Biomedical Research Seminar Series

Speaker Announcement

Friday, March 22, 2019 @ 3:30 pm

Domenici Hall, Room 109

Refreshments served at 3:00 pm

Sean Limesand, PhD

Professor,
School of Animal and Comparative Biomedical Sciences
University of Arizona

Catecholamines Regulate Fetal Adaptation during Placental Insufficiency

Intrauterine growth restriction (IUGR) of the placenta and fetus affects approximately 8% of all pregnancies and is associated with short- and long-term metabolic complications. In pregnant sheep, environmental heat stress causes placental insufficiency and provokes a stress response in the fetus that raises concentrations of catecholamines. We propose that sustained high norepinephrine concentrations observed in the IUGR fetus produce developmental adaptations in insulin secretion and action. Our findings show that chronically elevated catecholamines inhibit insulin secretion during IUGR and suppress fetal growth. Interestingly, a compensatory enhancement in insulin secretion occurs following the abatement of adrenergic action in IUGR fetuses. Together, an imbalance between insulin secretion and insulin sensitivity is created and these discrepancies may promote further adverse alterations in glucose homeostasis.

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For more information or to meet with the speaker please contact Ryan Ashley at ryashley@nmsu.edu