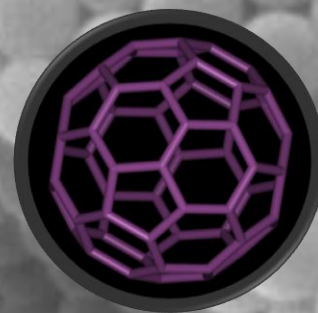
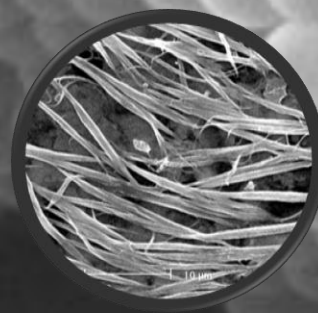
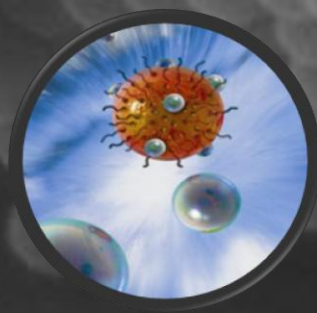
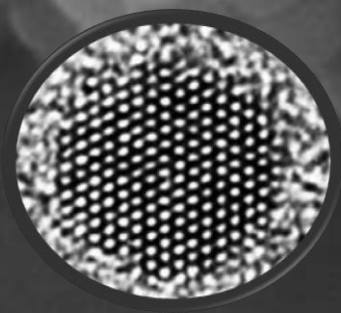


Nanoinformatics Resources for Nano Environmental, Health and Safety



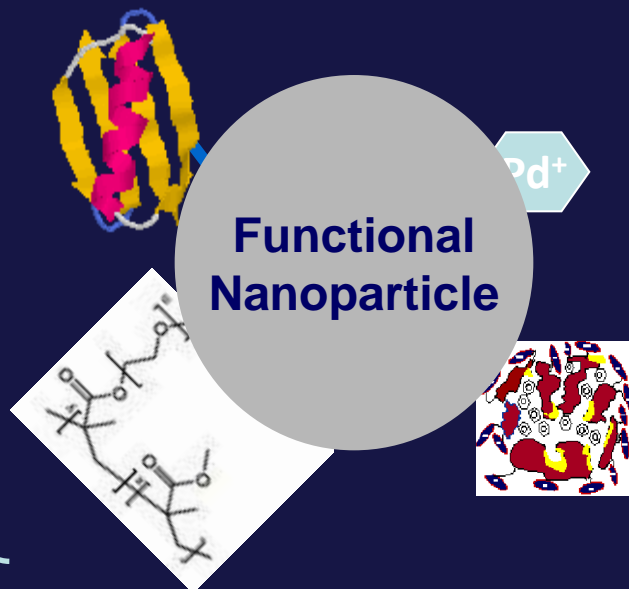
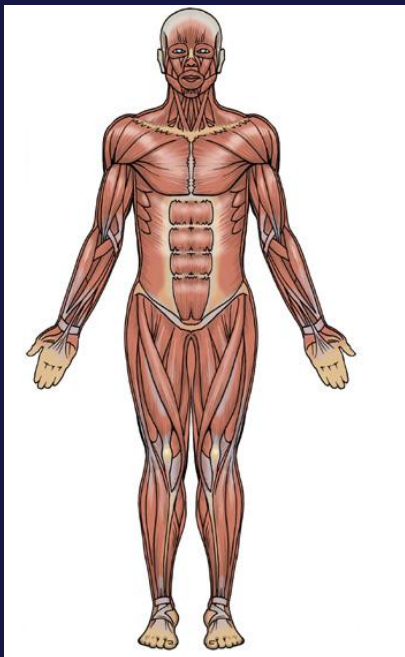
Dr. Kristen M. Kulinowski
Department of Chemistry
Center for Biological and Environmental Nanotechnology
International Council on Nanotechnology
Rice University

Center for Biological & Environmental Nanotechnology

Research

Education

Outreach



Theme 2: Nanoparticles for Bioengineering

Theme 1: Nanoscience at the Wet/Dry Interface

Theme 3: Nanoparticles & Environmental Engineering



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HOT PAPER: "Nucleation of protein fibrillation by nanoparticles," Linse, S., O. Cabeleiro-Lago, Xue, W.-F., Lynch, I., Lindman, S., Thulin, E., Radford, S. E., Dawson, K. A. (2007). Proceedings of the National Academy of Sciences of the United States of America XXXXXX: XXX.

This work explores the role that nanoparticles play in accelerating the rate of a process called protein fibrillation, which has been linked to amyloid diseases. Amyloid diseases are a broad class of ailments that result when amyloid proteins misfold and form insoluble fibrous plaques (fibrils) that deposit in the tissues of the body. Linse et al. noted an increased rate of protein fibrillation when beta 2-microglobulin, an amyloid protein associated with complications from kidney dialysis, was put into solution with nanoparticles. Four different types of nanoparticles (copolymer particles of N-iso-propylacrylamide (NIPAAI) and N-ter-butylacrylamide (tBAAI), cerium oxide particles, CdSe or CdSe/ZnS quantum dots and multi-walled carbon nanotubes) each accelerated the production of small seeds upon which fibrils form most effectively. However this study did not determine that nanoparticles can cause human disease.

For a general overview on nanoparticles and amyloid diseases, see [here](#).

For questions and answers about nanoparticles and amyloid diseases, see [here](#).

[More information.](#)

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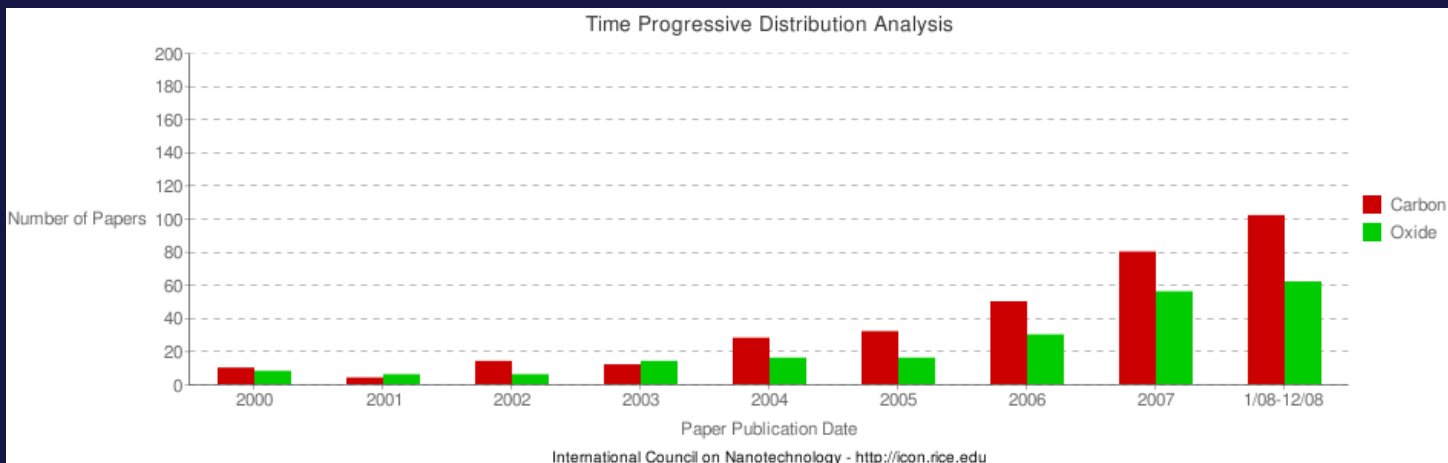
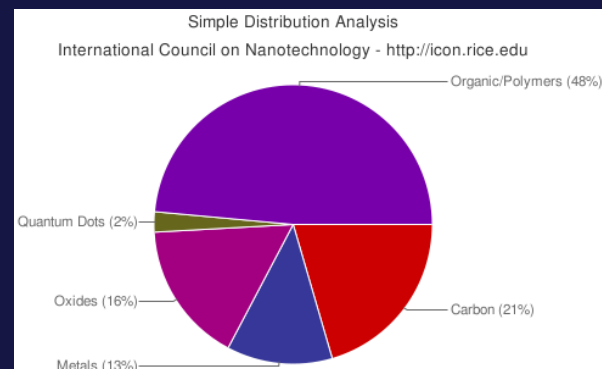
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The GoodNanoGuide is a collaboration platform designed to enhance the ability of experts to exchange ideas on how best to handle nanomaterials in an occupational setting. It is meant to be an interactive forum that fills the need for up-to-date information about current good workplace practices, highlighting new practices as they develop.

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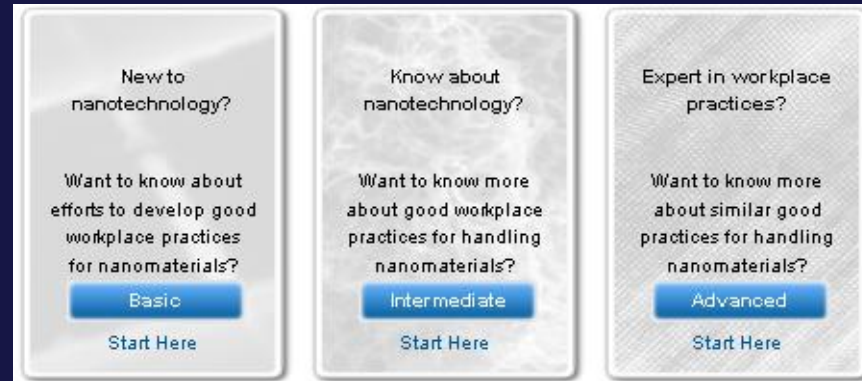
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