**Project Proposal**

**Project Title:** Music Learning Experience

**Project Advisor:** Dr. Carla Purdy

**Team Members:**

Adam Tait – Computer Science

Eric Gatto – Computer Science

Jason Judis – Computer Science

John Rose – Computer Science / Embedded Systems

**Problem Statement:**

Many children around the country do no have access to a music education. This is due to funding cuts and a lack of music teachers.

“A 2016 study at the University of Southern California’s Brain and Creativity Institute found that musical experiences in childhood can actually accelerate brain development, particularly in the areas of language acquisition and reading skills. According to the National Association of Music Merchants Foundation (NAMM Foundation), learning to play an instrument can improve mathematical learning and even increase SAT scores.”

According to many different sources, a music education is very important for young children and can help them in more ways than one. The problem at hand is a lot of children are not getting this important education early.

**Proposed Solution:**

We propose a simple musical keyboard that will teach the children the fundamentals of music. This keyboard will consist of a single octave of music which will teach kids the relationship. The hardware of the keyboard will be paired with a partner software application. This application will use the hardware keyboard as a controller to allow the child to create their own music. This will follow a basic music theory pattern. The software will allow inputs from the keyboard to let the children fill in the notes on a measure that can be saved and played back at a later time.

**Proposed Features:**

* Be able to interpret hardware signal into a musical note
* Allow the saving/loading of songs for future playback
* Build a custom keyboard that will send inputs to the software

**References:**

“Children and Music: Benefits of Music in Child Development.” *Bright Horizons®*, www.brighthorizons.com/family-resources/music-and-children-rhythm-meets-child-development.