

School of Biomedical Sciences

Postgraduate Symposium

10 June 09

Room 360, Physiology Lecture Theatre (Bdg. 63)

WELCOME - Professor Brian Key, Head of School

9.00am

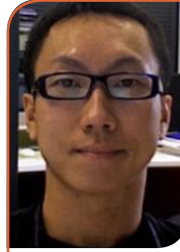


CARLY BANSEMER

Principal Advisor: A/Prof. Mike Bennett
Population biology, distribution, movement patterns and conservation requirements of the Grey nurse shark.

Carcharias taurus is Critically Endangered along the east coast of Australia. Photo-identification (PID) and acoustic tracking were used to investigate their reproductive periodicity, localised movements and behavioural segregation at Wolf Rock. PID surveys along the east coast of Australia were used to: 1) investigate the temporal and spatial distribution and movement patterns in relation to a shark's maturity, sex and pregnancy status, 2) quantify the occurrence of retained fishing gear and gear-related jaw injuries, and 3) estimate the minimum population size.

11.00am



RICKY CHEN

Principal Advisor: Prof. Joe Lynch
The investigation into the molecular pharmacology of $\alpha 1$ and $\alpha 3$ glycine receptors.

The glycine receptor (GlyR) mediates fast inhibitory neurotransmission in the central nervous system. $\alpha 3$ subunit-containing GlyRs are specifically involved in the central inflammatory pain sensitization. In this study, the modulation of $\alpha 1$ and $\alpha 3$ GlyRs by dihydropyridines and β -carbolines was examined. In addition, an unexpected role of the M4 helix of GlyR subunit in modulating receptor function was demonstrated. The identified regions of interest may potentially be useful for the design of GlyR subtype-specific compounds.

9.30am



BLAKE HARAHUSH

Principal Advisor: Prof. Shaun Collin
Ontogenetic changes in the visual system of the brown banded bamboo shark, *Chiloscyllium punctatum* (Elasmobranchii), with special reference to husbandry and breeding.

The visual capabilities of elasmobranchs are complex and well tuned to the specific environmental and behavioural needs of the animal. The visual system of embryonic and hatched brown banded bamboo sharks were analysed using light and electron microscopy, electroretinography (ERG) and microspectrophotometry (MSP) to determine how the eye and retina initially develop and how this continually growing system changes throughout the life of the animal. Captive breeding requirements and new techniques for electron microscopy fixation were also investigated.

11.30am



SHYUAN NGO

Principal Advisor: A/Prof. Peter Noakes
Neuregulin Modulation of Agrin-Induced Acetylcholine Receptor Clustering.

The neuromuscular synapse is responsible for eliciting action potentials across the muscle membrane. In vertebrates, the neurotransmitter acetylcholine signals through the acetylcholine receptor to induce muscle contractions. The loss of AChR clusters from neuromuscular junctions is a clinical feature of Myasthenia Gravis and patients commonly present with fluctuating muscle weakness and fatigue. In this study, molecular techniques were used to dissect out the mechanisms involved in the formation and loss of high density AChRs.

10.00am



SUSAN THEISS

Principal Advisor: Dr. Nathan Hart
Sensory biology and ecology of wobbegong sharks.

Elasmobranch possess a sophisticated array of sensory systems that are of great importance to their survival. Wobbegong sharks have a distinct body shape that, combined with their sedentary lifestyle and mode of ambush predation, suggests that they may differ from other elasmobranchs in how they employ their senses. Vision, olfaction, electroreception and mechanosensory lateral line were examined in detail in four wobbegong species. Correlations were made within both an ecological and phylogenetic context.

12.00pm GUEST SPEAKER

PROF. PETER KOOPMAN

Putting Sex in Science

Making a successful career in biomedical research is a challenge, even if your studies focus on cancer, obesity or neurodegenerative disease. Try working on sex determination! In this seminar I will outline the reasons for studying sexual development, what we have learned, and how I have made my research focus relevant and fundable, hopefully as a guide to those wanting to follow a career path less travelled.



10.30am MORNING TEA

12.45pm LUNCH - Physiology
Lecture Theatre Foyer