

## Biographical Sketch

NAME WISE YOUNG		POSITION TITLE: DISTINGUISHED PROFESSOR AND RICHARD H. SHINDELL CHAIR IN NEUROSCIENCE	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (IF APPLICABLE)	YEAR(S)	FIELD OF STUDY
Reed College, Portland, Oregon University of Iowa, Iowa City, IA Stanford Univ. Med. Sch., Palo Alto CA Surgery Internship, NYU/Bellevue, NY Neurosurgery resident, NYU/Bellevue	B.A. Ph.D. M.D.	1969-71 1971-75 1975-77 1977-78 1978-79	Biology & Chemistry Physiology & Biophysics Medicine & Surgery Surgery Neurosurgery
<p>RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List in chronological order the titles, all authors, and complete references to all publications during the past 3 years and to representative earlier publications pertinent to this application.</p> <p><b>Employment and Experience</b>                  1979-1983: Research Assistant Professor, Dept. Neurosurgery, NYU &amp; Bellevue Medical Center, NY                  1984-1991: Associate Professor (tenured), Dept. Neurosurgery, NYU Medical Center, NY                  1991-1997: Professor of Neurosurgery, Physiology, Biophysics, NYU Medical Center, NY                  1997-2012: Professor II of Cell Biology &amp; Neuroscience, Rutgers University, Piscataway, NJ                  1998-now: Founding Director, W. M. Keck Center for Collaborative Neuroscience at Rutgers                  2006-now: Richard H. Shindell Chair in Neuroscience, Rutgers University, Piscataway, NJ                  2006-now: CEO and Co-Chair of the Board, China Spinal Cord Injury Network, Hong Kong                  2013-now: Distinguished Professor of Cell Biology &amp; Neuroscience, Rutgers University</p> <p><b>Adjunct and Visiting Professorships</b>                  1997-now: Adjunct Professor, Univ. of Pittsburgh School of Allied Health Science, Pittsburgh, PA                  1997-now: Adjunct Professor, Robert Wood Johnson School of Medicine, Piscataway, NJ                  2006-2010: Distinguished Visiting Professor, Hong Kong University, Faculty of Medicine                  2010-now: Visiting Professor, Jiaotong University, Xian, China</p> <p><b>Current Advisory Positions and Board Memberships</b>                  2007-now: Board of Directors, Hong Kong Spinal Cord Injury Fund (Hong Kong)                  2011-now: Global Medical Director (unpaid), Stemcyte Inc., Covina, CA                  2011-now: Scientific Advisor, Acorda Therapeutics, Hawthorne, NY                  1997-now: Reviewer, NIH Director New Innovator Research Awards, Bethesda, MD</p>			

RESEARCH AND PROFESSIONAL EXPERIENCE (CONTINUED).

**Selected Previous Advisory Positions and Board Memberships**

The National Institutes of Health (NIH)

1983-1988: NINDS NSP-A Committee (Program Project Review Committee)

1988-1993: NINDS Neuroscience Training Committee

1993-1997: NICHD National Advisory Board for Medical Rehabilitation

2000-2004: NICHD NACHHD (National Advisory Child Health and Human Development Council)

Acorda Therapeutics

1995: Chief Scientific Officer; 1996-2000 Scientific Advisory Board; 1995-2011: Board of Directors

Journal of Neurotrauma, Neurotrauma Society, and International Neurotrauma Society

1983-1991: Editor-in-Chief, Central Nervous System Trauma (renamed J. Neurotrauma 1989)

1989-1995: Founder and Treasurer of the Neurotrauma Society; President (1996)

1990-1996: Founder and Treasurer of the International Neurotrauma Society

**Licenses**

National Board of Medical Examiners 192407; New York State Medical License 139618

**Selected Honors**

1971: Phi Beta Kappa (Reed College);

1973: Grass Fellow (Marine Biological Laboratory);

1985-1992: Jacob Javits Neuroscience Award (NIH);

1990: Wakeman Award in Neuroscience (Duke University);

1994: Neurotrauma Society Service Award;

1995: New York Brain Injury Association Distinguished Service Award (New York);

1998: Tall Texan of the Year Award (Kent Waldrep Foundation, Dallas, TX);

1999: Cure Award (New York, 1999); Robert S. Dow Neuroscience Award (Portland OR);

2001: Rutgers University Board of Trustees Research Award (New Brunswick, NJ);

2002: Asian-American Achievement Award (Asian American Heritage Council);

Time Magazine Best Scientist in Spinal Cord Injury Research;

2003: Douglass Medal for Advancement of Young Women in Science (Rutgers University);

2004: Elizabeth M. Bogg Award for Service to the Disabled Community;

2005: Esquire Magazine Best & Brightest Award;

Spinal Cord Injury Hall of Fame (National Spinal Cord Injury Association);

2006: Caring Heart Award (New Jersey Association of Biomedical Research, 2006);

The Hope Award – Salute to Research Innovation (New Brunswick);

The New Jersey Educator Award (Newark, NJ),

2007: New Jersey High Tech Hall of Fame;

Melvyn H. Motolinsky Foundation Distinguished Citizen Award (New Brunswick, NJ);

2008: First MBL Alumni Friday Night Lecture (Marine Biological Laboratory, 2008)

Honorary Professor at Chengdu Army General Hospital (Kunming, Yunnan, China)

Honorary Professor at Tzuchi Buddhist Medical University (Hualien, Taiwan)

2009: Honorary Professor at Hong Kong University, Department of Anatomy (Hong Kong, China)

2011: Best lecture at Advanced HLA Workshop (One Lambda, Punta Cana, Dominican Republic);

McGowan Institute Distinguished Lecturer (University of Pittsburgh)

2013: Everfront Award for Stem Cells and Cancer Research (Taipei, Taiwan)

### Selected Recent Articles from ~160 publications

1. Yang ML, Li JJ, So KF, Chen JY, Cheng WS, Wu J, Wang ZM, Gao F, Young W. Efficacy and safety of lithium carbonate treatment of chronic spinal cord injuries: a double-blind, randomized, placebo-controlled clinical trial. *Spinal Cord*. 2012;50(2):141-6. PMID: 22105463.
2. Zhu Z, Kremer P, Tadmori I, Ren Y, Sun D, He X, Young W. Lithium Suppresses Astroglialogenesis by Neural Stem and Progenitor Cells by Inhibiting STAT3 Pathway Independently of Glycogen Synthase Kinase 3 Beta. *PLoS One*. 2011;6(9):e23341. PMID: 21931595.
3. Qu Z, Sun D, Young W. Lithium promotes neural precursor cell proliferation: evidence for the involvement of the non-canonical GSK-3beta-NF-AT signaling. *Cell Biosci*. 2011;1(1):18. PMID: 21711903.
4. Babiarz J, Kane-Goldsmith N, Basak S, Liu K, Young W, Grumet M. Juvenile and adult olfactory ensheathing cells bundle and myelinate dorsal root ganglion axons in culture. *Experimental Neurology*. 2011;229(1):72-9. PMID: 20850435.
5. Wong YW, Tam S, So KF, Chen JY, Cheng WS, Luk KD, Tang SW, Young W. A three-month, open-label, single-arm trial evaluating the safety and pharmacokinetics of oral lithium in patients with chronic spinal cord injury. *Spinal Cord*. 2010;49(1):94-8. PMID: 20531359.
6. Sun X, Wang X, Chen T, Li T, Cao K, Lu A, Chen Y, Sun D, Luo J, Fan J, Young W, Ren Y. Myelin activates FAK/Akt/NF-kappaB pathways and provokes CR3-dependent inflammatory response in murine system. *PLoS One*. 2010;5(2):e9380. PMID: 20186338.
7. Liu K, Li Y, Wang H, Jiang X, Zhao Y, Sun D, Chen L, Young W, Huang H, Zhou C. The immunohistochemical characterization of human fetal olfactory bulb and olfactory ensheathing cells in culture as a source for clinical CNS restoration. *Anat Rec (Hoboken)*. 2010;293(3):359-69. PMID: 19899113.
8. Wu MM, Fan DG, Tadmori I, Yang H, Furman M, Jiao XY, Young W, Sun D, You SW. Death of axotomized retinal ganglion cells delayed after intraoptic nerve transplantation of olfactory ensheathing cells in adult rats. *Cell Transplant*. 2010;19(2):159-66. PMID: 20350358.
9. Young W. MASCIS Spinal Cord Contusion Model. In: Chen J, Xu ZC, Xu X-M, Zhang JH (ed). *Animal Models of Acute Neurological Injuries*. Totowa, NJ: Humana Press; 2009. p. 411-21.
10. Chang YW, Goff LA, Li H, Kane-Goldsmith N, Tzatzalos E, Hart RP, Young W, Grumet M. Rapid induction of genes associated with tissue protection and neural development in contused adult spinal cord after radial glial cell transplantation. *J Neurotrauma*. 2009;26(7):979-93. PMID: 19257808.
11. Young W. Review of lithium effects on brain and blood. *Cell Transplant*. 2009;18(9):951-75. PMID: 19523343.
12. Zhu H, Feng YP, Young W, You SW, Shen XF, Liu YS, Ju G. Early neurosurgical intervention of spinal cord contusion: an analysis of 30 cases. *Chin Med J (Engl)*. 2008;121(24):2473-8. PMID: 19187581.
13. Shinbrot T, Young W. Why decussate? Topological constraints on 3D wiring. *Anat Rec (Hoboken)*. 2008;291(10):1278-92. PMID: 18780298.
14. Matsumoto M, Ichikawa T, Young W, Kodama N. Glutamine synthetase protects the spinal cord against hypoxia-induced and GABA(A) receptor-activated axonal depressions. *Surg Neurol*. 2008;70(2):122-8; discussion 8. PMID: 18262603.
15. Marano JE, Sun D, Zama AM, Young W, Uzumcu M. Orthotopic transplantation of neonatal GFP rat ovary as experimental model to study ovarian development and toxicology. *Reprod Toxicol*. 2008;26(3-4):191-6. PMID: 18848623.

### Articles with $\geq 100$ citations on 5/18/13

1. Bracken MB, Shepard MJ, Collins WF, Holford TR, Young W, Baskin DS, Eisenberg HM, Flamm E, Leo-Summers L, Maroon J, et al. A randomized, controlled trial of methylprednisolone or naloxone in the treatment of acute spinal-cord injury. Results of the Second National Acute Spinal Cord Injury Study. *N Engl J Med*. 1990;322(20):1405-11. PMID: 2278545. [#Cit. 2162, 11/18/13]\*
2. Maynard FM, Jr., Bracken MB, Creasey G, Ditunno JF, Jr., Donovan WH, Ducker TB, Garber SL, Marino RJ, Stover SL, Tator CH, Waters RL, Wilberger JE, Young W. International Standards for Neurological and Functional Classification of Spinal Cord Injury. American Spinal Injury Association. *Spinal Cord*. 1997;35(5):266-74. PMID: 9160449. [#Cit. 1202, 11/5/13]\*
3. Bracken MB, Shepard MJ, Holford TR, Leo-Summers L, Aldrich EF, Fazl M, Fehlings M, Herr DL, Hitchon PW, Marshall LF, Nockels RP, Pascale V, Perot PL, Jr., Piepmeier J, Sonntag VK, Wagner F, Wilberger JE, Winn HR, Young W. Nifedipine for 48 hours in the treatment of acute spinal cord injury. Results of the Third National Acute Spinal Cord Injury Randomized Controlled Trial. *J American Med. Assoc*. 1997;277(20):1597-604. PMID: 9168289. [#Cit. 1179, 11/5/13]\*
4. Bracken MB, Shepard MJ, Collins WF, Jr., Holford TR, Baskin DS, Eisenberg HM, Flamm E, Leo-Summers L, Maroon JC, Marshall LF, Perot PL, Piepmeier J, Sonntag VK, Wagner F, Wilberger JE, Winn HR, Young W. Methylprednisolone or naloxone treatment after acute spinal cord injury: 1-year follow-up data. *J Neurosurg*. 1992;76(1):23-31. PMID: 1727165. [#Cit. 629, 11/5/13]\*
5. Ditunno JF, Jr., Young W, Donovan WH, Creasey G. The international standards booklet for neurological and functional classification of spinal cord injury. American Spinal Injury Association. *Paraplegia*. 1994;32(2):70-80. PMID: 8015848. [#Cit. 508, 11/5/13]\*
6. Bracken MB, Shepard MJ, Holford TR, Leo-Summers L, Aldrich EF, Fazl M, Fehlings MG, Herr DL, Hitchon PW, Marshall LF, Nockels RP, Pascale V, Perot PL, Jr., Piepmeier J, Sonntag VK, Wagner F, Wilberger JE, Winn HR, Young W. Methylprednisolone or tirilazad mesylate administration after acute spinal cord injury: 1-year follow up. Results of the third National Acute Spinal Cord Injury randomized controlled trial. *J Neurosurg*. 1998;89(5):699-706. PMID: 9817404. [#Cit. 400, 11/5/13]\*
7. Basso DM, Beattie MS, Bresnahan JC, Anderson DK, Faden AI, Gruner JA, Holford TR, Hsu CY, Noble LJ, Nockels R, Perot PL, Salzman SK, Young W. MASCIS evaluation of open field locomotor scores: effects of experience and teamwork on reliability. Multicenter Animal Spinal Cord Injury Study. *J Neurotrauma*. 1996;13(7):343-59. PMID: 8863191. [#Cit. 364, 11/5/13]\*
8. Constantini S, Young W. The effects of methylprednisolone and the ganglioside GM1 on acute spinal cord injury in rats. *J Neurosurg*. 1994;80(1):97-111. PMID: 8271028. [#Cit. 304, 11/5/13]\*
9. Young W, Flamm ES. Effect of high-dose corticosteroid therapy on blood flow, evoked potentials, and extracellular calcium in experimental spinal injury. *J Neurosurg*. 1982;57(5):667-73. PMID: 7131067. [#Cit. 302, 11/5/13]\*
10. Beattie MS, Bresnahan JC, Komon J, Tovar CA, Van Meter M, Anderson DK, Faden AI, Hsu CY, Noble LJ, Salzman S, Young W. Endogenous repair after spinal cord contusion injuries in the rat. *Exp Neurol*. 1997;148(2):453-63. PMID: 9417825. [#Cit. 297, 11/5/13]\*
11. Bracken MB, Shepard MJ, Hellenbrand KG, Collins WF, Leo LS, Freeman DF, Wagner FC, Flamm ES, Eisenberg HM, Goodman JH, Perot PL, Green BA, Grossman RG, Meagher JN, Young W, Fischer B, Clifton GL, Hunt WE, Rickinson N. Methylprednisolone and neurological function 1 year after spinal cord injury. Results of the National Acute Spinal Cord Injury Study. *J Neurosurg*. 1985;63(5):704-13. PMID: 3903070. [#Cit. 238, 11/5/13]\*
12. Young W. H2 clearance measurement of blood flow: a review of technique and polarographic

- principles. Stroke. 1980;11(5):552-64. PMID: 6999671. [#Cit. 209, 11/5/13]\*
13. Young W. Secondary injury mechanisms in acute spinal cord injury. J Emerg Med. 1993;11 Suppl 1:13-22. PMID: 8445198. [#Cit. 202, 11/5/13]\*
  14. Young W, Flamm ES, Demopoulos HB, Tomasula JJ, DeCrescito V. Effect of naloxone on posttraumatic ischemia in experimental spinal contusion. J Neurosurg. 1981;55(2):209-19. PMID: 7252544. [#Cit. 201, 11/5/13]\*
  15. Young W. Role of calcium in central nervous system injuries. J Neurotrauma. 1992;9 Suppl 1:S9-25. PMID: 1588635. [#Cit. 189, 11/5/13]\*
  16. Young W. Spinal cord contusion models. Prog Brain Res. 2002;137:231-55. PMID: 12440371. [#Cit. 168, 11/5/13]\*
  17. Young W, Yen V, Blight A. Extracellular calcium ionic activity in experimental spinal cord contusion. Brain Res. 1982;253(1-2):105-13. PMID: 6295546. [#Cit. 163, 11/5/13]\*
  18. Young W, Koreh I. Potassium and calcium changes in injured spinal cords. Brain Res. 1986;365(1):42-53. PMID: 3947986. [#Cit. 160, 11/5/13]\*
  19. Blight AR, Young W. Central axons in injured cat spinal cord recover electrophysiological function following remyelination by Schwann cells. J Neurol Sci. 1989;91(1-2):15-34. PMID: 2746287. [#Cit. 150, 11/5/13]\*
  20. Flamm ES, Young W, Demopoulos HB, DeCrescito V, Tomasula JJ. Experimental spinal cord injury: treatment with naloxone. Neurosurgery. 1982;10(2):227-31. PMID: 7070619. [#Cit. 139, 11/5/13]\*
  21. Young W, Rappaport ZH, Chalif DJ, Flamm ES. Regional brain sodium, potassium, and water changes in the rat middle cerebral artery occlusion model of ischemia. Stroke. 1987;18(4):751-9. PMID: 3603602. [#Cit. 133, 11/5/13]\*
  22. Iizuka H, Sakatani K, Young W. Neural damage in the rat thalamus after cortical infarcts. Stroke. 1990;21(5):790-4. PMID: 1692645. [#Cit. 125, 11/5/13]\*
  23. Xiao G, Rabson AB, Young W, Qing G, Qu Z. Alternative pathways of NF-kappaB activation: a double-edged sword in health and disease. Cytokine Growth Factor Rev. 2006;17(4):281-93. PMID: 16793322 [#Cit. 117, 11/5/13]\*
  24. Young W, Wojak JC, DeCrescito V. 21-Aminosteroid reduces ion shifts and edema in the rat middle cerebral artery occlusion model of regional ischemia. Stroke. 1988;19(8):1013-9. PMID: 3400099. [#Cit. 110, 11/5/13]\*
  25. Carmel JB, Galante A, Soteropoulos P, Tolias P, Recce M, Young W, Hart RP. Gene expression profiling of acute spinal cord injury reveals spreading inflammatory signals and neuron loss. Physiol Genomics. 2001;7(2):201-13. PMID: 11773606. [#Cit. 108, 11/5/13]\*
  26. Pan JZ, Ni L, Sodhi A, Aguanno A, Young W, Hart RP. Cytokine activity contributes to induction of inflammatory cytokine mRNAs in spinal cord following contusion. J Neurosci Res. 2002;68(3):315-22. PMID: 12111861 [#Cit. 103, 11/5/13]\*

\* Citations numbers were obtained from Google Scholar on 5/18/13. Dr. Young has published 26 articles that have been cited at least 100 times, and 10 articles that have been cited >250 times (out of a total of 12590 citations). He has an H-Index of 47, i.e. 47 published articles that have been cited at least 47 times by other published articles.