ABSTRACT

TITLE:	Design and Development of a Sampling Platform to Study Long Distance Seed Dispersal
AUTHOR(S):	Naglak, John; Blue-Eyes, Isaac; Miller, Collin; Baumbach, Aleph; Prentis, Peter; Smith, York R.; Smith, Ryan N.; Ogle, Jonathan
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ABSTRACT: Recent theoretical research has shown that ocean currents and wind interact to disperse seeds over long distances among isolated landmasses. Dispersal of seeds among isolated oceanic islands, by birds, oceans and man, is a well-known phenomenon, and many widespread island plants have traits that facilitate this process. Crucially, however, there have been no mechanistic vector-based models of long-distance dispersal for seeds among isolated oceanic islands based on empirical data. Here, we propose an experimental methodology and present a novel sensor platform to circumvent these limitations and directly estimate a mechanistic, vector-based model of seed dispersal in the ocean. We have developed seed analogues, or pseudoseeds, outfitted with wireless sensor technology that will enable high-fidelity tracking as they disperse across large distances in the ocean. The pseudoseeds are precisely designed to mimic actual seed buoyancy and morphology enabling realistic and accurate, vector-based dispersal models of ocean seed dispersal over vast geographic scales.