2015 Winner: Emma Bode

2016 Winner: Emma Bode

**POPULUS TREMULOIDES**

Winning Entry for the 2015 Science as Art Contest

Emma Bode, Environmental Sciences (RES), won the College’s “Science as Art” contest this fall. Bode classified and edited the Gallatin County soils GIS data in ArcMap to create the image of an Aspen tree.

The connection between science and art in the geospatial sciences is overwhelmingly present to me. Spatial Analyst’s GIS courses stress the importance of good design. Taking this experience a step further, I created a purely aesthetic interpretation of spatial data. I created this piece using soils data for the Gallatin Valley. Soils data is an ideal data set for artistic manipulation because it is made of many small polygons that are each unique, much like a child’s Color By Number workstation. In order to differentiate classes of polygons, I selected and exported them as a new shapefile. I created several shapefiles for the leaves, three shapefiles for the trunk, and one for the roots. I then manipulated the colors of each shapefile to produce the desired image.

—Emma Bode

Montana Vasculature

- Intermittent Streams
- Perennial Streams
- Major Rivers

Map Created by Emma Bode
Source: National Hydrography Dataset
U.S. Geological Survey

Artist’s statement: Water is life. Just as we depend on our rivers and streams to transport nutrients to our bodies, Montanans depend on streams and rivers to support our cities, farms, and ecosystems. This piece was created in ArcGIS with the National Hydrography Dataset. The NHDR represents the national drainage network with features such as rivers, streams, canals, lakes, ponds, reservoirs, dams, and streamsides. The dataset is typically used to generate reference maps and for scientific analysis—exploring cause and effect relationships in drainage areas, water quality, and fish populations. Through careful selection and embroidery of the feature attributes, I generated an aesthetic interpretation of Montana’s hydrology. I chose to depict the streams and rivers extending beyond Montana’s borders because water is subject to topography, not political boundaries.
Elodea leaf undergoing plasmolysis