NAPLES, ITALY 6-10 JULY
NANOSMAT Naples
16th International Conference on Surfaces, Coatings, and Nanostructured Materials

16th International Conference on Surfaces, Coatings and Nanostructured Materials
www.nanosmat.org/special.html

ABSTRACT:

A Golden Time for Nanotechnology

Catherine J. Murphy

Department of Chemistry, University of Illinois Urbana-Champaign,
600 S. Mathews Ave., Urbana, IL 61801 USA

Gold nanocrystals of controlled size and shape have tunable optical properties that enable new science. Upon illumination with resonant light, these gold nanocrystals can not only scatter light but also generate plasmons (coherent oscillations of conduction band electrons). These plasmons, in turn, can produce local electric fields and heat. All these modalities mean that gold nanocrystals can serve as excellent contrast and imaging agents in aqueous matrices. In this talk will be described the synthesis and shape control of these nanocrystals; absolute measurements of their absorption and scattering, and their ability to deliver photoelectrons; details of their surface chemistry, including ligand density and ligand flexibility; their ability to function as molecular sensors and light-triggered delivery agents; and how these nanocrystals impact biological systems at the protein, cell, and ecosystem levels.