

**Project Name**

Gestural Melody: New Learning Tools for Musical Composition

**Principal Investigator** Keith Landa

**Campus** Potsdam, State University College at

**Year of Project** 2012

**Tier** Tier One

**Project Team**

- Peer Bode, Alfred University
- Jim McElwaine, Purchase College
- Paul Thayer, Purchase College

**Overview Summary**

Use of iPads to sketch out melodies without constraints of formal composition notation tools, and develop an app.

**Outcomes Summary**

A full download of the source code for app development is [available](#).

**Project Abstract**

The Gestural Musical Interface

Melody in music is often seen as the most elusive musical craft. It is often left to intuition and recollection. But melody is an identifiable and teachable craft, though it is constantly impeded by an immediate translation into conventional music notation, or into physical repetition at an instrument. The Gestural Music Interface will be an innovative instructional technology tool for the capture, editing and refinement of melody, with minimal

reference to conventional notation or instrumental proficiency.

### Purchase College

Purchase College is a good location for the development of this new musical tool because Purchase represents SUNY's strongest intersection of the art of music with the math, science and the liberal arts. It is also the only SUNY campus to provide undergraduate and graduate instruction in melodic composition, to its majors and talented non-majors.

### Educational Goals

The first educational goal of the Gestural Music Interface will be easier access to immediate musical imaginations, to turn a simple, partial improvisation into a compositional fragment in a more immediate environment than translation through notation or instrument. Another goal will be the ongoing editing and refinement of those initial melodies into digital audio and hexadecimal information. A third goal will be the superimposition of conventional notation once the melody has reached a better level for that process than now currently exists. Yet another goal will be to re-illuminate (and perhaps redefine) the crafts of counterpoint, meaning multiple simultaneous melodies, within any number of harmonic or non-harmonic systems. This tool will also allow graphical representations of melodic phrases to be shared among students and with their instructors, to facilitate collaborative melody writing and the commenting & evaluation of student work.

### Technical Overview

The Gestural Music Interface will consist of a control surface, or touch screen, where melodic shapes and patterns can be sketched as free-form graphical representations. The manual input gestures will be interpreted as MIDI (Musical Instrument Digital Interface) hexadecimal information, with corresponding parameters of pitch, duration and velocity. The GMI will also permit the intuitive incorporation of pulse and duration quantizing at scalable levels – phrase, measure, beat and fractions of beats – through pre-programmed series of additional gestures. The GMI will permit application of melodic processes like motive and phrase repetition and transposition, melodic and rhythmic inversion and retrograde, and interval and duration expansion and diminution. The GMI will also contain plug-ins and export facility so that melodies can then be notated conventionally, combined in larger works, or harmonized. The GMI will require one year for initial exploration, development, testing and educational effectiveness assessment.

### Preliminary specifications

- Object-oriented editing ability
- Flexible event definitions and groupings
- Dynamic manipulation of duration, frequency, absolute and relative temporal location
- Voice 2, 3 and 4 provisions for critiquing
- File export: MID, MP3, AIF, WAV, MUS, SIB?
- Edit list/play list setup
- Intuitive gestures for cut, copy, paste, stretch/shrink, creep/move,
- Dynamic root-key assignment (center note of melodic scope)

### Reports and Resources

- [CIT 2013 Poster](#)
- A full download of the source code is available on [Github](#)

## **Instructional Design**

- Mobile Learning