

### **Abstract**

In this thesis we show that the Artin braid group is isomorphic to the fundamental group of the configuration space of the Euclidean plane. We give enough group theory to define the braid groups as well as some of its subgroups. We then define the homotopy groups and fiber bundles, and show that fiber bundles induce a long exact sequence of homotopy groups. After defining the configuration space of a topological space, we show that a certain map between configuration spaces is a fiber bundle, and we then use the long exact sequence of homotopy groups along with the results about the braid groups to prove the main theorem.

We end with a brief discussion about another result we conclude using this fiber bundle, namely that the configuration space of the Euclidean plane is a classifying space of the Artin braid group.