Christopher Fry Biosketch

Present position
Professor of Applied Physiology
Head of School of Physiology, Pharmacology & Neuroscience, University of Bristol, UK

Degrees and Honours

BSc Biological Sciences 1971 (2i)	Project: "Ionic factors regulating the Na-pump"
PhD Physiology 1974	Thesis: "Electrical properties of the frog heart".
BA Mathematics 1986 (First)	Project: "Geometric and topological spaces"
DSc Physiology 1991	Thesis: "The regulation of muscle contractility and excitability"
FRCS Edinburgh 2013	Citation: *Ad hominem* – services to surgical education

Honorary posts

2004-present	Royal College of Surgeons of England: Court of examiners
2006-present	Ministry of Defence: research ethics committee

Previous Employment

2008	Professor	University of Surrey
1994	Reader/Professor	Institute of Urology, University College London
1979	Lecturer/Senior Lecturer/Reader	St Thomas' Hospital Medical School (UMDS)
1976	BHF Lecturer	Cardiothoracic Institute, University of London
1975	Teaching assistant	Physiologisches Institüt, University of Bern
1974	Royal Society Fellow	Physiologisches Institüt, University of Bern

Other positions
UK Physiological Society
1993-1997 Meetings Secretary
1997-2003 Committee Secretary / Chairman of the Executive and Board of Trustees
Federation of European Physiological Societies
2002-2005 General Secretary

PhD/MD students
51 in Cardiology/Urology/Surgery

External examiner: Science and medical undergraduate courses
Leeds, Bristol, Cardiff, Belfast, Cambridge, Southampton, St Georges University of London
External visitor: University of Cambridge – Physiology, neuroscience and developmental sciences programmes

Journal editor:
Surgery, Nephron, Neurourology & Urodynamics, British Journal of Urology International, Age & Longevity

Research

- Cell physiology of smooth and cardiac muscle, in particular the study of factors that determine the contractility and excitability of these tissues.
- Investigations that seek to explain the pathophysiology of muscle dysfunction associated with organ disease, especially in the heart and the lower urinary tract. Although these are two different organs, the fundamental physiological control systems and derangements of function that occur in disease are similar so conclusions drawn from one may be applied to the other.

- Laboratory pioneered the use of human biopsy material (cardiac and lower urinary tract tissues) from patients with well-defined clinical conditions.
- Validated, with surgeons and anaesthetists/intensive care physicians, enhanced recovery programmes using goal-directed fluid therapy in peri-operative medicine to improve morbidity and reduce hospital length-of-stay.
- Research highlights:

identified the role of Ca^{2+} activated K^{+} currents to control cardiac action potential duration

first to make accurate real-time measurement of intracellular [Ca^{2+}] in muscle (with ion-selective microelectrodes.

co-identified the Na^{+}-Ca^{2+} exchanger in myocardium, as the means to regulate intracellular [Ca^{2+}].

characterised excitation-contraction coupling in lower urinary tract smooth muscle (including from normal and pathological human tissue).

identified and characterised interstitial cell function in the lower urinary tract as a modulator of contractile function.

identified the molecular basis of conduction failure in myocardium.

characterised the role of urothelium-derived neurotransmitters in the low urinary tract as mechanisms underlying urinary urgency and pelvic pain.

2016 publications

Fry CH, Vahabi B. The Role of the Mucosa in Normal and Abnormal Bladder Function. Basic Clin Pharmacol Toxicol. 2016 Oct;119 Suppl 3:57-62.

Henslee EA, Torcal Serrano RM, Labeed FH, Jabr RI, Fry CH, Hughes MP, Hoettges KF. Accurate quantification of apoptosis progression and toxicity using a dielectrophoretic approach. Analyst. 2016 Nov 14;141(23):6408-6415.

Jabr RI, Hatch FS, Salvage SC, Orlowski A, Lampe PD, Fry CH. Regulation of gap junction conductance by calcineurin through Cx43 phosphorylation: implications for action potential conduction. Pflugers Arch. 2016 Nov;468(11-12):1945-1955.

Drake MJ, Kanai A, Bijos DA, Ikeda Y, Zabbarova I, Vahabi B, Fry CH. The potential role of unregulated autonomous bladder micromotions in urinary storage and voiding dysfunction; overactive bladder and detrusor underactivity. BJU Int. 2016 Jul 22. doi: 10.1111/bju.13598.

Fry CH, Gammie A, Drake MJ, Abrams P, Kitney DG, Vahabi B. Estimation of bladder contractility from intravesical pressure-volume measurements. Neurourol Urodyn. 2016 Jun 6. doi: 10.1002/nau.23047.

Pakzad M, Ikeda Y, McCarthy C, Kitney DG, Jabr RI, Fry CH. Contractile effects and receptor analysis of adenosine-receptors in human detrusor muscle from stable and neuropathic bladders. Naunyn Schmiedebergs Arch Pharmacol. 2016 Aug;389(8):921-9.

Howlett PJ, Hatch FS, Alexeenko V, Jabr RI, Leatham EW, Fry CH. Diagnosing Paroxysmal Atrial Fibrillation: Are Biomarkers the Solution to This Elusive Arrhythmia? Biomed Res Int. 2016;2015:910267. doi: 10.1155/2015/910267

Kushida N, Fry CH. On the origin of spontaneous activity in the bladder. BJU Int. 2016 Jun;117(6):982-92.

Full papers and reviews 211 h-factor 36