

BI-CO MATHEMATICS COLLOQUIUM

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"Reproductive Hormone Dynamics: Modeling Regulation and Dysfunction"

Monday, November 16, 2015

Talk at 4:00 – H109

Tea at 3:30 – KINSC Math Lounge, H208

Abstract:

Reproductive hormones belong to a tightly regulated system of feedback between the brain and ovaries. Cross-talk between different hormones set the stage for the oscillatory behavior characteristic of the menstrual cycle. In the case of polycystic ovary syndrome (PCOS), a common cause of infertility, increased ovarian androgen production can disrupt the cycle. Further, elevated insulin is an important cause of the change in androgens. I will discuss how we can develop a model of the normal ovulatory cycle and many of its regulatory components to match clinical data. I will also discuss how we can use this model to understand the nature of ovulatory dysfunction as it relates to insulin-dependent changes in androgens.

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