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| **Student** | **Advisor** | **Poster Title, Abstract & Student Bio** |
| Andrea Saw | Dr. Shanju Zhang | Title: Applications of Structural Colors Produced by Graphene Oxide Photonic Liquid Crystals in PaintAbstract: Graphene oxide in the form of a thin film of 1nm thickness or more appears a dark brown to black shade, yet the color shifts to near transparency with the increase of thickness. When graphene oxide is dispersed in an aqueous solution, ordered photonic structures are formed spontaneously, due to a property to form a stable colloid with nematic assembly. If the photonic structure appears to be crystalline from a nematic and homogeneous GO dispersion, color reflection throughout the visible spectrum can be observed and altered by varying the concentration or volume of GO dispersed in the solution. This color display is owned to the 1D Bragg nanostructure of GO. Other factors such as exposure to humidity or the application of an intersheet force have been determined to influence the stability of a photonic liquid crystal and indirectly shift the wavelength of the GO. Such properties indicate that this nature of GO has potential applications in optics, paint, and structural color printing. Bio: Andrea Saw is a senior and a Materials Engineering major at Cal Poly. She graduated from Albany High School, Albany. Andrea is the first woman in her generation in her extended family to study STEM in university. Something interesting about Andrea is that she has never read or seen Game of Thrones. |