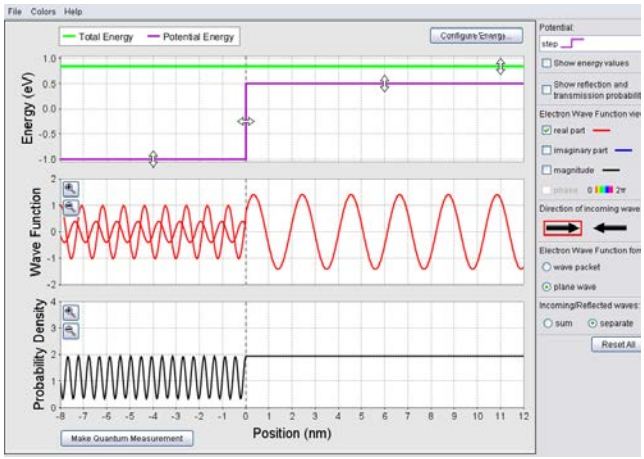
Simulations

Listed below are two quantum mechanics simulations. **Pick one** to play with and describe one phenomenon that we have discussed in class that it illustrated. Some phenomena you might choose: collapse of the wave function, tunneling, time independence the probability distribution of the energy eigenstates, etc.

1) Go to the Phet website http://phet.colorado.edu/en/simulation/quantum-tunneling and open the applet. Select the following settings:

- Potential=Step
- Electron wave function=Plane wave
- Incoming/Reflected=Separate
- Configure energy: set
  - V1=0 V (free space)
  - V2=+0.5eV (metal sheet, say)



2) The infinite square well.

Go to the website http://www.falstad.com/qm1d/ . You will see a simulation of the wavefunction for a particle in a 1D infinite square well. In order for you to interpret what you see, let's keep things simple, so make the following settings:

- View
  - Uncheck momentum
  - Wavefunction=Probability

You should see a panel similar to that at the right. The lower graph shows how the probability of finding the particle changes with position and time for a particle in an infinite square well.