Art Gallery:

Scarf- (A fashionable equation: the Yang Baxter scarf, by Robin Endelman, 2013. Manos del Uruguay's Silk Blend (merino and silk, hand-dyed).

This scarf depicts the Yang-Baxter equation of statistical mechanics, a variation of which is the braid equation in algebra, or the 3rd Reidemeister (equivalence) move in knot theory. Assigning the numbers 1, 2, 3 to the colors blue, green, gold, respectively, the Yang-Baxter equation reads: R12 R13 R23 = R23 R13 R12, where Rij denotes strand i crossing strand j — the two sides of the equation being depicted on the two ends of the scarf, with equality represented by the middle portion.

For the equation to read correctly, the fabric needed to be double-sided. To create the two-sided fabric and traveling cables simultaneously, the artist introduced a hybrid of double-knitting and tubular knitting. As a result of this technique, the colored strands are produced as embedded I-cords in the brown body of the scarf.

-Symmetry (Intrinsic Transformation I, by Conan Chadbourne. Archival digital print, 2013)

This work is part of a series of visual meditations on the structure of the alternating group on 5 elements, also known as the icosahedral group.

This group is the smallest non-abelian simple group, and it characterizes the orientation-preserving symmetries of the regular icosahedron and dodecahedron. It also has interesting historical significance as one of the first groups to be studied abstractly, through its connection with the theory of quintic equations.

This image explores the structure of the icosahedral group through a particular presentation by two generators. The group's elements, which appear as yellow disks in this image, are arranged at the vertices of a truncated icosahedron, shown here in stereographic projection, while the group's generators, of orders 2 and 5, correspond to the regions between the disks, colored red and blue, respectively. The image is composed of multiple hand-drawn images which are digitally composited and output as an archival digital print.

-Labyrinth

* Pictorial, representational and abstract designs, constructed from mosaics, relief, engraved and inlay materials and techniques.
* Text, relating to commissioned poetry, religious verses, and comments from the Artist’s research with partners and user groups from the wider community, incorporated into the pavers.
* -Globe

In more modern times polyhedra have inspired artists and mathematicians with an interest in the arts. Inspired by polyhedra, Stewart Coffin has created a wonderful array of [puzzle designs](http://interlockingpuzzles.com/Coffin.html) which require putting together pieces he designed made from rare woods to form polyhedra. [Coffin's puzzles](http://www.johnrausch.com/PuzzlingWorld/) are remarkable for both their ingenuity as puzzles and their beauty. This beauty is a reflection of the beauty of the polyhedral objects themselves, but also the beauty of the rare woods he used to make his puzzles. Coffin showed creativity in selecting symmetrical variants of well-known polyhedra. Coffin's work, like Escher's, has been an [inspiration](http://www.stirlingsouth.com/Roy/my_engines/roy.html) to others. Good [puzzles](http://gamepuzzles.com/resourc5.htm) engender the same sense of wonder that beautiful mathematics inspires. [George Hart](http://www.georgehart.com/), whose background is in computer science, is an example of a person who is contributing to the mathematical theory of polyhedra, while at the same time he uses his skills as a sculptor and artist to create original works inspired by polyhedral objects.

Origami-

Origami models of polyhedra use approaches where the panels become the faces of the polyhedra, so that the challenge becomes producing panels with different numbers of sides with the same edge lengths. One can also produce polyhedra which are "pyramided." By this I mean that the solids represent convex polyhedra with pyramids erected on each face. (Those are not stellations in the usual sense that geometers use this term.) Other polyhedra like these emphasize the edges of the polyhedron and in essence serve as rigid rod models for the polyhedra. They resemble Leonardo da Vinci's drawings that demonstrated emerging techniques of drawing polyhedra in perspective.

Origami2-

A major area of interest has been the study of the crease patterns (system of lines on the paper) which can be folded "flat." The mathematics needed involves ideas and methods somewhat different from what was done in the past in attempting to understand how a piece of a plane (a square of origami paper) could be transformed by a geometric transformation, because at the end of the transformation parts of the origami paper touch each other, though they do not interpenetrate other parts of the paper.

Cube- Durer’s “Melancolia”

Crannell demonstrated the essential concepts of perspective art by drawing a cube with front and back faces parallel to the canvas and therefore represented as squares. The remaining four edges of the cube are parallel to each other but not parallel to the canvas, so they lie along lines that converge to a vanishing point.