**Curriculum Vitae**

Charles Harker Rhodes, M.D., Ph.D

Senior Scientist [C]; National Institute of Mental Health

Human Brain Collection Core

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**Education:**

1982 Rockefeller University, Ph.D.

1982 Cornell University Medical College, M.D.

1975 Harvard College, A.B., (magna cum laude)

**Postdoctoral Training:**

1987-1988 Neuropathology Fellowship, Hospital of the University of Pennsylvania

1982-1987 Pathology Residency, Hospital of the University of Pennsylvania

**Licensure and Certification:**

1988 Board Certified in Anatomic and Neuropathology, 1988

1990 State of New Hampshire medical license #8418 (current)

**Academic Appointments:**

2014 – present Senior Scientist [C] National Institute of Mental Health

2011 – 2013 Professor of Pathology and Neurology, Geisel School of Medicine at Dartmouth

2010 – 2011 Professor of Pathology, Dartmouth Medical School, Hanover, NH

1996 – 2010 Associate Professor of Pathology, Dartmouth Medical School, Hanover, NH

1990 – 1996 Assistant Professor of Pathology, Dartmouth Medical School, Hanover, NH

1988 – 1990 Assistant Professor, School of Medicine, Univ. Pennsylvania, Philadelphia, PA

1982 – 1987 Assistant Instructor, School of Medicine, Univ. Pennsylvania, Philadelphia, PA

**Hospital Appointments:**

1990-2013 Staff Pathologist, Mary Hitchcock Memorial Hospital, Lebanon, NH

2008-2013 Director of the Autopsy Service, Dartmouth-Hitchcock Medical Center

**Membership, Office & Committee Assignments in Professional Societies:**

1988-Present American Association of Neuropathologists,

Professional Affairs Committee (2002-2006)

Assistant Secretary/Treasurer (2006-2008)

Secretary/Treasurer (2008 – 2013)

1991-2014 Canadian Association of Neuropathologists

1992-2014 College of American Pathologists (CAP)

**Major Extramural Committee Service and Consultations:**

NCI/NIH/NSF study sections and other grant review activities

2010 NCI Review: SBIR Contract - Topics 257, 272, 284

2005 NCI ad hoc review committee NCI-E RPRB-5 (S3)

2005 External grant reviewer for Italian Telethon Foundation

2004 NCI ad hoc review committee NCI-E GRB-F (X2)

2003 NIH ad hoc review committee ZCA1 GRB-F (J1)

1999 NCI ad hoc review committee RFA CA-98-013

1997 NCI ad hoc review committee P01-CA68426-01A2

1996 NSF ad hoc review committee MCB-9602106

1995 NCI ad hoc review committee 2P01-CA-55261-04 A1 (Oct 19, 1995)

1995 NCI ad hoc review committee 2P01-CA-55261-04 (Feb 21-23, 1995)

**Teaching Experience:**

**Giesel School of Medicine at Dartmouth:**

2012-2014 Organized and presented the one-week workshop “Pathology and Genetics of Human Cognition”

2011-2014 Organized and presented the Enrichment Elective “Genetic Polymorphisms Affecting Human Cognition”

2006-2013 Neuroanatomy practicum for PGY3 psychiatry residents

2005-2013 Regularly scheduled guest lecturer in PBBD course

2008-2009 Neurology section pathology coordinator, medical school course “Scientific Basis of Medicine” (SBM)

1990-2012 Neuropathology section of “SBM” for second year medical students

**Other institutions:**

2014 Organized and presented Special Course on Genetic Polymorphisms Affecting Human Cognition - Course Number: 197-2-0004, Ben Gurion University (Israel)

2013 Organized and presented the workshop “Genetic Polymorphisms Affecting Human Cognition”, Charles University (Prague) and International Clinical Research Center (Brno, Czech Republic)

2010-Present Co-director; “The Visceral Mind” Bangor University (Wales, UK)

2008 Briefing on Neurogenetics, Defense Science Board Task Force on IEDs (Arlington, VA)

2007-Present Continuing Faculty; Summer Institute in Cognitive Neuroscience (Santa Barbara, CA)

2006 After-dinner speaker, Wisconsin Parkinson’s Association gala fundraiser

**Bibliography:**

**Original Articles:**

1 Shee K, Lucas A, Flashman LA, McDonald BC, Saykin AJ, McAllister TW, **Rhodes CH** Synuclein polymorphisms associated with worse cognitive function after mild traumatic brain injury are different than those associated with increased risk of Parkinson’s disease [In preparation]

2 Jhala-KN, Flashman LA, McDonald BC, Saykin AJ, McAllister TW, **Rhodes CH** Cognitive Performance after Mild TBI: Interaction of Cognitive Reserve and CHRNA5 [In preparation]

3 Ramsaya JE, **Rhodes CH**, Thirtamara-Rajamanib K, Ryan M. Smith RM Genetic and epigenetic regulation of nicotinic α5 receptor (CHRNA5) mRNA expression in addiction-related brain regions [In preparation]

4 Hartford AC, Paravati AJ, Spire WJ, Li Z, Jarvis LA, Fadul CE, **Rhodes CH**, Erkmen K, Friedman J, Gladstone DJ, Hug EB, Roberts DW, Simmons NE. Postoperative stereotactic radiosurgery without whole-brain radiation therapy for brain metastases: potential role of preoperative tumor size. Int J Radiat Oncol Biol Phys. 2013 Mar 1;85(3):650-5

5 McAllister TW, Tyler AL, Flashman LA, **Rhodes CH**, McDonald BC, Saykin AJ, Tosteson TD, Tsongalis GJ, Moore JH. Polymorphisms in the brain-derived neurotrophic factor gene influence memory and processing speed one month after brain injury. J Neurotrauma. 2012 Apr 10;29(6):1111-8.

6 Albert DA, Cohen JA, Burns CM, Hickey WF, Prock TL, James JA, **Rhodes CH**, Wortmann RL. When should a rheumatologist suspect a mitochondrial myopathy? Arthritis Care Res (Hoboken). 2011 Nov;63(11):1497-502

7 Kreuter JD, Barnes A, McCarthy JE, Schwartzman JD, Oberste MS, **Rhodes CH**, Modlin JF, Wright PF. A fatal central nervous system enterovirus 68 infection. Arch Pathol Lab Med. 135(6):793-6, 2011.

8 Fadul CE, Fisher JL, Hampton TH, Lallana EC, Li Z, Gui J, Szczepiorkowski ZM, Tosteson TD, **Rhodes CH**, Wishart HA, Lewis LD, Ernstoff MS. Immune response in patients with newly diagnosed glioblastoma multiforme treated with intranodal autologous tumor lysate-dendritic cell vaccination after radiation chemotherapy. J Immunother. 34(4):382-9, 2011.

9 Wishart HA, Roth RM, Saykin AJ, **Rhodes CH**, Tsongalis GJ, Pattin KA, Moore JH, McAllister TW. COMT Val158Met genotype and individual differences in executive function in healthy adults. J Int Neuropsychol Soc. 17(1):174-80, 2011.

10 Sloan CD, Shen L, West JD, Wishart HA, Flashman LA, Rabin LA, Santulli RB, Guerin SJ, **Rhodes CH**, Tsongalis GJ, McAllister TW, Ahles TA, Lee SL, Moore JH, Saykin AJ. Genetic pathway-based hierarchical clustering analysis of older adults with cognitive complaints and amnestic mild cognitive impairment using clinical and neuroimaging phenotypes. Am J Med Genet B Neuropsychiatr Genet 153B(5):1060-1069, 2010.

11 Lathrop MJ, Chakrabarti L, Eng J, **Rhodes CH**, Lutz T, Nieto A, Liggitt HD, Warner S, Fields J, Stöger R, Fiering S. Deletion of the Chd6 exon 12 affects motor coordination. Mamm Genome 21(3-4):130-142, 2010.

12 Lonesky TA, Kreuter JD, Wortmann RL, **Rhodes CH**. Hydroxychloroquine and colchicine induced myopathy. J Rheumatol 36(11):2617-2618, 2009.

13 McAllister TW, Flashman LA, **Rhodes CH**, Tyler AL, Moore JH, Saykin AJ, McDonald BC, Tosteson TD, Tsongalis GJ. Single nucleotide polymorphisms in ANKK1 and the dopamine D2 receptor gene affect cognitive outcome shortly after traumatic brain injury: a replication and extension study. Brain Inj. 22(9):705-14, 2008.

14 Fadul CE, Kingman LS, Meyer LP, Cole BF, Eskey CJ, **Rhodes CH**, Roberts DW, Newton HB, Pipas JM. A phase II study of thalidomide and irinotecan for treatment of glioblastoma multiforme. J Neurooncol. 90(2):229-235, 2008.

15 Blackburn JS, **Rhodes CH**, Coon CI, Brinckerhoff CE.RNA interference inhibition of matrix metalloproteinase-1 prevents melanoma metastasis by reducing tumor collagenase activity and angiogenesis. Cancer Res. 67(22):10849-58, 2007.

16 Zarovnaya EL, Pallatroni HF, Hug EB, Ball PA, Cromwell LD, Pipas JM, Fadul CE, Meyer LP, Park JP, Biegel JA, Perry A, **Rhodes CH**. Atypical teratoid/rhabdoid tumor of the spine in an adult: case report and review of the literature. J Neurooncol 84(1):49-55, 2007.

17 Perez RP, Lewis LD, Beelen AP, Olszanski AJ, Johnston N, **Rhodes CH**, Beaulieu B, Ernstoff MS, and Eastman A. Modulation of Cell Cycle Progression in Human Tumors: A Pharmacokinetic and Tumor Molecular Pharmacodynamic Study of Cisplatin Plus the Chk1 Inhibitor UCN-01 (NSC 638850). Clin Cancer Res 12: 7079-7085, 2006.

18 Wishart HA, Saykin AJ, McAllister TW, Rabin LA, McDonald BC, Flashman LA, Roth RM, Mamourian AC, Tsongalis GJ, **Rhodes CH**. Regional brain atrophy in cognitively intact adults with a single APOE epsilon4 allele. Neurology 67(7):1221-4, 2006.

19 Fadul CE, Kominsky AL, Meyer LP, Kingman LS, Kinlaw WB, **Rhodes CH**, Eskey CJ, Simmons NE. Long term response of pituitary carcinoma to temozolomide. J Neurosurg 105:621-626, 2006.

20 Wishart HA, Saykin AJ, Rabin LA, Santulli RB, Flashman LA, Guerin S, Mamourian AC, Belloni DR, **Rhodes CH**, McAllister TW. Increased brain activation during working memory in cognitively intact adults with the APOE epsilon4 allele. Am. J. Psych 163(9):1603-10, 2006.

21 McAllister TW, **Rhodes CH**, Flashman LA, McDonald BC, Belloni D, Saykin AJ. Effect of the dopamine D2 receptor T allele on response latency after mild traumatic brain injury. Am. J. Psychiatry 162: 1749-1751, 2005.

22 Crain BJ, Alston SR, Bruch LA, Hamilton RL, McLendon RE, **Rhodes CH**, Tihan T, and Weidenheim KM. Accreditation council for graduate medical education (ACGME) competencies in neuropathology training. J. Neuropathol Exp. Neurol 64:273-279, 2005.

23 Pipas JM, Meyer LP, **Rhodes CH**, Cromwell LD, McDonnell CE, Kingman LS, Rigas JR, Fadul CE. A Phase II Trial of Paclitaxel and Topotecan with Filgrastim in Patients with Recurrent or Refractory Glioblastoma Multiforme or Anaplastic Astrocytoma. Journal of Neuro-Oncology 71:301-305, 2005.

24 McAllister TW, Ahles TA, Saykin AJ, Ferguson RJ, McDonald BC, Lewis LD, Flashman LA, **Rhodes CH**. Cognitive effects of cytotoxic cancer chemotherapy: predisposing risk factors and potential treatments. Curr Psychiatry Rep. 6(5):364-371, 2004.

25 Marotti JD, Tobias S, Fratkin JD, Powers JM, **Rhodes CH**. Adult onset leukodystrophy with neuroaxonal spheroids and pigmented glia: report of a family, historical perspective, and review of the literature. Acta Neuropathologica 107(6):481-488, 2004.

26 McAllister TW, McDonald BC, Flashman LA, **Rhodes CH**, Shaw PK, Ferrell RB, Kauffman CI, and Saykin AJ. Differential Effect of COMT Allele Status on Frontal Activation Associated With a Dopaminergic Agonist. Journal of Neuropsychiatry and Clinical Neurosciences 16(2):240, 2004.

27 Flashman LA, Saykin AJ, **Rhodes CH**, McAllister TW. Effect of COMT Val/Met genotype on frontal lobe functioning in traumatic brain injury. Journal of Neuropsychiatry and Clinical Neurosciences 16(2):238-239, 2004.

28 Gotter AL, Shaikh TH, Budarf ML, **Rhodes CH**, Emanuel BS. A palindrome-mediated mechanism distinguishes translocations involving LCR-B of chromosome 22q11.2. Human Molecular Genetics 13(1):103-115, 2004.

29 Tobias SM, Robitaille Y, Hickey WF, **Rhodes CH**, Nordgren R, Andermann F. Bilateral Rasmussen encephalitis: postmortem documentation in a five-year-old. Epilepsia 44(1):127-130, 2003.

30 Fillano JJ, Goldenthal MJ, **Rhodes CH**, Marin-Garcia J. Mitochondrial dysfunction in patients with hypotonia, epilepsy, autism, and developmental delay: HEADD syndrome. J Child Neurol. 17(6):435-439, 2002.

31 **Rhodes CH**, Call KM, Little R, Braunschweiger K, and Park JP. NOE3, a novel Olfactomedin/Noelin/Pancortin homolog identified near an ependymoma-associated translocation breakpoint. Neuro-Oncology 3(4) 306, 2001.

32 Langer CJ, Ruffer J, **Rhodes CH**, Paulus R, Murray K, Movsas B, Curran W. Phase II RTOG Trial of weekly paclitaxel and conventional external beam radiation therapy for supratentorial glioblastoma multiforme. Int J Radiat Oncol Biol Phys. 51(1):113-9, 2001.

33 Siegel AM, Jobst BC, Thadani VM, **Rhodes CH**, Lewis PJ, Roberts DW, and Williamson PD. Medically intractable, localization-related epilepsy with normal MRI: Presurgical evaluation and surgical outcome in 43 patients. Epilepsia 42(7):883-888, 2001.

34 **Rhodes CH**, Park JP, Mohandas TK, Call KM, Little R, Braunschweiger K, Shaikh T, Emanuel BS. Sequence analysis of an ependymoma-associated t(1;22)(p22;q11.2). Neuro-oncology 2(4):290, 2000.

35 Pipas JM, Fadul CE, Rigas JR, **Rhodes CH**, Cromwell LD, Meyer LP, McDonnell CE. A phase II study of Paclitaxel and topotecan with filgastrim in patients with recurrent or refractory glioblastoma multiform or anapastic astrocytoma. Neuro-oncology 2(4):286, 2000.

36 Jobst BC, Siegel AM, Thadani VM, Roberts DW, **Rhodes CH**, Williamson PD. Intractable seizures of frontal lobe origin: Clinical characteristics, localizing signs, and results of surgery. Epilepsia 41(9):1139-1152, 2000.

37 Park JP, Wojiski SA, Spellman RA, **Rhodes CH**, Mohandas TK. Human chromosome 9 pericentric homologies: implications for chromosome 9 heteromorphisms. Cytogenetics and Cell Genetics 82(3-4):192-194, 1998.

38 **Rhodes CH**, Call KM, Budarf ML, Barnoski BL, Bell CJ, Emanuel BS, Bigner SH, Park JP, Mohandas TK. Molecular studies of an ependymoma-associated constitutional t(1:22)(p22;q11.2) Cytogenet. Cell Genet 78:247-252, 1997.

39 **Rhodes CH**, Honsinger C, Porter DM, Sorenson GD. Analysis of the allele-specific PCR method for the detection of neoplastic disease. Diagn Mol Pathol 6:49-57, 1997.

40 Beversdorf DQ, Ratcliffe NR, **Rhodes CH**, Reeves AG. Pure alexia: clinical-pathologic evidence for a lateralized visual language association cortex. Clinical Neuropathology 16(6):328-331, 1997.

41 Wojiski S, **Rhodes CH**, Brodhurst CA, Mohandas TK, Park JP. The G positive band of the rare euchromatic 9qh variant is derived from 9p12. Appl. Cytogen. 23(50):125-129, 1997.

42 Park JP, Chaffee S, Noll WW, and **Rhodes CH**. Constitutional de novo t(1;22)(p22;q11.2) and ependymoma. Cancer Genetics and Cytogenetics 86:150-152, 1996.

43 Glantz MJ, Choy H, Akerley W, Kearns CM, Egorin MJ, **Rhodes CH**, Cole BF. Weekly paclitaxel with and without concurrent radiation therapy: toxicity, pharmacokinetics, and response. Seminars in Oncology, 23:128-135, 1996.

44 **Rhodes CH**, Glantz MJ, Glantz L, Lekos A, Sorenson GD, Honsinger C, and Levy NB. A comparison of polymerase chain reaction examination of cerebrospinal fluid and conventional cytology in the diagnosis of lymphomatous meningitis. Cancer 77:543-548, 1996.

45 Park JP, Dossu JR, **Rhodes CH**. Telomere Associations in Desmoplastic Infantile Ganglioglioma. Cancer Genetics and Cytogenetics 92:4-7, 1996.

46 Glantz MJ, Choy H, Kearns CM, Cole BF, Mills P, Zuhowski EG, Saris S, **Rhodes CH**, Stopa E, and Egorin MJ. Phase I study of weekly outpatient paclitaxel and concurrent cranial irradiation in adults with astrocytomas. J. Clin. Oncol. 14:600-609, 1996.

47 **Rhodes CH**, Honsinger C, and Sorenson GD. PCR-detection of tumor-derived p53 DNA in cerebrospinal fluid. Am. J. Clin. Path. 103: 404-408, 1995.

48 **Rhodes CH**, Honsinger C, and Sorenson GD. Detection of tumor-derived DNA in Cerebrospinal Fluid. J. Neuropathol. Exp. Neurol. 53:364-368, 1994.

49 **Rhodes CH**, and Honsinger C. Structure-activity relationships among inhibitors of peptidylglycine amidating monooxygenase. Ann NY Acad Sci 689:663-666, 1993.

50 Gee P, **Rhodes CH**, Fricker LD, and Angeletti RH. Expression of neuropeptide processing enzymes and neurosecretory proteins in ependyma and choroid plexus epithelium. Brain Research 617:238-248, 1993.

51 Coombs DW, Colburn RW, DeLeo JA, Hoopes PJ, **Rhodes CH**, Twitchell BB. Acute toxicology of an enkephalinase inhibitor (SCH 32615) given intrathecally in the ewe. Anesth. Analg. 76:123-130, 1993.

52 Titelbaum DS, **Rhodes CH**, Brooks JS, and Goldberg HI. Pigmented villonodular synovitis of a lumbar facet joint. Am. J. Neuroradiol. 13:164-166, 1992.

53 **Rhodes CH**, Angeletti RH, and McMorris FA. Peptidylglycine amidating monooxygenase (PAM), an enzyme required for neuropeptide biosynthesis, is present in Schwann cells and some glia. Ann N.Y. Acad. Sci. 633:623-625, 1991.

54 **Rhodes CH**, Xu R-Y, and Angeletti RH. Peptidylglycine alpha-amidating monooxygenase (PAM) in Schwann cells and glia as well as neurons. J. Histochem. Cytochem. 38:1301-1311, 1990.

55 **Rhodes CH**, Mezitis SG, Gonatas NK, and Fleischer B. Selective effect of nerve growth factor on some Golgi and lysosomal enzyme activities of rat pheochromocytoma (PC12) cells. Arch. Biochem. Biophys. 272:175-184, 1989.

56 Mezitis SG, **Rhodes CH**, Stieber A, Gonatas NK, Gonatas JO, and Fleischer B. The localization of an antiorganelle monoclonal antibody (10A8) in the Golgi apparatus of rat cells. Ann. N.Y. Acad. Sci. 551:256-258, 1988.

57 Kiyosawa M, Bosley TM, Alavi A, Gupta N, **Rhodes CH**, Chawluk J, Kushner M, Savino PJ, Sergott RC, Schatz NJ, and Reivich M. Positron emission tomography in a patient with progressive multifocal leukoencephalopathy. Neurology 38:1864-1867, 1988.

58 **Rhodes CH**, Stieber A, and Gonatas NK. Transneuronally transported wheat germ agglutinin labels glia as well as neurons in the rat visual system. J. Comp. Neurol. 261:460-465, 1987.

59 **Rhodes CH**, and Gonatas NK. Lectin affinity and PAGE analysis of soluble axonally transported glycoconjugates in the rat visual system. Brain Research 399:42-50, 1986.

60 **Rhodes CH**, Stieber A, and Gonatas NK. A quantitative electron microscopic study of the intracellular localization of wheat germ agglutinin in retinal neurons. J. Comp. Neurol. 254:287-296, 1986.

61 Reznikoff GA, Manaker S, **Rhodes CH**, Winokur A, and Rainbow TC. Localization and quantification of beta-adrenergic receptors in human brain. Neurology 36:1067-1073, 1986.

62 Manaker S, Eichen A, Winokur A, **Rhodes CH**, Rainbow TC. Autoradiographic localization of thyrotropin releasing hormone receptors in human brain. Neurology 36:641-646, 1986.

63 **Rhodes CH**, Gonatas JO, and Gonatas NK. A quantitative comparison of the efficiency of orthograde axonal transport and transsynaptic transport of iodinated (I-125) wheat germ agglutinin (I-WGA) and horseradish peroxidase labeled I-WGA (I-WGA-HRP) in the rat visual system. Brain Research 336:376-380, 1985.

64 Reznikoff GS, Manaker S, Parsons B, **Rhodes CH**, and Rainbow TC. Similar distribution of monoamine oxidase (MAO) and Parkinsonian toxin (MPTP) binding sites in human brain. Neurology 35:1415-1419, 1985.

65 Manaker S, Winokur A, **Rhodes CH**, and Rainbow TC. Autoradiographic localization of thyrotropin releasing hormone (TRH) receptors in human spinal cord. Neurology 35:328-332, 1985.

66 **Rhodes CH**, Morrell JI, and Pfaff DW. Estrogen-concentrating, neurophysin-containing hypothalamic magnocellular neurons in the vasopressin-deficient (Brattleboro) rat: A study combining steroid autoradiography and immunocytochemistry. J. Neurosci. 2:1718-1724, 1982.

67 **Rhodes CH**, Morrell JI, and Pfaff DW. Cytoplasmic peptide content and nuclear estrogen binding of magnocellular neurons in the hypothalamus of Long-Evans and Brattleboro rats. Ann. N. Y. Acad. Sci. 394:767-775, 1982.

68 **Rhodes CH**, Morrell JI, and Pfaff DW. Distribution of estrogen-concentrating neurophysin-containing magnocellular neurons in the rat hypothalamus as demonstrated by a technique combining steroid autoradiography and immunohistology in the same tissue. Neuroendocrin. 33:18-23, 1981.

69 **Rhodes CH**, Morrell JI, and Pfaff DW. Immunohistochemical analysis of magnocellular elements in rat hypothalamus: Distribution and numbers of cells containing neurophysin, oxytocin, and vasopressin. J Comp. Neurol. 198:45-64, 1981.

70 **Rhodes CH**, Morrell JI, and Pfaff DW. Changes in oxytocin content in the magnocellular neurons of the rat hypothalamus following water deprivation or estrogen treatment: Quantitative immunohistological studies. Cell Tissue Res. 216:47-55, 1981.

71 Apte BN, **Rhodes H**, and Zipser D. Mutation blocking the specific degradation of reinitiation polypeptides in E. coli. Nature 257:329-331, 1975.

**Book Chapters:**

1. Moore JH and **Rhodes CH**. Integration of Molecular and Cellular Pathogenesis: A Bioinformatics Approach. In: Molecular Pathology: The Molecular Basis of Human Disease. Coleman and Tsongalis (eds) Academic Press 2009