Proposed BCHM 421/422 Project Outline

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Project Title: **Structural and functional analysis of the myosin-I neck region**

Keywords (3-5): cell motility, myosin-I, IQ motifs, structural biology, protein-protein interactions

Project Goals:

1. Express and purify constructs encoding myosin light chains and myosin-I neck regions
2. Characterize light chain binding to IQ motifs in the myosin-I neck
3. Purify a stable myosin light chain-myosin neck complex
4. Crystallize and solve the X-ray crystal structure of the complex

Experimental Approaches:

1. DNA cloning, protein expression and purification
2. Biochemical and biophysical characterization of protein-protein interactions using isothermal titration calorimetry, pull-down assays, gel filtration, etc.
3. Protein Crystallization
4. X-ray crystallography and possibly NMR

References:
