

## **ACOUSTICS2008/3592**

### **Auditory streaming and coherence**

Shihab Shamma<sup>a</sup> and Mounya Elhilali<sup>b</sup>

<sup>a</sup>ECE Department, AV Williams Bldg, 2203, University of Maryland, College Park, MD 20742, USA

<sup>b</sup>Johns Hopkins University, Dept of Electrical and Computer Engineering, Barton Hall 105, 3400 N. Charles Street, Baltimore, MD 21218, USA

Auditory streaming is a phenomenon that manifests itself in the everyday ability of humans and animals to parse complex acoustic information arising from multiple sound sources into meaningful auditory "streams". For instance, the ability to follow a conversation at a noisy cocktail party or hear the violin in the orchestra both rely on the formation of auditory streams. While seemingly effortless, the neural mechanisms underlying auditory streaming remain a mystery. In this talk, we shall discuss physiological experiments that address the role of coherence in mediating this percept. The experiments contrast the perception and neural responses evoked by the classic two-tone stimuli when presented in alternating or synchronous modes. Briefly, while the percepts in these two conditions are very different, being much more "streamed" in the alternating case, physiological responses to the tones did not differ significantly enough to explain this change in percept. This result casts doubt on the simple spatial segregation hypothesis, and instead argues for a substantial role of coherence of stimuli across different channels in mediating streaming.