CURRICULUM VITAE –

Jason Paul Kirkness PhD (Medicine) ATSF **03 September 2024**
(Date of this version)

DEMOGRAPHIC INFORMATION

Current Appointment **Adjunct Associate Professor of Medicine**
School of Medicine, University of Miami, Miami, FL, USA

Personal Data **1926 Selby Ave,**
St Paul, Minnesota 55104
Cell: +1 651 788 3309
Email jpkirkness1@gmail.com

BIOSKETCH & SUMMARY:

I am an experienced executive scientist with a strong academic background, extensive research contributions in pulmonary and sleep medicine, and leadership roles in medical affairs, clinical affairs, medical device innovation, and industry advisory roles within prestigious institutions and professional societies. Over the next decade, the critical focus in healthcare will be dominated by use of technology to generate solutions for patient-centered care, patient engagement, and real-time data exchange, particularly in the domains of chronic respiratory diseases, stable acute respiratory conditions, and the prediction of acute exacerbations and disease progression. This necessitates a shift towards harnessing and effectively utilizing vast and varied data sources to improve patient outcomes and sustainably enhance quality of life. My professional trajectory has been dedicated to advancing technology, adoption of innovative practices, and introducing diagnostics and treatments for persistent respiratory illnesses, such as chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea, with a strong emphasis on patient-centric approaches and real-time data utilization:

- Global clinical trials of novel quantitative imaging technology for market specific regulatory certification, medical coding and reimbursement (SVP Medical Affairs).
- Development of medical education programs, clinical roundtable symposiums and practice change processes for *high flow therapy* in the critical care and homecare setting.
- Remote monitoring solutions for chronic respiratory diseases (Innovation awards from National Science Foundation and TEDCO – Maryland Innovation Initiative)
- Novel approaches to diagnose and treat disorders of the airways and lung obstruction (Career Development awards from National Institutes of Health, Australian NHMRC, American Heart Association)
- Novel medical devices and treatment approaches for chronic respiratory diseases (Research awards from industry – ResMed, inSleep health, imThera)
- Digital health platforms connecting health technology and remote monitoring solutions for chronic disease management (Role: Chief Technology Officer at a Johns Hopkins based start-up company)

To devise impactful technology solutions within a responsible healthcare delivery framework, it's crucial to grasp how healthcare leaders and professionals incorporate innovation into their practices. It's equally vital to recognize how organizations foster creativity and exploration and to pinpoint measurable indicators that assess their influence. My education, background, and enthusiasm for these challenges position me perfectly to make significant contributions to this mission.

EDUCATION AND TRAINING:

Undergraduate

1996	BSc in Science, University of Western Sydney, Kingswood, Australia
1997	BSc (1st class honors) in Physiology, University of Western Sydney, Australia

Doctoral

2003	Doctor of Philosophy (Medicine), The University of Sydney School of Medicine, The University of Sydney, Camperdown, Australia

Postdoctoral

2004	Thoracic Society of Australia and New Zealand Research Fellowship in Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland
2005-2007	The National Health and Medical Research Council of Australia CJ Martin Fellowship in Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland
2005-2009	The National Health and Medical Research Council of Australia CJ Martin Fellowship in Physiology/Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland
2018	American Thoracic Society Fellowship (ATSF)

PROFESSIONAL EXPERIENCE:

5/04-5/06	Honorary Associate Scientist, Ludwig Engel Centre for Respiratory Research, Westmead Millennium Institute & Westmead Hospital, Australia
5/07-1/09	Research Fellow, Sir Charles Gairdner Hospital, Western Australia.
4/08-1/09	Lecturer, School of Anatomy and Human Biology, The University of Western Australia
10/09-12/10	Research Associate in Medicine, School of Medicine, Johns Hopkins University
1/11-9/12	Instructor in Medicine, School of Medicine, Johns Hopkins University
10/12-01/17	Assistant Professor in Medicine, School of Medicine, Johns Hopkins University
02/17-02/18	Adjunct Assistant Professor in Medicine, School of Medicine, Johns Hopkins University
01/17-5/20	Director of Clinical Affairs, Fisher and Paykel Healthcare
05/15- 5/22	Vice President of Medical and Clinical Affairs, 4DMedical
05/22-04/24	Senior Vice President of Medical and Clinical Affairs, 4DMedical
01/23-present	Voluntary Associate Professor of Medicine, University of Miami

PROFESSIONAL SOCIETIES

2017 – present	American Thoracic Society Drug Device Discovery and Development Committee member
2021 – present	Respiratory Innovation Summit Organizing Committee, American Thoracic Society
2018 – 2020	National Association Medical Directors for Respiratory Care, Industry Advisory Committee.
2018 – 2023	Respiratory Compromise Institute, Industry Advisory Committee.
2024 – 2025	Board of Directors, American Thoracic Society

RESEARCH ACTIVITIES

Peer-Reviewed Original Manuscripts

1. Bendall LJ, **Kirkness JP**, Hutchinson A, Bianchi A, Makrynikola V, Bradstock KF, Gottlieb DJ. Antibodies to CD44 enhance adhesion of normal CD34(+) cells and acute myeloblastic but not lymphoblastic leukaemia cells to bone marrow stroma. *British Journal of Haematology.* 1997, 98 (4): 828-837.
2. Amis TC, **Kirkness JP**, Di Somma E, Wheatley JR.. Nasal vestibule wall elasticity: interactions with a nasal dilator strip. *Journal of Applied Physiology*. 1997, 86 (5): 1638-1643.
3. Seto-Poon M, Amis TC, **Kirkness JP**, Wheatley JR. Nasal dilator strips delay the onset of oral route breathing during exercise. *Canadian Journal of Applied Physiology-Revue Canadienne de Physiolohie Appliquee*. 1999, 24 (6): 538-547.
4. **Kirkness JP**, Wheatley JR, Amis TC. Nasal airflow dynamics: mechanisms and responses associated with an external nasal dilator strip. *European Respiratory Journal.* 2000,15 (5): 929-936.
5. **Kirkness JP**, Amis TC, Wheatley JR, Christenson HK. Determining the surface tension of microliter amounts of liquid. *Journal of Colloid and Interface Science.* 2000, 232 (2): 408-409.
6. **Kirkness JP**, Eastwood PR, Szollosi I, Platt PR, Wheatley JR, Amis TC, Hillman DR. Effect of surface tension of mucosal lining liquid on upper airway mechanics in anesthetized humans. *Journal of Applied Physiology.* 2003, 95 (1): 357-363.
7. **Kirkness JP**, Christenson HK, Garlick SR, Parikh R, Kairaitis K, Wheatley JR, Amis TC. Decreased surface tension of upper airway mucosal lining liquid increases upper airway patency in anaesthetised rabbits. *Journal of Physiology-London.* 2003, 547 (2): 603-611.
8. Kairaitis K, Parikh R, Stavrinou R, Garlick S, **Kirkness JP**, Wheatley JR, Amis TC. Upper airway extraluminal tissue pressure fluctuations during breathing in rabbits. *Journal of Applied Physiology.* 2003, 95 (4): 1560-1566.
9. **Kirkness JP**, Madronio M, Stavrinou R, Wheatley JR, Amis TC. Relationship between surface tension of upper airway lining liquid and upper airway collapsibility during sleep in obstructive sleep apnea hypopnea syndrome. *Journal of Applied Physiology.* 2003, 95 (5): 1761-1766. **This paper is the subject of review published in the same journal (titled: Upper airway surface tension: is it a significant cause of airflow obstruction during sleep? Alan R. Schwartz, Hartmut Schneider, and Philip L. Smith J Appl Physiol 2003; 95 1759-1760).**
10. Madronio MR, Di Somma E, Stavrinou R, **Kirkness JP**, Goldfinch E, Wheatley JR, Amis TC. Older individuals have increased oro-nasal breathing during sleep. *European Respiratory Journal.* 2004, 24 (1): 71-77.
11. **Kirkness JP**, Madronio M, Stavrinou R, Wheatley JR, Amis TC. Surface tension of upper airway mucosal lining liquid in obstructive sleep apnea/hypopnea syndrome. *SLEEP*, 2005, 28 (4): 457-463. **This paper is the subject of an editorial published in the same journal (titled: Surface tension and Sleep Apnea: a Sticky Business. By: A. Mulhotra and A. Jordan) Sleep, 2005; 28(4) 392-393.**
12. Seto-Poon M, Madronio M, **Kirkness JP**, Amis TC, Byth K, Lim CL. Decrement of the skin conductance response to repeated volitional inspiration. *Clinical Neurophysiology.* 2005, 116 (5): 1172-1180 **(2003 Impact factor 3.54).**
13. **Kirkness JP**, Christenson HK, Wheatley JR, Amis TC. Application of the 'pull-off' force method for measurement of surface tension of upper airway mucosal lining liquid. *Physiological Measurement.* 2005, 26 (5): 677-688.
14. Verma M, Seto-Poon M, Wheatley JR, Amis TC, **Kirkness JP**. Influence of breathing route on upper airway lining liquid surface tension in humans. *Journal of Physiology-London.* 2006. 574 (3): 859-866.

15. **Kirkness JP**, Schwartz AR, Patil SP, Pichard LE, Marx JJ, Smith PL, Schneider H. Dynamic modulation of upper airway function during sleep: a novel single-breath method. *Journal of Applied Physiology.* 2006, 101 (5): 1489-1494.
16. McGinley BM, Patil SP, **Kirkness JP**, Smith PL, Schwartz AR, Schneider H. A nasal cannula can be used to treat obstructive sleep apnea. *American Journal of Respiratory and Critical Care Medicine.* 2007, 176 (2): 194-200.
17. Howitt L, Kairaitis K, **Kirkness JP**, Garlick SR, Wheatley JR, Byth K, Amis TC. Oscillatory pressure wave transmission from the upper airway to the carotid artery. *Journal of Applied Physiology.* 2007, 103 (5): 1622-1627.
18. **Kirkness JP**, Schwartz AR, Schneider H, Punjabi NM, Maly JJ, Laffan AM, McGinley BM, Magnuson T, Schweitzer M, Smith PL, Patil SP. Contribution of male sex, age, and obesity to mechanical instability of the upper airway during sleep. *Journal of Applied Physiology.* 2008, 104 (6): 1618-1624.
19. McGinley BM, Schwartz AR, Schneider H, **Kirkness JP**, Smith PL, Patil SP. Upper airway neuromuscular compensation during sleep is defective in obstructive sleep apnea. *Journal of Applied Physiology.* 2008, 105 (1): 197-205.
20. Hoshino Y, Ayuse T, Kurata S, Ayuse T, Schneider H, **Kirkness JP**, Patil SP, Schwartz AR, Oi K. The compensatory responses to upper airway obstruction in normal subjects under propofol anesthesia. *Respir Physiol Neurobiol*. 2009, 166(1):24-31.
21. Hillman DR, Walsh JH, Maddison KJ, Platt PR, **Kirkness JP**, Noffsinger WJ, Eastwood PR. Evolution of changes in upper airway collapsibility during slow induction of anesthesia with propofol. *Anesthesiology*. 2009, 111(1):63-71.
22. Ayuse T, Hoshino Y, Kurata S, Ayuse T, Schneider H, **Kirkness JP**, Patil SP, Schwartz AR, Oi K. The effect of gender on compensatory neuromuscular response to upper airway obstruction in normal subjects under midazolam general anesthesia. *Anesth Analg*. 2009, 109(4):1209-18.
23. Simpson L, Mukherjee S, Cooper MN, Ward KL, Lee JD, Fedson AC, Potter J, Hillman Fanzca DR, Eastwood P, Palmer LJ, **Kirkness J**. Sex differences in the association of regional fat distribution with the severity of obstructive sleep apnea. *Sleep*. 2010, 33(4):467-74. **Senior author publication**. **This paper is the subject of an editorial published in the same journal (titled: Regional Fat Distribution and Sleep Apnea: Sex Makes a Difference. By: R. Riha) Sleep 2010;33:467-474.**
24. Squier SB, Patil SP, Schneider H, **Kirkness JP**, Smith PL, Schwartz AR. Effect of End-Expiratory Lung Volume on Upper Airway Collapsibility in Sleeping Men and Women. *J Appl Physiol*. 2010, 109(4):977-85.
25. **Kirkness JP**, Verma M, McGinley BM, Erlacher M, Schwartz AR, Smith PL, Wheatley JR, Patil SP, Amis TC, Schneider H. Pitot-tube flowmeter for quantification of airflow during sleep. *Physiol Meas*. 2011, 32(2):223-37.
26. **Kirkness JP**, Peterson LA, Squier SB, McGinley BM; Schneider H, Meyer A, Schwartz AR, Smith PL, Patil SP. Performance Characteristics of Upper Airway Critical Collapsing Pressure Measurements during Sleep. *Sleep* 2011;34(4):459-467.
27. Polotsky M, Elsayed-Ahmed A, Pichard LE, Richardson R, Smith PL, Schneider H, **Kirkness JP**, Polotsky V, and Schwartz AR. Effect of age and weight on upper airway function in a mouse model, *J Appl Physiol*. 2011, 111(3):696-703.
28. Hoshino Y, Ayuse T, Kurata S, Ayuse T, Schneider H, **Kirkness JP**, Patil SP, Schwartz AR, Oi K. The effects of hormonal status on upper airway patency in normal female subjects during propofol anesthesia. *J Clin Anesth*. 2011, 23(7):527-33.
29. **Kirkness JP**, McGinley BM, Sgambati FP, Patil SP, Schwartz AR, Smith PL, and Schneider H. Developing Quantitative Physiological Phenotypes of Sleep Apnea for Epidemiological Studies. *Conf. Proc. IEEE Eng Med* Biol Soc. 2011:8319-22.
30. Kobayashi M, Ayuse T, Hoshino Y, Kurata S, Moromugi S, Schneider H, **Kirkness JP**, Schwartz AR, Oi K. Effect of head elevation on passive upper airway collapsibility in normal subjects during propofol anesthesia. *Anesthesiology.* 2011, 115(2):273-81.

31. Chin CH, **Kirkness JP**, Patil SP, McGinley BM, Smith PL, Schwartz AR, Schneider H. Compensatory Responses to Upper Airway Obstruction in Obese Apneic Men and Women. *J Appl Physiol.* 2012. 112(3):403-10
32. Hernandez AB, **Kirkness JP**, Smith PL, Schneider H, Polotsky M, Richardson RA, Hernandez WC, Schwartz AR. Novel whole-body plethysmography system for the continuous characterization of sleep and breathing in a mouse. *J Appl Physiol.* 2012; 112(4):671-80.
33. Polotsky M, Elsayed-Ahmed A, Pichard LE, Harris C, Smith PL, Schneider H, **Kirkness JP**, Polotsky V, and Schwartz AR. Effects of leptin and obesity on the upper airway. *J Appl Physiol*. 2012; 112(10):1637-43.
34. Nilius G, Franke KJ, Domanski U, Rühle KH, **Kirkness JP**, Schneider H. Effects of Nasal Insufflation on Arterial Gas Exchange and Breathing Pattern in Patients with Chronic Obstructive Pulmonary Disease and Hypercapnic Respiratory Failure. *Adv Exp Med Biol.* 2013; 755:27-34.
35. Wei T, Erlacher MA, Grossman P, Leitner EB, McGinley BM, Patil SP, Smith PL; Schneider H, Schwartz AR, **Kirkness JP**. Approach for streamlining measurement of complex physiological phenotypes of upper airway collapsibility. *Computers in Biology and Medicine* 2013; 43(5):600-6.
36. Kawai M, **Kirkness JP**, Yamamura S, Imaizumi K, Yoshimine H, Oi K, Ayuse T. Increased phosphatidylcholine concentration in saliva reduces surface tension and improves airway patency in obstructive sleep apnoea. *Journal of Oral Rehabilitation*. 2013; 40(10):758-66.
37. Shapiro SD, Chin CH, **Kirkness JP**, McGinley BM, Patil SP, Polotsky VY, Biselli PJ, Smith PL, Schneider H, Schwartz AR. Leptin and the Control of Pharyngeal Patency during Sleep in Severe Obesity. *J Appl Physiol*. 2014; 116(10):1334-41.
38. Ishizaka S, Moromugi S, Kobayashi M, Kajihara H, Koga K, Sugahara H, Ishimatsu T, Kurata S, **Kirkness JP**, Oi K, Ayuse T. A remote-controlled airbag device can improve upper airway collapsibility by producing head elevation with jaw closure in normal subjects under propofol anesthesia. IEEE. Journal of Trans Engineering in Health and Medicine. 10.1109/JTEHM.2014.2321062.
39. Sowho MO, Woods MJ, Biselli P, McGinley BM, Buenaver LF, **Kirkness JP**. Nasal insufflation treatment adherence in obstructive sleep apnea. Sleep Breath.2015 19:1 pp:351-357
40. Biselli P, Grossman PR, **Kirkness JP**, Patil SP, Smith PL, Schwartz AR, Schneider H. The effect of increased lung volume in chronic obstructive pulmonary disease on upper airway obstruction during sleep. J Appl Physiol (1985). 2015 Aug 1;119(3):266-71. doi: 10.1152/japplphysiol.00455.2014. Epub 2015 Jun 5.
41. Pho H, Hernandez AB, Arias RS, Leitner EB, Van Kooten S, **Kirkness JP**, Schneider H, Smith PL, Polotsky VY, Schwartz AR. The effect of leptin replacement on sleep disordered breathing in the leptin-deficient ob/ob mouse. J Appl Physiol (1985). 2015 Oct 15:jap.00494.2015
42. McGinley BM, **Kirkness JP**, Schneider H, Lenka A, Smith PL, Schwartz AR. Utilizing inspiratory airflows during standard polysomnography to assess pharyngeal function in children during sleep. Pediatr Pulmonol. 2015 Oct 16. doi: 10.1002/ppul.23329.
43. Jun JC, Unnikrishnan D, Schneider H, **Kirkness JP**, Schwartz AR, Smith PL, Polotsky VY. Effect of Acute Intermittent CPAP Depressurization during Sleep in Obese Patients. PLoS One. 2016 Jan 5;11(1).
44. Yao Q, Pho H, **Kirkness JP**, Ladenheim EE, Bi S, Moran TH, Fuller DD, Schwart AR, Polotsky VY. Localizing Effects of Leptin on Upper Airway and Respiratory Control During Sleep. Sleep. 2016 1;39(5):1097-106.
45. Biselli PJ, **Kirkness JP**, Grote L, Fricke K, Schwartz AR, Smith P, Schneider H. Nasal high-flow therapy reduces work of breathing compared with oxygen during sleep in COPD and smoking controls: a prospective observational study. J Appl Physiol (1985). 2017 Jan 1;122(1):82-88.
46. Guzman MA, Sgambati FP, Pho H, Arias RS, Wolfe EM, Ötvös T, Rosenberg R, Dakheel R, Schneider H, **Kirkness JP**, Smith PL, Schwartz AR. The Efficacy of Low-Level Continuous

Positive Airway Pressure for the Treatment of Snoring. J Clin Sleep Med. 2017 May 15;13(5):703-711.

47. Pamidi S, Redline S, Rapoport D, Ayappa I, Palombini L, Farre R, **Kirkness JP**, Pépin JL, Polo O, Wellman A, Kimoff RJ. An Official American Thoracic Society Workshop Report: Noninvasive Identification of Inspiratory Flow Limitation in Sleep Studies. American Thoracic Society Ad Hoc Committee on Inspiratory Flow Limitation. Ann Am Thorac Soc. 2017 Jul;14(7):1076-1085. doi: 10.1513/AnnalsATS.201704-318WS.
48. Biselli P, Fricke K, Grote L, Braun AT, **Kirkness J**, Smith P, Schwartz A, Schneider H. Reductions in dead space ventilation with nasal high flow depend on physiological dead space volume: metabolic hood measurements during sleep in patients with COPD and controls. Eur Respir J. 2018 May 30;51(5).
49. Guzman MA, Sgambati FP, Pho H, Arias RS, Hawks EM, Wolfe EM, Ötvös T, Rosenberg R, Dakheel R, Schneider H, **Kirkness JP**, Smith PL, Schwartz AR. The Efficacy of Low-Level Continuous Positive Airway Pressure for the Treatment of Snoring. J Clin Sleep Med. 2017 May 15;13(5):703-711.
50. Sowho MO, Patil S, Schneider H, MacCarrick G, **Kirkness JP**, Wolfe LF, Sterni, L, Cistulli PA, Neptune ER. Sleep disordered breathing in Marfan syndrome: Value of standard screening questionnaires. Mol Genet Genomic Med. 2020 Jan;8(1):e1039.
51. Afshar-Mohajer, N., Wu, T. D., Shade, R., Brigham, E., Woo, H., Wood, M., Koehl, R., Koehler, K., **Kirkness, JP**, Hansel, N. N., Ramchandran, G., & McCormack, M. C. (2021). Obesity, tidal volume, and pulmonary deposition of fine particulate matter in children with asthma. Eur Respir J. 2022 Mar 3;59(3):2100209. doi: 10.1183/13993003.00209-2021.
52. **Kirkness JP**, Dusting J, Eikelis N, Pirakalathanan P, DeMarco J, Shiao SL, Fouras A. Association of x-ray velocimetry (XV) ventilation analysis compared to spirometry. Front Med Technol. 2023 Jun 22;5:1148310. doi: 10.3389/fmedt.2023.1148310. PMID: 37440838; PMCID: PMC10335741.
53. Karmali D, Sowho M, Bose S, Pearce J, Tejwani V, Diamant Z, Yarlagadda K, Ponce E, Eikelis N, Otvos T, Khan A, Lester M, Fouras A, **Kirkness J**, Siddharthan T. Functional imaging for assessing regional lung ventilation in preclinical and clinical research. Front Med (Lausanne). 2023 May 16;10:1160292. doi: 10.3389/fmed.2023.1160292. PMID: 37261124; PMCID: PMC10228734.
54. Siddharthan T, Grealis K, **Kirkness JP**, Ötvös T, Stefanovski D, Tombleson A, Dalzell M, Gonzalez E, Nakrani KB, Wenger D, Lester MG, Richmond BW, Fouras A, Punjabi NM. Quantifying ventilation by X-ray velocimetry in healthy adults. Respir Res. 2023 Aug 30;24(1):215. doi: 10.1186/s12931-023-02517-z. PMID: 37649012; PMCID: PMC10469820.

EXTRAMURAL SPONSORSHIP

Current:

2024-2026	Implications of Increased Flow in Nasal Cannula on Respiratory Mechanics ATS/Partner Award. Role: **Co-investigator – Kirkness JP**, PI – Afanador SM

Previous:

2011-2016	Pathogenesis & Sleep Disordered Breathing outcomes in patients with COPD R01HL1 05546, NIH. Role: **Co-investigator – Kirkness JP**, PI – Schneider H
2016	Next Generation Digital Health Solution for Patients & Respiratory Disease Companies. TEDCO. Role: **Co-investigator – Kirkness JP**, PI – Schneider H
2014-2015	Respiratory Therapy Adherence Monitors (Phase III) Maryland Innovation Initiative TEDCO. Role: **PI – Kirkness JP**

2012-2015	Heritability of Upper Airway Collapse & Ventilatory Responses, AHA (12SDG-8100000, NCRP). Role: **PI- Kirkness JP**
2013-2014	Respiratory Therapy Adherence Monitors (Phase I & II) Maryland Innovation Initiative TEDCO. Role: **PI – Kirkness JP**
2012-2013	Nocturnal Ventilatory Rest Prevents Cardiopulmonary Disease Progression Sleep Advancement Training and Research Fund Role: **Co-Investigator- Kirkness JP**; PI – Schwartz AR
2009-2011	Upper Airway Collapsibility **NHMRC (572647)** Role: **Co-investigator –Kirkness JP;** PI: P. Eastwood
2009-2011	Flow-Sensor for Polysomnography 5R44HL 091687 NIH (SBIR) PI: B. Lane Role: **JHU Sub-award project leader –Kirkness JP**
2008-2009	Dynamic Modulation of Upper Airway Raine Medical Foundation PI: **J. Kirkness** Role: Principal Investigator
2005-2009	Neurohumoral & Neuromuscular Control of Upper Airway Patency in Severe Obesity and Sleep Apnoea. NHMRC (353705) Role: **PI: J. Kirkness**
2006-2008	Effect of the liquid lining of throat, on throat blockage during sleep. NHMRC (402643) Role: **Associate Investigator –Kirkness JP**; PI: T. Amis
2004-2005	Neurohumoral & Neuromuscular Control of Upper Airway Patency in Severe Obesity and Sleep Apnoea. TSANZ. Role: **PI - Kirkness JP**
1998-2001	Role of Upper Airway Mucosal Lining Liquid in Upper Airway Patency and Obstructive Sleep Apnoea Hypopnea Syndrome. Garnett Passe & Rodney Williams Memorial Foundation. Role: PI – **Kirkness JP**
2000	Surface Tension Measurement Apparatus Westmead Institutes of Health, Small Equipment Grant. Role: PI - **Kirkness JP**

CONTRACTS

Previous

2013-2016	High Nasal Airflow for Treatment of COPD ResMed Inc. Role: **Principal Investigator – Kirkness JP**
2015-2016	Hypoglossal stimulation for the Treatment of Obstructive Sleep Apnea ImThera Inc. Role: **Co-investigator – Kirkness JP**
2015-2016	Novel Oral Negative Pressure Anti-snoring Device InSleep LLC. Role: **Co-investigator – Kirkness JP**
2014	High Nasal Airflow for Treatment of COPD ResMed Inc Role: **PI – Kirkness JP**
2013-2014	Device for Treatment of Snoring

	Insleep Technologies, LLC. Role: **Co-Investigator – Kirkness JP**
2008	Adherence to High Nasal Airflow Treatment ResMed Role: **Principal Investigator – Kirkness JP**
2009-2010	High Nasal Airflow for Treatment of Obstructive Sleep Apnea ResMed Role: **Principal Investigator – Kirkness JP**
2010-2012	High Nasal Airflow for Treatment of COPD ResMed Inc. Role: **Principal Investigator – Kirkness JP**
2010	Hypoglossal stimulation for the Treatment of Upper Airway Collapse Respicardia. Role: **Co-Investigator – Kirkness JP**

EDUCATIONAL ACTIVITIES

Educational Publications

Editorials

1. Schwartz AR, **Kirkness JP**, Smith P. Extraluminal tissue pressure: what does it mean? *Journal of Applied Physiology*. 2006, 100 (1): 5-6.
2. Schwartz AR, Patil SP, Squier S, Schneider H, **Kirkness JP**, Smith PL. Obesity and upper airway control during sleep. J Appl Physiol. 2010; 108(2):430-5.
3. Schwartz AR, Schneider H, Smith PL, McGinley BM, Patil SP, **Kirkness JP.** Physiologic phenotypes of sleep apnea pathogenesis. Am J Respir Crit Care Med. 2011 15; 184(10):1105-6.
4. Schwartz AR, Smith PL, Schneider H, Patil SP and **Kirkness JP**. Lung volume and upper airway collapsibility: What does it tell us about pathogenic mechanisms? J Appl Physiol. 2012; 113(5):689-90.
5. **Kirkness JP**. Hypopnea: 'rule of thumb' or ruler and plumb? Sleep Breath. 2014 Mar 27
6. **Kirkness JP**, Sowho M, Murano E. The interplay between tongue tissue volume, hyoid position, and airway patency. Sleep. 2014 Oct 1;37(10):1585-6.
7. **Kirkness JP**. Obesity-related ventilatory phenotypes of sleep-disordered breathing. Am J Respir Crit Care Med. 2014 Oct 15;190(8):853-4.

Book Chapters

1. **Kirkness JP**, Krishnan V, Patil SR and Schneider H. Upper Airway Obstruction in Snoring and Upper Airway Resistance Syndrome, Randerath WJ, Sanner BM, Somers VK (eds). in *Sleep Apnea. Progress in Respiratory Research.* Basel, Karger, 2006, vol 35, pp 79–89.
2. McGinley BM, **Kirkness JP**, Schneider H. Effect of a High-flow Open Nasal Cannula System on Obstructive Sleep Apnea in Children, Best of Sleep Medicine 2010, Lee-Chiong T (ed), National Jewish Health, Colorado, 2010, vol 1, pp 74-75.
3. Smith PL, **Kirkness JP** & Patil SP, Schneider H, Schwartz AR. Biomechanics of the Upper Airway, in *Sleep Apnea: Pathogenesis Diagnosis, and Treatment*, Pack A (ed) Marcel & Dekker. November 2011.
4. **Kirkness JP** & Patil SP. Pathogenesis of Obstructive Sleep Apnea in Obesity, in *Obesity and the Lung: A Guide to Management*. Clerisme-Beaty E & Dixon AE (eds) Springer. Dec 2012.
5. Patil S.P. and **Kirkness J.P**. Overview, Description, and Types of Sleep-Related Breathing Disorder. In: Kushida C.A. (ed.) The Encyclopedia of Sleep, Vol. 3, pp. 222-231. Waltham, MA: Academic Press. 2013.
6. Sowho M, Amatoury J, **Kirkness JP** & Patil SP. Respiratory Physiology; in Sleep and Breathing

beyond OSA issue of *Clinics in Chest Medicine*. Dambrosio C (ed) Springer. Clin Chest Med. 2014 Sep;35(3):469-81.

7. Schneider H and **Kirkness JP**. Nasal High Flow: Novel Approach for Ventilatory Assist during Sleep. A.M. Esquinas (ed.), *Noninvasive Mechanical Ventilation: Theory, Equipment, and Clinical Applications*, 2016 DOI 10.1007/978-3-319-21653-9_80
8. **Kirkness JP** & Patil SP. Pathogenesis of Obstructive Sleep Apnea in Obesity, in *Obesity and the Lung: A Guide to Management*. Clerisme-Beaty E & Dixon AE (eds) Springer. In-press 2023.

Patents

1. Schneider H & **Kirkness JP.** Apparatus for Quantifying Inspiratory and Expiratory Airflow. World Wide Patent **WO2012122506A9** (2012)

2. Hernandez A, Schwartz AR, Smith PL, **Kirkness JP**, Schneider H, Polotsky M, Hernandez W. Open System Mouse Whole-body Plethysmograph and Respiratory Effort Transducer. Provisional US Patent application (2011)

Other Publications

1. **Kirkness JP**. PhD Thesis. The role of surface tension of liquid lining the upper airway in upper airway patency and the obstructive sleep apnoea hypopnoea syndrome. 2003. *The University of Sydney.* Supervisor: Clinical Associate Professor John R Wheatley MBBS FRACP PhD, Director Respiratory Medicine and Ludwig Engel Centre for Respiratory Research, Westmead Hospital and University of Sydney.
2. **Kirkness JP**. BSc1st class honours Thesis. Influence of an external nasal dilator strip on the performance of elite rowers. Collaborative research project at Sydney Athletics Centre with NSW Institute of Sport, Department of Respiratory Medicine, Westmead Hospital and Department of Biological Sciences, University of Western Sydney, Nepean. Supervisor: Dr Margaret Seto-Poon, Senior Lecturer.
3. McLaughlin, RA, Armstrong JJ, Becker S, Walsh JH, **Kirkness JP**, Jain A, Leigh MS, Williamson J, Hillman DR, Eastwood PR, Sampson DD. Respiratory gating of endoscopic OCT images of the upper airway. Proceedings of the SPIE - The International Society for Optical Engineering 2008, vol.7004, pp. 70045V-1-4.

Other media

1. Assistant Producer of educational video entitled: Cancer, A self-help approach. 1996 Newcastle Video Productions, Newcastle, Australia.
2. Risks, Benefits and Challenges of Human Subjects Research in Sleep Apnea. Conference Proceedings 2012.

TEACHING:

Classroom Instruction

3/97-12/98 Health Science
Role: Practical demonstration of anatomy and physiology (1st yr)
University of Western Sydney

3/03-12/03 Health Science
Role: 1st yr class tutorial & practical demonstrations – anatomy & physiology
University of Western Sydney

9/03 Australian Upper Airway Symposium
Role: Research seminars - Upper airway liquid surface tension homeostasis in health & disease. University of Melbourne

2/07 Australian Upper Airway Symposium
Role: Research seminars - Lung volume modulates upper airway patency in sleep and anaesthesia, Western Australia Sleep Disorders Research Institute

2/08 Australian Upper Airway Symposium
Role: Research seminars - Effect of body fat distribution on prevalence of OSA. Sleep & Breathing Institute of Australia

10/08 Human Functional Morphology
Role: Guest lecture (3rd yr)
University of Western Australia

9/12-5/13 Center for Bioengineering Innovation and Design.
Title: *Screening sleep apnea at the consumer and primary care physician level.*
Role: Sleep expert innovator and advisor for team of 4 Bioengineering Masters candidates
Johns Hopkins, Whiting School of Engineering

9/13-12/13 Discovery to Market
Title: *Airflow Sensor: Feasibility Analysis.*
Role: Innovation advisor for team of 5 Business Masters candidates
Johns Hopkins Carey Business School

11/17 – 2/19 CME Advances in Nasal High Flow Therapy
Title: Mechanisms of Action, Physiological Effects and Clinical Outcomes of Nasal High Flow Therapy
Role: Course director
Oklahoma Medical Center, Houston Medical Center, St Lukes Medical Center Houston, San Antonio, Tyler.

MENTORING:
Research Advisees

2022-2024 **Sara Afanador MD (Assistant Professor – Pulmonary Medicine)**
Planned: ATS grant; Present position: Assistant Professor of Medicine; Role of Nasal High Flow in COPD post exacerbation.

2014-2018 **Tamás Ötvös MD (Director Medical Affairs – Image Tech)**
Planned: Post-doc fellowship; Present position: Director Medical Affairs
Implement multicenter trial of hypoglossal stimulation for the treatment of upper airway collapse.

2013-2019 **Mudiaga Sowho MD MPH (Associate Development – BSM)**
During: Post-doc fellowship; Present position: Assistant Professor Mentored post-doctoral research; Efficacy of nasal high flow therapy in Chronic Obstructive Pulmonary Disease.

2016 **Alexander Bisant MSc, MCompSc. (VP Backend Technology)**
During: Masters in Computer Science; Present: Vice President of Innovation. Developed custom software for novel research into ventilation.

2016 **Felix Yu PhD (Assistant VP The Blackstone)**
Business Development: Johns Hopkins Graduate Consulting Club Business Case Competition. Present: Vice President of Blackmore Group

2012-2013 **Patrick McNamara BSc**
During: BSc exercise physiology; Present position: BSc graduate
Mentored undergraduate research project; Elevated leptin and aerobic fitness predict success of a weight-loss intervention for treating obstructive sleep apnea.

2012-2013 **Stephen Van Kooten Meng (Engineer at Applied Intuition)**
During: BEng (candidate); Present position: Lead Software Engineer Google
Mentored summer research program; guided development of respiratory algorithm and implement custom analysis software.

2012-2014 **Colin Russell MD (Internal Medicine Greater Baltimore Medical Centre)**
During: BMedSc(candidate); Present position: Hospitalist, Greater Baltimore Medical Center, Baltimore. Mentored summer research program; Custom breath-by-breath ventilatory analysis of COPD and pediatric OSA.

2011-2012 **Evan Leitner BSc MA MD (Anesthesiologist Beebe Health)**
During: Research Post back; Present position: Anesthesiologist, Delaware Anesthesiology Associates. Mentored senior research assistant; guided development of murine sleep scoring algorithm.

2010-2012 **Peter Grossman BSc MD (Vtech – Carilion School of Medicine)**
During: Research Post back; Present position: Medical officer
Mentored research coordinator; guided conduct of sleep research; International conference abstract presentation.

2011-2012 **Tony Wei BEng MD PhD**
During: BEng (candidate); Present position: MD
Mentored summer research program and elective research topic for School of Engineering; guided development of upper airway collapsibility analysis software and database integration.

2010-2011 **Dr. Christian Reinke MD**
During: Research Fellowship; Present position: Respiratory & Sleep Physician
Mentored research for breath-wise analysis ventilation during sleep in COPD.

2011 **Shijit Dusgupta BEng**
During: BEng (candidate); Present position: Software engineer
Mentored summer research program; Guided the development of SQL database application, functions and procedures for reporting polysomnographic studies.

2009-2010 **Chien-Hung Chin MD**
During: Research Fellowship; Present position: Specialist Pulmonary Physician.
Mentored in measurement and analysis of upper airway collapsibility and ventilatory responses during sleep; International conference abstract and manuscript publication;

Use of custom pneumotachograph for use during sleep.

2009-2010 **Joseph J. Maly BSc MD (Hematology Oncology – Kentucky)**
During: Pre-med school research; Present position: General Internal Med Physician
Mentored in measurement and analysis of upper airway collapsibility; manuscript publication; reproducibility of measurement of upper airway collapsibility.

2008 **Michael Woods BSc BPsych PhD**
During: BSc (psychology); Present position: Research Associate
Degree earned: BSc BPsych(Honours)
Mentored in the use of novel high flow nasal insufflation and CPAP during sleep. National and local conference abstract presentations and manuscript preparation.

2007 **Jane Potter BSc**
During: BSc; Present position: Sleep Technologist
Degree earned: BSc (Honours)
Mentored in introductory level research practices (i.e. develop rationale for investigation, hypothesis, study design, data collection, analysis, and interpretation); local conference abstract and manuscript publication.

2007 **Luis Pichard PhD MHS**
During: MHS; Present position: CEO, SHUSH inc. Award earned: PhD scholarship. Mentored in introductory level research practices; guided development of respiratory algorithm and implement custom analysis software; International conference abstract and manuscript publication.

2003 **Manisha Verma BSc**
During: BSc; Present position: Research Assistant
Degree earned: BSc (Honours)
Specific training using custom scientific instrumentation for surface tension of upper airway surface liquid. Mentored in introductory level research practices; local conference abstract and manuscript publication (peer reviewed publication #14)

2003 **Jyotishna Narayan PhD**
During: BSc; Present position: PhD (research officer)
Degree earned: BSc (Honours)
Mentored in introductory level research practices; local conference abstract

Educational Program Building/Leadership/Career Development

4/08-1/09 **Graduate Certificate in Adult Sleep Science Development**
The Graduate Certificate in Adult Sleep Science is aimed at anyone with a background in science or allied health wishing to be trained to work as a sleep technologist (sleep scientists), or individuals who simply wish to better understand the scientific principles that underpin adult sleep science.

2/12- **NIH Grant Training Seminars**
Half-day workshop is designed for those who wish to submit winning research proposals to the National Institutes of Health (NIH).

1/13- **Johns Hopkins Junior Faculty Leadership Skills Program**
The Junior Faculty Leadership Skills Program is a voluntary cohort group program of the Office for Faculty Development (OFD) designed for those faculty members

who are at the Assistant Professor level with less than 4 years at rank.

5/15 **American Thoracic Society Inspiratory Airflow Limitation Workshop**
International Society Program to develop standards for manual and automated respiratory scoring for sleep and breathing events.

8/18 **American Thoracic Society Inspiratory DDDD**
International Society Program BEAR Cage. Innovation award committee.

10/18 **American Association Respiratory Care Workshop**
Nasal High Flow Therapy in the Critical Care Setting

1/19 **Current Topics in Emergency Medicine**
Mechanisms of Action and Physiological Responses of Nasal High Flow Therapy in the Critical Care Setting

12/21 **Advances in Function Lung Imaging**
Physician Patient Alliance for Health and Safety

5/22-24 **Career in Transition: Academia to Industry**
American Thoracic Society Center for Career Development Session

INNOVATION AND COMMERCIALIZATION ACTIVITIES

My professional journey has been marked by a diverse range of roles and activities aimed at fostering innovation networks and driving commercialization in the healthcare sector. With a focus on understanding and developing innovation ecosystems, I have actively contributed to establishing robust research data, evidence-based practices, and impactful programs. This section highlights my experience at the intersection of healthcare and innovation, showcasing my strategic involvement in fostering transformative initiatives and driving commercial success through innovative approaches.

2020 – 2024 **Senior Vice President of Medical and Clinical Affairs**, **4DMedical a US/Australian-based medical technology company, commercializing four-dimensional lung imaging solutions.** Incorporated in 2012 to acquire imaging platform, XV Technology, and associated intellectual property, from Monash University. XV is the first FDA cleared respiratory imaging solution that utilizes mathematical models and algorithms to convert sequences of X-ray images into four-dimensional quantitative data. The technology has been extensively patented, with core patents granted in key jurisdictions including the United States and Australia. 4DMedical consider market opportunity to be supplementing or replacing existing respiratory diagnostic modalities. In 2019, more than US$31 billion was spent on respiratory diagnostics across more than 377 million procedures globally.

2017 –2020 **Director of Clinical Affairs – Fisher and Paykel Healthcare**
Leading designer, manufacturer and marketer of products and systems for use in respiratory care, acute care. Distributed in over 120 countries worldwide. Broad range of heated humidification products and systems for use during the treatment of respiratory conditions by ventilation or oxygen therapy, which form part of a comprehensive family of solutions for all therapies in the respiratory care continuum. Incorporate technologies designed to benefit both the clinician and the patient,

translating to efficient delivery of care and improved patient outcomes.

2016-2017 **Scientific Consultant – ExamMed**
ExamMed is a telehealth platform provider for customizable modular approach to expanding practices. Module base software focuses on specific functionalities and integration requirements. Scaling user experience by linking in person connections and online services. Scalable approach looks at the entire disruptive shift in the patient healthcare journey helping to determine what criteria defines practice and healthcare delivery success.

2016-2017 **Scientific Consultant – NewNRG**
Mobile App for the newNRG program a readiness for change approach for breaking free from habits. Two programs tracks developed:
1. Lifestyle Change "Weight loss is a MIND GAME", and
2. Sleep Apnea

2014 – 2016 **Chief Technology Officer – respEQ inc**
Johns Hopkins based start-up company formed from JHU Faculty with previous commercial sponsors. respEQ licensed and purchased patents from Johns Hopkins and a technology incubator to develop a smartphone based monitoring platform connected to therapies for chronic respiratory diseases. My role was to validate the technology versus predicate devices and generate a regulatory pathway. In this role I developed relationships with key stakeholders, opinion leaders, suppliers and collaborators. In my role I was successful in obtaining ~$300K in non-dilutive funding from the Maryland Innovation Initiative (MII) and National Science Foundation (NSF).

2016 **Nation Science Foundation – Innovation Corps**
An immersive program for successfully transferring knowledge into products and processes that benefit society. Combines technical knowledge with deep commitment to investigate the commercial landscape surrounding innovation as well as providing support for transition of technology into commercialization.

2016 **Johns Hopkins School of Medicine, Faculty Innovation Leadership Panel**
Leadership committee formed by School of Medicine, Vice Dean of Innovation and Faculty with focus on commercialization. Organize activities

2014 – 2015 **Technology Executive Roundtable Member**
Start-up tech company founders and CEO engaging on a monthly basis. Facilitated networking for entrepreneurs to discuss execution innovative business idea, implementation, leadership and the company or organization.

2013 – 2014 **Consultant/Investigator – inSleep Health inc**
inSleep Technologies inc is Medical Device company generated an Anti-Snoring System, provides continuous low level airway pressure to eliminate or reduce simple snoring. I was a co-investigator and managed site qualification, training, implementation and co-ordination for a multisite clinical trial. For the trial, I designed, acquired and executed the data acquisition equipment and instruments. I liaised with the medical, clinical, CRO and company personnel to ensure that any hurdle (regulatory, recruitment, equipment) was solved. The study of 27 participants (with very specific characteristics) supporting the 510K application was approved in 2015 by the FDA.

2007 – 2016 **Consultant/Investigator – ResMed inc**
I have had various engagements with the Medical Affairs, Applied Research and Product Development departments at ResMed. I am most well-known at ResMed for research and development of a respiratory therapy referred to as high flow therapy. High flow therapy is a cannula based therapy that reduces ventilation via reduction is deadspace ventilation and vascular sympathetic activity during sleep in COPD. The most important studies I have conducted for ResMed include cannula usability study (from conception, IRB approval to data acquisition and report for FDA – in 3 months), evaluation of competitors products or assessment of products for due diligence. In addition I have had various roles in evaluating patents.

2014 **Consultant – TNI medical**
I have consulted for a German Medical device company to assess and publish the use of a cannula for treatment hypercapnic ventilatory failure. This medical device company has used this publication (and others) to file for 510K pre-market approval.

2012, 2024 **Expert Witness.** Details available on request. Inter Partes Review. Respiratory support, pulmonary pressure therapy devices. Airway therapy. Sleep Medicine.

2012 – 13 **Consultant/Co-Investigator – Respicardia inc**
Formerly cardiac concepts, I have consulted with this company to prepare IRB application and study documentation. In this role I worked with the CMO, VP of R&D and senior engineers to translate corporate goals into approved research study. The study was conducted at multiple sites overseas and in the US. The studies involved multidisciplinary teams including interventional cardiology, electrophysiologists, anesthesiologist, pulmonologists and multiple procedures including fluoroscopy, neurostimulation, sedation, respiratory support and polysomnography.

2008 – 2009 **Consultant/Co-Investigator – Apnex Medical inc**
Initially I was involved with the clinical research at one of the pilot study sites. As part of the research program I had conducted studies examining the effect of propofol, midazolam and isoflurane on airway collapse. These procedures were used to establish feasibility for stimulating hypoglossal nerves during sleep. I help establish the clinical sites across Australia for the feasibility study that followed.

CLINICAL ACTIVITIES

Clinical Operations & Laboratory Support Activities

8/ 98 – 11/03 **Sleep Disorders Laboratory, Department of Respiratory Medicine, Westmead Hospital, Australia**
Out-patient admission, health education, instrumentation of recording equipment & therapeutic devices

6/01 – 2/03 **Ludwig Engel Centre for Respiratory Research, University of Sydney and Westmead Hospital, Australia**
Research & Information Technology Officer

2/03 – 4/04 **Ludwig Engel Centre for Respiratory Research, University of Sydney and Westmead Hospital, Australia**

Sleep Research Manager

5/04 – 12/06 **Johns Hopkins Sleep Disorders Center, Baltimore, USA**
Support and training of research staff

Oct 09 – Oct 11 **Johns Hopkins Sleep Disorders Center, Baltimore, USA**
Weekly Bayview Sleep Laboratory operations meetings

7/10 – 10/15 **Johns Hopkins School of Medicine, Baltimore, USA**
American Academy of Sleep Medicine Fellowship Program Review Committee Faculty Member

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2014-2016 Johns Hopkins Medicine, Junior Faculty Resource Advisory Council
2012 Division of Pulmonary Critical Care, Research Focus Group
2008-2009 Elected Member of Academic Board of The University of Western Australia
2008-2009 University of Western Australia Researchers Association
2000 Department of Medicine Postgraduate Research Committee, The University of Sydney

Editorial Activities

Editorial Board

Journal of Clinical Sleep Medicine (2012 – 2024)

Journal peer reviewer

Journal of Sleep Research (2007 – 2018)
American Journal of Respiratory and Critical Care Medicine (2007 – 2015, 2023)
Thorax (2011-2013)
The Journal – Sleep (2006 – 2017)
Journal of Clinical Sleep Medicine (2009 - 2018)
Journal of Applied Physiology (2002 - 2018)
European Respiratory Journal (2002, 2008)
European Journal of Clinical Investigation (2008)
Experimental Lung Research (2006)
Journal of Sports Science and Medicine (2006)
Sleep and Breathing (2010 – 2018)
Experimental Physiology (2011)
Respiratory Care (2012-2015)
Respirology (2007-2008)
Sleep and Biological Rhythms (2013-2018)
Frontiers in Medicine (2023)

Advisory Committee Appointments

2013 National Institutes of Health. ETTN-10 Small Business Review Panel, Center for Scientific Review. External reviewer, phone panel.
2012-2013 Foundation for Polish Science External grant reviewer,
2012-2013 Johns Hopkins Clinical Research Unit. External reviewer
2008- Ad-hoc member of the Human Ethics Scientific Review Sub-committee, Sir Charles Gairdner Hospital Human Research Ethic Committee

2008-	External national competitive project grant reviewer, National Health and Medical Research Council of Australia
2006-	External grant reviewer, Sir Charles Gairdner Hospital Research Foundation

Professional Societies

2024-2025	American Thoracic Society, Board of Directors (2024-2025) American Thoracic Society, DDDD Committee member (Chair 2024-2025)
2021-202	American Thoracic Society, Respiratory Innovation Summit. COVID-19 panel co-chair (2022), Organizing Committee (2023-2025).
2018-2020	North Central Society of Critical Care Medicine, Board member
2017-2020	Nat. Ass. Medical Directors for Respiratory Care, Industry Adv. Committee
2004-present	American Thoracic Society, Member
2017-present	American Academy of Chest Physicians
2017-present	Society of Critical Care Medicine
2017-present	American Association for Respiratory Care
2004-2017	American Academy of Sleep Medicine, Member
2013-2015	American Thoracic Society, SRN program committee member
1996-2011	Thoracic Society of Australia & New Zealand, Member
1997-2011	Australian Lung Foundation, Member
1998-2011	Australasian Sleep Association, Member
2003-2005	American Physiological Society, Member
2007-	Chair, ASMR® Medical Research Week Professional Development Sub-committee, Australian Society for Medical Research (Western Australia)
2008-	Co-convener, ASMR® Medical Research Week, Australian Society for Medical Research (Western Australia)
2008-	Co-chair, Sleep and Physiology Special Interest Group, Thoracic Society of Australia & New Zealand
2008-	Co-Chair, Sleep and Physiology Special Interest Group, Thoracic Society of Australia & New Zealand
2009-	Convener, ASMR® Medical Research Week, Australian Society for Medical Research (Western Australia)
2009-	Conference Organizing Committee, Australasian Sleep Association, Member

Conference Organizer, Session Chair

2006-	Sleep Disordered Breathing Oral Session Chair, Australasian Sleep Association, Perth Convention Centre, Perth, Australia
2007-	Craniofacial Special Interest Group Oral Session Chair, World Federation of Sleep Medicine & Sleep Research Societies, Cairns International Convention Centre, Cairns, Australia
2007-	Sleep and Physiology Special Interest Group Oral Presentations Session Chair, Joint Congress of the Asia Pacific Society Respirology & American College of Chest Physicians, Surfer Paradise Convention Centre, Surfers Paradise, Australia
2007-	Co-convener, Australian Society for Medical Research, Curtin School of Health Science, Perth, Australia
2008-	Neurobiology & Sleep Oral Session Chair, Japanese Society for Respirology, Kobe Convention Centre, Kobe, Japan
2008-	Sleep and Physiology Poster mentor, Thoracic Society of Australia and New Zealand, Melbourne Convention Centre, Melbourne Australia
2009-	Member of Conference Organizing Committee, Australasian Sleep Association, Melbourne Sofitel Hotel, Melbourne, Australia

2012-	Sleep Disordered Breathing Oral Session Chair, American Thoracic Society, Moscone Convention Centre, San Francisco, USA
2013-	Sleep apnea pathogenesis: mechanical and neural mechanisms; Poster Discussion Co-chair, American Thoracic Society, Philadelphia Convention Centre, Philadelphia, USA
2014-	Upper Airway and Respiratory Control During Sleep and Non-Pulmonary Sleep Disorders; Thematic Poster Discussion Co-chair, American Thoracic Society, San Diego Convention Centre, California, USA
2022-	Respiratory Innovation Summit, COVID-19 panel co-chair, American Thoracic Society, San Francisco, CA
2023-	Functional Lung Imaging Conference, Invited Speaker, University of Miami, Miami, FL.

Consultantship and Board of Directors

2005-2006	TNI Medical, Attendance at scientific advisory meetings
2006-2007	Inspiration Medical, Scientific consultant for collaborative project, present data to advisory board
2007-2008	Teijin Co., Scientific consultant on collaborative project
2007-2009	ResMed Inc., Specific scientific advisory meetings for collaborative study
2008-2009	Apnex Medical, Scientific and technical consultant for collaborative study
2009-2013	Respicardia, Scientific consultant
2013-2014	InSleep Technologies, LLC. Scientific consultant
2014-2016	respEQ inc, Board of Directors

RECOGNITION

Awards & Honors

1996	Summer Research Scholarship, Institutional research award conducted at Department of Respiratory Medicine, Westmead Hospital, University of Western Sydney
1997	John Read Prize, National prize for physiological research. Peer reviewed publication #2, Thoracic Society of Australia & New Zealand
1996	Summer Research Scholarship, Institutional research award conducted at Department of Respiratory Medicine, Westmead Hospital, University of Western Sydney
1998	Australian Lung Foundation Travel Grant, Society travel grant to present research, Thoracic Society of Australia & New Zealand
1998-2001	Garnett Passe and Rodney Williams Memorial Foundation Postgraduate Research Scholarship, Postgraduate Scholarship, Other Publications #1, Peer reviewed publications #5, 6, 7, 9, 11, 13, Garnett Passe and Rodney Williams Memorial Foundation
1998-2001	Westmead Research Institute Top-up Grant, Postgraduate Scholarship, Other Publications #1, Peer reviewed publications #5, 6, 7, 9, 11, 13, Westmead Millennium Institute
1999	Australian Lung Foundation Travel Grant, Society travel grant to present research. Peer reviewed publication #12. Thoracic Society of Australia & New Zealand
2000	Australian Lung Foundation Travel Grant, Society travel grant to present research. Peer reviewed publication #11. Thoracic Society of Australia & New Zealand
2004	Thoracic Society of Australia & New Zealand Allen and Hanbury Overseas Research Fellowship, Prestigious national society overseas research award to undertake postdoctoral fellowship at Johns Hopkins School of Medicine, Thoracic Society of Australia & New Zealand

2005-2009	CJ Martin Fellowship, National competitive overseas research award. Postdoctoral Fellowship at Johns Hopkins School of Medicine and University of Western Australia, National Health & Medical Research Council
2006	Thoracic Society of Australia & New Zealand Allen and Hanbury Travel, Society overseas travel award, Thoracic Society of Australia & New Zealand
2006	Westmead Millennium Institute Science Prize, Institutional publication prize. Peer reviewed publication #11, Westmead Millennium Institute
2007	John Read Prize, National prize for physiological research, Thoracic Society of Australia & New Zealand
2008	Asia Pacific Society for Respirology Career Development Award, International award from APSR joint societies to present conference paper, Asia Pacific Society for Respirology
2012	American Heart Association National Career Development Award, American Heart Association career development award to investigate heritability of sleep apnea, American Heart Association.
2016	American Thoracic Society. Sleep & Respiratory Neurobiology (SRN) Assembly 2016 Best Sleep Fragment Award.

Invited Talks, Panels

2002	"Role of upper airway liquid surface tension in upper airway patency & OSA" Centre for Sleep & Neurophysiology, University of Pennsylvania, Philadelphia, USA
2002	"Role of upper airway liquid surface tension in upper airway patency & OSA" Johns Hopkins Sleep Disorders Centre, Johns Hopkins Bayview, Baltimore, USA
2002	"Role of upper airway liquid surface tension in upper airway patency & OSA" Division of Physiology Meeting, University of California San Diego, School of Medicine, Department of Physiology
2004	"Upper airway mucosal lining liquid surface tension" World Federation of Sleep, International Sleep & Breathing Symposium, Newport, Rhode Island, USA
2005	"Dynamic modulation of upper airway function with a breath by breath technique" Harvard Medical School, International Sleep & Breathing Symposium, Newport, Rhode Island, USA
2005	"Influence of breathing route on upper airway lining liquid surface tension" American Thoracic Society, Proceedings of the American Thoracic Society Annual Scientific Meeting, San Diego
2005	"Lipodystrophy affects ventilatory control in mice" American Thoracic Society, Proceedings of the American Thoracic Society Annual Scientific Meeting, San Diego
2006	"Quantification of inspiratory airflow obstruction using a novel light weight flowmeter" American Academy of Sleep Medicine, Proceedings of the Associated Professional Sleep Societies Annual Scientific Meeting, Salt Lake City
2006	"Women are protected against OSA through reduced upper airway mechanical loads & active neuromuscular responses" American Thoracic Society, Proceedings of the American Thoracic Society Annual Scientific Meeting, San Diego, USA
2007	"Pathophysiology of upper airway obstruction" World Association of Sleep Medicine, World Congress on Sleep Apnea, Bangkok, Thailand
2007	"Lung deflation decreases the stability of the hypotonic upper airway" American Thoracic Society, ATS Annual International Conference, San Francisco, USA
2008	"Decreasing lung volume promotes collapse of the hypotonic upper airway" American Thoracic Society, ATS Annual International Conference, Toronto, Canada
2008	"Decreasing lung volume promotes collapse of the hypotonic upper airway" Asian Pacific Society of Respirology, Japanese Respiratory Society, Kobe, Japan

2008 "Dynamic modulation of the upper airway" European Sleep Research Society, European Sleep Research Society, Glasgow, UK

2011 "Determining upper airway collapsibility from quantitative airflow measurements during sleep" World Federation of Sleep, International Sleep and Breathing Symposium, Barcelona, Spain

2012 "Intermittent Hypoxia in Human Subjects Research in Sleep Apnea" American Academy of Sleep Medicine, Risks, Benefits and Challenges of Human Subjects Research in Sleep Apnea, Baltimore MD

2013 "Upper Airway Pathophysiology and Ventilatory Control in Sleep Apnea" World Federation of Sleep, International Sleep and Breathing Symposium, Montreal, Canada

2014 AUTM - Northeastern, "Digital Health for Management of Chronic Respiratory Disease", BALTIMORE MD

2014 "Investigators Perspective of the Maryland Innovation Initiative", TEDCO, Baltimore, USA.

2014 "Pathophysiology of Upper Airway Collapse" American Thoracic Society, Sunrise Symposium, San Diego, USA

2015 ATS, Consensus Workgroup. Inspiratory Airflow Limitation. Denver, USA.

2016 ATS, Consensus Workgroup. Inspiratory Airflow Limitation. San Francisco, USA.

2015 – 2017 American Thoracic Society Ad Hoc Committee on Inspiratory Flow Limitation.

Invited Presentations - (National)

2002 "Role of upper airway liquid surface tension in upper airway patency and obstructive sleep apnea" Department of Respiratory Medicine, Royal North Shore Hospital, Sydney, Sleep Research Meeting, Royal North Shore Hospital, Sydney, Australia

2005 "Lipodystrophy affects ventilatory control in mice" Thoracic Society of Australia & New Zealand, Proceedings of the TSANZ, Canberra, Australia

2006 "Obesity augments passive mechanical loads on the upper airway in men but not women" Australasian Sleep Association, Annual Scientific Meeting of the Australasian Sleep Association, Perth, Australia

2006 "A novel treatment for obstructed sleep disordered breathing: treatment with nasal insufflation (TNI)" Australasian Sleep Association, Annual Scientific Meeting of the Australasian Sleep Association, Perth, Australia

2007 "Lung deflation decreases the stability of the hypotonic upper airway" Thoracic Society of Australia & New Zealand, Annual Scientific Meeting of the TSANZ, Auckland, New Zealand

2007 "Biomechanical links between sleep & obesity" The University of Western Australia, School of Physiology, University of Western Australia, Perth, Australia

2008 "Decreasing lung volume promotes collapse of the hypotonic upper airway" Thoracic Society of Australia & New Zealand, Annual Scientific Meeting of the TSANZ, Melbourne, Australia

2008 "Early career research – case study" Thoracic Society of Australia & New Zealand, Short Course in Respiratory Research, Melbourne, Australia

2010 "Upper Airway Phenotypes for Polysomnography" Case Western University, Pulmonary Grand Rounds, Cleveland, USA

2010 "Upper Airway Phenotypes for Polysomnography" Pittsburgh University, Pulmonary Grand Rounds, Pittsburgh, USA

2014 "CPAP compliance monitors" TEDCO, TechBreakfast, Baltimore, USA

2015 "Digital Health for Management of Sleep Disorders" HIMMS 2015 Chicago, USA

2018 "Mechanisms of Action and Clinical Evidence for Nasal High Flow Therapy", Southern District Missouri Society for Respiratory Care, Springfield, MO.

2018 "Mechanisms of Action and Clinical Evidence for Nasal High Flow Therapy",

	Northern District 5, Missouri Society for Respiratory Care, St Louis, MO.
2019-20	8 Multiple miscellaneous presentations to state respiratory societies
2020	CME presentations: Functional Lung Imaging: X-Ray Velocimetry for Lung Ventilation Analysis in Progressive and Advanced Disease. UCLA, AMSUS
2021	CME presentations. Functional Lung Imaging: X-Ray Velocimetry for Lung Ventilation Analysis in Progressive and Advanced Disease. UMichigan SOM, UCSD.
2023	National VA Burn Pit Exposure Consortium, Invited Speaker, Minneapolis VA