The confinement of electrons to low dimension offers rich possibilities for exploring new physics in a controllable environment. In such restricted geometries, electronic excitations often acquire surprising physical properties that are a result of the underlying lattice and the Coulomb interaction among the electrons. Graphene for example is a two dimensional metal consisting of a monolayer of graphite, where the electronic excitations behave as mass-less relativistic particles. Conventional but ultra clean two dimensional electron systems when subject to a quantizing magnetic field conspire to form novel phases where quasi particles have fractional charge and obey non-Abelian statistics. When reducing dimensionality to one dimension the electronic excitations loose completely their resemblance to regular electrons and properties such as spin and charge become decoupled and charge fractionalizes. In this talk we shall review some of our recent experiments that explore a variety of such low dimensional systems and their underlying excitations.