

## BIOLOGICAL FRAMEWORKS FOR ENGINEERS

### Session #1 [nm - m: Functions of Life]

#### General Objectives:

- ✓ Course introduction and overview
- ✓ Describe the functions of life and the extremes of survival
- ✓ Discuss the fundamental themes of biology

#### Central Framework:

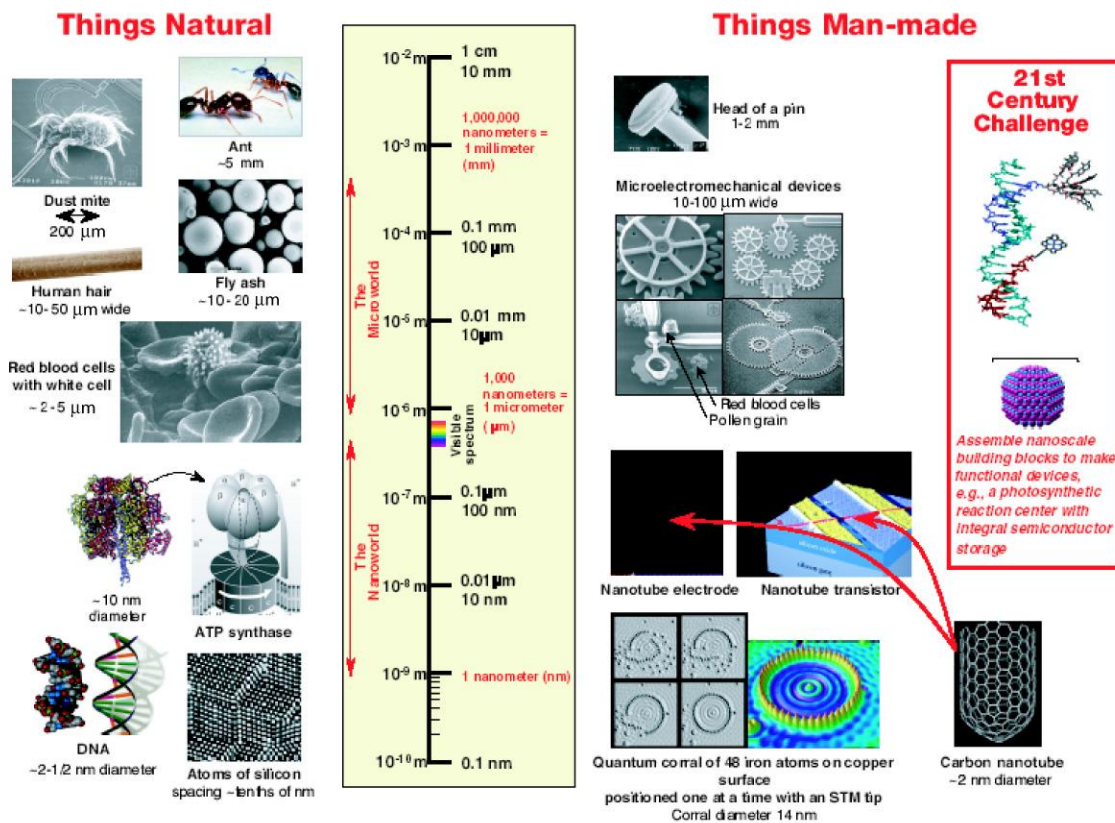
- ✓ Life is governed by specific physical, chemical, and thermodynamic rules which create the boundary conditions of life (environment) and facilitate the functions of life (survival).

#### Interactive Activity:

- ✓ Interactive discussions on the functions of life and environment.

#### Session Outline:

#### I. Course introduction



II. What are the functions of life?

III. What are the environmental limits within which life can exist?

IV. Fundamental themes of biology

A. molecular machines

B. integrated systems

C. form follows function

D. adaptation

1. short-term

2. long-term (evolution)