

Arthur



Science Research in *Nuclear Medicine*

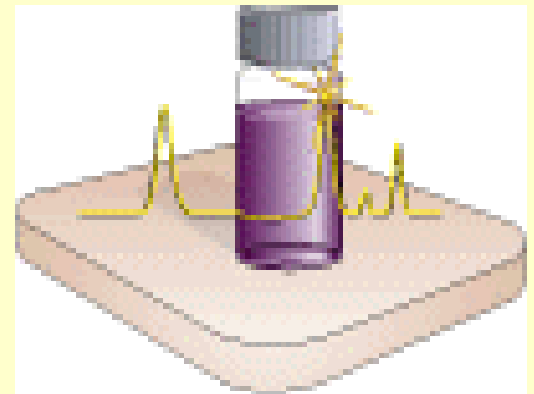
Career Day at
Oakland Terrace Elementary School
26 May 2000

R. Collé

Research Chemist

Physics Laboratory

*National Institute of Standards
and Technology*



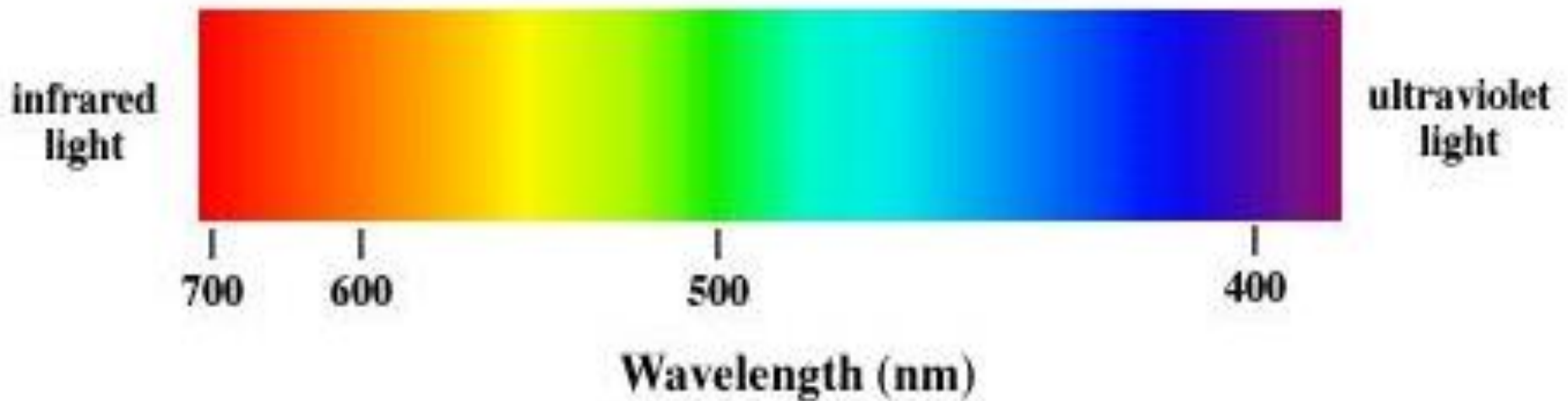
nuclear medicine primer

with many new words

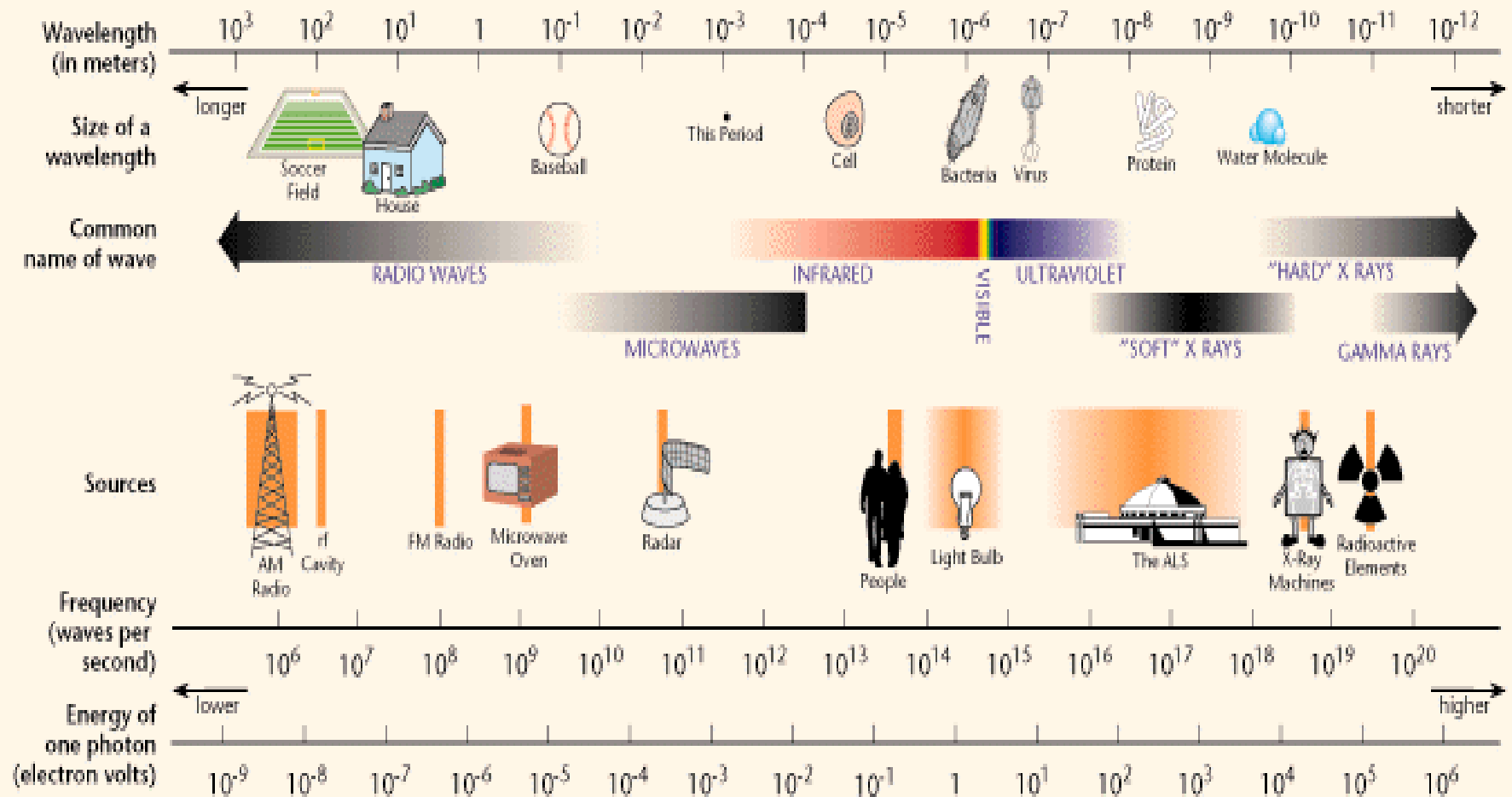
- **light & radiations from the EM spectrum**
- **molecules, atoms & the nucleus**
- **diagnostic & therapeutic uses**
- **external & internal radiation sources**
- **x ray radiographs and angiographs**
- **radiopharmaceuticals**
- **computed tomography**
- **science research careers**

Light

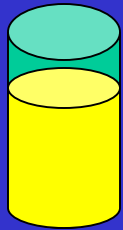
The Visible Spectrum



THE ELECTROMAGNETIC SPECTRUM



Glass of water

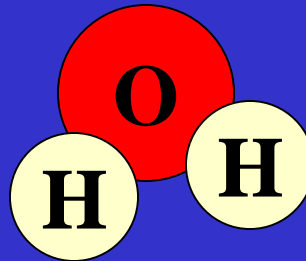


septillion
sextillion
quintillion
quadrillion
trillion
billion
million
thousand

⇒ 8,400,000,000,000,000,000,000,000

molecules of H_2O

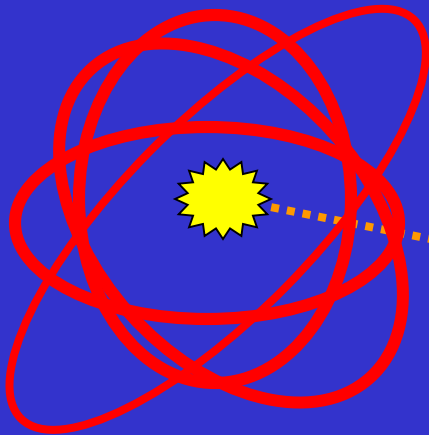
3 atoms



All atoms either
stable or
radioactive



natural or
man-made



electrons in orbits --
source of x rays

nucleus --
source of
nuclear
radiations

Purposes & Sources

	Diagnostic	Therapeutic
External source	X rays	“beams”
Internal source	injected radio-pharmaceuticals	Implanted “seeds”

Diagnostic X Ray

