1117-97-105   **Andrew D. Jones*** (`andrew.d.jones@yale.edu`) and **Richard Cohn**.
__Geometry, consonance, and the non-specialist:__
Pedagogical interdisciplinarity and math/music undergraduates.

Undergraduate mathematics and music theory both challenge students to formalize their intuitions using terms and concepts foreign to them. This paper describes the authors' attempts to produce an interdisciplinary pedagogy which works back and forth across this intuitive boundary, leveraging musical intuitions to exemplify formal mathematics and employing mathematical concepts, both formal and intuitive, to describe and define complex music theoretical relationships.

Offered in 2013 to 35 Yale undergraduates, the course based on this pedagogy pairs introductory concepts from modular arithmetic, graph theory, geometry, and topology with music theoretical analogues. Musical scales and octave equivalence render intuitive modular arithmetic, the mathematical formalization of which extends students' cyclic intuitions to the rhythmic domain. Treating chords as harmonic objects embedded in graphs and geometric spaces motivates investigating relations and metrics; terms and images from graph theory and geometry allow students to formalize new insights into extended harmonies and progressions. A textbook-in-progress contains these and other materials designed to give students a cross-domain vocabulary for describing patterns of relationships between musical and mathematical objects. (Received January 06, 2016)

1