



UAA Professional Development Seminar Series

An Analysis and Pursuit of Small Vessel Electrification in Alaska

Presented by Phillip "Gus" Lewis

ABSTRACT: As the world maritime sector continues to transition towards hybrid-electric and all-electric alternatives, the commercial fishing industry is often overshadowed by larger vessels. Interest in vessel hybridization in Alaska has seen an uptick in recent years, often driven by the state's high energy costs, with operators frequently stating that fuel

consumes 10-40% of annual operating costs. Much of the existing work and literature specific to Alaska seeks to provide energy estimates for larger vessels (seine, troll, longline, etc.) to help operators gauge how to reduce energy consumption through operating practices or battery sizing. In reality, due in part to cost and volume, battery storage is unlikely to offset diesel for most larger operations fully. There are, however, more attractive operations, primarily the state's mariculture sector, for electrification. This work seeks to provide listeners with a means to understand how energy is expended on commercial fishing vessels ranging from 58 ft seiners to 12 ft aluminum skiffs, and which industries across the state possess a real potential for electrification. In addition to providing a review of vessel-specific operating practices, this work highlights the need for real-time simulation for weaker shipboard microgrids, which must be able to handle sudden load changes.

BIO: Phillip "Gus" Lewis was born and raised in Anchorage, Alaska, and received his undergraduate degree in Electrical Engineering from UAA in the spring of 2024. While not initially certain in his desire to pursue a graduate degree, his strong interest in the state's fishing and marine industry made his decision to return easy. Phillip has been commercial fishing since his early teens and has been involved in numerous other subsistence activities over the course of his life, thanks to his family and friends. With an emphasis in power systems, he could not possibly imagine an area of research better suited to both his personal interests and academic background. Phillip began his final semester this spring and will wrap up his graduate work by the end of this upcoming summer. Still, he has been continually procrastinating on any big decisions about next steps afterwards.

Friday, March 6, 2026

11:45 am - 12:45 pm

EIB 211 or Online Via [YouTube Live](#)