

Lost Fundamentals in Neurosciences - A Call for Discussion

Can. J. Neurol. Sci. 2006; 33: 1-2

My mentors in Neurology, all clinicians, advocated the primacy of fundamental basic Neurosciences in training. They insisted that we learn how action potentials form and propagate or how Schwann cells myelinate axons. Their lessons were not confined to current professional practice but went well beyond, emphasizing how disease interacts with the function of the human nervous system. An exquisite knowledge of such function, not easily acquired, was the starting point. It opened the door.

A fundamental grounding and appreciation of Neurosciences is gradually disappearing from clinical programs in Neurology and Neurosurgery. Neurology programs are less likely to involve basic Neuroscientists in their teaching despite longer periods of training and the development of academic half days. Many other apparent priorities now occupy valuable learning opportunities. Neurological and Neurosurgical residents are rarely encouraged to attend the Society of Neurosciences meeting or to join the Canadian Association of Neurosciences. In the current quest to define "competency", it is not clear whether the Royal College examinations in Neurology now rigorously evaluate fundamentals. Is it possible that future clinical Neurosciences trainees will not learn basic neurophysiology either as medical students or residents? Without fundamentals, how do we build upon the complexities of plasticity, regeneration, and stem cell biology? The decline of Neuroscience training is even more evident in medical school curriculae. Medical students now argue that neuroanatomy training ought to be discarded or diluted. Future physicians may be left with a lesser grasp of neuroanatomy than interested members of the general public who read and have internet access.

It may be argued that not all trainees require fundamental training in Neurosciences. Perhaps they have had previous experience in the area or are innately curious and acquire the knowledge on their own. But what of the others who merely need an impetus? Do we close the door to them? What initiatives can we provide?

The Canadian Journal of Neurological Sciences actively recruits Neuroscience work to appear in our pages as reviews or original articles. Both new and seasoned authors are invited to submit reviews. We ask for fundamental and undiluted basic articles beyond those that directly address a clinical question. My hope is that this effort might help to bridge a widening gap between clinical and basic Neurosciences.

Another initiative worth considering, but not widely exploited by our clinical programs is the annual meeting of INMHA, the Institute of Neuroscience, Mental Health and Addiction of the Canadian Institutes of Health Research (CIHR). These meetings ought to be mandatory for clinical trainees in Neurosciences and Psychiatry. They are wonderful opportunities to directly experience bench to bedside medicine: a testimonial from a patient, a clinical overview, a cutting edge research presentation and considerable discussion. This year's meeting in Vancouver highlighted Parkinson's disease, mood disorders and addiction. With an acknowledged bias on my part, I suggest that this meeting should replace some of the currently subsidized theme courses offered for residency programs.

I encourage a dialogue on like issues in this journal. What exactly are the arguments, both for and against maintaining the teaching of rigorous fundamentals? Why is it unnecessary to include time spent in crystallizing exquisite appreciation of neuroanatomy and neurophysiology? Is it wrong to insist on this knowledge? Is our mission simply to create professionals versant in the professional practice of current Neurology?

Let us also examine the success stories. Perhaps some residency programs are bridging the divide between clinical and basic Neurosciences. How is this being done?

Without opportunity and impetus from my mentors to consider fundamental Neurosciences it is unlikely I would have chosen this field. Appreciation of its beauty, complexity and unknowns build on hard won concepts. The door needs to be opened wider so that we can be imaginative, not simply competent.



Douglas Zochodne
Editor-in-Chief

Thank you to our Reviewers

We are indebted to the expert referees who have reviewed submissions to the Canadian Journal of Neurological Sciences in 2005 (names in bold reviewed five or more papers). Their thoughtfulness and expertise have served our journal well.

John Adams	Bart Demaerschalk	R. John Hurlbert	Luanne Metz	J. David Spence
Mark Alberts	Andrew Demchuk	Alan Jackson*	Jean Michaud	Paul Steinbok*
Duncan Anderson	Elizabeth Donner	Pierre Jacob	Gyl Midroni	John Stewart
Lee-Cyn Ang	Joseph Dooley	Cheryl Jaigobin	David Mikulis	A. Jonathan Stoessl
Joseph Arezzo	Donna Dryden	Manouchehr Javidan	Thomas Miller	Paul Stolee
Nigel Ashworth	Pierre Duquette	Jack Jhamandas*	Jeffrey Minuk	Peter Stys
Wing-Lok Au	Richard Dyck	Mandar Jog	Dwight Moulin	Oksana
Roland Auer	George Ebers	S. Claiborne Johnston	Richard Moulton	Suchowersky*
Philip Barber	Michael Eliasziw	Stephen Karlik	S. Terence Myles*	Garnette Sutherland
Jason Barton	M. George Elleker	Anthony Kaufmann	Michael Nicolle	Ronald Tasker
Werner Becker	Derek Emery	Toshitaka Kawarai	John Noseworthy	Cory Toth
Ettore Beghi	Francisco Espinosa	Daniel Keene*	Paul O'Connor	Brian Toyota
Eric Belanger	Richard Farb	Ralph Kern	Joel Oger	Tony Troubsee
Robert Bell	Thomas Feasby	Andrew Kertesz	Isamu Ozaki	Bruce Tranmer
Kate Bell	Paolo Federico	Sarah Kirby	Ian Parney	Michael Trew
Timothy Benstead*	Michael Fehlings	Andrew Kirk	David Pearsall	Felix Tyndel
Mark Bernstein	Zhong-Ping Feng	Christopher Klein	James Peeling	Taufik Valiante
Jose Biller	J. Max Findlay*	David Knopman	David Pelz	Hillar Vellend
Jeff Blackmer	William Fletcher	Douglas Kondziolka*	Jose Pereira	Barbara Vickrey
Jean-Martin	Kathleen Foley	Daniel Lachance	James Perry	Sharon Warren
Boulanger	David Fortin	John Latter	Ronald Petersen	C. Peter Watson
Vera Bril	Daryl Fourney	Louise-Helene Lebrun	Stephen Phillips	Theodore Wein
Keith Brownell	Gordon Francis	Robert Lee	Sean Pittock	Richard Wennberg
Donald Brunet	Mark Freedman	Vanda Lennon	Jeffrey Politsky	B. Matt Wheatley
Andrew Bulloch	Sarah Furtado	James Lewis	Christopher Power	Chris White
Gregory Cairncross*	Marek Gawel	Liang Li	William Pryse-Phillips	Samuel Wiebe*
Peter Camfield	David Geldmacher	Marie Long	Allan Purdy	David Wiebers
Richard Camicioli	David George	Noel Lowry	Gary Redekop	Robert Willinsky
Steven Casha	David Gladstone	Samuel Ludwin	Karen Rimmer	Dean Wingerchuk
Colin Chalk	Allan Gordon	Cheemun Lum	Gordon Robinson	Elaine Wirrell
K. Ming Chan	Kevin Gordon	Alex MacKay	Gabriel Ronen	John Wong
Robert Chen	Mayank Goyal	Ian MacKenzie	John Rossiter	Wee Yong
Arthur Clark	Ian Grant	M. Elizabeth MacRae	Guy Rouleau*	G. Bryan Young*
David Clarke	David Grimes	Robert Macaulay	James Rutka	Wendy Ziai
Fred Colbourne	Walter Hader	Athen Macdonald	Dessa Sadovnick	Thomas Zwimpfer
John Connolly	Antoine Hakim	Jean Mah	Harvey B. Sarnat	David Zygun
Lara Cooke	Lorie Hamiwka	Wayne Martin	B. Scheithauer	Martin ten Hove
Paul Cooper	Robert Hammond	Warren P. Mason	Robert Schmidt	
Dale Corbett	Michael Hill	Eric Massicotte	James Scott	
Fiona Costello	Douglas Hobson	Charles Maxner	Guillaume Sebire	
Robert Cote	Ahmet Hoke	Michael McGarvy	Shashi Seshia	
Shelagh Coutts	Renn Holness	Stephen McNeil	James Sharpe	
Jeffrey Cummings	Christopher Honey	Vivek Mehta	Ashfaq Shuaib	
Bernadette Curry	Robin Hsiung	Michel Melanson	Brian Silver	
Jacques De Lean	Mark Hudon	Tilak Mendis	David Simpson	

* Editorial Board