



## Language Science Colloquium 2017

Time: 11:00-12:30 pm

Location: 1511 Social and Behavioral Sciences Gateway Building

Lunch will be served.

**Greg Hickok**

**THU, Jan 19<sup>th</sup>**

**Title:** The Dual Stream Model: Clarifications and Recent Progress

**Abstract:** This talk presents an overview of the Hickok & Poeppel Dual Stream model and its recent development. We start with a brief discussion of the origins of the model and several points of clarification. Specifically, I will re-emphasize that the division of labor between the streams turns on two broad functions—speech comprehension (ventral stream) and speech production (dorsal stream)—and that the relation between these streams is asymmetric in that speech production relies on sensory systems whereas speech comprehension is not dependent on motor systems. We then turn to recent developments of the model, particularly with respect to the dorsal stream. Regarding the dorsal stream, I will argue that the system is best conceptualized as a sensory-motor feedback control mechanism that operates over not only auditory-motor planning representations but also somatosensory-motor planning representations. This architecture provides a new way of thinking about the neural implementation of traditional linguistic levels of processing (segments, syllables, and sequences of syllables). I'll finish with a discussion of a new hypothesis regarding the function of area Spt and its implications for understanding the neural and computational basis of speech production.