1116-K6-2941 **Darrah P Chavey*** (chavey@beloit.edu), Beloit College, 700 College St., Beloit, WI 53511.
Sidewalk Patterns: Symmetry at Home. Preliminary report.

The availability of multiple colors of patio bricks makes it possible to design sidewalk or walkway patterns with a wide variety of symmetric patterns, and symmetrically colored patterns. Several available sizes of patio bricks, in multiple colors, come in dimensions with a ratio of 1:2, such as 4" X 8", 6" X 12", and even 12" X 24", and our work focused on the types of designs we could construct with this shape of brick. To help search the space of such designs, we developed software that allowed us to specify various constraints on the designs. These constraints include which linear symmetry group is desired, the maximum number of classes (or "orbits") of bricks acceptable in the design, restrictions against "gutters" (straight lines that cross the design without cutting across any brick), constraints on the coloring (requiring symmetric colorings or perfect colorings), etc. We demonstrate the software, and show some of the highlights of the designs it found. (Received September 23, 2015)