

1106-H1-2679      **Ellie Baker\***, ellie.baker@post.harvard.edu, and **Susan Goldstine**. *Make Your Own Torus Knot*  
– *Crafty Constructions in Bead Crochet and Beyond*.

This talk describes two thought experiments that help elucidate the elegant structure of torus knots and suggest design and construction techniques applicable to bead crochet and other materials.

In one thought experiment, we use a diagonal line spanning a  $P$  by  $Q$  patchwork of infinitely thin, transparent, flat tori and then join all identifying points to construct the desired  $(P, Q)$  knot. In a second thought experiment, we start with a single flat torus with  $Q$  evenly spaced vertical lines, roll it into a cylinder, apply a  $P/Q$  twist to one end, and join the two ends to form the desired  $(P, Q)$  knot. We show how these ideas can be applied to practical torus knot constructions in bead crochet, clay, and cookie dough, with potential for fun, possibly wearable or edible, hands-on exploration and learning. The thought experiments and bead crochet constructions are described in our new book, *Crafting Conundrums: Puzzles and Patterns for the Bead Crochet Artist*. (Received September 16, 2014)