1154-A0-82 **Ami Radunskaya***, Pomona College, 333 N College Way, Claremont, CA 91711. *On the scales of one to infinity: Learning to listen to your mathematics.*

Many mathematical constructs can be manifested as sounds! The visual palette is three dimensional, or four if you include color; in some ways, the sonic palette is richer. Our ears can perceive along many axes, including pitch, loudness, timbre, harmonic complexity and time. How could you better understand your mathematical problem by hearing it, as well as seeing it? For example, why is the "harmonic" series called by this name? Can we hear that the harmonic series diverges? Did you know we can "listen" to a dynamical system in order to understand its structure? Some features of common functions are better heard than seen! Together, we will explore the "route to chaos" via graphs and sounds, with live demonstrations. (Received July 31, 2019)