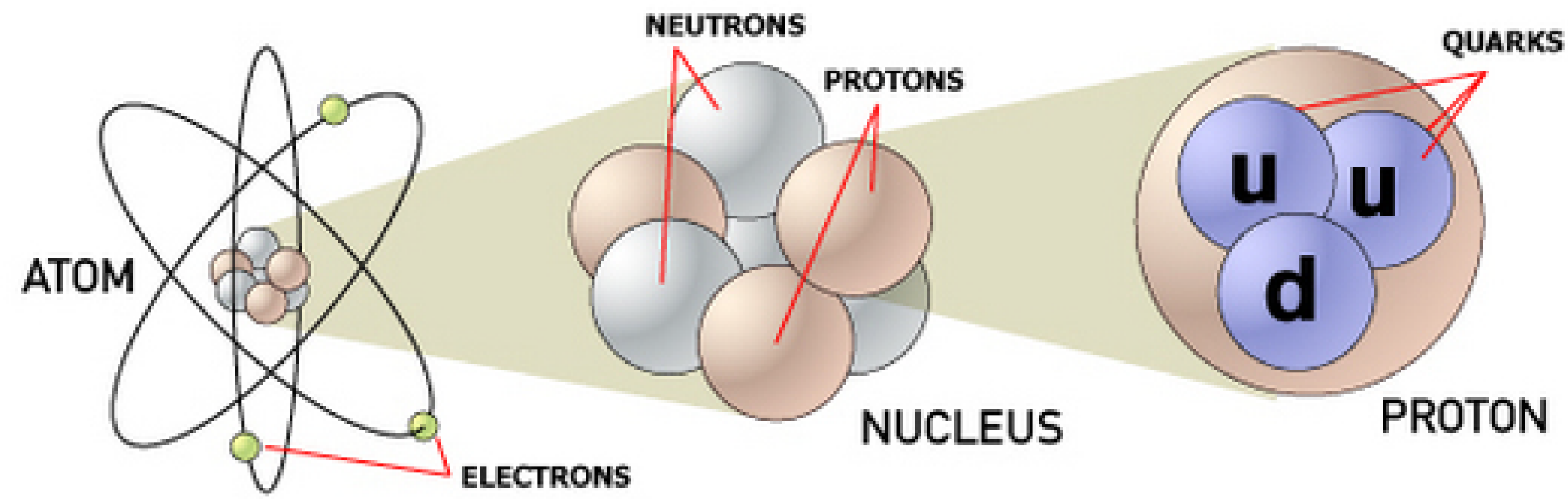


The Standard Model: Beyond the Atom



The 'Standard Model' is the theory that describes the smallest experimentally observed particles of matter & the interactions between them.

In the Standard Model, there are several categories of particles.

Matter is composed of *fermions* (*quarks & leptons*). In fact, all ordinary matter (such as this poster) is built from only 'up quarks', 'down quarks' & 'electrons'.

Bosons provide three forces, which enable the fermions to interact with one another: electromagnetism (γ), strong nuclear force (g) & weak nuclear force (Z^0 & W^\pm).

In order to explain why these particles have non-zero mass, the Standard Model must introduce one additional particle called the *Higgs Boson* (H^0).

The Standard Model doesn't include gravity, nor can it explain what the 'dark matter' & 'dark energy', which that make up most of mass of the Universe, might be. So although it is a very successful theory, it is not the final answer !

Elementary Particles in the Standard Model

