graduate students, Dept. of Physiology and Pharmacology and Experimental Therapeutics; Pharmacology of Physiological Systems, Course #6502. Transplantation Research."
1992	Grand Rounds, University of South Florida, and Department of Surgery. "Neurografting in the treatment of Parkinson's disease."

UNIVERSITY TEACHING (CONTINUED)

1993	Grand Rounds, University of South Florida, Department of Psychiatry, Tampa, Fl. "Overview of fetal neural transplantation in the treatment of Parkinson's disease."
l993 - present	Daily teaching of USF neurosurgical residents in all aspects of clinical neurosurgery (l2 hours/week).
l994	Faculty, Graduate Course, Pharmacology of Physiological Systems, Depts. of Physiology and Pharmacology and Experimental Therapeutics, University of South Florida, Tampa, Fl. "Transplantation Research," Course #GMS 6502.
l994	Grand Rounds, Department of Surgery, University of South Florida, Tampa, Fl. "Neural grafting for Parkinson's disease: The USF experience."
1994-l995	Secondary Postdoctoral Supervisor for Cesar Borlongan, Ph.D. Research studies of neural transplantation for Parkinson's and Huntington's diseases. (Promoted to instructor, Div. of Neurosurgery, l995; Asst. Prof., NINDS, Baltimore Maryland, 1998; Asst. Prof.,NINDS, Baltimore, Md., 1999-Present).
l995	Speaker, University of South Florida, Department of Surgery Research Conference Retreat, Tampa, Florida. "Ethical issues in research."
l995	Medicines: The Inside Story. Contributor of USF Transplant Program results to traveling museum exhibition dealing with the history of medicines and their role in society. Presented in interactive, video, CD ROM and multimedia formats.
l997	Grand Rounds, University of South Florida, Division of Neurosurgery, Tampa, Fl. "Neural reconstruction for Parkinson's disease; past and present studies."
l997	Grand Rounds, University of South Florida, Department of Neurology, Tampa, Fl. "Update on neurosurgical procedures for movement disorders."
1997	Medical Student Supervisor for Vernon Chapman, University of South Florida. Studies on human fetal neural grafts in rat models of Huntington's and Parkinson's diseases.
1997	Department of Pharmacology and Experimental Therapeutics, University of South Florida, Graduate Seminar Series. "Fetal tissue transplantation for the treatment of Huntington's disease."
1997	Honors Bachelors degree thesis examiner, Stacy L. Jones, University of South

Florida. "Cellular therapies for the treatment of Parkinson's disease."

1998 Medical student supervisor for Seth Kanowitz, University of South Florida. "Studies on the use of Sertoli cell cografts as a source of trophic factors for fetal nigral grafts in vivo."

UNIVERSITY TEACHING (Continued)

1998 Guest Professor, School of Public Health, University of South Florida. "Design of surgical and technological trials" in Course #EPB PHC 0017; Clinical Trials (Paul Leaverton, Course Director).

1998 Invited Speaker, Tampa General Hospital Spine Conference, Tampa, Fl. "Lumbar interbody fusion: indications for surgery."

1999 Guest Professor, University of South Florida, Biomedical Ethics Course. "Ethical issues in surgical placebo controlled trials." in Course #PHI 3633, Cross-reference #PHI 82569 (David P. Schenck, Course Director)

1999 - 2000 Guest Professor, School of Public Health, University of South Florida. "Surgical Trials" in Course EPB PHC 6017; Clinical Trials (Paul Leaverton, Course Director).

2000 Department of Pharmacology and Experimental Therapeutics, University of South Florida, Graduate Seminar Series. "Neurotransplantation for Huntington's Disease."

2000 Grand Rounds, Department of Geriatrics, VA Hospital, Tampa, Fl. "Neural transplantation for the treatment of Parkinson's disease, Huntington's disease and stroke."

2000 Medical student supervisor for Michael Portillo (MS I), University of South Florida. "Infectious risks in neural transplantation."

2002 Guest Lecturer, School of Business, University of South Florida. Strategic Market Assessments for New Technologies; Class Directors: Michael Fountain and Stephen Budd. "Cell therapies in medicine; strategic plan for Celgenica."

2002. Guest Lecturer, School of Business, University of South Florida. Business Plan Development (#GEB6116-001). Instructor: Michael Fountain. "The business plan for Celgenica Corporation."

2003 Grand Rounds, Department of Neurology, University of South Florida, Tampa, Fl. "A double-blind controlled trial of bilateral fetal nigral transplantation in Parkinson's disease."

2003 Grand Rounds, Department of Neurosurgery, University of South Florida, Tampa, Fl. "A double-blind controlled trial of bilateral fetal nigral transplantation in

Parkinson's disease."

2004 Clinical Shadowing Program, student Richard Synkiewicz, University of South Florida. Course Director: Wes Johnson, Ph.D. "Clinical Shadowing" (#BME 5748).

UNIVERSITY TEACHING (Continued)

2004 Clinical Shadowing Program, student Stephanie Carey, University of South Florida. Course Director: Wes Johnson, Ph.D. "Clinical Shadowing" (#BME5937).

2004 – 2005 Thesis Advisor, student Brenda Yantzer Master's Thesis, University of South Florida, Department of Chemical Engineering. Course #EC6971 "Torsion-induced stress distribution changes in human intervertebral discs: an in vitro study."

2006 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS Student Melissa Freeman, University of South Florida. Course Director: Richard Hoffmann, M.D., Course #BMS 6941.

2006 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS Student Megan Leonard, University of South Florida. Course Director: Richard Hoffman, M.D., Course #BMS 6941.

2006 Clinical Shadowing, student Mrunal Shah, University of South Florida., Dr. Ronald F. Mervis, Ph.D., Center of Excellence for Aging and Brain Repair.

2006 Clinical Shadowing, student James Kotick, University of South Florida, Dr. Ronald F. Mervis, Ph.D., Center of Excellence for Aging and Brain Repair.

2006 Grand Rounds, Department of Neurosurgery, University of South Florida, Tampa, Fl. "Modern era of surgical trial designs."

2007-2008 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS2 Pruthu Patel, University of South Florida. Course Director: Richard Hoffmann, M.D., Course #BMS 6941.

2007 Invited Speaker, The USF Signature Interdisciplinary Program in Neuroscience, University of South Florida, Tampa, Fl. "First neural transplant survival: implications for future stem cell and gene therapies."

2007 Grand Rounds, Department of Neurosurgery, University of South Florida, Tampa, Fl. "Sculpting with steel: spinal reconstruction with dual lockable-polyaxial screw systems."

2008 Preceptor, Stephen Klasko Medical Observership Program, University of South

Florida Office of International Affairs. Medical Students from Yeungnam University College of Medicine.

2008 Shadowing, Tampa General Hospital Operating Room, Tyler Cash-Padgett, Premedical student, Hillsborough High School.

UNIVERSITY TEACHING (Continued)

2008 Grand Rounds Departments of Neurological Surgery and Neurology, University of South Florida, Tampa, Fl. "Lewy body-like pathology in long term embryonic nigral transplants in Parkinson's disease."

2008 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS2 Maleeha Haq, University of South Florida. Course Director: Richard Hoffman, M.D., Course #BMS 6941.

2008-2009 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS2 Jessica Drake (Maloney), University of South Florida. Course Director: Richard Hoffman, M.D., Course #BMS 6941.

2008 Grand Rounds Departments of Neurological Surgery, University of South Florida, Tampa, Fl. "Paraspinous muscle denervation causes atrophy after cervical spine surgery. Techniques to minimize it."

2009 - 2010 Clinical Shadow, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS3 Kara Kay Robinson, Course Director Hugo Navarte, M.D., Course #6941.

2009 – 2010 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS1 Bridget Coughlin, University of South Florida. Course Director Hugh Navarte, M.C., Course #BMS 6941 11/16/09 – 4/26/10.

2010 Faculty, Neurological/Neurosurgical Therapeutics 2010: Contemporary Diagnosis and Management Course. Tampa, Fl. May, 2010. Course Directors: Clifton L. Gooch, M.D., F.A.A.N. and Harry R. van Loveren, M.D.

2010 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS2 Anthony Cobb, University of South Florida. Course Director Hugo Navarte, M.D., Course BMS 6941, 8/16/10 – 11/9/10

2010 -2011 Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, MS2 Amber Kuk, University of South Florida. Course Director Hugo Navarte, M.D., Course BMS 6941, 11/10 – 4/11

2011 Preceptor, Strategic Market Assessment for New Technologies, University of South Florida, College of Business. Course Director Mike Fountain. Course GEB 6930/EIN 6935. 2/2011

2011	Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, Travis Klein, (MSII) University of South Florida. Course Director Hugo Navarte, M.D., Course BMS 6941
2012	Stephen Klasko Medical Observership Program, University of South Florida, Ahmed Essam, Ain Shams University, Egypt, January 4, 2012 – January 27, 2012.

UNIVERSITY TEACHING (Continued)

2012-2013	Preceptor, Longitudinal Clinical Experience (DCE) Program, University of South Florida, Matt Widner, (MS1), University of South Florida.
2013	Grand Rounds Departments of Neurological Surgery, University of South Florida, Tampa, Fl. "Hip, Back, Sacroiliac? They're all a pain in the butt. How to differentially diagnosis and treat sacroiliac joint pain."
2013	Preceptor, Longitudinal Clinical Experience (LCE) Program, University of South Florida, Blake Kollefrath (MS II), University of South Florida.
2013	Preceptor for DCE student, Matthew Wollenschlaeger (MSII), University of South Forida.
2013	Grand Rounds Department of Neurological Surgery, University of South Florida, Tampa, FL. "Sacroiliac Joint Pain: USF Sacroiliac Joint Fusion Results in 38 Consecutive Patients".
2014- present	Graduate Student (Ph.D) Supervisory Committee, University of South Florida, Jamileh Ahmed, (Medical Sciences) University of South Florida.
2014	Preceptor for DCE student, Rhonda Robeel, University of South Florida
2014	Instructor, Cadaveric Fundamentals of Spinal Deformity Course, University of South Florida, Department of Neurosurgery and Brain Repair. Course Director Elias Dakwar, M.D.
2015	Preceptor for International Students Matias Hernandez Guzman & Santiago Gomez Paz. Morsani Medicine International Medical Observership Program, University of South Florida.
2015	Preceptor for DCE Student Elizabeth Beaty, University of South Florida Select Program.
2015	Precepter for DCE Student Nicholas Johnson, University of South Florida.
2015	Precepter for DCE Student Laura Nall, University of South Florida.
2016	Precepter for DCE Student Talha Rashid, University of South Florida.

NEUROSURGICAL RESIDENTS TRAINED

1997	Mark Oliver
1998	Mark Levy
1999	Rakesh Kumar
2000	Paul Montalbano
2001	Shahram Makoui
2002	John Sarzier
2003	Michael Hajjar
2004	Donna Saatman
2005	Mark Melton
	Evan Packer
2006	Edward Duckworth
2007	Juan Uribe
	Donald Sachs
2008	Tann Nichols
	Samy Youssef
	Nicholas Arredando
2009	Magdalena Banasiak
2010	Edwin Ramos
	Clinton Burkett
2011	Ali Baaj
2012	Elias Dakwar
	Glen Pollock
2013	Tien Le
	Tsz Lau
2014	Rohit Vasan
	Armen Deukmedjian
2015	Amir Ahmadian
	Angela Downes
	Jotham Manwaring
2016	Puya Alikhani

COMMUNITY SERVICE

l993	Expert Faculty, American Parkinson Disease Association, Parkinson's Disease Update for Patients, Tampa, Fl. "Transplantation in Parkinson's Disease."
l994	Speaker, Parkinson's Disease Seminar for Patients and Caregivers, Tampa General Healthcare, Tampa, Florida. "Fetal Transplantation for Parkinson's Disease."
1995	Invited Speaker, Florida Chapter of the Huntington's Disease Society of America, Miami, Florida. "The potential use of neural transplants for the treatment of Huntington's disease."
1996	Faculty, Mini-internship Program, Leadership Tampa, Chamber of Commerce. Intern: Edward Malone.
1997	Guest Speaker, The Rotary Club, Tampa, Fl. "Neural reconstruction of the human brain."

2000 Faculty, White Coat Mini-Internship Program, Tampa General Hospital, Tampa, Fl. Intern: John Dunn.

2001 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Al Silva.

2001 Invited Speaker, Florida Coalition to Cure Parkinson's Disease Golf Tournament, Clearwater, Fl.

2002 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Diane Egner, Editorial Writer, The Tampa Tribune

2002 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Arthur Savage, TGH Foundation Board of Trustees; President-A.R. Savage & Sons, Inc.

2002 Invited Speaker, Night School for Your Brain, Tampa General Hospital, Tampa, Fl.

2003 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Orie Byars, Community Volunteer.

2004 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Buck McInnis, TGH Foundation Board of Trustees; CEO-Tampa Bay Steel, Inc.

2004 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Jane Friend, Promotions-Cox Radio.

2005 Invited Speaker, Night School for Your Health, Tampa General Hospital, Tampa, Fl.

2005 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Victor Leavengood, Hillsborough County Hospital Authority.

2005 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Sally Tibbits, Office of U.S. Senator Mel Martinez.

2005 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Ed Oeschlaeger, TGH Foundation Board of Trustees; CEO-ECO Group, Inc.

2005 Invited Panelist, Reflections on the Terri Schiavo Case, Congregation Rodeph Sholom & Congregation Schaarai Zedek., Tampa, FL

2006 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Chuck Black, President-Tampa Electric Company.

2006 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Kenny Puig, Attorney/Founding Member-McCumber, Inclan, et al.

2006 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Joanne Urofsky, General Manager-WUSF Public Broadcasting.

2007 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Joy Harris, Public Phase Co-Chair, "Tiny Babies, Big Priority" Capital Campaign.

2007 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Susan Freeman, V.P.-Meridian Partners.

2007 Faculty, White Coat Mini-internship Program, Tampa General Hospital. Intern: Dr. Steve Kucera, Interim Dean, University of Tampa College of Natural Health & Sciences.

2008 Faculty, White Coat Mini-Internship Program, Tampa General Hospital. Intern: June S. Annis, Designer-Sutton Place Ltd., Inc..

2008 Faculty, White Coat Mini-Internship Program, Tampa General Hospital. Intern: Janice Cox, Dental Hygienist.

2009 Faculty, White Coat Mini-Internship Program, Tampa General Hospital. Intern: Harry "Hal" C. Flowers, Managing Partner, Everest Partners, LLC.

2010 Faculty, White Coat Mini-Internship Program, Tampa General Hospital. Intern: Doug Pace, Executive V.P and COO Bayshore Solutions.

2010 Faculty, White Coat Mini Internship Program, Tampa General Hospital. Intern: Kimberly D. Overman, CFP, President, The Financial Well, Inc.

2012 Faculty, White Coat Mini-Internship Program, Tampa General Hospital. Intern: Chloe Kelsche

2013 Invited Speaker, "Sacroiliac Joint Pain: Diagnosis & Treatment", Tampa General Hospital, Tampa, FL.

2014 Clinical Advisor, University of South Florida Neurological Surgey Interest Group

PRESENTATIONS SELECTED

l979 Neurology Grand Rounds, The Johns Hopkins Hospital, Baltimore, Md. "Lesions at the cranicervical junction."

1981 Parallel Session, Third World Congress on Pain of the International Association for the Study of Pain. Edinburgh, Scotland. "Failure of naloxone to effect chronic pain or stimulation-induced pain relief in man."

1988 Invited Speaker, Neurology and Neurosurgery Grand Rounds, Johns Hopkins Hospital, Baltimore, Maryland. "Strategies for the use of neural grafting in the

treatment of Parkinson's disease."

1989 Invited Speaker, First Annual Suncoast Workshop on the Neurobiology of Aging, St. Petersburg, Fl. "The future of neural grafting in the treatment of Parkinson's disease: a neurosurgeon's perspective."

1990 Symposium Speaker, Annual Meeting, American Association for the Advancement of Science, New Orleans, La. "Neurotransplantation in humans: short- and long-term perspectives."

1990 Plenary Session, Eric K. Fernstrom Symposium: Intracerebral Transplantation in Movement Disorders: Experimental Basis and Clinical Experiences, Lund Sweden. "Human cadaver embryonic substantial nigra grafts: effects of ontogeny, preoperative graft preparation and tissue storage."

1990 Eighth Annual Advanced Neuroradiology Seminar, Orlando, Fl. "Cervical spondylosis: radiological evaluation and surgical management."

1991 Scientific Program, Southern Neurological Society, Sea Island, Ga. l) "Storage of embryonic human cadaver dopaminergic neurons as explants in tissue culture
1992 Medium before transplantation into rodents" and 2) "Inadequacy of MR as the sole diagnostic modality in cervical spondylotic disease."

1991 64th Annual Clinical Assembly of Osteopathic Specialists, Orlando, Fl. l) "Cervical myelograms versus MRI" and 2) "Brain tissue transplantation for Parkinson's disease."

1991 Ninth Annual Advanced Neuroradiology Seminar, Orlando, Florida. "Cervical spondylosis - surgeon's viewpoint."

PRESENTATIONS SELECTED (Continued)

1991 Luncheon Seminar, The Congress of Neurological Surgeons Forty-First Annual Meeting, Orlando, Fl. "Technical factors that influence success of neural grafting."

1992 Scientific Program, IVth International Symposium on Neural Transplantation, Washington, D.C. "Influence of donor age in the survival of human embryonic dopaminergic neural grafts."

1993 Contributed Paper, Plenary Session, 9th Annual Meeting Joint Section on Disorders of the Spine and Peripheral Nerves, Tucson, Arizona. "Radiological evaluation of cervical spondylotic disease: limitations of magnetic resonance imaging for diagnosis and preoperative assessment."

1993 Invited Speaker, Society for Neuroscience, Tampa Bay Chapter. "Overview of fetal neural transplantation in the treatment of Parkinson's disease."

1993 Plenary Speaker, Second International Behavioral Neuroscience Society Conference, Clearwater, Florida, "Fetal neural tissue transplantation for Parkinson's disease: current status."

1993 Slide Session, 23rd Annual Meeting, Society for Neuroscience, Washington, D.C. "New device for stereotactic transplantation of tissue into the human striatum."

1993 Expert Faculty, video broadcast, "Current Topics in Fetal Tissue Research," MedEdNet and the NIH Research Satellite Network.

1993 Interviewer of Anders Bjorklund for American Association of Neurological Surgeons History Series: "Leaders in Neuroscience," Boston, Ma.

1994 Parallel Session Speaker, American Academy of Neurology, Washington, D.C. "Fetal transplantation in Parkinson's disease."

1994 Plenary Speaker, Southern Neurosurgical Society, White Sulphur Springs, W.Va. "Fetal transplantation in Parkinson's disease."

1994 Panelist, Breakfast Seminar, 62nd Annual Meeting of the American Association of Neurological Surgeons, San Diego, Ca. "Operative treatment of central nervous system degenerative diseases."

1994 Plenary Speaker, International Behavioral Neuroscience Society, Clearwater, Fl. "Fetal tissue transplantation in Parkinson's disease."

1994 Plenary Speaker, American Society for Neural Transplantation, Clearwater, Fl. "The USF protocol for fetal nigral transplantation in Parkinson's disease."

PRESENTATIONS SELECTED (Continued)

1994 Parallel Session Speaker, 5th International Symposium on Neural Transplantation, Paris France. "Fetal nigral transplantation into the post commissural putamen in Parkinson's disease."

1994 Slide Session, Society for Neuroscience 24th Annual Meeting, Miami Beach, Fl. "Fetal Nigral Transplantation in Parkinson's Disease: The USF Experience."

1994 Speaker, Scientific Advisory Board Meeting, Regeneron Pharmaceuticals, Inc., Tarrytown, N.Y. "Fetal tissue transplantation for the treatment of Parkinson's disease: basic science and clinical issues."

1994 Keynote Speaker, 3rd Annual NECTAR Meeting, Amsterdam, Netherlands. "Future issues in neural transplantation."

l994 Slide Session, Congress of Neurological Surgeons Annual Meeting, Chicago, Illinois. Stereotactic/Functional Section Session, "Fetal transplantation in

Parkinson's disease."

l994 Speaker, Festschrift in honor of Joseph Ransohoff, M.D., University of South Florida, Tampa, Fl. "Neural Tissue Transplantation."

l995 Speaker, Scientific Session, 63rd Annual Meeting of the American Association of Neurological Surgeons, Orlando, Florida. "Fetal nigral transplantation into the postcommissural putamen in Parkinson's disease: the USF experience."

l995 Speaker, Southern Neurosurgical Society Annual Meeting, San Juan, Puerto Rico. "Fetal Transplants for Parkinson's Disease: Comparison of the USF Program to Other Programs Demonstrating Graft-Induced FD Changes."

l995 Plenary Speaker, Southern Neurosurgical Society Annual Meeting, San Juan, Puerto Rico. "Long term survival of dopamine neurons following transplantation into a patient with Parkinson's disease."

l995 Medicines: The Inside Story. Contributor of USF Transplant Program results to traveling museum exhibition dealing with the history of medicines and their role in society. Presented in interactive, video, CD ROM and multimedia formats.

1995 Parallel Session Speaker, Society for Neuroscience, San Diego, California. "The use of a surgical placebo controlled trial in the treatment of Parkinson's disease."

1995 Invited Speaker, Cellular and Molecular Treatments of Neurological Diseases Conference, Cambridge, Ma. "Neurosurgical aspects of Neurological Disease."

1995 Summary Speaker, Surgical Therapy Session, Parkinson's Disease Research Planning Workshop; NIH/U.S. Senate Appropriations Committee, Washington, D.C. "Surgical Therapies for Parkinson's Disease; Funding Priorities for the Next Decade."

PRESENTATIONS SELECTED (Continued)

1995 Invited Plenary Speaker, The First Congress of Surgical Management of Movement Disorders, Irvine Ca. "Comparison of surgical therapies for Parkinson's disease and future implications."

1995 Invited Plenary Speaker, The First Congress of Surgical Management of Movement Disorders, Irvine, Ca. "The use of an "imitation operation" in a clinical trial of new surgical therapies."

1995 Invited Plenary Speaker, Discogenic Spine Disease Conference, Clearwater, Fl. "Radiographic assessment of discogenic disease of the spine."

1995 Invited Plenary Speaker, Discogenic Spine Disease Conference, Clearwater, Fl. "Spinal Tumors."

1996 Invited Speaker, Parallel Session, International Neuromodulation Society (Third International Congress) and American Neuromodulation Society (First Scientific

Meeting), Orlando, Fl. "Surgical therapies for Parkinson's disease: deja vu or significant adjunct to medical therapy."

1996 Invited Plenary Speaker, First Meeting of The Parkinson's Disease Gene Therapy Consortium, Washington, D.C. "From Transplants to Gene Therapy."

1996 Invited Panelist, Breakfast Seminar, Sixth Annual Meeting of The American Association of Neurological Surgeons, Minneapolis, Mn. "Ethical issues in neurotransplantation."

1996 Invited Speaker, Canadian Congress of Neurological Sciences, London, Ontario, Canada. "Clinical trials in Parkinson's disease: the Tampa Experience."

1996 Invited Plenary Speaker, The Cell Transplant Society Third International Congress, Miami Beach, Fl. "Towards the use of cosmetic surgical placebo controlled trials."

1996 Parallel Session Speaker, Society for Neuroscience, Washington, D.C. "Reasons for limited clinical benefit following fetal nigral transplantation in the treatment of Parkinson's disease."

1996 Invited Speaker, Tampa General Hospital Spine Conference, Tampa, FL. "Intradural extramedullar tumors of the spine."

1997 Invited Plenary Speaker, 6th International Neural Transplantation Meeting, San Diego, CA."Immunosuppression in fetal neural transplantation."

1997 Data Blitz, Winter Conference on Brain Research, Breckenridge, Co. "Limited Clinical Benefit Following fetal nigral transplantation in the treatment of Parkinson's disease: implications for future studies."

PRESENTATIONS SELECTED (Continued)

1997 Plenary Speaker, Annual Meeting of the Society of University Surgeons, Tampa, Florida. "Surgical placebo-controlled trials: timely or taboo."

1997 Parallel Session Speaker, The American Association of Neurological Surgeons, Denver, Co. "Survival of functional fetal nigral grafts in two patients with Parkinson's disease."

1997 Invited Speaker, Scientific Program, The Florida Neurosurgical Society Annual Meeting, Palm Beach, Florida. "Neural tissue transplantation for the treatment of degenerative neurological diseases.

1998 Invited Discussant, Plenary Session, American Association of Neurological Surgeons, Philadelphia, Pa. "Correlation of pallidal lesion location and outcome in Parkinson's disease: dissociation between motor signs and drug-induced dyskinesias" (by R.E. Gross, A.E. Lang, A.M. Lozano).

1998 Plenary Speaker, American Society for Neural Transplantation, Clearwater, Florida. "Exuberant neuritic outgrowth from the lateral-lateral ventricular eminence (LLVE)."

1998 Invited Speaker, General Scientific Session, 49th Annual Meeting of the German Society of Neurosurgery, Hannover, Germany. "Fetal tissue transplantation for the treatment of Huntington's disease: preclinical studies."

1998 Invited Speaker, Lunchtime Session, 49th Annual Meeting of the German Society of Neurosurgery, Hannover, Germany. "Indications and technique for clinical neurotransplantation."

1998 Invited Speaker, Bayfront Medical Center Neuroradiology Conference, Clearwater, Fl. "Fetal neuronal transplantation for Parkinson's and Huntington's diseases."

1998 Invited Speaker, Neurological Surgery Session, American College of Surgeons 84th Clinical Congress, Orlando, Fl. "Neuro-tissue transplantation for Parkinson's disease."

1998 Invited Speaker, Tampa General Healthcare, Community Events, Tampa, Fl. Parkinson's Disease Seminar for Patients and Caregivers. "Cell transplantation for Parkinson's disease."

1998 Invited Speaker, University of South Florida Institute on Aging, Successful Aging 1998 series, the USF College of Medicine and the Florida Bar Elder Law Section, Clearwater, Fl. "Surgical therapies for Parkinson's disease and other neurologic disorders."

PRESENTATIONS SELECTED (Continued)

1999 Invited Speaker, Tampa General Healthcare, Community Events, Tampa, Fl. Parkinson’s Disease: A Seminar for Patients and Caregivers. "Cell Transplantation for Parkinson’s disease."

1999 Invited Speaker, American Parkinson Disease Association, Parkinson’s Symposium-PD Diagnosis, Treatment and Research, Clearwater, Fl. "Surgical therapies for the treatment of Parkinson's disease."

1999 Plenary Session, American Society for Neural Transplantation and Repair, Clearwater, Fl. "Histological evaluation of human fetal striatal transplants in a patient with Huntington’s disease."

1999 Invited Speaker, Plenary Session, XIII International Congress on Parkinson’s disease, Vancouver, Canada. "Transplantation of human cells in Parkinson’s disease."

1999 Invited Symposium Speaker, Plenary Session, American Society for Neural

Transplantation and Repair, Clearwater, Fl. "When are clinical trials justified?"

1999 Invited Speaker, Plenary Session, Mini-symposium, American Society of Transplant Surgeons, Chicago, Il. "Cellular xenotransplantation in humans for neurologic diseases."

1999 Invited Speaker, Section on Stereotactic and Functional Surgery, Congress of Neurological Surgeons Annual Meeting, Boston, Ma. "Neurotransplantation: what have we learned? Where are we going?"

1999 Speaker, Parallel Session, The 7th International Meeting on Neural Transplantation and Repair, Odense, Denmark. "Histological evaluation of human fetal striatal transplants in a patient with Huntington's disease."

1999 Invited Speaker, Novartis Foundation Symposium #231, London, England. "Human fetalstriatal transplants in Huntington's disease: in vivo and autopsy studies."

2000 Invited Speaker, Sunrise Symposium. First Joint Meeting of the American Society of Transplant Surgeons and the American Society of Transplantation. Chicago, IL. "Cell transplantation: current status of neural transplantation."

2000 Invited Discussant, Plenary Session, American Association of Neurological Surgeons, San Francisco, Ca. "Results from a Phase 1 trial of neuronal transplantation for patients with fixed motor deficits following stroke." (By Douglas Kondziolka, et.al.)

2000 Invited Plenary Speaker, Annual Meeting of the Southern Society of Physical Medicine and Rehabilitation in conjunction with the Florida Society of Physical Medicine and Rehabilitation, Tampa, Fl. "Neural transplantation for the treatment of Parkinson's disease, Huntington's disease and stroke."

PRESENTATIONS SELECTED (Continued)

2000 Invited Plenary Speaker, General Scientific Session II, Congress of Neurological Surgeons, San Antonio, TX. "Neurotransplantation for Parkinson's disease and Huntington's disease: lessons learned from clinical trials."

2000 Parallel Session Speaker, Society for Neuroscience, New Orleans, La. "Human fetal striatal transplantation in Huntington's disease: a pilot clinical study."

2002 Invited Plenary Speaker, Molecular, Cellular and Clinical Aspects of Neurodegenerative Diseases Workshop, Verbier, Switzerland. "Surgical placebo controlled trial designs for the evaluation of novel surgical therapies for the treatment of neurodegenerative diseases."

2002 Plenary Speaker, Third National Symposium: Bioethical Considerations in Human object Research, Clearwater, Fl. "Sham surgery vs. placebo."

2002 Scientific Session, American Association of Neurological Surgeons, Chicago, IL. "A surgical placebo controlled trial of intrastriatal transplantation of fetal porcine ventral mesencephalic tissue (Neurocell^{TM}-PD) in subjects with Parkinson's disease".

2003 Breakfast Seminar, Panelist, American Association of Neurological Surgeons, Chicago, IL. "Transplants for the treatment of Huntington's disease" and "Cross species porcine neural transplantation."

2002 Plenary Speaker, 8th International Conference on Neural Transplantation and Repair, Keystone, Co. "A prospective, randomized, double-blind, surgical placebo-controlled trial of intrastriatal transplantation of fetal porcine ventral mesencephalic tissue (Neurocell-PD) in subjects with Parkinson's disease."

2002 Invited Plenary Speaker, Network of European CNS Transplantation and Restoration (NECTAR), 13th Annual Nectar Meeting, Amsterdam, Netherlands. "Fetal tissue transplantation for the treatment of Parkinson's disease: the Tampa/New York/Chicago Experience."

2002 Invited Plenary Speaker, 13th Annual NECTAR Meeting, Amsterdam, Netherlands. "Current status of fetal transplantation for the treatment of Huntington's disease: the Tampa experience."

2002 Invited Plenary Speaker, 13th Annual NECTAR Meeting, Amsterdam, Netherlands. "The rationale for sham surgery."

2003 Invited Plenary Speaker, 6th International Congress of the Cell Transplant Society, Atlanta, Ga. "Fetal cell therapy for Parkinson's disease and Huntington's disease."

2003 Plenary Speaker, American Society for Neural Transplantation and Repair, Clearwater, Fl. "Double blind controlled trial of bilateral fetal nigral transplantation in Parkinson's disease."

PRESENTATIONS SELECTED (Continued)

2003 Scientific Session, American Association of Neurological Surgeons, San Diego, Ca. "A prospective randomized surgical placebo-controlled trial of human fetal tissue transplantation for the treatment of Parkinson's disease."

2003 Invited Speaker, Special Symposium, American Association of Neurological Surgeons, San Diego, Ca. Transplantation: lessons learned and future directions, "Trial design issued for the surgical delivery of novel biologics."

2003 Invited Speaker, Grand Rounds, Department of Neurology, University of South Florida, Tampa, Fl. "A Double-blind controlled trial of bilateral fetal nigral

transplantation in Parkinson's disease."

2003 Scientific Session, Society for Neuroscience, New Orleans, La. "Surgical placebo controlled trial of human fetal nigral transplantation in Parkinson's disease."

2004 Discussant, American Association of Neurosurgeons, Orlando, Fl. "Unilateral intraputamenal administration of recombinant-methionyl human glial cell-line derived neurotrophic factor (r-metHuGDNF) to treat idiopathic Parkinson's disease."

2004 President's Lecture, American Society for Neural Transplantation and Repair, Clearwater, Fl. "From the laboratory to the clinic: unique issues in the clinical evaluation of neural reconstruction therapies."

2005 Invited Plenary Speaker, Medtronic NeuroTherapy Consortium, Louisville, Co. "Vision for brain agent delivery."

2006 Invited Plenary Speaker, American Society for Neural Therapy and Repair, Clearwater, Fl. "The modern era of surgical trial designs: perspectives of Parkinson's disease (PD) researchers."

2006 Panel Discussant, Sixth USF Symposium on Bioethics, Tampa, Fl., "Volunteerism, drugs, devices, patents, and diligence in the 21st century."

2007 Invited Speaker, Parallel Session Complex Spine. DePuy Spine National Sales Meeting, Orlando, Fl. "Sculpting with steel: spinal reconstruction with dual lockable-polyaxial screw systems."

2007 Invited Speaker, Parallel Session; Complex Spine. DePuy Area Vice-Presidents' Meeting, Tampa, Fl. "Sculpting with steel: spinal reconstruction with dual lockable-polyaxial screw systems."

2007 Invited Plenary Speaker, The Johns Hopkins School of Medicine Biennial Meeting and Reunion Weekend, Baltimore, Md. "The first surviving neural transplants for the treatment of neurodegenerative disease: implications for future stem cell and gene therapies.

PRESENTATIONS SELECTED (Continued)

2007 Invited Plenary Speaker, 13th Annual Kentucky Spinal Cord and Head Injury Research Trust Symposium, Louisville, Ky. "From laboratory to clinic: unique.

2007 Invited Speaker, The USF Signature Interdisciplinary Program in Neuroscience, Tampa, Fl. "First neural transplant survival: implications for future stem cell and gene therapies."

2007 Plenary Speaker, Neurosurgery Grand Rounds, University of South Florida, Tampa, Fl. "Sculpting with steel: spinal reconstruction with dual lockable-polyaxial screw systems."

2007 Invited Plenary Speaker, The Thomas Hartman Foundation for Parkinson's Research, Cold Spring Harbor Laboratory, Huntington, NY. "Clinical trials: a critical assessment of the results obtained in patients with fetal DA neuron transplants: The Tampa-Mount Sinai trial."

2008 Invited Plenary Speaker, The Thomas Hartman Foundation for Parkinson's Research, Cold Spring Harbor Laboratory, Huntington, NY. "Neurosurgical aspects of cellular transplantation in Parkinson's disease."

2008 Invited Speaker, Parallel Session, Adult Deformity Section, Complex Spine Study Group, Orlando, FL. "Sculpting with Steel."

2008 Speaker, Parallel Session, 24th Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, Fl. "Cervical atrophy following posterior cervical fusion."

2008 Invited Plenary Speaker, 10th International Conference on Neural Transplantation & Repair, Freiberg, Germany. "The long-term survival of neural transplants in Parkinson's disease and Huntington's disease is attenuated via different mechanisms."

2008 Invited Speaker, Neurological Surgery and Neurology Combined Grand Rounds, University of South Florida, Tampa, FL. "Lewy body-like pathology in long term embryonic nigral transplants in Parkinson's disease."

2008 Invited Speaker, Parallel Session, Congress of Neurological Surgeons, CNS Neurosurgical Forum – Section on Stereotactic and Functional Neurosurgery, Orlando, Fl. "Parkinson's disease pathology in nigral grafts 14 years after transplantation."

2008 Plenary Speaker, Neurosurgery Grand Rounds, University of South Florida, Tampa, Fl. "Paraspinous muscle denervation causes atrophy after cervical spine surgery. Techniques to minimize it."

PRESENTATIONS SELECTED (Continued)

2009 Plenary Speaker, 15th Quadrennial Meeting of the World Society for Stereotactic and Functional Neurosurgery, Toronto, Canada. "Neural grafts in patients with Parkinson's and Huntington's diseases undergo long-term disease specific neuronal degeneration via different mechanisms."

2009 Invited Plenary Speaker, Therapeutic Approaches for Basal Ganglia Disorders: From Fundamental to Clinical Data. Quebec, Canada. "The University of South Florida neural transplant program for the treatment of Parkinson's diseases: implications for future trials."

2009 Plenary Speaker, 16th Annual Meeting of the American Society for Neural Therapy and Repair, Clearwater Beach, Fl. Clinical Trials Section. "Striatal grafts undergo disease-specific neural degeneration 10 years after transplantation in patients with Huntington's disease."

2009 Invited Faculty, Selby Spine Conference, Park City, UT "Sculpting with steel."

2009 Plenary Speaker, XVIII WFN World Congress on Parkinson's Disease and Related Disorders, Miami Beach, Fl., December, 2009 "Neural transplants in patients with Huntington's disease undergo disease-like neuronal degeneration."

2010 Plenary Speaker, American Association of Neurological Surgeons Annual Meeting, Philadelphia, Pa., May 2010. "Mechanisms of disease-like degeneration of embryonic neural grafts in patients with Parkinson's and Huntington's diseases."

2010 Invited Plenary Speaker, Neurological and Neurosurgical Therapeutics 2010: Contemporary Diagnosis and Management. Tampa, Fl. May, 2010. "Restorative approaches to neurological disorders."

2010 Invited Speaker, Breakfast Seminar, American Society for Stereotactic and Functional Neurosurgery Biennial Meeting, New York, NY. June, 2010. "Cell Transplantation in Neurosurgery."

2010 Invited Speaker and Panelist, National Institutes of Health (NINDS/NIH) Office of Biotechnology Activities, Bethesda, Md. June, 2010. Sham Neurosurgical Procedures in Clinical Trials for Neurodegenerative Diseases: Scientific and Ethical Considerations. "What have we learned from the Parkinson's disease trials?"

2010 Plenary Speaker, American Academy of Neurological Surgeons, Pebble Beach, CA, Nov., 2010: "The effects of disease and aging on neural grafts: implications for future stem cell therapies."

2011 Invited Speaker, Selby Spine Annual Meeting, Park City, UT, Feb., 2011. "Technique to minimize paraspinal muscle atrophy and posterior cervical fusion."

PRESENTATIONS SELECTED (Continued)

2011 Invited Speaker, Spine Guard Symposium, Denver, Co., April, 2011. "Correction of kyphotic deformity secondary to a thoracolumbar burst fracture."

2011 Plenary Speaker, Neurological and Neurosurgical Therapeutics: Contemporary Diagnosis and Management, Tampa, Fl., May, 2011. "Sham surgery and the history of ethics in surgical research."

2012 Invited Speaker, Stem Cells and Regenerative Medicine Research Meeting: Tampa, FL., February 2013. "Clinical trials for neurologic disease."

2013 Plenary Speaker, Residents Conference, University of South Florida, Tampa, Fl. "Hip,back, sacroiliac? – they are all a pain in the butt. How to diagnose and treat sacroiliac joint pain."

2013 Invited Speaker, Stem Cells and Regenerative Medicine Research Meeting, University of South Florida, Tampa, Fl. "Clinical trials for neurologic disease."

2013 Invited Plenary Speaker, Selby Spine Conference, Park City, UT "SI joint fusion."

2013 Invited Plenary Speaker, 17th International Congress of Parkinson's Disease and Movement Disorders, Sydney, Austraila, June, 2013: "What has been achieved in strategies to repair the brain in Huntington's disease?"

2013 Invited Plenary Speaker, Cell Society 3rd Annual Clinical Meeting, San Diego, California, September 2013: "The effect of Parkinson's and Huntington's disease on neural transplants: implications for stem cell therapies."

2015 Invited Plenary Speaker, 18th Annual Selby Spine Conference, Park City, UT, February 2015: "Patient Outcomes After MIS SI Fusion; Is there Value?."

2015 Invited Plenary Speaker, 83rd AANS Annual Scientific Meeting, Washington, D.C., May 2015: "Can The Mutant Huntingtin Gene Product Spread From Cell to Cell: Evidence From Neuronal Allografts in Huntington's Disease Patients."

2017 Invited Plenary Speaker, 20th Annual Selby Spine Conference, Park City, UT, February 2017: "Advantages and Consequeces of Disruptive Business Models in Spine Surgery Practices."

CHAIRED SESSIONS

l995 Clinical and Preclinical Session, American Society for Neural Transplantation Annual Meeting, Clearwater, Fl.

1995 Surgical Therapy for Parkinson's Disease: A Research Planning Workshop. Nat. Inst. Of Neural Disorders and Stroke/U.S. Senate Appropriations Committee, Washington, D.C.

l996 Clinical and Preclinical Session, American Society for Neural Transplantation Annual Meeting, Clearwater, Fl.

l997 Clinical Session, The 6th International Symposium on Neural Transplantation, San Diego, Ca.

1999 Human Trials Session. American Society for Neural Transplantation and Repair, Clearwater Fl.

CHAIRED SESSIONS (Continued)

1999	Parallel Session. Parkinson's disease: clinical studies. 7th International Meeting on Neural Transplantation and Repair, Odense, Denmark. "Parkinson's disease: clinical studies."
2000	Clinical Trials Session. American Society for Neural Transplantation and Repair, Clearwater, Fl.
2001	Trauma and Ischemia Session. American Society for Neural Transplantation and Repair, Clearwater, Fl.
2002	Clinical Studies Session. Parkinson's disease. 8th International Conference on Neural Transplantation and Repair, Keystone, Co.
2006	Translational Neuroscience: The New Road Map. 13th Annual Meeting, American Society for Neural Therapy and Repair, Clearwater, Fl.
2010	Clinical Trials and Special Patient Presentations. May, 2010. American Society for Neural Therapy and Repair, Clearwater, Fl.
2011	Spine Guard Symposium. April 2011. American Association of Neurological Surgeons, satellite meeting, Denver, Co.
2014	Roy A.E. Bakay Tribute Symposium. Chaired session. American Society for Neural Tranplation and Repair, Clearwater, Fl.
2015	Special Session. Chaired session. American Society for Neural Tranplation and Repair, Clearwater, Fl.

COURSE FACULTY

2009	Invited Faculty and Plenary Speaker, Merc, Vail Co., February, 2009. Spine on the Mountain; Innovation Meets Practice: An Interactive Forum, "Sculpting with Steel."
2010	Invited Faculty, Selby Spine Annual Meeting, Park City, UT, February, 2010. "The role of surgical placebo controlled trials to evaluate new surgical technologies."
2011	Invited Faculty, Selby Spine, Park City, UT Feb., 2011. "Technique to minimize paraspinal muscle atrophy after posterior cervical fusion."
2012	Invited Faculty, Selby Spine, Park City, UT, Feb. 2012. "The Diagnosis, Medical, Interventional & Surgical Managements of Sacroiliac Disease".

2012 Invited Faculty, Selby Spine, Park City, UT, February 2012. "The Surgical Management of SI Joint Pain Using a Minimally Disruptive, Muscle Sparing Approach."

2013 Invited Faculty, Selby Spine, Park City, UT, February 2013. "SI Joint Fusion."

COMMUNITY CME OUTREACH

2011 Plenary Speaker "The Diagnosis, Medical Interventional & Surgical Managements of Sacroiliac Disease" USF Health, Tampa, FL, November 10, 2011.

2011 Plenary Speaker "The Diagnosis, Medical Interventional & Surgical Managements of Sacroiliac Disease" USF Health, St. Petersburg, FL, December 1, 2011.

2012 Plenary Speaker "The Diagnosis, Medical, Interventional & Surgical Management of Sacroiliac Disease" USF Health, Tampa, FL, January 19, 2012.

2012 Plenary Speaker "The Diagnosis, Medical, Interventional & Surgical Management of Sacroiliac Disease" USF Health, Bradenton, FL, March 1, 2012.

2012 Plenary Speaker "The Diagnosis, Medical, Interventional & Surgical Management of Sacroiliac Disease" USF Health, Tampa, FL, March 29, 2012.

2012 Plenary Speaker "Sacroiliac Joint Pain: Diagnosis & Treatment" USF Health, Tampa FL, May 2012.

2013 Plenary Speaker "Sacroiliac Joint Pain: Diagnosis & Treatment" USF Health, Tampa FL, March 28, 2013.

PUBLICATIONS

Scientific Articles

1. **Freeman, T.B.,** Campbell, J., Long, D.M. Naloxone does not affect chronic pain or electrical stimulation induced pain relief in man. Pain l983; l7:l89-l95

2. **Freeman, T.B.**, Brandeis, L., Pearson, J., Flamm, E.S. Cross-species grafts of embryonic rabbit mesencephalic tissue survive and cause behavioral recovery in the presence of chronic immunosuppression. Ann. N.Y. Acad. Sci. l987; 495:699-702.

3. Hadani, M., **Freeman, T.B.**, Pearson, J., Young, W., Flamm, E.S. Fetal cortical transplants survive in middle cerebral artery territory after permanent arterial occlusion in adult rats. Ann. N.Y. Acad. Sci. l987; 495:7ll-7l4.

4. **Freeman, T.B.**, Wojak, J.C., Brandeis, L., Michel, J-P. Pearson, J., Flamm, E.S. Cross-species intracerebral grafting of embryonic swine dopaminergic neurons. Prog. Brain Res. l988; 78:473-477.

5. **Freeman, T.B.**, Abati, A.D., Topsis, J., Snyder, J.R., Beneck, D., Lehman, L.B. Neonatal craniopharyngioma. N.Y. State J. Med. 1988; 88:8l-83.

6. **Freeman, T.B.**, Spence, M.S. and Miao, R. Development of tyrosine hydroxylase positive neurons in the human fetal substantia nigra. Restor. Neurol. Neurosci. l989; l: l55-l56.

PUBLICATIONS (Continued)

7. **Freeman, T.B.**, Spence, M.S., Boss, B.D., Spector, D.H., Strecker, R.E., Olanow, C.W. and Kordower J.H. Development of dopaminergic neurons in the human substantia nigra. Exp. Neurol. l99l; ll3:344-353.

8. Langston, J.W., Widner, H., Brooks, D., Fahn, S., **Freeman, T.B.**, Goetz, C., Watts, R. Core Assessment Program for Intracerebral Transplantation (CAPIT). Mov. Disord. l992; 7:2-l3.

9. **Freeman, T.B.**, Nauert, G.M., Sanberg, P.R. and Kordower, J.H. Influence of donor age on the survival of human embryonic dopaminergic neural grafts. J. Neural Transplant. and Plast. l992; 3:257-258.

10. Hadani, M., **Freeman, T.** Munsiff, A., Young, W., Flamm, E. Fetal cortical cell survive in focal cerebral infarct after permanent occlusion of the middle cerebral artery in adult rats. J. Neurotrauma 1992; 9:107-112.

11. Sanberg, P.R., Koutouzis, T.K., **Freeman, T.B.**, Emerich, D.F., Bertino, A.M., Cahill, D.W. Cell transplantation for Huntington's disease. Transplant. Proc. l992; 24:30l5-30l6.

12. Johnson T., Polgar, S., Emerich, D.F., **Freeman, T.B.**, Cahill, D.W., Sanberg, P.R. Neuroleptic dysphoria: in search of an animal model. Int. J. Neurosci. l993; 70:27l-275.

13. Sanberg, P.R., Koutouzis, T.K., **Freeman, T.B.**, Cahill, D.W., Norman, A.B. Behavioral effects in rodents of fetal neural transplants: relevance to Huntington's disease. Brain Res. Bull. l993; 32:493-496.

14. Nauert, G.M, **Freeman, T.B.** Low-pressure abortion for obtaining embryonic and early gestational fetal tissue for research purposes. Cell Transplant. l994; 3:l47-l5l.

15. Koutouzis, T.K., Borlongan, C.V., **Freeman, T.B.**, Cahill, D.W., Sanberg, P.R. Intrastriatal 3-nitropropionic acid: a behavioral assessment. NeuroReport l994; 5:224l-2245.

16. Koutouzis, T.K., Borlongan, C.V., Scorcia, T., Creese, I., Cahill, D.W., **Freeman, T.B.**, Sanberg, P.R. Systemic 3-nitropropionic acid: long-term effects on locomotor behavior. Brain Res. l994; 646:242-246.

17. **Freeman, T.B.**, Sanberg, P.R. Nauert, G.M., Boss, B.D., Spector, D., Olanow, C.W., Kordower, J.H. The influence of donor age on the survival of solid and suspension intraparenchymal human embryonic nigral grafts. Cell Transplant. l995; 4:l4l-l54.

18. **Freeman, T.B.**, Olanow, C.W., Hauser, R.A., Nauert, G.M., Smith, D.A., Borlongan, C.V., Sanberg, P.R., Holt, D.A., Kordower, J.H., Vingerhoets, F.J.G., Snow, B.J., Calne, D., Gauger, L.L. Bilateral fetal nigral transplantation into the post commissural putamen in Parkinson's disease. Ann. Neurol. l995; 38:379-388.

19. Kordower, J.H., **Freeman, T.B.**, Snow, B.J., Vingerhoets, F.J.G., Mufson, E.J., Sanberg, P.R., Hauser, R.A., Smith, D.A., Nauert, G.M., Perl, D.P., Olanow, C.W. Neuropathological evidence of graft survival and striatal reinnervation after the transplantation of fetal mesencephalic tissue in a patient with Parkinson's disease. N. Engl. J. Med. l995; 332:1118-1124

PUBLICATIONS (Continued)

20. Borlongan, C.V., **Freeman, T.B.**, Scorcia, T.A., Sherman, K.A., Olanow, C.W., Cahill, D.W., Sanberg, P.R. Cyclosporine-A increases spontaneous and dopamine agonist-induced locomotor behavior in normal rats. Cell Transplant. l995; 4:65-73.

21. Borlongan, C.V., Koutouzis, T.K., Randall, T.S., **Freeman, T.B.**, Cahill, D.W., Sanberg, P.R. Systemic 3-nitropropionic acid: behavioral deficits and striatal damage in adult rats. Brain Res.Bull. l995; 36:549-556.

22. Borlongan, C.V., Koutouzis, T.K., **Freeman, T.B.**, Cahill, D.W., Sanberg, P.R. Behavioral pathology induced by repeated systemic injections of 3-nitropropionic acid mimics the motoric symptoms of Huntington's disease. Brain Res. 1995; 697:254-257.

23. **Freeman, T.B.**, Sanberg, P.R., Isacson, O. Development of the human striatum: implications for fetal striatal transplantation in the treatment of Huntington's disease. Cell Transplant. l995; 4:539-545.

24. Borlongan, C.V., Martinez, R., Shytle, R.D., **Freeman, T.B.,** Cahill, D.W., Sanberg, P.R. Striatal dopamine-mediated motor behavior is altered following occlusion of the middle cerebral artery. Pharmacol. Biochem. Behav. 1995; 52:225-229.

25. Borlongan, C.V., Shytle, R.D., Ross, S.D., Shimizu, T., **Freeman, T.B.**, Cahill, D.W., Sanberg, P.R. Nicotine protects against systemic kainic acid-induced excitotoxic effects. Exp. Neurol. l995; l36:26l-265.

26. Kordower, J.H., Rosenstein, J.M., Collier, T.J., Burke, M.A., Chen, E.-Y., Li, J.M., Martel, L., Levey, A.E., Mufson, E.J., **Freeman, T.B.,** Olanow, C.W. Functional fetal nigral grafts in a patient with Parkinson's disease: chemo anatomic, ultra structural and metabolic studies. J. Comp. Neurol. l996; 370:203-230.

27. Borlongan, C.V., **Freeman, T.B.**, Hauser, R.A., Cahill, D.W., Sanberg, P.R., Cyclosporine-A increases locomotor activity in rats with 6-hydroxydopamine-induced hemi parkinsonism: relevance to neural transplantation. Surg. Neurol. l996; 46:384-388.

28. **Freeman, T.B.**, Olanow, C.W., Hauser, R.A., Nauert, G.M., Smith, D.A., Borlongan, C.V., Sanberg, P.R., Holt, D.A., Kordower, J.H., Vingerhoets, F.J.G., Snow, B.J., Calne, D., Gauger, L.L. Bilateral fetal nigral transplantation into the post commissural putamen in Parkinson's disease. The Yearbook of Neurology and Neurosurgery 1997; 7:131-133.

29. Kordower, J.H., **Freeman, T.B.**, Snow, B.J., Vingerhoets, F.J.G., Mufson, E.J., Sanberg, P.R., Hauser, R.A., Smith, D.A., Nauert, G.M., Perl, D.P., Olanow, C.W. Neuropathological evidence of graft survival and striatal reinnervation after the transplantation of fetal mesencephalic tissue in a patient with Parkinson's disease. The Yearbook of Neurology and Neurosurgery 1997; 7:464-465.

30. Kordower J.H., Styren, S., Clarke, M., DeKosky. S.T., Olanow, C.W., **Freeman, T.B.** Fetal grafting for Parkinson's disease: expression of immune markers in two patients with functional fetal nigral grafts. Cell Transplant. 1997; 6:213-219.

PUBLICATIONS (Continued)

31. Sanberg, P.R., Borlongan, C.V., Othberg, A.I., Saporta S., **Freeman, T.B.**, Cameron D.F. Testis-derived Sertoli cells have a trophic effect on dopamine neurons and alleviate hemi parkinsonism in rats. Nature Med. l997; 3:1129-1132.

32. Sanberg, P.R., Othberg, A.I., Borlongan, C.V., Saporta, S., Anton, A., **Freeman, T.B.,** Cahill, D.W., Allen, R.C., Cameron, D.F. Transplantation of testis-derived Sertoli cells into the mammalian brain. Transplant. Proceed. 1997; 29:1926-1928.

33. Saporta, S., Borlongan, C., Moore, J., Mejia-Millan, E., Jones, S.L., Bonness, P., Randall, T.S., Allen R.C., **Freeman, T.B.,** Sanberg P.R. Micro carrier enhanced survival of human and rat fetal ventral mesencephalon cells implanted in the rat striatum. Cell Transplant 1997; 6:579-584.

34. Sanberg, P.R., Borlongan, C.V., Koutouzis, T.K., Norgren, R., **Freeman, T.B.** Human fetal striatal transplantation in an excitotoxic lesioned model of Huntington's disease. Ann. N.Y. Acad. Sci. l997; 831:452-460.

35. Holt, D.A., Nauert, G.M., Othberg, A.I., Randall, T.S., Willing, A.E., Widen, R.H., Hauser, R.A., Sanberg, P.R., Olanow, C.W., **Freeman, T.B.** Infectious issues in human fetal neural transplantation. Cell Transplant. 1997; 6:553-556.

36. Borlongan, C.V., Koutouzis, T.K., **Freeman, T.B.** Hauser, R.A., Cahill, D.W., Sanberg, P.R. Hyperactivity and hypoactivity in a rat model of Huntington’s disease: the systemic 3-nitropropionic acid model. Brain Res. Protocols l997; 1:253-257.

37. Othberg, A.I., Willing, A.E., Cameron, D.F., Anton, A., Saporta, S., **Freeman, T.B.,** Sanberg, P.R. Trophic effect of porcine Sertoli cells on rat and human ventral mesenephalic cells and hNT neurons in vitro. Cell Transplant. 1998; 7:157-164. Erratum Cell Transplant. 1998; 7:497.

38. Kordower, J.H., **Freeman, T.B.**, Chen, E.-Y., Mufson, E.J., Sanberg, P.R., Hauser, R.A., Snow, B., Olanow, C.W. Fetal nigral grafts survive and mediate clinical benefit in a patient with Parkinson's disease. Mov. Disord. 1998; 13:383-393.

39. Hauser, R.A., **Freeman, T.B.**, Snow, B.J., Nauert, G.M., Gauger, L., Kordower, J.H., Olanow, C.W. Long-term evaluation of bilateral fetal nigral transplantation in Parkinson's disease. Arch. Neurol. 1999; 56:179-187.

40. Willing, A.E., Sudberry, J.J., Othberg, A.I., Saporta, S., Anton, A., Sinibaldi, S., Poulos, S.G., Cameron, D.F., **Freeman, T.B.,** Sanberg, P.R. Sertoli cells decrease microglial response and increase engraftment of human hNT neurons in the hemiparkinsonian rat striatum. Brain Res. Bull. 1999; 48:441-444.

41. Willing, A.E., Othberg, A.I., Saporta S., Anton, A., Jones, S., Poulos, S.G., Cameron, D.F., **Freeman, T.B.**, Sanberg, P.R. Sertoli cells enhance the survival of co-transplanted dopamine neurons. Brain

Research 1999; 822:246-250.

42. Zigova, T., Barroso, L.F., Willing, A.E., Saporta, S., McGrogan, M.P., **Freeman, T.B.,** Sanberg, P.R. Dopaminergic phenotype of hNT cells in vitro. Dev. Brain Res. 2000; 122:87-90.

PUBLICATIONS (Continued)

43. **Freeman, T.B.,** Hauser, R.A., Sanberg, P.R., Saporta, S. Neural transplantation for the treatment of Huntington's disease. Prog. Brain Res. 2000; 127:405-411.

44. Sanchez-Ramos, J., Song, S., Dailey, M., Cardozo-Pelaez, F., Hazzi, C., Stedeford, T., Willing, A., **Freeman, T.B.,** Saporta S., Zigova, T., Sanberg, P.R., Snyder, E.Y. The X-gal caution in neural transplantation studies. Cell Transplant. 2000; 9:657-667.

45. Sanchez-Ramos, J., Song, S., Cardozo-Palaez, F., Hazzi, C., Stedeford, T., Willing, A.E., **Freeman, T.B.,** Saporta, S., Janssen, W., Patel, N., Cooper, D.R., Sanberg, P.R. Adult bone marrow stroma cells differentiate into neural cells in vitro. Exp. Neurol. 2000; 164:247-256.

46. **Freeman, T.B.**, Cicchetti, F., Hauser, R.A., Deacon, T.W., Xiao-Jiang, L. Hersch, S.M., Nauert, G.M., Sanberg P.R., Kordower, J.H., Saporta, S., Isacson, O. Transplanted fetal striatum in Huntington's disease: phenotypic development and lack of pathology. Proc. Nat. Acad. Sci. 2000; 97:13,877-13,882.

47. Zigova, T., Willing, A.E., Saporta, S., Daadi, M. M., McGrogan, M.P., Randall, T.S., **Freeman, T.B.,** Sanchez-Ramos, J., Sanberg, P.R. Apoptosis in cultured hNT neurons. Dev. Brain Res. 2001; 127:63-70.

48. Hauser, R.A., Furtado, S., Cimino, C.R., Delgado, H., Eichler, S., Schwartz, S., Scott, D., Nauert, G.M., Soety, E., Sossi, V., Holt, D.A., Sanberg, P.R., Stoessl, A.J., **Freeman, T.B.** Bilateral human fetal striatal transplantation in Huntington's disease. Neurology 2002; 58:687-695.

49. Olanow, C.W., Goetz, C.G., Kordower J.H., Stoessl, J, Brin, M.F., Shannon, K.M., Perl, D., Godbold, J., **Freeman, T.B.** Double-blind controlled trial of bilateral fetal nigral transplantation in Parkinson's disease. Ann. Neurol. 2003; 54:403-414.

50. Vawter, D., Gervais, K., **Freeman, T.B.** Strategies for achieving high-quality IRB Review. American J. Bioethics 2004; 4(3):74-76.

51. Furtado, S., Sossi, V., Hauser, R.A., Samii, A., Schulzer, M., Murphy, C.B., **Freeman, T.B.,** Stoessl, A.J. Positron emission tomography after fetal transplantation in Huntington's disease. Ann. Neurol. 2005; 58; 331-337.

52. Prehn, A.W., Vawter, D.E., Gervais, K.G., DeVries, R.G., Garrett, J.E., **Freeman, T.B.**, McIndoo, T.Q. Studying neurosurgical implants for Parkinson's disease: A question of design. Neurology 2006; 67:1503-1505.

53. Yantzer, B.K., **Freeman, T.B.,** Lee, W.E III, Nichols, T., Inamasu, J., Guiot, B., Johnson, W. M. Torsion-induced pressure distribution changes in human intervertebral discs. An in vitro study. Spine 2007; 32(8):881-894.

54. Kordower, J.H., Chu, Y., Hauser, R.A., **Freeman, T.B.,** Olanow, C.W. Lewy body-like pathology in

long-term embryonic nigral transplants in Parkinson's disease. Nature Med. 2008; 14:504-506.

55. Soderstrom, K., Meredith, G., **Freeman, T.B.,** McGuire**,** S**.,** Collier, T., Sortwell, C., Wu, Q., Steece-Collier K. The synaptic impact of the host immune response in a parkinsonian allograft rat model: influence on graft-derived aberrant behaviors. Neurobiol. Disease 2008; 332:229-242.

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56. Kordower, J.H., Chu, Y., Hauser, R.A., Olanow, C.W., **Freeman, T.B.** Transplanted dopaminergic neurons develop PD pathologic changes: A second case report. Movement Disorders 2008; 23:2303-2306.

57. Olanow, C.W., Gracies, J.-M., Goetz, C. G., Stoessl, A.J., **Freeman, T.B.,** Kordower, J.H., Godbold, J., Obeso, J.A. Clinical pattern and risk factors for dyskinesia following fetal nigral transplantation in Parkinson's disease: a double blind video-based analysis. Movement Disorders 2009; 24(3):336-343.

58a. Cicchetti, F., Saporta, S., Hauser, R.A., Parent, M., Saint Pierre, M., Sanberg, P.R., Li, X.J., Parker, J.R., Chu, Y., Mufson, E.J., Kordower, J.H., **Freeman, T.B.** Neural transplants in patients with Huntington's disease undergo disease-like neuronal degeneration. PNAS 2009; 106:12483-12488.

58b. Cicchetti, F., Saporta, S., Hauser, R.A., Parent, M., Saint Pierre, M., Sanberg, P.R., Li, X.J., Parker, J.R., Chu, Y., Mufson, E.J., Kordower, J.H., **Freeman, T.B.** Supporting Information. Published online before print PD Online Research powered by the Michael J. Fox Foundation for Parkinson's Disease Research, July 20, 2009, doi;10.1073/pnas 0904239106 PNAS Cicchetti et al. 2009;106:12483-12488.

59. Phommachanh V., Patil Y.J., McCaffrey, T.V., Vale, F. **Freeman, T.B.,** Padhya, T.A. Otolaryngologic management of delayed pharyngoesophageal perforation following anterior cervical spine surgery. Laryngoscope 2010; 120:930-936.

60. Sangala, J.R, Nichols, T., **Freeman, T.B.** Technique to minimize paraspinal muscle atrophy after posterior cervical fusion. Clin. Neurol. and Neurosurg. 2011; 113:48-51.

61. Gross, R.E, Watts, R.L., Hauser, R.A., Bakay, R.A.E., Reichmann, H., von Kummer, R., Ondo, W.G., Reissig, E., Eisner, W., Steiner-Schulze, H., Siedentop, H., Fichte, K., Hong, W., Cornfeldt, M., Beebe, K., Sandbrink, R., **The Spheramine Investigation Group**. Intrastriatal transplantation of micro carrier-bound human retinal pigment epithelial cells versus sham surgery in patients with advanced Parkinson's disease: a double-blind, randomized, controlled trial. Lancet Neurol 2011; 10:509-519.

62. Cisbani, G., **Freeman, T.B**., Soulet, D., Saint-Pierre, M., Gagnon, D., Parent, M., Hauser, R.A., Barker, R.A., , Cicchetti, F. Striatal allografts in Huntington's disease: impact of diminished astrocytes and vascularization on graft viability**.** Brain 2013; 136:433-443.

63. Cicchetti, F., Lacroix, S., Cisbani, G., Vallieres, N., Saint-Pierre, M., St-Amour, I., Tolouei, R., Skepper, J.N., Hauser, R.A., Mantovani, D., Barker, R.A., **Freeman, T.B.** Mutant Huntingtin is present in neuronal grafts in Huntinton Disease patients. Ann Neurol 2014; 76: 31-42.

64. Cisbani, G., **Freeman, T. B.,** Cicchetti, F. Tau pathology spread into striatal allografts in Huntington's disease patients. Submitted: Nature Med. 2016.

65. Kordower, J.H., Goetz, C.G., Chu, Y., Haliday, G.M., Nicholson, D.A., Musial, T.F., Marmion, D.J.,

Stoessl, A.J., Sossi, V., **Freeman, T.B.,** Olanow, C.W. Robust graft survival and normalized dopaminergic innervation do not obligate recovery in a Parkinson disease patient. Ann Neurol 2017;81:46-57

66. Kaneko, Y., Tajiri, N., Staples, M., Reyes, S., Lozano, D., Sanberg, P., **Freeman, T.B.,** van Loveren, H., Kim, S.U., Borlongan, C.V. Bone Marrow-Derived Stem Cell Therapy for Metastatic Brain Cancers. Cell Transplantation, Volume 24, Number 4 2015; 625-630

67. **Freeman, T.B.** Death Perception: How Temporary Ventilator Disconnection Helped my Family Accept Brain Death and Donate Organs. Narrative Inquiry in Bioethics Volume 5, Number 1, Spring 2015; 9-12

Books Edited

1. Cell Transplantation for Neurological Disorders: Toward Reconstruction of the Human Central Nervous System. **Freeman, T.B.,** Widner, H., eds. Humana Press, Inc., Totowa, N.J. l998:1-350. L; l5:l63-l69.

Review Articles, Book Chapters and Policy Papers

1. Contract author. Office of Technology Assessment. Neural Grafting: Repairing the Brain and Spinal Cord. Washington, D.C.: Congress of the United States, Office of Technology Assessment, l990 (New Developments in Neuroscience, Series 2) (GPO publication No. 052-003-0l2l2-0).

Review Articles, Book Chapters and Policy Papers (Continued)

2. **Freeman, T.B.,** Kordower, J.H. Human cadaver embryonic substantia nigra grafts: effects of ontogeny, preoperative graft preparation and tissue storage. In: Lindvall, O: Bjorklund, A., Widner, H. eds. Intracerebral Transplantation in Movement Disorders: Experimental Basis and Clinical Experience. Fernstrom Foundation Series, Elsevier Science Publishers, B.V. Amsterdam. l990

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