

Undergraduate Research Symposium 2012

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Inexpensive Underwater Data Communication

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Providing access is paramount to developing technology and a large component of accessibility is cost. By laying groundwork for inexpensive underwater data communication, many more people will be able to use and participate in the refinement of this important advancement. This project attempted to transmit data encoded into an acoustic wave which could then be decoded into that data at a remote location connected only by water. Quantizing the frequency transmitted into discernibly different values based on anticipated inaccuracies allowed this to be done without any filtering or advanced signal processing. Low frequencies were used due to the inherent limitations in the equipment and to minimize self generated interference from reflected signals. The environment of this test transmission was also selected to minimize any interference. This data transmission was successfully achieved, while still keeping the cost of the components involved to less than \$60.