

Visualizing Symmetry: How I Use Symmetry Groups in My Art

Presented by

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Both mathematicians and artists employ the concept of symmetry. In mathematics, the study of symmetry groups plays a central role in both algebra and geometry. Finite symmetry groups, in particular, include two- and three-dimensional point groups visible in flowers and pinwheels. In three dimensions, the point groups fall into two categories. First are the prismatic groups and their subgroups, and second are the groups and subgroups of symmetries of regular solids, including the tetrahedral, the cube-octahedral, and the icosahedral groups. Infinite symmetry groups include the frieze and wallpaper groups. In art, like in geometry, objects having these symmetry groups are aesthetically intriguing. I will present artistic representations of objects that embody these symmetry groups, including woven bead sculptures and fabric quilts. Time permitting, I will show how I have recently represented other mathematical concepts with beads, including fractals and topology.

Thursday,
April 9, 2009
5:00–6:00 p.m.
115 Avery Hall

University of Nebraska–Lincoln

Reception: 348 Avery Hall
4:15–5:00 p.m.

Sponsored by the Department of Mathematics
and the Nebraska Alpha Chapter of Pi Mu Epsilon



Gwen L. Fisher

Dr. Gwen Fisher is trained as a mathematician and professional math educator. She worked for six years as a professor at California Polytechnic State University, and she is co-owner of beAd Infinitum. As an artist, Dr. Fisher is internationally known for her quilting and beaded bead designs. She has inspired many beaders around the globe with her innovative designs and patterns of her bead work. She has published extensively, as well as featured her artwork at several regional and national mathematics conferences. Three of her quilts currently hang at the Mathematical

Sciences Research Institute in Berkeley, CA, one of which is in their permanent collection.

