Acoustic Study of Clarinet Voicing Stacks\textsuperscript{1} CHRIS SNELLINGS, MARY NELSON, JEFF O’FLYNN, BONNIE ANDERSEN, Utah Valley University — The clarinet functions as a stopped tube and therefore sounds the fundamental pitch, and overblows to the third and fifth harmonics. Learning to control these registers, or voicing the instrument, is an essential part of a clarinetist’s education. By understanding how the clarinet couples to the overtones and whether the clarinet has an inherent “memory” for overtones, teachers can better instruct their students. In order to study the effects of overtones and voicing, data was collected for an advanced student just beginning to learn voicing. The duration she could maintain the sound coupled to the third partial without the benefit of the register key at the top of the tube to stabilize the sound was measured. By measuring duration and sound levels, the airflow affecting the coupling could be observed. As expected, the longer the fundamental wavelength was, the more energy it took to maintain coupling the third partial. An artificially blowing mechanism was then coupled to the clarinet to measure how a steady, unchanging stream of air affects coupling.

\textsuperscript{1}Western Alliance to Expand Student Opportunities, the Presidential Fellowship of Utah Valley University, and Scholarly Activities Committee of the UVU College of Science and Health