

Wednesday, Oct. 26, 2016

LSC 3 | 12:00 - 1:00PM



## DR. MIRANDA GROUNDS

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### “Skeletal muscle mass: impact of growth, aging and disease”

Skeletal muscle comprises over 40% of the body mass and is essential for movement, breathing and metabolism. The formation, function and maintenance of muscle mass is of wide interest during growth, aging and disease. This talk will first outline our broad research related to molecular and cellular changes *in vivo* in skeletal muscles during early post-natal growth and in later life where there is age-related loss of skeletal muscle mass and function, known as sarcopenia. Sarcopenia reduces independence and the quality of life, and leads to falls and fractures with escalating health costs: this is a major problem for the rapidly ageing human population. Thus there is much interest in understanding the mechanisms involved in sarcopenia and developing interventions to maintain healthy old muscles. Our time course studies in mice aged up to 29 months have identified changes in muscles (related to metabolism, denervation and the extracellular matrix), nerves (protein accumulation) and the response of inflammatory cells, plus tested the systemic benefits of exercise interventions. The second part of the talk addresses our research in muscular dystrophies that aims to identify the cellular and molecular mechanisms leading to pathology in order to optimise therapies, with a focus on the degeneration and replacement of muscles by adipocytes in dysferlin-deficient muscles.

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