

Curriculum Vitae

Devin Phillips, PhD

CONTACT INFORMATION

341 Norman Bethune College, York University, 4700 Keele Street
Toronto, Ontario, Canada, M3J1P3

Email: dbphill@yorku.ca

Gender identity: He/him

Citizenship: Canadian

First digit of social insurance number: 6

EDUCATION AND TRAINING

- | | |
|-------------|---|
| 2020 – 2022 | Queen’s University – Kingston, Ontario Department of Medicine Postdoctoral Fellow Supervisor: Dr. Denis O’Donnell |
| 2015 – 2020 | University of Alberta – Edmonton, Alberta Faculty of Kinesiology, Sport, and Recreation Doctor of Philosophy in Pulmonary Physiology Supervisor: Dr. Michael Stickland |
| 2011 – 2014 | University of Alberta – Edmonton, Alberta Faculty of Kinesiology, Sport, and Recreation Master of Science in Exercise Physiology Supervisor: Dr. Stewart Petersen |
| 2004 – 2008 | University of Nevada, Las Vegas – Las Vegas, Nevada Faculty of Health Sciences Bachelor of Science in Kinesiology |

FACULTY APPOINTMENTS

- | | |
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| 2023 – Present | Assistant Professor, School of Kinesiology and Health Science, York University |
| 2023 – Present | Professor (Adjunct), Department of Medicine, Queen’s University |

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RESEARCH INTERESTS

1. Influence of biological sex and aging on integrative physiological and perceptual responses to exercise.
2. Influence of biological sex on the pathophysiology of cardiovascular and respiratory disease, with a focus on studying the mechanisms and management of chronic activity related breathlessness.
3. Investigation of therapeutic interventions to improve lung microvascular function and breathlessness in patients living with chronic disease.

AWARDS AND SCHOLARSHIPS

National and International

1. Natural Sciences and Engineering Research Council of Canada (NSERC) Postdoctoral Fellowship (**\$45,000/year for 2 years**)
April 2020
2. Finalist, Canadian Society for Exercise Physiology Graduate Student Award (**\$250**)
November 2019
3. The Canadian Lung Association Breathing as One Studentship (**\$21,000/year for 2 years**)
August 2018
4. American Physiological Society, and Neural Control and Autonomic Regulation Travel Award (**\$125**)
April 2018
5. Finalist, Neural Control and Autonomic Regulation NCARNation Student Award. 2018 Experimental Biology International Conference
April 2018

Provincial and Institutional

1. John Alexander Stewart Postdoctoral Fellowship. Translational Institute of Medicine, Queen's University (**\$50,000**)
March 2022
2. Best Poster Presentation, Alberta Respiratory Centre Annual Research Day (**\$250**)
November 2019
3. University of Alberta Faculty of Graduate Studies and Research Travel Award (**\$1,500**)
September 2019
4. Best Poster Presentation, Alberta Respiratory Centre Annual Research Day (**\$250**)
November 2018
5. The Lung Association Alberta/NWT Studentship Award (**\$12,500**)
July 2018
6. University of Alberta Graduate Student Association Academic Travel Award (**\$500**)
June 2018

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7. Faculty of Kinesiology, Sport, and Recreation Travel Award (**\$500**)
May 2018
8. Faculty of Graduate Studies and Research Annual Graduate Student Teaching Award
March 2018
9. Alberta Respiratory Centre Travel Award (**\$1,500**)
February 2018
10. Faculty of Physical Education and Recreation Travel Grant (**\$500**)
February 2017
11. University of Alberta Graduate Student Association Academic Travel Award (**\$500**)
February 2017
12. Best Poster Presentation, 2016 Faculty of Physical Education and Recreation RECON
Graduate Student Conference
September 2016
13. Faculty of Physical Education and Recreation Graduate Tuition Award (**\$2,000**)
September 2016
14. The Lung Association Alberta/NWT Studentship Award (**\$11,500**)
July 2016
15. Saltin International Graduate Course in Clinical and Exercise Physiology, Sponsored
Student (**\$500**)
October 2015
16. Faculty of Physical Education and Recreation Graduate Tuition Award (**\$2,000**)
September 2015
17. Faculty of Physical Education and Recreation Travel Grant (**\$500**)
October 2014
18. Mountain West Conference Academic All-Conference Award
June 2008
19. Mountain West Conference Academic All-Conference Award
June 2006
20. Full NCAA Student Athlete Scholarship
April 2004
21. Victor Davis Memorial Student Athlete Scholarship (**\$1,000**)
November 2002

RESEARCH GRANTS

1. York University, Faculty of Health Combined Junior Faculty Fund/Minor Research Grant
(\$5,000)
Title: Understanding biological sex differences in the neural control of breathing. **2023-
2024.**
Role: Principal Investigator

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2. Southeastern Ontario Academic Medical Organization Academic Health Sciences Centres Alternate Funding Plan (**\$80,000**)
Title: Combining functional imaging and clinical physiology to enhance diagnosis and treatment of dyspneic patients in the initial stages of chronic obstructive pulmonary disease. **2021 – 2023**
Role: Collaborator (Principal investigator Alberto Neder)
3. Queen’s University Spear Endowment Grant (**\$30,000**)
Title: Mechanisms of exertional dyspnea in idiopathic pulmonary fibrosis. **2021 – 2022**
Role: Co-applicant (Principal investigator Alberto Neder)
4. Boehringer Ingelheim BUILS IIS Grant (**\$85,018.80**)
Title: Pulmonary gas-exchange and neuro-sensory abnormalities in patients with idiopathic pulmonary fibrosis and mild mechanical restriction. Implications for dyspnea and exercise intolerance. **2021 – 2023**
Role: Co-applicant (Principal investigator Denis O’Donnell)
5. Heart and Stroke Foundation of Canada Grant in Aid (**\$299,435**)
Title: High intensity interval training in youth with congenital heart disease: a randomized controlled trial of a novel telemedicine video game-linked exercise platform. **2021 – 2024**
Role: Collaborator (Principal investigator Michael Khoury)
6. Canadian Institutes of Health Research Project Grant (**\$726,750**)
Title: Pulmonary vascular dysfunction and exercise in chronic obstructive pulmonary disease. **2020 – 2025**
Role: Co-applicant (Principal investigator Dr. Michael Stickland)
7. Ontario Lung Association Grant in Aid (**\$12,605**)
Title: The effect of inhaled nitric oxide (iNO) on inspiratory neural drive and dyspnea during exercise in mild chronic obstructive pulmonary disease. **2020 – 2021**
Role: Co-applicant (Principal investigator Denis O’Donnell)
8. Queen’s University Spear Endowment Grant (**\$30,000**)
Title: Inhaled nitric oxide in post-pulmonary embolism syndrome. **2020 – 2021**
Role: Co-applicant (Principal investigator Denis O’Donnell)
9. Queen’s University Respiratory Division Research Award (**\$20,000**)
Title: The effect of inhaled nitric oxide (iNO) on pulmonary gas-exchange, inspiratory neural drive, and dyspnea during exercise in COPD. **2020 – 2021**
Role: Co-applicant (Principal investigator Denis O’Donnell)
10. The Lung Association Alberta/NWT National Grant Review (**\$30,000**)
Title: The effect on inhaled nitric oxide on dyspnea, exercise tolerance and ventilation perfusion matching; a pilot and feasibility study. **2018 – 2019**
Role: Co-Investigator (Principal investigator Dr. Michael Stickland)

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11. University of Alberta Hospital Foundation (**\$35,000**)
Title: The effect of inhaled nitric oxide on dyspnea and exercise tolerance in mild COPD.
2018 – 2019
Role: Co-Investigator (Principal investigator Dr. Michael Stickland)
12. Canadian Lung Association Breathing as One – Boehringer Ingelheim Canada COPD Catalyst Grant (**\$30,000**) *Declined*
Title: The effect of inhaled nitric oxide on dyspnea and exercise tolerance in mild COPD.
2018
Role: Co-Investigator (Principal investigator Dr. Michael Stickland)

SCHOLARLY ACTIVITY

Summary

Articles published or accepted in peer reviewed journals: **44**

Textbook chapter: **1**

Articles under review in peer reviewed journals: **1**

Abstracts from scientific meetings: **39**

Articles published or accepted in peer reviewed journals (# indicates trainee)

1. Berton DC, Plachi F, James MD, Vincent SG, Smyth RM, Domnik NJ, **Phillips DB**, de-Torres JP, Nery LE, O'Donnell DE, Neder JAS. 2023. Dynamic ventilatory reserve on incremental exercise: Reference values and clinical validation in COPD. *Annals Amer Thor Soc*. Accepted June 2023
Impact Factor: 8.8
2. Smyth RM[#], James MD, Vincent SG, Milne KM, Marillier M, Domnik NJ, de-Torres JP, Moran-Mendoza O, **Phillips DB**, O'Donnell DE, Neder JAS. Determinants of exercise intolerance in patients with fibrosing interstitial lung disease and a severely impaired DLCO. *Resp Care*. Accepted June 2023
Impact Factor: 2.3
3. Smyth RM[#], Neder JA, James MD, Vincent SG, Milne KM, Marillier M, de-Torres JP, Moran-Mendoza O, O'Donnell DE, **Phillips DB**. 2023. Exertional dyspnoea in patients with fibrosing interstitial lung disease and preserved spirometry: The role of ventilatory inefficiency and inspiratory constraints. *Resp Physiol Neurobiol*. 312: 104041.
Impact factor: 1.9
4. Milne KM, James MD, Smyth RM, Vincent SG, Singh N, D'Arigny, CL, de-Torres JP, de Wit K, Johri A, Neder JA, O'Donnell DE, **Phillips DB**. 2023 Neurophysiological mechanisms of exertional dyspnea in post-pulmonary embolism syndrome. *J Appl Physiol*. 134:667-677.
Impact Factor: 3.5

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5. Elbehairy AF, Vincent SG, **Phillips DB**, James MD, Veugen J, Parraga G, O'Donnell DE, Neder JA. Pulmonary vascular volume by quantitative CT and lung diffusing capacity in dyspneic smokers with minor emphysema. *J COPD*. 20(1):135-143.
Impact factor: 2.6
6. **Phillips DB**, James MD, O'Donnell CD, Vincent SG, Webb KA, Neder JA, O'Donnell DE. 2022. Physiological predictors of morbidity and mortality in COPD: The relative importance of low inspiratory capacity and inspiratory muscle weakness. *J Appl Physiol*. 133:679-688.
Impact Factor: 3.5
American Physiological Society Select Award for Distinction (October 2022)
7. James MD[#], **Phillips DB**, Vincent SG, Neder JA, Abdallah S, Donovan A, Smith BM, Jensen D, O'Donnell DE. 2022. Exertional dyspnoea in patients with mild-to-severe Chronic Obstructive Pulmonary Disease (COPD): Neuromechanical mechanisms. *J Physiol*. 600(18):4227-4245
Impact factor: 6.3
Editorial by Jolley CJ. doi.org/10.1113/JP283583.
8. McCartney A, **Phillips DB**, James MD, Chan O, Neder JA, de-Torres JP, Domnik NJ, Crinion SJ. 2022. Neural ventilatory drive in chronically hypercapnic patients with COPD: Effects of sleep and nocturnal non-invasive ventilation. *Eur Resp Rev*. 31: 220069
Impact factor: 8.8
9. Collins SÉ, **Phillips DB**, Brotto AB, Rampuri Z, Stickland MK. 2022. Reply to Borasio et al.: “Ventilatory efficiency in athletes, asthma and obesity: Different ventilatory phenotypes during exercise in obesity? Invited manuscript to *Eur Resp Rev*. 31:220054
Impact factor: 8.8
10. Neder JAS, **Phillips DB**, O'Donnell DE, Dempsey JA. 2022. Excess ventilation and exertional dyspnoea in heart failure and pulmonary hypertension. *Eur Resp J*. E-pub ahead of print.
Impact factor: 33.8
11. Neder JAS, Kirby M, Santyr G, Pourafkari M, Smyth R, **Phillips DB**, Crinion S, de-Torres JP, O'Donnell DE. 2022. Improving ventilation/perfusion mismatching: An unmet need in the pharmacological treatment of COPD. *Chest*. E-pub ahead of print.
Impact factor: 10.3
12. **Phillips DB**, Elbehairy AF, James MD, Vincent SG, Milne KM, de-Torres JP, Neder JAS, Kirby M, Jensen D, Stickland MK, Guenette JA, Smith BM, Aaron SD, Tan WC, Bourbeau J, O'Donnell DE. 2022. Impaired ventilatory efficiency, dyspnea and exercise intolerance in Chronic Obstructive Pulmonary Disease. Results from the CanCOLD study. *Am J Resp Crit Care Med*. 205(12):1391-1402.
Impact factor: 30.5
Editorial by Calverley P. doi.org/10.1164/rccm.202203-0579ED

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13. Paynter AS, Lai V, Smyth R, King J, Coote J, Colpman P, **Phillips DB**, Domnik NJ. Why obstructive lung disease is about more than just airways: Blood supply matters. *Frontiers Young Minds*. Accepted February 2022
Impact factor: N/A
14. Domnik NJ, **Phillips DB**, James MD, Ayoo GA, Taylor SM, Scheeran RE, Di Luck AT, Milne KM, Vincent SG, Elbehairy AF, Crinion SJ, Driver HS, Neder JA, O'Donnell DE. 2022. Compensatory responses to increased mechanical abnormalities in COPD during sleep. *Eur J Appl Physiol*. 122(3):663-676.
Impact factor: 3.1
15. Brotto AB, **Phillips DB**, Meah VL, Ross BA, Fuhr DB, van Diepen S, Stickland MK. 2022. Inhaled nitric oxide does not improve maximal oxygen consumption in endurance trained and untrained healthy individuals. *Eur J Appl Physiol*. 122(3):703-715.
Impact factor: 3.1
16. **Phillips DB**, Neder JA, Elbehairy AF, Milne KM, James MD, Day AG, de Torres JP, Webb KA, O'Donnell DE. 2021. Qualitative components of dyspnea during incremental exercise across the COPD continuum. *Med Sci Sport Exer*. 53:2467-2476.
Impact factor: 6.3
17. James MD[#], **Phillips DB**, Elbehairy AF, Milne KM, Vincent SG, Domnik NJ, de Torres JP, Neder JA, O'Donnell DE. 2021. Mechanisms of exertional dyspnea in patients with mild COPD and a low resting DLCO. *J COPD*. 18:501-510.
Impact factor: 2.6
18. **Phillips DB**, James MD, Elbehairy AF, Milne KM, Vincent SG, Domnik NJ, de Torres JP, Neder JA, O'Donnell DE. 2021. Dyspnea and exercise intolerance in patients with mild COPD: The role of reduced ventilatory efficiency and diffusing capacity for carbon monoxide. *Respirology*. 26:786-795.
Impact factor: 6.4
Editorial by Thompson BR. doi.org/10.1111/resp.14112
19. Neder JA, **Phillips DB**, Marillier M, Bernard AC, Berton DC, O'Donnell DE. 2021. Clinical interpretation of cardiopulmonary exercise testing: Current pitfalls and limitations. *Frontiers Physiol*. 12:552000.
Impact factor: 4.6
20. Steele AR, Berthelsen LF, Fraser G, **Phillips DB**, Fuhr DP, Wong EYL, Stickland MK, Steinback CD. 2021. Blunted sympathetic neuro-cardiovascular transduction is associated to the severity of obstructive sleep apnea. *Clin Auton Res*. 32(3):443-451.
Impact factor: 4.4

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21. **Phillips DB**, Brotto AB, Ross BA, Bryan TL, Wong EYL, Meah VL, Fuhr DB, van Diepen S, Stickland MK. 2021. Inhaled nitric oxide improves ventilatory efficiency and exercise capacity in patients with mild chronic obstructive pulmonary disease: a randomized-control crossover trial. *J Physiol.* 599:1665-1683.
Impact factor: 6.3
Editorial by Sieck DC and Sieck GC. doi.org/10.1113/ JP280913.
22. **Phillips DB**, Domnik NJ, Elbehairy AF, Preston ME, Milne KM, James MD, Vincent SG, Ibrahim-Masthan M, Neder JA, O'Donnell DE. 2021. Elevated exercise ventilation in mild COPD is not linked to enhanced central chemosensitivity. *Resp Physiol Neurobiol.* 284:103571.
Impact factor: 1.9
23. Neder JA, Berton DC, **Phillips DB**, O'Donnell DE. 2021. Exertional ventilation-CO₂ output relationship in COPD: from physiological mechanisms to clinical applications. *Eur Resp Rev.* 30: 200190.
Impact factor: 8.8
24. Collins SÉ, **Phillips DB**, Brotto AB, Rampuri Z, Stickland MK. 2021. Ventilatory efficiency in athletes, asthma, and obesity. *Eur Resp Rev.* 30:200206.
Impact factor: 8.8
25. Domnik NJ, James MD, Scheeran R, Ayoo G, Taylor S, Di Luch A, Milne KM, Vincent S, **Phillips DB**, Elbehairy AF, Crinion S, Driver H, Neder JA, O'Donnell DE. 2021. Deterioration of nighttime respiratory mechanics in chronic obstructive pulmonary disease: Impact of bronchodilator therapy. *Chest.* 159(1): 116-127
Impact factor: 9.7
26. Milne KM, Domnik NJ, **Phillips DB**, James MD, Neder AJ, O'Donnell DE. 2020. Non-invasive evaluation of dynamic respiratory mechanics during CPET. *Frontiers Med.* 7:548.
Impact factor: 5.1
27. Milne KM, Ibrahim-Masthan M, Scheeran R, James MD, **Phillips DP**, Moran-Mendoza O, Neder JA, O'Donnell DE. 2020. Increased inspiratory neural drive and exertional dyspnea in mild to moderate interstitial lung disease: Effect of inhaled fentanyl. *Resp Physiol Neurobiol.* 282:103511.
Impact factor: 1.9
28. Khoury M, **Phillips DB**, Wood PW, Mott WR, Stickland MK, Boulanger P, Rempel GR, Conway J, Mackie AS, Khoo N. 2020. Cardiac rehabilitation in the pediatric Fontan population: Development of a home-based high-intensity interval training program. *Cardiol Young.* 10:1409-1416.
Impact factor: 1.1

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29. James MD[#], Milne KM, **Phillips DB**, Elbehairy AF, Neder JA, O'Donnell DE. 2020. Dyspnea and exercise limitation in mild COPD: the value of CPET. *Frontiers Med.* 7:442. Impact factor: 5.1
30. **Phillips DB**, Collins SÉ, Stickland MK. 2020. Measurement and interpretation of exercise ventilatory efficiency. *Frontiers Physiol.* 11:659. Impact factor: 4.4
31. Ross BA, Brotto AR, Fuhr DP, **Phillips DB**, van Diepen S, Bryan TL, Stickland MK. 2020. The supine position improves but does not normalize the blunted pulmonary capillary blood volume response to exercise in mild COPD. *J Appl Physiol.* 128:925-933. Impact factor: 3.5
32. Collins SÉ, **Phillips DB**, McMurtry MS, Bryan TL, Paterson DI, Wong EYL, Ezekowitz JA, Forhan MA, Stickland MK. 2020. The effect of carotid chemoreceptor inhibition on exercise tolerance in chronic heart failure. *Front Physiol.* 11:00195. Impact factor: 4.4
33. **Phillips DB**, Collins SÉ, Bryan TL, Wong EYL, McMurtry MS, Bhutani M, Stickland MK. 2019. The effect of carotid chemoreceptor inhibition on exercise tolerance in chronic obstructive pulmonary disease: a randomized-controlled crossover trial. *Resp Med.* 160: 105815. Impact factor: 3.4
34. **Phillips DB**, Stickland MK. 2019. Respiratory limitations to exercise in health: A brief review. *Curr Opin Physiol.* 10: 173-179. Impact factor: 2.4
35. **Phillips DB**, Ehnes CM, Stickland MK, Petersen SR. 2019. Ventilatory responses in males and females during graded exercise with and without thoracic load carriage. *Eur J Appl Physiol.* 119: 441-453. Impact factor: 3.1
36. Tedjasaputra V, van Diepen S, **Phillips DB**, Wong EYL, Bhutani M, Michaelchuk WW, Bryan TL, Stickland MK. 2018. Pulmonary capillary blood volume response to exercise is diminished in mild chronic obstructive pulmonary disease. *Resp Med.* 145:57-65. Impact factor: 3.4
37. Moore LE, Brotto AR, **Phillips DB**, Bhutani M, Stickland MK. 2018. Exertional dyspnea and operating lung volumes in asthma. *J Appl Physiol.* 125:870-877. Impact factor: 3.5

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38. **Phillips DB**, Steinback CD, Collins SÉ, Fuhr DP, Bryan TL, Wong EYL, Tedjasaputra V, Bhutani M, Stickland MK. 2018. The carotid chemoreceptor contributes to the elevated arterial stiffness and vasoconstrictor outflow in COPD. *J Physiol.* 15:3233-3244.
Impact factor: 6.3
Article was highlighted in a special edition release “*Advances in cellular and integrative control of oxygen and carbon dioxide homeostasis*”
Journal club articles by Brock JM doi/10.1113/JP276597 and Oliveira DM et al doi/10.1113/JP276986
39. **Phillips DB**, Ehnes CM, Welch BG, Lee LN, Simin I, Petersen SR. 2018. Influence of work clothing on physiological responses and performance during treadmill exercise and the wildland firefighter Pack Test. *Appl Ergonomics.* 68:313-318.
Impact factor: 3.7
40. **Phillips DB**, Scarlett MP, Petersen SR. 2017. The influence of body mass on physical fitness test performance in male firefighter applicants. *J Occup Environ Med.* 59:1101-1109.
Impact factor: 1.4
41. **Phillips DB**, Ehnes CM, Stickland MK, Petersen SR. 2016. The impact of thoracic load carriage up to 45 kg on the cardiopulmonary response to exercise. *Eur J Appl Physiol.* 116:1725-1734.
Impact factor: 3.1
42. **Phillips DB**, Stickland MK, Petersen SR. 2016. Physiological and performance consequences of heavy thoracic load carriage in females. *Appl Physiol Nutr Metab.* 41:741-748.
Impact factor: 3.1
43. **Phillips DB**, Stickland MK, Petersen SR. 2016. Ventilatory responses to prolonged exercise with heavy load carriage. *Eur J Appl Physiol.* 116:275-280.
Impact factor: 3.1
44. **Phillips DB**, Stickland MK, Lesser IA, Petersen SR. 2016. The effects of heavy load carriage on physiological responses to graded exercise. *Eur J Appl Physiol.* 116:19-27.
Impact factor: 3.1

Textbook chapter

1. Dempsey JA, Neder JAS, **Phillips DB**, O'Donnell DE. 2022. The physiology and pathophysiology of exercise hyperpnea. Invited submission to *Handbook Clin Neurology.* 188:201-232.

Articles under review in peer reviewed journals

1. Phillips DB, James MD, Vincent SG, Elbehairy AF, Neder JAS, Kirby M, Ora J, Tan WC, Bourbeau J, O'Donnell DE. Physiological characterization of preserved ratio impaired spirometry in the CanCOLD Study: Implications for exertional dyspnea and exercise intolerance. Manuscript under review.
2. Brotto AR, **Phillips DB**, Rowland SD, Moore LE, Wong EYL, Stickland MK. Reduced tidal volume-inflection point and elevated operating lung volumes in well-controlled females with asthma. Manuscript under review.

Abstracts from scientific meetings (presenting author in italics, #=trainee)

1. *Neder JA*, Berton DC, Plachi F, **Phillips DB**, Smyth RM, James MD, Crinion S, de-Torres JP, O'Donnell DE. Submaximal breathing reserve during incremental cycle ergometry: reference values and clinical validation. Poster presentation at 2022 European Respiratory Society International Congress.
2. *Neder JA*, Berton DC, Plachi F, **Phillips DB**, Smyth RM, James MD, Crinion S, de-Torres JP, O'Donnell DE. Do “static” lung volumes add to inspiratory capacity to predict exertional dyspnea and poor exercise tolerance in COPD? Poster presentation at 2022 European Respiratory Society International Congress.
3. *Neder JA*, Smyth RM, **Phillips DB**, James MD, Vincent SG, Milne KM, Marillier M, de-Torres JP, Moran-Mendoza O, O'Donnell DE. Why patients with lung fibrosis showing only mild restriction at rest may develop limiting dyspnoea on exertion? Poster presentation at 2022 European Respiratory Society International Congress.
4. *James MD*[#], Vincent SG, **Phillips DB**, Stickland MK, Guenette JA, Neder JA, O'Donnell DE. Reliability and clinical relevance of impulse oscillometry in smokers with and without airflow obstruction. Poster presentation at 2022 European Respiratory Society International Congress.
5. *James MD*[#], **Phillips DB**, Vincent SG, Abdallah SJ, Donovan AA, Neder JA, Smith BM, Jensen D, O'Donnell DE. The link between elevated inspiratory neural drive, inspiratory constraints, and dyspnea across the continuum of COPD severity. Poster presentation at 2022 European Respiratory Society International Congress.
6. **Phillips DB**, James MD, Vincent SG, de-Torres JP, Neder JA, Langer D, O'Donnell DE. Prognostic value of a low resting inspiratory capacity and inspiratory muscle weakness in COPD. Poster presentation at 2022 European Respiratory Society International Congress.
7. **Phillips DB**, Elbehairy AF, James MD, Vincent SG, Milne KM, de-Torres JP, Neder JA, Kirby M, Jensen D, Stickland MK, Guenette JA, Smith BM, Aaron SD, Tan WC, Bourbeau J, O'Donnell DE. Prevalence of impaired ventilatory efficiency during exercise and its clinical implications in the Canadian Cohort of Obstructive Lung Disease (Cancold) Study. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.

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8. **Phillips DB**, James MD, Vincent SG, de-Torres JP, Neder JA, O'Donnell DE. Prognostic impact of a low resting inspiratory capacity and reduced inspiratory muscle strength in patients with COPD. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.
9. **Smyth RM[#]**, James MD, Vincent SG, Milne KM, Marillier M, Moran-Mendoze O, de-Torres JP, Neder JA, O'Donnell DE, **Phillips DB**. Mechanisms of dyspnea and exercise intolerance in patients with lung fibrosis and mild restrictive deficits: The role of impaired ventilatory efficiency. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.
10. Milne KM, **Phillips DB**, James MD, Vincent SG, D'Arsigny CL, de-Torres JP, Neder JA, O'Donnell DE. Physiologic mechanisms of exertional dyspnea in the post-pulmonary embolism syndrome. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.
11. **James MD[#]**, **Phillips DB**, Vincent SG, Neder JA, Abdallah S, Donovan A, Smith BM, Jensen D, O'Donnell DE. Elevated inspiratory neural drive, critical inspiratory constraints and dyspnea during exercise across the continuum of chronic obstructive pulmonary disease (COPD) severity. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.
12. **Neder JA**, Berton DC, **Phillips DB**, Smyth RM, James MD, Vincent SG, Nery LE, de-Torres JP, O'Donnell DE. Age- and sex-based reference values for submaximal breathing reserve during incremental cycle ergometry: relationship with dyspnea perception and exercise capacity. Abstract presented at the Annual Canadian Respiratory Conference in April 2022.
13. **Elbehairy AF**, Vincent SG, **Phillips DB**, James MD, Veugen J, Parraga G, O'Donnell DE. Low DLCO, reduced pulmonary blood volume and ventilatory inefficiency in smokers with mild emphysema. Abstract oral presentation at 2021 European Respiratory Society International Congress.
14. **Neder JA**, de Torres JP, Martin-Palmero M, Berton D, **Phillips DB**, James MD, Vincent SG, O'Donnell DE. Severe exertional dyspnoea in COPD: Implications for exercise tolerance and survival. Abstract oral presentation at 2021 European Respiratory Society International Congress.
15. **Phillips DB**, Neder JA, Elbehairy AF, Milne KM, James MD, Day AG, de Torres JP, Webb KA, O'Donnell DE. Components of dyspnoea during incremental exercise across the COPD continuum. Abstract oral presentation at 2021 European Respiratory Society International Congress.
16. **Khoury M**, **Phillips DB**, Wood PW, Mott WR, Stickland MK, Boulanger P, Rempel GR, Conway J, Mackie AS, Khoo N. 2020. Cardiac rehabilitation in the pediatric Fontan

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population: Development of a home-based high-intensity interval training program. Virtual presentation at 2020 Canadian Cardiovascular Congress. *Can J Cardiol.* 36(10):S24-S25.

17. *Ross BA, Brotto AR, Fuhr DP, Phillips DB, van Diepen S, Stickland MK.* 2020. Pulmonary capillary blood volume is augmented but does not normalize with supine exercise in mild chronic obstructive pulmonary disease. Abstract accepted for poster presentation at 2020 Canadian Respiratory Conference. April 2020. *Cancelled due to COVID-19.*
18. *Phillips DB, Brotto AR, Ross BA, Bryan TL, Wong EYL, van Diepen S, Stickland MK.* 2019. Inhaled nitric oxide improves dyspnea and exercise capacity in patients with mild chronic obstructive pulmonary disease. Graduate student award oral presentation at 2019 Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 44(10(Suppl 2)):S100.
19. *Brotto AR, Phillips DB, Henry S, van Diepen S, Stickland MK.* 2019. Effect of inhaled nitric oxide on maximal oxygen consumption in healthy high- and low-fit individuals. Graduate student award poster presentation at 2019 Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 44(10(Suppl 2)):S162.
20. *Rowland SD, Brotto AR, Moore LE, Phillips DB, Stickland MK.* 2019. Sex differences in dyspnea and operating lung volume during exercise in asthma. Poster presentation at 2019 Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 44(10(Suppl 2)):S104.
21. *Phillips DB, Brotto AR, Ross BA, Bryan TL, Wong EYL, van Diepen S, Stickland MK.* 2019. The effect of inhaled nitric oxide on dyspnea and exercise capacity in mild COPD. Oral presentation at 2019 European Respiratory Society International Congress. *Eur Res J.* 201954: Suppl. 63, OA3572.
22. *Collins SÉ, Phillips DP, McMurtry MS, Bryan TL, Paterson DI, Wong EYL, Ezekowitz JA, Forhan MA, Stickland MK.* 2018. Does the carotid chemoreceptor play a role in the potentiated ventilatory and dyspnea response to exercise in chronic heart failure? Oral and poster presentation at the 2018 Dyspnea International Scientific Meeting.
23. *Phillips DB, Steinback CD, Collins SE, Bryan TL, Wong EYL, McMurtry MS, Bhutani M, Stickland MK.* 2018. How do the carotid chemoreceptors modulate ventilatory control and cardiovascular regulation at rest and during exercise in COPD? Poster and two invited oral presentations at the 2018 Experimental Biology Annual Meeting. *FASEB J.* 32(1(Suppl)): 884.2.
24. *Phillips DB, Steinback CD, Collins SE, Bryan TL, Wong EYL, Tedjasaputra V, Bhutani M, Stickland MK.* 2018. Carotid chemoreceptor modulation of resting muscle sympathetic nerve activity, arterial stiffness and vascular conductance in COPD. Poster presentation at the 2018 American Thoracic Society International Conference. *Am J Respir Crit Care Med.* 197:A3957.

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25. **Phillips DB**, Collins SE, Bryan TL, Wong EYL, McMurtry MS, Bhutani M, Stickland MK. 2018. Does the carotid chemoreceptor play a role in cardiopulmonary regulation, dyspnea and exercise intolerance in COPD? Poster presentation at the 2018 American Thoracic Society International Conference. *Am J Respir Crit Care.* 197:A3921.
26. **Phillips DB**, Collins SE, Tedjasaputra V, Wong EYL, Bryan TL, Bibeau MD, Bhutani M, Stickland MK. 2017. Carotid chemoreceptor control of cardiovascular function at rest in COPD. Poster presented at 2017 International Hypoxia Symposia.
27. **Tedjasaputra V**, Michaelchuk WW, **Phillips DB**, Bryan TL, Bhutani M, Stickland MK. 2017. Pulmonary capillary blood volume response to exercise is blunted in mild COPD. Poster and oral presentation at 2017 International Hypoxia Symposia.
28. **Phillips DB**, Ehnes CM, Welch BG, Simin I, Petersen SR. 2016. Effects of wildland firefighter clothing on physiological responses and performance during graded treadmill exercise. Poster presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 41(9(Suppl 4)):S382.
29. **Phillips DB**, Ehnes CM, Stickland MK, Petersen SR. 2016. Are there sex differences in the cardiopulmonary response to graded exercise with heavy load carriage? Poster presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 41(9(Suppl 4)):S381.
30. **Ehnes CM**, **Phillips DB**, Welch BG, Simin I, Petersen SR. 2016. Effects of wildland firefighter clothing on the oxygen cost of treadmill walking. Poster presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 41(9(Suppl 4)):S356.
31. **Ehnes CM**, **Phillips DB**, Welch BG, Simin I, Petersen SR. 2016. Effects of wildland firefighter clothing ensemble on pack test performance. Poster presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 41(9(Suppl 4)):S355.
32. **Phillips DB**, Stickland MK, Petersen SR. 2016. The effect of body size on performance during treadmill exercise with heavy load carriage. Poster presentation at the Second International Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S190.
33. **Phillips DB**, Stickland MK, Lee LN, Petersen SR. 2016. Effects of heavy load carriage on physiological responses and exercise performance during graded exercise in females. Poster presentation at the Second International Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S190.
34. **Phillips DB**, Stickland MK, Petersen SR. 2016. Ventilatory responses to prolonged exercise with heavy load carriage in females. Oral presentation at the Second International

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Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S191.

35. *Ehnes CM, Phillips DB, Stickland MK, Petersen SR.* 2016. Effects of backpack weight on resting pulmonary function and oxygen cost of treadmill walking. Poster presentation at the Second International Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S186.
36. *Scarlett MP, Phillips DB, Petersen SR.* 2016. The effect of body size on job-related test performance in firefighter applicants. Poster presentation at the Second International Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S191.
37. *Scarlett MP, Phillips DB, Petersen SR.* 2016. The effect of body size on treadmill test performance in fire protective ensemble. Poster presentation at the Second International Conference on Physical Employment Standards. *Appl Physiol Nutr Metab.* 41(6(Suppl 2)):S191.
38. *Petersen SR, Phillips DB, Lesser IA, Stickland MK.* 2015. The effects of load carriage on cardiopulmonary responses to graded exercise. Oral presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 39(S1):S37.
39. *Phillips DB, Stickland MK, Petersen SR.* 2015. Ventilatory responses to prolonged exercise with heavy load carriage. Oral presentation at the Canadian Society for Exercise Physiology Annual Meeting. *Appl Physiol Nutr Metab.* 39(S1):S38.

OTHER POSTER AND ORAL PRESENTATIONS (presenting author in italics, #=trainee)

1. *Smyth RM[#], James MD, Vincent SG, Milne KM, Marillier M, Moran-Mendoza O, de-Torres JP, Nader JA, O'Donnell DE, Phillips DP.* Exertional dyspnea in patients with mild interstitial lung disease: the role of gas exchange abnormalities. Poster presented at 2022 Queen's University Research Day. ***Winner for Best Poster presentation**
2. *Phillips DB, Brotto AR, Ross BA, Bryan TL, Wong EYL, Meah VL, Fuhr DP, van Diepen S, Stickland MK.* The impact of resting diffusing capacity on the ventilatory responses to inhaled nitric oxide during exercise in mild COPD - Pulmonary vascular dysfunction or destruction? Poster presented at the 2019 Alberta Respiratory Centre Research Day. November 2019. ***Winner for Best Poster presentation**
3. *Phillips DB, Brotto AR, Ghods-Esfahani D, Ross BA, Bryan TL, Wong EYL, Meah VL, Fuhr DP, van Diepen S, Stickland MK.* The effect of inhaled nitric oxide on ventilation during exercise in healthy aging. Poster presented at the 2019 Alberta Respiratory Centre Research Day. November 2019.
4. *Phillips DB.* Inhaled nitric oxide in mild COPD. Oral presentation at the 2019 Canadian Respiratory Research Network Annual General Meeting. January 2019.

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5. **Phillips DB**, Brotto AR, Ross BA, Bryan TL, Wong EYL, van Diepen S, Stickland MK. The effect of inhaled nitric oxide on dyspnea and exercise capacity in mild COPD. Poster presented at the 2018 Alberta Respiratory Centre Research Day. November 2018.
***Winner for Best Poster presentation**
6. *Ross BA*, **Phillips DB**, Brotto AR, Fuhr DP, Bryan TL, Stickland MK. Does the supine position normalize the capillary blood volume and diffusion capacity response to exercise in mild COPD? Poster presented at the 2018 Alberta Respiratory Centre Research Day. November 2018.
7. *Brotto, AR*. **Phillips DB**, Ross BA, van Diepen S, Stickland MK. Effect of inhaled nitric oxide in healthy high- and low-fit individuals. Poster presented at the 2018 Alberta Respiratory Centre Research Day. November 2018.
8. *Collins SE*, **Phillips, DB**, McMurtry SM, Bryan TL, Paterson ID, O'Neill DO, Forhan MA, Stickland MK. Does the carotid chemoreceptor influence ventilation and dyspnea during exercise in healthy adults? Poster presented at the 2017 Alberta Respiratory Centre Research Day. November 2017.
9. **Phillips DB**, Steinback CD, Collins SE, Bryan TL, Wong EYL, Tedjasaputra V, Bhutani M, Stickland MK. Carotid chemoreceptors modulation of resting muscle sympathetic nerve activity, arterial stiffness and vascular conductance in COPD. Poster presented at the 2017 Alberta Respiratory Centre Research Day. November 2017.
10. **Phillips DB**, Collins SE, Bryan TL, Wong EYL, McMurtry SM, Bhutani M, Stickland MK. Does the carotid chemoreceptor play a role in cardiopulmonary regulation, dyspnea and exercise intolerance in COPD? Poster presented at the 2017 Alberta Respiratory Centre Research Day. November 2017.
11. *Collins SE*, **Phillips DB**, McMurtry SM, Fuhr DP, Bryan TL, Paterson ID, O'Neill DO, Forhan MA, Stickland MK. The effects of carotid chemoreceptor inhibition on exercise tolerance. Poster presented at 2017 University of Alberta, Faculty of Rehabilitation Medicine Research Day. June 2017.
12. **Phillips DB**, Collins SE, Tedjasaputra V, Wong EYL, Bryan TL, Bibeau MD, Bhutani M, Stickland MK. Carotid chemoreceptor control of cardiovascular function at rest in COPD. Poster presented at 2017 University of Alberta, Department of Medicine Research Day. May 2017.
13. **Phillips DB**, Collins SE, Tedjasaputra V, Wong EYL, Bryan TL, Bibeau MD, Bhutani M, Stickland MK. Carotid chemoreceptor control of cardiovascular function at rest in COPD. Poster presented at 2016 University of Alberta, Department of Medicine Pulmonary Research Day. November 2016.
14. **Phillips DB**, Ehnes CM, Stickland MK, Petersen SR. Are there sex differences in the cardiopulmonary response to graded exercise with heavy load carriage? Poster presented

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at the 6th annual University of Alberta, Faculty of Physical Education and Recreation RECON. September 2016.

***Winner for Best Poster presentation**

15. *Phillips DB*. Impaired exercise ventilation and oxygen uptake with very heavy thoracic loading. Poster presented at 2015 University of Alberta, Department of Medicine Pulmonary Research Day. November 2015.
16. *Phillips DB*, Stickland MK, Petersen SR. Ventilatory responses to prolonged exercise with heavy load carriage. Poster presented at the 3rd annual University of Alberta, Faculty of Physical Education and Recreation RECON. September 2013.

INVITED TALKS (not-including scientific meetings)

1. Neurophysiology of exertional dyspnea in lung and pulmonary vascular disease Common mechanisms and implications for therapy. Invited talk at the University of Toronto Interdepartmental Division of Critical Care Medicine Kavanagh Physiology Rounds. June 2023.
2. Using cardiopulmonary exercise testing to understand dyspnea and exercise limitation in cardiopulmonary disease. Invited talk at the Ontario Lung Health Foundation 2023 Better Breathing Conference. February 2023.
3. Quantifying the biology of aging: The role of cardiorespiratory physiology. Invited talk at the York University YU-Care Symposium. January 2023.
4. Impaired ventilatory efficiency in Chronic Obstructive Pulmonary Disease. Invited talk at the 2022 Canadian Respiratory Research Network Annual General Meeting. October 2022.
5. Cardiopulmonary regulation in COPD: Implications for exertional dyspnea. Invited talk at the Queen's Department of Medicine, Division of Respiratory and Sleep Medicine Academic Rounds. March 2022.
6. Clinical respiratory physiology. Invited talk at the Queen's University, School of Graduate Studies Annual Postdoctoral Showcase. September 2021.
7. Pulmonary vascular function during exercise in chronic lung disease. Invited talk at the Queen's Department of Medicine, Division of Respiratory and Sleep Medicine Journal Club Rounds. March 2021.
8. Clinical exercise physiology: Understanding mechanisms and improving clinical outcomes. Invited talk at University of Alberta, Augustana Campus undergraduate research seminar. April 2019.

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9. Influence of work clothing on physiological responses and exercise performance: implications for occupational fitness testing. Invited talk at the 2018 Davey Textile Seminar. November 2018.
10. Cardiovascular risk in COPD. Invited talk at the 2017 Alberta Respiratory Centre Trainee Series. December 2017.
11. Mentorship and Graduate Panel: A professional development session. Invited talk at the annual University of Alberta, Faculty of Kinesiology, Sport, and Recreation RECON Graduate student conference. September 2017.
12. Carotid chemosensitivity and the cardiovascular consequences of COPD. Invited talk given at the Saltin International Graduate Course in Exercise Physiology. October 2015.
13. Fitness assessment for the elite athlete. Invited talked for the University of Alberta graduate seminar in Sport Physiology. February 2015 and 2016.
14. Ventilatory responses to prolonged exercise with heavy load carriage. Invited talk given at the University of Alberta, Faculty of Physical Education and Recreation Graduate Student Speaker Series. April 2014.

RESEARCH EDITORIAL ACTIVITIES

Invited Journal Reviewer

1. European Journal of Applied Physiology
Peer reviewer for 11 submitted manuscripts (2016, 2017, 2019, 2020, 2021, 2022 and 2023)
2. Medicine and Science in Sports & Exercise
Peer reviewer for 6 submitted manuscripts (2017, 2019, 2020 2021, 2022 and 2023)
3. Springer Science Reviews
Peer reviewer for 1 submitted manuscript (2017)
4. Journal of Occupational and Environmental Medicine
Peer reviewer for 1 submitted manuscript (2017)
5. Journal of Applied Physiology, Nutrition and Metabolism
Peer reviewer for 4 submitted manuscripts (2017, 2019, 2020 and 2021)
6. Ergonomics Journal
Peer reviewer for 4 submitted manuscripts (2018, 2020 and 2021)
7. International Journal of Chronic Obstructive Pulmonary Disease
Peer reviewer for 2 submitted manuscript (2020 and 2021)

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8. Journal of Chronic Obstructive Pulmonary Disease
Peer reviewer for 3 submitted manuscript (2020 and 2021)
9. Respiratory Physiology and Neurobiology
Peer reviewer for 4 submitted manuscripts (2020 and 2021)
10. European Respiratory Journal Open Access
Peer reviewer for 2 submitted manuscript (2020 and 2023)
11. Scientific Reports
Peer reviewer for 2 submitted manuscript (2020 and 2021)
12. Frontiers in Physiology
Peer reviewer for 3 submitted manuscripts (2020 and 2021)
13. Journal of Applied Physiology
Peer reviewer for 1 submitted manuscripts (2021)

Invited grant reviewer

1. Canadian Lung Association
2. William M. Spear Endowment Fund in Pulmonary Research and the Richard K. Start Memorial Fund (Respiratory Disease)

TEACHING EXPERIENCE

See appendix for detailed teaching experience

Supervisory roles

- | | |
|----------------|---|
| 2020 – 2022 | Matthew James, PhD, Translational Medicine Graduate Program, Department of Medicine, Queen’s University “Neurophysiological Mechanisms of Dyspnea in COPD” My role: PhD committee member |
| 2021 – Present | Reginald Smyth, MSc student, Experimental Medicine, Department of Biomedical and Molecular Sciences (DBMS), Queen’s University “Mechanisms of Exertional Dyspnea in Idiopathic Pulmonary Fibrosis” My role: Advisory committee member *Co-Supervisor for DBMS PHGY 499 Undergraduate Research Project in Physiology (Sept 2020 – April 2021) |

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Students Mentored

| Year | Name | Institution | Mentee status | Current status |
|------|---------------------------|-------------|-----------------|------------------------------------|
| 2023 | Christine Darko | York | BSc Student | BSc Student |
| 2023 | Johdeth Dela Cruz | York | BSc Student | BSc Student |
| 2023 | Parsa Ebrahimpoor Mashhad | York | BSc Student | BSc Student |
| 2023 | Rozhan Owji | York | BSc Student | BSc Student |
| 2022 | Alex McCartney | Queen's | BSc Student | Research assistant/Medical student |
| 2022 | Bridgett Chau | Queen's | BSc Student | BSc Student |
| 2021 | Reginald Smyth | Queen's | BSc/MSc Student | MSc Student |
| 2021 | Matthew James | Queen's | PhD Candidate | Postdoctoral Fellow |
| 2019 | Andrew Brotto | Alberta | MSc Student | PhD Student |
| 2019 | Daniel Ghods-Esfahani | Alberta | BSc Student | Medical Student |
| 2015 | Lauren Lee | Alberta | BSc Student | Health Care Professional |
| 2015 | Noah Schwabe | Alberta | BSc Student | Nurse |
| 2016 | Jillian Karpyshyn | Alberta | BSc Student | Orthopedic Surgery Resident |
| 2015 | Sophie Collins | Alberta | MSc Student | PhD Candidate |
| 2015 | Cameron Ehnes | Alberta | MSc Student | College Instructor/PhD Student |

Primary Instructor

2023 – current KINE 3012. Human Physiology II, Faculty of Health, School of Kinesiology and Health Science, York University. Taught course Winter 2023 semester

2016 KIN 411. Physiology of Emergency Response Occupations, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Taught course Fall 2016 semester.

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- 2014 – 2015 KIN 311. Assessment of Fitness and Health, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Taught course Spring 2014, Winter 2015, and Spring 2015 semesters.
- 2014 PAC 110. Instruction of the Basics of Aquatics. Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Taught course Fall 2014 semester.

Teaching Assistant (Laboratory Instructor)

- 2021 TMED 800. Translational Medicine. Translational Medicine Graduate Program, Department of Medicine, Queen’s University. Teaching Assistant Fall 2021 Semester
- 2013 – 2019 KIN 411. Physiology of Emergency Response Occupations, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Lab Instructor Fall 2013, 2014, 2015, 2018 and 2019 semesters.
- 2014 – 2016 KIN 311. Assessment of Fitness and Health, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Lab Instructor Winter 2014 and 2016 semesters.
- 2012 – 2019 KIN 200. Physiology of Exercise, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Lab Instructor Winter 2012, Fall 2012, Winter 2013, Fall 2013, Winter 2018 and Winter 2019 semesters.
- 2011 KIN 100. Structural Anatomy, Faculty of Kinesiology, Sport, and Recreation, University of Alberta. Lab Instructor Fall 2011 semester.

See appendix for details on guest lectures

Tutoring

Undergraduate Tutor, Various Human and Exercise Physiology course within the Faculty of Kinesiology, Sport, and Recreation, University of Alberta. May 2014 – May 2015.

WORK EXPERIENCE

Research

- 2020 – 2022 Postdoctoral Fellow, Respiratory Investigation Unit, Queen’s University, Kingston, Ontario.
- 2015 – 2020 Research Assistant, Clinical Physiology Laboratory. University of Alberta, Edmonton, Alberta.

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2013 – 2017 Research Coordinator, Work Physiology Laboratory, University of Alberta, Edmonton, Alberta.

2011 – 2013 Research Assistant, Work Physiology Laboratory, University of Alberta, Edmonton, Alberta.

Clinical

2013 – 2017 Clinical Exercise Physiologist, Executive Wellness Health Audit, Links Clinic. Edmonton, Alberta.

Professional

2013 – 2017 Laboratory Supervisor and Occupational Fitness Testing Manager, Work Physiology Laboratory, University of Alberta, Edmonton, Alberta.

2009 – 2014 Strength and Conditioning Coach, Edmonton Keyano Swim Club, Edmonton, Alberta.

2009 – 2011 Personal Trainer, World Health, Edmonton, Alberta.

2006 – 2008 Strength and Conditioning Coach, Body by Bennett Hockey Acceleration, Edmonton, Alberta.

2004 NCAA Division 1 Competitive Swimmer, University of Nevada, Las Vegas, Las Vegas, Nevada.

MEMBERSHIPS AND CERTIFICATIONS

2023 – Present Member, York University Center for Aging Research (YU-CARE)

2020 – Present Member, Translational Institute of Medicine, Queen’s University

2018 – Present Member, Canadian Respiratory Research Network.

2018 – Present Member, Neural Control and Autonomic Regulation Section, American Physiological Society.

2014 – Present Clinical Exercise Physiologist, Canadian Society for Exercise Physiology.

2016 – Present Member, Canadian Thoracic Society.

2016 – Present Basic Lifesaving for Health Care Provider Level C and Standard First Aid certified. Heart and Stroke Foundation of Canada.

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ORGANIZATION AND COMMITTEE EXPERIENCE

- 2023 – Present Organizing Committee for 2024 Canadian Thoracic Society Canadian Respiratory Conference
- 2021 – 2022 Kingston Health Sciences Center Redeveloping Committee
- 2021 – Present Member, CanCOLD Physiology/Imaging National Working Group
- 2015 Organizing Committee member for 2015 Second International Conference on Physical Employment Standards.
- 2013 Organizing Committee member for Third Annual Faculty and Graduate Retreat (RECON), Faculty of Kinesiology, Sport, and Recreation, University of Alberta

MEDIA COVERAGE

- 2022 Queen’s University Research Spotlight
<https://www.queensu.ca/grad-postdoc/research/research-spotlights/postdoc-queens-department-medicine-tenure-track-york-meet-devin>
- 2021 Physicians Weekly website interview.
<https://www.physiciansweekly.com/inhaled-nitric-oxide-aids-ventilatory-efficiency-exercise-capacity-in-mild-copd/>
- 2016 Edmonton Journal feature on the Work Physiology Laboratory at the University of Alberta.
<https://edmontonjournal.com/news/local-news/for-aspiring-wildland-firefighters-what-they-wear-affects-how-well-they-test-say-u-of-a-researchers>
- 2016 Global News Edmonton feature on the Work Physiology Laboratory at the University of Alberta.
<https://www.facebook.com/GlobalEdmonton/videos/10153473490980927>

APPENDIX – Teaching Dossier

TEACHING ACTIVITIES AND COURSE DETAILS

Primary instructor roles

KIN 411: Physiology of Emergency Response Occupations – University of Alberta

A fourth-year elective for undergraduate students in the Faculty of Kinesiology, Sport, and Recreation. Two 80-minute lectures and one 110-minute lab per week.

Course Description: This course will explore selected topics related to the physiological challenges associated with selected emergency response occupations. The main emphasis will be on structural firefighting however other emergency response occupations (e.g., wildland firefighting, military, police, and paramedic) will also be studied.

Work physiology may be described as the study of human performance with respect to the stresses of work environment. One of the main objectives of the work physiologist is to ensure that workers can complete their tasks safely and effectively. To accomplish this task, it is necessary to understand both the occupational demands and the capacity of the worker.

Through a series of lectures, readings, practical experiences and assignments, successful students will develop an understanding of:

- Selected aspects of the physiological limitations to work;
- The interactions of metabolic, support and regulatory systems during selected aspects of work;
- Human rights legislation and policy related to bona fide occupational requirements;
- The assessment of workload; and,
- The development and implementation of physical fitness testing programs for applicants and incumbents.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2016 – Fall | 24 |

KIN 311: Assessment of Fitness and Health – University of Alberta

Mandatory class for undergraduate students in the Faculty of Kinesiology, Sport, and Recreation. Two 80-minute lectures and one 110-minute lab per week.

Course description: This course is primarily designed to introduce the undergraduate student to the theory and practice of fitness assessment and basic prescription for health, performance, and research. The students will be introduced to each category of fitness assessment (body composition, musculoskeletal, anaerobic, balance/agility, and aerobic) as well as screening procedures including heart rate, blood pressure and spirometry measurements and basic fitness counseling. There is an emphasis on knowing the reliability, validity and variability associated with fitness measurements. There is a full laboratory complement to the course in which the

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students will be provided with the instruction and practice to gain competency in performing assessments for fitness and health. In the past, it has been possible to challenge the exam associated with the Canadian Society for Exercise Physiology CSEP Certified Personal Trainer™ (CPT) certification which has recently (Fall 2013) changed its name to CSEP-PATH (Physical Activity Training for Health). Students can also challenge the Alberta Fitness Leadership Certification Association (AFLCA) Certified Fitness Trainer (CFT). Choosing to do this new certification program is optional and a courtesy provided to you that has nothing to do with your KIN 311 course or grade in any way. As well, you will be referred to other certification programs for your own investigation and interest (e.g., AKA, ACSM, NSCA, CanFitPro).

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2015 – Winter | 66 |
| 2015 – Spring | 15 |
| 2014 – Spring | 9 |

PAC 110: Instruction of Competitive Swimming – University of Alberta

Elective for undergraduate students in the Faculty of Kinesiology, Sport, and Recreation. Three 50-minute classes (combination of classroom lecture and in-pool experiential sessions) per week.

Course Description: PAC 110 is an introductory level course designed to offer an introduction to the instruction of competitive swimming. The focus will be on the ability to demonstrate selected basic skills of competitive swimming and gain an understanding of error detection and correction. The acquisition and understanding of these skills will be presented primarily through lab and lecture components and will be evaluated through a combination of physical performance and written assessments and teaching assignments. A further focus will be the development of an understanding of the rules of the sport and principles of motion in the water.

Objectives:

1. To introduce students to the basic instructional skills and the associated rules.
2. To provide opportunities for supervised error detection and correction of selected swimming skills.
3. To introduce students to both practical and theoretical aspects of the instruction of swimming.
4. To provide opportunities for students to demonstrate understanding and competence through examinations and physical performance assessments.
5. To promote participation in physical activity in a positive and challenging learning environment.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2014 – Fall | 19 |

Detailed course descriptions and sample lectures notes are available upon request.

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Teaching Assistant roles

TMED 800: Translational Medicine – Queen’s University

Postdoctoral teaching assistant

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2021 – Fall | 19 |

KIN 411: Physiology of Emergency Response Occupations – University of Alberta

Instructor for laboratory portion of course.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2019 – Fall | 24 (12/lab x 2) |
| 2018 – Fall | 24 (12/lab x 2) |
| 2015 – Fall | 36 (12/lab x 3) |
| 2014 – Fall | 24 (12/lab x 2) |
| 2013 - Fall | 24 (12/lab x 2) |

KIN 311: Assessment of Health and Fitness – University of Alberta

Instructor for laboratory portion of course.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2016 – Winter | 12 (12/lab x 1) |
| 2014 – Winter | 12 (12/lab x 1) |

KIN 200: Physiology of Exercise – University of Alberta

Instructor for laboratory portion of course.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2019 – Winter | 24 (12/lab x 2) |
| 2018 – Winter | 12 (12/lab x 1) |
| 2013 – Winter | 24 (12/lab x 2) |
| 2013 – Fall | 24 (12/lab x 2) |
| 2012 – Winter | 24 (12/lab x 2) |
| 2012 – Fall | 24 (12/lab x 2) |

KIN 100: Structural Anatomy – University of Alberta

Instructor for laboratory portion of course.

| <u>Year and semester taught</u> | <u>Number of students</u> |
|---------------------------------|---------------------------|
| 2011 – Fall | 48 (24/lab x 2) |

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Guest Lectures

Department of Biomedical and Molecular Sciences, Queen's University. November 2021. Pulmonary gas-exchange during exercise. Developed and delivered undergraduate/graduate class lecture on exercise pulmonary physiology.

Course and Instructor: PHGY 355 – Biomedical Respiratory Physiology, Dr. Amany Elbehairy

Department of Biomedical and Molecular Sciences, Queen's University. March 2021. Pulmonary gas-exchange during exercise. Developed and delivered undergraduate/graduate class lecture on exercise pulmonary physiology.

Course and Instructor: PHGY 355 – Biomedical Respiratory Physiology, Dr. Amany Elbehairy

Department of Biomedical and Molecular Sciences, Queen's University. March 2020. Pulmonary vascular dysfunction and dyspnea in mild chronic obstructive pulmonary disease: a clinical exercise physiology perspective. Developed and delivered undergraduate/graduate class lecture on exercise pulmonary physiology.

Course and Instructor: PHGY 355 – Biomedical Respiratory Physiology, Dr. Nicolle Domnik

Faculty of Nursing, University of Alberta. March 2016 – 2019. Designed and delivered graduate level guest lectures and laboratory demonstrations on clinical cardiopulmonary exercise testing.

Course and Instructor: NURS509 – Advanced Pathophysiology, Dr. Edith Pituskin

Faculty of Kinesiology, Sport, and Recreation, University of Alberta. October 2017, 2018 and 2019. Developed and delivered undergraduate class lecture on pulmonary physiology.

Course and Instructor: KIN 411 – Physiology of Emergency Response Occupations, Dr. Stewart Petersen

Faculty of Physical Education, University of Alberta, Augustana. April 2019. Developed and delivered undergraduate class lecture on clinical physiology research design.

Course and Instructor: AUPED374 – Special Topics: Advanced Methods in Exercise Science, Dr. Jane Yardley

Davey Textiles. November 2018. Developed and delivered lecture style presentation to delegates and stakeholders.

Course: Davey Textile Seminar.

Faculty of Kinesiology, Sport, and Recreation, University of Alberta. February 2015 and 2016. Developed and delivered graduate level lectures on fitness testing in elite athletes.

Course and Instructor: PEDS 514 – Sport Physiology, Dr. Stewart Petersen

Faculty of Kinesiology, Sport, and Recreation, University of Alberta. June 2017 and September 2018. Developed and delivered undergraduate class lecture on occupational fitness for duty testing.

Course and Instructor: KIN 311 – Assessment of Fitness and Health, Desi Fuhr

University of British Columbia, October 2015. Developed and delivered presentation on clinical cardiopulmonary physiology.

Course: 2015 Saltin International Graduate Course in Clinical and Exercise Physiology.

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Tutoring

Undergraduate Tutor, Various Human and Exercise Physiology course within the Faculty of Kinesiology, Sport, and Recreation, University of Alberta. May 2014 – May 2015

CURRICULUM DEVELOPMENT

During my time as a primary instructor for PAC 110 and KIN 411 at the University of Alberta, I was involved in updating and further developing these courses. Part of my duty was to integrate recent literature into both reading lists and lecture material. In collaboration with Dr. Stewart Petersen, I was involved in a complete restructuring of the lab component of the KIN 411 fourth year undergraduate class. This included re-writing all lab manuals along with designing new lab experiences, which were based on emerging research in the specific area. Additionally, I assisted in re-structuring the lecture portion of the class, to ensure alignment with the lab session. In the future, I intend to pursue curriculum development opportunities, including sitting on curriculum development committees and enrolling in continuing education courses for instructors.

EVIDENCE OF TEACHING EFFECTIVENESS

Student evaluation of teaching – Primary Instructor

All extracted information comes from the end of term universal standard rating of instructor online survey. All responses were voluntary and anonymous. Student evaluations range from 1 to 5, where 5 is the highest achievable score. Data are reported as median scores.

KIN 411: Physiology of Emergency Response Occupations – University of Alberta

| | Fall 2016 |
|--|------------------|
| The instructor spoke clearly | 4.3 |
| The instructor was well prepared | 4.4 |
| The instructor treated the students with respect | 4.7 |
| Overall, this instructor was excellent | 4.3 |

KIN 311: Assessment of Fitness and Health – University of Alberta

| | Winter 2015 | Spring 2015 | Spring 2014 |
|--|--------------------|--------------------|--------------------|
| The instructor explained concepts clearly | 4.6 | 4.1 | 3.8 |
| The instructor was well prepared | 4.5 | 4.4 | 4.5 |
| The instructor treated the students with respect | 4.8 | 4.8 | 4.8 |
| Overall, this instructor was excellent | 4.6 | 4.4 | 4.2 |

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PAC 110: Instruction of Competitive Swimming – University of Alberta

| | Fall 2015 |
|--|------------------|
| The instructor spoke clearly | 4.3 |
| The instructor was well prepared | 4.4 |
| The instructor treated the students with respect | 4.9 |
| Overall, this instructor was excellent | 4.6 |

Complete course evaluations are available upon request.

Representative Student Comments upon Course completion

“Devin did a great job teaching the course for his first full time. He wasn't dry nor was it difficult to pay attention in class (in my opinion). The last leg of the course on the topics of task analysis were slightly dry since there wasn't much physiology, but overall the course was fantastic, the tests were fair and Devin made sure everyone was on the right tract and was always open to answering questions.” –Anonymous student, KIN 411 Fall 2016 semester

“This course was interesting in that it encouraged students to consider physiological concepts in a different light. Being able to apply the concepts that we learned to a more practical setting made it easier to understand the physiology. All in all, Devin did a great job in teaching this course for the first time.” –Anonymous student, KIN 411 Fall 2016 semester

“The greatest strength of this course is the instructor. Devin Phillips was an awesome teacher, and he was very good at showing and explaining theory and the practical components.” – Anonymous student, KIN 311 Winter 2015 semester

“I thought Devin was a great prof. He always came prepared and had great and engaging notes. Devin kept class interesting and funny which kept you engaged in the class. Overall, I thought he was a great prof!” –Anonymous student, KIN 311 Winter 2015 semester

“Devin is awesome. He is so approachable and fun while still getting across the material. He really jazzed up the course. Only suggestion is to provide more exam-like practice questions rather than just the easy ones. Other than that, Devin was always accessible outside of class and super helpful. I really believe he wants to help us whenever he can. THANKS DEVIN!” –Anonymous student, KIN 311 Winter 2015 semester

“The instructor was able to use lots of real-world examples from sports or clinical situations that made learning the material more interesting and easier to relate to.” –Anonymous student, KIN 311 Winter 2015 semester

“Strengths were that the instructor taught the swimming skills really well. Instructor was very knowledgeable in technical skills of strokes. Provided multiple opportunities to practice!” – Anonymous student, PAC 110 Fall 2014 semester

Dr. Devin Phillips – Curriculum Vitae

“Devin Phillips was a great professor and really helped in every way he could. He was very respectful and had a good knowledge and showed passion for what he was doing.” –Anonymous student, PAC 110 Fall 2014 semester

Further student comments are available upon request.

TEACHING AWARDS

Faculty of Graduate Studies and Research Annual Graduate Student Teaching Award.
March 2018.

Award Description: Two awards are presented annually within Faculty of Kinesiology, Sport, and Recreation at the University of Alberta. Awarded to graduate students who exemplify outstanding commitment to education and higher learning. Importantly, the award nomination process was initiated by colleagues (e.g., faculty staff and graduate students) and former students.

TEACHING SCHOLARSHIP

I have completed multiple review articles (peer reviewed) that aim to educate researchers, instructors, and practitioners on the latest cutting-edge research in exercise physiology.

1. Dempsey JA, Neder JAS, **Phillips DB**, O'Donnell DE. The physiology and pathophysiology of exercise hyperpnea. Invited submission to Handbook of Clinical Neurology. Conditionally accepted November 2021.
2. Neder JA, **Phillips DB**, Marillier M, Bernard AC, Berton DC, O'Donnell DE. Clinical interpretation of cardiopulmonary exercise testing: Current pitfalls and limitations. *Frontiers Physiol.* 12:552000.
3. Neder JA, Berton DC, **Phillips DB**, O'Donnell DE. Exertional ventilation-CO₂ output relationship in COPD: from physiological mechanisms to clinical applications. *Eur Resp Rev.* 30: 200190.
4. Collins SÉ, **Phillips DB**, Brotto AB, Rampuri Z, Stickland MK. Ventilatory efficiency in athletes, asthma, and obesity. *Eur Resp Rev.* 30:200206.
5. Milne KM, Domnik NJ, Phillips DB, James MD, Neder AJ, O'Donnell DE. Non-invasive evaluation of dynamic respiratory mechanics during CPET. 2020 *Frontiers Med.* 7:548.
6. James MD, Milne KM, Phillips DB, Elbehairy AF, Neder JA, O'Donnell DE. 2020 Dyspnea and exercise limitation in mild COPD: the value of CPET. *Frontiers Med.* 7:442.
7. Phillips DB, Collins SÉ, Stickland MK. 2020 Measurement and interpretation of exercise ventilatory efficiency. *Frontiers Physiol.* 11:659.
8. Phillips DB, Stickland MK. 2019. Respiratory limitations to exercise in health: A brief review. *Curr Opin Physiol.* 10: 173-179.