

Peptoid Nano-Assemblies

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Internship Description:

Peptoids are synthetic structural isomers of natural peptides [DOI: 10.1039/C3BM60269A]. Specific monomer sequences give rise to self-assembly of nanostructures not seen in nature (e.g. nanofibers, nanosheets), and individual sequences as well as some of the assembled nanostructures confer bioactivity (e.g. anticancer, antibacterial activities, influence of stem cell differentiation). In this project, you will be responsible for investigating how to control the self-assembly process through modifying the peptoid sequence and/or the physical conditions of the assembly. Depending on interest, the project can focus more on synthesis and purification (by solid phase methods and HPLC), experimentation with self-assembly conditions (including kinetic control), or nanostructure characterization/analysis of the data (including confocal microscopy).

Qualifications:

- Excellent chemistry background
- Interest in one or more of the following topics: biomaterials, self-assembly, biochemistry, materials science, polymers, image analysis, analytical chemistry, physical chemistry, bionanotechnology