

The Centre for Integrative Biomedicine at King's College London

The centre for integrative biomedicine (CIB) is one of four capacity building centres in the UK providing training, education and research in mammalian physiology and pharmacology *in vivo*. Research includes the improved modelling of disease and translational approaches to developing new drugs for clinical use in humans and animals. The research themes at the CIB include cardiovascular, neuroscience, respiratory, blood-brain-barrier, reproduction, endocrinology, inflammation and transplantation.

Cardiovascular

Cardiovascular and inflammatory activities of vasoactive mediators · Chronic leg ulcer healing · Aneurysm growth and repair · Novel mechanisms for suppressing cardiac arrhythmias · Endothelial dysfunction and oxidative stress · Left ventricular hypertrophy & heart failure · Nutrition and vascular function · Vascular gene therapy · Transgenic mouse models of cardiovascular disease

Neuroscience

Molecular basis of Huntington's disease · Novel treatments for Parkinson's disease and other neurodegenerative movement disorders · Contributory mechanisms to chronic pain states, pain processing, inflammation & sensory nerve activation · Cerebral ischemia (stroke) and spinal cord injury · The enteric nervous system and neuroendocrine systems

Respiratory

Respiratory pharmacology · Platelets and leukocyte interaction · Bronchial hyper-responsiveness · Blood-vessel wall interactions · Biology of glycosaminoglycans · Phosphodiesterase inhibitors · Airway neurotransmission · Pharmacology of smooth muscle · Murine models of inflammation

Blood-brain barrier

Drug delivery across the blood-brain, blood-CSF barrier · Glia and ionic homeostasis · Endothelial cell function · Ischaemia and cytokine-induced regulation of cerebral microvascular permeability · Leukocyte transmigration across the blood-brain barrier

Reproduction

Integrative neuroscience · Neurobiology of reproduction & sociality · Nutritional influences on reproductive physiology · Early life programming for obesity · Circadian biology

Endocrinology

Molecular biological approaches to stress, infertility and hot flushes · Quantitative gene expression of melatonin and melanopsin · Foetal origins of adulthood diabetes, hypertension and cardiovascular disease

Inflammation & Transplantation

Inflammatory hyperalgesia, vascular hyperpermeability & swelling · Role of nitric oxide, carbon monoxide and hydrogen sulphide in inflammation & cardiovascular disease · The relationship between innate immunity, epithelial immunobiology and progressive kidney injury · Immunology and Infection · Role of natural killer cells in transplantation · Microencapsulation of islets of langerhans · Islet transplantation

To work with the CIB on a collaborative project, discuss training & knowledge transfer schemes or find out how CIB can be your consultancy partner, contact Mark Christie, PhD (BBSRC Industrial Impact Fellow).

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<http://www.kcl.ac.uk/schools/health/research/partners/councils/bbsrc/cib/>