

Department of Chemistry  
COLLEGE OF ARTS & SCIENCES

SUMMER RESEARCH OPPORTUNITIES  
FOR UNDERGRADUATE WOMEN

**APPLICATION DEADLINE: March 1, 2010**

*The Department of Chemistry is pleased to offer the following research project for the summer of 2010. 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: Exploration of the role of long-range cooperativity in the mechanical response of large biomolecular assemblies**

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**Project Description**

Research in the Dima group focuses on understanding the role of various structural and cellular factors in the mechanical response of biological molecules ranging from small multi-domain proteins to large fibrillar assemblies that play crucial roles in fundamental processes such as the maintenance of the cell shape, cell mobility, cell-cell adhesion, blood flow, wound closure, axonal growth, and mitosis. A project for a REWU student is "Exploration of the role of long-range cooperativity in the mechanical response of large biomolecular assemblies". The goal of this project is to identify and classify the types of long-range interactions between combinations of the most prevalent structural domains that give rise to flexible biomolecular assemblies. The student will gain experience with analysis of protein databases, will learn to use software applications to probe the dynamical response of proteins to applied forces, and will gain knowledge in searching the scientific literature.