As highlighted by the popular television show The Deadliest Catch, commercial fishing is consistently one of the most dangerous occupations in the United States. Given that the end-goal of vessel dynamics research is to save lives, how does one encourage the use of potentially life-saving technologies into a cash-strapped fleet? The aim of this talk is to discuss both the cutting edge of vessel dynamics research, and how we can capitalize upon hardware developments of recent years to package this work into accessible, easily disseminated tools for a broad audience. To serve this end, the seminar will begin with an overview of research being conducted by the Virginia Tech vessel dynamics research group including analytical, experimental, and numerical work on topics ranging from exploration of Europa, to prediction of dynamic instabilities such as capsizing, to air cushion vehicle skirt dynamics. The talk will then discuss the importance of identifying and implementing mechanisms to transition research into the hands of the end-user. I will discuss in some depth how analytical formulations can be derived for use in a regulatory framework as well as providing an example for how occupational safety interventions can be deployed in a cost-efficient manner.

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