Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

**Investigating Confinement Effects on Cholesteric Liquid Crystals**

KYLE KABASARES, CHARLES MELTON, LINDA HIRST, Univ of California - Merced — Liquid crystal (LC) droplets provide the ability to study how confinement can affect macroscopic properties studied previously only in bulk material. Understanding properties such as elasticity and topological defects are important from both a scientific and practical standpoint. Advances in material applications, both biological and electronic, rely on characterizing the properties of LC and other soft matter based materials. In this project, we studied chiral nematic, also known as cholesteric liquid crystal (CLC) droplets in a mixture with water. We observed the material properties through polarized light microscopy, and we characterize properties such as defect textures and phase transitions on CLC samples of varying concentration. This study illustrates a versatile approach to studying confinement and self-assembly which can possibly be extended to other soft matter materials.

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Date submitted: 11 Nov 2016 Electronic form version 1.4