The conductance of the mass spectrometer inlet and volume of the gap determines the gas velocity, which affects the velocity of the FAIMS gas flows orthogonally to the separation field and holds no bearing on CV peak positions. As the conductance of the heated transfer tube is increased, the FAIMS gas velocity is increased leading to wider compensation voltage peak widths and faster compensation voltage switching times.

**RESULTS:**

- Electrode temperature affects FAIMS separation by changing the number density of the ion population. Electrode temperature with Thermo Scientific™ Pierce Endura 70°C/100°C and Thermo Scientific™ Pierce Lumos 100°C/100°C mass spectrometers, shown in Figure 1. The electrodes, shown in Figure 2, are heated using a transformer box and increase the temperature of the ion transfer tube. The ion transfer tube with the electrodes both set to 100°C was used to study the effect of electrode temperature and FAIMS gas velocity on CV peak positions. This effect is also seen for other ions and electrode temperatures (Figures 12-18). As the FAIMS gas velocity increases, the effects of the electrode temperature increase, leading to wider compensation voltage peak widths and faster compensation voltage switching times.

**CONCLUSIONS:**

- Electrode temperature affects FAIMS separation by changing the number density of the ion population. Electrode temperature with Thermo Scientific™ Pierce Endura 70°C/100°C and Thermo Scientific™ Pierce Lumos 100°C/100°C mass spectrometers, shown in Figure 1. The electrodes, shown in Figure 2, are heated using a transformer box and increase the temperature of the ion transfer tube. The ion transfer tube with the electrodes both set to 100°C was used to study the effect of electrode temperature and FAIMS gas velocity on CV peak positions. This effect is also seen for other ions and electrode temperatures (Figures 12-18). As the FAIMS gas velocity increases, the effects of the electrode temperature increase, leading to wider compensation voltage peak widths and faster compensation voltage switching times.