

## Professor David J Webb CBE

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### Education:

1964 – 1971 Dulwich College (Kent Scholarship)

1972 – 1977 The Royal London Hospital Medical School (University of London)

### University Degrees:

1977 MB BS University of London

1990 MD University of London

2000 DSc University of Edinburgh

**See also:** [Edinburgh Research Explorer](#); [Google Scholar](#); [LinkedIn](#); [Wikipedia](#)

**\* For paper correspondence, during COVID-19, please use my home address. For other means of contact please use my email address or mobile phone number.**

## Summary CV:

**Education and training:** Born in Greenwich and educated at Dulwich College and the Royal London Hospital, I trained in general internal medicine, cardiology and clinical pharmacology & therapeutics, and held clinical and research posts in London and Scotland, before appointment to the University of Edinburgh (UoE)'s Christison Chair of Therapeutics & Clinical Pharmacology in 1995.

**Clinical:** In my career, I have been a clinically active consultant physician, clinician scientist and clinical pharmacologist, running a European Society for Hypertension (ESH)-accredited Hypertension Excellence Centre in Edinburgh. My main clinical and research interests are in hypertension and cardiovascular risk management, but also include lipid disorders, type 2 diabetes, chronic kidney disease and clinical toxicology.

**Research leadership (UoE):** Supported mainly by the British Heart Foundation (BHF), Medical Research Council and Wellcome Trust, my research focuses on the pathophysiology of hypertension and renal disease, particularly arterial structure and function, with work that has guided subsequent understanding of arterial stiffness, and the therapeutic potential of phosphodiesterase 5 inhibitors and endothelin receptor antagonists. I have published >500 peer-reviewed papers, and 5 books, on clinical pharmacology and cardiovascular disease. My work has received >45,000 citations (current h-index 109).

I am a principal investigator in Edinburgh's BHF Centre of Research Excellence (CoRE) and run its Hypertension and Renal Theme (HART), having won a competitive Wellcome Trust Cardiovascular Research Initiative (£7M (€7.9M) grant; 1998-2001) with which I established Edinburgh's Centre for Cardiovascular Science in 2002 (since supported by a series of large BHF CoRE Awards). I was also a member of the core group responsible for raising funds to move research to the new Queen's Medical Research Institute at Little France: £5M (€5.65M) BHF; £22.4M (€25.3M) Wellcome Trust; £27M (€30.5M) UoE). Previously, I ran Edinburgh's University Department of Medicine (1997-2001) and have been President of the Scottish Society of Physicians (2010-11).

**Teaching and training (UoE):** I teach and train undergraduate medical, pharmacy and Masters' students, along with postgraduate scientists and physicians (lead/primary supervisor for >30 PhD and 14 MD degrees). I have led two Translational Medicine & Therapeutics (TMT) PhD programmes for clinicians: the Scottish TMT initiative (STMTI; Wellcome Trust) and Scottish Clinical Pharmacology and Pathology Programme (SCP3; MRC). These were integral components of a UK-wide strategy to increase research power in clinical pharmacology and translational science. Many of my trainees have gone on to successful careers in medicine, academia and the pharmaceutical industry, including Profs David Newby, Duke of Edinburgh BHF Chair of Cardiology, Edinburgh; Michael Eddleston, Chair of Clinical Toxicology, Edinburgh; Bill Haynes, Vice President, Novo Nordisk Research Centre, Oxford; Brian Walker, Pro Vice Chancellor for Research & Chair of Medicine, Newcastle; and Ian Wilkinson, Director of Clinical Trials Unit, & Chair of Therapeutics, Cambridge.

**Leadership of the British Pharmacological Society (BPS):** My main academic discipline is pharmacology, with my interests spanning pharmacology, clinical pharmacology and therapeutics (CPT), as well as the cost-effectiveness of medicines and the ethics of research. As a UK-based pharmacologist, my national learned society is the BPS. I am Past President, having previously held a number of posts, including Vice President (Clinical), Vice President (Meetings), President Elect and President. BPS awarded me the SKB Silver Medal for research (1994), and the Lilly Prize and Gold Medal for longstanding contributions to CPT (2003).

**Support for clinical pharmacology:** With an Edinburgh colleague, Prof Simon Maxwell, I co-wrote a Commentary on the risks to UK clinical pharmacology (*Lancet* 2006;**367**:799), aimed at improving the NHS delivery of safer and better targeted medicines by medical graduates. This led, through a review chaired by Prof Sir Robert Lechler (Medical Schools Council Safe Prescribing Working Group: see Aronson J. *Br J Clin Pharmacol* 2010;**69**:111-7), to a revision of the GMC's advice on undergraduate medical prescribing skills, and the delivery by BPS (with the UK Medical Schools Council) of a Prescribing Safety Assessment examination, now taken by all 8000+ UK medical students and overseas medical graduates entering the UK, which must be passed to enter FY2 training (*Lancet* 2019;**394**:283-5). In addition, the Lechler review led to

the creation of UK translational medicine training programmes (SCP3 from MRC; STMTI from WT), with awards for both of which I was a leader in Scotland.

**Leadership in international pharmacological associations:** I am a past Executive Committee member of EACPT and hosted its biennial international meeting in Edinburgh in 2009. I am a current Executive Committee member of the International Union of Basic and Clinical Pharmacology (IUPHAR), the global overarching organisation for pharmacology, having been its Clinical President for 2 years (2017-18). I am also future President of IUPHAR's World Congress of Basic & Clinical Pharmacology, to be held in Glasgow.

**Leadership at Medicines and Healthcare products Regulatory Agency (MHRA):** I have been Deputy Chair of MHRA Unitary Board since 2018, and Non-Executive Director since 2013. I have chaired the newly re-established NIBSC Scientific Advisory Committee since 2014, helping to reorganize and integrate its science, ensure regular external reviews of its divisions, and renew its quinquennial funding from DHSC/NIHR to support research. I also take a major interest in the Clinical Practice Research Datalink (CPRD), supporting its wider uptake and the broader use of real-world data.

**Leadership within the NHS in HTA:** Working in Scotland for 30 years, a proportion of my non-academic time has been used to support Scottish NHS/Government initiatives. I helped establish the Scottish Medicines Consortium (SMC), Scotland's equivalent of NICE single technology assessment. This was a multi-disciplinary approach to health technology assessment (HTA) involving the NHS, academia, and the pharmaceutical industry. I chaired SMC's New Drugs Committee (2001-2004) and SMC Board (2004-2008) with stakeholders including physicians, health economists and health service managers, as well as representatives from industry, patient and public bodies and Scottish Government. We worked closely with leaders at NICE, including Sir Andrew Dillon (CEO) and Sir Mike Rawlins (Chair), to support the role of HTA within the UK NHS, and to persuade the public and pharmaceutical industry of its value.

**Leadership within the Royal Colleges:** I worked with the Royal College of Physicians (London) as Chair of the Clinical Pharmacology Committee (1998-2000), and was involved in two working groups, leading to influential reports on "*Clinical Pharmacology & Therapeutics in a Changing World*" and "*Costly Medicines*". I was Vice-President of the Royal College of Physicians (Edinburgh: 2006-09) and remain Clinical Training Programme Director for Clinical Pharmacology & Therapeutics in Scotland (twice: 2007-10 and since 2014).

**Working with industry:** I have worked with industry on translational studies helping to direct the development of renin inhibitors, angiotensin receptor blockers, phosphodiesterase inhibitors and endothelin receptor antagonists (mainly with GSK, Pfizer and Roche, as well as Actelion and Alnylam). In 2011 I helped to establish Edinburgh's Wellcome Trust Clinical Research Facility as the first academic MHRA-accredited first-in-human centre in the UK.

I am a founder member of the UK Clinical Pharmacology Skills Alliance (CPSA), which is a formal ongoing collaboration between BPS, the Association of the British Pharmaceutical Industry (ABPI) and the Faculty of Pharmaceutical Medicine (FPM). I have engaged with BPS, MRC, ABPI and FPM over many years, and spoken at the ABPI's annual meetings, to gain recognition of the need to promote careers in clinical pharmacology.

**Communication, media and public engagement:** I speak widely at international research meetings (Europe, US & Asia), and have organised UK, European and World Congresses on hypertension, pharmacology and endothelin biology. I have given evidence at Scottish and Westminster Parliaments on drug safety, prescribing skills and value for money in new medicines. I work regularly with the UK Science Media Centre.

I also enjoy engaging with the public on topics that matter to them (often related to medicines) and in debates on priorities and values. In the recent past, I have been involved in debates and discussions at the Cheltenham Science Festival and Edinburgh Science Festival discussing equity and efficiency in managing NHS budgets. I also advised on, and narrated, an award-winning television drama documentary on the TGN-1412 disaster at Northwick Park ("[When a drug trial goes wrong: emergency at the hospital](#)").

## MAJOR ROLES

### Academic: Current [University of Edinburgh unless otherwise stated]

2015 Chair, Hypertension and Renal Theme (HART), Centre for Cardiovascular Science  
2004 Research Strategy Group, BHF Centre of Research Excellence (CoRE)  
1995 Christison Professor of Therapeutics and Clinical Pharmacology  
1990 Director, University of Edinburgh's Clinical Research Centre

### Academic: Previous

2016-2019 Clinical Trials Committee, British Heart Foundation (BHF)  
2010-2014 Pharmacology Lead, MRC Clinical Pharmacology & Pathology Programme  
2010-2011 President, Scottish Society of Physicians  
2008-2015 Director, Wellcome Trust Translational Medicine & Therapeutics Initiative  
2008-2010 Faculty, National Institute for Health Research  
2006-2015 Collaborative Research Steering Group, British Hypertension Society  
2002-2004 College of Medicine and Veterinary Medicine Research Committee  
2001-2004 Strategic Co-ordinating Group: Transfer to Little France  
2000-2004 Head, Centre for Cardiovascular Science  
1999-2001 Convenor, Cardiovascular Interdisciplinary Group  
1998-2000 Little France Research Institute Project Board  
1998-2001 Leader, Wellcome Trust Cardiovascular Research Initiative  
1997-2001 Head, Department of Medicine, University of Edinburgh  
1990-1995 Senior Lecturer in Medicine  
1985-1985 Lecturer, Clinical Pharmacology, St George's Medical School, University of London  
1982-1985 MRC Clinician Scientist, MRC Blood Pressure Unit, University of Glasgow

### Educational

2016- Director, UK CPT Mentoring Scheme, IUPHAR  
2014-2019 Chair, Executive Board, UK Prescribing Safety Assessment (BPS)  
1998-2015 Director, Education Programme, Wellcome Trust Clinical Research Facility  
1998-2001 Management Board, Trans-Faculty Wellcome Trust 4-Year PhD Programme  
1996-1998 Medical Education Committee's Curriculum Review: *VISION 2000*

### National Health Service

2014- Training Programme Director, SE Scotland, Clinical Pharmacology & Therapeutics  
2007- Director, Edinburgh ESH Centre of Excellence in Hypertension  
1990- Honorary Consultant Physician, Lothian University Hospitals NHS Trust  
2003-2006 Chair, CVD/Stroke Research Portfolio Steering Group, Scot. Executive Health Dept  
2001-2010 National Specialty Adviser Clinical Pharmacology, Scot Executive Health Dept  
1998-2001 Chair, Committee on Clinical Pharmacology, Royal College of Physicians, London  
1997-2001 Clinical Pharmacologist, Multi-centre Research Ethics Committee for Scotland  
1993-2003 Lothian Research Ethics Committee, Faculty of Medicine Representative  
1985-1989 Honorary Senior Registrar in Medicine, St. George's Hospital, London  
1982-1985 Honorary Registrar in Medicine, Western Infirmary, Glasgow  
1980-1982 Registrar: Medical rotational scheme: Royal London Hospital

1977-1980 Junior medical posts: The Royal London Hospital scheme

### **Regulatory**

2021- Member, Patient Safety and Engagement Committee, MHRA  
2018- Deputy Chair, MHRA Unitary Board  
2014- Chair, Scientific Advisory Committee, NIBSC  
2014-2016 Member, Audit & Risk Assessment Committee, MHRA  
2013- Non-Executive Director, MHRA Board (reappointed 2016)  
2004-2008 Chair, Scottish Medicines Consortium  
2002-2012 Chair, Advisory Board, Centre for Adverse Drug Reactions Scotland (CARDS)  
2001-2004 Chair, Scottish Medicines Consortium New Drugs Committee  
2001-2004 Vice Chair, Scottish Medicines Consortium  
1996-2001 Chair, Lothian Area Drug & Therapeutics Committee

### **Learned Societies**

2022- President, 19th World Congress of Basic & Clinical Pharmacology, IUPHAR  
2017- Co-founder, Clinical Pharmacology Skills Alliance (CPSA; academic/industry)  
2014- Executive Committee member, IUPHAR  
2017-2018 Chair, Clinical Division, IUPHAR  
2016-2017 President, British Pharmacological Society  
2014-2015 President Elect, British Pharmacological Society  
2011-2013 Vice President (Meetings), British Pharmacological Society  
2006-2009 President, European Association for Clinical Pharmacology & Therapeutics  
2006-2009 Vice President, Royal College of Physicians, Edinburgh

### **External Grant Review**

2016-2019 BHF Clinical Trials Committee  
2008-2011 MRC Efficacy and Mechanism Evaluation (EME) Programme, NIHR  
2004-2007 French National Institute of Health, Département de l'Evaluation Scientifique, Inserm  
evaluation expert adviser for projects and site visits  
2004-2008 BHF Project Grants Committee (Chair)  
2001-2005 Health Research Board (HRB) for Ireland Programme Grants Committee  
1997-2000 The Wellcome Trust Physiology & Pharmacology Panel  
1996-1998 MRC, Physiological Medicine Grants Committee

### **Working Parties/Reports**

2017 Methods of evaluating evidence; Academy of Medical Sciences (AMS)  
2015 Ensuring UK leadership in experimental medicine; ABPI/BPS  
2013 Chair, Task and Finish Group on Scottish Medicines Consortium; Scot Govt  
2011 The regulation and governance of medical research; AMS  
2010 Advisory Board, Department of Trade & Industry Innovation Pass  
2009 Office of Life Sciences Blueprint, Clinical Pharmacology Task & Finish Group  
2008 Scottish Management of Antimicrobial Resistance Action Plan; Scottish Government  
2008 Complementary and Alternative Medicines; AMS  
2008 Witness, Physicians & Pharma Industry Working Party, Royal College of Physicians  
2007 Short Life Working Group on Safe Prescribing: GMC/Medical Schools Council/et al.

2007 Adviser, Board of Science Working Party on Evidence-Based Prescribing; BMA  
 2007 Chair, Working Party Meeting on Safe Prescribing; Joint BPS/European Association for Clinical Pharmacology & Therapeutics  
 2007 Short Life Working Group on Consistent Advice; Scottish Medicines Consortium, Scottish Intercollegiate Guidelines Network & Quality Improvement Scotland  
 2006 Co-Chair, Towards Better Safety Assessment of Medicinal Products; AMS  
 2000 Prescribing of Costly Medicines; Royal College of Physicians, London  
 2000 Consensus on Misconduct in Biomed. Research; Royal College of Physicians (Edin)  
 2000 Management of Hypertension: Scottish Intercollegiate Guidelines Network  
 1999 Clinical Pharmacology in a Changing World; Royal College of Physicians, London

### **Fellowships**

2017 Academia Europaea  
 2014 British Hypertension Society (first elected cohort; FBHS)  
 2004 British Pharmacological Society (FBPhS)  
 2004 Royal Society of Edinburgh (FRSE)  
 2001 European Society of Cardiology (FESC)  
 1999 Academy of the Medical Sciences (first elected cohort; FMedSci)  
 1996 American Heart Association (International Fellowship; FAHA)  
 1994 Royal College of Physicians, London (FRCP Lond)  
 1993 Faculty of Pharmaceutical Medicine (FPM) *by distinction*  
 1992 Royal College of Physicians, Edinburgh (FRCP Edin)

### **Other Awards & Distinctions**

2020 Awarded CBE (Commander of the British Empire) in the Queen's Birthday Honours  
 2020 Council Member, Academy of Medical Sciences  
 2019 Chair, Trustees of the Edinburgh High Blood Pressure Fund  
 2018 Honorary Fellowship, British Pharmacological Society  
 2017 Fourth Tomoh Masaki Award, ET-15 (previously to Yanagisawa, Goto, Clozel)  
 2017 BHF Advisory Council  
 2017 Biennial Scientific Award, European Association for Clinical Pharmacology  
 2016 Honorary Fellowship, Faculty of Pharmaceutical Medicine  
 2016 Finalist, BMA Awards Education Team of the Year (Prescribing Safety Assessment)  
 2016 Finalist, BMA Awards Research Team of the Year (PATHWAY-2 trial)  
 2014 Nominated as President, 19<sup>th</sup> IUPHAR World Congress of Pharmacology (2022)  
 2003 Lilly Biennial Prize & Gold Medal for distinction in Clinical Pharmacology, BPS  
 1999 RD Wright (Howard Florey) Lecturer, High Blood Pressure Council of Australia  
 1998 Diploma Clin Pharm *Honoris Causa*, Worshipful Society of Apothecaries, London  
 1998 Research Leave Fellowship, Wellcome Trust (1998-2001)  
 1994 SKB Biennial Prize & Silver Medal for distinction in research, BPS  
 1994 Austin Doyle Prize Lecture, International Society of Hypertension

## Large Grants

### Infrastructural grants

- 2013 BHF. Research Excellence Award (RE/13/3/30183). **£3,000,000 (€3,389,289)**. Professors M Bradley, KAA Fox, T Freeman, N Hastie, JJ Mullins (PI), DE Newby, B Peault, JR Seckl, BR Walker, Prof DJ Webb; external – Professors A Cowley, J Girkin, C MacRae.
- 2008 BHF. Research Excellence Award (RE/08/001/23904). **£7,600,000 (€8,586,200)**. Professor KAA Fox (PI), A Harmar, JJ Mullins, DE Newby, J Savill, JR Seckl, BR Walker, Prof DJ Webb, I Wilmut; external - Professors J Girkin, C MacRae.
- 2004 MRC. Health Informatics Consortium. **£1,998,412 (€2,257,732)**. Profs MP Atkinson, Paul Boyle, Sir A Cuschieri, P Davey, C Goble, A Grant, T MacDonald, R Marshall, A Morris, J Norrie, N Pitts, IW Ricketts, F Sullivan (PI). Prof DJ Webb as named collaborator on behalf of the Scottish Medicines Consortium.
- 2003 BHF Second Cardiovascular Initiative. Infrastructural Grant. Proposal for a BHF Imaging Centre in Edinburgh. **£2,243,773 (€2,534,932)**. Prof KAA Fox (PI), Prof DJ Webb, Prof JJ Mullins, Prof JR Seckl, Prof BR Walker, Prof N McDicken, Dr I Marshall & Dr DE Newby.
- 2002 Science Research Investment Fund and Scottish Higher Education Funding Council (SRIF/SHEFC). Establishment of a Research Institute for Medical Cell Biology at the New Royal Infirmary of Edinburgh. **£22,400,000 (€25,306,694)**. Building over 3 years. Prof C Haslett (PI), Prof H Critchley, Prof KAA Fox, Prof A McNeilly, Prof R Miller, Prof JJ Mullins, Prof J Savill, Prof JR Seckl, and Prof DJ Webb.
- 1999 BHF Cardiovascular Initiative. Infrastructural Grant. Facility for Integrative Cardiovascular Research. July 1999. **£5,099,457 (€5,761,179)**. Prof KAA Fox, Prof JR Seckl, Prof DJ Webb (PI).
- 1998 The Wellcome Trust. Cardiovascular Research Initiative. **£7,000,000 (€7,908,342)**. for 7 years. Professor KAA Fox, Professor C Haslett, Dr JJ Mullins, Professor JR Seckl, Prof DJ Webb (PI).
- 1997 The Wellcome Trust. "Clinical Research Facilities Initiative". **£4,045,493 (€4,570,449)**. Prof DJ Webb (Director: Cardiovascular Programme & Research Training Programme) and others. Research Director and Application Coordinator: Prof PC Butler.

### Research grants

- 2016 BHF. Clinical Study (CS/16/1/31878). Clinical study of UMOD NKCC2 interaction on salt-sensitivity in hypertension. **£653,756 (€738,589)**. June 2016 for 3.5yrs. Padmanabhan S (PI), Macdonald T, Webb DJ.
- 2014 BHF. Clinical Study (CS/14/1/30659). Treatment In the Morning versus Evening (TIME) Study. Brown M, Ford I, McDonald T (PI), Mackenzie I, Webb DJ, Williams B. **£1,059,948 (€1,197,490)**.
- 2012 BHF Special Project (SP/12/8/29620). A randomized open-label branded endpoint trial to compare the effects of spironolactone to chlortalidone on left ventricular mass and arterial stiffness in stage 3 chronic kidney disease (SPIRO-CKD). **£964,216 (€1,089,336)**. Dr C Ferro, Dr JN Townsend (PI), Prof DJ Webb, Dr D Wheeler, Dr IB Wilkinson.
- 2008 BHF. Programme Grant (SP/08/002). A Programme for Prevention And Treatment of Resistant Hypertension With Algorithm based TherapY (PATHWAY). Supplement of £691,351: **£2,585,802 (€2,921,344)**. Professors M Brown (PI), M Caulfield, I Ford, T Macdonald, G Macgregor, G McInnes, N Poulter, P Sever, D Webb and B Williams.

### Research training grants

- 2013 BHF. Intermediate Clinical Research Fellowship (FS/13/30/29994) for Dr Neeraj Dhaun. Macrophage regulation of the pro-hypertensive and pro-inflammatory effects of endothelin-1. **£757,149 (€855,399)**. Sponsor: Prof DJ Webb.

- 2010 MRC Clinical Pharmacology and Pathology Fellowship Programme. (G1000419). Scottish Clinical Pharmacology and Pathology Programme (SCP<sup>3</sup>). From September 2010 for 5 years. **£1,849,964 (£2,090,021)**. Profs Iain McInnes (Programme Lead); Prof David Webb (Clinical Pharmacology Lead); Prof David Harrison (Pathology Lead).
- 2009 BHF. Four-Year PhD Programme. **£3,000,000 (£3,389,289)**. D Webb as co-principal supervisor (14 total). Coordinator: M Bailey.
- 2008 The Wellcome Trust. Edinburgh Clinical Academic Track (ECAT) Clinical PhD Training Programme. **£5,100,000 (£5,761,792)**. Prof J Iredale (Director) and Prof BR Walker (Deputy Director). Prof DJ Webb (Programme supervisor, and Lead, Wellcome Trust CRF Education Programme) and others.
- 2008 Wellcome Trust/Wyeth. Scottish Translational Medicine and Therapeutics Initiative (STMTI) (WT 085664). **£5,500,000 (£6,213,697)**. Prof DJ Webb (PI; Director) and Prof IB McInnes (Deputy Director), and others.

#### Publications (see [Google Scholar](#) or [PubMed](#) for full list)

Original research papers: >350

Citations: >45,000

H-Index: 109

Review papers: >250

Authored books: 7

Book chapters: >40

Reports & monographs: >20

#### Selected Original Research Papers (from >350)

1. Anand A, Farrah TE, Miller-Hodges E, Shah ASV, Strachan FE, Carter E, Johnston NR, **Webb DJ**, Mills NL, Dhaun N. Serial troponin measurements to monitor risk and response to endothelin A antagonism in chronic kidney disease. *Nephrol Dial Transplant* 2021;**36**:375-7.
2. European Society of Hypertension COVID-19 Task Force. The Covid-19 pandemic compromised routine care for hypertension: a survey conducted among Excellence Centers of the European Society of Hypertension. *J Hypertens* 2021;**39**:190-5.
3. Crosse EI, Gordon-Keylock S, Rybtsov S, Binagui-Casas A, Felchle H, Nnadi NC, Kirschner K, Chandra T, Tamagno S, **Webb DJ**, Rossi F, Anderson RA, Medvinsky A. Multi-layered spatial transcriptomics identify secretory factors promoting human haematopoietic stem cell development. *Cell Stem Cell* 2020;**27**:822-39
4. Farrah TE, Anand A, Gallacher PJ, Kimmitt R, Carter E, Dear JW, Mills NL, **Webb DJ**, Dhaun N. Endothelin receptor antagonism improves lipid profiles and lowers PCSK9 (proprotein convertase subtilisin/kexin type 9) in patients with chronic kidney disease. *Hypertension* 2019;**74**:323-30.
5. Heerspink HJL, Parving H-H, Andress DL, et al., on behalf of the SONAR Committees and Investigators (**Webb DJ**, DMEC Member). Atrasentan and renal events in patients with type 2 diabetes and chronic kidney disease (SONAR): a double-blind, randomised, placebo-controlled trial. *Lancet* 2019;**393**:1937-47.
6. Czopek A, Moorhouse R, Guyonnet L, Farrah T, Lenoir O, Owen E, van Bragt J, Costello HM, Menolascina F, Baudrie V, **Webb DJ**, Kluth DC, Bailey MA, Tharaux PL, Dhaun N. A novel role for myeloid endothelin-B receptors in hypertension. *Eur Heart J* 2019;**40**:768–84.
7. Culshaw GJ, Costello HM, Binnie D, Stewart KR, Czopek A, Dhaun N, Hadoke PWF, **Webb DJ**, Bailey MA. Impaired pressure natriuresis and non-dipping blood pressure in rats with early type 1 diabetes mellitus. *J Physiol* 2019;**597**:767-80
8. Williams B, MacDonald TM, Morant SV, **Webb DJ**, et al. for the British Hypertension Society's PATHWAY Studies Group. Endocrine and haemodynamic changes in resistant hypertension, and blood pressure responses to spironolactone or amiloride: the PATHWAY-2 mechanisms substudies.



*Lancet Diabetes Endocrinol* 2018;**6**:464-75.

9. Brown MJ, Williams B, Morant SV, **Webb DJ**, *et al.* for the British Hypertension Society's PATHWAY Studies Group. Effect of amiloride, or amiloride plus hydrochlorothiazide, versus hydrochlorothiazide on glucose tolerance and blood pressure (PATHWAY-3): a parallel-group, double-blind randomised phase 4 trial. *Lancet Diabetes Endocrinol* 2016;**4**:136-47.
10. Williams B, MacDonald TM, Morant S, **Webb DJ**, *et al.* for the British Hypertension Society's PATHWAY Studies Group. Spironolactone versus placebo, bisoprolol, and doxazosin to determine the optimal treatment for drug-resistant hypertension (PATHWAY-2): a randomised, double-blind, crossover trial. *Lancet* 2015;**386**:2059-68.
11. Bateman DN, Dear JW, Thanacoody HKR, Thomas SHL, Eddleston M, Sandilands EA, Coyle J, Copoper JG, Rodriguez, A, Butcher I, Lewis SC, Vliegenthart ADB, **Webb DJ**, Gray A. Reduction of adverse effects from intravenous acetylcysteine treatment for paracetamol poisoning: randomized controlled trial. *Lancet* 2014;**383**:697-704.
12. Ben-Shlomo Y, Spears M, Boustred C, *et al.* Aortic pulse wave velocity improves cardiovascular event prediction: an individual participant meta-analysis of prospective observational data from 17,635 subjects. *J Am Coll Cardiol* 2014;**63**:636-646. [cited >1000 times]
13. Study of the Effectiveness of Additional Reductions in Cholesterol and Homocysteine (SEARCH) Research Collaborative Group. Intensive lowering of LDL cholesterol with 80 mg versus 20 mg simvastatin daily in 12064 survivors of myocardial infarction: a double-blind randomised trial. *Lancet* 2010;**376**:1658-69
14. The ASTRAL Investigators. Revascularization versus medical therapy for renal-artery stenosis. *N Engl J Med* 2009;**361**:1953-62.
15. Dhaun N, Macintyre IM, Melville V, Lilitkarntakul P, Johnston NR, Goddard J, **Webb DJ**. Blood pressure-independent reduction in proteinuria and arterial stiffness after acute endothelin-A receptor antagonism in chronic kidney disease. *Hypertension* 2009;**54**:113-9.
16. Heaton A, **Webb DJ**, Maxwell SRJ. Undergraduate preparation for prescribing: the views of 2413 UK medical students and recent graduates. *Br J Clin Pharmacol* 2008;**66**:128-34.
17. Gudmundsdóttir IJ, Lang NN, Boon NA, Ludlam CA, **Webb DJ**, Fox KA, Newby DE. Role of the endothelium in the vascular effects of the thrombin receptor (protease-activated receptor type 1) in humans. *J Am Coll Cardiol* 2008;**51**:1749-56.
18. Oliver JJ, Melville VP, **Webb DJ**. Effect of regular phosphodiesterase type 5 inhibition in hypertension. *Hypertension* 2006;**48**:622-7.
19. Goddard J, Eckhart C, Johnston NR, Cumming AD, Rankin AJ, **Webb DJ**. Endothelin A receptor antagonism and angiotensin-converting enzyme inhibition are synergistic via an endothelin B receptor-mediated and nitric oxide-dependent mechanism. *J Am Soc Nephrol* 2004;**15**:2601-10.
20. Goddard J, Johnston NR, Hand MF, Cumming AD, Rabelink TJ, Rankin AJ, **Webb DJ**. Endothelin-A receptor antagonism reduces blood pressure and increases renal blood flow in hypertensive patients with chronic renal failure: a comparison of selective and combined endothelin receptor blockade. *Circulation* 2004;**109**:1186-93.
21. Labinjoh C, Newby DE, Pellegrini MP, Johnston NR, Boon NA, **Webb DJ**. Potentiation of bradykinin-induced tissue plasminogen activator release by angiotensin-converting enzyme inhibition. *J Am Coll Cardiol* 2001;**38**:1402-8.
22. Witherow FN, Helmy A, **Webb DJ**, Fox KA, Newby DE. Bradykinin contributes to the vasodilator effects of chronic angiotensin-converting enzyme inhibition in patients with heart failure. *Circulation* 2001;**104**:177-81.

23. Wilkinson IB, MacCallum H, Flint L, Cockcroft JR, Newby DE, **Webb DJ**. The influence of heart rate on augmentation index and central arterial pressure in humans. *J Physiol (Lond)* 2000;525:263-70. [cited >1000 times]
24. Kyriakides ZS, Kremastinos DT, Kolettis TM, Tasouli A, Antoniadis A, **Webb DJ**. Acute local endothelin<sub>A</sub> receptor antagonism prevents normal reduction of myocardial ischemia on repeated balloon inflations during angioplasty. *Circulation* 2000;102:1937-43.
25. **Webb DJ**, Muirhead GJ, Wulff M, Sutton JA, Levi R, Dinsmore WW. Sildenafil citrate potentiates the hypotensive effects of nitric oxide donor drugs in male patients with stable angina. *J Am Coll Cardiol* 2000;36:25-31.
26. Helmy A, Jalan R, Newby DE, Hayes PC, **Webb DJ**. Role of angiotensin II in regulation of basal and sympathetically stimulated vascular tone in early and advanced cirrhosis. *Gastroenterology* 2000;118:565-72.
27. Newby DE, Wright RA, Labinjoh C, Ludlam CA, Fox KAA, Boon NA, **Webb DJ**. Endothelial dysfunction, impaired endogenous fibrinolysis, and cigarette smoking: a mechanism for arterial thrombosis and myocardial infarction. *Circulation* 1999;99:1411-5.
28. McEwan PE, Gray GA, **Webb DJ**, Kenyon CJ. Differential effects of angiotensin II on cardiac cell proliferation and intracoronary perivascular fibrosis *in vivo*. *Circulation* 1998;98:2765-73.
29. Newby DE, Flint LL, Fox KAA, Boon NA, **Webb DJ**. Reduced responsiveness to endothelin-1 in peripheral resistance vessels of patients with syndrome X. *J Am Coll Cardiol* 1998;31:1585-90.
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#### **Selected Review Articles (from >250)**

1. Guthrie G, Poulter N, Macdonald T, Ford I, Mackenzie I, Findlay E, Williams B, Brown M, Lang C, **Webb D**. Commentary - Chronotherapy in hypertension: the devil is in the details. *Eur Heart J*. 2020;**41**:1606-7.
2. Farrah TE, Dhillon B, Keane PA, **Webb DJ**, Dhaun N, The eye, the kidney & cardiovascular disease: old concepts, better tools, & new horizons *Kidney Int* 2020;**98**:323-42
3. Tzoumas N, Farrah TE, Dhaun N, **Webb DJ**. Established and emerging therapeutic uses of phosphodiesterase type 5 inhibitors in cardiovascular disease. *Br J Pharmacol* 2020;**177**:5467-88.
4. Maxwell SRJ, **Webb DJ**. Improving medication safety: focus on prescribers and systems. *Lancet* 2019;**394**:283-5.
5. Dhaun N, **Webb DJ**. Endothelins in cardiovascular biology and therapeutics. *Nature Rev Cardiol* 2019;**16**:491-502.
6. Farrah TE, **Webb DJ**, Dhaun N. Retinal 'fingerprints' for precision cardiovascular risk profiling. *Nature Rev Cardiol* 2019;**16**:379-81.
7. Maxwell SR, Cameron IT, **Webb DJ**. Prescribing safety: ensuring that new graduates are prepared. *Lancet* 2015;**385**:579-81.
8. **Webb DJ**. Value-based medicine pricing: NICE work? *Lancet* 2011;**377**:1552-1553.
9. Dhaun N, **Webb DJ**. Endothelin-receptor antagonism: the future is bright. *Lancet* 2008;**371**:2061-2
10. **Webb DJ**, Walker A. Value based pricing of drugs in the UK. *Lancet* 2007;**369**:1415-6.
11. Carlson RV, van Ginneken NH, Pettigrew LM, Davies A, Boyd KM, **Webb DJ**. The three official language versions of the Declaration of Helsinki: what's lost in translation? *J Med Ethics* 2007;**33**:545-8
12. Aronson JK, Henderson G, **Webb DJ**, Rawlins MD. A prescription for better prescribing. *BMJ* 2006;**333**:459-60.
13. Maxwell S, **Webb DJ**. Clinical pharmacology: too young to die? [Commentary] *Lancet* 2006;**367**:799-800.

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15. Oliver JJ, **Webb DJ**, Newby DE. Stimulated tissue plasminogen activator release as a marker of endothelial function in humans. *Arterioscl Thromb Vasc Biol* 2005;**25**:2470-9.
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17. Maxwell SRJ, **Webb DJ**. Cox-2 selective inhibitors: important lessons learned [Commentary]. *Lancet* 2005;**365**:449-51.
18. Deanfield J, Donald A, Ferri C, Giannattasio C, Halcox J, Halligan S, Lerman A, Mancina G, Oliver JJ, Pessina AC, Rizzoni D, Rossi GP, Salvetti A, Schiffrin EL, Taddei S, **Webb DJ**. Endothelial function and dysfunction. Part I: Methodological issues for assessment in the different vascular beds: A statement by the Working Group on Endothelins and Endothelial Factors of the European Society of Hypertension. *J Hypertens* 2005;**23**:7-17. [cited >800 times]
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20. Oliver JJ, **Webb DJ**. Noninvasive assessment of arterial stiffness and risk of atherosclerotic events. *Arterioscl Thromb Vasc Biol* 2003;**23**:554-66. [cited >1000 times]
21. Thomson AJ, Grant IS, **Webb DJ**, Maxwell SRJ. Oxygen therapy in acute medical care: too much of a good thing. *Br Med J* 2002;**324**:1406-7.
22. Affolter J, **Webb DJ**. Urotensin II: a new mediator in cardiopulmonary regulation? [Commentary]. *Lancet* 2001;**358**:774-5.
23. Wilkinson IB, **Webb DJ**, Cockcroft JR. Isolated systolic hypertension: a radical rethink [Editorial]. *Br Med J* 2000;**320**:1685.
24. Newby DE, **Webb DJ**. The endothelin system in cardiovascular disease: discovery to drug development in under a decade. *Br Med J* 1997;**314**:531-2.
25. Benjamin N, Calver A, Collier J, Robinson B, Vallance P, **Webb D**. Measuring forearm blood flow and interpreting the responses to drugs and mediators. *Hypertension* 1995;**25**:918-23.
26. **Webb DJ**, Haynes WG. Endothelins come of age. *Lancet* 1993;**342**:1439-40.
27. **Webb DJ**, Haynes WG. European Community guidelines for clinical trials. *Eur J Int Med* 1992;**3**:5-8.

#### **Selected books (from 5)**

1. Vallance PJT & **Webb DJ** (editors). *Vascular Endothelium in Human Physiology and Pathophysiology*. Harwood Academic Publishers, London, 1999, pp 285. ISBN: 90-5702-489-6.
2. **Webb D** & **Vallance P** (editors). *The Endothelium in Hypertension*. Springer-Verlag, Berlin 1997 pp 154. ISBN: 3-54062943-2.
3. Gray GA & **Webb DJ** (editors). *The molecular biology and pharmacology of the endothelins*. Molecular Biology Intelligence Unit Monograph Series, RG Landes Co., Austin, Texas, USA, 1995, pp 173. ISBN: 3-540-59425-6.

#### **Selected Reports and Monographs (from >20)**

1. Samer C, Webb D, Mannaioni G, Watanabe H, Gook Shin J, Coleman J, Lucena MI, Doogue M, Kshirsagar N, Ogunleye O, Hilmer S, Wei W. Considerations in the context of the COVID-19 pandemic. Report from the International Union for Basic and Clinical Pharmacology (IUPHAR)

Clinical Division. May 2020. <https://iuphar.org/wp-content/uploads/2020/05/IUPHAR-Clinical-Division-Considerations-in-the-Context-of-COVID-19-Pandemics.pdf>

2. Al-Shahi Salman R, Dawson J, Drylie I, Forsyth P, Hendry A, Mackenzie I, McKinstry B, Padmanabhan S, Touyz R, **Webb D**. Beating High Blood Pressure: Scotland's Silent Killer. A Report by the Cross-Party Group on Heart Disease and Stroke. pp. 1-17. January 2019. <https://www.bhf.org.uk/-/media/files/heart-voices/beating-high-blood-pressure-scotlands-silent-killer-report-final.pdf?la=en>
3. Next Steps for Using Real World Evidence: Summary of a Report of a Forum Follow-Up Roundtable from the Academy of Medical Sciences, January 2018. <https://acmedsci.ac.uk/file-download/7021031>
4. Sources of Evidence for Assessing the Safety, Efficacy and Effectiveness of Medicines (Chair: Sir Michael Rutter), A report from the Academy of Medical Sciences, June 2017. <https://acmedsci.ac.uk/file-download/86466482>
5. Real World Evidence. A report from the Academy of Medical Sciences and the Association of the British Pharmaceutical Industry. Convenors Sir Alasdair Breckenridge and Virginia Acha. 2015. <https://acmedsci.ac.uk/file-download/38667-573d8796ceb99.pdf>
6. Pirmohamed M, Rang H, **Webb DJ**. Clinical pharmacology: a dynamic medical specialty essential for UK healthcare. *A Report from the BPS*, 2015. <https://www.bps.ac.uk/BPSMemberPortal/media/BPSWebsite/Clinical-Pharmacology-A-dynamic-medical-specialty-essential-for-UK-Healthcare.pdf>
7. Bruce I, Close D, Hughes A, Pirmohamed M, Savill J, **Webb D**. Ensuring UK leadership in experimental medicine. *A Joint Report from the ABPI and BPS*, 2015. <https://www.bps.ac.uk/BPSMemberPortal/media/BPSWebsite/Assets/Ensuring-UK-leadership-in-experimental-medicine-Aug-2015.pdf?ext=.pdf>
8. Rawlins M et al. A New Pathway for the Regulation and Governance of Health Research. *A Report from the Academy of Medical Sciences*. Jan 2011. ISBN No: 978-1-903401-31-6.
9. Lechler R, Anwar Q, Aronson J, Bramble M, Hays Hughes A, R, Martin J, Maskrey N, Maxwell S, Paice E, Petty-Saphon K, **Webb D**, Outcomes of the Medical Schools Council Safe Prescribing Working Group chaired by Professor Robert Lechler. November 2007.
10. **Webb DJ**, Wilkins MR. Safety Assessment During Pre-Marketing Clinical Trials. *In Safer Medicines: A Report from the Academy of Medical Sciences*. November 2005. ISBN No: 1-903401-10-0.
11. Scottish Intercollegiate Guidelines Network (SIGN). Hypertension in Older People: A National Clinical Guideline, Number 49, January 2001. pp. 1-49. ISBN 1-899893-42-3.
12. The Prescribing of Costly Medicines. Report of a Working Party of the Royal College of Physicians of London, April 2000, pp. 1-74. ISBN: 1-86016-126-X
13. Clinical Pharmacology and Therapeutics in a Changing World. Report of a Working Party of the Royal College of Physicians of London, 1999, pp. 1-76. ISBN: 1-86016-089-1

#### **Selected Letters (from >50)**

1. Baker E, Coleman J, **Webb D**. Challenge of multimorbidity: amplifying the impact of clinical pharmacology and therapeutics. *BMJ* 2020;**368**:m717.
2. **Webb D**, Pirmohamed M. The NHS and cost-effective medicines. *The Times*. p. 28, Saturday, 21<sup>st</sup> January 2017.
3. **Webb DJ**, Paterson KR. The importance of expertise. *Sunday Herald*. p. 28-29, Sun, 6<sup>th</sup> April 2014.
4. **Webb DJ**. Drug development critical in ongoing medical challenges [Article]. *Scotsman*, p. 41, Tuesday, 21<sup>st</sup> July 2009.
5. **Webb DJ**. Prescribing: rising to the challenge. *Scotsman*, Friday, 6<sup>th</sup> February, 2009.

6. Griffin GE *et al.* UK research on verge of extinction. *The Times*, Wed, 14<sup>th</sup> January, 2009.
7. Aronson JK, Barnett DB, Breckenridge AM, Ferner RE, Ferro A, Jackson P, Maxwell SR, McInnes GT, Rawlins MD, Ritter JM, Routledge P, Walley TJ, **Webb DJ**, Woods KL. The UK's NHS and pharma: need for more clinical pharmacologists. *Lancet* 2009;**373**:1251-2.
8. Griffin GE *et al.* UK research on verge of extinction. *The Times*, Wed, 14<sup>th</sup> January, 2009.
9. Aronson JK, Barnett DB, Ferner RE, Ferro A, Henderson G, Maxwell SR, McInnes GT, Rawlins MD, **Webb DJ**. *BMJ* 2006;**333**:756.

### **Selected Presentations (since 2011)**

Invited Discussant: Physicians and the pharmaceutical industry: the way forward (organisers Dr Richard Horton & Prof Tim Evans). *Royal College of Physicians, London (3<sup>rd</sup> February 2011)*.

Invited speaker: Endothelin receptor antagonists and PDE5 inhibitors as new targets for reduction of arterial stiffness in chronic kidney disease. *Joint UREKA/BHS Collaborative Research Group meeting, University of Birmingham (11<sup>th</sup> March 2011)*.

Invited speaker: Studies in chronic kidney disease. *BHS Collaborative Research Group meeting, St Mary's Hospital, University of London (25<sup>th</sup> March 2011)*.

Invited speaker: PDE5 inhibitors and organic nitrates. In "Off-Target Cardiovascular Effects of Non-Cardiovascular Drugs", *American Society of Hypertension, Annual Scientific Meeting (23<sup>rd</sup> May 2011)*.

Invited speaker: Developing and delivering Clinical Pharmacology in UK Universities. *James Black Conference On Planning a 5-Year Agenda for UK Clinical Pharmacology, British Pharmacological Society, Green-Templeton Oxford (20<sup>th</sup> June 2011)*.

Invited speaker: National Medicines Policy: Scope and Roles of Clinical Pharmacologists. *James Black Conference on Planning a 5-Year Agenda for UK Clinical Pharmacology, British Pharmacological Society, Green-Templeton Oxford (22<sup>nd</sup> June 2011)*.

State-of-the-Art Lecture: Selective Endothelin-A Receptor Antagonism: A Novel Mechanism to Lower Residual Albuminuria. *Conference On Changing the Paradigm, European Renal Association (ERA)/European Dialysis and Transplant Association (EDTA), Prague, Czech Republic (23<sup>rd</sup> June 2011)*.

Invited speaker: The Role of the Clinical Pharmacologist in Health Technology Assessment (HTA). *British Pharmacological Society (BPS) Symposium on Clinical Pharmacology and Rational Drug Use, European Association for Clinical Pharmacology and Therapeutics (EACPT), Budapest, Hungary (27<sup>th</sup> June 2011)*.

Invited speaker: Over-Regulation of Research: the UK Prescription. *European Association for Clinical Pharmacology and Therapeutics (EACPT), Budapest, Hungary (29<sup>th</sup> June 2011)*.

International speaker: Lessons in Health Technology Assessment for Middle-Income Countries: the Scottish Medicines Consortium. *Fifth Congress of the Hungarian Health Economic Forum, Budapest, Hungary (29<sup>th</sup> June 2011)*.

Keynote Lecture: Challenges in the clinical application of endothelin antagonists. *The 12<sup>th</sup> International Conference on Endothelin, Cambridge, UK (13<sup>th</sup> September 2011)*.

Invited speaker: Clinical relevance of endothelin receptor antagonists and ECE inhibitors in cardiovascular and renal disease (chairs Drs Michel Feletou and John-Paul Vilaine. *Servier Research Institute, Paris (21<sup>st</sup> October 2011)*.

Invited speaker: High blood pressure: taming the silent killer. *Public lecture in the "Let's Talk About..." series (jointly with Dr Matt Bailey), Wellcome Lecture Theatre, Queen's Medical Research Institute, Edinburgh (21<sup>st</sup> March, 2012).*

Invited speaker: Endothelin antagonists and renal progression. *Symposium on progression of CKD and associated cardiovascular complications. 49th European Renal Association-European Dialysis and Transplantation Association (ERA-EDTA) Congress, Paris (24-27<sup>th</sup> May, 2012).*

Invited speaker: The Scottish perspective. *Symposium on the Future of European Clinical Pharmacology. International School of Pharmacology, Erice, Sicily (18-22 June, 2012).*

Plenary speaker: Modulation of endothelial function to produce cardiac and renal protection in hypertensive chronic kidney disease patients. *24<sup>th</sup> Annual Scientific Meeting of the International Society of Hypertension, Sydney, Australia (30<sup>th</sup> September, 2012).*

Plenary speaker: British Pharmacological Society: Past, Present and Future. *33<sup>rd</sup> Annual Scientific Meeting of the Japanese Society of Clinical Pharmacology & Therapeutics, Okinawa, Japan (29<sup>th</sup> November, 2012).*

Plenary speaker: From Bench to Bedside: Endothelin and Vascular Diseases. *33<sup>rd</sup> Annual Scientific Meeting of the Japanese Society of Clinical Pharmacology & Therapeutics, Okinawa, Japan (29<sup>th</sup> November, 2012).*

Invited speaker: How do we manage cardiovascular risk in Turner syndrome? *Fifteenth Annual Scientific Meeting of the Scottish Paediatric Endocrine Group, Dunkeld (25<sup>th</sup> January 2013).*

Invited speaker: Hypertensive Crisis. *Evening Medical Update, Royal College of Physicians, Edinburgh (19<sup>th</sup> March 2013).*

Plenary speaker: Therapeutic targeting of endothelin and nitric oxide in hypertension and chronic kidney disease. *12<sup>th</sup> Meeting of the Asia Pacific Federation of Pharmacologists (9-13 July), Second Joint Symposium of the Chinese Pharmacological Society and British Pharmacological Society, and Joint Meeting of the Chinese Pharmacological Society and Hong Kong Pharmacology Society, Shanghai (12<sup>th</sup> July 2013).*

Invited speaker: The Scottish model of HTA: the Scottish Medicines Consortium. *In: Health Therapies Assessment, 11<sup>th</sup> EACPT Congress, Geneva (28<sup>th</sup> August 2013).*

Keynote Lecture: Treatment-Resistant Hypertension: The Challenges For Drug Treatment. *ET-13, Tokyo, Japan (8<sup>th</sup> -11<sup>th</sup> September, 2013).*

Keynote Lecture: The Prescribing Safety Assessment: Underpinning Patient Safety. *Inaugural Lecture: Executive Director series, Medicine & Healthcare products Regulatory Agency (MHRA), London (18<sup>th</sup> June, 2014).*

Invited speaker: Communicating decisions on HTA: the tension between utility & equity. *Symposium on "Communicating with the Public and the Policy Community. 17<sup>th</sup> World Congress of Basic and Clinical Pharmacology (WCP2014), Cape Town, South Africa (14 July 2014).*

Invited speaker: Translational research partnerships: Wellcome Trust Translational Medicine and Therapeutics training. *Symposium on "Ensuring UK Leadership in Experimental Medicine". Joint meeting between the Association of the British Pharmaceutical Industry (ABPI)/British Pharmacological Society (BPS) Symposium, London (3 October 2014).*

Invited speaker: Is the UK set up to tackle the affordability challenge? *Session on 'Value assessment – should affordability be in or out?'* ABPI Annual Conference on the Affordability Conundrum (chair: Fiona Bruce), London (23 April 2015).

Seminar speaker: A guide to writing a good scientific paper. *BPS journals seminar. Tomorrow's medicines: pharmacology, patients and populations. Joint ASCEPT-BPS conference, University of Hong Kong (19-21 May 2015).*

Invited speaker: UK licensing of medicines and herbal products: where do traditional Chinese medicines (TCM) stand? *Symposium on the Challenges of Drug Discovery and Development. On behalf of IUPHAR (organisers: Professors Sam Enna and Yong-Xiang Zhang), Xi'an, China (24 May 2015).*

Keynote Speaker: British Pharmacological Society and Skills Shortages in Pharmacology & Clinical Pharmacology, ABPI Experimental Medicine Network, London (9<sup>th</sup> February 2016).

Speaker: The Interface between Regulation and Clinical Toxicology, UK Training Day in Toxicology, Edinburgh (9<sup>th</sup> February 2016).

Keynote Speaker: Skills Shortages in Pharmacology & Clinical Pharmacology, Experimental Medicine Funders Network, MRC Headquarters, London (9<sup>th</sup> February 2016).

Invited Speaker: Management of Treatment-Resistant Hypertension. Hypertension Seoul 2016: The 26<sup>th</sup> Scientific Meeting of the International Society of Hypertension, Seoul Co-Ex (27<sup>th</sup> September 2016).

Invited Speaker: The critical role of clinical pharmacology in therapeutic targeting: first-in-human studies. IUPHAR Symposium on Therapeutic Targeting. ASCEPT/MGPCR Joint Scientific Meeting (Australasian Society of Clinical and Experimental Pharmacology and Toxicology & Molecular Pharmacology G-Protein Coupled Receptors), Convention & Exhibition Centre, Melbourne (29<sup>th</sup> November, 2016).

Invited speaker: Accelerated access to medicines: risks and benefits. Edinburgh Endocrine Colloquium, Royal College of Physicians, Edinburgh (10<sup>th</sup> January 2017).

Speaker: A healthy philosophy: we need to talk about how we value our medicines (with Rachel Baker and Ken Paterson). Edinburgh Science Festival (3<sup>rd</sup> April 2017).

Invited lecture: New drugs in hypertension. *Symposium on Hypertension: State of the Art in 2017, Royal College of Physicians, London (16<sup>th</sup> May 2017).*

Invited speaker: Starting early: optimising cardiovascular risk. *Symposium on management of Turner Syndrome. British Society of Paediatric Endocrinology and Diabetes, Newcastle (22<sup>nd</sup> Nov 2017).*

Discussant: FORUM Scoping Roundtable on real world evidence. *Academy of Medical Sciences, London (24<sup>th</sup> Jan 2018).*

Discussant: Exploring good clinical practice guidelines in clinical trials. *Joint meeting of the Academy of Medical Sciences, Bill & Melinda Gates Foundation, and Wellcome Trust, Wellcome Trust, London (19<sup>th</sup> Mar 2018).*

Speaking in support: Innovation Roundtable: A Debate on randomised clinical trials; are they still the gold standard? Chair, Prof Margaret Johnson. *Royal College of Physicians, London (29<sup>th</sup> Mar 2018).*

Speaker: Prospects for novel therapeutic approaches to hypertension. *In Hypertension: New Developments in Understanding and Management. IUPHAR 18<sup>th</sup> World Congress of Basic & Clinical*



*Pharmacology. Kyoto, Japan (2 July 2018).*

Speaker: The role of the clinical pharmacologist. Health Technology Assessment (HTA) for Smaller Countries: A Central Role for Clinical Pharmacology (with Prof Phil Routledge). *IUPHAR 18<sup>th</sup> World Congress of Basic & Clinical Pharmacology. Kyoto, Japan (2 July 2018).*

Speaker: A changing scientific and pharmaceutical landscape: the challenge for pharmacology. The BPS Focus on Pharmacology Project: Securing the Future of Pharmacology and Clinical Pharmacology (with Prof Steve Hill). *IUPHAR 18<sup>th</sup> World Congress of Basic & Clinical Pharmacology. Kyoto, Japan (3 July 2018).*

Speaker: Health economics: big ideas from a small country? *Session on 'Closing the Money Gap'. Fourteenth Congress of the EACPT, City Conference Centre, Stockholm (1 July 2019).*

Panellist: Closing the Money Gap. *Fourteenth Congress of the EACPT, City Conference Centre, Stockholm (1 July 2019).*

Tutor: Case studies on observational studies vs RCTs. *CNPHARS-IUPHAR Clinical Pharmacology Training Course. Beijing, 26<sup>th</sup> & 27<sup>th</sup> July 2019*

Keynote speaker: An overview of drug regulation and drug development. *CNPHARS-IUPHAR Clinical Pharmacology Training Course. Beijing, 26<sup>th</sup> July 2019.*

Keynote speaker: CPRD, Biologicals and 'Value for Money'. *CNPHARS-IUPHAR Clinical Pharmacology Training Course. Kunming, 31<sup>st</sup> July 2019.*

Keynote speaker: CREDENCE: Canagliflozin for Diabetic Nephropathy. Debate: Endothelin receptor antagonists (ERAs; SONAR) or sodium-glucose transporter 2 inhibitors (SGLT2is; CREDENCE) for diabetic nephropathy. *16<sup>th</sup> International Conference on Endothelin (ET-16), Kobe (23rd September 2019).*

Chair and Speaker: Joint SIF/IUPHAR Roundtable on the World Health Organisation's (WHO's) global challenge on Medication Without Harms. *Annual Meeting of the Italian Society of Pharmacology (SIF) jointly with the International Union of Basic and Clinical Pharmacology (IUPHAR), Florence (22nd November 2019)*

Keynote speaker: Can traditional medicines deliver on their potential in Western countries? *At the 5th IUPHAR World Conference on the Pharmacology (WCP) of Natural Products 2019, India at the 51st Annual Conference of Indian Pharmacological Society (IPS), Hyderabad, 5th December 2019.*

Speaker: Management of hypertensive emergencies and urgencies. *St Andrews Day Symposium, Royal College of Physicians of Edinburgh, Edinburgh (24 November 2020).*

Speaker: Malignant hypertension – current concepts. *15<sup>th</sup> International Jordanian Conference of Internal Medicine, Amman, Jordan (1 April 2021).*