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 Faculty of Medicine
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EDUCATION

- 1985-1989 BS. Zoology, National Taiwan University, Taipei, Taiwan
- 1990-1995 Ph.D. Committee on Virology, University of Chicago
 Thesis: Identification of an alternatively translated viral protein critical for viral-induced immune-mediated demyelination disease: a murine model of multiple sclerosis.
 Advisor: Dr. Raymond P. Roos

RESEARCH POSITIONS

- 1995-1996 Postdoctoral fellow, Department of Neurology, University of Pittsburgh.
 Demonstrate the feasibility and persistence of *in vivo* muscle gene transfer of full-length dystrophin with a novel high capacity adenoviral vector that lacks all viral gene.
 Advisor: Paula Clemens, M.D. Funding: National Research Service Award (NIH)
- 1997-2003 Research Associate, Department of Neurobiology, University of Pittsburgh.
 Identification of genes regulating sensory neuron specification by differential screening of single-cell cDNA libraries.
 Electrophysiological characterization of the effects of neurotrophin 3 on spinal monosynapses in a transgenic mouse model of congenital ataxia.
 Advisor: Eric Frank, Ph.D. Funding: National Research Service Award (NIH)
- 2003-2004 Senior Research Associate, Cardiovascular Institute, University of Pittsburgh
 Characterization of Tissue-Specific Transcription Cofactors
 Advisor: Dr. Barry London, M.D./Ph.D. Funding: Muscular Dystrophy Association
- 2005-present Scientist/Principal Investigator, Centre for Stroke Recovery, Neuroscience Division, Ottawa Health Research Institute, University of Ottawa
- 2005-present Assistant professor, Department of Medicine, University of Ottawa
- 2006-present Assistant professor, Department of Cellular and Molecular Medicine, University of Ottawa

AWARDS

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|-------------|----------------------|-------------------------------|--------------|
| 1993 | Student travel award | American Society for Virology | \$750 |
| 1994 | Student travel award | American Society for Virology | \$750 |
| 1995 | Student travel award | American Society for Virology | \$750 |

1997-1999	Postdoctoral fellowship	American Heart Association	\$ 48,000 (declined)
1997-2000	National Research Service Award	National Institutes of Health (USA) (National Heart, Lung, & Blood Institute)	\$90,000 (terminated after relocation)
1999-2002	National Research Service Award	National Institutes of Health (USA) National Research Service Award (National Institute of Neurological Diseases and Stroke)	\$150,000
2009-2014	Early Researcher Award	Ontario Ministry of Research and Innovation (The molecular mechanisms controlling sensory neuron development, a foundation for cell-based therapy for neuropathies.)	\$150,000
2009-2010	Henry J. M. Barnett Research Scholarship award	The Heart and Stroke Foundation of Canada	\$15,000
2009-2014	New Investigator Award	Canadian Institutes of Health Research	\$300,000 (declined)
2009-2014	New Investigator Award	The Heart and Stroke Foundation of Canada	\$300,000

GRANTS AND FINANCIAL AWARDS

2006-2008	Canada Foundation for Innovation	Establishment of an experimental embryology, microscopy and electrophysiology laboratory to study the molecular basis of congenital neuronal defects and stroke recovery.	\$140,000
2006-2008	Ontario Research Foundation	Establishment of an experimental embryology, microscopy and electrophysiology laboratory to study the molecular basis of congenital neuronal defects and stroke recovery.	\$140,000
2006-2007	Heart and Stroke Foundation Centre for Stroke Recovery	LMO4-mediated IL6 signaling is a novel pathway that may account for preconditioning induced IL-6 mediated neuroprotection and polymorphisms of LMO4 promoter may affect tolerance and recovery from stroke.	\$40,000
2007	CIHR Priority Announcement (NSA 174808)	Control of sensory neuron differentiation and survival.	\$50,000
2007-2008	Heart and Stroke Foundation Centre for Stroke Recovery	LMO4 is required for PPAR gamma dependent neuronal survival of ischemic injury	\$40,000
2008-2013	CIHR Neurosciences, Mental Health and Addiction (NSB)	Control of sensory neuron development.	\$615,315

2008-2011	179197) The Heart and Stroke Foundation of Canada (Grant-in-Aid) (NA6301)	Mechanisms to reduce injury and improve recovery from stroke.	\$304,326
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AD HOC REVIEWER

Granting agencies: CIHR Neuroscience RFA (2007)
Swiss National Science Foundation (2007)
CIHR Pharmacology & Toxicology (PT) (2007)
NSERC Discovery grant (2008)

Peer-review Journal: Biochemical Biophysical Research Communications (2007), Oncogen (2008, 2009), Cellular and Molecular Life Sciences (2009)

PROFESSIONAL COMMITTEES

Full member, Society for Neuroscience (USA)
Full member, American Heart Association (USA)
Core member, Centre for Stroke Recovery, Heart and Stroke Foundation of Ontario
Core member, Neuroscience Graduate Program
Member, Faculty of Graduate and Postdoctoral Studies

POSTDOCTORAL FELLOW SUPERVISED

Rama Panford-Walsh	Heart and Stroke Foundation of Ontario Funded	2008
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STUDENTS SUPERVISED

Sarah Schock (nee McKee)	PhD Neuroscience	2005-2008
Philippe Duquette	BSc Honours	2007
Philippe Duquette	MSc Neuroscience	2008-
Mariana Gomez-Smith	MSc/PhD Neuroscience	2008-
Xun Zhou	MSc/PhD Neuroscience	2008-

SUMMER STUDENTS SUPERVISED

Patrick William Hughes	Summer Student	2006
Punarpreet S Rai	Summer Student	2007(& 2008)
Adam Lewandowski	Summer Student (recipient of the John D Schultz scholarship, Heart and Stroke Foundation of Ontario)	2007(& 2008)
Ningke Kuang	Summer Student	2009

GRADUATE STUDENT COMMITTEES

Committees in Neurosciences/CMM	(PhD)	(MSc)
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	Zohreh Galehdar	Kimberly Galaraga
	Grace Iyirhiaro	Kunal Bhanot
	Leticia Sanchez Alvarez	Rema Kamal
	Mohammad Parsanejad	Max Rousseaux
Comprehensive Examiner	Anastasia Rogaeva	
	Kirsten Jacobsen	
	Kelly McClellan	
	Mahmoud R. Hajighassem	
	Sarah C Shock	
	Vladimir Ruzhynsky	
	Hossein Aleyasin	
Thesis Defense Examiner	Sarah C Schock.	Ariel Burns
		Federico Remes Lenicov

JUDGE FOR GRADUATE SEMINAR AND POSTER

NSC graduate program, Department of Cellular and Molecular Medicine, University of Ottawa (2005-2009)

TEACHING GRADUATE COURSES

NSC 8103 Developmental Neuroscience (2007-2009)

NSC 5102 Cellular and Molecular Neuroscience (2007-2009)

COORDINATE GRADUATE COURSE AND SEMINAR

NSC 5102 Cellular and Molecular Neuroscience (2008-2009)

Neuroscience Seminar Series (2008-2009)

WORKSHOPS AND INVITED TALKS

1. Theiler's murine encephalomyelitis virus-induced demyelinating disease, an animal model of multiple sclerosis. Department of Microbiology, National Taiwan University, Taipei, Taiwan ROC, August 6, 1992.
2. Gene therapy in Duchenne's muscular dystrophy: Stable persistence in muscle of an adenoviral vector that lacks all viral genes. Institute of molecular biology, Academia Sinica, Taipei, Taiwan ROC, February 17, 1997.
3. Gene therapy in Duchenne's muscular dystrophy: Stable persistence in muscle of an adenoviral vector that lacks all viral genes. Department of Microbiology, National Taiwan University, Taipei, Taiwan ROC, February 18, 1997.
4. Keystone Symposia of Molecular Biology of Muscle Development. April 1-6, 1997 (abstract presented).
5. Cold Spring Harbor Laboratory meeting on Axon guidance & Neural Plasticity. September 20-24, 2000. (abstract presented).
6. Keystone Symposium on Development of the Spinal Cord and Neural Crest. March 17-22, 2002 (abstract presented).
7. Molecular mechanisms regulating the development of a spinal reflex circuit. Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa, Canada. Mar 6, 2003.

8. Molecular mechanisms regulating the development of a spinal reflex circuit. Department of Biomedical Science, Florida Atlantic University, Florida. March 31, 2003.
9. Molecular mechanisms regulating the development of a spinal reflex circuit. Division of Child Neurology, Children's Hospital of Pittsburgh/University of Pittsburgh, Pittsburgh. April 4, 2003.
10. Molecular cues controlling neural identity and synaptic function in the spinal cord. Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan. April 17, 2003.
11. Vestigial Cofactors Regulate Cardiac and Skeletal Muscle Transcription. Keystone Symposium on Cardiac Development and Congenital Heart Disease, March 7-11, 2004.
12. Molecular cues controlling neural identity and synaptic function in the spinal cord. Neuroscience Division, Ottawa Health Research Institute, November 29, 2004.
13. Development of a spinal circuit. Department of Cellular and Molecular Medicine, University of Ottawa, February 14, 2006.
14. Transcription cofactor LMO4 mediates IL-6-dependent gene expression and promotes neuronal ischemic tolerance. Centre for Stroke Recovery Annual General Meeting, Toronto, Ontario. May 5, 2006.
15. LMO4 promotes neuron survival of ischemia. OHRI annual retreat, Lac Carlin, Quebec. April 2007.
16. Genetic control of recovery. Centre for Stroke Recovery Annual General Meeting, Toronto, Ontario. June 17, 2007.
17. The LIM domain only protein LMO4 is an essential cofactor of PPAR γ required for neuron survival of ischemic injury. Keystone Symposium on Nuclear Receptors: Orphan Brothers. March 31, 2008.

PUBLICATIONS

REVIEWS

1. **Chen, H.-H.** and Frank, E. (1999). Development and specification of muscle sensory neurons. *Cur. Opinion in Neurobiol.*, 9, 405-409.
2. **Chen, H.-H.** Arber, S., and Frank, E. (2003). Development of monosynaptic reflex circuits. *Cur. Opinion in Neurobiol.*, 13, 96-102.

BOOK CHAPTER

1. **Chen, H.-H.**, Stewart AFR. (2007) Characterization of Cardiac Gene Promoter Activity: Reporter Constructs and Heterologous Promoter Studies. In: Zhang J, Rokosh G, eds. Cardiac Gene Expression: Methods and Protocols. Totowa, New Jersey: Humana Press:217-25.

PEER-REVIEWED ARTICLES

1. **Chen, H.-H.**, Kong, W.-P., Ward, P.L. and Roos, R.P. (1995). A picornaviral protein synthesized out of frame with the polyprotein plays a role in a virus-induced immune-mediated demyelinating disease. *Nature Medicine*, 1, 927-931.
2. **Chen H.-H.**, Kong, W.-P. and Roos, R. P. (1995). The leader peptide of Theiler's murine encephalomyelitis virus is a zinc-binding protein. *J. Virol.*, 69, 8076-8078.
3. Grubman, M.J., Piccone, M.E., **Chen, H.-H.** and Roos, R.P. (1996). Construction of a chimeric Theiler's murine encephalomyelitis virus containing the Lb gene of foot-and-mouth disease virus. *Virology*, 226, 135-139.
4. Kochanek, S., Clemens, P.R., Mitani, K., **Chen, H.-H.**, Chan, S. and Caskey, C.T. (1996). A new adenoviral vector: replacement of all viral coding sequences with 28 kb of DNA independently expressing both full-length dystrophin and β -galactosidase. *Proc. Natl. Acad. Sci. USA*, 93, 5731-5736.

5. Clemens, P.R., Kochanek, S., Sunada, Y., Chan, S., **Chen, H.-H.**, Campbell, K. P. and Caskey, C. T. (1996). In vivo muscle gene transfer of full-length dystrophin with an adenoviral vector that lacks all viral genes. *Gene Therapy*, 3, 965-972.
6. **Chen, H.-H.**, Mack, L.M., Kelly, R., Ontell, M., Kochanek, S. and Clemens, P.R. Persistence in muscle of an adenoviral vector that lacks all viral genes. (1997). *Proc. Natl. Acad. Sci. USA*, 94, 1645-1650.
7. Stewart, A.F.R., Suzow, J., Kubota, T., Ueyama, T., and **Chen, H.-H.** (1998) Transcription Factor RTEF-1 Mediates α_1 -Adrenergic Reactivation of the Fetal Gene Program in Cardiac Myocytes. *Circ. Res.*, 83, 43-49.
8. **Chen, H.-H.**, Mack, L.M., Choi, S. Y., Ontell, M., Kochanek, S. and Clemens, P.R. (1999). Removal of all viral genes in a high capacity adenoviral vector results in stable transgene expression in muscle from intact vector DNA. *Hum. Gene Therapy*, 10, 365-373.
9. **Chen, H.-H.**, Tourtellotte, W.G. and Frank, E. (2002). Muscle spindle-derived neurotrophin 3 (NT3) regulates synaptic connectivity between muscle sensory and motor neurons. *J. Neurosci*, 23, 3512-3519.
10. Maeda, T., Sepulveda, J., **Chen, H.-H.**, and Stewart, A. F. R. (2002). α_1 -Adrenergic activation of the cardiac ankyrin repeat protein gene in cardiac myocytes. *Gene*, 297, 1-9.
11. **Chen, H.-H.**, Yip, J.W., Stewart, A.F.R. and Frank, E. (2002). Differential expression of a transcription regulatory factor, the LIM-domain only 4 protein LMO4, in muscle sensory neurons. *Development*, 129, 4879-4889.
12. MacGowan, G.A., Evans, C., Hu, T. C. C., Debrah, D., Mullett, S., **Chen, H.-H.**, McTiernan, C., Stewart, A. F. R., Koretsky, A. P., and Schroff, S. G. (2004) Ca^{2+} -dependent alterations in left ventricular function in troponin I mutant mice. *Cardiovascular Research*, **63**, 245-255.
13. **Chen, H.-H.**, Mullett, S. J., Stewart, A. F. R. (2004) Vgl-4, a novel member of the Vestigial-like family of transcription cofactors, regulates α_1 -adrenergic activation of gene expression in cardiac myocytes. *Journal of Biological Chemistry*, **279**, 30800-30806.
14. **Chen, H.-H.**, Maeda, T., Mullett, S. J., Stewart, A. F. R. (2004) The transcription cofactor Vgl-2 is required for skeletal muscle differentiation. *Genesis*, **39**, 273-279.
15. **Chen, H.-H.**, Baty, C., Maeda, T., Saba, S., Ueyama, T., Brooks, S., Baker, L. C., Gursoy, E., Salama, G., London, B., and Stewart, A. F. R. (2004) Transcription Enhancer Factor-1-Related Factor-Transgenic Mice Develop Cardiac Conduction Defects Associated With Altered Connexin Phosphorylation. *Circulation*, 110, 2980-2987.
16. **Chen, H.-H.**, Mullett, S.J., and Stewart, A.F.R. TEF-1 transcription factors interact with hypoxia inducible factor 1 alpha and modulate the hypoxic response in cardiac myocytes. (Manuscript under preparation).
17. **Chen, H.-H.**, Xu J, Safarpour F, Stewart AF. LMO4 (2007) mRNA stability is regulated by extracellular ATP in F11 cells. *Biochem Biophys Res Commun*, 357, 56-61.
18. **Chen, H.-H.**, Schock SC, Xu J, Safarpour F, Thompson CS, Stewart AF. (2007) Extracellular ATP-dependent upregulation of the transcription cofactor LMO4 promotes neuron survival from hypoxia. *Exp Cell Res.*, 313, 3106-16.
19. Schock SC, Xu J, Duquette PM, Qin Z, Rai PS, Lewandowski AJ, Thompson CS, Seifert EL, Harper M, **Chen, H.-H.** (2008) Rescue of neurons from ischemic injury by PPAR γ requires a novel essential cofactor LMO4. *J. Neurosci.* 2008 28: 12433-12444.

UNDERLINED: SENIOR AND CORRESPONDING AUTHOR

ABSTRACTS

1. **Chen, H.-H.**, Kong, W.-P., Stein, S.B. and Roos, R.P. (1992). Structure, function, and protein binding of Theiler's murine encephalomyelitis virus (TMEV) 5' untranslated region (UTR). *The Third International Positive Strand RNA Symposium*.

2. **Chen, H.-H.** and Roos, R.P. (1993). Studies of the Theiler's murine encephalomyelitis virus (TMEV) 5' untranslated region (5'UTR). *12th Annual Meeting of the American Society of Virology*.
3. **Chen, H.-H.**, Kong, W.-P., Ghadge, G. and Roos, R.P. (1994). L/P1 processing of mutants of Theiler's murine encephalomyelitis virus (TMEV) with Leader (L) deletions. *13th Annual Meeting of the American Society of Virology*.
4. **Chen, H.-H.**, Kong, W.-P. and Roos, R.P. (1994). Polyprotein processing of Theiler's murine encephalomyelitis virus (TMEV) with mutations of the leader (L) coding region. *VIIIth meeting of the European study group on the molecular biology of picornaviruses*.
5. **Chen, H.-H.**, Kong, W.-P. and Roos, R.P. (1995). A picornaviral protein synthesized out of frame with the polyprotein plays a critical role in a virus-induced immune-mediating disease. *14th Annual Meeting of the American Society of Virology*.
6. **Chen, H.-H.**, Mack, L. M., Kelly, R., Ontell, M., Kochanek, S. and Clemens, P.R. (1997). Stable persistence in muscle of an adenoviral vector that lacks all viral genes. *Keystone Symposia of Molecular Biology of Muscle Development*.
7. Frank, E., Ladle, D. R., **Chen, H.-H.**, Milbrandt, J. and Tourtellotte, W. G. (1999). Functional deficits in sensory-motor connections in the spinal cord of Egr3-deficient mice. *Annual Meeting of the Society for Neuroscience*.
8. **Chen, H.-H.**, Ladle, D. R., Covington, S.B., Berzhanskaya, J., Chalovich, E.M., Tourtellotte, W.G. and Frank, E. (2000). Muscle spindles are required for maintenance of synaptic connections between sensory and motoneurons during the neonatal period. *Cold Spring Harbor Laboratory meeting on Axon guidance & Neural Plasticity*.
9. **Chen, H.-H.**, and Frank, E. (2002) A transcription regulatory factor, the LIM-only domain protein LMO4, is expressed in functionally related subsets of muscle sensory and motor neurons. *Keystone Symposia of Development of the Spinal Cord and Neural Crest*.
10. **Chen, H.-H.**, and Frank, E. (2003) Mis-expression of a transcription regulatory factor, the LIM-only domain protein LMO4, alters axonal projection in chick spinal cord. *Keystone Symposia of Development of the Spinal Cord and Neural Crest*.
11. **Chen, H.-H.**, and Stewart, A. F. R. (2004) Vestigial Cofactors Regulate Cardiac and Skeletal Muscle Transcription. Cardiac Development and Congenital Heart Disease, Keystone Symposium, Keystone, Colorado, March 7-11.
12. **Chen, H.-H.**, Thompson, C. McKee, S., Xu, J., Stewart, A. F. R. (2006) Transcription cofactor LMO4 mediates IL-6-dependent gene expression and promotes neuronal ischemic tolerance. *Annual Meeting of the Society for Neuroscience, Atlanta, October 17*.
13. Schock SC, Xu J, **Chen, H.-H.**. The LIM domain only protein LMO4 is an essential cofactor of PPAR γ required for neuron survival of ischemic injury. *Keystone Symposium on Nuclear Receptors: Orphan Brothers. March 31, 2008*.
14. Duquette P., Schock SC, Xu J, **Chen, H.-H.** Rescue of neurons from ischemic injury by PPAR γ requires a novel essential cofactor LMO4. *International Stroke Conference 2009*.
15. AC Teng, **H.-H. Chen**, S Dugan, M Crowson, MI Belanger, D Kuraitis, E Suuronen, PG Burgon, AFR Stewart. IDENTIFICATION OF INTERFERON RESPONSIVE FACTOR 2 BINDING PROTEIN 2 (IRF2BP2) AS A NOVEL MUSCLE-ENRICHED TRANSCRIPTION COFACTOR THAT COACTIVATES THE VASCULAR ENDOTHELIAL GROWTH PROMOTER. *12th SCBA international symposium, Taipei, Taiwan. June 14-18, 2009*.
16. Schock SC, Xu J, Duquette P, **Chen, H.-H.** Rescue of neurons from ischemic injury by PPAR γ requires a novel essential cofactor LMO4. *12th SCBA international symposium, Taipei, Taiwan. June 14-18, 2009*.