

EVA R. CHIN

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EDUCATION

1989-1993	University of Waterloo Faculty of Applied Health Sciences	Ph.D. Kinesiology
1987-88	Queens University Faculty of Education	B.Ed.
1985-87	McMaster University Adapted Human Biodynamics Program	M.Sc. Exercise Physiology
1981-85	University of Windsor Faculty of Human Kinetics	B.H.K.

SOCIETY MEMBERSHIPS

American Physiological Society
American Heart Association – Basic Science Council
American College of Sports Medicine
Australian Physiological & Pharmacological Society

OTHER PROFESSIONAL ACTIVITIES

Journal Review Panels

1999-2001	Editorial Review Board, Journal of Applied Physiology
1996-present	Reviewer, Journal of Applied Physiology
1996-present	Reviewer, Canadian Journal of Physiology and Pharmacology
1994-2000	Reviewer, Plugers Archiv
1998-present	Reviewer, Journal of Physiology
2001-present	Reviewer, American Journal of Physiology
2005-present	Reviewer, Molecular Biology of the Cell

Grant Review Committees

1999-2000 Reviewer, Australian Research Council
2002-2006 Grant Review Committee member (Integrated Animal Biology) for Natural Science Engineering & Research Council of Canada (NSERC)

Thesis/Dissertation Examination Committees

2000 Thomas J. Hawke, University of Guelph
Ph.D. Dissertation: Intracellular calcium's role in methylxanthine-induced changes in potassium uptake in mammalian skeletal muscle
Oral and written thesis examination

2001 Francois M. Viau, Laurentian University
M.Sc. Thesis: The role of Ca²⁺ and calcineurin in regulating the myofibrillar and metabolic properties of individual skeletal muscle fibres
Written thesis examination

2005 Nicole Stupka, University of Melbourne
Ph.D. Dissertation: The calcineurin signal transduction pathway in muscular dystrophy and skeletal muscle regeneration.
Written thesis examination

2007 Joseph Eibl, Laurentian University
M.Sc. Thesis: Deciphering the calcineurin/NFAT pathway in the hypertrophy and fiber type conversions of skeletal muscle
Oral and written thesis examination

RESEARCH EXPERIENCE

April 2006 – August 2008 **Pfizer Global Research & Development (Groton labs):** Associate Director
Global Project Management: Cardiovascular & Metabolic Disease

- support Research Candidate Management Teams in planning, conducting and reviewing data from clinical trials for novel proprietary compounds in obesity, osteoporosis and frailty

April 2004 – April 2006 **Pfizer Global Research & Development (La Jolla labs):** Principal Scientist
Research Pharmacology (Diabetes & Obesity)

- Lead a small group of scientists conducting *in vitro* and *in vivo* pharmacological studies aimed at identifying small molecule and antibody-based therapies that are efficacious at lowering blood glucose
- Focus on mechanisms for overcoming fatty acid-induced insulin resistance in muscle, adipose and liver through targeting MAPK signalling pathways and for increasing muscle mass by targeting myostatin signalling
- *In vitro* assay development includes Cellomics nuclear translocation assays, Meso Scale Discovery phosphoprotein assays (include multi-spot arrays) and ³H 2-deoxyglucose uptake assays in myocytes and 3T3-L1 adipocytes
- *In vivo* studies include use of *ob/ob*, *db/db* and *KKA^y/a* models of diabetes for efficacy and biomarker outcomes

- December 1999 – April 2004 **Pfizer Global Research & Development (Groton labs):** Senior Research Scientist (Frailty Biology)
- Focused on identifying novel targets for drug discovery in new area of age-related muscle wasting (sarcopenia)
 - Utilized micro-array and proteomics technologies, adenovirus and siRNA approaches as well as transgenic and knockout mouse models for target identification and validation
 - Developed cell-based assays for moderate throughput screens of proprietary compounds including Cellomics-based nuclear translocation assays
 - Developed *in vivo* models for assessing motor performance to establish pre-clinical efficacy of clinical candidates; included use of genetically modified mice, *ob/ob*, and *mdx* mice
 - Established fluorescence microscopy technique for assessing myocyte intracellular Ca²⁺ levels in aged and atrophied muscle
 - Focused on myostatin and IGF-1 signaling pathways
 - Managed external grants to academics including Dr. Karyn Esser (University of Illinois at Chicago; now at University of Kentucky), Dr. George Ordway (University of Texas Southwestern Medical Center at Dallas), Dr. Richard Harvey (Victor Chang Cardiac Research Institute, Sydney Australia) and Professor David Allen (University of Sydney)
- July-December 1999 **University of Queensland:** Lecturer
- Set up research lab to investigate the molecular basis for skeletal muscle adaptation to exercise training.
 - Established cell culture model for investigating Ca²⁺ -dependent pathways of gene expression using quantitative rt-pcr
 - Held three internal grants funded through the Australian Research Council (~ \$60,000 per yr)
- October 1996-June 1999 **University of Texas Southwestern Medical Center:** Research Fellow
- Investigated the molecular basis for fibre-type specificity of gene expression in skeletal muscle
 - Developed expertise in techniques of molecular biology which can be applied to understanding the molecular basis of muscle plasticity, including: DNA cloning, tissue culture work, gene transfection, generation of transgenic mice, genotyping using southern blot and PCR screening and gene expression analysis using RT-PCR, northern blot and western blot techniques
 - Established expertise in Ca²⁺ -dependent pathways of regulating muscle gene expression including use of cell-based and transgenic mouse models
- August 1993-October 1996 **University of Sydney, NH&MRC** Research Officer
- Investigated the regulation of intracellular Ca²⁺ in isolated single fibres during muscle fatigue
 - Trained in techniques of micro-dissection, micro-injection and the use of fluorescent dyes and caged compounds for single cell analysis
 - Developed expertise in the role of intracellular Ca²⁺ in both acute and prolonged muscle fatigue
- Sept. 1989-July 1993 **University of Waterloo,** Ph.D. Candidate

- Modified and implemented several techniques for assessing skeletal muscle membrane function
- Co-ordinated research into sarcoplasmic reticulum Ca²⁺ regulation during muscle fatigue

September 1985-
September 1987

McMaster University, M.Sc. Candidate

Supervisors: Dr. J.D. MacDougall and Dr. G.J.F. Heigenhauser

- Design and completion of thesis research investigating ionic and metabolic regulation in inactive skeletal muscle

May 1983-
September 1983

University of Windsor, Summer Research Assistant

- Assistance with experiments investigating myosin ATPase plasticity during compensatory hypertrophy in rat skeletal muscle

TEACHING & SUPERVISORY EXPERIENCE

January - May 2007
& January-May 2008

Connecticut College

- Professor for Human Physiology undergraduate course.
- Course designed as a studio class with mini-lectures, lab activities, group discussion and presentation.
- Focus is problem-based learning.

December 1999 - present

Pfizer Global Research & Development

- Supervise research associates involved in developing high throughput screening assays, cell-based signalling assays, analysis of tissues *ex vivo* for signalling proteins and gene expression and *in vivo* drug screening
- Trained and supervised undergraduate students during summer research internships

July - December 1999

University of Queensland

- Lectured undergraduate and graduate students in exercise physiology course
- Co-ordinated undergraduate and graduate level exercise physiology laboratory course

November 1997-
June 1999

UT Southwestern Medical Center

- Lead team project investigating the role of calcineurin in the regulation of gene expression and hypertrophic growth in skeletal muscle
- Supervised 2 full-time and 1 part-time technical staff and 1 graduate student

June-July 1998

UT Southwestern Medical Center

- Training and supervision of rotating medical student during summer research experience

August 1994 -
October 1995

University of Sydney

- Casual lecturer in graduate course in Applied Physiology - Exercise Sports Science/Sports Physiology

- lecturer for topics of metabolic regulation and muscle fatigue

December 1992-
July 1993

University of Waterloo

- Lectured in undergraduate and graduate courses in exercise and muscle physiology
- Representative of Graduate Student Association on committee set up by the University President to evaluate the use and needs of the students physical activity complex

PUBLICATIONS

Refereed Publications

1. **Chin, E.R.**, M.I. Lindinger and G.J.F. Heigenhauser. (1991). Lactate metabolism in inactive skeletal muscle during lactacidosis. *American Journal of Physiology* 261 (Regulatory Integrative Comp. Physiol. 30): R98-R105.
2. Green, H.J., M. Ball-Burnett, **E.R. Chin** and D. Pette. (1993). Time dependent increases in Na⁺/K⁺ ATPase content of chronically stimulated rabbit muscle. *FEBS*, 310(2): 129-131).
3. Green, H.J., **E.R. Chin**, M. Ball-Burnett and D. Ranney. (1993). Increases in human skeletal muscle Na⁺-K⁺ ATPase pump concentration with short term training. *American Journal of Physiology*, 264 (Cell Physiol. 33): C1538-C1541.
4. **Chin, E.R.** and H.J. Green. (1993). Fibre type differences in Na⁺ -K⁺ ATPase concentration of rat skeletal muscle are related to oxidative potential. *Canadian Journal of Physiology and Pharmacology*, 71(8): 615-618.
5. Dossett-Mercer, J., H.J. Green, **E. Chin** and F. Grange. (1994). Preservation of sarcoplasmic reticulum Ca²⁺ sequestering function in homogenates of different fibre type composition following sprint activity. *Canadian Journal of Physiology and Pharmacology*, 72: 1231-1237.
6. **Chin, E.R.**, H.J. Green, F. Grange, J.D. Mercer and P.J. O'Brien. (1994). Technical considerations for assessing alterations in sarcoplasmic reticulum Ca²⁺ sequestration function *in vitro*. *Molecular and Cellular Biochemistry*, 139: 41-52.
7. Dossett-Mercer, J., H.J. Green, **E.R. Chin** and F. Grange. (1995). Failure of short term stimulation to reduce sarcoplasmic reticulum Ca²⁺ ATPase function in homogenates of rat gastrocnemius. *Molecular and Cellular Biochemistry*, 146(1): 23-33.
8. **Chin, E.R.**, H.J. Green, F. Grange, J. Dossett-Mercer and P.J. O'Brien. (1995). Effects of prolonged low frequency stimulation on skeletal muscle sarcoplasmic reticulum. *Canadian Journal of Physiology and Pharmacology*, 73: 1154-1164.
9. **Chin, E.R.** and H.J. Green. (1996). Effects of tissue fractionation on exercise-induced alterations in sarcoplasmic reticulum function in rat gastrocnemius muscle. *Journal of Applied Physiology*, 80(3): 940-948.
10. **Chin, E.R.** and D.G. Allen. (1996). The role of elevations in intracellular [Ca²⁺] in the development of low frequency fatigue in mouse single muscle fibres. *Journal of Physiology*, 491.3: 813-824.
11. Allen, D.G., C.D. Balnave and **E.R. Chin** (1996). Intracellular calcium release and muscle fatigue. [Review]. *Today's Life Sciences*. Vol. 8 (9): 12-17.
12. **Chin, E.R.**, M.I. Lindinger, and G.J.F. Heigenhauser. (1997). Distribution of lactate and other ions in inactive skeletal muscle: Influence of hyperkalemic lactacidosis. *Canadian Journal of Physiology and Pharmacology*, 75: 1375-1386.

13. **Chin, E.R.**, C.D. Balnave and D.G. Allen. (1997). The role of intracellular calcium and metabolites in low frequency fatigue of mouse skeletal muscle. *American Journal of Physiology*. 272 (Cell Physiology 41): C550-C559.
14. **Chin, E.R.** and D.G. Allen. (1997). The effects of reduced muscle glycogen concentration on force, Ca^{2+} release and contractile protein function in intact mouse skeletal muscle. *Journal of Physiology*. 498: 587-600.
15. **Chin, E.R.** and D.G. Allen. (1998). The contributions of pH-dependent mechanisms to fatigue at different workloads in mammalian single muscle fibres. *Journal of Physiology*. 512: 831-840.
16. **Chin, E.R.**, E.N. Olson, J.A. Richardson, Q. Yang, C. Humphries, J.M. Shelton, H. Wu, W. Zhu, R. Bassel-Duby and R.S. Williams. (1998). A calcineurin-dependent transcriptional pathway controls skeletal muscle fiber type. *Genes & Development* 12: 2499-2509.
17. Garry, D.J., G.A. Ordway, J.N. Lorenz, N.B. Radford, **E.R. Chin**, R.W. Grange, R. Bassel-Duby and R.S. Williams. (1998). Mice without myoglobin. *Nature*. 395: 905-908.
18. Ordway, G.A., P. D. Neuffer, **E. R. Chin**, and G. N. DeMartino. (2000). Chronic contractile activity upregulates the proteasome system in rabbit skeletal muscle. *J. Appl. Physiol.* 88: 1134-1141.
19. Wu, H., F.J. Naya, T.A. McKinsey, B. Mercer, J.M. Shelton, **E.R. Chin**, A.R. Simard, R.N. Michel, R. Bassel-Duby, E.N. Olson and R.S. Williams. (2000). MEF2 responds to multiple calcium-regulated signals in the control of skeletal muscle fiber type. *Embo J.* 19(9): 1-11.
20. Dunn, S.E., **E.R. Chin** & R.N. Michel. (2000). Matching of calcineurin activity to upstream effectors is critical for skeletal muscle fiber growth. *J. Cell. Biol.* 151(3): 1-10.
21. Grange, R.W., A. Meeson, **E.R. Chin**, K.S. Lau, J.T. Stull, J.M. Shelton, R.S. Williams & D.J. Garry. (2001). Functional and molecular adaptations in skeletal muscle of myoglobin-mutant mice. *Am. J. Physiol.* 281(5): C1487-C1494.
22. **Chin, E.R.**, R.W. Grange, R.F. Viau, R.S. Bassel-Duby, R.N. Michel and R.S. Williams. (2003a). Alterations in slow-twitch muscle phenotype in transgenic mice overexpressing the Ca^{2+} buffering protein parvalbumin. *J. Physiol.* 547: 649-663.
23. Chakkalakal, J.V., M.A. Stocksley, M.A. Harrison, L.M. Angus, J. Deschenes-Furry, S. St.Pierre, L.A. Megheny, **E.R. Chin**, R.N. Michel and B.J. Jasmin. (2003). Expression of utrophin A mRNA correlates with the oxidative capacity of skeletal muscle fibre types and is regulated by calcineurin. *PNAS* 100: 7791-7796.
24. Chakkalakal, J.V., M.A. Harrison, **E.R. Chin**, R.N. Michel and B.J. Jasmin. (2004). Stimulation of calcineurin signalling attenuates the dystrophic pathology in *mdx* mice. *Human Molecular Genetics* 13(4): 379-388.
25. **Chin, E.R.** (2004). The role of Ca^{2+} and the Ca^{2+} /calmodulin-dependent kinases in skeletal muscle plasticity and mitochondrial biogenesis. *Proceedings of the Nutrition Society*. 63: 279-286.
26. Michel, R.N., S.E. Dunn and **E.R. Chin**. (2004). Calcineurin and muscle growth. *Proceedings of the Nutrition Society*. 63: 341-349.

27. Hornberger, T.A., R. Stuppard, K.E. Conley, M. Fedele, M.L. Fiorotto, **E.R. Chin** and K.A. Esser. (2004). Mechanical stimuli regulate rapamycin-sensitive signalling by a phosphoinositide-3-kinase, protein kinase B and growth factor independent mechanism. *Biochemical Journal*. 380: 795-804.
28. Hornberger, T.A., R.D. Mateja, **E.R. Chin**, J.L. Andrews and K.A. Esser (2005). Aging does not alter the mechanosensitivity of the p38, p70^{S6k} and JNK2 signaling pathways in skeletal muscle. *J. Appl. Physiol.* 98: 1562-1566.
29. **Chin, E.R.** (2005). The role of Ca²⁺/calmodulin-dependent kinases in skeletal muscle plasticity. *J. Appl. Physiol.* 99(2): 414-23.
30. Angus, L.M., J.V. Chakkalakal, A. Mejat, J.K. Eibl, G. Belanger, L.A. Megheny, **E.R. Chin**, L. Schaeffer, R.N. Michel and B.J. Jasmin. (2005). Calcineurin/NFAT signaling, together with GABP and PGC-1 α , drives utrophin gene expression at the neuromuscular junction. *Am. J. Physiol. Cell Physiol.* 289: C908-C917.
31. Chakkalakal, J.V., S.A. Michel, **E.R. Chin**, R.N. Michel and B.J. Jasmin. (2006). Targeted inhibition of Ca²⁺/calmodulin signaling exacerbates the dystrophic phenotype in mdx mouse muscle. *Hum. Mol. Gen.* 15: 1423-1435.
32. Michel, R.N., **E.R. Chin**, J.V. Chakkalakal, J.K. Eibl and B.J. Jasmin. (2007). Ca²⁺/Calmodulin-based signalling in the regulation of the muscle fibre phenotype and its therapeutic potential via modulation of utrophin A and myostatin expression. *Appl. Physiol. Nutr. Metab.* 32: 921-929.
33. Cairns, S., **E.R. Chin** and J.M. Renaud. (2007). Stimulation pulse characteristics and electrode configuration determine site of excitation in isolated mammalian skeletal muscle: Implications for fatigue. *J. Appl. Physiol.* 103: 359-368.

Published Abstracts/Conference presentation

1. Galea, V., **E.R. Freisinger**, M.I. Lindinger and G.F.J. Heigenhauser. (1987). Effects of lactacidosis on skeletal muscle ion regulation. *Medicine and Science in Sports and Exercise. Suppl.* 19(2): S35.
2. **Freisinger, E.R.**, M.I. Lindinger, V. Galea and G.J.F. Heigenhauser. (1987). Effects of lactacidosis on resting skeletal muscle metabolism in isolated perfused rat hindlimb. *Medicine and Science in Sports and Exercise. Suppl.* 19(2): S54.
3. **Freisinger, E.R.**, M.I. Lindinger, V. Galea, J.D. MacDougall and G.J.F. Heigenhauser. (1987). Effects of arterial lactacidosis on fat and carbohydrate metabolism in inactive skeletal muscle. *Canadian Journal of Sport Sciences.* 12(3): 7P.
4. **Chin, E.R.**, M.I. Lindinger and G.J.F. Heigenhauser. (1990). Effects of lactacidosis on ionic flux across inactive skeletal muscle. *Canadian Journal of Sport Sciences.* 15(4): 7S.
5. **Chin, E.R.** and H.J. Green. (1991). Fibre type differences in Na⁺ -K⁺ ATPase concentration of rat skeletal muscle are related to oxidative potential. *Medicine and Science in Sports and Exercise. Suppl.* 23(4): S23.
6. **Chin, E.R.**, H.J. Green, M. Ball-Burnett and D. Ranney. (1992). Training induced changes in sarcolemmal Na⁺ -K⁺ pump concentration in human skeletal muscle. *Medicine and Science in Sports and Exercise. Suppl.* 24(5): S106.

7. Green, H.J., F. Grange, **E.R. Chin**, C. Goreham, D. Ranney and R.J. Xiu. (1992). Alterations in sarcoplasmic reticulum Ca^{2+} ATPase activity in human skeletal muscle with prolonged exercise. *The Physiologist*. 35(4): 215.
8. **Chin, E.R.**, F. Grange, J.D. Mercer and P.J. O'Brien. (1992). Technical considerations for assessing skeletal muscle sarcoplasmic reticulum function following exercise. *The Physiologist*. 35(4): 215.
9. **Chin, E.R.**, H.J. Green, F. Grange, J.D. Mercer, P.J. O'Brien. (1993). Functional impairment of sarcoplasmic reticulum Ca^{2+} - Mg^{2+} ATPase in vitro is related to altered membrane yield following prolonged running. *The FASEB Journal*. 7(3): A226.
10. Dossett-Mercer, H.J. Green, **E.R. Chin**, F. Grange and P.J. O'Brien. (1993). Lack of an effect of short term stimulation on sarcoplasmic reticulum Ca^{2+} uptake and Ca^{2+} ATPase activity in homogenates of rat red and white gastrocnemius. *Medicine and Science in Sports and Exercise*. Suppl. 25(5): S177.
11. **Chin, E.R.**, H.J. Green, F. Grange, J.D. Mercer, P.J. O'Brien. (1993). Muscle *fatigue in situ* is independent of altered sarcoplasmic reticulum function in vitro following prolonged electrical stimulation. *Medicine and Science in Sports and Exercise*. Suppl. 25(5): S19
12. **Chin, E.R.** and H.J. Green. (1994). Skeletal muscle Ca^{2+} ATPase activity in heavy and light sarcoplasmic reticulum fractions following treadmill running. *Proceedings of the Australian Physiological and Pharmacological Society*. 25(1): 25P.
13. **Chin, E.R.**, F. Grange and H.J. Green. (1994). Calcium uptake in heavy and light sarcoplasmic reticulum of skeletal muscle following treadmill running. *Proceedings of the Australian Physiological and Pharmacological Society*. 25(2): 114P.
14. **Chin, E.R.** and D.G. Allen. (1995). Effects of caffeine and tetanic stimulation on the force-frequency relationship in isolated single muscle fibres. *Proceedings of the Australian Physiological and Pharmacological Society*. 26(1): 27P.
15. **Chin, E.R.** and D.G. Allen. (1995). Raised intracellular calcium can cause subsequent failure of calcium release in mammalian skeletal muscle. *Proceedings of the Physiological Society Oxford Meetings*. 41P.
16. **Chin, E.R.** and D.G. Allen. (1995). The role of substrate supply and Ca^{2+} release in fatigue resistance of mouse single skeletal muscle fibres. *Proceedings of the Australian Physiological and Pharmacological Society*. 26(2): 124P.
17. **Chin, E.R.** and D.G. Allen. (1996). Alterations in myofibrillar protein function associated with glycogen depletion in mouse skeletal muscle. *Proceedings of the Australian Physiological and Pharmacological Society*. 27(1): 59P.
18. **Chin, E.R.** and D.G. Allen. (1996). The effects of muscle glycogen depletion on Ca^{2+} release in single skeletal muscle fibres. *Medicine and Science in Sports and Exercise*. Suppl. 28(5): S122.
19. Allen, D.G. and **E.R. Chin**. (1996). Fatigue in mouse muscle fibres at different work intensities. *Proceedings of the Australian Physiological and Pharmacological Society*. 27(2).
20. Allen, D.G., **E.R. Chin**, and C.D. Balnave. (1996). Modulation of tetanic calcium concentrations in skeletal muscle during and after exercise. *The Physiologist*. 39(5): A-62.

21. **Chin, E.R.** and D.G. Allen. (1996). Changes in intracellular free Ca^{2+} concentration during constant 10 Hz stimulation of mouse single skeletal muscle fibres. *The Physiologist*. 39(5): A-74.
22. **Chin, E.R.** and D.G. Allen. (1997). Effects of epinephrine-stimulated glycogenolysis on force and Ca^{2+} release in mouse single skeletal muscle fibres. *Medicine and Science in Sports and Exercise*. Suppl. 29(5): S272.
23. **Chin, E.R.** and R.S. Williams. (1998). An RT-PCR-based assay system for examining fiber-type specific gene expression in skeletal muscle. *FASEB Journal*. 12(4): A472.
24. **Chin, E.R.**, E.N. Olson, C. G. Humphries., H. Wu, R.S. Bassel-Duby and R.S. Williams. (1998). Regulation of skeletal muscle fiber-type diversity by a calcineurin-dependent transcriptional pathway. *American Heart Association Meetings*.
25. **Chin, E.R.**, R.W. Grange, M.Maier, R.S. Bassel-Duby and R.S. Williams. (1999). Altered contractile function in slow-twitch muscle from transgenic mice overexpressing parvalbumin. *Medicine and Science in Sports and Exercise*. Vol. 31:5 Suppl.
26. Dunn, S.E., A.R. Simard, E.R. Chin and R.N. Michel. (2001). Calcineurin and its upstream activity-dependent effectors signal via NFAT and MEF2 to induce skeletal muscle hypertrophy. *FASEB Journal*. 15(4): A421.
27. Viau, F., **E.R. Chin**, R.S. Williams and R.N. Michel. (2001). Alterations in skeletal muscle gene expression in transgenic mice overexpressing the Ca^{2+} buffering protein parvalbumin. *FASEB Journal*. 15(4): A420.
28. **Chin, E.R.**, S.E. Dunn, R.N. Michel and R.S. Williams. (2001). Alterations in muscle phenotype in transgenic mice overexpressing a calmodulin inhibitory peptide regulated by the troponin I slow promoter. *FASEB Journal*. 15(4): A421.
29. Chakkalakal, J.V., M.A. Stocksley, J. Deschenes-Furry, **E.R. Chin**, M.-A. Harrison, R.N. Michel and B. J. Jasmin. (2003). Expression of Utrophin A mRNA correlates with the metabolic efficiency of muscle and involves calcineurin. *FASEB. J.* 17(5): A956.
30. **Chin, E.R.**, F.-W. Bangerter and J.M. Renaud. (2003b). Alterations in intracellular Ca^{2+} transients in single muscle fibers from old compared to young rats. *FASEB J.* 17(5): A1277.
31. Renaud, J.M., J.P. O'Malley and **E.R. Chin**. (2003). Effect of time in culture on intracellular Ca^{2+} levels and unloaded shortening velocity. *FASEB. J.* 17(5): A1275.
32. Hill, R.J., D.B. Rouillard, **E.R. Chin**, C. Ibebunjo, X.N. Wang, R. Layfield and J.J. Oleynek. (2004). Age-related muscle atrophy is associated with both an increase in poly ubiquitination and expression of the muscle-specific E3 ligase MAFbx. *FASEB J.* 18(4): A346.
33. Genido, J., J.F. Schaefer and **E.R. Chin**. (2004). Down-regulation of both fast and slow fibre-type specific genes by myostatin and $\text{TGF}\beta$. *The Physiologist*. 47 (4): 342.
34. **Chin, E.R.** and J.F. Schaefer. (2005). Inhibition of Casein Kinase I α increases nuclear NFAT in C2C12 cells. *FASEB J.* 19(4): A116.
35. Petras, C.F. and **E.R. Chin**. (2005). Motor activity in *mdx* mice is increasingly impaired with age. *FASEB J.* 19(4): A573.

36. Muthuri, S.K., **E.R. Chin** and R.N. Michel. (2007). Myostatin as a putative downstream gene target of calcineurin signaling associated with muscle growth remodelling. FASEB J.

Papers in Preparation

Genido, J. and E.R. Chin. Regulation of fast and slow fibre-type specific genes by myostatin and TGF β .

Chin, E.R. and D.G. Allen. Changes in intracellular free Ca²⁺ concentration during constant 10 Hz stimulation of mouse single skeletal muscle fibres.

Chin, E.R., F.-W. Bangerter and J.M. Renaud. Alterations in intracellular Ca²⁺ transients in single muscle fibers from old compared to young rats.

Renaud, J.M., J.P. O'Malley and **E.R. Chin.** Effects of denervation on intracellular Ca²⁺ levels and unloaded shortening velocity.

Theses

Ph.D. Assessment of Sarcoplasmic Reticulum Ca²⁺ Sequestration in Rat Gastrocnemius Muscle Following Prolonged Activity
Advisor: Dr. H.J. Green
Completed: August 1993, University of Waterloo, Canada

M.Sc. Effects of Lactacidosis on Muscle Metabolism and Ionic Flux in Inactive Skeletal Muscle of the Isolated Perfused Rat Hindlimb
Advisor: Dr. J.D. MacDougall
Completed: September 1987, McMaster University, Canada

Patents/Patent Applications

Eva R. Chin, Jeffery Molkentin, Eric. Olson & R. Sanders Williams. 1999. A method to alter specialized characteristics of skeletal myofibers.

Eva R. Chin, Chikwendu Ibebunjo, Philip A. Krasney, Junming Yie, Joseph Zachwieja & Larry Green. 2007. Antibodies to myostatin. WO2006116269 A3.

INVITED PRESENTATIONS

Invited Seminar Presentations

“Intracellular calcium signalling in striated muscle: Decoding a complex message.” University of Ottawa, Department of Cellular and Molecular Medicine, Graduate Seminar Series. August 17, 2000.

“Intracellular calcium signalling in striated muscle: Decoding a complex message.” Boston University, Department of Health Sciences, Graduate Seminar Series. Boston, MA. June 22, 2001.

“Regulation of skeletal muscle gene expression by intracellular calcium signalling.” The Children’s Hospital at Westmead, Sydney, Australia. August, 28, 2001.

“The role of calcium signalling in skeletal muscle gene expression.” University of Illinois at Chicago, College of Applied Health Sciences, Graduate Seminar Series. Chicago, IL. October 26, 2001.

“The role of Calcium-dependent signals in skeletal muscle hypertrophy and fibre type adaptations.” University of California-Irvine, Department of Orthopaedics Seminar Series. Irvine, CA. December 1, 2004.

“The role of Calcium-dependent signals in skeletal muscle hypertrophy and fibre type adaptations.” Concordia University, Department of Exercise Sciences, Montreal, QC, Canada. February 10, 2006.

“Understanding Ca²⁺ signaling pathways in skeletal muscle: Could this lead to an exercise pill? University of Dundee, Molecular Physiology Group, Dundee, Scotland, UK. July 18, 2007.

Invited Conference Presentations

“The role of calcium-dependent transcriptional pathways for regulating skeletal muscle diversity.” Princess Diana Lecture and Symposium, The Victor Chang Cardiac Research Institute, Sydney, Australia. November 1, 1999

“Calcineurin signalling of gene expression in skeletal muscle.” Gordon Conference on Excitation-contraction coupling, New London, NH. June 12, 2003

“Role of Calcium and calmodulin kinases in fibre type and mitochondrial biogenesis.” International Biochemistry of Exercise Meetings, Maastricht, The Netherlands. July 15, 2003.

“Calcineurin and Muscle Growth.” International Biochemistry of Exercise Meetings, Maastricht, The Netherlands. July 16, 2003.

“Calcium signalling in skeletal muscle: Decoding a complex message.” Howard J. Green Symposium, The University of Waterloo, Ontario Canada. September 24, 2004.

“The boomerang approach to science: Research across the world and back.” International Union of Physiological Societies, San Diego, CA. April 3, 2005.

“Ca²⁺ /Calmodulin-based signaling in the regulation of the muscle fiber phenotype.” International Biochemistry of Exercise Meeting, Seoul, Korea. October 20, 2006.

“Functional roles of SR, myoplasmic and extracellular calcium in determining force generation.” APS/ACSM Integrative Biology of exercise Meeting, Hilton Head, SC. September 2008.

Symposia Chair:

2004 APS/ACSM Integrative Biology of exercise Meeting, Austin, TX. “Striated Muscle Hypertrophy: Factors Controlling Cell Enlargement and Phenotype Transformations”.

2008 APS/ACSM Integrative Biology of exercise Meeting, Hilton Head, SC. “Signaling Mechanisms Regulating Metabolic and Transcription Processes in Skeletal Muscle”.