1116-K5-2174   **Susan Goldstine*** (`sgoldstine@smcm.edu`). *Thinking Outside the Torus: Geometric explorations in bead crochet.*

For the past six years, Ellie Baker and I have studied the mathematics of bead crochet rope bracelets. The traditional form for such a bracelet is an apparently seamless torus of beads arranged in a single spiral. This spiral structure introduces fascinating constraints on pattern design, and we have spoken about our discoveries at various conferences and published them in several papers and a book.

The underlying crochet in a standard bead crochet bracelet is very simple, with the same stitch repeated throughout the piece to produce a homogeneous torus; the intricate patterns and textures in a bracelet stem entirely from the choice and arrangement of beads. Incorporating different crochet stitches such as increases, decreases, and chain stitches can produce bead crochet with more complicated geometry and topology. This talk will cover some of these new explorations into the mathematical possibilities of the art form. (Received September 22, 2015)