Adipose (fat) tissue is a central regulator of energy metabolism and its functional failure in obesity can lead to metabolic disturbances such as type 2 diabetes. Adipogenesis - a process where preadipocytes differentiate to lipid accumulating adipocytes - is tightly regulated by many factors including insulin and extracellular matrix which modulates pre/adipocyte size and morphology and thus also its ability to store fat. This research seminar presents studies where we dissected out the function of recently discovered human obesity-linked gene – F13A1 (Factor XIII-A transglutaminase) – in adipocytes and adipose tissue. Our work on transgenic mice show that the absence of FXIII-A affects insulin sensitivity, adipocyte size as well as adipose tissue fibrosis and inflammation in mice on high-fat diet. Mechanistic data from cell studies show that FXIII-A protein-crosslinking activity in preadipocytes promotes accumulation of liver-derived, circulating plasma fibronectin into matrix which in turn regulates insulin sensitivity and acts as a switch between adipocyte proliferation and differentiation.

**Wednesday, May 30th, 2018**

11:30 am

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