University of Birmingham

Dr Alex Conner PhD

Senior Lecturer in Medical Sciences

Cardiovascular and Respiratory Sciences

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About

Alex Conner has a degree and PhD in Molecular and Biological Sciences. His research interests lie in the structure and function of large membrane proteins. This involves using cell and molecular biology techniques with an emphasis on understanding the regulation of aquaporin water channels and the ligand-binding and activation of family B G protein-coupled receptors (GPCRs). See **Membrane Protein Structure and Function Research Group (http://www.birmingham.ac.uk/research/activity/mds/domains/cardio-resp-neuro/cardiovascular-sciences/membrane-protein-structure-and-function/index.aspx)** webpage.

Alex has over 40 publications in scientific journals, reviews and book chapters. He has received grants from the British Heart Foundation and the Wellcome Trust.

He is experienced in teaching of science, training of non-academic skills and professional coaching and uses all of these methods to help students and staff develop and achieve their goals.

Qualifications

- Certificate in Professional Coaching – University of Warwick 2013
- Post-graduate qualification in University teaching – University of Warwick 2012
- PhD Molecular Biology – University of Birmingham - 2000

Biography

Alex Conner graduated from the School of Bioscience at the University of Birmingham with a Degree in Biological Sciences (Genetics) and a PhD in Molecular Biology in 2000. He worked as a post-doctoral fellow on grants funded by the Wellcome trust from 2000-2006, splitting his time between Aston University, the University of Birmingham and a short stint as a Wellcome VIP fellow at the University of Rochester Medical School, New York. His research involved the molecular structure and function analysis of large membrane proteins (specifically G protein-coupled receptors or GPCRs) and resulted in a number of key publications describing similarities and differences between the two major families (A and B). Alex joined the Medical School of the University of Swansea as a Junior Lecturer in 2006, which started a continuing interest in psychiatric biology. After less than a year, he was appointed as Assistant Professor at Warwick Medical School where he spent the next six years researching GPCRs (with an emphasis on the CGRP receptor), psychiatric biology and more recently, the role of aquaporins (AQPs) as regulated water pores in health and disease. He has published more than 40 times, has a University teaching qualification and recently obtained a certificate in professional coaching from the University of Warwick. He is an external consultant facilitator and trainer, which involves writing, delivering and 'training the trainers' for a number of non-academic skills including efficiency as a researcher, delivering impact, group-work behaviour and presentation skills.

Alex Conner joined the University of Birmingham, College of Medicine and Dentistry as a Senior Lecturer in Medical Sciences in August 2013.

Teaching

- Deputy Module Leader – Renal and Urinary Physiology – BMedSci
- Deputy Module Leader – Renal and Urinary Physiology – MBCHB

Postgraduate supervision

Currently supervising 3 PhD students

Research

Research includes:

Molecular structure and function analysis of large membrane proteins.

This includes:

- Understanding the role of the CGRP receptor. CGRP is a potent vasodilator found throughout the vasculature, known to be involved in migraine and pain and linked to cardiovascular disease and stroke.
- Discovering novel regulatory mechanisms for the trafficking of the aquaporin (AQP) family of water pores. More recently, this includes the hypotonicity-induced movement of AQP4, a protein known to be involved in the formation of brain oedema following stroke, blunt-force trauma and some cancers.

Other activities

Coaching: Alex Conner is a professional coach, using a non-directive approach to identify issues arising from career-related processes.

Alex Conner is a consultant trainer/facilitator writing, delivering and 'training the trainers' for a number of courses. These include:

- Effective Team-working
- Networking skills
- Delivering Impact
- Working Effectively with a Supervisor
- Poster design

Publications

- Woolley MJ and Conner AC (2013) Comparing the molecular pharmacology of CGRP and adrenomedullin. *Curr Protein Pept Sci*. 14(5):358-74
- Conner AC, Bill RM and Conner MT (2013) An emerging consensus on aquaporin translocation as a regulatory mechanism. *Mol Membr Biol*. 30(1):1-12
- Vohra S, Taddese B, Conner AC, Poyner DR, Hay DL, Barwell J, Reeves PJ, Upton GJ and Reynolds CA (2012) Similarity between class A and class B G-protein-coupled receptors exemplified through calcitonin gene-related peptide receptor modelling and mutagenesis studies. *J R Soc Interface*. 10(79):20120846
- Conner AC, Conner MT, Bland CE, Taylor LH, Brown JE, Parri HR and Bill RM (2012) Rapid aquaporin translocation regulates cellular water flow: mechanism of hypotonicity-induced subcellular localization of aquaporin 1 water channel. *J Biol Chem.* 287(14):11516-25
- Barwell J, Woolley MJ, Wheatley M, Conner AC and Poyner DR (2012) The role of the extracellular loops of the CGRP receptor, a family B GPCR. *Biochem Soc Trans*. 40(2):433-7 Review

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