CURRICULUM VITAE FOR
ALISON ELIZABETH WILLING

Business Address:
Department of Neurosurgery & Brain Repair
Center of Excellence for Aging and Brain Repair
University of South Florida
3515 E. Fletcher Ave., MDT 1581
Tampa, Florida 33613
U.S.A.
Tel: (813) 974-7812
E-mail: awilling@ usf.edu

ACADEMIC TRAINING

B.A. (Honors)	Psychology University of Calgary Calgary, Alberta, Canada T2N 4N1 1988
M.Sc.	Psychology University of Calgary 1990
Ph.D.	Medical Physiology University of Calgary 1993
Postdoctoral Fellow	Medical Physiology University of Calgary September 1993 to October, 1994
Postdoctoral Fellow	Neuroscience Pennington Biomedical Research Center Louisiana State University November 1994 to November 1996

EMPLOYMENT

November,1996	Assistant Professor Department of Neurosurgery and Brain Repair, Center of Excellence for Aging & Brain Repair University of South Florida
April, 2000	Joint appointment to the Department of Anatomy
May 2002	Joint appointment to the Department of Pharmacology and Therapeutics
January 2003	Joint appointment to the Department of Pathology
August 2004	Associate Professor with tenure, Center of Excellence for Aging & Brain Repair, Department of Neurosurgery and Brain Repair
August 2008-present	Professor with tenure, Center of Excellence for Aging & Brain Repair, Department of Neurosurgery and Brain Repair
March 2015-present	Professor, Office of Graduate Programs, USF College of Pharmacy

ACADEMIC HONORS/AWARDS

1986	Southam Communications Limited Centennial Scholarship ($500).
1986	University of Calgary Merit Award ($500).
1987	Louise McKinney Post-Secondary Scholarship.
1988-1992	Natural Sciences and Engineering Research Council of Canada Studentship.
1988-1993	Alberta Heritage Foundation for Medical Research Studentship.
1990	Placed 11th in Canada in the competition for the Medical Research Council of Canada scholarship.
1997	OCO USF equipment grant to buy a fluorescent microscope.
1998	Research and Creative Scholarship Award (University of South Florida Intramural Award): *Transplantation of neural cells derived from a human teratocarcinoma cell line in an animal model of Huntington's Disease.*
2000	Presidential Young Faculty Award (University of South Florida Intramural Award): *Human Neural Stem Cells for the Treatment of Stroke*
2000	University of South Florida Institute on Aging Award: *Neurogenesis in the Adult Brain After Stroke.*
2000	OCO USF equipment grant to buy multi-channel gas anesthesia system.
2003	Listed in Who's Who in Stem Cell Research (Winter 2002 edition)
2004	Listed in Marquis Who's Who in America (2004-2005 edition)
2006	Established Investigator Award: *Measuring Inflammation after Stroke in Man: Towards Development of New Therapies*
2006	Bernard Sanberg Memorial Award for Brain Repair
2006	Million Dollar Club, USF Sponsored Research
2010	Charter Member of the National Academy of Inventors.
2022-2023	Faculty Education Bonus (awarded for excellence in teaching)

GRANTS HELD

Federal Funding

Principal Investigator

2006-2012 National Institute of Health/National Institute of Neurological Diseases & Stroke (Principal Investigator, R01 NS052839): *Cord Blood is Neuroprotective in a Rat Model of Stroke.*

2002-2008 National Institute of Health/National Institute of Aging. (Principal Investigator, R01 AG20927-01): *Potential of Cord Blood Cells to Rescue Aging Brain.*

2001-2003 National Institute of Health/National Institute of Neurological Disorder and Stroke -STTR grant in conjunction with Saneron CCEL Therapeutics (Principal Investigator, R41 NS40583-01). *Sertoli Cell Co-transplants in Parkinson's Disease.*

2000-2002 National Institute of Health/National Institute of Neurological Disorder and Stroke -STTR grant in conjunction with Layton BioScience, Inc. (Principal Investigator, R41 NS39669-01): *Lithium Increases Dopaminergic Phenotype in hNT neurons.*

Co-Principal/ Co- Investigator

2022-2026 1I01BX005757-01A1 (Mohapatra, PI)
VA Merit Award.
Anti-inflammatory and hMSC combination therapy for traumatic brain injury

2016-2020 VA Merit Award (Subhra Mohapatra as PI)
Combined Nano- and Cell-Therapy for the Treatment of TBI.

2011-2015 Department of Defense (W81XWH-11-1-0634) (Sanberg as PI): *Battlefield-Related Injury Translational Research – Post Traumatic Disease and Disability – Veterans Reintegration Strategy*

2008-2011 National Institutes Of Health/National Institute Of Neurological Disease And Stroke (1 R21 NS060907) (Pennypacker as PI, multiple PI): *Expanding the Therapeutic Window for Stroke*

2003-2004 National Institutes Of Health/National Institute Of Neurological Disease And Stroke (1 R41-NS46155-01)(Saporta as PI): *Spinal Cord Repair with Human Umbilical Cord Blood*

2003-2004 National Institutes Of Health/National Institute Of Neurological Disease And Stroke (1-R41-NS46878-01)(Cameron as PI): *Sertoli Cell -treated Umbilical Cord Blood for Stroke*

2000-2004 National Institute of Health/National Institute of Aging. (1R01 NS39141-01A2) (Pennypacker as PI): *Nuclear factor-□κB (NF-κB) Induction After Middle Cerebral Artery Occlusion.*

State Funding

Principal Investigator

2023-2028	Florida Department of Health (Multiple Principal Investigator) *Randomized Controlled Clinical trial of Hyperbaric Oxygen Treatment for Traumatic Brain Injury and Post Traumatic Stress in Veterans*
2022-2023	Florida Department of Veteran's Affairs. (Principal Investigator): *Alternative Treatment Options for Veterans*
2016-2024	State of Florida General Revenue Appropriations (Principal Investigator*): Pilot Randomized Controlled Trial of Brazilian Jiu Jitsu (BJJ) Training Versus Hatha Yoga for the Symptoms of Post-Traumatic Stress Disorder (PTSD) Among U.S. Male Veterans*
2014-2017	State of Florida General Revenue Appropriations (Principal Investigator): *Prospective Cohort Study of Jiu Jitsu (JJ) Training among Male U.S. Service Members and Veterans with Symptoms of PTSD*
2013-2015	James and Esther King Biomedical Research Program, Florida Department of Health (Principal Investigator, 04KB-01): *HLA Interactions with Human Umbilical Cord Blood Cells in a Humanized Mouse Model of Stroke.*
2007-2008	James and Esther King Biomedical Research Program, Florida Department of Health (Principal Investigator, 07KB-07): *Splenic Mechanisms of Cord Blood Induced Repair.*
2001-2004	Florida Department of Health, Biomedical Research Program (Principal Investigator): *Transplantation of Umbilical Cord Blood Minimizes Injury After Stroke.*

Co-Principal/ Co-Investigator

2009-2012 James & Esther King Biomedical Research Team Science Program, Florida Department of Health (Principal Investigator Project 4, Co-PI, program, 09KT-02; Pennypacker, PI). *Synthesis and Screening of Sigma Ligands for Stroke Treatment at Delayed Time Points*

Foundation Funding

Principal Investigator

2005-2007 American Heart Association (0555266B): *Anti-inflammatory Therapy for Stroke Induced with Allogeneic or Xenogeneic Cord Blood Cells*

2003-2005 American Heart Association (0355183B): *Modulation of Stroke-Induced Inflammatory Responses in Rat with Intravenous Delivery of hUCB Cells*

2003-2004 College of Medicine Pilot Research Grant Program: *Modulation of Peripheral Immune Response After Intravenous Delivery of hUCB Cells.*

2001-2004 Florida High Tech Corridor External Matching Grant Program (Principal Investigatory): *Sertoli Cell Co-transplants in Parkinson's Disease*

2000-2001 Presidential Young Faculty Award (University of South Florida Intramural Award): *Human Neural Stem Cells for the Treatment of Stroke*

2000-2002 University of South Florida Institute on Aging Award: *Neurogenesis in the Adult Brain After Stroke.*

1999-2000 University of South Florida Spinal Center Grant. (Department of Neurosurgery): *Transplantation for the Treatment of Motor Neuron Disease.*

1998-1999 American Parkinson's Disease Association: *Novel Cell Transplantation Strategies for Parkinson's Disease.*

Co-Principal/ Co-Investigator

2001-2007 Children's Medical Research Foundation. (Sanberg as PI): *Treating Sanfilippo with Umbilical Cord Blood Stem Cells.*

Pharmaceutical Funding
Principal Investigator

2000-2003 Layton BioScience, Inc.(Principal Investigator): *Neural Transplantation of a Human Post-mitotic CNS Cell Line.*

Co-Principal/ Co- Investigator

2008-2009 Takeda Pharmaceuticals, (Pennypacker as PI): *Use of Pioglitazone in Treating Stroke at Delayed Time Point*

PUBLICATIONS

THESIS/DISSERTATION

Willing, A.E., Koopmans, H. S., & Walls, E. K. The role of insulin in regulating food intake in the diabetic rat. Honor's Thesis at the University of Calgary, 1988.

Willing, A.E. Insulin's effect on food intake and body weight in diabetic rats. Masters Thesis, University of Calgary, Calgary, Alberta, Canada, 1990.

Willing, A.E. The effect of long-term vena cava or hepatic portal insulin infusion on daily food intake and plasma glucose, free fatty acid and insulin levels in both diabetic and normal rats. Doctoral Dissertation, University of Calgary, Calgary, Canada, National Library of Canada, 210 pp, 1993.

RESEARCH ARTICLES

Refereed Articles

1. **Willing AE**, Walls EK, Koopmans, HS. Insulin infusion stimulates daily food intake and body weight gain in diabetic rats. Physiology and Behavior, 48(6): 893-898, 1990.

2. Koopmans HS, Walls EK, **Willing AE**. Does peripheral insulin reduce daily food intake? International Journal of Obesity, 14(S3): 75-76, 1990.

3. Walls EK, **Willing AE**, Koopmans HS. Intravenous nutrient-induced satiety depends on feeding-related gut signals. American Journal of Physiology, 261: R313-322, 1991.

4. Koopmans HS, Walls EK, **Willing AE**. Does the integrated level of all plasma nutrients control food intake? Brain Research Bulletin, 27:429-434, 1991.

5. **Willing AE**, Koopmans HS, Walls EK. Hepatic portal and vena cava insulin infusions lead to increased food intake in diabetic rats. Physiology & Behavior, 56(5): 993-1001, 1994.

6. **Willing AE**, Walls EK, Koopmans HS. Insulin increases the daily food intake of diabetic rats on high and low fat diets. Physiology & Behavior, 56(5): 983-991, 1994.

7. Berthoud H-R, Patterson LM, **Willing AE**, Mueller K, Neuhuber WL. Capsaicin-resistant vagal afferent fibers in the rat gastrointestinal tract: anatomical identification and functional integrity. Brain Research, 746:1-2, 195-206, 1997.

8. Burggraf K, **Willing AE**, Koopmans HS. The effects of glucose or lipid infused intravenously or intragastrically on voluntary food intake in the rat. Physiology & Behavior, 61(6): 787-793, 1997.

9. **Willing AE**, Berthoud H-R. Gastric distension-induced c-fos expression in catecholaminergic neurons of rat dorsal vagal complex. American Journal of Physiology, 272:1 pt 2:R59-67, 1997.

10. Holt DA, Nauert GM, Othberg AI, Randall TS, **Willing AE**, Widen RH, Hauser RA, Sanberg PR, Olanow CW, Freeman TB. Infectious issues in fetal neural transplantation. Cell Transplantation, 6: 553-556, 1997.

11. Othberg AI, **Willing AE**, Saporta S, Cameron DF, Sanberg PR. Preparation of cell suspensions for co-transplantation: methodological considerations. Neuroscience Letters, 247: 111-114,1998.

12. Othberg AI, **Willing AE**, Cameron DF, Anton A, Saporta S, Freeman TB, Sanberg PR. Trophic effect of porcine Sertoli cells on rat and human ventral mesencephalic cells and hNT neurons in vitro. Cell Transplantation, 7(2): 157-164, 1998.

13. Duckworth EA, Koutouzis TK, Borlongan CV, Gordon MN, **Willing A**, Cahill DW, Sanberg PR. Rats receiving systemic 3-nitropropionic acid demonstrate impairment of memory in morris water maze. Psychobiology, 27(4): 561-566, 1999.

14. Zigova T, **Willing AE**, Borlongan CV, Saporta S, Snable GL, Sanberg PR. Lithium chloride induces the expression of tyrosine hydroxylase in hNT neurons. Experimental Neurology, 157: 251-258, 1999.

15. **Willing AE**, Sudberry JJ, Othberg AI, Saporta S, Poulos SG, Cameron DF, Freeman TB, Sanberg PR. Sertoli cells decrease microglial response and increase engraftment of human hNT neurons in the hemiparkinsonian rat striatum. Brain Research Bulletin, 48, 441-444, 1999.

16. Pennypacker K, Hernandez H, Benkovic S, Morgan D, **Willing AE**, Sanberg PR. Induction of presenilins in the rat brain after middle cerebral artery occlusion. Brain Research Bulletin, 48: 539-543, 1999.

17. **Willing AE**, Othberg AI, Saporta S, Anton A, Jones S, Poulos SG, Cameron DF, Freeman TB, Sanberg PR. Sertoli cells enhance the survival of co-transplanted dopamine neurons. Brain Research, 822: 246-250, 1999.

18. Pennypacker KR, Eidizedeh S, Kassed CA, O-Callaghan JP, Sanberg PR, **Willing AE**. Expression of FRA-2 in rat hippocampus after middle cerebral arterial occlusion. Neuroscience Letters. 289(1): 1-4, 2000.

19. Sanchez-Ramos J, Song S, Cardozo-Pelaez F, Hazzi C, Stedeford T, **Willing A**, Freeman T, Saporta S, Janssen W, Patel N, Cooper DR, Sanberg PR. Adult Bone Marrow Stromal Cells Differentiate Into Neural Cells in vitro. Experimental Neurology, 164: 247-256, 2000.

20. Saporta S, **Willing AE**, Colina LO, Zigova T, Milliken M, Daadi MM, Sanberg PR. In vitro and in vivo characterization of hNT neuron neurotransmitter phenotypes. Brain Research Bulletin. 53: 263-268, 2000

21. Zigova T, Barroso LF, **Willing AE**, Saporta S, McGrogan MP, Freeman TB, Sanberg PR. Dopaminergic phenotype of hNT cells in vitro. Developmental Brain Research. 122: 87-90, 2000.

22. Sanchez-Ramos J, Song S, Dailey M, Cardozo-Pelaez F, Hazzi C, Stedeford T, **Willing A**, Freeman TB, Saporta S, Zigova T, Sanberg PR, Snyder EY. The X-gal caution in neural transplantation studies. Cell Transplantation, 9: 657-667, 2000.

23. Rivas-Arancibia S, **Willing AE**, Zigova T, Rodriguez AI, Sanberg PR. The effects of taurine on hNT neurons transplanted in adult rat striatum. Cell Transplantation, 9(6): 751-758, 2000

24. Garbuzova-Davis S, **Willing AE**, Milliken M, Saporta S, Sowerby B, Cahill DW, Sanberg PR. Intraspinal Implantation of hNT Neurons into SOD1 mice with apparent motor deficit. ALS. 2:175-180, 2001.

25. Chen J, Sanberg PR, Li Y, Wang L, Lu M, **Willing AE**, Sanchez-Ramos J and Chopp M. Intravenous administration human umbilical cord blood reduces behavioral deficits after stroke in rats. Stroke. 32: 2682-2688, 2001.

26. Pennypacker KR, Kassed CA, Eidizadeh S, Saporta S, Sanberg PR, **Willing AE**. NF-κB p50 is increased in neurons surviving hippocampal injury. Experimental Neurology, 172: 307-319, 2001.

27. **Willing AE**, Garbuzova-Davis S, Saporta S, Milliken M, Cahill DW, Sanberg PR. HNT Neurons Delay Onset Of Motor Deficits In A Model Of Amyotrophic Lateral Sclerosis. Brain Research Bulletin. 56(6): 525-530, 2001.

28. Daadi MM, Saporta S, **Willing AE**, Zigova T, Sanberg PR. In vitro induction and in vivo expression of bcl-2 in the hNT Neurons. Brain Research Bulletin. 56(2): 147-152, 2001.

29. Cameron DF, Hushen JJ, Nazian SJ, **Willing A**, Saporta S, Sanberg PR. Formation of Sertoli Cell-enriched tissue constructs utilizing simulated microgravity technology. Annals of the NewYork Academy of Sciences, 944: 420-428, 2001.

30. Sanchez-Ramos JR, Song S, Kamath SG, Zigova T, **Willing A**, Cardozo-Pelaez F, Stedeford T, Chopp M, Sanberg PR. Expression of neural Markers in human umbilical cord blood.

Experimental Neurology. 171: 109-115, 2001.

31. Saporta S, **Willing AE**, Zigova T, Daadi M, Sanberg PR. Comparison of calcium-binding proteins within hNT neurons in vitro and after transplantation in the rat striatum. Experimental Neurology, 167: 252-259, 2001.

32. Rivas-Arancibia S, Rodriguez AI, Zigova T, **Willing AE**, Brown WD, Cahill DW, Sanberg PR. Taurine protects against neurodegeneration produced by 3-nitropropionic acid in rats. International Journal of Neuroscience. 108: 55-67, 2001.

33. Zigova T, **Willing AE**, Saporta S, Daadi MM, McGrogan MP, Randall TS, Freeman TB, Sanberg PR. Apoptosis in cultured hNT Neurons. Developmental Brain Research. 127: 63-70, 2001.

34. **Willing AE**, Zigova T, Milliken M, Poulos S, Saporta S, McGrogan MP, Snable G, Sanberg PR. Lithium Exposure Enhances Survival of NT2N cells (hNT Neurons) in the Hemiparkinsonian Rat. European Journal of Neuroscience. 16: 2271-2278, 2002.

35. Kassed CA, **Willing AE**, Garbuzova-Davis S, Sanberg PR, Pennypacker KR. Lack of NF-κB p50 exacerbates degeneration of hippocampal neurons after chemical exposure and impairs learning. Experimental Neurology. 176: 277-288, 2002.

36. **Willing AE**, Nowicki P, Poulos S, Lixian J, Milliken M, Cahill DW, Sanberg PR. Effects of Middle Cerebral Artery Occlusion on Spontaneous Activity and Cognitive Function in Rats. International Journal of Neuroscience. 112: 503-516, 2002.

37. Zigova T, Song S, **Willing AE**, Hudson JE, Newman MB, Saporta S, Sanchez-Ramos J, Sanberg PR. Human Umbilical Cord Blood Cells Express Neural Antigens after Transplantation into the Developing rat Brain. Cell Transplantation. 11 (3): 265-274 2002.

38. Garbuzova-Davis S, **Willing AE**, Milliken M, Saporta S, Zigova T, Cahill DW, Sanberg PR. Positive Effect of Xenotransplantation of hNT Neurons (Ntera 2/D1 Cell-Line) in a Model of Familial Amyotrophic Lateral Sclerosis. Experimental Neurology. 174: 169-180, 2002.

39. Saporta S, Makoui AS, **Willing AE**, Khan T, Daadi MM, Cahill DW, Sanberg PR. Functional recovery in complete contusion spinal cord injury after transplantation of hNT Neurons in rats. Journal of Neurosurgery. (Spine 1) 97:57-62, 2002.

40. Butler TL, Kassed CA, Sanberg PR, **Willing AE**, Pennypacker KR. Neurodegeneration in the rat hippocampus and striatum after middle cerebral artery occlusion. Brain Research. 929: 252-260, 2002.

41. **Willing AE**, Saporta S, Lixian J, Milliken M, Poulos S, Bowersox SS, Sanberg PR. Preliminary studies of the behavioral effects of LBS-Neurons implantation on seizure susceptibility following middle cerebral artery occlusion in the rat. Neurotoxicity Research, 4(2): 111-118, 2002.

42. Rodriguez AI, **Willing AE**, Cameron DF, Saporta S, Sanberg PR. Neurobehavioral

assessment of transplanted porcine Sertoli cells. Neurotoxicity Research, 4(2); 103-109, 2002.

43. Garbuzova-Davis S, **Willing AE**, Zigova T, Saporta S, Justen EB, Lane JE, Hudson JE, Hart CD, Sanberg PR. Intravenous administration of human umbilical cord blood cells in a mouse model of ALS: Distribution, migration and differentiation. Journal of Hematotherapy and Stem Cell Research, 12(3): 255-270, 2003.

44. Misiuta IE, Anderson L, McGrogan MP, Sanberg PR, **Willing AE**, Zigova T. The transcription factor Nurr1 in human NT2 cells and hNT neurons. Developmental Brain Research, 145(1):107-15, 2003.

45. Rodriguez AI, **Willing AE**, Saporta S, Cameron DF, Sanberg PR. Effects of Sertoli cell transplants in a 3-nitropropionic acid model of early Huntington's disease: a preliminary study. Neurotoxicity Research, 5(6):443-450, 2003.

46. Saporta S, Kim JJ, **Willing AE**, Fu ES, Hart CD, Sanberg PR. Intravenous Administration of Human Umbilical Cord Blood Cells in Rats with Spinal Cord Injury. J Journal of Hematotherapy and Stem Cell Research, 12(3): 271-278, 2003.

47. **Willing AE**, Vendrame M, Mallery J, Cassady CJ, Hart CD, Sanchez-Ramos J, Sanberg PR. Mobilized peripheral blood cells administered intravenously produce functional recovery in stroke. Cell Transplantation, 12(4): 449-454, 2003.

48. **Willing AE**, Jiang L, Milliken M, Poulos S, Zigova T, Song S, Sanchez-Ramos J, Sanberg PR. Intravenous versus Intrastriatal Cord Blood Administration in a Rodent Model of Stroke. Journal of Neuroscience Research, 73: 296-307, 2003.

49. Garbuzova-Davis S, **Willing AE**, Zigova T, Saporta S, Justen EB, Lane JE, Hudson JE, Hart CD, Sanberg PR. Intravenous administration of human umbilical cord blood cells in a mouse model of ALS: Distribution, migration and differentiation. Journal of Hematotherapy and Stem Cell Research. 12(3): 255-270, 2003.

50. Hudson JE, Chen N, Song S, Walczak P, Jendelova P, Sykova E, **Willing AE**, Saporta S, Bickford P, Sanchez-Ramos J, Zigova T. Green fluorescent protein bone marrow cells express hematopoietic and neural antigens in culture and migrate within the neonatal rat brain. J. Neurosci. Res., 76: 255-264, 2004.

51. Walczak P, Chen N, Hudson JE, **Willing AE**, Garbuzova-Davis SN, Song S, Sanchez-Ramos J, Bickford P, Zigova T. Do Hematopoietic cells exposed to neurogenic environment mimic properties of endogenous neural precursors? J. Neurosci. Res., 76: 244-254, 2004.

52. Gografe SI, Garbuzova-Davis S, **Willing AE**, Hass K, Chamizo W, Sanberg PR. A mouse model of San Filippo syndrome type B: which phenotypical features relate to background strain? Comparative Medicine, 53(6): 622-632, 2004.

53. Vendrame M, Cassidy J, Newcomb J, Butler T, Pennypacker KR, Zygova T, Davis Sanberg PR, **Willing AE.** Infusion of human umbilical cord blood cells in a rat model of stroke dose-

dependently rescues behavioral deficits and reduces infarct volume. Stroke, 35: 2390-2395, 2004.

54. Cameron DF, Hushen JJ, Colina L, Mallory J, **Willing AE**, Sanberg PR, Saporta S. Formation and structure of transplantable tissue constructs generated in simulated microgravity from Sertoli cells and neuron precursors. Cell Transplantation, 13(7/8): 755-763, 2004.

55. Henning RJ, Abu-Ali H, Balis JU, Morgan MB, **Willing AE**, Sanberg PR. Human umbilical cord blood mononuclear cells for the treatment of acute myocardial infarction. Cell Transplantation, 13(7/8): 729-739, 2004.

56. Saporta S, **Willing AE**, Shamekh R, Bickford P, Paredes D, Cameron DF. Rapid differentiation of NT2 cells in Sertoli-NT2 cell tissue constructs grown in the rotating wall bioreactor. Brain Research Bulletin, 64(4): 347-356, 2004.

57. Shamekh R, Newcomb J, Mallory J, Cassidy CJ, Saporta S, Cameron, DF, Sanberg PR, **Willing AE**. Survival of Rat or Mouse Ventral Mesencephalon Neurons after Co-Transplantation with rat Sertoli Cells in the Mouse Striatum. Cell Transplantation, 14: 551-564, 2005

58. Garbuzova-Davis S, **Willing AE**, Desjarlais T, Sanberg CS, Sanberg PR. Transplantation of human umbilical cord blood cells benefits an animal model of Sanfilippo syndrome type B. Stem Cells and Development. 14(4): 384-394, 2005

59. Chen N, Hudson JE, Walczak P, Misiuta I, Garbuzova-Davis S, Jiang L, Sanchez-Ramos, Sanberg PR, Zigova T, **Willing AE**. Human Umbilical Cord Blood Progenitors: The potential of these Hematopoietic cells to Become Neural. Stem Cells, 23: 1560-1570, 2005.

60. Newman MB, **Willing AE**, Manresa JJ, Davis Sanberg C, Sanberg PR. Stroke-induced migration of human umbilical cord blood cells: Time course and cytokines. Stem Cells and Development, 14: 576-586, 2005.

61. Vendrame M, Gemma C, de Mesquita D, Collier L, Bickford PC, Davis Sanberg C, Sanberg PR, Pennypacker KR, **Willing AE**. Anti-inflammatory Effects Of Human Cord Blood Cells In A Rat Model Of Stroke. Stem Cells and Development, 14: 595-604, 2005.

62. Newcomb JD, Brown WD, Rodriguez AI, Garbuzova-Davis S, Saporta S, Sanberg PR, **Willing AE**. Behavioral alterations in Lewis rats following two-day continuous 3-nitropropionic acid administration., Neurotox Res. 2005 Nov;8(3-4):259-66, 2005.

63. Garbuzova-Davis SN, Gografe SJ, Davis Sanberg C, **Willing AE**, Saporta S, Cameron DF, Desjarlais T, Daily J, Kuzmin-Nichols N, Chamizo W, Klasko SK, Sanberg PR. Maternal Transplantation of Human Umbilical Cord Blood Cells Provides Prenatal Therapy in Sanfilippo Type B Mouse Model. The FASEB Journal, 20(3):485-7, 2006.

64. Misiuta IE, Saporta S, Sanberg PR, Zigova T, **Willing AE**. Influence of retinoic acid and lithium on proliferation and dopaminergic potential of human NT2 cells. Journal of Neuroscience Research, 83: 668-679, 2006.

65. Shamekh R, Cameron DF, **Willing AE**, & Saporta S. The role of connexins in the differentiation of NT2 cells in Sertoli-NT2 Cell Tissue Constructs Grown in the rotating wall bioreactor. Experimental Brain Research. 170(2): 277-284, 2006.

66. Newcomb JD, Ajmo CT, Davis Sanberg C, Sanberg PR, Pennypacker KR, **Willing AE**. Timing of cord blood treatment after experimental stroke determines therapeutic efficacy. Cell Transplantation, 15(3) 15(3):213-223, 2006.

67. Vendrame M, Gemma C, Pennypacker KR, Bickford PC, Davis Sanberg C, Sanberg PR, **Willing AE**. Cord Blood Rescues Stroke-Induced Changes In Splenocyte Phenotype and Function. Experimental Neurology, 199(1):191-200, 2006.

68. Shamekh R, Mallery J, Newcomb J, Hushen J, Saporta S, Cameron DF, Davis Sanberg C, Sanberg PR, **Willing AE**. Enhancing tyrosine hydroxylase expression and survival of fetal ventral mesencephalic neurons with rat or porcine Sertoli cells in vitro. Brain Research, 1096(1):1-10, 2006.

69. Newman MB, **Willing AE**, Manresa JJ, Davis-Sanberg C, Sanberg PR. Cytokines Produced by Cultured Human Umbilical Cord Blood (HUCB) Cells: Implications for Brain Repair. Experimental Neurology, 199(1):201-208, 2006.

70. Vernon DOL, Garbuzova-Davis S, Sanberg PR, **Willing AE**, Pennypacker KR. Reduced Nuclear Factor Kappa B activation in Dentate Gyrus after Active Avoidance training. Brain Research, Brain Res 1104: 39-44, 2006.

71. Garbuzova-Davis S, **Willing AE**, Saporta S, Zigova T, Justin EB, Misiuta IE, Sanberg PR. Multiple transplants of hNT Neurons into the spinal cord of SOD1 mouse model of familial amyotrophic lateral sclerosis. Amyotrophic Lateral Sclerosis and Other Motor Neuron Disorders, 7(4): 221-226, 2006.

72. Chen N, Kamath S, Newcomb J, Hudson J, Garbuzova-Davis S, Bickford P, Davis-Sanberg C, Sanberg PR, Zigova T, **Willing AE**. Trophic factor induction of human umbilical cord blood cells In vitro and in vivo. Journal of Neural Engineering, 4: 130–145, 2007.

73. Newcomb JD, Janowski M, Zigova T, Saporta S, McGrogan MP, Sanberg PR, **Willing AE**. A comparison of dopaminergic cells from the human NTERA2/D1 cell line transplanted into the hemiparkinsonian rat. Life Science, 81(6): 441-448, 2007.

74. Walczak P, Chen N, Eve D, Hudson J, Zigova T, Sanchez-Ramos J, Sanberg PR, **Willing AE**. Human Umbilical Cord Cells Transplanted in the Striatum of NOD SCID mice. Brain Research Bulletin, 74(1-3): 155-163, 2007.

75. Bachstetter AD, Pabon MM, Cole MJ, Hudson CE, Sanberg PR, **Willing AE**, Bickford PC, Gemma C. Peripheral Injection of Umbilical Cord Blood Stimulates Neurogenesis in the Aged Rat Brain. BMC Neuroscience, 9:22, Feb 14, 2008.

76. Ajmo CT, Collier L, Vernon D, Hall A, Garbuzova-Davis S, **Willing AE***, Pennypacker K*. The spleen contributes to stroke induced neurodegeneration. Journal of Neuroscience Research, 86(10):2227-34* equal contributions, 2008.

77. Jiang L, Newman M, Saporta S, Chen N, Sanberg C, Sanberg PR, **Willing A.E.** MIP-1α and MCP-1 Induce Migration of Human Umbilical Cord Blood Cells in Models of Stroke. Current Neurovascular Research**,** 5(2): 118-124, 2008.

78. Shamekh R, Saporta S, Cameron DF, **Willing AE**, Sanberg CD, Johe K, Sanberg PR. Effects of Sertoli Cell-Conditioned Medium on Ventral Midbrain Neural Stem Cells: A Preliminary Report. Neurotoxicity Research, 13(3-4): 241-6, 2008.

79. Hall AA, Guyer AG, Leonardo CC, Ajmo jr CT, Collier LA, **Willing AE*,** Pennypacker KR*. Human Umbilical Cord Blood Cells Directly Suppress Ischemic Oligodendrocyte Cell Death. Journal of Neuroscience Research, 87(2): 333-341, 2009 * equal contributions

80. Garbuzova-Davis S**, Willing AE**, Sanberg PR. Human Umbilical Cord Blood Treatment in a Mouse Model of ALS: Optimization of Cell Dose. PLoS ONE. 3(6):e2494, 2008.

81. Herrera Y, Katnik C, Jael R. Rodriguez JR, Aaron A. Hall AA, Willing AE, Pennypacker KR, Cuevas J. Modulation of ASIC1a Channels by Sigma-1 Receptors in Rat Cortical Neurons: Membrane Current Activation And $[Ca^{2+}]_i$. Journal of Pharmacology & Experimental Therapeutics. 327: 491-502, 2008.

82. Ajmo Jr CT, Collier LA, Leonardo CC, Hall AA, Cuevas J, Green SM, Womble TA, **Willing AE***, Pennypacker KP*. Blockade of adrenoreceptors inhibits the splenic response to stroke. Experimental Neurology, 218: 47–55, 2009* equal contributions

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186. Shahaduzzaman M, McAleer J, Grieco J, Golden J, Glover J, Hall J, Cortes-Salva M, Antilla J, Cuevas J, Pennypacker KR, **Willing AE**. Sigma receptor (σRs) agonist NAPH decreased long-term infarct volume and rescued white matter after middle cereal artery occlusion (MCAO). American Society for Neural Transplantation and Repair (ASNTR), Cell Transplantation. 21(4): 790-790, 2012.

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190. **Willing AE**, Newcomb JD, Garbuzova-Davis S, Sanberg PR. Do allografts of rat umbilical cord blood cells decrease infarct size to the same extent as human umbilical cord blood cell xenografts after middle cerebral artery occlusion in the rat? Program No. 805.05. 2014 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2014. Online

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192. **Willing AE**, Deichert R, Wood R, Girling SA, Gonzalez J, Hernandez DF, Foran E, Kip K. Jiu Jitsu training reduces symptoms of PTSD and related psychopathologies. American Society for Neural Therapy and Repair (ASNTR), April, 2016.

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PATENTS

Issued

1. Human Cord Blood as a Source of Neural Tissue for Repair of the Brain & Spinal Cord

   US Patent Number: US 7,160,724 (Issued 1/9/07)
   US 8,309,352 (Issued 11/13/12)

   Inventors: Paul R. Sanberg
   Juan Sanchez-Ramos
   Alison Willing

2. Human Cord Blood as a Source of Neural Tissue for Repair of the Brain & Spinal Cord

   Australian Patent Number 2001243464

   Inventors: Paul R. Sanberg
   Juan Sanchez-Ramos
   Alison Willing

3. Treating Amyotrophic Lateral Sclerosis (ALS) with isolated aldehyde dehydrogenase-positive umbilical cord blood cells

   US Patent Number: US 8,765,119 (Issued 7/1/14)

   Inventors: Svitlana Garvuzova-Davis
   Andrew Balber
   Cyndy Davis-Sanberg
   Tracy Gentry
   Nicole Kuzmin-Nichols
   Paul R. Sanberg
   Alison E. Willing

4. Ischemic Tissue Cell Therapy

US Patent Number: US 10335434 (Issued 7/02/19)

Inventors: Paul R. Sanberg
Alison E. Willing
Nelson Hossne
Adriana Invitti

5. N,N'-di-p-naphthalen-1yl-lguanidine HCL Reduces Infarct Volume and Increases Functional Recovery After Stroke

Patent: US 9,636,311 (Issued 5/2/17)

Inventors: Keith R. Pennypacker
Jonathan Antilla
Michelle Cortes-Salva
Javier Cuevas
Alison E. Willing

6. Umbilical Cord Blood Source of Stem Cells and Neural Precursors for Brain and Spinal Cord Repair

Patent: US 9,795,637 (issued 10/24/17)

Inventors: Paul R. Sanberg
Juan Sanchez-Ramos
Alison Willing
Daniel D. Richard

7. Use of Endogenous Antioxidant Proteins in the Treatment of Stroke

Patent: US 9,795,652 (issued 10/24/17)

Inventors: Keith R. Pennypacker
Alison E. Willing

Applications

1. Umbilical Cord Blood as Source of Stem Cells for Circulatory System Repair

Patent Office Serial Number 60/319942

Inventors: Alison E. Willing
Robert Henning
Paul R. Sanberg
Juan Sanchez-Ramos

2. Method of Potentiating Inflammatory and Immune Modulation for Cell and Drug Therapy

Invention Disclosure: 04B103PRC

Inventors: Alison E. Willing

Paul R. Sanberg
Mary Newman

3. Method of Reducing Inflammation and Methods of Treating Stroke-Induced Brain Injury
   Patent Office Serial Number: 61/596,305
   Inventors: Keith R. Pennypacker
   Alison E. Willing

4. Antibodies against interferon gamma as a treatment for stroke
   Invention Disclosure:
   Inventors: Keith R. Pennypacker
   Alison E. Willing

5. Inhibitors of Jak1/2 as a treatment for stroke
   Invention Disclosure: 10B093
   Inventors: Keith R. Pennypacker
   Alison E. Willing

6. Use of leukemia inhibitory factor in the treatment of stroke
   Invention Disclosure:
   Inventors: Keith R. Pennypacker
   Alison E. Willing

7. Neurodegenerative Disorder and Neurological Disease Treatment using HLA Mismatched or Untyped Umbilical Cord Cells
   Patent Office Serial Number: 12/258,951
   Inventors: Alison E. Willing
   Paul R. Sanberg
   Cyndy Sanberg
   Nicole Kuzmin-Nichols

8. N,N'-di-p-nitrophenylguanidine HCL Reduces Infarct Volume and Increases Functional Recovery After Stroke
   Invention Disclosure: USF Ref. No. 12A015
   Inventors: Keith R. Pennypacker
   Jonathan Antilla
   Michelle Cortes-Salva
   Javier Cuevas
   Alison E. Willing

TEACHING

Courses:
Medical Education

1999	**MEL 7881**	**Neurosurgical Research (Course Director)** This is a research elective in which the students develop and conduct a research project. In this project they will learn to critically evaluate the scientific literature, perform small animal surgery and administer post-operative care, perform functional outcome measures, tissue preparation and histology, neuronal tracing, data analysis.
2001-2002	**BMS 6020**	**Medical Neuroscience** This course is an interdisciplinary course intended for first year medical students. The focus of the course is on the normal structure and function of the human nervous system with emphasis on those concepts, facts and mechanisms that all physicians should be familiar with, regardless of career path. My role in this course was: – Small Group Discussion Facilitator – Special Interest Topics
2002	**BMS 6206**	**Molecular, Cellular, and Genetic Basis of Medicine** The objective of this course is to provide an understanding of the biochemical, cell biology and genetic principles of physiology and pathology that explain the molecular mechanisms that underlie the cellular aberrations seen in clinical disorders and how these are associated with genetic alterations in tissue. My role in the course was: – Small Group Discussion Facilitator
2005-2011	**BMS 6832**	**Clinical Problem Solving** The objective of this course is introduce the students to skills in obtaining medical history and researching literature in order to come up with a differential diagnosis for patients.
2013-2021	**BMS 6837**	**Evidence Based Clinical Reasoning II**

This course will build upon skills learned in EBCR I: clinical reasoning and key concepts of evidence literacy and numeracy will applied to solve real world medical problems.

Graduate Education

1998-present **GMS 7418** **Directed Research**
This is a course in which graduate students conduct laboratory research prior to completing their candidacy. Students are expected to work on a specific project and participate in all aspects of the study including design, surgeries, behavioral testing, cell preparation, tissue culture, histology, image and data analysis.

2000-2001 **GMS 7939** **Anatomy Seminar Series**
This seminar series is for student presentation of their research accomplishments to date. In addition, guest speakers/faculty present cutting edge research in anatomy. Seminars delivered include:

- Transplantation of hNT Neurons
- Sertoli Cells to Treat Parkinson's Disease

2001-2002 **GMS 7939** **Neuroscience Seminar Series (Chair, 2002; Co-Chair 2001)**
In this series, prominent researchers from multiple subdisciplines within Neuroscience present their works. The title of the series for this semester was "Toward Repairing the Nervous System"

2002 **GMS 6602** **Neural Correlates of Behavior**
Co-director of this course focuses on the organization and function of nervous system structures that control and regulate various aspects of somatic and visceral motor behavior.

2002-present **GMS 6706** **Graduate Medical Neurosciences**
This is an introductory course for graduate students whose purpose is to familiarize students with the fundamentals of neuroscience. Topics covered in the course include the basic nature of the neuron and its

place in the nervous system, sensory and motor systems and the molecular and cellular nature of cognitive neuroscience. I have lectured on the following topics:

- Chemical Senses
- Neural Networks & Behavior
- Stem cells & Neurogenesis
- Pathophysiology of Injury

2003 **GMS 6513** **Principles of Pharmacology and Therapeutics**

This course is designed to familiarize students with basic principles of pharmacology and therapeutics. Students will be exposed to classical concepts of pharmacology such as drug-receptor interactions as well as modern techniques such as gene therapy

- Lecture presented - Cell Therapy

2004-present **GMS 6773** **Stem Cells in Brain Repair**

Director

This is a graduate level course designed to familiarize the students with key issues in designing stem cell therapies for brain diseases and injury. This is an interactive course in which the students prepare presentations and lead discussions on current research issues and theories in the field.

- Lectures presented
  - CNS Development
  - Pathophysiology
  - Environmental Effects on Stem Cells

2005-present **GMS 6771** **Aging & Neuroscience**

This is a graduate level course designed to familiarize the students with the physiology of aging and the brain.

- Lectures presented
  - Introduction to the Nervous System
  - Stroke

2007-2019	**GMS 6772**	**Spinal Cord: Development, Pathology, Therapy** This is a graduate level course designed to familiarize the students with the spinal cord - Lecture presented - Introduction to CNS & PNS Cell Therapy for Spinal Cord
2020- present	**GMS6604**	**'* This replaced 6772** **Human Structure & Function: Spinal Cord** This is a graduate level course designed to familiarize the students with the spinal cord - Lectures: - Introduction to CNS & PNS - Cell therapy for spinal cord
2008-present	**GMS 6735**	**Neuropharmacology** This is a graduate level course designed to familiarize the students with chemical signaling in the brain - Lecture presented Neurohormones, Cytokines, & Chemokines
2012-present	**GMS 6078**	**Neuroimmunology** This is a graduate level course designed to provide an overview of the basic principles regarding cellular and molecular organization of the immune system and the brain in health and disease - Lecture presented Autoimmune Disease
2014	**GMS7930**	**Introduction to Research in Biomedical Sciences** This course is designed to prepare a student for research in a biomedical research laboratory with focus on pathological processes of various neurodegenerative diseases. - Facilitator

2015-present **PHA6336** **Tissue Engineering and Regenerative Medicine**

This course is an elective in the new College of Pharmacy Graduate Curriculum, with students at the graduate certificate, masters and PhD level. This course was developed as a distance learning course that caters to students that cannot accommodate the schedule of a regular didactic course offered in a traditional classroom. The major goal of this course is to provide students with the knowledge, skills and responsibility to utilize the principles of tissue engineering and design strategies for practical applications for tissue repair. This course is offered each term.

- Course Director
- Instructor
- This course is offered every semester
- 22 lectures in spring and fall, 20 lectures in summer

2016-present **GMS 6505.998** **Basic Medical Pharmacology**

This course is an elective in the new College of Pharmacy Graduate Curriculum for the masters program. This course was developed as a distance learning course that caters to students that cannot accommodate the schedule of a regular didactic course offered in a traditional classroom.

- Course Designer
- Instructor – 43 lectures

2017-present **GMS 6440.998** **Basic Medical Physiology**

This course is an elective in the new College of Pharmacy Graduate Curriculum for the masters program. This course was developed as a distance learning course that caters to students that cannot accommodate the schedule of a regular didactic course offered in a traditional classroom. It will be offered for the first time Fall 2016.

- Course Designer
- Instructor – 21 lectures

2019-present	**PHA6971**	**Master's Thesis** Supervisor of College of Pharmacy Masters student

Postdoctoral Fellows Supervised

1999-2001	Svitlana Garbuzova-Davis, Ph.D., D.Sc.
2002-2003	Rania Shamekh, MD
2000	Sharam Makoui, MD
2004-2008	Ning Chen, MD
2004	Piotr Walczak, MD
2007	Tracy Womble, PhD
2008-2012	MD (Zaman) Shahaduzzaman, MD

Graduate Students Supervised

Graduated

Martina Vendrame – PhD (Pathology, 2004)

Iwona Misuita – PhD (Pharmacology & Therapeutics, 2005)

Lixian Jiang– PhD candidate (Pathology & Cell Biology, 2008)

Adam Guyer – Masters student (Pathology & Cell Biology, 2007)

Graduate Committees:

Lixian Jiang – PhD program (Neuroscience, Pathology & Cell Biology, co-director)

Mary Newman – PhD (Psychology, 2005)

Joanne Mayer – PhD (Molecular Pharmacology & Physiology, 2007)

Michelle Hamel – PhD (Molecular Pharmacology & Physiology, 2006)

Ted Ajmo – PhD (Molecular Pharmacology & Physiology, 2007)

Aaron Hall – PhD (Molecular Pharmacology & Physiology)

Yelenis Herrera - PhD (Molecular Pharmacology & Physiology)

Chris Leonardo - PhD (Molecular Pharmacology & Physiology)

Derrick Rowe - PhD (Molecular Pharmacology & Physiology)

Hilary Seifert - PhD (Molecular Pharmacology & Physiology, 2013)

Donna Darlington - PhD (Neuroscience, 2014)

Lisa Le - PhD Candidate (Neuroscience)

Jeannie Stephenson – PhD (Clinical Translational Research, 2014)

Stephanie Davis – PhD (Molecular Pharmacology & Physiology, 2016)

Taylor Martinez – PhD candidate (Molecular Medicine, 2023)

Graduate Student External Chair (Candidacy)

2013	Chase Lambert - PhD Candidate (Neuroscience)
2013	Diana Hernandez-Ontiveros – PhD Candidate (Neuroscience)
2014	Joseph Grieco – PhD Candidate (Neuroscience)
2015	Seol-Hee Kim – PhD Candidate (Neuroscience) Dylan Finneran – PhD Candidate (Neuroscience) Lecia Brown – PhD Candidate (Neuroscience)
2016	Bethany Grimmig – PhD Candidate (Neuroscience) Md Habib – PhD Candidate (Neuroscience)
2018	Chao Ma - PhD Candidate (Neuroscience) Hung Nguyen - PhD Candidate (Neuroscience)
2019	Austin Nenninger - PhD Candidate (Neuroscience) Meena Subbarayan - PhD Candidate (Neuroscience) Andie Dodge - PhD Candidate (Neuroscience)
2022	Robert Botelho, PhD Candidate (Neuroscience)
2023	Chardane Logan, PhD Candidate (Neuroscience)

Graduate Student External Thesis Reviewer

2014 Bhimashankar Mitkari - PhD Candidate (University of Eastern Finland)

Graduate Student Rotations in the Lab

1998 Chris Hazzi– MS student (Pharmacology & Therapeutics)

2002 Srilaxmi Musunuri – PhD student (Pharmacology & Therapeutics)

2003 Tim Boyd, PhD student (Biomedical Sciences)

2004 Veljko Nikolic, PhD student (Biomedical Sciences)

2005-2006 Amy Simmens, Graduate Certificate Student (Aging & Neuroscience)

2007 Martina Colon, PhD student

Tina Fiorelli

2010-2011 Joseph Grieco, Masters (Aging and Neuroscience)

Kevin Almerico, Masters (Aging and Neuroscience)

Chris Huguet, Masters (Aging and Neuroscience)

James McAleer, Masters (Pathology and Cell Biology)
Jair Franco, Masters (Pathology and Cell Biology)

2011-2012 Praveen Venkatachalam (Aging and Neuroscience)
Sonal Jadeja (Medical Science)
Murtala Ibrahim (Medical Science)
Olatunji Otegbeye (Medical Science)

2012 Nima Khosravani (Aging and Neuroscience)
Andres Izaguirre (Aging and Neuroscience)

2013 Elspeth Foran (Aging and Neuroscience)
Ramya Tadinada (Aging and Neuroscience)

2014 Maria Ciesla (Aging and Neuroscience)
Kayla Cox (Pre-professional Masters programme)
David Hill (Aging and Neuroscience)
Keirsten Reilly (Pre-professional Masters programme)
Tiwalolu Soyebo (Pre-professional Masters programme)
Sophie Trujillo (Aging and Neuroscience)

2015 Olivia Maleki (Aging and Neuroscience)
Bushra Faraz (Aging and Neuroscience)
Lauren Easler (University of Tampa)

2016 Brett LaRose (Aging and Neuroscience)

2017 Tobin Chakkala (Aging and Neuroscience)
Brandon Singh (Aging and Neuroscience)

2018 Marissa Albert (Aging and Neuroscience)
Ryann Fiascki (Aging and Neuroscience)
Israel Mahr (Aging and Neuroscience)

2019 Ajla Becirbesic (Aging and Neuroscience)

2020 Melissa Gaeta (Pharmaceutical Nanotechnology)
Rachel Sieradzan (Pharmaceutical Nanotechnology)

2023 Haylee Garling (Aging and Neuroscience)
Brooke Stoddard (Aging and Neuroscience)
Greg Levitt (Social Work)

Medical Students Supervised

Honors

1997 Jonathan Sudberry

1998 Paul Nowicki

1999 Chris Webster

2000 Brad Freeman

2002 Gary DeCesare

3rd Year

1999 Mike Bellew

Undergraduate Honors Students

Major Professor

1999 Binit Shah (Biology) Supervisor
Title of Thesis: *Neuroprotection in a Parkinsonian Rat Model*

2002 Wendy Brown (Psychology). Supervisor.
Title of Thesis: *Behavioral Characterization of Lewis Rats in the 3-Nitropropionic Acid Rat Model of Huntington's Disease*

2003 Sherien Bain (Honors College). Supervisor

2003 Salma Pothiawaia (Honors College). Supervisor

2004 Linda Arauz. Supervisor

2004 Mina Hanna (Honors College). Supervisor
Title of Thesis: *Cytokine Expression in the Spleen of stroked rats after HUCB cell Transplantation*

2003-2004 Fabio Ferrari (Honors College) Supervisor

2003-2004 Arveen Analis (Biology) Supervisor

2004 Melanie Thomas (Biology) Supervisor

2004-2005 Keyly Pimienta (Biology) Supervisor

2004-2006 Christienn Blanco (Biology) Supervisor

2004-2005 Kia Amrrori (Biology) Supervisor

2006 Laura Williard (Biology)
Directed Research

2006-2007 Alnecia Rumpfs (Honors College) Supervisor
Title of Thesis: *The Effects of Diets Enriched with Antioxidants from Foods on Hematopoietic Progenitor Cell Viability and Proliferation in the Aging Rat*

2006-2007 Kaye Rozecki (Biomedical Sciences, Honors) Supervisor

Title of Thesis: *Inducement of Myeloid Populations with Lipopolysaccharide after Experimental Stroke and Cord Blood Treatment*

2006-008 Rashidul Munim (Biomedical Sciences, Honors) Supervisor
Title of Thesis: *Stem Cells in a Parkinson Disease Rat Model*

2007-2009 Allison Nelson (Biology)
WST 4910, Research Experience for Undergraduates in Women's Health

2008-2009 Allisun Gronda (Honors College)
Title of Thesis: *The Effect of Cord Blood Fractions on Rat Neural Stem Cells*

2009-2011 Emmanuelle Adrien (Honors College)
Title of Thesis: *Cord Blood Cells Induce Neurogenesis In Vivo.*

2010-2011 Vijay Mehta (New College, Sarasota)
Title of Thesis: *Human Umbilical Cord Blood (HUCB) cells Protect Neurons Following Oxygen Glucose Deprivation (OGD) Through Activation AKT Pathway*

2011-2012 Jessica Glover (Honors College)
Title of Thesis: *Temporal Profile of Chemokines and Cytokines in the Human Inflammatory Response to Ischemic Stroke and their Relationship to the Timing of Human Umbilical Cord Blood (HUCB) Treatment in Rats*

2011-2013 Jonathan Hall (Honors College)
Title of Thesis: *The Vermicelli Handling Test: Associations of dexterous forepaw function with the effects of cerebral ischemia.*

Supervising Committee

1999 Erin M. Tedesco (Biology). Committee.
Title of Thesis: *The Effect of Lithium Chloride on the Morphological Maturation of Cultured hNT Neurons*

2002 Angel Haywood (Biology). Committee
Title of Thesis: *Amyotrophic Lateral Sclerosis*

2003 Jennifer Lane (Honors College). Committee
Title of Thesis: *Transplantation of Human Umbilical Cord Blood Cells in a Mouse Model of ALS: Distribution, Migration, and Integration*

2007 Stephen Seedial (Honors College). Committee
Title of Thesis: *Dose Effects of Intravenously Transplanted Human Umbilical Cord Blood Cells in a Mouse Model of Amyotrophic Lateral Sclerosis*

2010 Christina Miller (Honors College). Committee
Title of Thesis: *Microglia Reduction in the Spinal Cord of ALS Mice with Optimal Dose of Human Umbilical Cord Blood Cells*

2010 Aysha Ahmed (Honors College). Committee
Title of Thesis: *T-Cell Deficiency and Age Related Decrease in Hippocampal Neural Cell Proliferation*

High School Student Outreach

Major Professor

2000-2001 Blake Sowerby. Co-supervisor

2003-2006 Justus Roberts II. Supervisor
Science Fair Project, Placed at state level for 3 years.

2004 Preya Shah. Supervisor
Volunteer

2005 Shannon Gallimore. Supervisor
Volunteer

2007 April Rogers
Volunteer

2011 Ravi Medikonda
Volunteer

2012 John-Michael Buchs
Volunteer

2012 Akash Gupta
Volunteer

2014 Zachary Diamandis
Volunteer

Middle School Student Outreach

Major Professor

2005-present Joshua Hammer. Supervisor
Science Fair Project, Placed 2nd at State level for 2 years. Was chosen as a finalist in the Discovery Channel Science Fair competition September 2007

2008 Science Fair Project, Placed 4th at State level in senior division.

PROFESSIONAL SOCIETIES

2006-2016 American Heart Association
1997- present American Society for Neural Transplantation & Repair (ASNTR)
1997-2010 Cell Transplant Society

1995-2005	International Behavioral Neuroscience Society
1994- present	Society for Neuroscience
2010-2020	USF Academy of Inventors, Founding Chapter of National Academy of Inventors

COMMUNITY SERVICE

Service to the University:

2001-2003	Member of the Research Council of the Faculty Senate. I have also been a member of the following subcommittees of the Research Council:
2001-2003	Research Incentives Subcommittee.
2001-2002	Social Sciences Internal Award Review Subcommittee
2002-2003	Biomed/Lifesciences Internal Award Review Subcommittee **Chair 2002
2002	Grant Writing Award Development Subcommittee
2003	Interdisciplinary Award Subcommittee Review
2002-2008	USF Limited Submission Review Subcommittee

Service to the College of Medicine:

2013-2019	Search Committee, Molecular Pharmacology and Physiology
2012- 2015	College Appointment, Tenure and Promotions Committee
2008- 2010	Pharma II Committee (developing policy for relationship of industry to clinicians)
2007-2009	Bylaws Committee
2006-2009	Core Facilities Committee Animal Core Cell Sorting Core

2003	Member of the Selection committee for the Chair of Neurology.
2002	Member of the Medical Student Affairs Committee.
2000-2003	Member of the Neuroscience Concentration Committee.
2001-2002	Chair, Neuroscience Seminar Series Committee
2000-2001	Co-Chair, Neuroscience Seminar Series Committee

Service to the Department:

2002	Member of the Medical Student Affairs Committee.
1997-present	Participate as an interviewer for the annual Neurosurgical Resident Interviews
2005-present	Member Departmental appointment, promotion, and tenure committee

Service to the College of Pharmacy:

2015-2018	Chair, Faculty Search Committee
2015-present	Member, Graduate Curriculum committee
2015-2022	Chair, Graduate Curriculum committee

Professional Organizations:

2009- 2010	Muscular Dystrophy Association Annual jailbird lockup fund raiser Auggie's Quest
2006-2008	USF Health Leadership Institute
2005-present	American Heart Association,
2011	Hillsborough County Community Board Team leader, Departmental Heart Walk Team (raised $2300)
2013-2015	Abstract Reviewer, International Stroke Conference
2000-2001	International Behavioral Neuroscience Society Local organizing committee
1997 to present	American Society for Neural Transplantation and Repair Local organizing committee for annual meeting
2002	Co-chair of the Local Organizing Committee
2012-2015	Council Member

Funding Agencies Reviewed for:

1999	National Science Foundation
1999 - 2000	Center for Scientific Review, National Institutes of Health
2000	Natural Sciences and Engineering Research
	Council of Canada
2001	Medical Research Council, (UK)
2004	Saint Louis University Fleur-de-Lis grant program
2004	North Carolina Biotechnology Program
	Center for Scientific Review, National Institutes of Health,
2004-2006	Special Emphasis Review Panel
2006-2011	BINP (charter member)
2007,	American Heart Association (Brain 3)
2013-present	
2019-present	Chair, Pre- and Post-Doctoral fellowship application review
2009-present	Mission Connect (TIRR Foundation, Houston, Tx)

Journals Reviewed for:

In my 27 years as faculty at the University of South Florida I routinely review manuscripts for journals. Specifically, I have reviewed manuscripts on multiple topics including (but not limited to) stem cells (multiple kinds), stroke, TBI, Parkinson's disease, aging, rodent behavioral testing, neuroinflammation and Covid.

1. Acta Biomaterialia
2. Annals of Neurology
3. Behavioral Neuroscience
4. Bentham Journals
5. Biomed Research International
6. BMC Neuroscience
7. Brain Research
8. Brain Research Bulletin
9. Brain Sciences
10. Canadian Medical Association Journal
11. Cell Stem Cell
12. Cell Transplantation
13. Cellular and Molecular Neurobiology
14. Circulation
15. Clinical Science
16. Current Pharmaceutical Design
17. Current Stem Cell Research and Therapy
18. Cytotherapy
19. European Journal of Neuroscience
20. Experimental Neurology
21. Expert Opinion on Biological Therapy
22. FASEB Journal
23. Haematologia
24. Journal of Cerebral Blood Flow and Metabolism
25. Journal of Leukocyte Biology
26. Journal of Neurochemistry
27. Journal of Neuroscience
28. Journal of Neuroscience Research
29. Medical Science Monitor
30. Molecular Neurobiology
31. Nature
32. Nature Medicine
33. Nature Neuroscience
34. Nature Protocols
35. Neurobiology of Disease
36. Neuropharmacology
37. Neuroreport
38. Neuroscience
39. Neurosignals

40. Pharmacology, Biochemistry & Behavior
41. PLoS one
42. Psychobiology
43. Regenerative Medicine
44. Scientific Reports
45. Stem Cells
46. Stem Cells & Development
47. Stem Cell Therapy
48. Stroke

Community

2018-present	Resilient Warrior Foundation (501c 3) Board of Directors
2010	University of Colorado Denver, School of Pharmacy Faculty Tenure Review
2010-present	Judge, Young Inventor's Competition Sponsored by MOSI & USF
2005-present	St. Vincent de Paul Society. Secret Santa program
2005-present	Newcomer's Welcome Committee. St. Paul's Catholic Church Monthly meeting with new parishioners to welcome to parish.
2005-2007	Time, Treasures and Talent appeal. St. Paul's Catholic Church Spoke at Masses on personal experiences with tithing
1996-present	Annual giving campaign, St. Paul's Catholic Church, to help build a school on the church site
March, 1999	Parkinson's Disease Foundation (Lakeland Branch), Neural Transplantation to Treat Parkinson's Disease. March 1999
September, 2000	USF Honors Medical Student Seminar. *Human Neural Stem Cells for the Treatment of Stroke.*
November, 2000	Lake Magdalene Elementary, Hillsborough County. The Great American Teach In. The Brain. November 2000.
December 2000	University Community Hospital. Santa & his Elves (my family) visited the children's ward on Christmas morning to deliver toys and good cheer
January, 2001	Parkinson's Disease Foundation (Lakeland Branch. Parkinson's Disease: Causes and Cures).
November, 2002.	Lake Magdalene Elementary, Hillsborough County. The Great American Teach In. Touch
August 2003	Monetary contribution in support of a "Back to School Teacher Appreciation Luncheon", Lake Magdalene Elementary School
March, 2009	St. Marks Primetimers Club. *Stem Cell Therapy: Where do we Stand*