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**Title:**

The Ups and Downs of Gonadotropin-Releasing Hormone (GnRH) Neurons

**Abstract:**

GnRH neurons form the final common pathway for the central regulation of reproduction. Their output is episodic (pulsatile) and frequency modulated; both features are critical to normal reproductive cycles in females. Recently, a *biological* model was proposed in which GnRH pulse generation was outsourced to a neuronal population in the arcuate nucleus of the hypothalamus. These KNDy neurons coexpress kisspeptin, neurokinin B and dynorphin and are proposed to act as a self-stimulating (NKB) and self-inhibiting (dynorphin) network that sends excitatory information to GnRH neurons via the neuromodulator kisspeptin to initiate pulsatile release. Data will be presented from electrophysiological studies designed to test aspects of this biological model, and also feedback interactions from GnRH neurons to this population. The data were collected by Zhiguo Chu and Kristen Ruka.