

Title of Project: Understanding coral reef thermal dynamics through innovative drone technology

Names of supervisors:

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Brief description of project

The link between increasing water temperatures and coral stress is undeniable. However, we do not currently have the means to assess temperature variations over large areas at scales appropriate to the individual coral colonies that are affected. Satellite technologies allow large area coverage and can assess broad fluctuations between reefs but are too coarse for within reef assessments. Conversely, field survey techniques provide site specific measurements at individual points but cannot capture contiguous spatial and temporal changes. This project will use high spatial and temporal resolution thermal imaging acquired from aerial drone platforms, integrated with field survey and oceanographic models to better understand fine scale thermodynamics on a coral reef and the implications for bleaching alerts. Until now, it has not been possible to capture this level of spatial and temporal detail, so this project represents an exciting contribution to coral reef and remote sensing science.