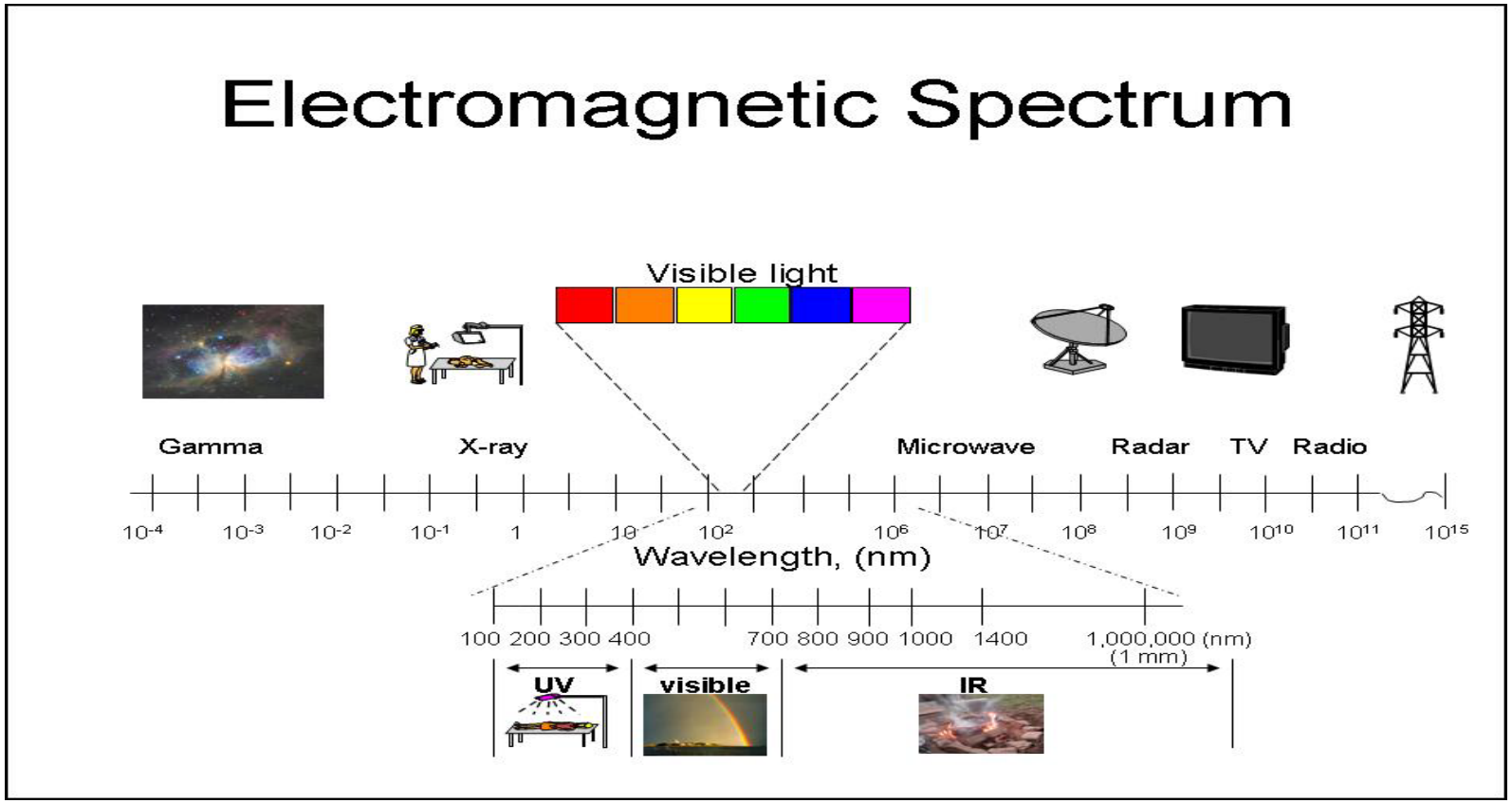

- UV wavelengths are between 100-400nm
- They are widely used in the lab for cross-linking, microscopy, germicidal lamps and photolithography
- Two types found in our lab
  - 365nm or UVA: 'black light'; lower energy, does not cause direct sun burns, does not directly alter DNA
  - 253nm or UVC: germicidal ; higher energy, causes sun burns, can degrade DNA, higher protection needed

UV safety

- There are no regulatory UV radiation exposure limits.
- The American Conference of Governmental Industrial Hygienists (ACGIH) publishes Threshold Limit Values (TLVs),
- UV-A (315 nm to 400 nm), the ACGIH recommends 1.0 J/cm2 for periods lasting less than 1000 seconds.
  - Our lamp in normal usage maximum at center of beam is 2 (mJ/s)/cm^2
- UV-C limit is 3.1 mJ/cm^2 at 275 nm for periods lasting less than 1000 seconds

- Sources of Danger
  - Optical Microscope with mercury lamp if incorrect filter is in place
  - UV Lamps for photolithography (365nm used primarily)
- How to Limit Danger
  - Whenever you switch to use the fluorescent bulb on the microscope always have the filter in place **beforehand! – failure could burn cornea!**
  - Wear protective gloves, sleeves and UV protection glasses when using the UV lamps (especially the 253 nm lamp). Limit direct exposure.

http://www.americanairandwater.com/UV-pdf/ultraviolet-radiation-safety.pdf