

Pharmacy Advanced Projects in Pharmacology for 2010

For general information about the programme please contact the Co-ordinator:

Dr Jasmine Henderson

Dept. Pharmacology

Room 211d Bosch Building

Phone 9036 9408 or email jasmine@med.usyd.edu.au

Or Sub-Coordinator

Dr Rachel Codd

Room 306 Blackburn Building

Phone 9351 6738 or email rcodd@med.usyd.edu.au

PROJECTS

Dr Brent McParland

Senior Lecturer

Bosch Institute and Pharmacology, School of Medical Sciences

Smooth Muscle Mechanics Laboratory 228 Blackburn

Ph 9036 6477

Email: brentmcpaland@med.usyd.edu.au

Theme: Asthma smooth muscle mechanics and pharmacology

- A) Investigating the barrier effect of the epithelium using porcine bronchial segments
- B) Investigating the mechanical loads that alter airway contractility

For further details please contact Dr McParland

Dr Hilary Lloyd

Senior Lecturer,

Discipline of Pharmacology, School of Medical Sciences,

Room 219- Blackburn

Phone 9351 2836; Email: hgelloyd@pharmacol.usyd.edu.au

Area of interest: Fertility, smooth muscle contractility

Project: Regulation of contractile activity in the rodent vas deferens

The contractile activity of the vas deferens is critical to male fertility, yet there remains many unanswered questions. Failure to transport sperm effectively via the vas deferens (ducts that transport sperm) can lead to infertility due to oligo/azospermia, a particular problem in patients taking sympatholytic medications (Tillem and Mellinger, 1999). Recently, we have provided the first evidence, in vitro, that the vas deferens contracts in a peristalsis-like manner, which has major significance with respect to furthering our understanding of how the vas deferens functions. Our

research has implications for hitherto unexplained causes of male fertility as well as for the development of male contraceptives.

Current projects in our lab are concerned with receptor trafficking, the role of the cholinergic system and the involvement of interstitial cells of Cajal in peristalsis in the vas deferens. These investigations use guinea-pig, rat and mouse vas deferens. **Methodology:** organ bath, wire and pressure myography.

Dr Heidi Fedorow

Lecturer,
UoS Coordinator PCOL2605 Pharmacology for Pharmacy
Discipline of Pharmacology and Bosch Institute
School of Medical Sciences
Room 204, Bosch Building
Phone 9351 6957
Email: hfedorow@usyd.edu.au Interests: Neurodegenerative disorders (Parkinson's disease & multiple sclerosis), L-dopa, melanin pigments, lipids.

Dr Gopi Rangan

Senior Lecturer (Conjoint),
University of Sydney and Staff Specialist (Nephrology), Westmead Hospital
Institute: Centre for Transplant and Renal Research, Westmead Millennium Institute
Contact Email: g.rangan@wmi.usyd.edu.au

Project Name: Role of retinoids in the therapy of polycystic kidney disease

Aims: To test the hypothesis that retinoids reduces cyst enlargement in polycystic kidney disease.

Dr Rangan's research focuses on modelling various forms of polycystic kidney disease in rodent models and therapeutic approaches using novel drug therapies.

Dr Chris Vaughan

Pain Management Research Institute, Level 13 Kolling Building
University of Sydney at Royal North Shore Hospital.
Phone: 9926 4950
email: chrisv@med.usyd.edu.au

Chronic pain & cannabinoids

Chronic pain syndromes particularly those caused by injury to the nervous system are resistant to traditional analgesics such as opioids. The psychoactive ingredient in marijuana, THC, has been shown to be effective in alleviating these pain syndromes by acting on an endogenous cannabinoid neurotransmitter system. Recently, a number of agents that modulate the body's own endocannabinoid neurotransmitter system have been identified. One potential project would examine whether these novel endocannabinoid modulators have pain relieving activity in animal models of chronic pain.