

**GEORGE MASON UNIVERSITY  
COLLEGE OF SCIENCE  
BIOLOGY DEPARTMENT SEMINAR  
Spring 2015**

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***“Novel Transcriptional Networks Regulating Fat Biology”***

Obesity and diabetes are major health concerns. Calorically rich diets paired with sedentary habits have been shown to constitute the major drivers of the worldwide epidemic of pediatric and adult obesity. In addition, age related energy imbalances have been implicated in the metabolic disorders that occur late in life. My laboratory's primary goal is to uncover the molecular mechanisms governing adipose tissues expansion in response to diets rich in fat and during aging. Through candidate gene approaches and genetic screens we have identified two novel transcriptional regulators and functionally characterized their involvement in adipocyte function, visceral obesity and energy dissipation. Furthermore, recent results from our laboratory have demonstrated that the Forkhead box factor A3 (Foxa3) contributes to obesity by playing a double role in metabolism, favoring the expansion of visceral depots under high fat diet and suppressing subcutaneous fat tissue energy expenditure during the aging process. Our results suggest that Foxa3 enables energy “hoarding”, a process critical for the survival of organisms with intermittent exposure to external caloric sources but pathologic when food is abundant. A better understanding of how transcriptional regulators involved in adipose depot biology function may suggest approaches to combat obesity and associated metabolic disorders.

**TUESDAY February 24, 2015**

**3:00-4:15 PM**

**Johnson Center Room Meeting Room F**