CURRICULUM VITAE

Name: NIHAL CHANDRA DE LANEROLLE

Education:

B.Sc. Honors, Zoology, University of Ceylon (1967)
D.Phil., Neuroethology, University of Sussex, England (1972)
B.A. Honors, Theology & Rel. Studies, University of Cambridge, England (1974)
M.A. University of Cambridge, England (1981)
D.Sc. (Higher doctoral degree), University of Sussex, England (1995)

Career:

1967 - 1969	Assistant Lecturer, Department of Zoology, University of Ceylon
1969 - 1972	Doctoral student, University of Sussex, England
1972 - 1974	Affiliated student in Philosophy & Theology, University of Cambridge Research Fellow, Sub Department of Animal Behavior, University of Cambridge (Part-time)
1974 - 1978	Postdoctoral Fellow, Departments of Animal Science & Pharmacology, University of Minnesota
1978 - 1979	Postdoctoral Fellow, Dept. Psychiatry, Yale University
1979 - 1982	Associate Research Scientist, Section of Neurological Surgery, Yale Univ.
1982 - 1986	Assistant Professor of Surgery (Neurosurgery) and Neuroanatomy, Yale University
1986 - 1992	Associate Professor of Surgery (Neurosurgery) and Neurobiology, Yale University
1992 - 2005	Associate Professor with Tenure, Neurosurgery and Neurobiology, Yale University
2001–2002	(On leave from Yale). College Chaplain and Professor (Adjunct) in Neuroscience, Trinity College, Hartford, Connecticut.
2005 July - present	Professor of Neurosurgery & Neurobiology, Yale School of Medicine
2007 - present	Visiting Professor in Biology & Neuroscience, Wesleyan University, Middletown, Connecticut

Professional Honors or Recognition:

University of Ceylon Postgraduate Scholarship for doctoral studies in the UK (1969-1972)
Timmin's Memorial Scholarship, Jesus College, Univ. of Cambridge (1972-1974)
Elected Corresponding Member of the German League Against Epilepsy (1992).
Fulbright Senior Scholar to Sri Lanka (1998-99)
External Examiner for higher doctoral degrees (D.Sc.) Univ. of Peradeniya, Sri Lanka

Professional Service:

Ad Hoc member of the Neurological Sciences Study Section of the National Institutes of Health (1985)

Member National Institute of Mental Health Study Section on "Cognitive Functional Neuroscience," (1992 - 1994)

Member, Genetics Task Force, American Epilepsy Society (2000 – 2002)

Member, Sensory, Motor and Cognitive Neuroscience Fellowships Study Section (2007 2008)

Systems Integrator, PREVENT Phase 2, Defense Advanced Research Projects Agency (DARPA), 2010 – 2012.

Research Trainees

Undergraduate

Peter W. Chatfield, 1982 – 1983, Undergraduate Senior Thesis, Wesleyan University, Middletown, CT, "Brain stimulation evoked vocalizations in the domestic chick."
Attended Yale Law School, and presently partner od Phillips & Cohen LLP

Trac Duong, 1994 – 1996 Yale Undergraduate Senior Thesis, "Hyperthermic seizures in rats."
Went on to earn MD degree from Yale Medical School and presently skull base and otolaryngology surgeon.

Carlos Paz 1996 – 1999 Yale Undergraduate Senior Thesis, "GABA transporters in human hippocampal seizure foci."
Went on to earn an MD and PhD degrees from Harvard and presently a dermatological surgeon in private practice.

Arko Gosh - 2004, Undergraduate Senior Thesis, Trinity College, Hartford "A new animal model of temporal lobe epilepsy".
Presently completed Ph.D. and Associate Professor at the University of Zurich. Switzerland

Darren Lee - 2006 -2009 Undergraduate research Yale, "The distribution of Plectin 1 in the hippocampus of patients with temporal lobe epilepsy
Presently completing medical studies at the University of British Columbia, Canada

Alexander Y. Lee – 2009 – 2012 Yale Undergraduate Senior Thesis, "Molecular mechanisms erythropoietin mediated neuroprotection in a novel seizure model"
Presently 2nd year medical student at Stanford Medical School, Stanford, California

Damian Stobiersky – 2011 – present. Yale Undergraduate senior Thesis, "Molecular mechanisms in hyperthermic seizures."

Post-graduate

Frederick F. Lang Jr. "Mapping of vocalization areas within the brain of the domestic cat using electrical stimulation with 14C-2-deoxyglucose and tract tracing methods.
Yale MD thesis Honors 1988
Presently Professor of Neurosurgery and Director of Research, MD Anderson Cancer Center, Texas

Theodore Miclau III, "Facial tics in Gilles de La Tourette syndrome". Yale MD thesis Honors 1988.
Presently Professor and Vice Chair, Orthopedic Trauma Institute, University of San Francisco, CA.

Sanjoy Sunderesan, "Neurochemical changes in the hippocampus in human temporal lobe epilepsy" Yale MD thesis Honors 1990
Presently Neurosurgeon in Private Practice

John R. Tompkins, "Alterations in D2 receptor concentration in human temporal lobe epilepsy. Yale MD Thesis 1990
Presently Neurosurgeon in private practice

Matthew F. Philips, "Synaptic and pathway remodeling of the human hippocampus in temporal lobe epilepsy." Yale MD thesis Honors 1993

Subu Magge, "Characterization of human astrocytes cultured from tumor related neocortical seizure foci." Yale MD thesis Honors, 1993
Presently neurosurgeon at the Lahey Hospital and Medical Center, Massachusetts

Trac M Duong, "Upregulation of BDNF mRNA in the rat hippocampus after single and recurrent hyperthermia induced seizures." Yale MD Thesis 2002
Present position – Skull base and ENT (Otolaryngology) surgeon, Adjunct Faculty University of Minnesota and Private Practice.

Herriot Tabuteau, "Physiological determinants of $GABA_A$ receptor number in living human hippocampal and neocortical brain slices." Yale MD thesis, Honors, 1994
Presently, Chief Executive Officer at Axsome Therapeutics, Inc., New York

Amos O. Dare, "Ouabain potentiates kainate neurotoxicity: A new rat model of human temporal lobe epilepsy." Yale MD thesis, 1996
Presently neurosurgeon in private practice

Kofi B. Asamadu, "Neurochemical organization of the human subiculum and temporal lobe epilepsy." Yale MD thesis, 1998

Tih-Shih Lee, M.D. "Genomic and Pathophysiological Characterization of Hippocampal Sclerosis in Human Temporal Lobe Epilepsy" Ph.D. thesis, Yale University, 2005
Presently Associate Professor in Psychiatry, Duke University, NC

Postdoctoral Fellows

Clive Coen, D,Phil. *Oxford* (1983 – 1985) – Neurotransmitter localization in the human spinal cord
John P. Partington, MD., (1986 - 1987) Human pituitary tumors
Kamal Thapar, MD. *Toronto (1987- 1989)* Role of somatostatin in the human epileptic hippocampus
Conrad Pappas, MD., (1990 – 1991) Ultrastructural changes in the human epileptogenic hippocampus
Eric W. Johnson, Ph.D. (1990 – 1992) Neurotransmitter receptor localization in the human epileptogenic hippocampus
Weiguo Jiang, MD; (1991 – 1996) Hyperthermia induced seizures in the rat
Hong Xie , Ph.D. *Smith College* – Transposons in human temporal lobe epilepsy
Gord von Campe, MD., Ph.D. *Lausanne* (1997 – 2002) – Neuronal morphology in human hippocampal seizure foci
Edward O'Connor, Ph.D. – Physiology of astrocytes in human seizure foci
John Pizzonia, Ph.D. – Characterization of neurochemical properties of astrocytes in human seizure foci.
Tore Eid, MD., Ph.D. *Bergen* (2002-2006) – Histopathology of human seizure foci.
Yue Wang, Ph.D. *Memphis (2006 – 2008)* Developing animal models of temporal lobe epilepsy
Lars Petter Björnsen, Md., Ph.D. *Oslo (2004 – 2005)* GABA and glutamate transporters in astrocytes from human epileptic seizure foci
K. Heuser, MD, Ph.D. *Oslo (2010 – 2011)* Potassium Kir4.1expression in human seizure foci,
Argyle Baumanglag, Ph.D. *Arizona (2010 – 2012)* Perforant path stimulation induced temporal lobe epilepsy models in the rat

Bibliography:

Peer-reviewed original research

1] de Lanerolle, N. and Andrew, R.J. (1974) Midbrain structures controlling vocalizations in the domestic chick. Brain Behavior and Evolution, 10: 354 - 376.

2] Andrew, R.J. and de Lanerolle, N. (1974) Effects of muting lesions on the emotional behavior and behavior normally associated with calling. Brain, Behavior and Evolution, 10: 377 - 399.

3] de Lanerolle, N.C. (1977) Amphetamine and chick behavior: A role for the monoamines in the causation of vocalizations and emotion. Brain Behavior and Evolution, 14: 418 - 439.

4] de Lanerolle, N.C. (1978) The effects of amphetamine on the behavior of decerebrate domestic chicks. Comparative Biochemistry and Physiology, 60C: 75 - 77.

5] de Lanerolle, N.C. and Youngren, O.M. (1978) Chick vocalizations and emotional behavior influenced by apomorphine. Journal of Comparative and Physiological Psychology, 92: 416 - 430.

6] de Lanerolle, N.C. and Millam, J.R. (1980) Dopamine, chick behavior and states of attention. Journal of Comparative and Physiological Psychology, 94: 346 - 352.

7] Martin, J.T., de Lanerolle, N.C. and Phillips, R.E. (1979) Avian archistriatal influences on fear motivated behavior and adrenocorticoid function. Behavioral Processes, 4: 284 - 293.

8] Elde, R.P., Haber, S., Ho, R., Holets, V., de Lanerolle, N., Maley, B., Micevych, P., Seybold, V. (1980) Interspecies conservation and variation in peptidergic neurons. Peptides, 1: Supplement 1, 21 - 26.

9] de Lanerolle, N.C., Elde, R.P., Sparber, S.B. and Frick, M.L. (1981) Distribution of methionine-enkepahlin immunoreactivity in the chick brain: An immunohistochemical study. Journal of Comparative Neurology, 199: 513 - 533.

10] LaMotte, C.C. and de Lanerolle, N.C. (1981) Human spinal neurons: Innervation by both substance P and enkephalin. Neurosicences, 6: 713 - 723.

11] LaMotte, C.C., Johns, D.R. and de Lanerolle, N.C. (1982) Immunohistochemical evidence of indoleamine neurons in monkey spinal cord. Journal of Comparative Neurology, 206: 359 - 370.

12] de Lanerolle, N.C. and LaMotte, C.C. (1982) The morphological relationships between substance P immunoreactive processes and ventral horn neurons in the human and monkey spinal cord. Journal of Comparative Neurology, 207: 305 - 313.

13] de Lanerolle, N.C. and LaMotte, C.C. (1982) The human spinal cord: Substance P and methionine-enkephalin like immunoreactivity. Journal of Neuroscience, 2: 1369 - 1386.

14] de Lanerolle, N.C. and LaMotte, C.C. (1983) Ultrastructure of chemically defined neuron systems in the dorsal horn of the monkey. I. Substance P immunoreactivity. Brain Research, 274: 31 - 49.

15] LaMotte, C.C. and de Lanerolle, N.C. (1983) Ultrastructure of chemically defined neuron systems in the dorsal horn of the monkey. II. Methionine-enkephalin immunoreactivity. Brain Research 274: 51 - 63.

16] LaMotte, C.C. and de Lanerolle, N.C. (1983) Ultrastructure of chemically defined neuron systems in the dorsal horn of the monkey. III. Serotonin immunoreactivity. Brain Research, 274: 65 - 77.

17] Kapadia, S.E. and de Lanerolle, N.C. (1984) Immunohistochemical and electronmicroscopic demonstration of vascular innervation in the mammalian brain stem. Brain Research, 292: 33 - 39.

18] Kapadia, S.E. and de Lanerolle, N.C. (1984) Populations of substance P, met-enkephalin and serotonin neurons in the interpeduncular nucleus of the cat: Cytoarchitectonics. Brain Research, 302: 33 - 43.

19] Kapadia, S.E. and de Lanerolle, N.C. (1984) Substance P neuronal organization in the median region of the interpeduncular nucleus of the cat: An electron microscopic analysis. Neuroscience, 12: 1229 - 1242.

20] Kapadia, S.E. and de Lanerolle, N.C. (1984) The ultrastructure and organization of methionine-enkephalin immunoreactive profiles in the interpeduncular nucleus of the cat. Journal of Comparative Neurology, 229: 48 - 65.

21] Kapadia, S.E., de Lanerolle, N.C. and LaMotte, C.C. (1985) Immunocytochemical and electron microscopic study of serotonin neuronal organization in the dorsal raphe of the monkey. Neuroscience, 15: 729 - 746.

22] LaMotte, C.C. and de Lanerolle, N.C. (1986) VIP terminals, axons and neurons: Distribution throughout the length of the spinal cord. Journal of Comparative Neurology, 249: 133 - 145.

23] Akesson, T.R., de Lanerolle, N.C. and Cheng, M-F. (1987) Ascending vocalization pathways in the female Ring Dove: Projections of the nucleus Intercollicularis. Experimental Neurology, 95: 34 - 43.

24] Cheng, M-F., Akesson, T.R. and de Lanerolle, N.C. (1987) Retrograde HRP demonstration of afferent projections to the midbrain and nest calls in the Ring Dove. Brain Research Bulletin, 18: 45 - 48.

25] Axiotis, C.A., Lippes, H.A., Merino, M.J., de Lanerolle, N.C., Stewart, A.F. and Kinder, B. (1987) Corticotroph cell pituitary adenoma within an ovarian teratoma. American Journal of Surgical Pathology, 11: 218 - 224.

26] de Lanerolle, N.C., Kim, J.H., Robbins, R.J. and Spencer, D.D. (1989) Hippocampal interneuron loss and plasticity in human temporal lobe epilepsy. Brain Research, 495: 387 - 395.

27] Carlton, S.M., LaMotte, C.C., Honda, C.N., Surmeier, D.J., de Lanerolle, N.C. and Willis, W.D. (1989) Ultrastructural analysis of axosomatic contacts on functionally identified primate spinothalamic tract neurons. Journal of Comparative Neurology, 281: 555 - 566.

28] de Lanerolle, N.C. (1990) A pontine call site in the domestic cat: Behavior and neural pathways. Neuroscience, 37: 201 - 214.

29] Robbins, R.J., Brines, M.L., Kim, J.H., de Lanerolle, N.C., Welsh, S. and Spencer, D.D. (1991) A selective loss of somatostatin in the hippocampus of patients with temporal lobe epilepsy. Annals of Neurology, 29: 325 - 332.

30] Johnson, E.W., de Lanerolle, N.C., Kim, J.H., Sundaresan, S., Spencer, D.D., Mattson, R.H., Zoghbi, S.S., Baldwin, R.M., Hoffer, P.B., Seibyl, J.P. and Innis, R.B. (1992) "Central" and "peripheral" benzodiazepine receptors: Opposite changes in human epileptic tissue, Neurology, 42: 811 - 815

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32] Brines, M.L., Tabuteau, H., Sundaresan, S., Kim, J.H., Spencer, D.D. and de Lanerolle, N.C. (1995) Regional distribution of Na+,K+-ATPase, cytochrome oxidase, and total protein in temporal lobe epilepsy, Epilepsia, 36: 371 - 383

33] Brines, M.L., Dare, A.O. and de Lanerolle, N.C. (1995) The cardiac glycoside ouabain potentiates excitotoxic injury of adult neurons in rat hippocampus, Neuroscience Letters, 191: 145 - 148.

34] de Lanerolle, N.C., Gunel, M., Sundaresan, S., Shen, M-Y, and Spencer, D.D. (1995) Vasoactive intestinal polypeptide changes in human temporal lobe epilepsy, Brain Research, 686: 182 - 193.

35] Luby, M., Spencer, D.D., de Lanerolle, N.C. and McCarthy (1995) Hippocampal MRI volumetrics and temporal lobe substrates in medial temporal lobe epilepsy, MRI 13: 1065 - 1072.

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39] Brines, M.L., Sundaresan, S., Spencer, D.D. and de Lanerolle, N.C. (1997) Quantitative autoradiographic analysis of ionotropic glutamate receptor subtypes in human temporal lobe epilepsy: up-regulation in reorganized epileptogenic hippocampus, European Journal of Neuroscience, 9: 2035 - 2044

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rage behavior elicited from the medial hypothalamus of the cat, Brain Research, 765: 198 - 207

41] de Lanerolle, N.C., Eid, T., von Campe, G., Kovacs, I., Spencer, D.D. and Brines, M.L. (1998) Glutamate receptor subunits GluR1 and GluR2/3 distribution shows reorganization in the human epileptogenic hippocampus, European Journal of Neuroscience 10: 1687 - 1703.

42] O'Connor, E.R., Sontheimer, H., Spencer, D.D. and de Lanerolle, N.C. (1998) Astrocytes from human hippocampal epileptogenic foci exhibit action potential like responses, Epilepsia 39: 347 - 354.

43] Xie, H., Brines, M.L. and de Lanerolle, N.C. (1998) Transcripts of the transposon *mariner* are present in epileptic brain, Epilepsy Research 32: 140 - 153.

44] Jiang, W., Duong, T.M. and de Lanerolle, N.C. (1998) The neuropathology of hyperthermic seizures in the rat, Epilepsia 40: 5 - 19.

45] Spencer, S.S., Kim, J.H., de Lanerolle, N. and Spencer, D.D. (1999) Differential neuronal and glial relations with parameters of ictal discharge in medial temporal lobe epilepsy, Epilepsia 40: 708 - 712.

46] Brines, M.L., Ghezzi, P., Keenan, S., Agnello, D., de Lanerolle, N.C., Cerami, C., Itri, L.M. and Cerami, A. (2000) Erythropoietin crosses the blood-brain barrier to protect against experimental brain injury, PNAS 97: 10526 - 10531.

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49] de Lanerolle, N.C., Kim, J.H., Williamson, A., Spencer, S.S., Zaveri, H.P., Eid, T., and Spencer, D.D. (2003) A retrospective analysis of hippocampal pathology in human temporal lobe epilepsy: Evidence for distinctive patient subcategories. Epilepsia 44: 677 – 687.

50] Amiry-Moghaddam, M., Williamson, A., Palomba, M., Eid, T., de Lanerolle, N.C., Nagelhus, E.A., Adams, M E., Froehner, S.C., Agre, P., and Ottersen, O-P. (2003) Delayed K+ clearance associated with aquaporin-4 mislocalization: Phenotypic defects in brains of α–syntrophin-null mice. Proc. Natl. Acad. Sci. 100: 13615 - 13620

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51] Eid, T., Brines, M.L, Cerami. A.,Spencer, D.D., Kim, J.H., Schweitzer, J.S., Otterson, O.P., and de Lanerolle, N.C. (2004) Increased expression of erythropoietin receptor on blood vessels in the human epileptogenic hippocampus. J. Neuropathology and Experimental Neurology 63: 73 – 83.

52] Lee, T-S., Eid, T., Mane, S., Kim, J.H., Spencer, D.D., Ottersen, O.P., and de Lanerolle, N.C. (2004) Aquaporin-4 is increased in the sclerotic hippocampus in human temporal lobe epilepsy. Acta Neuropathologica 108: 493-502.

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54] de Lanerolle, N.C. and Lee, T-S. (2005) New facets of the neuropathology and molecular profile of human temporal lobe epilepsy. Epilepsy & Behav. 7:190-203.

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58] Bjørnsen, L.P., Eid, T., Holmseth, S., Danbolt, N.C., Spencer, D.D. and de Lanerolle, N.C. (2006) Changes in glial glutamate transporters in human epileptogenic hippocampus: Inadequate explanation for high extracellular glutamate during seizures. Neuribiol. Dis. 25: 319 - 330

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[62] Gomes, W.A., Lado, F.A., de Lanerolle, N.C., Takahashi, K., Pan, C. and Hetherington, H.P. (2007) Spectroscopic imaging of the pilocarpine model of human epilepsy suggests that early NAA reduction predicts epilepsy. Magnetic Resonance in Med. 58: 230 – 235.

[63] Eid T, Williamson A, Lee TS, Petroff OA, de Lanerolle NC. (2008) Glutamate and astrocytes--key players in human mesial temporal lobe epilepsy? Epilepsia. 49: Suppl 2:42-52. Review.

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[65] Bauman, R.A., Ling, G.S., Tong, T., Januszkiewicz, A., Agoston, D., de Lanerolle, N.C., Kim, J.H., Ritzel, D., Bell, R., Eklund, J.M., Arminda, R., Bandak, F., and Parks, S. (2009) An introductory characterization of a combat-casualty-care relevant swine model of closed head injury resulting from exposure to explosive blast. J. Neurotrauma 26: 841 – 860.

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[69] Lauritzen F, de Lanerolle NC, Lee TS, Spencer DD, Kim JH, Bergersen LH, Eid T. Monocarboxylate transporter 1 is deficient on microvessels in the human epileptogenic hippocampus. Neurobiol Dis. 2011 Feb;41(2):577-84.

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Book chapters

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