

## CURRICULUM VITAE

Name: **Christopher Neil Wyatt**

*Academic Address:* Department of Neuroscience, Cell Biology and Physiology, Wright State University, 3640, Colonel Glenn Hwy, Dayton, OH 45435, USA

Telephone: (+1) 937-775-4249

E-mail: [christopher.wyatt@wright.edu](mailto:christopher.wyatt@wright.edu)

### Education

<u>Institution</u>	<u>Concentration</u>	<u>Degree / Date</u>
University of Leeds Leeds, UK.	Pharmacology	Ph. D., 1994
University of Bath Bath, UK	Pharmacology	BSc (2:1), 1991

### Postdoctoral Experience

Postdoctoral Research Fellow	School of Biology, University of St Andrews, St Andrews, UK	2003-2006
Postdoctoral Research Scientist	University Laboratory of Physiology, University of Oxford, Oxford, UK	1999-2003
Postdoctoral Research Scientist	Department of Pharmacology, University College London, London, UK	1994-1998

### Academic Experience

<u>Institution</u>	<u>Position</u>	<u>Dates</u>
Wright State University Dayton, Ohio	Associate Chair for Education Neuroscience, Cell Biology and Physiology	2019-
Wright State University Dayton, Ohio	Associate Dean, College of Science and Mathematics	Jan 2017 – Sept 2019
Wright State University Dayton, Ohio	Interim Chair, Department of Neuroscience, Cell Biology and Physiology	Feb 2015 - Oct 2016
Wright State University Dayton, Ohio	Associate Professor, Department of Neuroscience, Cell Biology and Physiology	2012 - Present
Wright State University Dayton, Ohio	Assistant Professor, Department of Neuroscience, Cell Biology and Physiology	2007-2012

## Professional Memberships

<u>Association</u>	<u>Status</u>	<u>Dates</u>
The American Physiological Society	Member	2007-present
The Ohio Physiological Society	Member	2007 - present
The Physiological Society	Member	1999-present
International Society for Arterial Chemoreception	Organizing / Scientific Committee	1993-present
The New York Academy of Sciences	Member	2009-2010

## Professional Honors and Awards

<u>Title of Honor / Award</u>	<u>Granting Association</u>	<u>Dates</u>
Faculty Mentor Award	Boonshoft School of Medicine Wright State University	2016
Faculty Award for Excellence Early Achievement Award	Wright State University	2011
Annual Plenary Lecture	Physiological Society of Chile	2011
Young Investigator Award	Oxford Conference on Modelling and The Control of Breathing	2006
De Castro, Heymans, Neil Medal 1 <sup>st</sup> Place	International Society of Arterial Chemoreception (ISAC)	2005

## Manuscript Reviewer

The Journal of Physiology	Bio Med Central Neuroscience
British Journal of Pharmacology	Respiration Physiology and Neurobiology
Journal of Applied Physiology	Pflügers Archiv – European Journal of Physiology
American Journal of Physiology (AJP)	Experimental Physiology
AJP-Cell Physiology	Advances in Experimental Medicine and Biology
AJP-Integrative Physiology	Physiological Genomics
Science	Science Signaling
Frontiers in Physiology	

## Reviewing Editor

The Journal of Physiology

## Ad Hoc Grant Reviewer

<u>Agency</u>	<u>Dates</u>
National Science Foundation	2009-present
NIH, NHLBI Special Emphasis Panel	2012, 2013

## Teaching

### Courses Taught at Wright State University:

<u>Course Number</u>	<u>Course Title</u>	<u>Dates</u>	
BMS 8620/P&N 6100 <b>Co-Director</b> <b>(2013-2017)</b>	Human Physiology. Mechanics of Breathing (4Hr)	2009-present	
	Human Physiology. Control of Breathing (2Hr)	2008-present	
	Human Physiology. Team Based Learning (2Hr)	2009-present	
P&N 7760	Intercellular communication. Receptor Theory (2Hr)	2009-present	
	Intercellular communication. Signal Transduction (2Hr)	2009-present	
	Neuroscience and Physiology. K <sup>+</sup> Channels (1Hr)	2014-present	
P&N7750 / BMS8750	Neuroscience and Physiology. Ca <sup>2+</sup> Channels (1Hr)	2009-present	
	Neuroscience and Physiology. Control of [Ca <sup>2+</sup> ] <sub>i</sub> (1Hr)	2009-present	
	Neuroscience and Physiology. Receptor Modulation of Ion Channels (1Hr)	2009-2015	
	Cells Tissues and Organ Systems Respiratory Physiology (2 Hr)	2011	
	Epithelial Physiology (1 Hr)	2012-2017	
SMD5720	Kidney Physiology (2 Hr)	2013-2017	
	G-proteins (1Hr)	2013-2017	
	Voltage-Gated Channels (1Hr)	2013-2017	
	Ligand-Gated Channels (1Hr)	2013-2017	
	SMD580	Glomerular Disease (2Hr)	2016
		Mechanics of Breathing (2Hr)	2016
	SMD8175	Receptors/Pharmacodynamics (3hr)	2017-present
Transporters and Barriers (2Hr)		2017-present	
ANT 7310	Anatomy of Respiratory Control (1 hr)	2013-present	

BMB 7670	Channelopathies (3 Hr)	2014-present
P&B 7220/BMS8530	Ion Channels (3 hr)	2014-2017
ANT 6030	Biomedical Review Article	2019-present
ANT 6040	Biomedical Experimental Design	2019-present
P&N 6300	Medical Cell Biology and Physiology	2019-present

### Student Supervision:

#### Doctoral Dissertations Supervised

RYAN RAKOCZY (2017-), Title of Dissertation: Acute Oxygen-Sensing by the Carotid Body: the Thermal Micro-Domain Model. (*Ph.D proposal accepted*).

JENNIFER JURCSISN (2015 - 2019), Co Director with Dr Erica Johnson. Title of Dissertation: Biomarker-Performance Associations during Nutritional and Exercise Intervention in Air Force Personnel. (*Graduated*).

RICHARD L. PYE, (2011-2015), Title of Dissertation: Measuring the acute physiological effect of leptin in the carotid body. **Graduate Student Excellence Award 2012**. (*Graduated, Postdoctoral Researcher, Wright State University; Science Writer, Oxford, UK*).

HEIDI L. JORDAN, (2007-2012), Title of Dissertation: The role of AMP-activated protein kinase in the acute hypoxic ventilatory response of the mouse. (*Graduated, Adjunct Biology Professor, Tri-County Technical College, Pendleton, SC*)

#### Doctoral Dissertation Committees

BEN SCHMITT	2015-present	(Mark Anstadt, Advisor)
LOBNA ELKHADRAGY	2014-2017	(Weiwen Long, Advisor, <i>Graduated</i> )
BRIAN STOGSDILL	2014-present	(David Goldstein, Advisor)
JOSEPH SANTIN	2014-2017	(Lynn Hartzler, Advisor, <i>Graduated</i> )
NATHAN WEIR	2011-2012	(Mariana Morris, Advisor, <i>Graduated</i> )
CATHY GRAHAM	2009-2014	(Robert Putnam, Advisor, <i>Graduated</i> )
ANN IMBER	2010-2012	(Robert Putnam, Advisor, <i>Graduated</i> )
KASHMIRA KULKARNI	2009	(Thomas L. Brown, Advisor, <i>Graduated</i> )

#### Masters Theses Supervised (one year laboratory project)

CHRISTINA KINSTEDT	2020-	
KAJAL KAMRA, MS	2017-2019	( <i>Graduated</i> )
TARIQ FAYYAD, MS	2016-2017	( <i>Graduated</i> )
RYAN RAKOCZY, MS	2015-2017	( <b>Sherrington Physiology Award, Shirahata travel award, DeCastro Award, Graduate Student Excellence Award, Graduated</b> )

ERIC DUNN, MS	2014-2015	(Sherrington Physiology Award, Graduated)
ELLEN RICKER, MS	2013-2014	(Graduate Student excellence award, Graduated)
JENNIFER JURCSISN, MS	2012-2014	(Graduate Student excellence award, Sherrington Physiology Award, Graduated)
JULIA PAULET MS	2011-2012	(Graduate Student excellence award, Presidential Commendation, Graduated)
RYAN SHAPIRO	2010-2011	(Graduate Student excellence award)
CARRIE THOMPSON, MS	2009-2010	(Graduate Student excellence award, Graduated)
DREW BURLON, MS	2007-2009	(Graduated)

### Masters Thesis Committees Served On

CASSIDY DUCKETT	2020	(Matt Sherwood, Advisor)
AMBER CASTELLANOS	2019-	(Mike Kemp, Advisor)
ALAYNA MELLOTT	2019-	(Ashot Kozak, Advisor)
CHRIS WAKER, MS	2014-2015	(Debra Mayes, Advisor, Graduated)
RENEE ALBERS, MS	2012-2013	(Thomas L. Brown, Advisor, Graduated)
ERICA CAREY MS	2012-2013	(Thomas L. Brown, Advisor, Graduated)
LARISSA TANGEMAN, MS	2010-2012	(Thomas L. Brown, Advisor, Graduated)
SERGEI ROBINSON MS	2010-2011	(James Olson, Advisor, Graduated)
VIVIAN NANAGAS, MS	2009-2010	(Robert Putnam, Advisor, Graduated)
BRIAN TUCKER, MS	2008-2012	(James Olson, Advisor, Graduated)
IAN WENKER, MS	2008-2009	(James Olson, Advisor, Graduated)

### Scholarly Project Advisor for Masters Programs

Payachana Chareunsouk	2020	(M&I.)
Marc Thoma	2018	(Graduated)
Bryen Yoon	2016	(Graduated)
Sarah Laub MS	2011	(Graduated)
Jenny Belsky, MS	2010	(Graduated)
Lyndsey Woeste, MS	2009	(Graduated)
April Davoli, MS	2009	(Graduated)

### Undergraduates Supervised in the Wyatt Laboratory

Yoon-Jae Yi	2019	(WSU Psychology Major, Honors Project)
Annah Hartpence	2016-2018	(WSU Biology Major, Senior Capstone)
Jon Ali	2012-2013	(WSU Biology Major)
J. Chika Morah	2011-2013	(STREAMS student, 3 <sup>rd</sup> place poster, WSU Biology, Senior Honors Project, BIOSSTAR)
Huong-Thao Tran	2011	(WSU Biology, Senior Honors Project)
Keith Troche	2009	(STREAMS student)
Andrew Jenkins	2007-2008	(Co-Op student, Case Western Reserve)
April Wilson	2007	(STREAMS student, 3 <sup>rd</sup> place poster)

## Printed Scholarship Published Following WSU Probationary Period (2012 – Present day)

WSU students are underlined, (R) indicates that the publication was peer reviewed.

13 publications since promotion to Associate, 7 counting as (1) and 6 counting as (0.5) giving a total of 10 for the purposes of promotion and tenure. 29 publications in total since arrival at Wright State.

- Kamra, K., Rakoczy, R. J., Yi, Y-J & **Wyatt, C. N (2019)** Synergistic depression of breathing due to concurrent ethanol and opioid use is not mediated by actions on carotid body type I cells. *Neurosci. Lett.* **Under review.**
1. (R) Jendzjowsky, N. G., Roy, A., Barioni, N., Kelly, M. M., Green, F. H. Y., **Wyatt, C. N.**, Pye, R. L., Tenorio-lopess, L. & Wilson, R. J. A (2018) Preventing acute asthmatic symptoms by targeting a neuronal mechanism involving carotid body lysophosphatidic acid receptors. *Nature Communications.* **9(1):** 4030  
doi: 10.1038/s41467-018-06189-y
  2. (R) Rakoczy, R., Pye, R. L., Fayyad, T. H., Santin, J. S., Barr, B. L. & **Wyatt, C. N (2018)** High fat feeding in rats alters respiratory parameters by a mechanism that is unlikely to be mediated by carotid body type I cells. *Adv Exp Med Biol.* **1071:** 137-142
  3. (R) Rakoczy, R & **Wyatt, C. N. (2018)** Acute oxygen-sensing by the carotid body: a rattlebag of molecular mechanisms. *J.Physiol,* **596(15)**, 2969-2976
  4. (R) Waker, C. A., Albers, R. E., Pye, R. L., Doliboa, S. R., **Wyatt, C. N.**, Brown, T. B. & Mayes, D. A (2017) AMPK knockdown in placental Labyrinthine progenitor cells results in restriction of critical energy resources and altered differentiation. *Stem. Cells. Dev.* **26(11)**, 808-817
  5. (R) Thompson, E. L., Ray, C. J., Holmes, A. P., Pye, R. L., **Wyatt, C. N.**, Coney, A. M. & Kumar, P (2016) Adrenaline release evokes hyperpnoea and an increase in ventilatory CO<sub>2</sub> sensitivity during hypoglycaemia: a role for the carotid body? *J. Physiol.* **594(15)**, 4439-52
- This publication was also the subject of the following 'Perspectives' Article indicating its importance in the field of respiratory control:**
- O'Halloran, K. D. (2016) Counter-regulatory control of homeostasis during hypoglycaemia – adrenaline hits the sweet spot in the controversy concerning carotid body glucose-sensing. *J. Physiol.* **594(15)**, 4091-92
6. (R) Boivin, G. P., Bottomley, M., Dudley, E. S., Schimpl, PA., **Wyatt, C. N.** & Grobe, M (2016) Physiological, behavioural and histological responses to different CO<sub>2</sub> chamber replacement rates. *J. Am. Assoc. Lab. Animal. Sci.* **55(4)**, 451- 461
  7. (R) Jurcsisn, J. G., Pye, R. L., Ali, J., Barr, B. L & **Wyatt, C. N (2015)** The CamKK $\beta$  inhibitor STO609 causes artefacts in Ca<sup>2+</sup> imaging and inhibits BK<sub>Ca</sub> in mouse carotid body type I cells. *Adv Exp Med Biol.* **860**, 17-24

8. (R) Ricker, E. M., Pye, R. L., Barr, B. L. & Wyatt, C. N (2015) Selective mu and kappa opioid agonists inhibit voltage-gated Ca<sup>2+</sup> entry in isolated neonatal rat carotid body type I cells. *Adv Exp Med Biol.* **860**, 49-54
9. (R) Pye, R. L., Dunn, E. J., Ricker, E. M., Jurcsisn, J. G., Barr, B. L. & Wyatt, C. N (2015) Acutely administered leptin increases [Ca<sup>2+</sup>]<sub>i</sub> and BK<sub>Ca</sub> currents but does not alter chemosensory behaviour in rat carotid body type I cells. *Adv Exp Med Biol.* **860**, 61- 67
10. (R) Carey, E. A., Albers, R. E., Doliboa, S. R., Hughes, M., Wyatt, C. N., Natale, D. R. & Brown, T. L. (2014) AMPK knockdown in placental trophoblast cells results in altered morphology and function. *Stem. Cells. Dev.* **23 (23)**, 2921-2930
11. (R) Evans, A. M., Peers, C., **Wyatt, C. N.** Kumar, P. & Hardie, D. G. (2012) Ion channel regulation by the LKB1-AMPK signalling pathway: the key to carotid body activation by hypoxia and metabolic homeostasis at the whole body level. *Adv Exp Med Biol.* **758**, 81-90
12. (R) Shapiro, R. L., Barr, B. L., Putnam, R. W. & Wyatt, C. N. (2012) Acute Hypoxia does not influence intracellular pH in isolated rat carotid body type I cells. *Adv Exp Med Biol.* **758**, 105-107
13. (R) Tangeman, L., Wyatt, C. N. & Brown, T. L. (2012) Knockdown of AMP-activated protein kinase (AMPK) α1 and α2 catalytic subunits. *Journal of RNAi and Gene Silencing.* **8**, 470-478. **Co-corresponding author.**

## Books Edited Following WSU Probationary Period

### (2012 – Present Day)

1. Arterial Chemoreceptors in Physiology and Pathophysiology (2015). *Springer*. Editors: Peers, C., Kumar, P., **Wyatt, C. N.**, Gauda, E. B., Nurse, C. A. & Prabhakar, N. ISBN:978-3-319-18439-5
2. Making sense of sensing hypoxia (2018) *Springer*. Editors: Gauda, E. B., **Wyatt, C. N.**, Prabhakar, N. & Shultz, H. D. ISBN:

### Industrial Reports

### (2010 – Present Day)

Data included in these reports are proprietary and as such were unable to be published by conventional mechanisms. The data generated represents months of dedicated research time.

1. Pye, R. L., Rakoczy, R & **Wyatt, C. N. (2015)**. Effects of Galleon Compounds on Calcium Signaling and Ionic Currents in Acutely Isolated Rat Carotid Body Type I cells. A Report for Galleon Pharmaceuticals, Horsham, PA.
2. Jordan, H. L & **Wyatt, C. N. (2010)**. The Effect of Putative Respiratory Stimulants on Carotid Body Type I Cells. A Report for Galleon Pharmaceuticals, Horsham, PA

## Printed Scholarship Published During WSU Probationary Period (2007-2011)

WSU students are underlined, (R) indicates that the publication was peer reviewed.

14. (R) Thompson, C. M. & **Wyatt, C. N.** (2011) Inhibition of adenylate cyclase attenuates muscarinic Ca<sup>2+</sup> signaling by a PKA-independent mechanism in rat carotid body Type I cells. *Respiratory Physiology and Neurobiology*. **175**, 90-96
15. (R) Ross, F. A, Rafferty, J. N., Dallas, M. L., Ogunbayo, O., Ikematsu, N., McClafferty, H., Tian, L., Widmer, H., Rowe, I. C. M., **Wyatt, C. N.**, Shipston, M. J., Peers, C., Hardie, D. G. & Evans, A. M. (2011) Selective expression in carotid body type I cells of a single splice variant of the large conductance calcium- and voltage- activated potassium channel confers regulation by AMP-activated protein kinase. *Journal of Biological Chemistry*. **286(14)**, 11929-36
16. (R) Thompson, C. M., Troche, K., Jordan, H. L., Barr, B. L. & **Wyatt, C. N** (2010) Evidence for functional, inhibitory, histamine H3 receptors in rat carotid body type I cells. *Neuroscience Letters* **471**, 15-19
17. (R) Peers, C., **Wyatt, C. N.** & Evans, A. M (2010) Mechanisms for acute oxygen sensing in the carotid body. *Respiratory Physiology & Neurobiology*. **174**, 292-298
18. (R) Dallas, M. L., Scragg, J. L., **Wyatt, C. N.**, Ross, F., Hardie, D. G., Evans, A. M. & Peers, C. (2009). Modulation of O<sub>2</sub>-sensitive K<sup>+</sup> channels by AMP-activated protein kinase. *Adv Exp Med Biol*. **648**, 57-63
19. (R) Burlon, D. C., Jordan, H. L. & **Wyatt, C. N.** (2009) Presynaptic regulation of isolated neonatal rat carotid body type I cells by histamine. *Respiratory Physiology & Neurobiology*. **168**, 218-223.
20. (R) **Wyatt, C. N.** & Peers, C. (2009). Hetero or homo, hypoxia has them all. *J. Physiol (Lond)* **587.12**, 2717-18
21. (R) Calcraft, P. J., Ruas, M., Pan, Z., Cheng, X., Arredouani, A., Hao, X., Tang, J., Rietdorf, K, Teboul, L., Chuang, K-T., Lin, P., Xiao, R., Wang, C., Zhu, Y., Lin, Y., **Wyatt, C. N.**, Parrington, J., Ma, J., Evans, A. M., Galione, A & Zhu, M. X. (2009) NAADP mobilizes calcium from acidic organelles through two-pore channels. *Nature* **459**, 596-601
22. (R) Evans, A. M., Hardie, D. G., Peers, C., **Wyatt, C. N.**, Viollet, B., Kumar, P., Dallas, M. L., Ross, F., Ikematsu, N., Jordan, H. L., Barr, B. L., Rafferty, J. N & Ogunbayo, O (2009) Ion channel regulation by AMPK. The route of hypoxia-response coupling in the carotid body and pulmonary artery. *Ann. N. Y. Acad. Sci.* **1177**, 89-100
23. (R) Robertson, T. P., Mustard, K. J. W., Lewis, T. H., Clark, J. H., **Wyatt, C. N.**, Blanco, E. A., Peers, C., Hardie, D. G. & Evans, A. M. (2008). AMP-activated protein kinase and hypoxic pulmonary vasoconstriction. *European. J. Pharmacol* **595**, 39-43
24. (R) Kinnear, N. P., **Wyatt, C. N.**, Clark, J. H., Calcraft, P.J., Fleischer, S., Jeyakumar, L. H., Nixon, G. F. & Evans, A. M. (2008) Lysosomes co-localize with ryanodine receptor



- subtype 3 to form a trigger zone for calcium signalling by NAADP in rat pulmonary arterial smooth muscle. *Cell Calcium* **44**, 190-201
25. (R) **Wyatt, C. N.**, Pearson, S. A., Kumar, P., Peers, C., Hardie, D.G. & Evans, A. M. (2008) Key roles for AMP-activated protein kinase in the function of the carotid body? *Adv Exp Med Biol.* **605**, 63-68
26. (R) Varas, R., **Wyatt, C. N.** & Buckler, K. J (2007). Modulation of TASK-like background potassium channels in rat arterial chemoreceptor cells by intracellular ATP and other nucleotides. *J. Physiol (Lond).* **583.2**, 521-536
27. (R) **Wyatt, C. N.**, Mustard, K. J. W., Pearson, S. A., Dallas, M. L., Atkinson, L., Kumar, P., Peers, C., Hardie, D. G. and Evans, A. M. (2007). AMP-activated protein kinase mediates carotid body excitation by hypoxia. *J. Biol. Chem.* **282 (11)**, 8092-8098
28. (R) **Wyatt, C. N.** & Evans, A. M. (2007). AMP-activated protein kinase and chemotransduction in the carotid body. *Respiratory Physiology and Neurobiology.***157**, 22-29
29. (R) Peers, C. and **Wyatt, C. N.** (2007) The role of maxiK channels in carotid body chemotransduction. *Respiratory Physiology and Neurobiology* **157**, 75-82

## Printed Scholarship Published Prior to Probationary Period (1991 – 2006)

The following publications were accepted for publication before I arrived at Wright State (R) indicates the publication was peer reviewed.

30. (R) **Wyatt, C. N.**, Kumar, P., Aley, P., Peers, C., Hardie, D. G and Evans, A. M. (2006). Does AMP-activated protein kinase couple hypoxic inhibition of oxidative phosphorylation to carotid body excitation? *Adv Exp Med Biol.* **580**, 191-196.
31. (R) Evans, A. M., Mustard, K. J., **Wyatt, C. N.**, Dipp, M., Kinnear, N. P. & Hardie, D. G. (2006). Does AMP-activated protein kinase couple inhibition of mitochondrial oxidative phosphorylation by hypoxia to pulmonary artery constriction? *Adv Exp Med Biol.* **580**, 147-154.
32. (R) Evans, A. M, Mustard, K. J. W., **Wyatt, C. N.**, Peers, C., Dipp, M., Kumar, P., Kinnear, N. P. & Hardie, D. G. (2005). Does AMP-activated protein kinase couple inhibition of mitochondrial oxidative phosphorylation by hypoxia to calcium signalling in O<sub>2</sub>-sensing cells? *J. Biol. Chem* **280** 41504-41511.
33. (R) Evans, A. M, **Wyatt, C. N**, Kinnear, N. P., Clark, J. H. & Blanco, E. A. (2005). Pyridine nucleotides and Calcium signalling in arterial smooth muscle: from cell physiology to pharmacology. *Pharmacology and Therapeutics.* **107**, 286-313.
34. (R) Buckler, K. J., Williams, B. A., Varas, R. & **Wyatt, C. N.** (2005). The role of TASK-like Potassium channels in Oxygen sensing in the carotid body. In: *Signalling pathways in acute Oxygen sensing*. Novartis Foundation Symposium 272, Eds Chadwick, D. J & Goode, J. pp 73-94. John Wiley and Sons, UK.
35. (R) Evans, A. M., Hardie, D. G., Galione, A., Peers, C., Kumar, P. & **Wyatt, C. N** (2005). AMP-activated protein kinase couples mitochondrial inhibition by hypoxia to cell specific Ca<sup>2+</sup>-signalling mechanisms in oxygen-sensing cells. In: *Signalling pathways in acute Oxygen sensing*. Novartis Foundation Symposium 272, Eds Chadwick, D. J & Goode, J. pp 234-258. John Wiley and Sons, UK
36. (R) **Wyatt, C.N** & Buckler, K.J. (2004). The effect of mitochondrial inhibitors on membrane currents in isolated neonatal rat carotid body type I cells. *J.Physiol (Lond).* **556.1**, 175-191.
37. **Wyatt, C.N.** & Buckler, K.J. (2003). Effect of mitochondrial inhibitors on type I cells. *Adv Exp Med Biol.* **536**, 55-58.
38. **Wyatt, C.N** & Buckler, K.J. (2003). The effect of methanandamide on isolated type I cells. *Adv Exp Med Biol.* **536**, 123-127.
39. (R) Meir, A., **Wyatt, C.N.**, Stephens, G.J. & Dolphin, A.C. (2000). Neuronal T-type calcium channels: Pharmacology and investigation of subunit composition. In: *Slow synaptic responses and modulation*. Eds Kuba, K., Brown, D.A. & Yoshioka, T. pp121-129. Springer-Verlag, Tokyo.

40. (R) Dolphin, A.C, **Wyatt, C.N.**, Richards, J., Beattie, R.E., Craig, P., Lee, J.-H., Cribbs, L.L., Volsen, S.G. & Perez-Reyes, E. (1999). The effect of  $\alpha 2\text{-}\delta$  and other accessory subunits on expression and properties of the calcium channel  $\alpha 1\text{G}$ . *J. Physiol. (Lond)*. **519.1**, 35-45.
41. (R) **Wyatt, C.N.**, Page, K.M., Berrow, N.S., Brice, N.L. & Dolphin, A.C. (1998). The effect of overexpression of auxiliary  $\text{Ca}^{2+}$  channel subunits on native  $\text{Ca}^{2+}$  channel currents in undifferentiated mammalian NG108-15 cells. *J. Physiol. (Lond)*. **510.2**, 347-360.
42. (R) **Wyatt, C.N.**, Campbell, V., Brodbeck, J., Brice, N.L., Page, K.M., Berrow, N.S., Brickley, K., Terracciano, C.M.N., Naqvi, R.U., MacLeod, K.T. & Dolphin, A.C. (1997). Voltage-dependent binding and calcium channel current inhibition by an anti- $\alpha_{1\text{D}}$  subunit antibody in rat dorsal root ganglion neurones and guinea pig myocytes. *J. Physiol. (Lond)*. **502.2**, 307-319.
43. (R) Peers, C., Carpenter, E., Hatton, C.J., **Wyatt, C.N.** & Bee, D. (1996).  $\text{Ca}^{2+}$  channel currents in type I carotid body cells of normoxic and chronically hypoxic neonatal rats. *Brain. Res.* **739**, 251-257.
44. (R) **Wyatt, C.N.** & Peers, C. (1995).  $\text{Ca}^{2+}$ -activated  $\text{K}^{+}$  channels in isolated type I cells of the neonatal rat carotid body. *J. Physiol. (Lond)*, **483.3**, 559-565.
45. (R) **Wyatt, C.N.**, Wright, C., Bee, D. & Peers, C. (1995).  $\text{O}_2$ -sensitive  $\text{K}^{+}$  currents in carotid body chemoreceptor cells from normoxic and chronically hypoxic rats and their roles in hypoxic chemotransduction. *Proc. Natl. Acad. Sci. USA*. **92**, 295-299.
46. (R) **Wyatt, C.N.**, Weir, E.K. & Peers, C. (1994). Diphenylene iodonium blocks  $\text{K}^{+}$  and  $\text{Ca}^{2+}$  currents in type I cells isolated from the neonatal rat carotid. *Neurosci Lett.* **172**, 63-66.
47. (R) Weir, E.K., **Wyatt, C.N.**, Reeve, H.L., Huang, J., Archer, S.L. & Peers, C. (1994). Diphenylene iodonium inhibits both potassium and calcium currents in isolated pulmonary artery smooth muscle cells. *J. Appl. Physiol.* **76(6)**, 2611-2615.
48. **Wyatt, C.N.** & Peers, C. (1994).  $\text{Ca}^{2+}$  activated  $\text{K}^{+}$  channels from isolated type I cells of the neonatal rat. In *Arterial Chemoreceptors Cell to System*, ed. O'Regan, R.G., Nolan, P., McQueen, D.S. & Paterson, D.J., pp. 159-161. Plenum Press. New York, USA.
49. Peers, C., **Wyatt, C.N.** & Buckler, K. J. (1994). Actions of nicotinic agonists on isolated type I cells of the neonatal rat carotid body. In *Arterial Chemoreceptors Cell to System*, eds. O'Regan, R.G., Nolan, P., McQueen, D.S. & Paterson, D.J., pp. 155-157. Plenum Press, New York, USA.
50. (R) Rana, B., McMorn, S.O., Reeve, H.L., **Wyatt, C.N.**, Vaughan, P.F.T. & Peers, C. (1993). Inhibition of neuronal nicotinic acetylcholine receptors by imipramine and desipramine. *Eur. J. Pharmacol.* **250**, 247-251.
51. (R) **Wyatt, C.N.** & Peers, C. (1993). Nicotinic acetylcholine receptors in isolated type I cells of the neonatal rat carotid body. *Neuroscience*. **54**. vol 1, 275-281.

52. (R) **Wyatt, C.N.** & Peers, C. (1992). Modulation of ionic currents in isolated type I cells of the neonatal rat carotid body by p-chloromercuribenzenesulphonic acid. *Brain Res.* **591**, 341-344.
53. (R) Knight, A.R., **Wyatt, C.** & Middlemiss, D.N. (1991). Spironolactone causes a rapid downregulation of sigma recognition sites in guinea pig brain and liver. *Neuropharmacology.* **30**, vol 8, 923-925.

### **Summary of printed scholarship**

Christopher N. Wyatt is an author on **53** publications. Google scholar h-index 24.

### **Current Active Collaborations**

1. Prof Prem Kumar, University of Birmingham, UK. *Epinephrine and the carotid body.*
2. Dr Richard Wilson, University of Calgary, Ca. *Fat hormones and the carotid body.*
3. Dr Deidre Mahle, Henry M. Jackson Foundation, OH. *Hyperoxia and the carotid body.*
4. Dr F. Stuart Leeds, Wright State Physicians, OH. *Effect of alcohol and opioids on the carotid body*

## Conference Presentations Whilst at WSU

WSU students are underlined.

### International Conferences

Ryan J. Rakoczy and **Christopher N. Wyatt (2019)** Acute Oxygen-Sensing by the Carotid Body: the Thermal Micro-Domain Model. *Neuroscience Research Day*, Western University, Ontario, Canada. **Awarded Best Poster at the Conference Award.**

Rakoczy, R. J., Pye, R. L., Fayyad, T. H., Santin, J. M., Barr, B. L. and Wyatt, C. N. (2017) High fat feeding in rats alters respiratory parameters by a mechanism that is unlikely to be mediated by carotid body type I cells. *XXth meeting of the International Society for Arterial Chemoreception*, Baltimore, USA. **Awarded Heymans, deCastro, Neil Award**

Jurcsisn, J. G., Pye, R. L., Ali, J., Barr, B. L. and Wyatt, C. N. (2014) The CamKK $\beta$  inhibitor STO609 causes artifacts in Ca<sup>2+</sup> imaging and selectively inhibits BK<sub>Ca</sub> in mouse carotid body Type I cells. *XIXth meeting of the International Society for Arterial Chemoreception*, Leeds, UK. **Oral Communication C2.**

Ricker, E. M., Pye, R. L., Barr, B. L. and Wyatt, C. N. (2014) Selective  $\mu$  and  $\kappa$  opioid agonists inhibit voltage-gated Ca<sup>2+</sup> entry in isolated rat carotid body Type I cells. *XIXth meeting of the International Society for Arterial Chemoreception*, Leeds, UK. **Oral Communication C5.**

Pye, R. L., Ricker, E. M., Dunn, E. J., Barr, B. L. and Wyatt C. N. (2014) Acutely administered leptin increases [Ca<sup>2+</sup>]<sub>i</sub> and changes membrane conductance via modulation of BKCa channels in rat carotid body type I cells. *XIXth meeting of the International Society for Arterial Chemoreception*, Leeds, UK. **Oral Communication C8**

Paulet, J. E., Pye, R. L., Tran, H-T. T., Jordan, H. L., Ladle, D. R. and Wyatt C. N. (2012) Mitochondrial plasticity may determine the development of oxygen-sensitivity in rat carotid body. *Physiological Society Annual Meeting*, Edinburgh, UK. PC217.

Paulet, J. E., Tran, H-T. T., Jordan, H. L., Pye, R. L., Ladle, D. R. and Wyatt C. N. (2011) Maturation of the Carotid Body oxygen-sensor during normal rat development. *The Chilean Physiological Society Annual Meeting*, Santiago, Chile. Focused Symposium: Oxygen-Sensing in Health and Disease. **Oral Communication S15.**

Jordan, H. L., Barr, B. L., Viollet, B., Kumar, P., Peers, C., Hardie, D. G., Wyatt, C. N. and Evans, A. M. (2011) Knockout of AMP-activated protein kinase alpha 2 subunits attenuates acute hypoxic chemotransduction in mouse Type I cells. *XVIIth meeting of The International Society for Arterial Chemoreception*, Hamilton, Canada. Poster P2.3.

Shapiro, R.L., Barr, B. L., Putnam, R. W and Wyatt, C. N. (2011) Acute hypoxia does not influence intracellular pH in isolated rat carotid body Type I cells. *XVIIIth meeting of The International Society for Arterial Chemoreception*, Hamilton, Canada. Poster P2.1.

Evans, A. M., **Wyatt, C. N.**, Peers, C., Hardie, D. G., Kumar, P., Rafferty, J. N., Jordan, H. L., Hollaway, A., Dallas, M. L., Barr, B. L., Ross, F. A., Viollet, B and Mahmoud, A. **(2011)** AMP-

activated protein kinase and hypoxia-response coupling in the carotid body. *XVIIIth meeting of The International Society for Arterial Chemoreception*, Hamilton, Canada. O2.3.

Dallas, M. L., Ross, F., Scragg, J. L., Mahmoud, A., **Wyatt, C. N.**, Kumar, P., Hardie, D. G., Peers, C. and Evans, A. M. (2011) Inhibition of recombinant TASK-3 K<sup>+</sup> channels by AMP-activated protein kinase. *XVIIIth meeting of The International Society for Arterial Chemoreception*, Hamilton, Canada. O2.4.

Rafferty, J., Dallas, M. L., Ross, F. A., **Wyatt, C. N.**, Ogunbayo, O., Ikematsu, N., McClafferty, H., Tian, L., Widmer, H., Rowe, I. C., Shipston, M. J., Hardie, D. G., Peers, C. & Evans, A. M. (2010) AMPK-dependent regulation of BK<sub>Ca</sub> channels is splice variant specific. *Physiological Society Annual Meeting, Birmingham, UK*. Focused Symposium: Coping with Hypoxaemia: Strategies and Solutions. Poster PC21

Dallas, M. L., Ross, F., Scragg, J. L., **Wyatt, C. N.**, Hardie, D. G., Peers, C. & Evans, A. M. (2010) AMP-activated protein kinase inhibits recombinant TASK-3 K<sup>+</sup> channels. *Physiological Society Annual Meeting, Birmingham, UK*. Focused Symposium: Coping with Hypoxaemia: Strategies and Solutions. Communication C01 and poster PC01

Evans, A. M., Peers, C., **Wyatt, C. N.** & Hardie, D. G. (2009) AMP-activated protein kinase monitors respiratory gases as an index of respiratory function and energy supply at the whole-body level. *IUPS Kyoto*, Japan, abstract 02698

Jordan, H.L., Burlon, D.C., Barr, B. L., Jenkins, A. W. & **Wyatt C. N.** (2009) Histamine is not an excitatory presynaptic neurotransmitter in neonatal rat carotid body type I cells. *IUPS Kyoto*, Japan, abstract 00065

## National

Rakoczy, R. J., Pye, R. L., Fayyad, T. H., Santin, J. M., Barr, B. L. and **Wyatt, C. N.** (2017) High Fat Feeding in Rats Alters Respiratory Parameters by a Mechanism that is Unlikely to be Mediated by Carotid Body Type I Cells. *Experimental Biology 2017*, abstract 1072.1

Fayyad, T. H. and **Wyatt, C. N.** (2017) Mitochondrial Development Is Impaired in Hyperoxic Rats and This May Underpin the Blunting of the Acute Hypoxic Ventilatory Response. *Experimental Biology 2017*, abstract 1072.4

Pye, R.L., Roy, A., Wilson, R. J. A. & **Wyatt, C. N.** (2016) The effect of obese levels of leptin on peripheral chemoreception. *Experimental Biology 2016*, abstract 1995. **Selected for Featured Topics Oral Presentation in the Chemical Control of Autonomic Function in Health and Disease session.**

Pye, R. L., Ricker, E. M., Jurcsisn, J., Schmidt, B., Barr, B. L. & **Wyatt, C. N.** (2014) Acute Leptin evokes physiological responses in rat carotid body type I cells. *Experimental Biology 2014*, abstract 5246

Jurcsisn, J., Pye, R. L., Barr, B. L. & **Wyatt, C. N.** (2013) The Cam kinase kinase  $\beta$  inhibitor STO609 is contraindicated in Ca<sup>2+</sup> imaging studies. *Experimental Biology 2013*, abstract 9874

Morah, J. C., Barr, B. L., Tran, H-T. T., Paulet, J. E. & Wyatt, C. N. (2012) The importance of cell culture at appropriate ambient oxygen levels. ***Annual Biomedical Research Conference for Minority Students***, San Jose, CA.

Paulet, J. E., Tran, H-T. T., Jordan, H. L., Pye, R. L., Ladle, D. R. and Wyatt C. N. (2012) Mitochondrial content of Carotid Body Type I cells decreases during the maturation of the hypoxic response. *Experimental Biology 2012*, abstract 1272

Evans, A. M., Hardie, D. G. Peers, C., Kumar, P., & **Wyatt, C. N. (2012)** Ion channel regulation by the LKB1-AMPK signalling pathway: the key to carotid body activation by hypoxia and metabolic homeostasis at the whole body level. *Experimental Biology 2012*, abstract

**Wyatt, C. N., Jordan, H. L., Barr, B. L., Viollet, B., Peers, C., Hardie, D. G. & Evans, A. M. (2010)** Global knockout of AMP-activated protein kinase alpha subunits attenuates the hypoxic ventilatory response in mice. *Experimental Biology 2010*, abstract 3157

Dallas, M. L., Scragg, J. L., **Wyatt, C. N.**, Hardie, D. G., Evans, A. M. & Peers, C. (2009) Regulation of oxygen-sensitive channels by AMP-activated protein kinase. *New York Academy of Sciences, Hypoxia and Consequences Conference*

**Wyatt, C. N., Dallas, M. L., Ross, F., Ikematsu, N., Jordan, H. L., Barr, B. L., Rafferty, J. N., Ogunbayo, O., Viollet, B., Kumar, P., Peers, C., Hardie, D. G. & Evans A. M. (2009)** AMP-activated protein kinase and hypoxia-response coupling in the carotid body and pulmonary artery. *New York Academy of Sciences, Hypoxia and Consequences Conference*

## Regional

Kamra, K, Yi, Y-J, Wyatt, C. N and Ryan J. Rakoczy (2018) Synergistic Depression of Breathing due to Concurrent Ethanol and Opioid Use is Centrally Mediated. *Ohio Physiological Society Meeting*, University of Cincinnati. Data Blitz Presentation.

Kamra, K, Rakoczy, R. J, Wilson R. J. A and Wyatt, C. N. (2018) The effect of osmotic mini-pump implantation on hypertension induced by chronic intermittent hypoxia. *Ohio Physiological Society Meeting*, University of Cincinnati.

Kamra, K., Rakoczy, R. J., Barr, B. L. and Wyatt, C. N. (2017) Can somatostatin analogues attenuate hypertension associated with chronic intermittent hypoxia? *Ohio Physiological Society Meeting*, NEOMED

Rakoczy, R. J., Pye, R. L., Fayyad, T. H., Santin, J. M., Barr, B. L & Wyatt, C. N. (2016) High fat feeding in rats alters respiratory parameters by a mechanism that may be mediated by carotid body type I cells. *Ohio Physiological Society Meeting*, The Ohio State University, November 2016.

Fayyad, T. H., Rakoczy, R. J., Hartpence, A. J and Wyatt, C. N (2016) Does Hyperoxia Blunt the Acute Hypoxic Ventilatory Response Via Impaired Mitochondrial Development in Carotid Body Type I Cells? *Ohio Physiological Society Meeting*, The Ohio State University, November 2016.

Pye, R. L., Dunn, E., Ricker, E. M., Jurcsisn, J. G., Barr, B. L & Wyatt, C. N (2015) Measuring the acute effects of leptin on isolated neonatal rat carotid body type I cells. *Midwest Graduate Research Symposium*, University of Toledo, March 2015. **Selected Oral Presentation O29.**

Dunn, E. J., Pye, R. L., Barr, B. L and Wyatt, C. N. (2014) Effect of Somatostatin on Voltage-Gated  $Ca^{2+}$  Influx in Isolated Neonatal Rat Carotid Body Type I Cells. *Ohio Physiological Society Meeting*, Miami University, OH, October 2014. **P1.**

Ricker E. M., Pye, R. L., Barr, B.L & Wyatt, C. N. (2014) Opioids inhibit voltage-gated calcium entry by a  $G_i$  mediated mechanism in carotid body type I cells. *Midwest Graduate Research Symposium*, University of Toledo, March 2014. **Selected Oral Presentation O36. Awarded 1<sup>st</sup> Place Female in Science and 2<sup>nd</sup> Place Oral Presentation** (170 presentations over 24 disciplines).

Ricker E. M., Pye, R. L., Barr, B.L & Wyatt, C. N. (2013) Inhibitory effect of opioids on voltage-gated  $Ca^{2+}$  influx in rat carotid body Type I cells. *Ohio Physiological Society Meeting*, NEOMED, OH, October 2013.

Pye, R. L., Ricker, E. M., Jurcsisn, J., Schmidt, B., Barr, B. L. & Wyatt, C. N. (2013) Leptin increases intracellular calcium, but not metabolic rate, in carotid body type I cells. *Ohio Physiological Society Meeting*, NEOMED, OH, October 2013. **Selected Oral Presentation.**

Jurcsisn, J., Pye, R. L. & Wyatt, C. N. (2012) Use of the Cam kinase kinase  $\beta$  inhibitor STO609 is precluded in  $Ca^{2+}$  imaging studies. *Ohio Physiological Society Meeting*, Dayton OH, October 2012. **P58.**

Pye, R. L., Jurcsisn, J. & Wyatt, C. N. (2012) Obese levels of leptin initiate calcium signaling events in rat carotid body type I cells. *Ohio Physiological Society Meeting*, Dayton OH, October 2012. **P59.**

Tran, H-T. T., Paulet, J. E., Jordan, H. L., Pye, R. L. Ladle, D. R. & Wyatt C. N. (2011) Does mitochondrial plasticity underpin the development of oxygen sensitivity in carotid body type I cells? *Ohio Physiological Society Meeting*, Cincinnati OH, October '11. **Thao Tran won 'The Molecular and Cellular Physiology Award' for her presentation at this meeting.**

Thompson, C. M. & Wyatt, C. N. (2010) EPAC modulates muscarinic  $Ca^{2+}$  signaling in neonatal rat carotid body type I cells. *Ohio Physiological Society Meeting*. Cleveland OH, October '10. **Selected Oral Presentation.**

Thompson, C. M., Troche, K., Burlon, D. C., Jordan, H. L., Barr, B. L. & Wyatt C. N. (2009) Histamine inhibits calcium signaling by muscarinic receptors via the H3 receptor in neonatal rat carotid body type I cells. *Ohio Physiological Society Meeting*, Ohio State University, October '09.

**Wyatt, C. N. (2007).** AMP-activated protein kinase and oxygen-sensing in the carotid body. *Ohio Physiological Society annual meeting*. Athens, Ohio.

Burlon, D. C., Barr, B. L., Jenkins, A., Wilson, A. & Wyatt, C. N. (2007). Histaminergic activation of neonatal rat carotid body type I cells. *Ohio Physiological Society annual meeting*. Athens, Ohio.



## Conference Presentations Prior to Appointment at WSU

Kinnear, N. P., **Wyatt, C. N.**, Jeyakumar, L. H., Fleischer, S., Nixon, G. F. & Evans, A. M. (2006) Lysosomes and ryanodine receptor subtype 3 co-localize to form a trigger zone for calcium signalling by NAADP in rat pulmonary artery smooth muscle. *British Pharmacological Society Oxford Meeting*, pA<sub>2</sub> 077P.

Blanco, E. A., **Wyatt, C. N.**, Evans, A. M. & Peers, C (2006) AMP-activated protein kinase mobilises calcium from a thapsigargin sensitive, cyclopiazonic acid-insensitive sarcoplasmic reticulum calcium store via ryanodine receptors but not IP<sub>3</sub> receptors. *British Pharmacological Society Oxford Meeting*, pA<sub>2</sub> 098P.

**Wyatt, C. N.**, Kumar, P., Pearson, S. A., Peers, C., Hardie, D. G. & Evans, A. M. (2006) AMP-activated protein kinase mediates carotid body excitation by hypoxia. *10<sup>th</sup> Oxford Conference on Modeling and the Control of Breathing*. Lake Louise, Alberta, Canada.

Evans, A. M., **Wyatt, C. N.**, Peers, C., Mustard, K. J. W., Kumar, P., Kinnear, N. P. & Hardie, D. G. (2005) AMP-activated protein kinase couples mitochondrial inhibition by hypoxia to calcium signalling. *FASEB Journal*, **19(5)**: A1619 Part 2 Suppl S.

**Wyatt, C. N.**, Peers, C., Kumar, P., Hardie, D.G. & Evans, A. M. (2005) The effects of AMP-kinase activators on oxygen-sensing type 1 cells of the rat carotid body. *Brit. J. Pharmacol. pA<sub>2</sub> online* **3(4)**, 049P.

Evans, A. M., **Wyatt, C. N.**, Peers, C., Mustard, K. J. W., Kinnear, N. P. & Hardie, D. G. (2004) Calcium signalling by AMP-activated protein kinase is cell function specific. *J Physiol (Lond)* **565P**, C80.

Evans, A. M., Mustard, K. J. W., **Wyatt, C. N.**, Dipp, M., Kinnear, N. P. Hardie, D. G. (2004) Hypoxic pulmonary vasoconstriction: Is AMP-activated protein kinase the primary metabolic sensor and effector? *J Physiol (Lond)* **560P**, C43.

**Wyatt, C. N.**, Kumar, P., Peers, C., Kang, P., Hardie, D. G. & Evans, A. M. (2004) The potential role for AMP-kinase in hypoxic chemotransduction of the rat carotid body. *J Physiol (Lond)* **560P**, C44.

**Wyatt, C. N.** & Buckler, K. J. (2000) The effect of mitochondrial inhibitors on membrane currents in isolated neonatal rat carotid body type 1 cells. *J. Physiol.* **527**, 121P.

Dolphin, A. C., **Wyatt, C. N.**, Richards, J., Beattie, R. E., Craig, P., Lee, J.-H., Cribbs, L. L., Volsen, S. G. & Perez-Reyes, E. (1999) The effect of the calcium channel  $\alpha 2\text{-}\delta$  accessory subunit on expression of the low voltage-activated calcium channel  $\alpha 1\text{G}$ . *J. Physiol.* **518**, 115P.

**Wyatt, C. N.**, Brickley, K. & Dolphin, A. C. (1996) An antibody to an L-type calcium channel attenuates voltage-dependent barium currents in cultured rat dorsal root ganglion cells. *J. Physiol.* **495**, 79P.

Peers, C. & **Wyatt, C. N.** (1995) Hypoxic inhibition of  $\text{Ca}^{2+}$ -activated  $\text{K}^+$  channels in neonatal rat type I carotid body cells is not a membrane-delimited phenomenon. *Pflugers Archiv.* **429**, R147.

Peers, C., **Wyatt, C.N.** & Bee, D. (1995) Ca<sup>2+</sup> channel currents in isolated type I carotid body cells of normoxic and chronically hypoxic rats. *J. Physiol.* **489**, 73P.

**Wyatt, C.N.**, Peers, C., Wright, C. & Bee, D. (1994). K<sup>+</sup> currents in isolated type I carotid body cells of neonatal rats born and reared in hypoxia and normoxia. *J. Physiol.* **475**, 128P.

Weir, E.K., **Wyatt, C.N.**, Reeve, H.L., Archer, S.L. & Peers, C. (1994). Inhibition of K<sup>+</sup> and Ca<sup>2+</sup> currents in freshly isolated rat pulmonary artery smooth muscle cells by diphenylene iodonium. *J. Physiol.* **475**, 128P.

**Wyatt, C.N.**, Weir, E.K. & Peers, C. (1994). Inhibition of ionic currents in isolated type I cells of the neonatal rat carotid body by diphenylene iodonium. *J. Physiol.* **477**, 93-94P.

**Wyatt, C.N.** & Peers, C. (1993) Actions of doxapram on Ca<sup>2+</sup>-activated K<sup>+</sup> channels from isolated type I carotid body cells of the neonatal rat. *Brit. J. Pharmacol.* **110**, 24P.

Peers, C., McMorn, S. O., Reeve, H. L., **Wyatt, C. N.** & Vaughan, P. F. T. (1993) Inhibition of neuronal nicotinic acetylcholine receptors in the human neuroblastoma SH-SY5Y by desipramine and imipramine. *Brit. J. Pharmacol.* **110**, 69P

**Wyatt, C. N.** & Peers, C. (1992) Inhibition of Ca<sup>2+</sup>-activated K<sup>+</sup> currents in isolated type 1 cells of the neonatal rat carotid body by p-mercuribenzenesulphonic acid. *J. Physiol* **452**, 313P

## Conferences Organized

<u>Conference</u>	<u>Location/Date</u>	<u>Role</u>
XIX ISAC Conference	Leeds, UK, 2014	Member of Organizing and Scientific Committees
XX ISAC Conference	Baltimore, USA, 2017	Member of Organizing and Scientific Committee

## Invited Seminars

<u>Date</u>	<u>Host Organization and Title</u>
11/10/2020	<b>TEDx Dayton 2020.</b> ‘The Breathtaking Truth About Opioids’.
07/02/2020	NOVA Unliversity, Lisbon, Portugal, XX1st ISAC meeting. Meet the seniors: mentoring and emerging opportunities for young investigators. <b>Symposium Chair.</b> (Cancelled due to COVID-19)
04/7/2019	<b>Experimental Biology 2019</b> , Orlando, Fl. Carotid body sensing – more than just an O <sub>2</sub> sensor. <b>Co-Chair of symposium.</b> (DECLINED DUE TO WIFE’S SEVERE ILLNESS)
10/2/2018	Wilmington College, OH, Westheimer Peace Symposium, ‘Science of Opioid Addiction’.
7/24/2017	Johns Hopkins University, Baltimore, MD, XXth ISAC Meeting, Acute oxygen-sensing by the carotid body: a rattlebag of molecular mechanisms. <b>Plenary Lecture.</b>
10/22/2015	Case Western Reserve University, Titus Group, Department of Pediatrics, Cleveland, OH. ‘Oxygen-sensing by the carotid body: development and pathological modulation during obesity’.
06/24/2015	The Henry M. Jackson Foundation, Aerospace Toxicology Program, Wright Patterson Airforce Base OH. ‘Don’t Hold Your Breath: The Acute Hypoxic Ventilatory Response.’
05/16/2014	Society for Neuroscience – Ohio Chapter, Wright State University, Ohio. ‘Academic Search Committees and How to Impress Them’.
04/24/2013	<b>Experimental Biology 2013</b> , Boston, MA. Featured Topic: Hypoxic Chemotransduction: Defining the Oxygen Sensors. ‘Mitochondrial plasticity during the development of the acute hypoxic response’. <b>Chairman of session.</b>
04/05/2013	Department of Biology and Physics, Kennesaw State University, GA. The development of the acute hypoxic ventilatory response.
10/22/2012	Department of Physiology and Biophysics, Case Western Reserve University, Cleveland OH. The role for AMP-activated protein kinase in the acute hypoxic ventilatory response.
02/17/2012	Society for Neuroscience – Ohio Chapter, Miami University, Ohio. ‘Mitochondrial plasticity during the maturation of functional carotid bodies’.
10/13/2011	<b>The Chilean Physiological Society Annual Meeting</b> , Santiago, Chile. <b>Annual Plenary Lecture.</b> ‘The role of AMP-activated protein kinase in oxygen-sensing by the carotid body’.

- 09/16/2011** NCBP Department, Wright State University. 'Carotid bodies and Hypoxia'
- 03/28/2011** Biology Department, Wright State University. 'Carotid bodies and the acute hypoxic ventilatory response'.
- 05/10/2010** Galleon Pharmaceuticals, Horsham, PA. 'Oxygen-sensing by the peripheral arterial chemoreceptors'
- 04/28/2010** **Experimental Biology 2010**, Anaheim, California. **Featured Topic.** Mechanisms of Peripheral Chemoreception. 'Global knockout of AMP-activated protein kinase alpha subunits attenuates the hypoxic ventilatory response in mice.' **Chairman of session**
- 03/17/2010** Dept' Physiology, University of Connecticut. 'Molecular transduction of the acute hypoxic ventilatory response. The role of AMPK.'
- 03/11/2010** Dept' Neuroscience and Center for Molecular Neurobiology, Ohio State University, Columbus, Ohio. 'The role of AMP-activated protein kinase in the hypoxic ventilatory response.'
- 10/26/2009** Dept' Molecular Biosciences, Kansas University, Lawrence, KS. 'The role of AMP-activated protein kinase in acute oxygen-sensing'.
- 03/19/2009** Kettering College, Dayton, Ohio. 'Hypoxia and the control of breathing'.
- 11/2007** Ohio Physiological Society 22<sup>nd</sup> annual meeting 'AMP-activated protein kinase and oxygen-sensing in the carotid body'.

## Research Funding

<u>Dates</u>	<u>Award, funding body and title</u>
<b>2018</b>	NSF, Robert Noyce Teacher Scholarship Program Project. Partnering to Apply Science and Math Practices to Foster, Support, and Sustain STEM Teachers in High Need Schools. <b>\$1,006,979</b> . One of 3 Co-PIs. Not funded
<b>2016</b>	R15 MH113162-01 A novel role for phospholamban in the brain Not funded, Impact Score: 49, Percentile 44
<b>06/2015- 08/2015</b>	Awarded <b>\$37,074</b> by Galleon Pharmaceuticals, Horsham, PA. 'An investigation of the effects of putative respiratory stimulant compounds on isolated rat carotid body type I cells' <i>PI: C. N. Wyatt</i>
<b>01/2011- 11/2015</b>	Awarded <b>\$1,301,333</b> NIH 1RO1HL091836 National Heart Lung and Blood Institute 'AMP-activated protein kinase and oxygen-sensing'. <b>Priority score 13, percentile 3.0</b> <i>PI: C. N. Wyatt</i>
<b>07/2010- 08/2010</b>	Awarded <b>\$16,550</b> by Galleon Pharmaceuticals, Horsham, PA. 'The effect of putative respiratory stimulants on carotid body type I cells'. <i>PI: C. N. Wyatt</i>
<b>06/2008- 06/2010</b>	Awarded <b>\$130,000</b> Beginning Grant in Aid, American Heart Association. 'The role of AMP-activated protein kinase in oxygen sensing by the carotid body' <b>Priority score 1.4, percentile 2.46 (rated excellent, 3<sup>rd</sup> highest score in Great Rivers Affiliate BGIA 2008).</b> <i>PI: C. N. Wyatt</i>

### Competitive Internal WSU Research Awards:

<u>Date</u>	<u>Amount</u>	<u>Funding body</u>
<b>04/2010</b>	Awarded \$9,996	Research Initiation Grant by WSU.
<b>03/2008</b>	Awarded \$9,960	Seed fund grant WSU School of Medicine.
<b>01/2008</b>	Awarded \$20,000	Early Start/Augmentation grant by WSU.
<b>02/2007</b>	Awarded \$25,000	Research Challenge fund by WSU.

I was PI on all these internal research awards. Thomas L. Brown (NCBP Department) was a Co-PI on the 2010 Research Initiation Grant.

## Service

<u>Committee</u>	<u>Position</u>	<u>Dates</u>
<b>University</b>		
Graduate Council Student Affairs Committee	Member	2009-2011
University Parking and Transportation Committee	Member	2011-2012
IACUC	Member	2012-2019
IACUC	<b>Chairman</b>	2013-2017
Undergraduate Academic Policies Committee	Member	2019-
<b>College of Science and Mathematics</b>		
BMS retreat site selection committee	Member	2008
BMS retreat organising committee	Member	2010
BMS Admissions committee	Member	2012-2014
BMS Admissions committee	<b>Chairman</b>	2015
BMS Nominating committee	Member	2013-2014
Academic Policies Committee	Member	2019-2022
Undergraduate Neuroscience Steering Committee	Member	2014-
Undergraduate Neuroscience Course Design	Member	2015-
<b>ALL CoSM COMMITTEES</b>	<b>Assoc Dean</b>	<b>2017- 2019</b>
Graduate Studies Committee	Member	2019-
Program Review Committee	Member	2020
INTERIM DIRECTOR IASM PhD program	<b>Director</b>	2018-
<b>Boonshoft School of Medicine</b>		
BSoM Research Committee	Member	2010-2012 2016-2018
Focus Committee: Research	Member	2013
Curriculum Change (Doctoring)	<b>Co-Chair</b>	2014-2016
2 <sup>nd</sup> Year heart/lung/kidney module redesign	Member	2015-2016
LCME Subcommittee 1	Member	2015-2017
Steering committee Origins 1	Member	2016-
Steering committee Origins 2	<b>Director</b>	2016-2017
	Member	2017-
<b>Departmental</b>		
Seminar Series	<b>Organizer</b>	2013-2015
Annual Evaluation Screening Committee	Member	2013-2015
Cell Signalling Search Committee	<b>Chairman</b>	2013
<b>NCBP Interim Chair</b>	<b>Chairman</b>	2015-2016
Faculty Development Committee	Member	2016
Graduate Committee	Member	2019-
Associate Chair for Education	<b>Chairman</b>	2019-
Curriculum Committee	Member	2019-

**External Service**

IACUC Department of Veterans Affairs Medical Center	Member	2015-2016
American Physiological Society Respiration Section Programming Committee	Member	2013-2015

## **Scientific and Community Outreach**

- 2010** Organised endocrinology review session for Science Olympiad Camp at Wright State University.
- 2012-2013** Trained 7<sup>th</sup> and 8<sup>th</sup> grade middle school students in anatomy and experimental design for The Science Olympiad Competition. Recruited masters and Ph.D students from WSU to enrich the kids learning experience.
- 2013-2017** I was the Cub Scout Master for Yellow Springs Pack 578
- 2015- 2017** Chapter President Scouts for Equality for Champaign, Logan, Clark, Greene and Clinton County. Promoting non-discrimination within Boy Scouts of America.
- 2016-** Ran EMG and nerve conduction teaching labs in area high schools to promote the Neuroscience Undergraduate Degree Program.
- 2017-** Established NeuroLab to introduce high school students to neuroscience at Wright State University.