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| **Student** | **Advisor** | **Poster Title, Abstract & Student Bio** |
| Kyle Aidukas  **POSTER & ORAL PRESENTATION** | Dr. Shanju Zhang | Title: Graphene Oxide Polyurethane Composite for Increased Corrosion Resistance  Abstract: Due to the demand for low VOC content, polyurethane systems are the current industry standard for protective coatings. However, the aforementioned systems lack the optimal performance of their banned counter-parts. As such, full recoats of low VOC systems are needed more frequently due to their reduced corrosion resistance, thereby increasing their annual costs. This effect is exacerbated by shortened service lives resulting from the regulation of corrosion resistive additives. In this work, graphene oxide, a material that has been studied intensely due to its high mechanical, thermal, electrical, and barrier properties, was incorporated into a polyurethane matrix. This composite shows great promise due to graphene oxide’s facile incorporation within the previously mentioned coatings system. Bulk material properties of the composites were determined using differential scanning calorimetry, dynamic mechanical, and thermogravimetric analyses. The corrosion resistance was measured using electrochemical impedance spectroscopy and a continuous salt-spray method. An increase in the mechanical and barrier properties were seen in 5 mil composites. However, difficulty was found in achieving uniform dispersions of the graphene oxide.  Bio: Kyle Aidukas is a 5th year Senior Biomedical Engineering and Chemistry Double Major, with a Concentration in Polymers and Coatings. He is originally from Thousand Oaks, California. Kyle graduated from Westlake High School in 2013.  At Cal Poly in Dr. Zhang's research group Kyle worked with Polyurethane composites. Kyle awarded best poster at the 2017 American Coatings Association Coatings Tech Conference. During his time outside of school Kyle rock climbs, runs, and reads literature for fun. |