

## CURRICULUM VITAE

**Milap S. Sandhu, PT, Ph.D.**

Research Scientist  
Sensory Motor Performance Program  
Rehabilitation Institute of Chicago  
Northwestern University  
345 E. Superior, Room 1435  
Chicago, IL 60611

### EDUCATION

- 2004 - 2010     Doctor of Philosophy in Rehabilitation Science  
                    University of Florida, Gainesville, FL  
                    Advisor: David D. Fuller, PhD  
                    *Dissertation: Neural Plasticity and Control of Breathing*
- 1998 - 2003     Bachelor of Physical Therapy  
                    Department of Sports Medicine and Physiotherapy  
                    Guru Nanak Dev University, Amritsar (India)

### PROFESSIONAL EXPERIENCE

- 2016 - present     Research Scientist  
                    Sensory Motor Performance Program  
                    Rehabilitation Institute of Chicago  
                    Northwestern University
- 2014 - 2015     Post Doctoral Fellow  
                    Sensory Motor Performance Program  
                    Rehabilitation Institute of Chicago  
                    Northwestern University  
                    Supervisor: William Zev Rymer
- 2011 – 2014     Post-doctoral Associate  
                    McKnight Brain Institute  
                    University of Florida  
                    Supervisors: Paul J. Reier and David D. Fuller
- 2005 - 2010     Graduate Research Assistant  
                    Respiratory Neurobiology and Neuroplasticity Laboratory  
                    Department of Physical Therapy, UF
- 2004 - 2005     Graduate Research Assistant  
                    Department of Occupational Therapy, UF
- 2003 – 2004     Physical Therapist  
                    Apollo Physiotherapy & Rehabilitation Center, Amritsar (India)
- 2002 – 2003     Physical Therapy Intern  
                    Dayanand Medical College & Hospital, Ludhiana (India)

## PHYSICAL THERAPY CERTIFICATION

2005 - present Michigan# 5501012290

## HONORS AND AWARDS

Mar 2014 Best Postdoctoral Poster, 9<sup>th</sup> Neuromuscular Plasticity Symposium, UF  
Mar 2012 Outstanding Poster, 7<sup>th</sup> Neuromuscular Plasticity Symposium, UF  
2009, 2010 Outstanding Research Award, 22<sup>nd</sup> and 23<sup>rd</sup> College Research Day, UF  
Mar 2009 UF Division of Sponsored Research Travel Grant, Research and Graduate Programs  
Dec 2008 Best Poster Award, 4<sup>th</sup> Neuromuscular Plasticity Symposium, UF  
Nov 2008 Outstanding Achievement Award, 14<sup>th</sup> International Student Academic Awards, FL  
Jan 2008 Best Poster Award, 3<sup>rd</sup> Neuromuscular Plasticity Symposium, UF  
Jun 2007 B.W. Robinson Memorial Endowment for the Neurosciences, Tallahassee, FL  
Apr 2007 Brooks Rehabilitation Research Grant Award, Department of Health Professions, UF  
Nov 2006 Rehabilitation Science Doctoral Program Travel Award, UF  
Jul 2006 Student Travel Grant Award, Graduate Student Council, UF  
2004 – 2008 Alumni Fellowship, UF

## INVITED REVIEWER

2013 - Human Gene Therapy  
2014 - Journal of Applied Physiology  
2014 - Neural Regeneration Research  
2014 - PLOS ONE  
2014 - Paralyzed Veterans of America Grant Reviewer  
2015 - Respiratory Physiology and Neurobiology

## ACADEMIC SERVICE

2011-12 Respiratory Section Training Subcommittee, American Physiological Society  
2009-10 Grass Traveling Scientist Program Committee  
Society for Neuroscience North Central Florida Chapter  
2009-10 Neuroscience-Teacher Partner Program Committee  
Society for Neuroscience North Central Florida Chapter

## RESEARCH GRANTS

Title Timing and Dosage of Intermittent Hypoxia Therapy for Persons with Spinal Cord Injury  
Participation Principal Investigator  
Type Switzer Research Fellowship  
Agency National Institute on Disability, Independent Living, and Rehabilitation Research  
Direct Costs \$70,000  
Funding Period 2015 – 2016

Title Training Novel Host-Graft Interfaces to Enhance Spinal Cord Repair  
Participation Principal Investigator  
Type Postdoctoral Fellowship Award  
Agency Craig H. Neilsen Foundation  
Direct Costs \$130,139  
Funding Period 2012 – 2014

Title Training Novel Host-Graft Circuits to Enhance Spinal Cord Repair  
Participation Co-Principal Investigator  
Type External Funding Agency  
Agency Paralyzed Veterans of America  
Direct Costs \$50,000  
Funding Period 2011

Title Combining pharmacological therapy with cell transplantation to improve respiratory function after spinal cord injury  
Participation Principal Investigator  
Type External Funding Agency - Graduate Award  
Agency Bryan W. Robinson Endowment, Tallahassee Memorial Neuroscience Center  
Direct Costs \$2,500  
Funding Period 2009

Title Neural repair and functional respiratory recovery after cervical spinal cord injury  
Participation Principal Investigator  
Type University of Florida McKnight Brain Institute Graduate Investigators Grant  
Direct Costs \$5,000  
Funding Period 2008

## PROFESSIONAL PEER-REVIEWED PUBLICATIONS

### ***IN PREPARATION FOR SUBMISSION***

**SANDHU MS, SRIVATSAN S, KESSLER A, MITCHELL G, JAYARAMAN A, RYMER WZ.** (2016) Inflammation impairs acute intermittent hypoxia-induced motor plasticity in persons with spinal cord injury.

### ***IN REVIEW***

**SANDHU MS, ROSS HH, LEE KZ, ORMEROD BK, REIER PJ, FULLER DD.** (2016) Transplantation of post-natal derived neural precursor cells after high cervical hemisection. Submitted to *Exp Neurol*.

### ***PUBLISHED***

21. LYNCH MM, DUFFELL L, **SANDHU MS, SRIVATSAN S, DEATSCH K, KESSLER A, MITCHELL GS, JAYARAMAN A, RYMER WZ.** (2016) Effect of acute intermittent hypoxia on motor function in individuals with chronic spinal cord injury following ibuprofen pretreatment: A pilot study. *J Spinal Cord Med*. [Epub ahead of print]
20. **SANDHU MS, BAEKEY DM, MALING NG, SANCHEZ JC, REIER PJ, FULLER DD.** (2015) Mid-cervical neuronal discharge patterns during and following hypoxia. *J Neurophysiol*. 113(7):2091-101.
19. LEE KZ, **SANDHU MS, DOUGHERTY BJ, REIER PJ, FULLER DD.** (2015) Hypoxia triggers short term potentiation of phrenic motoneuron discharge after chronic cervical spinal cord

injury. *Exp Neurol.* 263:314-324.

18. ROSS HH, **SANDHU MS**, SHARIFIAR S, FULLER DD. (2015). Delivery of in vivo acute intermittent hypoxia in neonatal rodents to prime subventricular zone-derived neural progenitor cell cultures. *J Vis Exp.* 2015 Nov 2;(105).
17. **SANDHU MS**, LEE KZ, GONZALEZ-ROTHI EJ, FULLER DD. (2013) Repeated intravenous doxapram induces phrenic motor facilitation. *Exp Neurol.* 250:108-115.
16. ELMALLAH MK, FALK DJ, NAYAK S, FEDERICO RA, **SANDHU MS**, POIRIER A, BYRNE BJ, FULLER DD. (2013) Sustained correction of motoneuron histopathology following intramuscular delivery of AAV in Pompe mice. *Mol Ther.* 22(4):702-12.
15. LEE KZ, LANE MA, DOUGHERTY BJ, MERCIER LM, **SANDHU MS**, SANCHEZ JC, REIER PJ, FULLER DD (2013) Intraspinal transplantation and modulation of donor neuron electrophysiological activity. *Exp Neurol.* 251:47-57.
14. LEE KZ, DOUGHERTY BJ, **SANDHU MS**, LANE MA, REIER PJ, FULLER DD. (2013) Phrenic motoneuron discharge patterns following chronic cervical spinal cord injury. *Exp Neurol.* 249:20-32.
13. ROSS HH, **SANDHU MS**, CHEUNG TF, SHER WJ, TIEMEIER AJ, LAYWELL ED, FULLER DD. (2012) In vivo intermittent hypoxia elicits enhanced proliferation and neuronal differentiation in cultured neural progenitors. *Exp Neurol.* 235(1):238-45
12. LEE KZ, QIU K, **SANDHU MS**, ELMALLAH MK, FALK DJ, LANE MA, REIER PJ, BYRNE BJ, FULLER DD. (2011) Hypoglossal neuropathology and respiratory activity in Pompe mice. *Front. Physiol.* 2:31.
11. **SANDHU MS**, LEE KZ, FREGOSI RF, FULLER DD. (2010) Phrenicotomy alters phrenic long term facilitation (LTF) following intermittent hypoxia in anesthetized rats. *J Appl Physiol.* 2010 Aug;109(2):279-87.
  - This paper was featured in the Journal of Applied Physiology editorial: Peever, J., 2010. The ins and outs of deep breathing: mechanisms of respiratory motor plasticity. *J Appl Physiol.* 109 (2), 265-266.
  - Selected as a "recommended read" for the Faculty of 1000 Physiology and Neuroscience.
10. WHITE TE, LANE MA, **SANDHU MS**, O'STEEN BE, FULLER DD, REIER PJ. (2010) Neuronal progenitor cell transplantation and respiratory outcomes following upper cervical spinal cord injury in adult rats. *Exp Neurol.* 2010 Sep;225(1):231-6.
9. LEE KZ, **SANDHU MS**, DOUGHERTY BJ, REIER PJ, FULLER DD. (2010) Influence of vagal afferents on supraspinal and spinal respiratory activity following cervical spinal cord injury in rats. *J Appl Physiol.* Aug;109(2):377-87.
8. FULLER DD, DOUGHERTY BJ, DOPERALSKI NJ, **SANDHU MS**, HAYWARD LF. (2009) Prenatal nicotine exposure alters respiratory long term facilitation in neonatal rats. *Respir Physiol Neurobiol.* 169(3):333-7.

7. **SANDHU MS**, DOUGHERTY BJ, LANE MA, BOLSER DC, KIRKWOOD PA, REIER PJ, FULLER DD. (2009) Respiratory recovery following high cervical hemisection. *Respir Physiol Neurobiol.* 169(2):94-101.
6. FULLER DD, **SANDHU MS**, DOPERALSKI NJ, LANE MA, WHITE TE, BISHOP MD, REIER PJ. (2009) Graded unilateral cervical spinal cord injury and respiratory motor recovery. *Respir Physiol Neurobiol.* 165(2-3):245-53
5. LANE MA, WHITE, TE, COUTTS MA, JONES AL, **SANDHU MS**, BLOOM DC, BOLSER DC, YATES BJ, FULLER DD, REIER PJ. (2008) Cervical prephrenic interneurons in the normal and lesioned spinal cord of the adult rat. *J Comp Neurol.* 511(5):692-709.
4. DOPERALSKI NJ, **SANDHU MS**, REIER PJ, FULLER DD. Ventilation and Phrenic Output following high cervical spinal hemisection in male vs. female rats. (2008) *Respir Physiol Neurobiol.* 162(2):160-7
3. FULLER DD, DOPERALSKI NJ, DOUGHERTY BJ, **SANDHU MS**, BOLSER DC, REIER PJ. Modest Spontaneous Recovery of Ventilation Following Chronic High Cervical Hemisection in Rats. (2008) *Exp Neurol.* May;211(1):97-106
2. CLASSEN S., SHECHTMAN O., STEPHENS B., DAVIS E., BENDIXEN R., BELCHIOR P., **SANDHU M.**, JUSTISS M., POSSE C., MCCARTHY D., & MANN W. (2005). The impact of roadway intersection design on driving performance of young and senior adults. *Topics in Geriatric Rehabilitation*, 22(1), 18- 26
1. SHECHTMAN O., CLASSEN S., STEPHENS B. DAVIS E., BENDIXEN R., BELCHIOR, P., **SANDHU M.**, MCCARTHY D., & MANN W. (2005). The impact of intersection design on simulated driving performance of young and senior adults. *Topics in Geriatric Rehabilitation*, 22(1), 27- 35

## PROFESSIONAL ABSTRACTS/POSTERS

### **NATIONAL**

32. **SANDHU MS**, AFSHARIPOUR B, RASOOL G, CARDONA A, RYMER WZ (2016). Acute Intermittent Hypoxia Augments Upper Limb Neuromotor Function in Persons with Spinal Cord Injury. International Society of Electrophysiology and Kinesiology. July 5-8, Chicago, IL.
31. AFSHARIPOUR B , **SANDHU MS**, RASOOL G, RYMER WZ (2016). Use of high density EMG grid recordings to characterize the level of injury in individuals sustaining cervical spinal cord injury. International Society of Electrophysiology and Kinesiology. July 5-8, Chicago, IL.
30. **SANDHU MS**, ROSS HH, AMIRZADEHASL P, ARMSTRONG GT, PASCUAL LM, ORMEROD BK, REIER PJ, FULLER DD (2013). Neural precursor cell transplantation improves breathing after cervical spinal cord injury in rats. 15th International Symposium on Neural Regeneration. Asilomar Conference Grounds, Pacific Grove, CA.
29. GONZALEZ-ROTHI EJ, **SANDHU MS**, AMIRZADEHASL P, GARCIA L, TURNER SM, REIER PJ, BAEKEY DM, GREER JJ, FULLER DD (2013). Ampakine therapy improves respiratory motor output in rats with incomplete cervical spinal cord injury. 15th International Symposium on Neural Regeneration. Asilomar Conference Grounds, Pacific Grove, CA.
28. MERCIER LM, **SANDHU MS**, ARIAS NL, GONZALEZ-ROTHI EJ, LITTLE LN, FULLER DD, REIER PJ, LANE MA (2013). Cervical spinal cord injury alters the pattern of inspiratory and expiratory neuronal activity in the rat brainstem respiratory centers. Society for Neuroscience,

San Diego.

27. **SANDHU MS**, ELMALLAH MK, LANE MA, REIER PJ, GREER JJ, FULLER DD. (2013) Ampakines induce a persistent increase in phrenic motor output in rats with cervical spinal cord injury. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
26. **SANDHU MS**, LEE KZ, REIER PJ, FULLER DD. (2013) Intermittent respiratory stimulation with doxapram induces phrenic motor plasticity. Cellular and Network Functions in the Spinal Cord. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
25. ROSS HH, FITZPATRICK G, SHARIFIFER S, BERNARDO J, **SANDHU MS**, FULLER DD. (2013) Differential effects of hypoxia exposures on long-term neural progenitor cell expansion and differentiation. Cellular and Network Functions in the Spinal Cord. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
24. ELMALLAH MK, **SANDHU MS**, BAEKEY DM, FULLER DD. (2013). Apnea Alters the Pattern of Intermittent Hypoxia-Induced Long Term Facilitation in Anesthetized Mice. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
23. GUARNIERI LE, **SANDHU MS**, FULLER DD, BAEKEY DM. (2013). Selective activation of respiratory thoracic efferents in the spinal cord of the *in situ* rat preparation. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
22. JAISWAL PB, **SANDHU MS**, FULLER DD, DAVENPORT PW. (2013). Increased bilateral external intercostal EMG activity during Tracheal Occlusions (TO) in conscious rats with unilateral cervical spinal cord injury. Experimental Biology Meeting. Boston, MA. April 20-24, 2013.
21. ARIAS NL, MERCIER LM, LEE KZ, **SANDHU MS**, GUIMOND LM, GONZALEZ-ROTHI EJ, O' STEEN BE, FULLER DD, REIER PJ, LANE MA (2013). Cervical Spinal Cord Injury Results in Reorganization of Respiratory Activity in the Medulla. 18th Annual Meeting of the American Society for Neural Therapy and Repair (ASNTR), Clearwater, Florida.
20. REIER PJ, FULLER DD, LEE KZ, **SANDHU MS**, LANE MA. (2012) Spinal Respiratory Interneurons: Plasticity and Repair Following Cervical Spinal Cord Injury (cSCI). Cellular and Network Functions in the Spinal Cord. Madison, Wisconsin. May 22-25, 2012.
19. **SANDHU MS**, GONZALEZ-ROTHI EJ, LEE KZ, MALING N, LANE MA, REIER PJ, BAEKEY DM, SANCHEZ JC, FULLER DD. (2012) Hypoxia induced changes in interneuron bursting within cervical lamina VII-X of the adult rat spinal cord. Cellular and Network Functions in the Spinal Cord. Madison, Wisconsin. May 22-25, 2012.
18. **SANDHU MS**, GONZALEZ-ROTHI EJ, LEE KZ, MALING N, LANE MA, REIER PJ, BAEKEY DM, SANCHEZ JC, FULLER DD. (2012) Cervical interneuron bursting during hypoxia in anesthetized rats. FASEB J March 29, 2012 26:1147.3.
17. LEE KZ, MATTIO RY, LANE MA, DOUGHERTY, BJ, **SANDHU MS**, SANCHEZ JC, REIER PJ, FULLER DD. (2011) Bursting patterns of embryonic spinal cord grafts following repetitive acute intermittent hypoxia training in cervical spinal cord injured rats. Program No. 255.03. Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2011.
16. **SANDHU MS**, LEE KZ, ELMALLAH MK, FALK DJ, MATTIO RY, GONZALEZ-ROTHI E, REIER PJ, BYRNE BJ, FULLER DD. (2011) Hypoglossal motoneuron pathology in a mouse model of Pompe disease. FASEB J March 17, 2011 25:1b635
15. LEE KZ, DOUGHERTY BJ, **SANDHU MS**, REIER PJ, FULLER DD. (2011) Modulation of phrenic motoneuron plasticity following chronic high cervical spinal cord injury in the rat. FASEB J March 17, 2011 25:1111.7
14. ROSS HH, **SANDHU MS**, SHER WJ, CHEUNG TF, TIEMEIER AJ, REYNOLDS BA, FULLER

- DD. (2011) Acute intermittent hypoxia alters cell fate choice in postnatal neural precursors. *FASEB J* March 17, 2011 25:861.2
13. **SANDHU MS**, ROSS HH, DOUGHERTY BJ, LAYWELL ED, ORMEROD BK, REIER PJ, FULLER DD. (2010) Respiratory changes following transplantation of post-natal neural precursors into high cervical hemileisions of the adult rat. Society for Neuroscience Conference 2010.
  12. LEE KZ, **SANDHU MS**, DOUGHERTY BJ, REIER PJ, FULLER DD. (2010) Influence of the vagal afferent on supraspinal and spinal respiratory activity following cervical spinal cord injury in rats. *FASEB J* April 6, 2010 24:799.19
  11. **SANDHU MS**, FREGOSI RF, LANE MA, REIER PJ, FULLER DD. (2009) Phrenicotomy alters expression of long term facilitation in anesthetized rats. *FASEB J* April 22, 2009 23:1010.15
  10. FULLER D.D., LANE M.A., WHITE T.E., **SANDHU M.S.**, REIER P.J. (2008) Cervical Spinal Cord Injury and Respiratory Neuroplasticity. *Acta Physiologica Sinica*. 60(1):51, 2008.
  9. FULLER D.D., DOPERALSKI N.J., DOUGHERTY B.J., **SANDHU M.S.**, REYNOLDS C., HAYWARD L.F. (2008) Prenatal nicotine and respiratory long-term facilitation in neonatal rats. *FASEB J*. April 5, 2008 22:955.12.
  8. LANE M.A., WHITE T.E., COUTTS M.A., JONES A.L., **SANDHU M.S.**, SIEGEL K.A., O'STEEN B.E., FULLER D.D., REIER P.J. (2007) Neuroplasticity in the respiratory circuit following lateral hemisection in the adult rat cervical spinal cord. 13<sup>th</sup> International Symposium on Neural Regeneration, Pacific Grove, CA. Dec. 2007
  7. LANE M.A., WHITE T.E., COUTTS M.A., **SANDHU M.S.**, SIEGEL K.A., O'STEEN B.E., FULLER D.D., REIER P.J. (2007) Plasticity in respiratory circuitry following partial spinal cord injury (SCI) in the adult rat. Society for Neuroscience Annual Meeting 2007.
  6. **SANDHU M.S.**, DOPERALSKI N.J., BOLSER D.C., REIER P.J., FULLER D.D. (2007) The phrenic motor circuitry after cervical spinal cord injury: insights from neurophysiological methods. 14th Annual Conference of the American Society for Neural Therapy and Repair, Clearwater Beach, FL. May 3 -7, 2007.
  5. LANE M.A., **SANDHU M.S.**, FULLER D.D., REIER P.J. Transneuronal tracing reveals interneurons premotor to the phrenic motor nucleus in the adult rat spinal cord. (2007) American Society of Neural Therapy and Repair National Conference 2007.
  4. **SANDHU M.S.**, DOPERALSKI N.J., BOLSER D.C., REIER P.J., FULLER D.D. (2006) Waveform correlation of ipsilateral vs. contralateral phrenic motor output following chronic C2 cervical hemisection in rats. Program No. 447.3. 2006 Neuroscience Meeting Planner. Atlanta, GA: Society for Neuroscience, 2006.
  3. CLASSEN, S., SHECHTMAN, O; STEPHENS, B., DAVIS, E., BENDIXEN, R., BELCHIOR, P., **SANDHU, M.**, JUSTISS, M., POSSE, C., MCCARTHY, D., MANN, W. (2006) The Impact of Roadway Intersection Design on Driving Performance of Young and Senior Adults. Gerontological Society of America's 59th Annual Scientific Meeting Dallas, TX, November 16-23, 2006.
  2. SHECHTMAN O., CLASSEN S., STEPHENS B., DAVIS E., BENDIXEN R., BELCHIOR P., **SANDHU M.**, MCCARTHY D., AND MANN W. (2006) The impact of intersection design on simulated driving performance of young and senior adults. 4th Annual STISIM Drive User Group Meeting: New Approaches to Simulation and the Older Operator, Boston, MA, October 27, 2006.
  1. **SANDHU M.S.**, SINHA A.G., SANDHU J.S. (2003). A Survey of the Hamstring Length among adolescent Rural Population of Punjab. Silver Jubilee Congress of Indian Association of Sports Medicine, Amritsar, Punjab, India.

## LOCAL

9. ROSS DJ, **SANDHU MS**, GONZALEZ-ROTHI EJ, ARMSTRONG GT, LANE MA, REIER PJ, FULLER DD. (2013) Effect of Chondroitinase ABC Therapy and Intermittent Hypoxia Training on Respiratory Recovery following Cervical Spinal Cord Injury. 26<sup>th</sup> Annual PHHP Research Day, Gainesville FL. April 2013
8. **SANDHU MS**, ARMSTRONG GT, LANE MA, HOWLAND DH, REIER PJ, FULLER DD. (2013) Fetal spinal cord transplantation and Chondroitinase ABC therapy after cervical spinal cord injury. 9<sup>th</sup> Annual Neuromuscular Plasticity Symposium, FL. March 2013
7. **SANDHU MS**, GONZALEZ-ROTHI EJ, LEE KZ, MALING N, LANE MA, REIER PJ, BAEKEY DM, SANCHEZ JC, FULLER DD. (2012) Cervical Interneuron Bursting during Intermittent Hypoxia in Anesthetized Rats. 8<sup>th</sup> Annual Neuromuscular Plasticity Symposium, Gainesville, FL. March 2012
6. **SANDHU MS**, ROSS HH, DOUGHERTY BJ, LAYWELL ED, ORMEROD BK, REIER PJ, FULLER DD. (2011) Respiratory changes following transplantation of post-natal neural precursor cells after cervical spinal cord injury in adult rats. 6<sup>th</sup> Annual Neuromuscular Plasticity Symposium, Gainesville, FL. March 2011
5. **SANDHU MS**, ROSS HH, DOUGHERTY BJ, LAYWELL ED, ORMEROD BK, REIER PJ, FULLER DD. (2010) Transplantation of Post-Natal Stem Cells after Cervical Spinal Cord Injury (SCI) 5<sup>th</sup> Annual Neuromuscular Plasticity Symposium, Gainesville, FL. March 2010.
4. **SANDHU MS**, REIER PJ, FREGOSI RF, FULLER DD. (2009) Phrenic afferents influence respiratory plasticity. (2009) PHHP Research Day, Gainesville, FL. April 2009.
3. **SANDHU M.S.**, WHITE T.E., LANE M.A., DOUGHERTY, B.J., REIER P.J., FULLER D.D. (2008) Phrenic motor output after spinal cord injury and cellular replacement therapy. 4<sup>th</sup> Annual Neuromuscular Plasticity Symposium, Gainesville, FL. Jan 31, 2008.
2. DOUGHERTY B.J., DOPERALSKI N.J., **SANDHU M.S.**, Carr H.M., REYNOLDS C.R., HAYWARD L.F., FULLER D.D. (2008) Phrenic motor output after spinal cord injury and cellular replacement therapy. 3<sup>rd</sup> Annual Neuromuscular Plasticity Symposium, Gainesville, FL. Jan 31, 2008.
1. **SANDHU M.S.**, DOPERALSKI N.J., BOLSER D.C., REIER P.J., FULLER D.D. (2006) Correlation of ipsilateral (IL) versus contralateral (CL) phrenic inspiratory waveforms after chronic C2 cervical hemisection (C2HS) in rats. 2<sup>nd</sup> Annual Neuromuscular Plasticity Symposium, MBI DeWeese Auditorium and President's House, University of Florida, Gainesville, FL, Dec. 1, 2006.

## INVITED PRESENTATIONS

9. Inflammatory suppression augments intermittent hypoxia-induced plasticity in individuals with spinal cord injury. American Society of Neurorehabilitation Annual Meeting 2015, Session: Novel Applications of FDA Approved Drugs in Neurologic Rehabilitation. Chicago IL. Oct 16, 2015.
8. Phrenic motor plasticity after cervical spinal cord injury. Physiology & Biomedical Engineering Seminar Series, Mayo Clinic. Rochester, MN Oct 11, 2013.
7. Cervical Interneurons in the Intact (and Injured) Spinal Cord. Department of Physiological Sciences 2013 Spring Seminar Series, College of Veterinary Medicine, FL. Apr 2, 2013.
6. Neural Precursor Cell Transplantation after Cervical Spinal Cord Injury. Symposia on Neurorehabilitation and Plasticity, Brain Rehabilitation and Research Center, McKnight Brain



Institute, Gainesville, FL. Jan 25, 2011.

5. Respiratory Neuroplasticity and Cell Transplantation following Cervical Spinal Cord Injury. Neuro Noons Presentation, Dept. of Physical Therapy, UF. June 3, 2010
4. Phrenicotomy alters Expression of Long Term Facilitation in Anesthetized Rats. Trainee Highlights in respiration physiology. Experimental Biology (EB) Conference. New Orleans, LA. April 20, 2009.
3. Phrenicotomy alters Expression of Long Term Facilitation in Anesthetized Rats. Respiration Physiology Hot Topics. Experimental Biology (EB) Conference. New Orleans, LA. April 18, 2009.
2. Enhancing Respiratory Recovery after Spinal Cord Injury using Cell Transplantation and Pharmacological Methods. 10<sup>th</sup> Annual Bryan Robinson Foundation Endowment, Tallahassee Memorial Hospital, FL. June 5, 2008
1. Role of Phrenic Afferents in Respiratory Neuroplasticity after Cervical Spinal Cord Injury. Neuro Noons Presentation, Dept. of Physical Therapy, UF. Aug 7, 2008

## UNDERGRADUATE STUDENT/INTERN MENTORSHIP

- 2015            Lily DeValle (RIC Intern, Summer 2015)  
                  The Catholic University of America, Washington DC  
                  Project: Impact of Acute Intermittent Hypoxia Therapy and Prednisolone on Patients with Incomplete Spinal Cord Injuries.
- 2012-2013     Lauren Pascual  
                  College of Public Health and Health Professions  
                  Project: Effect of Chondroitinase ABC on the glial scar after cervical hemicontusion injury in adult rats.
- 2012-2013     Lauren Guimond  
                  College of Biomedical Sciences  
                  Project: Hypoxia induced changes in interneuron bursting within the cervical spinal cord.
- 2011-2013     Daniel Ross  
                  College of Public Health and Health Professions  
                  University Scholars Program  
                  Project: Effect of intraspinal delivery of Chondroitinase ABC and intermittent hypoxia training on respiratory recovery following cervical spinal cord Injury.
- 2011-2012     Roland-Austin Federico  
                  College of Public Health and Health Professions  
                  Project: Silver labeling of extracellular recording location within the cervical spinal cord in rats.
- 2009-2011     Rachel Mattio  
                  College of Public Health and Health Professions  
                  Project: Respiratory deficits in different transgenic mouse models of Amyotrophic Lateral Sclerosis.

## TEACHING

- Spring 2009     Supervised Teaching

Neuroscience in Physical Therapy  
UF Doctoral Program in Physical Therapy

Feb 2010      Invited guest lecture  
                  Motor Systems – Clinical aspects  
                  Neuroscience in Physical Therapy  
                  UF Doctoral Program in Physical Therapy

## PROFESSIONAL MEMBERSHIPS

2015 - International Society of Electrophysiology and Kinesiology

2006 - Society for Neuroscience

2009 - American Physiological Society

## PROFESSIONAL TRAINING

2016      Training in Grantsmanship for Rehabilitation Research (TIGRR), Isle of Palms, South  
                  Carolina, January 12-16, 2016

2006      Spinal Cord Injury Research Training Program  
                  (NIH sponsored 3 week program offered at the Ohio State University)

## NON-PROFESSIONAL MEMBERSHIPS

2006 - Sigma Xi Society

*Last Updated: Apr 2016*