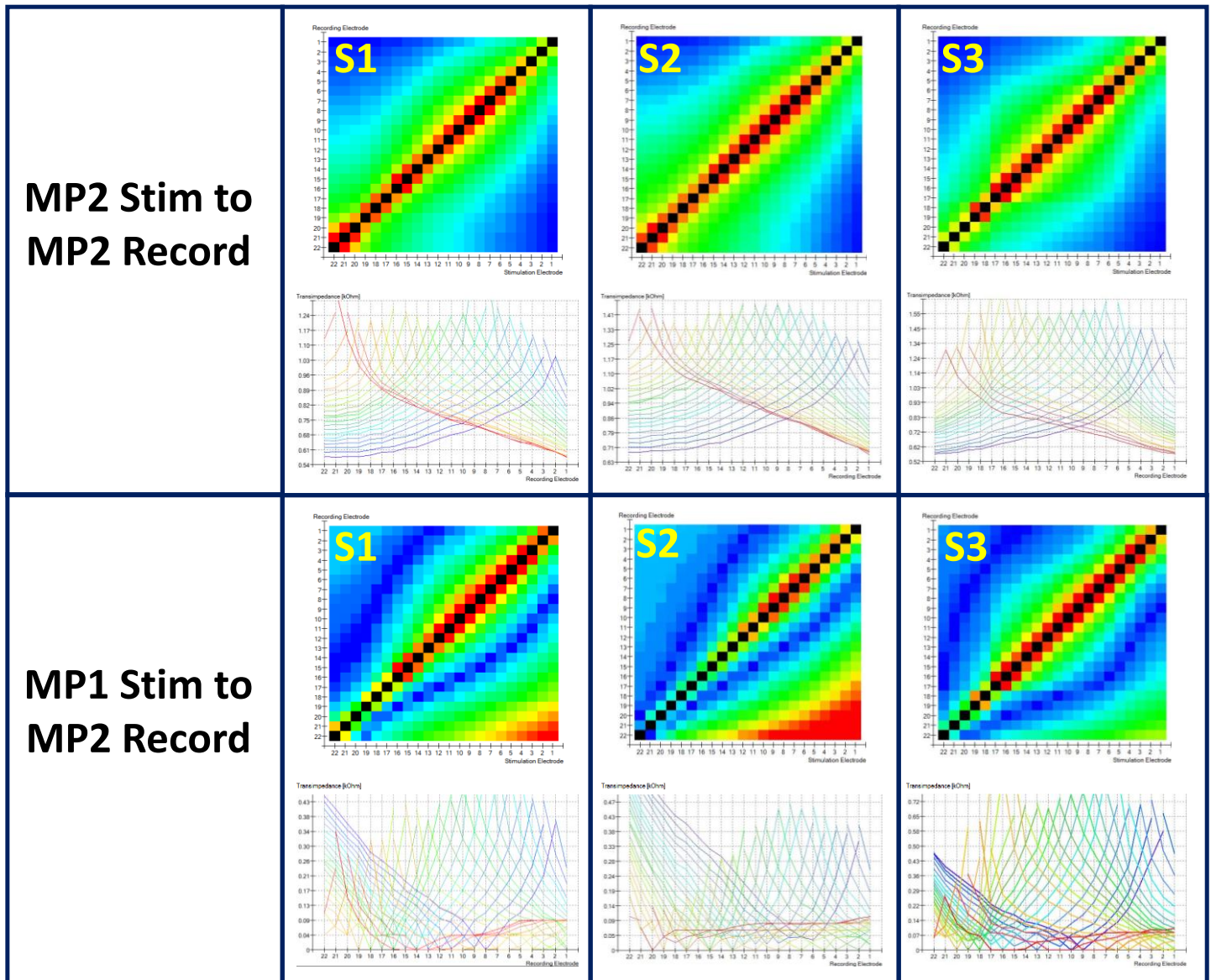


Supplemental Digital Content



Supplemental Figure 1: Screen captures of transimpedance matrix (TIM) recordings from Custom Sound organized in columns for all three subjects. The top row shows the pattern of voltage decay over distance when a given electrode between 1 and 22 is stimulated using the case ground (ECE2) as a reference, and voltage is measured in each one of those electrodes, also using the case ground as a reference. The x-axis shows the stimulating electrode, the y-axis denotes the recording electrode, and color is used to represent voltage (normalized with respect to the voltage observed in the stimulating electrode). In the top panels, which leave ECE1 out of the equation, voltage decays monotonically over distance as expected. The bottom panel also shows the pattern of voltage decay over distance when a given electrode between 1 and 22 is stimulated with ECE2 as a reference, except now the voltage is measured with respect to the ECE1 electrode. This configuration shows clear nonmonotonic voltage patterns as a function of distance, which can be used as verification that ECE1 has been placed into the apex.