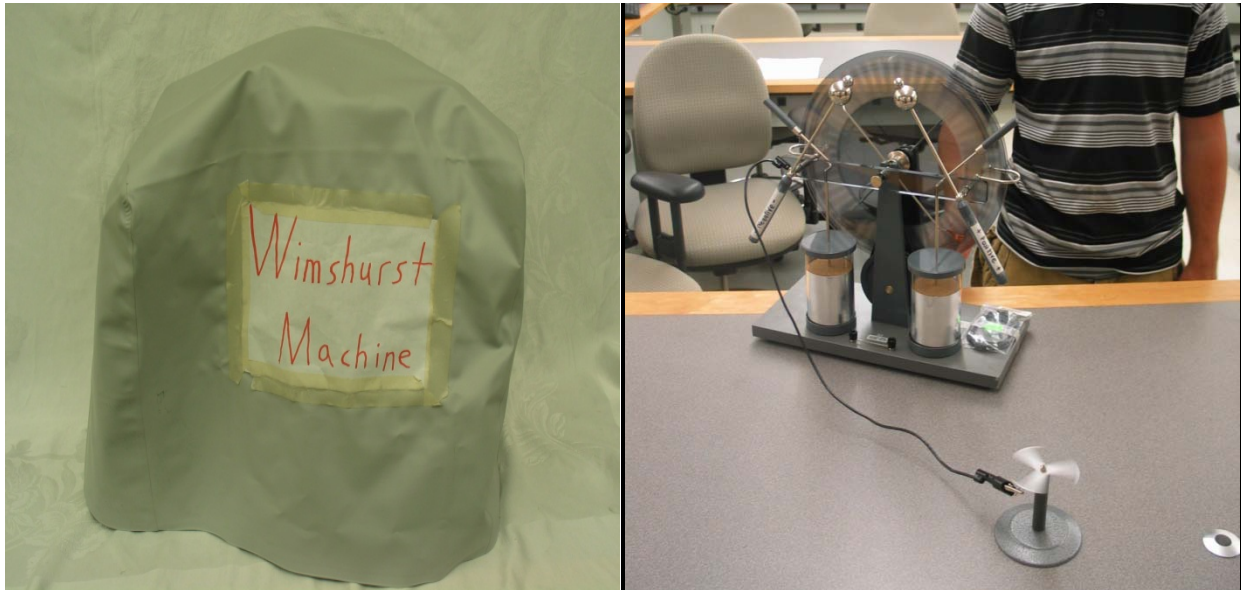


## Electric Whirl (WM)



**Purpose:** To show that sharp points can be used to generate “electric fields” intense enough to ionize air and exert force on the resulting ions.

**Location:** room 146, shelf L2

With the handles to the Leyden jars lifted, so charge isn't stored, insert the banana plug end of the short cord into either the positive or negative connection hole, and clip the other end onto the short copper wire attached to the “electric whirl” pivot pin. Rotate the hand crank on the Wimshurst machine in the clockwise direction and the vanes on the electric whirl should start spinning. This is due to the fact that the electric field created when a sharp object is charged can become so intense that it ionizes air near the sharp tips, and repels the like-charged ions, with the resulting reaction force making the vane spin. The Wimshurst machine uses electrostatic induction and feedback to generate high voltages. Its operation is explained in more detail at: [http://www.splung.com/content/sid/3/page/electrostatic\\_machines](http://www.splung.com/content/sid/3/page/electrostatic_machines) (You may need to hold the control key when clicking on this.) Keep cord from touching desktop to avoid discharge to ground.