

Curriculum Vitae

June 13, 2012

Name: Steven Gerard Kernie, M.D.
 Birth date: March 30, 1966
 Birthplace: USA (Spokane, Washington)
 Citizenship: USA

ACADEMIC TRAINING

Undergraduate

September 1984 -June1988	Stanford University Stanford, California	B.A., Human Biology, 1988
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Medical School

September1988 -June 1992	University of Washington School of Medicine Seattle, Washington	M.D., 1992
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CLINICAL TRAINING

July 1992 -June 1995	Pediatric Resident, Children's Medical Center Dallas, UT Southwestern Medical Center Dallas
July 1995 -June 1996	Pediatric Chief Resident, Children's Medical Center Dallas, UT Southwestern Medical Center Dallas
July 1996 -June 1999	Pediatric Critical Care Fellowship, Children's Medical Center Dallas, UT Southwestern Medical Center Dallas.

BOARD CERTIFICATION and LICENSURE

May 2011	The University of the State of New York Education Department Office of the Professions, Physician license 261353-1, certificate # 7457222
October 2007	American Board of Pediatrics, Board Certified (re-certification), Pediatric Critical Care
October 2002	American Board of Pediatrics, Board Certified (re-certification), General Pediatrics
October 2000	American Board of Pediatrics, Board Certified, Pediatric Critical Care, certificate #921
October 1996	American Board of Pediatrics, Board Certified, General Pediatrics, certificate #59164
November 1995-2011	Texas State Board of Medical Examiners, License #J8291

PROFESSIONAL SOCIETIES

2006-2010	Fellow, American Academy of Pediatrics
2004-Present	Society for Pediatric Research, Elected Member
2003-Present	National Neurotrauma Society
2001-Present	Society for Neuroscience
1999-Present	Society for Critical Care Medicine

ACADEMIC APPOINTMENTS

June 2011-	Associate Professor of Pediatrics and Pathology & Cell Biology (tenure track) Columbia University, College of Physicians and Surgeons Director, Division of Pediatric Critical Care Medicine
September 2008-2011	Associate Professor UT Southwestern Medical Center at Dallas Division of Applied Science Biomedical Engineering Program
September 2007-2011	Associate Professor UT Southwestern Medical Center at Dallas Departments of Pediatrics and Developmental Biology
September 2007-2011	Associate Professor UT Southwestern Graduate School of Biomedical Sciences Division of Basic Science Integrative Biology Program
September 2000-2011	Adjunct Assistant Professor of Cognition and Neuroscience The University of Texas at Dallas School of Behavioral and Brain Sciences
September 2003-2007	Assistant Professor UT Southwestern Graduate School of Biomedical Sciences Division of Basic Science Integrative Biology Program
September 2002-2007	Assistant Professor UT Southwestern Medical Center at Dallas Center for Developmental Biology
May 2002- April 2010	Director, Fellowship Program UT Southwestern Medical Center at Dallas Department of Pediatrics Division of Critical Care Medicine
July 1999-August 2007	Assistant Professor UT Southwestern Medical Center at Dallas

Department of Pediatrics
Division of Critical Medicine

January 1997- July 1999 Research Fellow
UT Southwestern Medical Center at Dallas
Center for Developmental Biology
(Mentor – Luis F. Parada, Ph.D.)

July 1995-June 1999 Assistant Instructor
UT Southwestern Medical Center at Dallas
Department of Pediatrics
Division of Critical Medicine

HOSPITAL APPOINTMENTS

June 2011- Chief of Critical Care Services, Morgan Stanley Children’s Hospital of
New York Presbyterian

June 2011- Attending Pediatrician, Morgan Stanley Children’s Hospital of New
York Presbyterian

May 2010-June 2011 Medical Director, Research Administration, Children’s Medical Center
Dallas

November 2004-June 2011 Director, Perot Family Center for Brain and Nerve Injuries, Children’s
Medical Center Dallas

July 1999- June 2011 Attending Physician, Pediatric Intensive Care Unit, Children’s Medical
Center Dallas

July 1995-June 1996 Pediatric Chief Resident, Children’s Medical Center Dallas

July 1992-June1995 Pediatric Resident, Children’s Medical Center Dallas

HONORS AND AWARDS

2004 Elected Member, Society for Pediatric Research

2003 Annual Scientific Award, Society for Critical Care Medicine,
32nd Annual Congress

2002 Young Investigator Fellow Award, Society for Critical Care Medicine,
31st Annual Congress

2000 President’s Research Council Distinguished Young Researcher Award,
The University of Texas Southwestern Medical Center at Dallas

1995 Pediatric Chief Resident, Children’s Medical Center at Dallas

1993 Arthur Campbell Research Fellowship, University of Washington
School of Medicine

FELLOWSHIP AND GRANT SUPPORT

Active Grant Support

National Institutes of Health, NINDS

The Role of Neural Stem Cells in Traumatic Brain Injury

5 R01 NS048192

2006-2012. Principal Investigator 30% (\$202,500 direct costs/yr)

Completed Grant Support

National Institutes of Health, NINDS

Ephrins Regulate Stem Cell Proliferation Following TBI

5 RO1 NS049545 (D. Liebl, U of Miami, PI)

2005-2010. Co-Principal Investigator 10% (\$42,000 direct costs/yr)

National Institutes of Health, NINDS

The Role of Neural Stem Cells in Traumatic Brain Injury

3R01NS048192-04S1

2009. Student Supplement (\$11,200 direct costs)

National Institutes of Health, NICHD

Genetic Factors in Outcome From Traumatic Brain Injury

5 RO1 HD048179 (R. Diaz-Arrastia, PI)

2004-2009, Co-Investigator and site PI

National Institutes of Health, NICHD

BDNF Promoter Elements in the Developing Hypothalamus

1K08 HD01470-01

2001-2006, Principal Investigator 70%

Children's Medical Center at Dallas Research Advisory Committee

Transplantation of Neural Stem Cells in Traumatic Brain Injury

\$15,000 support for D. Miles (Fellow)

2005, Faculty Sponsor and Project PI

Crystal Charity Ball Collaborative Program for Pediatric Brain Injuries, 2001,
Co-Principal Investigator, \$877,000.

President's Research Council Distinguished Young Researcher, 2000
\$60,000.

DEPARTMENT AND UNIVERSITY COMMITTEES

Department of Pediatrics, The University of Texas Southwestern Medical Center at Dallas

2004-2007	Member, Pediatric Intern Evaluation Committee
2003	Chair, Residency Review Committee, Pediatrics
2003	Pediatric Intern Advisor
2002-2011	Fourth-year medical student advisor for Pediatrics
2002-2010	Director, Pediatric Critical Care Fellowship Program

The University of Texas Southwestern Medical Center at Dallas

2010-2011	Co-director, Introduction to Embryology, first-year medical school core course
2010-2011	Executive Committee, Institutional Review Board
2009-2011	Interviewer for medical school admissions, UTSW
2005-2011	Organizer, Stem Cells in the Nervous System, Works in progress
2004-2007	Neural Injury and Neuroplasticity, Works in progress
2003-2011	Integrative Biology, Graduate Student Qualifying Committee, UTSW
2004-2011	Steering Committee, T32 Training Program in Burns, Trauma, and Critical Care (F. Nwariaku, Principal Investigator)
2003	Co-Chair, Judith and Charles Ginsburg Endowed Chair Fundraising Committee

Children's Medical Center Dallas

2002-2011	Member, Children's Clinical Research Advisory Committee
2002-2004	Program Director, Making a World of Difference Critical Care Lecture Series
2005-2010	Member, Graduate Medical Education Committee

TEACHING EXPERIENCE AND RESPONSIBILITIES

2010-2011	Co-director, Medical Embryology, core course for first-year medical students
2002-2010	Fellowship Program Director, Pediatric Critical Care
2003-2005	Co-Program Director, Reprogramming the Human Brain, collaborative conference on brain plasticity
2001-2004	Program Director, Making a World of Difference, Pediatric Critical Care conference.
2000-2011	Lecturer and discussion leader, Introduction to Embryology- required course for first year medical students.

Students, Residents, Fellows Mentored

<u>Years</u>	<u>Name</u>	<u>Position</u>	<u>Role</u>	<u>Current Position</u>
2012-present	Sue Hong, M.D.	Clinical Fellow	Mentor/PI	
2010-2011	Moushumi Dey	Graduate Student	Mentor/PI	
2009-2011	Jamie Wright	Green Fellow, UTD	Mentor/PI	
2009-2011	Kyle Lieppman, M.D.	Clinical Fellow	Lab Mentor	
2008-2009	Wei Li	Post-doctoral fellow	Mentor/PI	Senior research associate-UTSW
2008	Georgi Dimchev	Graduate Student	Lab Mentor	Postdoctoral Fellow-England
2008	Shereen Mohideen	UTA M.S. Student	Co-Mentor/PI	
2006-2011	Cui-Ping Yang, Ph.D.	Post-doctoral fellow	Mentor/PI	
2006-2008	Josh Koch, M.D.	Clinical Fellow	Lab Mentor	Asst Prof. Pediatrics-UTSW
2006-2011	Jennifer Gilley	Graduate Student	Mentor/PI	
2002-2008	Tzong-Shiue Yu	Graduate Student	Mentor/PI	Postdoctoral Fellow
2003-2007	Darryl Miles, M.D.	Clinical Fellow	Lab Mentor	Asst Prof. Pediatrics-UTSW
2002-2006	Jian Shi Ph.D.	Post-doctoral fellow	Mentor/PI	Instructor -- UCSF
2002-2004	Haitham Salman M.D.	Clinical Fellow	Lab Mentor	Indian Health Service,

2001-2003	William Ma M.D.	Clinical Fellow	Clinical Res Mentor	Anchorage, Alaska Asst Clinical Prof Riley Children's Hosp
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OTHER PROFESSIONAL ACTIVITIES

Editorial Review Activities

Ad hoc Reviewer

Applied Immunohistochemistry and Molecular Morphology (AIMM)
 Biological Psychiatry
 BMC Neuroscience
 Brain Research
 Cell Death and Differentiation
 Current Neuropharmacology
 Development
 Developmental Neuroscience
 Early Human Development
 European Journal of Neuroscience
 Experimental Neurology
 Genesis
 Hippocampus
 The Journal of Biological Chemistry
 The Journal of Cerebral Blood Flow and Metabolism
 The Journal of Neurochemistry
 The Journal of Neuroscience
 The Journal of Neuroscience Research
 The Journal of Pediatrics
 Nature Method
 Neurobiology of Disease
 Neuroscience Letters
 Pediatric Critical Care Medicine
 Pediatric Nephrology
 Physiological Genomics
 PLoS ONE
 The Pediatric Infectious Disease Journal
 Regulatory Peptides
 Stem Cells

Research Review Activities

Ad hoc Reviewer

2011	The Netherlands Organization for Health Research and Development
2008, 2010	National Science Foundation, Faculty Early Career Development Program
2008	Sigma Delta Epsilon/Graduate Women in Science Fellowship
2007	Department of Defense, Traumatic Brain Injury Research Program
2005	Biomedical Research Council (BMRC-Singapore)
2002-2011	Children's Clinical Research Advisory Committee (CCRAC, Children's Medical Center, Dallas)

Study Section Membership

2006-Present	The New Jersey Commission on Spinal Cord Research (NJCSCR)
2006-2007	NIH, CSR, guest member, Neurogenetics and Neuroimaging, MDCN-K
2007	NIH, CSR, guest member, Neurogenesis and Cell Fate, MDCN
2008-2009	NIH, CSR, guest member, Molecular Neurogenetics, MNG
2009-2013	NIH, CSR, permanent member, Molecular Neurogenetics, MNG
2011-2012	NIH, NCI, Special Emphasis Panel, Pediatric Loan Repayment

PUBLICATIONS**Original, Peer-reviewed Articles**

1. **Kernie, S.G.**, Liebl, D.J., and Parada, L.F. (2000) BDNF regulates weight and locomotor activity in mice. EMBO Journal. Mar: 19 (6). 1290-1300.
2. **Kernie***, S.G., Erwin, T.M., and Parada, L.F. (2001) Brain remodeling due to neuronal and astrocytic proliferation following controlled cortical injury in mice. The Journal of Neuroscience Research. Nov: 66(3). 317-326.
3. Ma, W., Shang-Feaster, G., Okada, P., and **Kernie, S.G.***. (2003) Elevated cerebrospinal fluid levels of glutamate in children with bacterial meningitis as a predictor of the development of seizures or other adverse outcomes. Pediatric Critical Care Medicine. 4(2). 170-175.
4. Salman, H., Ghosh, P., and **Kernie, S.G.** (2004) Subventricular zone neural stem cells remodel the brain following traumatic injury in adult mice. Journal of Neurotrauma. 21(3). 283-292.
5. Yu, T., Dandekar, M., Monteggia, L.M., Parada, L.F. and **Kernie***, S.G. (2005) Doxycycline-mediated expression of Cre recombinase in neural stem cells. Genesis. 41(4): 147-153.
6. Shi, J., Parada, L.F., and **Kernie, S.G.** (2005) Bax limits adult neural stem cell persistence through caspase and IP3 receptor activation. Cell Death and Differentiation. 12(12): 1601-1612.
7. Malkovska, I., **Kernie, S.G.**, and Parada, L.F. (2006) Differential expression of the four untranslated BDNF exons in the adult mouse brain. Journal of Neuroscience Research. 83(2): 211-221.
8. Yue, T., Xian, K., Hurlock, E., Xin, M., **Kernie, S.G.**, Parada, L.F., and Lu, Q. R. (2006) A critical role for dorsal progenitors in cortical myelination. Journal of Neuroscience. 26(4): 1269-1274.
9. Cai, J., Chen, Y., Cai, W.H., Hurlock, E.C., Wu, H., **Kernie, S.G.**, Parada, L.F., and Lu, Q.R. (2007) A crucial role for olig2 in white matter astrocyte development. Development. 134(10): 1887-1899.
10. Shi, J., Miles, D.K., Orr, B.A., Massa, S.M., and **Kernie***, S.G. (2007) Injury-induced neurogenesis in Bax-deficient mice: Evidence for regulation by voltage-gated potassium channels. European Journal of Neuroscience. 25(12): 3499-3412.

11. Chumley, M., Catchpole, T., Silvany, R., **Kernie, S.G.**, and Henkemeyer, M. (2007) EphB receptors regulate stem/progenitor cell proliferation, migration, and polarity during hippocampal neurogenesis. Journal of Neuroscience. 27(49): 1381-1390.
12. Koch, J., Miles, D.K., Gilley, J., Yang, C.P., and **Kernie*, S.G.** (2008) Brief exposure to hyperoxia depletes the glial progenitor pool and impairs functional recovery following hypoxic-ischemic brain injury. Journal of Cerebral Blood Flow and Metabolism. 28 (7): 1294-1306.
13. Miles, D.K. and **Kernie*, S.G.** (2008) Hypoxic-ischemic injury activates early hippocampal stem/progenitor cells to replace vulnerable neuroblasts. Hippocampus. 18(8): 793-806.
14. Li, Y., Luikart, B.W., Birnbaum, S., Chen, J., Kwon, C.H., **Kernie, S.G.**, Bassel-Duby, R., and Parada, L.F. (2008) TrkB regulates hippocampal neurogenesis and governs sensitivity to antidepressive treatment. Neuron. 59(3): 399-412.
15. Chen, Y., Miles, D.K., Hoang, T.N., Shi, J., Hurlock, E.C., **Kernie, S.G.**, and Lu, Q.R. (2008) The bHLH transcription factor Olig2 is critical for reactive astrocyte proliferation after cortical injury. Journal of Neuroscience. 28(43): 10983-10989.
16. Yu, T.S., Zhang, G., Liebl, D.J., and **Kernie*, S.G.** (2008) Traumatic brain injury-induced hippocampal neurogenesis requires activation of early nestin-expressing progenitors. Journal of Neuroscience. 28(48): 12901-12912.
17. Wright, J., Zhang, G., Yu, TS. and **Kernie*, S.G.** (2010) Age-related changes in the oligodendrocyte progenitor pool influence brain remodeling after injury. Developmental Neuroscience. 32(5-6): 499-509.
18. Gilley, J.A., Yang, C.P., and **Kernie*, S.G.** (2011) Developmental profiling of postnatal dentate gyrus progenitors provides evidence for dynamic cell-autonomous regulation. Hippocampus. 21(1): 33-47.
19. Blaiss, C.A., Yu, T.S., Zhang, G., Chen, J., Dimchev, G., Parada, L.F., Powell, C.M., and **Kernie*, S.G.** (2011) Temporally specified genetic ablation of neurogenesis impairs cognitive recovery following traumatic brain injury. Journal of Neuroscience. 31(13): 4906-4916.
20. Raman, L., Kong, X., Gilley, J.A. and **Kernie, S.G.** (2011) Chronic hypoxia impairs murine hippocampal development and depletes the postnatal progenitor pool by attenuating mTOR signaling. Pediatric Research. 70(2): 159-165.
21. Luikart B.W., Bensen A.L., Washburn E.K., Perederiy J.V., Su K.G., Li Y., **Kernie S.G.**, Parada L.F., and Westbrook G.L. (2011) miR-132 mediates the integration of newborn neurons into the adult dentate gyrus. PloS One. 6(5): e19077. Epub 2011 May 17.
22. Yang, C.P., Gilley, J.A., Zhang, G. and **Kernie*, S.G.** (2011) ApoE is required for maintenance of the dentate gyrus neural progenitor pool. Development. 138(20): 4351-4362.
23. Gilley, J.A. and **Kernie*, S.G.** (2011) GltI and Glast negatively regulate calcium-dependent proliferation of hippocampal neural progenitor cells and are persistently upregulated after injury. European Journal of Neuroscience. 34(11): 1712-1723.

24. Goto, J., Talos, D.M., Klein, P., Qin, W., Chekaluk, Y.I., Anderl, S., Malinowska, I.A., DiNardo, A., Bronson, R.T., Chan, J.A., Vintners, H.V., **Kernie, S.G.**, Jensen, F., Sahin, M. and Kwiatowski, D.J. (2011) Regulable neural progenitor-specific Tsc1 loss yields giant cells with organellar dysfunction in a model of tuberous sclerosis complex. Proceedings of the National Academy of Sciences. 108(45): E1070-1079.
25. Weng, Q., Chen, Y., Wang, H., Xu, X., Yang, B., He, Q., Shou, W., Chen, Y., Higashi, Y., van den Berghe, V., Seuntjens, E., **Kernie, S.G.**, Bukshpun, P., Sherr, E. H., Huylebroeck, D., and Lu, Q.R. (2012) Dual-mode modulation of Smad signaling by Smad-Interacting protein Sip1 is required for myelination in the central nervous system. Neuron. 73 (4): 713-728.
26. Kappor, R., Desouza, L.A., Nanavaty, I.N., **Kernie, S.G.**, and Vaidya, V.A. (in press) Thyroid hormone accelerates the differentiation of adult hippocampal progenitors. Journal of Neuroendocrinology.
27. Chen, J., Yu, T.Z., McKay, R.M., Burns, D.K., **Kernie, S.G.**, and Parada, L.F. (in press). Cancer stem cells sustain glioblastoma tumor growth and infiltration in vivo. Nature.

**Corresponding/Senior Author*

Invited Reviews, Articles, and Book Chapters

1. **Kernie, S.G.** and Mustafa, M. (1995) Fever and Neutropenia: Defining Low-risk Groups. Pediatric Infectious Disease Journal. Jan: 14 (1): 82-3.
2. **Kernie, S.G.** and Parada, L.F. (2000) The Molecular Basis for Understanding the role of Neurotrophins in Human Disease. Archives of Neurology. May: 57(5): 654-57.
3. Rubenstein, J.L.R. and **Kernie, S.G.** (2004) Overview of Brain Development. In: Neurobiology of Mental Illness. Charney and Nestler eds.
4. Miles, D.M. and **Kernie S.G.** (2006) Brain Remodeling and Regeneration after Injury. Moller, ed. Progress in Brain Research. 157(12): 187-197.
5. **Kernie, S.G.** and Lehman S.M. (2007) Intracranial Hypertension. In: Wheeler, Wong, and Shanley, eds. Pediatric Critical Care Medicine: Basic Science and Clinical Evidence. 1st ed. Springer-Verlag Publishing, Inc., London, UK. (80). 902-916.
6. Tansey, M.G. and **Kernie, S.G.** (2009) Inflammation in Neurodegenerative Disease and Injury. In: Squire LR (ed.) Encyclopedia of Neuroscience, Volume 5. 131-136. Oxford: Academic Press.
7. **Kernie, S.G.** and Parent, J.M. (2010) Forebrain Neurogenesis after Focal Ischemic and Traumatic Brain Injury. Neurobiology of Disease. 37 (2): 267-274.
8. **Kernie, S.G.** (2011) Management of Cerebral Edema and Elevated Intracranial Pressure. In: Rudolph's Pediatrics, 22nd Edition, Rudolph, C. ed. McGraw-Hill Publishing. Chapter 111. 420-422.
9. Koch, J.D. and **Kernie, S.G.** (2011) Protecting the Future: Neuroprotective Strategies in the Pediatric Intensive Care Unit. Current Opinion in Pediatrics. 23: 275-280.