

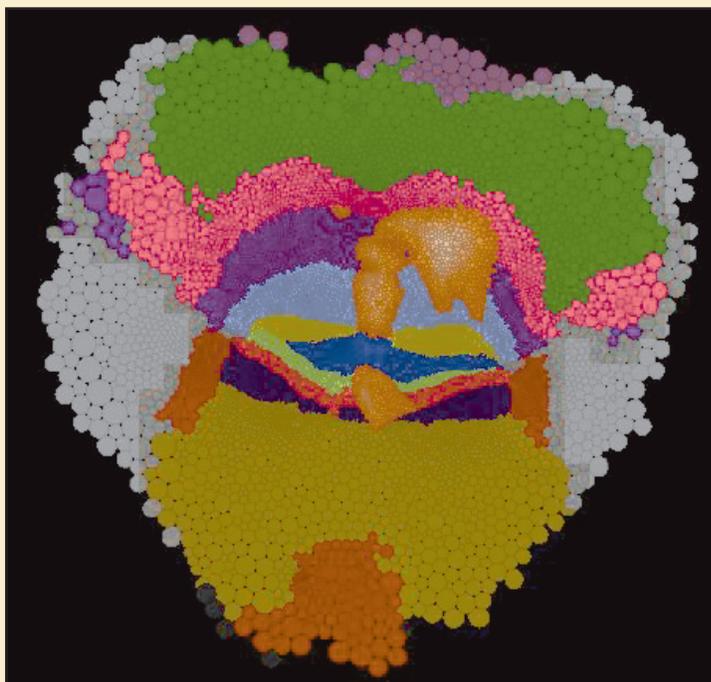
# Mapping the Brain

Mathematics is used to understand how to precisely identify the parts of the brain that correspond to specific functions. Current research involves mapping our three-dimensional brain to two dimensions, similar to translating a globe to a map. Yet because of the many fissures and folds in the surface of the brain, mapping our brains is more complex than converting a globe to a map.

Points of the brain that are at different depths can appear close in a conventional image. To develop maps of the brain that distinguish such points, researchers use topology and geometry, including hyperbolic and spherical geometry. Conformal mappings—correspondences between the brain and its flat map that don't distort angles between points—are especially important to accurate representations of the brain. Just as a map of the earth aids navigation, conformal mappings serve as a guide for researchers in their quest to understand the brain.

**For More Information:**

<http://www.math.fsu.edu/~mhurdal/research/flatmap.html>



Photograph courtesy of Dr. Monica K. Hurdal (mhurdal@math.fsu.edu)  
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