

## 8. Curriculum Vitae

Principal Investigator/Program Director (Last, First, Middle):		Tsai, Eve, Chung	
<b>BIOGRAPHICAL SKETCH</b>			
Provide the following information for the key personnel and other significant contributors in the order listed on Page 1. Follow this format for each person. <b>DO NOT EXCEED FOUR PAGES.</b>			
NAME Eve Chung Tsai		POSITION TITLE Neurosurgeon, Assistant Professor and Associate Scientist	
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Toronto, Toronto, Canada	MD	1991-1995	Medicine
University of Toronto, Toronto, Canada	PhD	1998-2004	Neurosurgery, Spinal Cord
University of Toronto (Neurosurgery Residency),	FRCSC	1995-2005	Neurosurgery
Cleveland Clinic, Cleveland, USA	Spine Fellow	2005-2006	Spine

**A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Positions**

1995-2005 Neurosurgery Resident, University of Toronto, Ontario, Canada  
 1998-2003 PhD Student in Spinal Cord Injury Repair, University of Toronto, Ontario, Canada  
 2005-06 Spine Fellow, Cleveland Clinic, Cleveland, Ohio, USA  
 2006 - Neurosurgeon, Assistant Professor, Associate Scientist, Ottawa Civic Hospital, University of Ottawa, with Cross Appointments in Neuroscience and Regenerative Medicine and the Sprott Centre for Stem Cell Research, Ottawa, Ontario, Canada

**Honors**

Awards for work on synthetic channels for spinal cord injury and spinal cord repair:  
 2007: Young Clinician Investigator Award for research on regeneration after spinal cord injury; Neurosurgery Research and Education Foundation of the American Association of Neurological Surgeons (AANS)  
 2005: Synthes Brain and Spine Injury Award for best abstract/oral presentation; AANS/Synthes.  
 2003: Synthes Award for Spinal Cord and Spinal Column Injury for best abstract/oral presentation; AANS/Synthes.  
 2003: American College of Surgeons 25th Annual International Residents Trauma Paper Competition - First Place for the best trauma research paper in Basic Laboratory Science; American College of Surgeons.  
 2003: K. G. McKenzie Memorial Prize-best basic science research abstract; Canadian Congress of Neurological Sciences.  
 2003 - CIHR/CSCI Award for Excellence in Resident Research best abstract/poster presentation; Canadian Institutes of Health Research/Canadian Society for Clinical Investigation.  
 2003 - The Thomas P. Morley Neurosurgical Resident First Prize for outstanding accomplishments in neurosurgical research and for contributions to the advancement of the field; University of Toronto, Division of Neurosurgery, Department of Surgery.  
 2002 - Concours Prix À La Relève for best research abstract; BioContact and the Canadian Institutes of Health Research.

**B. Selected peer-reviewed publications (in chronological order).** Do not include publications submitted or in preparation.

1. Shamji, Mohammed F.; Seth, Rashmi; Tsai, Eve. Procedure: Cervical Laminoforaminotomy., in Fehlings MG (ed): *Neurosurgery: Tricks of the Trade*, 2008 (in press).
2. Tsai, EC, Roger, E and Benzel, E: Biomechanics of Spinal Injury, in *Neurotrauma and Critical Care*. J. Jallo, A. Vaccaro (eds). New York: Thieme, 2008 (in press).
3. Tsai, EC, Ugokwe, K and Benzel, E: Biomechanics and Technique Selection for Lumbar Fusion, in *Surgical Management of Lower Back Pain*. R. Resnick, R Haid (eds). New York: Thieme, 2008 (in press).
4. Tsai, EC, Butler, J and Benzel, E: Spinal Meningiomas, in J. H. Lee (ed): *Meningiomas: Diagnosis, Treatment and Outcome*. London: Springer-Verlag (London) Ltd, 2008 (in press).
5. Mohammed F. Shamji, M.D., M.Sc., Mohammed Bafaquh, M.D., and Eve Tsai, M.D., Ph.D. The pathogenesis of ankylosing spondylitis E3, *Neurosurgical FOCUS*, January 2008 24,(1) 1-10
6. Tsai, EC, Hawryluk, G and Rutka, JT: Tumors of the Skull Base in Children, in J. C. Tonn, M. Westphal, J. T. Rutka and S. A. Grossman (eds): *Neuro-Oncology of Cns Tumors*. Berlin Heidelberg New York: Springer-Verlag Berlin Heidelberg, 2006, pp 555-566.
7. Tsai, EC, Dalton, PD, Shoichet, MS and Tator, CH. Matrix Inclusion within Synthetic Hydrogel Guidance Channels Improves Specific Supraspinal and Local Axonal Regeneration after Complete Spinal Cord Transection. *Biomaterials*, 2006, 27: 519-533.
8. Berglund, RK, Lyden, SP, Tsai, EC, Lieberman, I and Klein, EA. Nonseminomatous Germ Cell Tumor after Chemotherapy with Residual Mass Invading the Spine. *Eur Urol*, 2006.
9. Tsai, Eve C. MD, PhD; Krassioukov, Andrei V. MD, PhD; Tator, Charles H. MD, PhD Corticospinal Regeneration into Lumbar Grey Matter Correlates with Locomotor Recovery after Complete Spinal Cord Transection and Repair with Peripheral Nerve Grafts, Fibroblast Growth Factor 1, Fibrin Glue, and Spinal Fusion. *Journal of Neuropathology & Experimental Neurology*. March 2005, 64(3):230-244.
10. Tsai, EC and Tator, CH. Neuroprotection and Regeneration Strategies for Spinal Cord Repair. *Current Pharmaceutical Design*, 2005, 11(10):1211-22.
11. Tsai, EC, Krassioukov, AV and Tator, CH. Corticospinal Regeneration into Lumbar Grey Matter Correlates with Locomotor Recovery after Complete Spinal Cord Transection and Repair with Peripheral Nerve Grafts. *Journal of Neuropathology and Experimental Neurology*, March 2005, 64(3):230-244.
12. Tsai, EC, Dalton, PD, Shoichet, MS and Tator, CH. Matrix Inclusion within Synthetic Hydrogel Guidance Channels Improves Specific Supraspinal and Local Axonal Regeneration after Complete Spinal Cord Transection. *Biomaterials*, 2005, 27(3):519-33.
13. Tsai, EC, Dalton, PD, Shoichet, MS and Tator, CH. Synthetic Hydrogel Guidance Channels Facilitate Regeneration of Adult Rat Brainstem Motor Axons after Complete Spinal Cord Transection. *J Neurotrauma*, 2004, 21: 789-804.
14. Tsai, EC. Mechanisms of Locomotor Recovery after Spinal Cord Repair with Peripheral Nerves, Fibroblast Growth Factor 1, and Fibrin Glue after Complete Spinal Cord Transection in the Adult Mammal. Institute of Medical Sciences, Toronto, 2004 - PhD.
15. Tsai, EC and Rutka, JT: Cervicomedullary Astrocytomas, in M. Prados (ed): *Textbook of Neuro-Oncology*. Philadelphia: Elsevier Inc., 2004.
16. Tsai, EC. Images of Cervical Spine: Cover Illustration. *Can J Surg*, 2004, 47: Cover.
17. Tsai, EC, Lukas, L, Dalton, PD, Shoichet, MS and Tator, CH. Improved functional recovery with matrix supplemented hydrogel channels. *Canadian Journal of Neurological Sciences*, 2004, 31(Supplement 1): S17.
18. Tsai, EC, DeMarchi, R, Dalton, PD, Shoichet, MS and Tator, CH. Novel synthetic grafts promote axonal regeneration and functional recovery after spinal cord transection. *Canadian Journal of Neurological Sciences*, 2003, 30(Supplement 2): S11.
19. Jimenez Hamann, MC, Tsai, EC, Tator, CH and Shoichet, MS. Novel Intrathecal Delivery System for Treatment of Spinal Cord Injury. *Exp Neurol*, 2003, 182: 300-309.

**EVE TSAI, BIOSKETCH CHRISTOPHER AND DANA REEVE GRANT APPLICATION**

20. Tsai, EC, Lukas, L, Dalton, PD, Parr, A, Shoichet, MS and Tator, CH. Matrix Modification Within Novel Synthetic Hydrogel Channels can Promote Specific Types of Axonal Regeneration. *Journal of Neurotrauma*, 2003, 19(10):
21. DeMarchi, R, Tsai, EC and Tator, CH. A Novel Synthetic Tube with Combination Therapy Improves Functional Recovery After Spinal Cord Injury. *17th Annual University of Toronto Medical Student Research Day*, 2003, 80(Supp): S25.
22. Tsai, EC, Parr, A, Dalton, PD, Shoichet, MS and Tator, CH. Regeneration of Adult Rat Brainstem Motor Axons After Complete Spinal Cord Transection with Novel Synthetic Hydrogel Guidance Channels. *Society for Neuroscience*, 2003: 553.555.
23. Tsai, EC, Lee, L, Morshead, C, Mothe, AJ, van der Kooy, D and Tator, CH. Feasibility of transplantation of subependymal stem cells into mouse spinal cord after acute and chronic spinal cord injury. *Canadian Journal of Neurological Sciences*, 2002: 66.
24. Tsai, EC, Dalton, PD, Shoichet, MS, van Bendegem, RL and Tator, CH. Repair of spinal cord injury using a novel synthetic graft. *Canadian Journal of Neurological Sciences*, 2002: 66.
25. Tsai, EC, Dalton, PD, Shoichet, MS and Tator, CH. Novel synthetic grafts that are biocompatible and promote axonal regeneration after spinal cord injury. *Journal of Neurotrauma*, 2002, 19(10): 1280.
26. Mothe, AJ, Ichihara, K, Tsai, EC and Tator, CH. Identification of proliferating ependymal cells in the rat spinal cord following trauma. *Journal of Neurotrauma*, 2002, 19(10): 1374.
27. Jimenez Hamann, MC, Tsai, EC, Tator, CH and Shoichet, MS. A novel delivery system for treatment of spinal cord injury. *Journal of Neurotrauma*, 2002, 19(10): 1392.
28. Govindarajan, A, Lukas, L, Tsai, E and Tator, CH. Effect of neurotrophic factors, FGF-1 and NT-3, on spinal cord regeneration. *University of Toronto Medical Journal*, 2002, 79(Supp): S31.
29. Lukas, L, Tsai, EC, Govindarajan, A, Marshall, KH, Dalton, PD, Shoichet, MS and Tator, CH. Gel Matrix Substrates Act as Physical Scaffolding for Axonal Regeneration in Adult Sprague-Dawley Rats. *University of Toronto Medical Journal*, 2002, 79(Supp): S31.
30. Jimenez-Hamann, M, Tsai, EC, Tator, CH and Shoichet, MS. *In situ* delivery of growth factors to the injured rat spinal cord. *Program No. 203.6. 2002 Abstract Viewer/Itinerary Planner*, 2002, Society for Neuroscience, Online.
31. Mothe, AJ, Tsai, EC, Lee, LL, Morshead, CM, van der Kooy, D and Tator, CH. Feasibility of transplantation of stem cells into mouse spinal cord. *Program No. 203.19. 2002 Abstract Viewer/Itinerary Planner*, 2002, Society for Neuroscience, 2002. Online:
32. Tsai, EC, Poon, PCK, van Bendegem, RL and Tator, CH. Pathophysiological mechanisms underlying a successful spinal cord repair in a rat. *Program No. 204.2. 2002 Abstract Viewer/Itinerary Planner*, 2002, Society for Neuroscience, Online.:
33. Tsai, EC, Poonai, N, Marshall, K, Rahman, N-u, Foad Ghazni, N and Tator, CH. Transplantation of Stem Cells Into Injured Mouse Spinal Cord. *University of Toronto Medical Journal*, 2002, 79(Supp): S31.
34. Tsai, EC, Santoreneos, S and Rutka, JT. Tumors of the Skull Base in Children: Review of Tumor Types and Management Strategies. *Neurosurgery Focus*, 2002, 12: 1-13.
35. Tsai, EC, van Bendegem, RL, Hwang, SW and Tator, CH. A Novel Method for Simultaneous Anterograde and Retrograde Labeling of Spinal Cord Motor Tracts in the Same Animal. *J Histochem Cytochem*, 2001, 49: 1111-1122.
36. Tsai, EC, Marshall, KH, Hwang, SW, van Bendegem, RL and Tator, CH. The spinal cord reanastomosis surgical repair strategy results in functional and histological improvement following complete spinal cord transection. *Canadian Journal of Neurological Sciences*, 2001, 28(Suppl 2): S59-60.
37. Tsai, EC, Marshall, KH, van Bendegem, RL and Tator, CH. Evaluation of two spinal cord repair strategies that improve functional and histological recovery. *Journal of Neurotrauma*, 2001, 18(10): 1147.
38. Grant, AA, Tsai, EC, Hwang, SW, Dalton, PD, Lee, L, Shoichet, MS and Tator, CH. Functional and histological evaluation of novel synthetic tube grafts for spinal cord repair. *University of Toronto Medical Journal*, 2001, 78: S19.

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39. Hwang, SW, Tsai, EC, Grant, AA, van Bendegem, RL and Tator, CH. Functional and histological assessment of spinal cord repair using two surgical strategies. *University of Toronto Medical Journal*, 2001, 78: S20.
40. Tsai, EC, Marshall, KH, Hwang, SW, van Bendegem, RL and Tator, CH. A spinal cord reanastomosis surgical repair strategy results in functional and histological improvement following complete spinal cord transection. *Canadian Journal of Neurological Sciences*, 2001, 28(Supplement 2): S59-60.
41. Tsai, EC, Hwang, SW, Marshall, KH and Tator, CH. Functional and histological assessment of spinal cord repair using two strategies, peripheral nerve grafting and anastomosis. *Society for Neuroscience Proceedings*, 2001:
42. Tsai, EC, Fehlings, M and Tator, CH. Long term follow-up of treated posttraumatic syringomyelia: role of magnetic resonance imaging in the evaluation of outcome. *Canadian Journal of Neurological Sciences*, 2000, 27(Suppl 2): S68.
43. Tsai, EC and Tator, CH. Retrograde and anterograde labeling of spinal cord tracts in the same animal. *Canadian Journal of Neurological Sciences*, 2000, 27(Suppl 2): S56.
44. Tsai, EC, McDermott, SL, Lozano, AM and Tator, CH. Neutralization of myelin induced neurite inhibition by the IN-1 and 10D antibodies. *Journal of Neurotrauma*, 2000, 17(10): 988.
45. Tsai, EC, Schwartz, G and Tator, CH. Retrograde and anterograde labeling of spinal cord tracts in the same animal as applied to spinal cord repair. *Restorative Neurology and Neuroscience*, 2000, 16: 270.
46. Kaptanoglu, E, Tsai, EC and Tator, CH. Functional and Histological Examination of Spinal Cord Transection Repair Strategies and Neurotrophic Growth Factors. *Journal of Neurotrauma*, 1999, 16(10): 1011.
47. Tsai, EC, Yau, C, Lozano, AM and Tator, CH. Effect of Two Myelin Neutralizing Antibodies on Dorsal Root and Superior Cervical Ganglia Neurite Outgrowth. *Journal of Neurotrauma*, 1999, 16(10): 1011.
48. Tsai, EC, Theriault, E and Tator, CH. Neurological Function and Cell Body Response of Red Nucleus Neurons Following Traumatic Compression Injury of the Spinal Cord. *Neurotrauma Symposium, Neurotrauma Society*, 1993

**C. Research Support**

OHRI Start-up Funding, Tsai (PI) 10/01/06-09/3/09  
The Ottawa Health Research Institute, Surgery, Neurosurgery Departments. \$130,000  
Through the OHRI, I have access to a research administrative assistant and laboratory space at the Loeb Research Building at the Civic Campus with access to the animal facility. I have also been provided with formal mentorship by the senior scientist, Dr. Leo Renaud. Through the Department of Surgery and the Division of Neurosurgery, I have been provided salary support and protected time to dedicate 60% of my time to research. Role, PI

Research Award, Tsai 04/2007-03/2008  
2007 YOUNG CLINICIAN INVESTIGATOR AWARD \$40,000 US  
Young Clinician Investigator Award from the Neurosurgery Research and Education Fund of the American Association of Neurological Surgeons.  
Project Bioengineering strategies to enable combination therapy for the repair of spinal cord injury.  
Role, PI

Canadian Institutes for Health Research 04/01/2008-03/31/20011  
Operating Grant \$138,649/yr  
*Bioengineering strategies to restore motor function after spinal cord injuries*,  
Role: Co-PI, Eve Tsai, Neurosciences, Ottawa Health Research Institute, P.I. Xudong Cao, Chemical Engineering, University of Ottawa, , and May Griffith, Cellular and Molecular Medicine, University of Ottawa