This lecture will review some of the long history of tiling—a subject that mathematicians have only recently addressed and in so doing, have discovered its riches and tantalizing unanswered questions. The legacy of unknown artisans, manufacturers, and builders in many cultures from earliest times testify to an accumulated knowledge about the art and utility of tiling. Mathematicians ask: What shapes tile? In what ways do they tile? In how many ways do they tile? J. Kepler, P. J. MacMahon, and M. C. Escher are some of the early pioneers who explored these questions. Many mathematicians (notably, B. Grunbaum and G. C. Shephard) have contributed to the current state of knowledge in this active field. But many others are also contributors since tilings provide models for natural phenomena such as crystal structure and cellular structure of plants, they are encountered in coding theory and nearest neighbor problems, and they provide wonderful recreational problems.

Visions of Symmetry: Mathematics in the Art of M. C. Escher
Tuesday, November 7, 1995
7:00 p.m.
Brendle Recital Hall, Scales Fine Arts Building

M. C. Escher's graphic works fascinate us with their imagery—the images not only make obvious use of geometry, but often provide visual metaphors for abstract mathematical concepts. The lecture will examine the mathematical concepts implicit in several of Escher's works, outline the transformation geometry that governs his interlocking figures, and reveal how this "math anxious" artist actually did pioneering mathematical research in order to accomplish his artistic goals.