

**Department of Science and Health
UC Clermont College**

**SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN**

APPLICATION DEADLINE: March 1, 2012

The Department of Science and Health is pleased to offer the following research project for the summer of 2012. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and, if possible, develop a timetable for the twelve-week research period.

PROJECT TITLE: Clathrate-Forming Surfactants

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Project Description

My research involves the synthesis and characterization of a novel class of clathrate-forming surfactants. Typical surfactants self assemble to form a fluid micelles and liquid crystals in water while typical clathrate formers induce the self assembly of water into ice-like crystals. I'm attempting to understand the molecular structures that could simultaneously induce surfactant and clathrate self assembly.

The summer research project is part of an ongoing study of molecular structures than can induce both surfactant and clathrate self assembly. Students will work with a polarizing light microscope and a uv/visible spectrometer to study phase behavior and hydrophobic solubilization. The purpose of the project is to investigate solubilization and clathration in the liquid-crystalline phases of aqueous tetrabutylammonium 10-undecenoate.