

# AMY A. KIRKHAM, PHD

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## EDUCATION & TRAINING

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### **Postdoctorate - Cardiovascular Magnetic Resonance Imaging**, Apr 2016-present

Department of Biomedical Engineering, Faculty of Medicine & Dentistry  
University of Alberta, Edmonton, AB

*Supervisor: Richard Thompson, PhD; Co-supervisor: Ian Paterson, MD*

**Awards** (\$632,000 CAD total):

1. Susan G. Komen PDF Grant (2017-2020): \$180,000 USD (\$242,000 CAD)
2. Susan G. Komen Breast Cancer Challenge Semi-Finalist (2017)
3. Canadian Institutes of Health Research Fellowship (2016-2019): \$165,000
4. Alberta Innovates - Health Solutions Clinician Fellowship (2016-2019): \$225,000

### **PhD - Cardiac & Exercise Oncology**, Sep 2010-Feb 2016 (medical LOA 09/11-08/12)

Rehabilitation Sciences, Department of Physical Therapy, Faculty of Medicine  
University of British Columbia, Vancouver, BC

Thesis title: Exercise Cardio-Protection from Chemotherapy for Breast Cancer

*Supervisor: Kristin Campbell, BSc PT, PhD*

**Awards** (\$143,200 CAD total):

5. Mary Adele Norman Postgraduate Award in Medical Research (2016): \$2800
6. Canadian Institutes of Health Research Canada Graduate Scholarships - Doctoral Award (2010-2011, 2012-2014): \$105,000
7. UBC Four Year Doctoral Fellowship (2010-2011, 2012-2015): \$20,000
8. Canadian Institutes of Health Research Canada Graduate Scholarships – Michael Smith Foreign Study Supplement (2014): \$6,000
9. UBC Urban Poling Activator Award (2014): \$2,000
10. American College of Sports Medicine Foundation Doctoral Student Research Grant (2013): \$5,000 USD
11. American College of Sports Medicine Annual Meeting Cancer Interest Group Karen Hornbostel Memorial Trainee Award (2013): \$250 USD
12. Canadian Cancer Society Travel Award (2013): \$1100

### **Masters of Science - Exercise Oncology**, Sep 2008- Oct 2010

School of Human Kinetics, Faculty of Education  
University of British Columbia, Vancouver, BC

Thesis title: Comparison of Aerobic Exercise Intensity Prescription Methods in Breast Cancer Patients and Survivors

*Supervisor: Don McKenzie, MD, PhD*

**Awards** (\$58,183 CAD total):

13. UBC Faculty of Education Graduate Student Research Grant (2010): \$883
14. Canadian Institutes of Health Research Canada Graduate Scholarship - Master's Award (2009): \$17,500
15. Michael Smith Foundation for Health Research – Junior Graduate Studentship (2009): \$22,500
16. UBC University Graduate Fellowship (2009, declined): \$16,000
17. UBC Faculty of Education Award (2008): \$1300

**Bachelor of Science Cum Laude – Kinesiology, 2003-2008**

**Certificate - Athletic Therapy, 2004-2007**

School of Kinesiology and Health Science, Faculty of Health  
York University, Toronto, ON

**Awards** (\$23,500 CAD total):

18. York Kinesiology and Health Science Honour Award (2007): \$500
19. York Dean's Honour Roll (2003/04, 2004/05, 2006/07, 2007/08)
20. York Kinesiology - Robert Munroe Menzies Award (2006): \$500
21. Canadian Interuniversity Sports Academic All-Canadian (2005/06, 2007/08)
22. York University Sport and Academic Excellence Award (2004-2008): \$10,500 total
23. Koch Industries Inc. Achievement Award (2003-2006): \$6,000 total
24. York University Entrance Scholarship (2003): \$2,000
25. York University Faculty of Pure & Applied Science Scholarship (2003): \$4,000

**PUBLICATIONS & PRESENTATIONS**

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Note: Trainees for whom I played a substantial supervision/mentorship role are underlined

Peer-reviewed manuscripts

*Accepted - First Author*

1. **Kirkham AA**, Paterson DI, Prado CM, Mackey JM, Courneya KS, Pituskin E, Thompson RB. Rationale and Design of the Caloric Restriction and Exercise protection from Anthracycline Toxic Effects (CREATE) Study: A 3-arm Parallel Group Phase II Randomized Controlled Trial in Early Breast Cancer. BMC Cancer, accepted August 23, 2018. Impact factor: 3.3
2. **Kirkham AA**, Lloyd MG, Claydon VE, Gelmon KA, McKenzie DC, Campbell KL. A longitudinal study of the association of clinical indices of cardiovascular autonomic function with breast cancer treatment and exercise training. The Oncologist, accepted June 28, 2018. Impact factor: 5.0.
3. **Kirkham AA**, Pituskin E, Paterson DI. Does cancer affect cardiac function prior to cancer therapy exposure? [Invited Editorial]. Canadian Journal of Cardiology 2018; 34(3):234-5. Impact factor: 4.4.
4. **Kirkham AA**, Eves ND, Shave RE, Bland KA, Bovard J, Gelmon KA, Virani SA, McKenzie DC, Stöhr EJ, Warburton DER, Campbell KL. The effect of an aerobic exercise session 24 h prior to each doxorubicin treatment for breast cancer on markers of cardiotoxicity and treatment symptoms: a RCT. Breast Cancer Research and Treatment 2018;167(3):719-29. Impact factor: 3.6.
5. **Kirkham AA**, Bonsignore A, Bland KA, McKenzie DC, Gelmon KA, Van Patten C, Campbell KL. Exercise prescription and adherence for breast cancer: One size does not FITT all. Medicine & Science in Sports & Exercise 2018;50(2):177-86. Impact factor: 4.1.
6. **Kirkham AA**, Shave RE, Bland KA, Bovard JM, Eves ND, Gelmon KA, McKenzie DC, Virani SA, Stöhr EJ, Warburton DER, Campbell KL. Protective effects of acute exercise prior to doxorubicin on cardiac function of breast cancer patients: A proof-of-concept RCT. International Journal of Cardiology 2017; 245:263-70. Impact factor: 4.6.
7. **Kirkham AA**, Van Patten C, Gelmon KA, McKenzie DC, Bonsignore A, Bland KA, Campbell KL. Effectiveness of oncologist-referred exercise and healthy eating programming as a part of supportive adjuvant care for early breast cancer. The Oncologist 2018; 23:105-115. Impact factor: 5.0.
8. **Kirkham AA**, Klika RJ, Ballard TM, Downey P, Campbell KL. Effective translation of research to practice: Hospital-based rehabilitation program improves health-related physical fitness and quality of life of cancer survivors. Journal of the National Comprehensive Cancer Network 2016;14(12):1555-62. Impact factor: 4.7.
9. **Kirkham AA**, Bland KA, Sayyari S, Campbell KL, Davis MK. Clinically Relevant Physical Benefits of Exercise Interventions in Breast Cancer Survivors [invited review]. Current

- Oncology Reports 2016; 18(2):12. Impact factor: 2.8.
10. **Kirkham AA**, Neil-Sztramko SE, Morgan J, Hodson S, Weller SK, McRae T, Campbell KL. Fee-for-service cancer rehabilitation programs improve health-related quality of life. *Current Oncology* 2016; 23(4):233-40. Impact factor: 2.0.
  11. **Kirkham AA**, Neil SE, Morgan J, Hodson S, Weller SK, McRae T, Campbell KL. Health-related physical fitness assessment in a community-based cancer rehabilitation setting. *Supportive Care in Cancer* 2015; 23(9):2525-33. Impact factor: 2.7.
  12. **Kirkham AA**, Davis MK. Exercise prevention of cardiovascular disease in breast cancer survivors [review]. *Journal of Oncology*, special issue: "Cancer and Cardiovascular Disease: The Complex Labyrinth" 2015; Article ID 917606. Impact factor: 4.5.
  13. **Kirkham AA**, Virani SA, Campbell KL. The utility of cardiac stress testing for detection of cardiovascular disease in breast cancer survivors: A systematic review [review]. *International Journal of Women's Health* 2015;7:127-140. Impact factor: 2.6.
  14. **Kirkham AA**, Pauhl KE, Elliot RM, Scott JA, Doria SC, Davidson HK, Neil-Sztramko SE, Campbell KL, Camp PG. Utility of equations to estimate peak oxygen uptake and work rate from a six-minute walk test in patients with COPD in a clinical setting. *Journal of Cardiopulmonary Rehabilitation and Prevention* 2015; 35(6):431-8. Impact factor: 1.8.
  15. **Kirkham AA**, Campbell KL, McKenzie DC. Comparison of aerobic exercise intensity prescription methods in breast cancer. *Medicine & Science in Sports & Exercise* 2013;45(8):1443-50. Impact factor: 4.1.

*Accepted – Co-author*

16. Bland KA, Neil-Sztramko SE, **Kirkham AA**, Bonsignore A, Van Patten CL, McKenzie DC, Gelmon KA, Campbell KL. Predictors of attendance to an oncologist-referred exercise program for women with breast cancer. *Supportive Care in Cancer*. Accepted 23 March 2018 doi: 10.1007/s00520-018-4180-7. Impact factor: 2.7.
17. Campbell KL, Kam JWY, Neil-Sztramko SE, Liu Ambrose T, Handy TC, Lim H, Hayden S, Hsu L, **Kirkham AA**, Gotay CC, McKenzie DC, Boyd LA. Effect of aerobic exercise on cancer-associated cognitive impairment: A proof-of-concept RCT. *Psycho-Oncology* 2018;27(1):53-60. Impact factor: 3.1.
18. Neil SE, **Kirkham AA**, Hung SH, Niksirat N, Nishikawa K, Campbell KL. Aerobic capacity and upper limb strength are reduced in women diagnosed with breast cancer: A systematic review [review]. *Journal of Physiotherapy* 2014;60(4):189-200. Impact factor: 4.1.
19. Takacs J, **Kirkham AA**, Brown J, Marriot E, Monkman D, Havey J, Hung S, Campbell KL, Hunt MH. Lateral trunk lean gait modification increases the energy cost of treadmill walking in those with knee osteoarthritis. *Osteoarthritis and Cartilage* 2014;22(2):203-9. Impact factor: 4.7.
20. Campbell KL, Van Patten CL, Neil SE, **Kirkham AA**, Gotay CC, Gelmon KA, McKenzie DC. Feasibility of a lifestyle intervention on body weight and serum biomarkers in breast cancer survivors with overweight and obesity. *Journal of the Academy of Nutrition and Dietetics* 2012;112(4): 559-67. Impact factor: 3.4.

*Under Review*

21. Yang E, **Kirkham AA**, Thompson RB. Measurement and correction of the bulk magnetic susceptibility effects of fat: application in venous oxygen saturation imaging. *Magnetic Resonance in Medicine*. Impact factor: 3.9.
22. **Kirkham AA**, Bland KA, Wollmann H, Bonsignore A, McKenzie DC, Gelmon KA, van Patten CL, Campbell KL. Maintenance of lasting fitness and quality of life benefits from supervised exercise offered as supportive care for breast cancer. *Journal of the National Comprehensive Cancer Network*. Impact factor: 4.7.
23. Balneaves LG, Truant T, Van Patten CL, **Kirkham AA**, Waters E, Campbell KL. Physician referrals to a lifestyle intervention program for breast cancer patients: The experiences of patients and oncologists. *Journal of Physical Activity & Health*. Impact factor: 1.9.

### *In preparation*

24. **Kirkham AA**, Virani SA, Bland KA, McKenzie DC, Gelmon KA, Warburton DER, Campbell KL. Is aerobic exercise before or during anthracycline treatment associated with change in longitudinal strain in early breast cancer patients? *Journal of the American Society of Echocardiography*. Impact factor: 6.8.
25. **Kirkham AA**, Beaudry R, Haykowsky MJ, Thompson RB. An update and expansion to the Multiple Hit Hypothesis for cardiovascular injury in early breast cancer. [Invited Review]. *Progress in Cardiovascular Diseases*. Impact factor: 6.8.
26. **Kirkham AA**, Gelmon KA, Bland KA, Wollmann H, Van Patten CL, McKenzie DC, Campbell KL. A cohort study of differences in chemotherapy, cancer, and mortality outcomes between women with breast cancer prospectively offered exercise as supportive care and a retrospective non-exercise control. *JAMA Oncology*. Impact factor: 16.6.
27. **Kirkham AA**, Neil-Sztramko SE, Prado CM, Pituskin E. Characterization of the Cardiovascular Disease Burden in Canadian Cancer Survivors.
28. **Kirkham AA**, Xu L, Wang H, Chow K, Pagano J, White J, Haykowsky MJ, Dyck J, Ezekowitz J, Oudit G, Mackey J, Thompson RB, Pituskin E, Paterson DI. Breast cancer diagnosis is associated with relative left ventricular hypertrophy.
29. **Kirkham AA**, Beka V, Prado CM. A systematic review and meta-analysis of the effect of caloric restriction or fasting on cardiovascular function.

### Published conference abstracts

1. **Kirkham AA**, Paterson DI, Pituskin E, Grenier J, Yang E, Thompson RB. Skeletal muscle blood flow, oxygen extraction and consumption in women receiving chemotherapy for breast cancer. *Med Sci Sports Exerc* 2018; 50(5S Suppl 1). Poster presented at American College of Sports Medicine Annual General Meeting, Minneapolis, MN, June 2018.
2. Bland KA, **Kirkham AA**, Bovard J, Shenkier T, Zucker D, Davis MK, McKenzie DC, Gelmon KA, Campbell KL. Exercise influence on chemotherapy-induced peripheral neuropathy symptoms in women with breast cancer: A proof-of-concept RCT. *Med Sci Sports Exerc* 2018; 50(5S Suppl 1). Thematic poster presented at American College of Sports Medicine Annual General Meeting, Minneapolis, MN, June 2018.
3. **Kirkham AA**, Bland KA, McKenzie DC, Eves ND, Campbell KL. “Showing up” to exercise program is most important factor in mitigating chemotherapy-related deterioration in  $VO_{2peak}$  in women with breast cancer. *Appl Physiol Nutr Metab* 2017; 42(10 (Suppl 2):S82. Poster presentation at Canadian Society of Exercise Physiology Annual General Meeting, Winnipeg, MB, October 2017.
4. Bland KA, **Kirkham AA**, Bovard J, Lloyd M, Shenkier T, Davis MK, Zucker D, Claydon VE, Gelmon KA, McKenzie DC, Campbell KL. “Chemotherapy-periodized” aerobic exercise for women with breast cancer: A novel exercise prescription to account for fluctuations in fatigue. *Appl Physiol Nutr Metab* 2017; 42(10 (Suppl 2):S61. Oral presentation at Canadian Society of Exercise Physiology Annual General Meeting, Winnipeg, MB, October 2017.
5. Yang EH, **Kirkham AA**, Thompson RB. Measurement and correction for the magnetic susceptibility effects of fat in venous oximetry: Application in the quantification of muscle oxygen consumption ( $VO_2$ ) with plantar flexion exercise. *International Society for Magnetic Resonance in Medicine (ISMRM) Proceedings*. Poster presented at the ISMRM Annual Meeting, Honolulu, HI, May 2017.
6. **Kirkham AA**, Campbell KL, McKenzie DC. Breast cancer- and metabolic-related predictors of  $VO_{2peak}$  amongst active post-menopausal women. *Med Sci Sports Exerc* 2017; 49(5S Suppl 1):272. Poster presented at American College of Sports Medicine Annual General Meeting, Denver, CO, June 2017.
7. Rowe S, **Kirkham AA**, Bland KA, Van Patten CL, Bonsignore A, McKenzie DC, Gelmon KA, Campbell KL. Feasibility of supervised aerobic interval exercise training following treatment for breast cancer. *Med Sci Sports Exerc* 2017; 49(5S Suppl 1):271. Poster presented at American College of Sports Medicine Annual General Meeting, Denver, CO. June 2017.

8. Bland KA, **Kirkham AA**, Van Patten CL, Wollmann H, Bonsignore A, McKenzie DC, Gelmon KA, Campbell KL. Supervised exercise as supportive care for breast cancer patients: Improvements in physical fitness. *Med Sci Sports Exerc* 2017; 49(5S Suppl 1):334-335. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Denver, CO. June 2017.
9. Wollmann HM, **Kirkham AA**, Van Patten CL, Bland KA, Bonsignore A, McKenzie DC, Gelmon KA, Campbell KL. Does supervised exercise programming at diagnosis impact future physical activity levels in breast cancer survivors? *Med Sci Sports Exerc* 2017; 49(5S Suppl 1):896. Poster presented at American College of Sports Medicine Annual General Meeting, Denver, CO. June 2017.
10. **Kirkham AA**, Shave RE, Eves ND, McKenzie DC, Gelmon K, Warburton DER, Virani SA, Campbell KL. Moderate exercise training prevents doxorubicin-related deterioration of subclinical marker of cardiac dysfunction in breast cancer. *Appl Physiol Nutr Metab* 2016 41(9 Suppl 4):S367. Poster presented at Canadian Society of Exercise Physiology Annual General Meeting, Victoria, BC, October 14, 2016.
11. Bland KA, **Kirkham AA**, van Patten CL, Bonsignore A, McKenzie DC, Gelmon KA, Campbell KL. Changes in quality of life among women engaging in exercise programming as a part of supportive care during and post adjuvant breast cancer treatment. *Appl Physiol Nutr Metab* 2016 41(9 Suppl 4):S343. Poster presented at Canadian Society of Exercise Physiology Annual General Meeting, Victoria, BC, October 14, 2016.
12. Wollmann HM, **Kirkham AA**, van Patten CL, Bonsignore A, McKenzie DC, Gelmon KA, Campbell KL. Comparison of strength improvements during and post adjuvant breast cancer treatment. *Appl Physiol Nutr Metab* 2016 41(9 Suppl 4):S397. Poster presented at Canadian Society of Exercise Physiology Annual General Meeting, Victoria, BC, October 13, 2016.
13. **Kirkham AA**, Shave R, Stöhr E, Gelmon K, Eves ND, McKenzie DC, Warburton DER, Virani SA, Campbell KL. The effect of exercise 24 hours before chemotherapy on cardiac function and symptoms in breast cancer. *Med Sci Sports Exerc* 2016; 48(5S Suppl 1):831. Poster presented at American College of Sports Medicine Annual General Meeting, Boston, MA. June 3, 2016.
14. Bland KA, **Kirkham AA**, van Patten CL, Neil-Sztramko SE, Bonsignore A, Gelmon KA, McKenzie DC, Campbell KL. Patient-reported Barriers to Exercise and Predictors of Exercise Adherence During Adjuvant Chemotherapy for Breast Cancer. *Med Sci Sports Exerc* 2016; 48(5S Suppl 1):333. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Boston, MA. June 2, 2016.
15. Rafn BS, **Kirkham A**, Klika R, Downey P, Ballard T, Campbell KL. The effect of a clinical cancer rehabilitation program on arm function and quality of life in breast cancer survivors. *Support Care Cancer* 2015; 23(Suppl 1):300. Poster presented at International Annual Meeting on Supportive Care in Cancer, Copenhagen, Denmark, June 27, 2015.
16. Klika R, **Kirkham A**, Campbell K, Downey P, Ballard T. Evaluation of the Strides to Strength™ cancer rehabilitation program. *Med Sci Sports Exerc* 2015; 47(5S):315-316. Poster presented at American College of Sports Medicine Annual General Meeting, San Diego, CA. May 28, 2015.
17. **Kirkham AA**, Morgan J, Hodson S, McRae T, Campbell KL. Assessment of a series of physical fitness tests in a community-based cancer rehabilitation setting. *Med Sci Sports Exerc* 2014;46(5 Suppl):127. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Orlando FL; May 28, 2014.
18. Hung SH, Neil SE, **Kirkham AA**, Niksirat N, Campbell, KL. Physical function in breast cancer survivors: A systematic review and comparison to healthy normative data. *Med Sci Sports Exerc* 2014;46(5 Suppl):382. Poster presented at American College of Sports Medicine World Congress on Exercise is Medicine, Orlando FL; May 29, 2014.
19. **Kirkham AA**, Morgan J, Hodson S, McRae T, Campbell KL. Urban cancer-specific community exercise programs: Who enrolls and what changes occur? *Med Sci Sports Exerc* 2014;46(5 Suppl):366. Poster presented at American College of Sports Medicine World Congress on Exercise is Medicine, Orlando FL; May 29, 2014.

20. Campbell KL, Kam J, Boyd LA, Handy TC, Lim H, Hayden S, Hsu L, Neil SE, **Kirkham AA**, Gotay CC, McKenzie DC, Liu-Ambrose T. Effect of exercise on cancer-associated cognitive dysfunction: A proof-of-concept randomized controlled trial. *J Clin Oncol* 32(15 Suppl):9583. Poster presented at the Annual Meeting of the American Society of Clinical Oncology, Chicago USA, May 30-June 3, 2014.
21. Tacaks J, **Kirkham AA**, Campbell KL, Hunt M. Lateral trunk lean gait modification increases the energy cost of walking in those with knee osteoarthritis. *International Society for Gait and Posture Annual Meeting Proceedings*. Poster presented at the International Society for Gait and Posture Annual Meeting, Vancouver, Canada, June 29, 2014.
22. **Kirkham AA**, Virani SA, Campbell KL. The utility of exercise or pharmacological stress in identifying cardiac damage in breast cancer survivors. *Med Sci Sports Exerc* 2013;45(5 Suppl 1):215. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Indianapolis, IN; May 30, 2013.
23. Campbell KL, Kam JWY, Hayden S, Neil SE, **Kirkham AA**, Handy TC, Boyd LA, Liu-Ambrose TYL. Does cardiorespiratory fitness influence cognitive function in breast cancer survivors reporting cancer-related cognitive changes? *Med Sci Sports Exerc* 2013;45(5 Suppl 1):213. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Indianapolis, IN; May 30, 2013.
24. **Kirkham AA**, Campbell KL, McKenzie DC. Comparison of aerobic intensity prescription methods in breast cancer patients and survivors. *Med Sci Sports Exerc* 2011;43(5 Suppl):S7. Thematic poster presented at American College of Sports Medicine Annual General Meeting, Denver, CO; June 2011.
25. **Kirkham AA**, Neil SE, Campbell KL, McKenzie DC. An easy method for adjusting heart rate targets to account for training adaptations throughout exercise interventions with breast cancer survivors. *Appl Physiol Nutr Metab* 2010;35(S1). Poster presented at Canadian Society of Exercise Physiology Annual General Meeting, Toronto, ON; Nov. 2010.
26. Feehan L, Li LC, MacIntyre D, Harris S, **Kirkham A** and the Osteo-Fx Review Team. Exercise program elements deemed important by physiotherapists in exercise prescription following osteoporotic fracture. *Arthritis and Rheumatism*, 2010;60(10 Suppl):1882. Poster presented at American College of Rheumatology & Association of Rheumatology Health Professionals Annual Scientific Meeting, Atlanta, GA Nov, 2010.
27. **Kirkham AA**, Campbell KL, Jespersen DK and McKenzie DC. Exercise intensity prescription for women with breast cancer undergoing chemotherapy. *Appl Physiol Nutr Metab* 2009;34(S1):S48-S49. Oral presentation at Canadian Society of Exercise Physiology Annual General Meeting, Vancouver, BC: Nov. 2009.

#### Unpublished conference presentations

28. **Kirkham AA**, Xu L, Wang H, Chow K, Pagano J, White J, Haykowsky MJ, Dyck J, Ezekowitz J, Oudit G, Mackey J, Thompson RB, Pituskin E, Paterson DI. Breast Cancer Diagnosis is Associated with Relative Left Ventricular Hypertrophy. Abstract submitted to Global Cardio Oncology Summit, Tampa, FL, September, 2018.
29. **Kirkham AA**, Paterson DI, Pituskin E, Grenier J, Thompson RB. Changes in skeletal muscle metabolism, mass and strength with receipt of cardiotoxic breast cancer treatments. Poster presented at Okanagan Cardiovascular and Respiratory Symposium, Silver Star, BC, March 2018.
30. **Doroshuk M**, **Kirkham AA**, Paterson DI, Pituskin EN, Thompson RB. Magnetic resonance imaging-derived left ventricular strain changes with cardiotoxic breast cancer treatment. Poster presentation at Research Revealed: Undergraduate Forum for Kinesiology, Exercise Science, Sport Studies and Recreation, Calgary, AB, March, 2018.
31. **Kirkham AA**, Paterson DI, Mackey J, Prado, C, Courneya KS, Pituskin E, Thompson RB. Caloric Restriction and Exercise protection from Anthracycline Toxic Effects: (CREATE) Study. Mini-oral and poster presentation at Cancer Research Institute of Northern Alberta Research Day, Edmonton, AB, Nov 2017.

32. Neil-Sztramko SE, **Kirkham AA**. Patterns of health lifestyle factors amongst those with cancer, cancer survivors, and those without cancer: findings from the 2013-14 Canadian Community Health Survey. Poster presented at Canadian Cancer Research Conference, Vancouver, BC, November 2017.
33. Bland KA, **Kirkham AA**, Bovard J, Lloyd M, Shenkier T, Davis MK, Zucker D, Gelmon KA, McKenzie DC, Claydon VE, Campbell KL. Influence of supervised exercise during versus after taxane chemotherapy for breast cancer on quality of life. Poster presented at Canadian Cancer Research Conference, Vancouver, BC, November 2017.
34. Christiansen J, **Kirkham AA**, Pituskin EN, Paterson DI, Thompson RB. The effect of chemotherapy and trastuzumab on skeletal muscle quality of breast cancer patients. Poster presentation at Research Revealed: Undergraduate Forum for Kinesiology, Exercise Science, Sport Studies and Recreation, Edmonton, AB, March, 2017.
35. **Kirkham AA**, Eves ND, McKenzie DC, Shave RE, Stöhr EJ, Gelmon K, Warburton DER, Virani SA, Campbell KL. Cardio-protection from a single exercise session performed 24 hours prior to doxorubicin treatment in breast cancer patients. Poster presented at Global Cardio-Oncology Summit, Vancouver, BC, October 2016.
36. **Kirkham AA**, Lloyd MG, Gelmon K, Claydon VE, Van Patten C, Campbell KL. Resting heart rate and blood pressure changes during and after chemotherapy for breast cancer concurrent to exercise training. Poster presented at the Global Cardio-Oncology Summit, Nashville, TN, October 2015.
37. Lloyd MG, **Kirkham AA**, Claydon VE, Campbell KL. Resting heart rate and blood pressure changes during adjuvant treatment for breast cancer. Poster presented at the International Society for Autonomic Neuroscience, Italy, September 2015.
38. Balneaves LG, Truant TLO, Campbell KL, Van Patten C, Waters E, **Kirkham A**. Patients and oncologist' perspectives on physician referrals to a lifestyle intervention program. Poster presentation at the 12th International Conference of the Society for Integrative Oncology. Boston, MA, USA. November 2015.
39. **Kirkham AA**, Pauhl KE, Elliot R, Scott JA, Doria S, Davidson HK, Campbell KL, Camp PG. Utility of equations that estimate peak oxygen consumption and work rate from the six-minute walk test in patients with COPD. Poster presented at Heart and Lung Fest, Vancouver, BC, February 2014.

### Invited presentations

1. "Effectiveness of exercise programming for cancer survivors in clinical and community settings: How does it compare to randomized trials?" (within 2-hour symposium titled: Exercise for cancer survivors in the real world: Translating research to practice; other speakers: Joachim Wiskermann (Germany), Maike Sweegers (The Netherlands), Anna Campbell (Scotland)); Symposium at American College of Sports Medicine Annual Meeting, Minneapolis, MN, June 1, 2018
2. "Exercise in Cardio-Oncology: The relationship between exercise and cancer treatment-related cardiotoxicity"; 50-minute tutorial jointly presented with Dr. Mark Haykowsky (USA) at the World Congress on Exercise is Medicine, Minneapolis, MN, May 30, 2018
3. "Use of Biomedical Imaging and Nutrition to Increase the Impact of Exercise Oncology Research"; 15-minute oral presentation at Cancer Special Interest Group Meeting at American College of Sports Medicine Annual Meeting, Minneapolis, MN, May 30, 2018
4. "Maximizing the impact of exercise and diet on breast cancer outcomes", Susan G. Komen Breast Cancer Challenge Semi-finalist, Obesity & Cancer Section Meeting at Obesity Week 2017, Washington, DC, November 2017
5. "Exercise and diet as adjunct therapy for breast cancer"; Northern Alberta Breast Cancer Program Retreat, Edmonton, AB, October 2017
6. "Longitudinal strain imaging by magnetic resonance is a sensitive predictor of cardiotoxicity caused by breast cancer therapies"; Alberta Imaging Symposium, Edmonton, AB, May 2017

7. “Good days and bad days: Tailoring aerobic exercise prescription to chemotherapy” (within 2-hour symposium titled: Back to basics: Applying training principles for effective exercise prescription in cancer patients; other speakers: Kathryn Schmitz (USA), Prue Cormie (Australia), Joachim Wiskermann (Germany)); Symposium at American College of Sports Medicine Annual Meeting, Boston, MA, June 2016
8. “Exercise therapy for breast cancer treatment side effects”; Pharmaceutical Outcomes & Policy Innovations Seminar, UBC; Vancouver, BC, May 26, 2015
9. “The role of acute and chronic exercise in cardio-protection from anthracycline chemotherapy for breast cancer”; Lions Gate Hospital Community Chemotherapy Centre; North Vancouver, BC; September 11, 2014
10. “Exercise is medicine: The benefits of exercise during cancer treatment”; Burnaby General Hospital Community Chemotherapy Centre; Burnaby, BC; August 20, 2014
11. “Exercise for cancer survivors: What does it look like outside research?”; School of Health and Social Care, University of Surrey (satellite location); Glasgow, Scotland; July 9, 2014
12. “Assessment and prescription in exercise oncology”; Cardiac Rehabilitation, Atrium Health Ltd. Centre for Exercise and Health; Coventry, England; July 1, 2014
13. “Exercise cardio-protection from chemotherapy for breast cancer”; School of Sport, Cardiff Metropolitan University; Cardiff, Wales; June 20, 2014
14. “Exercise cardio-protection from breast cancer anthracycline-induced cardiotoxicity”; British Columbia Cancer Agency Vancouver Centre; Vancouver, BC; May 24, 2014
15. “Prescription of exercise intensity in breast cancer and beyond”; StepUp 2013 (physiotherapy conference); Vancouver, Canada; April 30, 2013

## OPERATING GRANTS

1. Canadian Cancer Society & Canadian Institutes of Health Research Innovation Grant (National). “Maximizing metastatic breast cancer patient outcomes using diet and exercise.” \$200,000. Role: Co-applicant. Principal investigator: Carla Prado. Co-principal investigator: Richard Thompson. Co-investigators: Ian Paterson, John Mackey, Kerry Courneya, Edith Pituskin. Status: Active.
  - o I independently conceived of this study and wrote this grant application. I will also be leading this study.
2. Susan G. Komen (International) Postdoctoral Research Fellowship Grant (direct operating costs). “Short-term lifestyle interventions for cardio-protection from anthracyclines.” \$180,000 USD (\$242,000 CAD); 2017-2020. Role: PI. Co-investigators: Richard Thompson, Ian Paterson, John Mackey, Carla Prado, Edith Pituskin. Status: Active.
3. Anita Cochrane Memorial Endowment Fund Award, British Columbia Cancer Foundation (Provincial). “The effects of exercise before doxorubicin infusion on cardiac function in breast cancer patients” (PhD thesis); \$6,840; 2014. Role: Co-I. PI: Dr. Karen Gelmon. Co-Investigators: Kristin Campbell, Don McKenzie, Sean Virani. Status: completed.
4. American College of Sports Medicine Foundation (International) Doctoral Student Research Grant. “Cardio-protective effects of exercise during chemotherapy” (PhD thesis); \$5,000; 2013. Role: PI. Co-Investigators: Kristin Campbell, Don McKenzie, Sean Virani. Status: completed.
5. UBC (Institutional) Faculty of Education Graduate Student Research Grant. “Comparison of aerobic exercise intensity prescription methods among breast cancer patients during and after chemotherapy” (MSc thesis); \$883; 2010. Role: PI. Co-investigator: Don McKenzie. Status: completed.

## ACADEMIC LEADERSHIP

- Dedicated and experienced supervisor and mentor of students, including independent recruitment and supervision of volunteers, practicum/co-op students, and paid staff (see ‘Supervision and Mentorship Experience’)
- Leading and training large research staff (paid and volunteers) teams:
  - a. UBC: Responsible for training and maintaining standards for data collection among up to 15 research staff working on a given study to collect exercise data



- b. UAlberta: Leading and training staff for intensive MRI acquisitions requiring up to three MR technicians, Research Nurse, a student helper and myself.
  - c. UAlberta: Coordinates multi-disciplinary assessments for multiple studies between patients and staff for MR Research Centre, Exercise Physiology Labs, Cancer Rehabilitation Clinic, Human Nutrition Research Unit, and the cancer treatment centre.
- Coordination of multi-disciplinary expertise in large research teams:
  - a. UBC: Lead and coordinated contributions from Medical Oncologists, Cardiologists, Registered Dietitians, Onco-Physiatrists, Sports Medicine Physicians, and multiple PhDs (Physical Therapy, Cardiac Physiology, Autonomic function) from Vancouver, the United States and the United Kingdom on cardio-oncology and exercise oncology research projects. Lead resulting publications with up to 11 authors.
  - b. UAlberta: Leading and coordinating contributions from Medical Oncologists, Cardiologists, Nurse Practitioners, Registered Dietitians, and PhDs (Biomedical Engineering, Nutrition, Exercise Oncology, Physical Therapy, Pulmonary Physiology)
- Enthusiastic teacher of practical skills and theoretical content to undergraduate and graduate students (see ‘Teaching Experience’)
- Encouraged and facilitated numerous junior students to attend academic conferences by sharing research data for presentation (see second-authored conference publications)
- Conceived of symposium (2-hour presentation) and tutorial (50-minute presentation) content for American College of Sports Medicine Annual General Meeting 2018, invited speakers, submitted proposal and executed top-rated sessions at the conference. See ‘Invited Presentations’
- Conceived of two symposium sessions, invited speakers and submitted proposals for 2019 conference on topics and with speakers that will generate new content for this conference.
- Served as Communications Officer for the Graduate Student Committee of the Canadian Society of Exercise Physiology for two years, which involved leading a team of graduate students across the country to generate content for a quarterly newsletter sent to all student members.
- Served as expert reviewer for multiple peer-reviewed journals and clinical operating grant review (see ‘Service’)
- Delivery of valuable research content to public via print and television media (see ‘Media Coverage of Research’)

## TEACHING EXPERIENCE

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### Graduate

1. Instructor, PHTH 517 – “Exercise and Movement I”, UBC Department of Physical Therapy (Fall 2015)
2. Instructor, PHTH 527 - “Exercise and Movement II” (lab), UBC Department of Physical Therapy (Winter 2015)
3. Clinical Skills Assistant, PHTH 514 – “Clinical Skills I” (emergency care, athletic taping, cardiorespiratory examination, and exercise testing labs), UBC Department of Physical Therapy (Fall 2010-2015)

### Undergraduate

4. Teaching Assistant, International Summer School - “Recovery from Injury and Disease” and “Exercise is Medicine” (facilitated laboratory sessions) UBC Faculty of Medicine (Summer 2015)
5. Guest Lecturer, KINE 469 - “Exercise Prescription”; UBC School of Human Kinetics (March 2011)
6. Teaching Assistant, KINE 103 – “Active Health” (Delivered lecture and supervised laboratory sessions), UBC School of Human Kinetics (Winter 2010)
7. Teaching Assistant, KINE 190 – “Anatomy and Physiology I” (Delivered lecture and supervised laboratory sessions), UBC School of Human Kinetics (Fall 2008 & Winter 2009)

## SUPERVISION AND MENTORSHIP EXPERIENCE

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### Primary or significant supervision role

1. Supervisor, UAlberta KIN Practicum, Jessica Hoskins (Sep-Dec 2018)
2. Supervisor, UAlberta Graduate Student Internship Program (paid), Sara Nejatnamini (PhD candidate, May 2018 - present)
3. Supervisor, UAlberta Research Technician, Marissa Doroshuk (May 2018 - present)
4. Supervisor, UAlberta Exercise Physiologist, Andrew Brotto (October 2017-present)

5. Supervisor, UAlberta KIN Practicum, Gregory Farmer (May-Aug 2018)
6. Supervisor, UAlberta KIN Practicum, Kim Brennan (Jan-Apr 2018)
7. Supervisor, UAlberta KIN Practicum, Marissa Doroshuk (Sep-Dec 2017)
8. Supervisor, UAlberta KIN Practicum, Jillian Christiansen (Jan-Apr 2017, currently in Physical Therapy program)
9. Supervisor of undergraduate volunteers:
  - i. Marissa Doroshuk (UAlberta, Jan-May 2018)
  - ii. Hanna Hruczowski (UAlberta, May-Nov 2017)
  - iii. Bav Cheema (UBC, Sept 2014 -Apr 2015, currently in medical school)
  - iv. Savanna Rowe (UBC, Jan 2015 –Apr 2017, presented our work at international conference & currently in Physical Therapy program)
  - v. Hannah Kapur (UBC, May-Aug 2015, currently in medical school)
  - vi. Simran Parmar (UBC, Sep 2015 – Feb 2016, currently in medical school)
10. Supervisor, UBC Work Learn Program, Chris Grellman (Sep 2014-Apr 2015)
11. Supervisor, UBC Work Learn Program, Nima Omid-Fard (Sept 2014-Jun 2015, currently in medical school)
12. Supervisor, UBC Work Learn Program, Cristina Trasolini (May 2014-April 2015)
13. Supervisor, UBC Faculty of Medicine Summer Research Award recipient, Sean Nugent (Jun-Aug 2014, currently in medical school)
14. Supervisor, UBC Work Learn Program, Kortni Pelli (2013-2014)
15. Supervisor, UBC Masters of Physical Therapy group research project: “Metabolic Cost of Trunk Lean Walking for Arthritis” (2012-2013)
16. Supervisor, UBC Masters of Physical Therapy group research project: “Can the 6-minute Walk Test Predict VO<sub>2</sub>peak in COPD patients?” (2012-2013)

#### Mentorship

1. Mentor, UBC Kinesiology Mentorship Program, Sarah Sayyari, (2014-2015, completed MSc)
2. Mentor, MSc student lab mate, Stanley Hung (2012-2014)
3. Mentor, UBC Kinesiology Mentorship Program, Shaolin Rahman (2013-2014, currently working in health care)
4. Mentor, Tri-council Graduate Student Applications, Rehabilitation Sciences Graduate Program, UBC (2012-2016)

## SERVICE

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#### Committees

1. Abstract Reviewer, Cancer Research Institute of Northern Alberta Research Conference, 2017
2. Clinician Scientist Search Committee, Department of Physical Therapy, UBC, 2012
3. Student Advisory Committee, Clinical Exercise Physiology Association, 2009-2010
4. Communications Officer, Canadian Society of Exercise Physiology Graduate Student Committee, 2009-2011
5. Admissions Committee, Athletic Therapy Program, York University, 2007
6. Publicity Director, York University Varsity Sports Council, 2007-2008

#### Operating grant review

1. Dutch Cancer Society (KWF Kankerbestrijding), Amsterdam, NL (2016-present)
2. Tenovus Cancer Care, Cardiff, United Kingdom (2016-present)

#### Journal review

1. Cochrane Breast Cancer Group, Cochrane Database of Systematic Reviews
2. Medicine & Science in Sports & Exercise
3. Supportive Care in Cancer
4. PLOSOne
5. Hypothesis Journal
6. Experimental Physiology

7. Disability & Rehabilitation
8. Journal of Science and Medicine in Sports

### Community

1. Community speaker, Running Room Learn-to-Run Clinic for breast cancer survivors, 2015
2. Created knowledge translation document for oncologists to prescribe exercise to their patients during treatment, published by Canadian Cardiac Oncology Network, 2014
3. Volunteer fitness testing for Vancouver Canucks, 2008-2010
4. Peer Health Educator, Community & Leadership Development, York University, 2007-2008

### MEDIA COVERAGE OF RESEARCH

1. ACSM National Office of Communications & Media Advocacy press release to Newswise highlighting work from my manuscript “Exercise prescription and adherence for breast cancer: One size does not FITT all,” Feb 2018.
2. My manuscript, “Exercise prescription and adherence for breast cancer: One size does not FITT all” highlighted in Medicine & Science in Sports & Exercise Editorial, Feb 2018.
3. Lay summary of my manuscript, “Protective effects of acute exercise prior to doxorubicin on cardiac function of breast cancer patients: A proof-of-concept RCT” highlighted by Canadian Society of Exercise Physiology’s ‘Knowledge Translation: Advances in Exercise Physiology Research’ section of January 2018 Comminqué.
4. “Modifying exercise during chemotherapy / protecting against cardiotoxicity”, Research in Exercise and Cancer Health (REACH) Podcast 60-minute interview, Oct 2017: <https://www.reachbeyondcancer.com/podcast/2017/10/5/ep-24-dr-amy-kirkham-modifying-exercise-during-chemotherapyprotecting-against-cardio-toxicity> (also available on iTunes)
5. “CTV Edmonton: Protecting cancer patients’ hearts”, University of Alberta Faculty of Medicine & Dentistry ‘FoMD in the News’ Sep 2017 newsletter top story: <https://www.ualberta.ca/medicine/news/2017/september/fomd-in-the-news>
6. “Protecting cancer patient’s hearts”, CTV Edmonton’s health correspondent Carmen Leibel reported on my CREATE study, aired Aug 30, 2017 during CTV news, and also promoted on CTV’s Twitter and Facebook accounts: <http://www.ctvnews.ca/video?clipId=1198427>
7. “Can heart damage from chemotherapy be prevented through exercise and diet?”, University of Alberta Faculty of Medicine & Dentistry website feature story, August 30, 2017: <https://www.ualberta.ca/medicine/news/2017/august/can-heart-damage-from-chemotherapy-be-prevented-through-exercise-and-diet>
8. My manuscript “Protective effects of acute exercise prior to doxorubicin on cardiac function of breast cancer patients: A proof-of-concept RCT” (Int J Cardiol 2017; 245:263-70) has received more online ‘attention’ than 93% of the 8.5 million research outputs tracked by Altmetric (<https://www.altmetric.com/details/21982604#score>).
9. “Amy Kirkham PhD ‘16”, University of British Columbia Faculty of Medicine Alumni Profile Spotlight, July 2017 E-Newsletter
10. “Caloric Restriction and Exercise in Breast Cancer Patients to Protect Against Anthracycline Toxic Effects”, Feature Story, Cancer Control Alberta July 11 2017 newsletter and website
11. “UBC students explore the impact of exercise on cancer prevention and rehabilitation”, UBC Faculty of Medicine June 2015 Communications: <http://www.med.ubc.ca/ubc-students-explore-the-impact-of-exercise-on-cancer-prevention-and-rehabilitation/>
12. “Prescription Exercise”, Michael Smith Foundation for Health Research June 2010 News: <https://www.msfrh.org/news/features/prescription-exercise>

### RESEARCH ASSISTANTSHIPS

1. Research Assistant, Exercise and cancer-associated cognitive function (May 2011–Jan 2014)
2. Research Assistant, Diet and physical activity pilot study (2009-2010)
3. Project Manager, Randomized anastrozole exercise trial, (Sept 2009-Jan 2010)
4. Research Assistant, RCT of combined aerobic and resistance exercise in breast cancer survivors receiving chemotherapy: The CARE trial, (2008-2011)
5. Research Assistant, Arthritis Research Centre of Canada (Jan-Sept 2009)

## ADVANCED ACADEMIC COURSES

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1. Analyzing repeated measures data: ANOVA and mixed model approaches, (8 w online, 2016)
2. International intensive graduate course in exercise & clinical physiology, Concordia University, (5 days, Montreal, QC, 2010)
3. Cardiovascular ultrasound in sport and exercise sciences, UBC-Okanagan, (5 days, Kelowna, BC, 2010)
4. Instructional skills for graduate students, Teaching and Academic Growth (4 days, Vancouver, BC, 2010)
5. Publication and grant writing workshop, CIHR-funded quality of life training program in rehabilitation research, (5 days, Vancouver, BC, 2010)
6. Introduction to and applications of hierarchical linear modeling/ linear mixed effects models, Department of Statistics, UBC (3 days, Vancouver, BC, 2009)

## CERTIFICATIONS AND MEMBERSHIPS

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1. Professional Kinesiologist, Alberta Kinesiology Association (2016-present)
2. Professional Kinesiologist, British Columbia Association of Kinesiologists (2014-2015)
3. Member, Canadian Society of Exercise Physiology (2009-present)
4. Member, American College of Sports Medicine (2009-present)
5. Member, Clinical Exercise Physiology Association (2009-present)
6. First Aid, CPR, AED Certification, Canadian Red Cross (2004-present)
7. Certified First Responder, Canadian Red Cross (2004-2009)
8. Certification Candidate, Canadian Athletic Therapists Association (2004-2010)
9. Certification Candidate, Ontario Athletic Therapists Association (2004-2010)

## ATHLETIC ACHIEVEMENTS

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1. Several podiums in international Half-Ironman races as a Professional Triathlete (2010)
2. Member, British Columbia Elite Long Course Triathlon Team (2009 & 2010)
3. 3<sup>rd</sup>, Elite women, British Columbia Time Trial (cycling) Provincial Championship (2010)
4. Twice represented Canada (2008: 8<sup>th</sup>, women 20-24; 2009: 19<sup>th</sup>, women 25-29) at Age Group Triathlon World Championships
5. 2<sup>nd</sup>, women 25-29, 4<sup>th</sup> overall, National Olympic Triathlon Championships (2009)
6. 2<sup>nd</sup>, women 20-24, National Sprint & Olympic Triathlon Championships (2007, 2008)
7. 2<sup>nd</sup>, senior women's team, National Cross Country Championship (2007)
8. Ontario University Athletics Cross Country All-Star (2007)
9. Varsity Cross Country Team Captain, York University (2006-08)
10. Varsity Cross Country MVP, York University (2003-04, 2007-08)
11. York Lions Track and Field Achievement Award (2005)
12. York University Excalibur's Varsity Athlete-of-the-Year nomination (2004)
13. 10<sup>th</sup>, 3000m, Canadian Interuniversity Sport Track & Field National Championship (2004)