

# LAUREN BURT

July, 2015

## CURRICULUM VITAE

### BIOGRAPHICAL DATA

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**Name:** Lauren Burt  
**Email:** lburt@ucalgary.ca

**Present rank:** Postdoctoral fellow  
**Department:** Radiology  
**Faculty:** Medicine and Kinesiology  
**Institution:** University of Calgary

### ACADEMIC RECORD

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**Final degree:** Doctor of Philosophy  
**Date completed:** 13 March 2012  
**Specialty:** Exercise Science  
**Institution:** Australian Catholic University, NSW, Australia

- i. Undergraduate  
Degree: Bachelor of Exercise Science (Honours First Class)  
Date completed: 7 December 2006  
Institution: Australian Catholic University, NSW, Australia
- ii. Post-doctoral  
Institution: Faculty of Medicine, University of Calgary  
Estimated completion date: 01 June 2016
- iii. Certification  
Science Knowledge Translation Training Course, Alberta Innovates- Health Solutions, 2014  
Faculty of Teaching Certificate, University of Calgary, 2013  
Instructional Skills Workshop, University of Calgary, 2012  
The International Society For Clinical Densitometry, Bone Densitometry Course, Certified Bone Technologist (CTD), 2011

### AWARDS AND DISTINCTIONS

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- 2015 Osteoporosis Canada, Canadian Multicentre Osteoporosis Study Award
- 2014 Young Investigator Travel Grant from the American Society for Bone and Mineral Research
- 2014 NSERC CREATE I3T Fellowship Award
- 2013 Young Investigator Award from the American Society for Bone and Mineral Research
- 2013 Osteoporosis Canada, Tim Murray Short-Term Training Award
- 2013 NSERC CREATE I3T Fellowship Award

- 2013 New Investigator Award from the International Conference on Children's Bone Health
- 2013 Young Investigator Award from The International Society For Clinical Densitometry
- 2012 American Society for Bone and Mineral Research, Bone Strength Working Group, Best Abstract Winner
- 2012 Alberta Innovates Health Solutions Fellowship Award
- 2011 NSW Sporting Injuries Committee – Sports Safety Awards. Outstanding Safe Sport Practices, Regional/Club Level (Gold Award)
- 2010 Australian Catholic University Three Minute Thesis Competition - Finalist
- 2008 NSW Sporting Injuries Committee, Young Investigator Award – David Garlick Memorial Scholarship
- 2008 Australian Postgraduate Award
- 2007 NSW Sporting Injuries Committee – Sports Safety Awards. Outstanding Achievement in Applied Research by a Research Team (Bronze Award)
- 2007 University Medal – Australian Catholic University
- 2007 Health Sciences Faculty Medal - Australian Catholic University
- 2006 Australian Federation of University Women (NSW) Jamieson Award
- 2005 Zonta Sydney North Award for most outstanding female student in Exercise Science

## **EDUCATIONAL ACTIVITIES**

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### **i. Undergraduate teaching**

Australian Catholic University

2006 – 2011

*Lectured In (Sessional Instructor)*

EXSC131 Coaching Principles

80 students, 1x 2hr lecture per week for 12 weeks

FXPE151 Personal Fitness

80 students, 1x 2hr lecture per week for 12 weeks

EXSC250 Health and Physical Education Activities 2 - Gymnastics and Dance

50 students, 1x 2hr lecture per week for 12 weeks

*Teaching Assistant (Tutor)*

EXSC320 Advanced Biomechanics

50 students, 3x 2hr labs per week for 12 weeks

EXSC120 Mechanical Bases of Exercise Science

70 students, 4x 2hr labs per week for 12 weeks

EXSC199 Psychology of Sport and Physical Activity

80 students, 4x 2hr classes per week for 12 weeks

University of Calgary

2014

*Lectured In (Sessional Instructor)*

KNES355 Human Growth and Development

240 students, 3x 1hr lecture per week for 13 weeks

**ii. Curriculum development**

EXSC250 Health and Physical Education Activities 2 - Gymnastics and Dance

Assisted with the development of the gymnastics component of this course.

**iii. Student supervision and mentorship**

Sydney Malenfant

Medical student, University of Calgary. Volunteer student 2014 – 2015.

Laura Sevick

Science and Business Program, University of Waterloo, Summer Student 2013 (May to August). Role: supervised summer research project (co-op student).

Madeleine Townley

Biomedical Engineering Program, University of Victoria, Summer Student 2013 (May to August). Role: supervised summer research project (co-op student).

Lisa Milo

Bachelor of Health Science Program, University of Calgary. Mentor 2012/2013 school year.  
Role: Mentor

Scott Stanger

Biomedical Engineering Program, University of Calgary, Summer Student 2012 (May to August). Role: supervised summer research project.

**iv. Committee membership**

Australian Catholic University

School of Exercise Science, Research Committee

Graduate student representative for 2010 -2011

University of Calgary

International and Industrial Imaging Training (I3T) NSERC CREATE Executive Committee

Postgraduate student representative for 2013-2014

**v. Research assistant**

Australian Catholic University

2006 - 2011

- Talented athlete study
- Apprentice jockey study
- Whole body vibration training on musculoskeletal health in older adults
- Hydration profiles of adolescent athletes

Role: Bone scans and analysis, anthropometric measurements, questionnaires, data entry and processing.

University of Sydney

2007 - 2008

- The effect of exercise and weight loss on articular cartilage health in obese people with osteoarthritis

Role: participant recruitment, anthropometric measurements, questionnaires, muscle strength and power testing, gait motion analysis, functional movement analysis, data

entry and processing.

vi. **Administration**

Australian Catholic University

2007

School of Exercise Science Administration Officer

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**PROFESSIONAL ACTIVITIES**

i. **Membership in professional and learned societies**

American Society for Bone and Mineral Research

Orthopedic Research Society

ii. **Professional service**

Journal reviews

Educational Research and Reviews

Hormones

Journal of Bone and Mineral Research

Journal of Musculoskeletal and Neuronal Interactions

Journal of Sports Sciences

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**RESEARCH SUPPORT**

**Grants**

Co-Applicant. CIHR 2015–2023. CAD \$6,207,968. Understanding the parallel dynamics of muscle health and frailty in aging Canadians – the CaMos Muscle Quality Study (MQS). Under review.

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**INVITED ADDRESSES**

2014 **Burt, L.A.**, Macdonald H.M., Hanley, D.A., Boyd, S.K. Can we use Cross Sectional Studies to Estimate Individual-Specific Longitudinal Change? Alberta Imaging Symposium, 3<sup>rd</sup> June, Edmonton, Canada.

2012 **Burt, L.A.**, Macdonald H.M., Hanley, D.A., Boyd, S.K. Changes in Bone Mineral Density and Bone Strength from 16 to 34 Years of Age, As Assessed by High Resolution Peripheral Quantitative Computed Tomography. American Society for Bone and Mineral Research, Bone Strength Working Group, 14<sup>th</sup> October, Minneapolis, USA.

2010 **Burt, L.A.**, Naughton, G.A. & Greene, D.A. Health Benefits of Gymnastics – new research perspectives. Gymnastics Australia, Sports Science and Medicine Conference, 29-30<sup>th</sup> April, Melbourne, Australia.

## PUBLICATIONS/PRESENTATIONS

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### I. Peer reviewed manuscripts

- 2015 **Burt, L.A.**, Schipilow, J.D. & Boyd, S.K. Competitive Trampoline Influences Trabecular Bone Structure, Bone Size and Bone Strength. *Journal of Sport and Health Science* (in press).
- 2014 Boyd, S.K., **Burt, L.A.**, Sevick, L & Hanley, D.A. The relationship between serum 25(OH)D and bone density and microarchitecture as measured by HR-pQCT. *Osteoporosis International* (in press).
- 2014 **Burt, L.A.**, Macdonlad, H.M., Hanley, D.A & Boyd, S.K. Bone Microarchitecture and Strength of the Radius and Tibia in a Reference Population of Young Adults: An HR-pQCT Study. *Archives of Osteoporosis*, 9, 183.
- 2013 **Burt, L.A.**, Ducher, G., Naughton, G.A., Courteix, D. & Greene, D.A. Gymnastics Participation Induces Skeletal Benefits in the Distal Forearm: A 6-Month Study using Peripheral Quantitative Computed Tomography. *Journal of Musculoskeletal and Neuronal Interactions* 13(4), 395-404.
- 2013 **Burt, L.A.**, Greene, D.A., Ducher, G. & Naughton, G.A. Skeletal Adaptations Associated with Pre-Pubertal Gymnastics Participation as determined by DXA and pQCT: A Systematic Review and Meta-Analysis. *Journal of Science and Medicine in Sport*, 16, 231-239.
- 2012 **Burt, L.A.**, Naughton, G.A. Greene, D.A. Courteix, D. & Ducher, G. Non-elite gymnastics participation is associated with greater bone strength, muscle size, and function in pre- and early pubertal girls. *Osteoporosis International*, 23(4): 1277-1286.
- 2011 **Burt, L.A.**, Naughton, G.A, Greene, D.A. & Ducher, G. Skeletal differences at the ulna and radius between pre-pubertal non-elite female gymnasts and non-gymnasts. *Journal of Musculoskeletal and Neuronal Interactions*, 11(3), 227-233.
- 2011 Ferry, B., Duclos, M., **Burt, L.A.**, Therre, P., Le Gall, F., Jaffré, C. & Courteix, D. Bone geometry and strength adaptations to physical constraints inherent in different sports: comparison between elite female soccer players and swimmers. *Journal of Bone and Mineral Metabolism*, 29(3), 342-351.
- 2010 **Burt, L.A.**, Naughton, G.A., Higham, D.G. & Landeo, R. Quantifying training load in pre-pubertal artistic gymnastics. *Science of Gymnastics Journal*, 2(3), 5-14.
- 2009 Higham, D.G., Naughton, G.A., **Burt, L.A.** & Shi, X. Comparison of fluid balance between competitive swimmers and less active adolescents. *International Journal of Sport Nutrition and Exercise Metabolism*, 19(3), 259-274.

### II. Non-peer reviewed manuscripts

- 2006 **Burt, L.A.** Does training in elite gymnastics affect growth? *Sport Health*. 24(2), 8-19.

### III. Published/Presented abstracts

- 2015 Hanley, D.A., **Burt, L.A.**, Manske, S.L., Bhatla, J.L & Boyd, S.K. HR-pQCT and DXA changes in bone density and microarchitecture over two years in young adults. Presented at the ECTS-IBSM Conference, April 25-28, Rotterdam, The Netherlands. (Oral poster and poster)
- 2014 Boyd, S.K., Manske, S.L., **Burt, L.A.**, Jorgenson, B., Zhu, Y., Hilderbrandt, E.M., & Hanley, D.A. High Resolution Imaging of Bone Microarchitecture in the Human Appendicular Skeleton. *Journal of Orthopaedic Translation* 10/2014; 2(4):201–202. (Oral presentation)
- 2014 **Burt, L.A.**, Manske, S.L., Bhatla, J.L., Hanley, D.A., & Boyd, S.K. Determining Peak Bone Mineral Density in 16 to 24 year olds: A Longitudinal HR-pQCT Study. *Journal of Bone and Mineral Research*, 28 (Suppl 1). Available at <http://www.asbmr.org/education/AbstractDetail?aid=12bc5942-3833-46fd-bda6-f782fbcc5bf6>. (Plenary poster and oral poster)
- 2014 **Burt, L.A.**, Macdonald, H.M., Hanley, D.A. & Boyd, S.K. A Longitudinal Study of Biomechanical Modifications in Women with Normal and Compromised Bone Health. Presented at the 7<sup>th</sup> World Congress of Biomechanics, July 6 – 11, Boston, USA. (Poster)
- 2014 **Burt, L.A.**, Macdonald, H.M., Hanley, D.A. & Boyd, S.K. Cross Sectional Studies Grossly Underestimate Individual-Specific Longitudinal Change: A 5-year Follow-up Study. Presented at the Canadian Orthopaedic Research Society Annual Meeting. June 19, 2014. Montreal, Canada. (Podium)
- 2014 **Burt, L.A.**, Ménard, A.L., Macdonald, H.M., Hanley, D.A. & Boyd, S.K. A Five-Year Longitudinal Study Assessing Age- and Sex-related Bone Changes – a comparison of DXA and HR-pQCT. Presented at the 2014 Orthopaedic Research Society Annual Meeting. March 15-18, 2014. New Orleans, USA. (Poster)
- 2014 **Burt, L.A.**, Townley, M.B. & Boyd, S.K. Determinants of Bone Quality as measured by HR-pQCT: Familial versus Lifestyle Factors. Presented at the 2014 Orthopaedic Research Society Annual Meeting. March 15-18, 2014. New Orleans, USA. (Poster)
- 2014 Hanley, D.A., **Burt, L.A.**, Ménard, A.L., Macdonald, H.M. & Boyd, S.K. Age-related Changes in Bone Quality using DXA and HR-pQCT: A Five-Year Longitudinal Study of the Calgary Population-Based Cohort. *Osteoporosis International*, 25 (Suppl 2), P148. (Invited Poster)
- 2013 Hildebrandt EM, Sevicik LK, **Burt LA**, Hanley DA, & Boyd SK (2013) Dose-dependent effects of vitamin D on bone quality: from pilot study to clinical trial. Presented at the 14th Annual Alberta Biomedical Engineering Conference. October 25-27, 2013. Banff, Canada. p.98 (Podium)
- 2013 **Burt L.A.**, Ménard A.L., Macdonald H.M., Hanley, D.A., & Boyd, S.K. A Five-Year Longitudinal Study of Site-Specific Changes in Bone Quality in the Calgary Population-Based Cohort: an HR-pQCT Study. *Journal of Bone and Mineral Research* 28 (Suppl 1). Available at <http://www.asbmr.org/asbmr-2013-abstract-detail?aid=bf061225-0796-4f92-99c9-51edbbbfc58f> (Distinguished Oral)

- 2013 **Burt, L.A.**, Stanger, S.P., Schipilow, J.D. & Boyd, S.K. Artistic Gymnasts Display Micro-architectural Advantages Over Trampolining and Tumbling Gymnasts: A High Resolution Peripheral Quantitative Computed Tomography Study. Presented at the 6th International Conference on Children's Bone Health 2013, Rotterdam, Netherlands. Bone Abstracts Vol 2, OP 11. (Oral Poster)
- 2013 Hanley, D.A., **Burt L.A.**, Macdonald H.M. & Boyd, S.K. Changes in Bone Mineral Density and Bone Strength from 16 to 34 Years of Age, As Assessed by High Resolution Peripheral Quantitative Computed Tomography. *Osteoporosis International*, 24 (Suppl 1), S114. (Invited Poster)
- 2013 **Burt L.A.**, Macdonald H.M., Hanley, D.A. & Boyd, S.K. Establishment of T-scores for HR-pQCT using a normative Canadian population. *Journal of Clinical Densitometry*, 16(3), 264-265. (Poster)
- 2012 **Burt L.A.**, Macdonald H.M., Hanley, D.A. & Boyd, S.K. Changes in Bone Mineral Density and Bone Strength from 16 to 34 Years of Age, As Assessed by High Resolution Peripheral Quantitative Computed Tomography. *Journal of Bone and Mineral Research* 27 (Suppl 1). S114 (Poster)
- 2012 Stanger, S.P., **Burt, L.A.** Schlipilow, J.D. & Boyd, S.K. Bone Structure and Strength in Competitive Gymnasts. Presented at the 13th Annual Alberta Biomedical Engineering Conference, Banff, Canada. (Podium)
- 2011 **Burt, L.A.**, Greene, D.A., Naughton, G.A., Courteix, D. & Ducher, G. Non-elite gymnastics induces musculoskeletal benefits in the upper limbs of early pubertal girls: A 6-month study using pQCT. *Journal of Bone and Mineral Research*, 26 (suppl 1): SU0023. (Poster)
- 2010 **Burt, L.A.**, Naughton, G.A., Greene, D.A., & Ducher, G. Upper body bone strength in pre-pubertal, non-elite gymnasts and non-gymnasts. *Journal of Science and Medicine in Sport*; 13 (suppl 1): e24. (Podium)
- 2010 **Burt, L.A.**, Naughton, G.A., Greene, D.A., & Ducher, G. Recreational gymnastics: strengthening the musculoskeletal system in young girls. *Journal of Bone and Mineral Research*; 25 (suppl 1): SU0015. (Poster)
- 2010 **Burt, L.A.**, Naughton, G.A., Ducher, G., & Greene, D.A., Upper body bone and muscle profiles in non-elite pre-pubertal female gymnasts. *Journal of Science and Medicine in Sport*; 12, (suppl 2): e20. (Podium)
- 2009 Higham, D.G., Naughton, G.A. & **Burt, L.A.** Four day observation of hydration profiles of adolescent swimmers and controls. *Journal of Science and Medicine in Sport*; 12 (suppl 1): S14. (Podium)
- 2007 **Burt, L.A.**, Naughton, G.A., Landeo, R. & Higham, D.G. Effects of participation level, apparatus and training phase on training load of young female gymnasts. *Journal of Science and Medicine in Sport*; 10 (suppl 1): p115. (Podium)