

1096-J5-2237 **Kurt Ludwick*** (keludwick@salisbury.edu), Salisbury University, 1101 Camden Ave, Salisbury, MD 21801. *Counting Melodies: A Musical Introduction to Recursion*. Preliminary report.

In this talk, I will present an activity that I have developed while teaching a course on connections between music and mathematics for a liberal arts audience. A significant portion of this course is devoted to the study of various types of counting problems. One such problem that arises is counting the number of distinct rhythms and melodies that can be written under certain restrictions. For example: “How many different n -beat rhythms can be written using only quarter notes and half notes?” leads us quickly to “discover” the Fibonacci sequence. Minor variations to this question - e.g., changing allowable note lengths, introducing rests, or allowing multiple pitches (thus, melodies rather than just rhythms) - motivates us, through fairly straightforward musical considerations, to explore a wide variety of recurrence relations. (Received September 17, 2013)