

## Student Hosted Seminar Series



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**Thursday, November 7, 2019**

**4:30 – 5:30 pm, Ward 5-230**

**Videoconferenced to Pancoe Auditorium**

### The language system in the human mind and brain

Human language surpasses all other animal communication systems in its complexity and generative power. My lab uses a combination of behavioral, brain imaging, and computational approaches to illuminate the functional architecture of language, with the ultimate goal of deciphering the representations and computations that enable us to understand and produce language.

I will discuss three discoveries my lab has made over the last decade. **First**, I will show that the language network is selective for language processing over a wide range of non-linguistic processes that have been argued to share computational demands with language, including arithmetic, executive functions, music, and action/gesture observation. **Next**, I will show that syntactic processing is not localized to a particular region within the language network, and that every brain region that responds to syntactic processing is at least as sensitive to word meanings, including when probed with a high-spatial/high-temporal-resolution method (ECoG). **Finally**, I will provide evidence that semantic composition may be the core driver of the response in the language-selective brain regions. Taken together, these results argue against an abstract and domain-general syntactic processing mechanism, and support strong integration between the lexicon and syntax. They further suggest that the language network is more concerned with meaning than structure, in line with the primary function of language – to share meanings across minds.