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**Subject:** New Project Proposal Submission  
**Date:** Tuesday, June 16, 2009 4:08:06 PM

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Lab Address:	205 Particle Science & Technology
Department:	MSE
Title:	Interaction of natural organic matter with nanomaterial
Problem:	Although a significant amount of research has been conducted to study the negative impacts of manufactured nanomaterials, very few take into account the realistic environmental factors that may affect nanomaterial toxicity, including organic matters, which are present in almost all environmental compartments. However, up to date, the interaction of organic matter with nanomaterials is still not well studied and this gap needs to be filled up soon in order to address the toxicity issues associated with many nanomaterials.
Approach:	Varying concentrations of organic matter will be mixed with known amount of nanomaterials and shaken for days, some of which will be centrifuged. TOC in the supernatant will be measured to determine the amount adsorbed. The uncentrifuged samples will be exposed to test organisms to assess the toxicity vs. TOC content.
Techniques/Equipment:	Dynamic light scattering TOC analyzer ICP UV/Vis spectroscopy
Systems and Materials:	Organic matter: suwannee river humic acid Nanomaterials: silver and copper
Goals:	Study the adsorption kinetics of organic matter on nanomaterials and the resulting effects on nanomaterial toxicity
Relevant Industries/Applications:	Government regulation Green manufacturing of nanomaterials
Number of Students	1

Requested:	
Time Commitment:	10
Semesters Required to Complete Project:	1-2
Will this Project Satisfy Senior/Honor Research Requirements in your Department?	Yes
If not, Can the Scope of this Project be Expanded to Meet Senior/Honor Research Requirements?	Yes