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| **Student** | **Advisor** | **Poster Title, Abstract & Student Bio** |
| Jefferson Norman | Dr. Erik Sapper | Title: Controlling and Characterizing the Surface Morphology of Polymer Blends and Copolymers  Abstract: The use of atomic force microscopy (AFM) as a means of characterizing the surface morphology and topology of polymer blends and copolymers is necessary for the advancement of polymeric surfaces with designed color and appearance. The mixing of different polymer and copolymer types can yield superior and desirable finishes, but only after the complex relationships between the composition and structure within the polymer and the morphology and topography of the resultant polymer surface are elucidated. Here, we demonstrate the capability of AFM to map the surface of polymer materials on the microscale, allowing a better understanding of the observed macroscale optical qualities. Comparisons of surface morphology between different, fully characterized polymers, copolymers, and polymer blends allows for a rational approach for the design and development of new polymer mixtures with specified traits. Herein, we present our results from AFM studies relating polymer and copolymer structure (molecular weight, mixing ratios, architectures, etc.) to the morphology (distribution of material heterogeneity) and the topography (height distribution) of the resultant surfaces.  Bio: Jefferson Norman is a junior Materials Engineering student at Cal Poly. He went to San Luis Obispo High School and graduated in 2015. Jefferson successfully summited Mount Kilimanjaro in Tanzania (the highest mountain in Africa standing at 19,341 feet). His biggest hobby is travel, and he loves to visit new and interesting places and learn about different cultures. |