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**Erica J Graham\*** (ejgraham@brynmawr.edu). *Sensitivity and bifurcation analysis of disruptive mechanisms in a menstrual cycle model.*

A normally functioning menstrual cycle requires significant crosstalk between hormones originating in ovarian and brain tissues. Reproductive hormone dysregulation may disrupt function and can lead to infertility, as occurs in the common endocrine disorder polycystic ovarian syndrome (PCOS). To examine mechanisms of ovulatory dysfunction, we analyze global parameter sensitivity and bifurcations in a model of the menstrual cycle. In particular, the model highlights androgen-mediated dysfunction and the influence of elevated insulin, both of which are common in PCOS. We discuss conditions under which physiological stable oscillations are lost to pathological outcomes. (Received September 25, 2017)