

## ABSTRACT

DISSERTATION: Color Circle: An Original Composition for Orchestra and Computer

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*Color Circle* is a single-movement work for orchestra and computer. This eight minute composition draws upon a fully-chromatic circle of fifths and the mathematical properties of geometric circles (realized as various waveforms) to help generate compositional material and to guide formal decisions. The work is divided into five sections, each of which is driven by a variation on a motive of three rising pitches and several overlapping sonorities. The work culminates in a motivic, instrumental, and harmonic climax in the final section, owing largely to the completion of the always present, yet often obscured, circle of fifths.

The accompanying document provides a review of relevant literature that proved historically, musically, and technically influential, as well as an analytical examination of the work from a viewpoint that includes pitch structure, motivic development, harmony, rhythm, texture, orchestration, and the role of the computer-generated sounds.

Additional documents: included is a musical score of the piece and an mp3 file of a MIDI mockup