



The journal

Canadian Journal of Neurological Sciences

Volume 44 (Supplement 2) June 2017

52nd Annual Congress of the Canadian Neurological Sciences Federation

Victoria, British Columbia, Canada

52e congrès annuel de la
Fédération des sciences
neurologiques du Canada

ABSTRACTS / RÉSUMÉS

AN INTERNATIONAL JOURNAL PUBLISHED BY THE CANADIAN NEUROLOGICAL SCIENCES FEDERATION

The official Journal of: The Canadian Neurological Society, The Canadian Neurosurgical Society,
The Canadian Society of Clinical Neurophysiologists, The Canadian Association of Child Neurology

2016 REVIEWER OF THE YEAR – HARVEY B. SARNAT, M.S., M.D., F.R.C.P.C.



Harvey B. Sarnat is Professor of Paediatrics, Pathology (Neuropathology) and Clinical Neurosciences at the University of Calgary and Alberta Children's Hospital in Calgary, Canada since 1981, except for a decade in which he returned to the U.S. to serve on faculty at the University of Washington (Seattle) and later UCLA (Los Angeles). He began his career at the University of Illinois, earning a B.S. degree in zoology before entering the U. of I. College of Medicine, Chicago, in a dual programme, earning an M.S. degree in neuroanatomy a year before his M.D. degree in 1966. After medical school he remained at the U. of I. Hospitals in Chicago to perform a residency in Paediatrics, later followed by residencies in Paediatric Neurology and Neuropathology at the University of Virginia in Charlottesville. Research interests include neuroembryology, developmental/fetal neuropathology, epilepsy neuropathology, congenital myopathies and mitochondrial cytopathies. Publications include 190 original peer-reviewed research articles and 100 books and book chapters, mostly on these topics. He sits on Editorial Boards of 9 journals and is an *ad hoc* reviewer for several others. From 1984-1992 he served as Associate Editor of the *Canadian*

Journal of Neurological Sciences. In 2013 an annual endowed *Harvey Sarnat Developmental Neuroanatomy and Neuropathology Lectureship* was established at Alberta Children's Hospital in his honour. He is one of 8 members of the Neuropathology Commission of the International League Against Epilepsy. He was honoured as the 2010 *Gordon Matheson Lecturer* at the 50th anniversary meeting of the Canadian Association of Neuropathologists, and as the prestigious *Bernard Sachs Lecturer* at the 2016 meeting of the (USA) Child Neurology Society. His principal research interests are in developmental neuroanatomy (neuroembryology) and neuropathology; epilepsy neuropathology; and phylogenetic (evolutionary) neurobiology.

52nd Annual Congress of the
Canadian Neurological Sciences Federation
British Columbia, Victoria • JUNE 20 - 23, 2017

CNSF EXECUTIVE COMMITTEE

Jeanne Teitelbaum, CNSF/NSFC President

Kesh Reddy, CNSF/NSFC Vice President

Michael Hill, CNSF/NSFC Vice President

Sharon Whiting, CNSF/NSFC Vice President

J. Max Findlay CNSF/NSFC Past President

Dan Morin, CNSF/NSFC Board Member - CNSF Chief Executive Officer

Juliette Hukin, CNSF/NSFC Board Member - CACN President

Cecil Hahn, CNSF/NSFC Board Member - CACN Vice President

Stephen Lowrie, CNSF/NSFC Board Member - CNSS President

Pat McDonald CNSF/NSFC Board Member - CNSS Vice President

Colin Chalk, CNSF/NSFC Board Member - CNS President

Fionna Costello, CNSF/NSFC Board Member - CNS Vice President

Jose Francisco Tellez-Zenteno, CNSF/NSFC Board Member - CSCN President

Fraser Moore, CNSF/NSFC Board Member - CSCN Vice President

Bill Wang, CNSF/NSFC Board Member - CNSS Resident Representative

Theo Mobach, CNSF/NSFC Board Member - CNS Resident Representative

Leyila Kaseka, CNSF/NSFC Board Member - CACN Resident Representative

Ian Fleetwood CNSF/NSFC Board Member - CNSF At-large

Kristine Chapman, CNSF/NSFC Board Member - CNSF At-large

Robert Chen, CJNS Editor-in-Chief – CNS + CSCN Member

Tejas Sankar, CNSF SPC Chair

Joe Megyesi, CNSF PDC Chair

Richard Riopelle, CNSF Advocacy Chair – CNS Member

Shobhan Vachhrajani, CNSF CPGC Chair – CNSS Member

**SCIENTIFIC PROGRAM COMMITTEE &
PROFESSIONAL DEVELOPMENT COMMITTEE**

Joe Megyesi PDC Chair (CNSS)

Aleksandra Mineyko PDC Vice-Chair (CACN)

Tejas Sankar SPC Chair (CNSS)

Alexandre Henri-Bhargava SPC Vice-Chair (CNS+CSCN)

Chintankumar Shah PDC (CACN)

Shannon Venance PDC (CSCN)

Craig Campbell SPC (CACN+CSCN)

Michael Esser SPC (CACN)

Phillippe Couillard SPC (CNS)

Gelareh Zadeh SPC (CNSS)

Danielle Andrade SPC (CSCN)

Seyed Mirsattari SPC (CSCN)

Leyila Kaseka SPC + PDC Residents Rep (CACN)

Theo Mobach SPC + PDC Residents Rep (CNS)

Bill Wang SPC + PDC Residents Rep (CNSS)

Mark Bigder SPC + PDC Junior Residents Rep (CNSS)

Jeanne Teitelbaum CNSF/NSFC President (CNS)

Kesh Reddy CNSF/NSFC Vice President (CNSS)

Sharon Whiting CNSF/NSFC Vice President (CACN+CSCN)

CANADIAN NEUROLOGICAL SCIENCES FEDERATION

143N – 8500 Macleod Trail SE

Calgary, Alberta T2H 2N1 Canada

Tel: (403) 229-9544 • Fax: (403) 229-1661



**ABSTRACTS
AND PROGRAM**

*The Canadian Journal of
Neurological Sciences
and
The Canadian Neurological
Sciences Federation
do not assume any responsibility or
liability for any errors in the abstracts.*



Volume 44 / Supplement 2 / June 2017

Editor-in-Chief/Rédacteur en chef

Robert Chen TORONTO, ON

Associate Editors/Rédacteurs associés

Etienne De Villers-Sidani MONTREAL, QC
Robert Hammond LONDON, ON
Hans Katzberg TORONTO, ON
Mahendranath Moharir TORONTO, ON
Tejas Sankar EDMONTON, AB
Manas Sharma LONDON, ON
Jeanne Teitelbaum MONTREAL, QC

Past Editors/Anciens rédacteurs en chef

G. Bryan Young LONDON, ON
Douglas W. Zochodne CALGARY, AB
James A. Sharpe TORONTO, ON
Robert G. Lee CALGARY, AB
Robert T. Ross WINNIPEG, MB
(Emeritus Editor, Founding Editor)

Editorial Board/Comité éditorial

Jorge Burneo, LONDON, ON
Jodie Burton, CALGARY, AB
Colin Chalk, MONTREAL, QC
K. Ming Chan, EDMONTON, AB
Alan Goodridge, ST. JOHN'S, NL
Mark Hamilton, CALGARY, AB
Michael Hill, CALGARY, AB
Alan C. Jackson, WINNIPEG, MB
Draga Jichici, HAMILTON, ON
Suneil Kalia, TORONTO, ON
Daniel Keene, OTTAWA, ON
Julia Keith, TORONTO, ON
Stephen Lownie, LONDON, ON
Jian-Qiang Lu, EDMONTON, AB
Patrick McDonald, VANCOUVER, BC
Joseph Megyesi, LONDON, ON

Tiago Mestre, OTTAWA, ON
Sarah Morrow, LONDON, ON
Michael Nicolle, LONDON, ON
Narayan Prasad, LONDON, ON
Alex Rajput, SASKATOON, SK
Kesh Reddy, HAMILTON, ON
Ramesh Sahpaul, NORTH VANCOUVER, BC
Dipanka Sarma, TORONTO, ON
Sean Symons, TORONTO, ON
Brian Toyota, VANCOUVER, BC
Brian Weinshenker, ROCHESTER, MN
Sam Wiebe, CALGARY, AB
Eugene Yu, TORONTO, ON

Book Review/Critiques de livres

Reflections/Reflets

Andrew Kirk SASKATOON, SK

Journal Staff/Effectif du Journal

Dan Morin CALGARY, AB
Chief Executive Officer
Donna Irvin CALGARY, AB
CNSF Membership Services / Communications Officer

The official journal of: / La Revue officielle de:

The Canadian Neurological Society
La Société Canadienne de Neurologie

The Canadian Neurosurgical Society
La Société Canadienne de Neurochirurgie

The Canadian Society of Clinical Neurophysiologists
La Société Canadienne de Neurphysiologie Clinique

The Canadian Association of Child Neurology
L'Association Canadienne de Neurologie Pédiatrique

The permanent secretariat for the four societies and the Canadian Neurological Sciences Federation is at:

Le secrétariat des quatre associations et de la Fédération des sciences neurologiques du Canada est situé en permanence à :

143N – 8500 Macleod Trail SE
Calgary, Alberta T2H 2N1 Canada
CNSF (403) 229-9544 / CJNS (403) 229-9575
Fax (403) 229-1661

The Canadian Journal of Neurological Sciences is published bi-monthly. The annual subscription rate for Individuals (electronic) is £125/\$207. The annual subscription rate for Institutions (electronic) is £167/\$277. See <cambridge.org/cjn> for full details including taxes; e-mail: subscriptions_newyork@cambridge.org. The Canadian Journal of Neurological Sciences is included in the Cambridge Core service, which can be accessed at cambridge.org/cjn. For information on other Cambridge titles, visit www.cambridge.org. For advertising rates contact M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009; Phone: 856-768-9360; Fax: 856-753-0064; Email: mjmrvica@mrvica.com.

Le Journal Canadien des Sciences Neurologiques est publié tous les deux mois. Le prix d'abonnement annuel pour les individus (électronique) est 125£/207\$. Le prix d'abonnement annuel pour les établissements (électronique) est 167£/277\$. Veuillez consulter <cambridge.org/cjn> pour tous les détails, y compris les taxes; e-mail: subscriptions_newyork@cambridge.org. Le Journal canadien des sciences neurologiques est inclus dans le service Cambridge Journals Online, accessible à cambridge.org/cjn. Pour plus d'informations sur les titres disponibles chez Cambridge, veuillez consulter www.cambridge.org. Pour les tarifs de publicité, contactez M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009; Téléphone: (1)856-768-9360; Email: mjmrvica@mrvica.com.

This journal is indexed by / Cette revue est indexée par:
Adis International, ArticleFirst, BIOBASE, BioLAB, BiolSci, BIOSIS Prev, Centre National de la Recherche Scientifique, CSA, CurAb, CurCont, De Gruyter Saur, E-psyche, EBSCO, Elsevier, EMBASE, FRANCIS, IBZ, Internationale Bibliographie der Rezensionen Geistes- und Sozialwissenschaftlicher Literatur, MEDLINE, MetaPress, National Library of Medicine, OCLC, PE&ON, Personal Alert, PsycFIRST, PsycINFO, PubMed, Reac, RefZh, SCI, SCOPUS, Thomson Reuters, TOCPrem, VINITI RAN, Web of Science.

ISSN: 0317-1671
EISSN: 2057-0155

COPYRIGHT © 2016 by THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying, or otherwise, without permission in writing from Cambridge University Press. Policies, request forms and contacts are available at: <http://www.cambridge.org/about-us/rights-permissions>. Permission to copy (for users in the U.S.A.) is available from Copyright Clearance Center: <http://www.copyright.com>, email: info@copyright.com.

COPYRIGHT © 2016 du THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. Tous droits réservés.
Aucune partie de cette publication ne peut être reproduite, sous quelque forme ou par quelque procédé que ce soit, électronique ou autre, y compris la photocopie, sans l'accord écrit de Cambridge University Press. Les politiques, les formulaires de demande et les contacts sont disponibles à: <http://www.cambridge.org/about-us/rights-permissions>. La permission de copier (pour les utilisateurs aux États-Unis) est disponible auprès Copyright Clearance Center: <http://www.copyright.com>, email: info@copyright.com.

ABSTRACTS

PLATFORM PRESENTATIONS

Wednesday, June 21, 2017

GP. Grand Plenary

GP.01 to GP.05 S7

Includes all 2017 Society Prize Abstracts

A. CACN Chair's Select Abstract Presentations

A.01 to A.07 S8

B. CNS/CSCN Chair's Select Abstract Presentations
B.01 TO B.07 S10

C. CNSS Chair's Select Abstract Presentations
C.01 to C.07 S12

POSTER PRESENTATIONS

Tuesday, June 20, 2017 and Thursday, June 22, 2017

GENERAL CATEGORIES

General Neurology - *P.001 to P.005.....S14*

General Neurosurgery - *P.006 to P.024.....S15*

General Pediatric Neurology - *P.025 to P.026S19*

Pediatric Nerosurgery - *P.027 to P.028* S20

Epilepsy - *P.029 to P.039* S21

Neuro-oncology - *P.040 to P.044* S24

Neurovascular and

Neurointerventional - *P.045 to P.052* S25

Multidisciplinary - Other - *P.053* S26

Stroke - *P.054 to P.063.....S27*

NEUROLOGY AND CHILD NEUROLOGY

SUBSPECIALTIES

Dementia and Cognitive

Disorders - *P.064 to P.065.....S29*

Movement Disorders - *P.066.....S30*

MS / Neuroinflammatory

Disease - *P.067 to P.071.....S30*

Neuromuscular Disease - *P.072 to P.074* S31

NEUROPHYSIOLOGY SUBSPECIALTIES

EEG - *P.075 to P.077* S32

EMG - *P.078* S33

Neuroimaging - *P.079 to P.083.....S33*

NEUROSURGICAL SUBSPECIALTIES

Functional Neurosurgery and

Pain - *P.084 to P.085.....S34*

Spine and Peripheral Nerve

Surgery - *P.086 to P.098* S35

OTHER

Ethical, Legal, Societal, Historical

Aspects of Neuroscience - *P.099* S39

Neuroscience Education - *P.100 to P.108.....S39*

Congress @ Glance..... S6

AUTHORS INDEX..... S45

<http://congress.cnsfederation.org/congress/societyprizes/>

2017 Society Prize Winners

**Congratulations to the following CNSF members that have been awarded
2017 Society Prizes.**

**Be sure to attend the Grand Plenary session on Wednesday morning
when they will present their work.**

The Canadian Neurological Society

2017 Francis McNaughton Memorial Prize

Recipient: Raed A. Joudi

Title as submitted: "Outcomes after gastrostomy tube placement in patients with acute stroke: A 10-year population-based study using the Ontario Stroke Registry"

2017 André Barbeau Memorial Prize

Recipient: Kristin Ikeda

Title as submitted: "Network connectivity following a single unprovoked seizure using 7 Tesla resting-state fMRI"

The Canadian Association of Child Neurology

2017 President's Prize

Recipient: Kristine Woodward

Title as submitted: "Sensory-motor network functional connectivity in hemiparetic children with perinatal stroke"

The Canadian Neurosurgical Society

2017 K.G. McKenzie Memorial Prize in Basic Neuroscience Research

Recipient: Daipayan Guha

Title as submitted: "Quantification of computational geometric homogeneity in surface-based registration for spinal intra-operative three dimensional navigation"

2017 K.G. McKenzie Memorial Prize in Clinical Research

Recipient: Stefan Lang

Title as submitted: "Resting state functional connectivity: a biomarker for pre-operative cognitive function and cognitive outcome following surgery in patients with diffuse glioma"