

# MBG FOCUS TALK

hosted by Erik Østergaard Jensen



**Tuesday November 14, 2017 at 9:15-10:00**

Dept. of Mathematics, Aud D2 (1531-119)

**Prof. Chris Blanchard, Ph.D.**

Director, ARC Industrial Transformation Training Centre for Functional Grains

## **Transforming the Australian Grains Industry through protein functionality and bioactivity research**

Australia is a significant producer of grains including wheat, barley, oats, sorghum, rice, canola, chickpeas and lentils. The majority of the grain crops grown in Australia are exported as relatively low value commodities. While grains are well known as a good source of nutrients, they are also an important potential source of high value functional proteins and bioactive compounds. These bioactive compounds have the potential to improve health outcomes for consumers. This presentation will outline some of the research undertaken in the Functional Grain Centre to identify bioactive properties of Australian grown cereals, oilseeds and pulses. Peptides produced from canola proteins were found to reduce the blood pressure of hypertensive rats. Bioactive compounds extracted from canola meal were also able to inhibit topoisomerase enzymes which may prove useful in anti-cancer therapies. Extracts from faba beans and pigmented rice were shown to induce apoptosis in cancer cells in vitro. Extracts from pulses, canola and coloured rice also inhibited adipogenesis in differentiating fat cells by reducing the expression of key genes. Rats fed with rice bran containing enhanced levels of GABA displayed a reduction in weight gain as well as a range of other improved health outcomes. We are now using ex vivo and in vivo human models to demonstrate the bioactive properties of grains and designing delivery systems to make these compounds available to the wider community.