Big Impact of Small Science: Nanotechnology and Bionanotechnology

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Wednesdays, April 18th - May 23rd
10:30 a.m. - 12:30 p.m.
Room 124, Leeds House Building

Schedule of topics:

Week 1 (date - TBD): What is nanotechnology? This lecture will introduce the fundamentals of nanotechnology and nanoscience. We’ll look at some of the nano-enabled products that you may already be using every day.

Week 2 (date - TBD): Nanoparticles: With the fundamentals examined last class, we’ll explore a class of nanomaterials known as nanoparticles. We’ll learn about how these materials are made and how their properties are being exploited for sensors, displays, and other applications.

Week 3 (date - TBD): Nanotubes: In this lecture, we’ll look at another class of materials known as nanotubes. We’ll explore their interesting properties, how they are prepared, and their possible applications (including as cables for a space elevator!).

Week 4 (date - TBD): Nanocoatings: In this lecture, we’ll look at how coatings with thicknesses on the nanoscale can be prepared and how they are used in a variety of applications, from electronics to contact lenses.

Week 5 (date - TBD): Bionanotechnology: In this lecture, we’ll look to Nature for inspiration and for the building blocks of new nanotechnology. Nanotechnology built from DNA and proteins will be described, as well as nanomaterials that mimic the self-cleaning ability of the lotus leaf, or the adhesive quality of gecko feet.

Week 6 (date - TBD): Is nanotechnology safe? In this lecture, we will discuss the field of nanotoxicology and eco-nanotoxicology. We will discuss the risks and benefits associated with nanotechnology.
Recommended readings for continued learning:
None

Other interesting resources:
Interesting websites will be highlighted throughout the lecture series.