

BIOGRAPHICAL SKETCH

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NAME Marc R. Del Bigio	POSITION TITLE Professor		
eRA COMMONS USER NAME (credential, e.g., agency login)			
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Manitoba	M.D.	1978/9 - 1982/5	Medicine
University of Manitoba	B.Sc.	1979/5 - 1982/5	
University of Manitoba	Ph.D.	1983/9 - 1987/6	
University of Saskatchewan	Post-doctorate	1989/7 - 1989/12	

A. Personal Statement

I am a neuropathologist with a background in experimental and clinical / diagnostic neuropathology. Much of my research involves determining relationships and validity between animal models and human disease, especially diseases of the developing nervous system.

B. Positions and Honors

Positions and Employment

1994/6 - 1998/3 Assistant Professor, Pathology, Medicine, The University of Manitoba
 1998/4 - 2002/3 Associate Professor, Pathology, Medicine, The University of Manitoba
 1994/7 - present Neuropathologist, Winnipeg Health Sciences Centre
 2002/4 - present Professor, Pathology, Medicine, The University of Manitoba

Honors

1998/1 - 1998/1 Rh Award (Health Sciences category), The University of Manitoba
 2000/1 - 2000/1 Robert H. Pudenz Lecturer, American Society of Pediatric Neurosurgeons
 2001/7 - 2004/6 Manitoba Medical Service Foundation (MMSF) Clinical Research Professorship, Manitoba Medical Service Foundation
 2004/1 - 2017/12 Canada Research Chair in Developmental Neuropathology (Tier 1), Canadian Institutes of Health Research
 2009/1 – 2009/1 Robert H. Pudenz Award of Distinction for Excellence in Cerebrospinal Fluid Physiology, CSF Research Society

C. Selected Peer-reviewed Publications

Journal Articles

1. Del Bigio MR. (2010). Ependymal cells: biology and pathology.. Acta neuropathologica. 119(1)
2. Del Bigio MR. (2010). Neuropathology and structural changes in hydrocephalus.. Developmental disabilities research reviews. 16(1)
3. Del Bigio MR , Johnson ES. (2010). Neuropathology in Canada: overview of development and current status.. The Canadian journal of neurological sciences. 37(2)

4. Lategan B , Chodirker BN , Del Bigio MR. (2010). Fetal hydrocephalus caused by cryptic intraventricular hemorrhage.. *Brain pathology*. 20(2)
5. Al-Hajri Z , Del Bigio MR. (2010). Brain damage in a large cohort of solvent abusers.. *Acta neuropathologica*. 119(4)
6. Kuzyk A , Kastyak M , Agrawal V , Gallant M , Sivakumar G , Rak M , Del Bigio MR , Westaway D , Julian R , Gough KM. (2010). Association among amyloid plaque, lipid, and creatine in hippocampus of TgCRND8 mouse model for Alzheimer disease.. *The Journal of biological chemistry*. 285(41)
7. Del Bigio MR , Rewcastle NB. (2010). Neuropathology in Canada: the first one hundred years.. *The Canadian journal of neurological sciences*. 37(6)
8. Del Bigio MR , Slobodian I , Schellenberg AE , Buist RJ , Kemp-Buors TL. (2011). Magnetic resonance imaging indicators of blood-brain barrier and brain water changes in young rats with kaolin-induced hydrocephalus.. *Fluids and barriers of the CNS*. 8
9. Shulyakov AV , Cenkowski SS , Buist RJ , Del Bigio MR. (2011). Age-dependence of intracranial viscoelastic properties in living rats.. *Journal of the mechanical behavior of biomedical materials*. 4(3)
10. Del Bigio MR , Chudley AE , Sarnat HB , Campbell C , Goobie S , Chodirker BN , Selcen D. (2011). Infantile muscular dystrophy in Canadian aboriginals is an α B-crystallinopathy.. *Annals of neurology*. 69(5)
11. Del Bigio MR. (2011). Cell proliferation in human ganglionic eminence and suppression after prematurity-associated haemorrhage.. *Brain*. 134(Pt 5)
12. Pahlavan PS , Sutton W , Buist RJ , Del Bigio MR. (2012). Multifocal haemorrhagic brain damage following hypoxia and blood pressure lability: case report and rat model.. *Neuropathology and applied neurobiology*.
13. Kastyak-Ibrahim MZ , Nasse MJ , Rak M , Hirschmugl C , Del Bigio MR , Albensi BC , Gough KM.(2012). Biochemical label-free tissue imaging with subcellular-resolution synchrotron FTIR with focal plane array detector.. *NeuroImage*. 60(1)
14. Schellenberg AE , Buist R , Del Bigio MR , Khorooshi R , Toft-Hansen H , Owens T , Peeling J. (2012). Blood-brain barrier disruption in CCL2 transgenic mice during pertussis toxin-induced brain inflammation.. *Fluids and barriers of the CNS*. 9(1)
15. Del Bigio MR , Khan OH , da Silva Lopes L , Juliet PA. (2012). Cerebral white matter oxidation and nitrosylation in young rodents with kaolin-induced hydrocephalus.. *Journal of neuropathology and experimental neurology*. 71(4)
16. Shulyakov AV , Buist RJ , Del Bigio MR. (2012). Intracranial biomechanics of acute experimental hydrocephalus in live rats.. *Neurosurgery*. 71(5)
17. Shulyakov AV , Del Bigio MR. (2013). Small-amplitude Cyclic Increments in Intracranial Pressure During a Short Period of Time Produce Sustained Increased Intracranial Stiffness, Increased Parenchymal Viscoelastic Strain and Progressive Ventriculomegaly: Therapeutic Applications of the C. *Neurosurgery*.
18. Morrison LC , McClelland R , Aiken C , Bridges M , Liang L , Wang X , Di Curzio D , Del Bigio MR , Taylor MD , Werbowetski-Ogilvie TE. (2013). Deconstruction of medulloblastoma cellular heterogeneity reveals differences between the most highly invasive and self-renewing phenotypes.. *Neoplasia*. 15(4)
19. Bush JW , Wuerz T , Embil JM , Del Bigio MR , McDonald PJ , Krawitz S. (2013). Outcomes of persons with blastomycosis involving the central nervous system.. *Diagnostic microbiology and infectious disease*. 76(2)
20. Di Curzio DL , Buist RJ , Del Bigio MR. (2013). Reduced subventricular zone proliferation and white matter damage in juvenile ferrets with kaolin-induced hydrocephalus.. *Experimental neurology*. 248C
21. Johnston MG , Del Bigio MR , Drake JM , Armstrong D , Di Curzio DL , Bertrand J. (2013). Pre- and post-shunting observations in adult sheep with kaolin-induced hydrocephalus.. *Fluids and barriers of the CNS*. 10(1)
22. Alfasi AM , Shulyakov AV , Del Bigio MR. (2013). Intracranial biomechanics following cortical contusion in live rats.. *Journal of neurosurgery*. 119(5): 1255-1262.
23. Del Bigio MR , Hainfellner JA , McLean CA , Powell SZ , Sikorska B , Takahashi H , Weis J , Xuereb JH. (2013). Neuropathology training worldwide - evolution and comparisons.. *Brain Pathology (Zurich, Switzerland)*.
24. Bailey K , Rahimi Balaei M , Mannan A , Del Bigio MR , Marzban H. (2014). Purkinje cell compartmentation in the cerebellum of the lysosomal Acid phosphatase 2 mutant mouse (nax – nakedataxia mutant mouse).. *PloS one*. 9(4): e94327.

25. Herath JC , Kalikias S , Phillips SM , Del Bigio MR. (2014). Traumatic and other non-natural childhood deaths in Manitoba, Canada: a retrospective autopsy analysis (1989-2010).. Canadian journal of public health = Revue canadienne de santé publique. 105(2): e103-8.
26. Shih,F. Yip,S. McDonald,P.J. Chudley,A.E. Del Bigio,M.R.. (2014). Oncogenic codon 13 NRAS mutations in a primary mesenchymal brain neoplasm and nevus of a child with neurocutaneous melanosis.. Acta Neuropathol. Commun. 2: 140.
27. Di Curzio, D.L. Turner-Brannen,E. Del Bigio,M.R.. (2014). Oral antioxidant therapy for juvenile rats with kaolin-induced hydrocephalus.. Fluids Barriers CNS. 11: 23.
28. Liyanage,V.R.B. Jarmasz,J. Murugesan,N. Del Bigio,M.R. Rastegar,M. Davie,J.R.. (2014). DNA modifications: function and applications in normal and disease states.. Biology. 3(4): 670-723.
29. Frosk P , Phillips SM , Del Bigio MR , Chodirker BN. (2014). Atypical Features in a Case of Lethal Perinatal Gaucher Disease.. Neuropathology and applied neurobiology. 40(7): 946-950.

Book Chapters

1. Del Bigio,M.R. (2014). Neuropathology of human hydrocephalus. Chapter 2. D. Rigamonti. Adult Hydrocephalus ISBN-13: 978-1107031777. : 14-27.
Published, Cambridge University Press, United Kingdom
2. Kinney,H.C. Folkerth,R.D. Del Bigio,M.R.. (2015). The Neuropathology of Stillbirth. Chapter 12. Pathology of Fetal Death: Principles and Practical Evaluation. T.K. Boyd (Editor).
Accepted, springer, Germany
3. Folkerth,R.D. Del Bigio,M.R. (2015). Disorders of the perinatal period. Chapter 4. S. Love, A. Perry, J. Ironside, H. Budka. Greenfield's Neuropathology, 9th edition. (S. Love, A. Perry, J. Ironside, H. Budka; editors).
In Press, Cambridge University Press, United Kingdom

D. Research Support

Awarded

- | | |
|---|--|
| 2013/8 - 2018/7
Co-applicant | <i>Discovering the Epigenetic Signatures Associated with Fetal Alcohol Spectrum Disorder</i>
- \$1,372,800
Funding Sources: Canadian Institutes of Health Research (CIHR) CEEHRC
Co-applicant: Elias, Brenda; Hicks, Geoff; Rastegar, Mojgan;
Principal Applicant: Davie, James |
| 2011/1 - 2017/12
Principal Applicant | <i>Canada Research Chair in Developmental Neuropathology (Tier 1) - \$1,400,000</i>
Funding Sources: Canada Research Chairs (CRC)
Research Chair |
| 2013/4 - 2016/3
Co-applicant | <i>Development of Magnetic Nanoparticles to Break Through the Blood-Brain Barrier</i>
- \$660,999
Funding Sources: Canadian Institutes of Health Research (CIHR) CHRP
Principal Applicant: Miller, Donald |

Completed

- | | |
|---|--|
| 2011/7 - 2013/6
Principal Investigator | <i>Periventricular hemorrhage in immature brain - \$100,000</i>
Funding Sources: Heart and Stroke Foundation of Canada (HSFC)
Operating grants |
| 2010/7 - 2012/6
Principal Investigator | <i>Preclinical Studies for Treatment of Hydrocephalus - \$200,000</i>
Funding Sources: Canadian Institutes of Health Research (CIHR)
Operating grants - regional partnership Manitoba |