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Using Microarrays to Compare Bacterial Community Changes Between Healthy & Diseased Corals

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U.S. Department of the Interior
U.S. Geological Survey

FL Keys Marine Ecosystem

Short version:

Microbial communities on corals (too small to see in this photo)

Using microarrays to study them

Wow! I’m out of time, email me if you have questions

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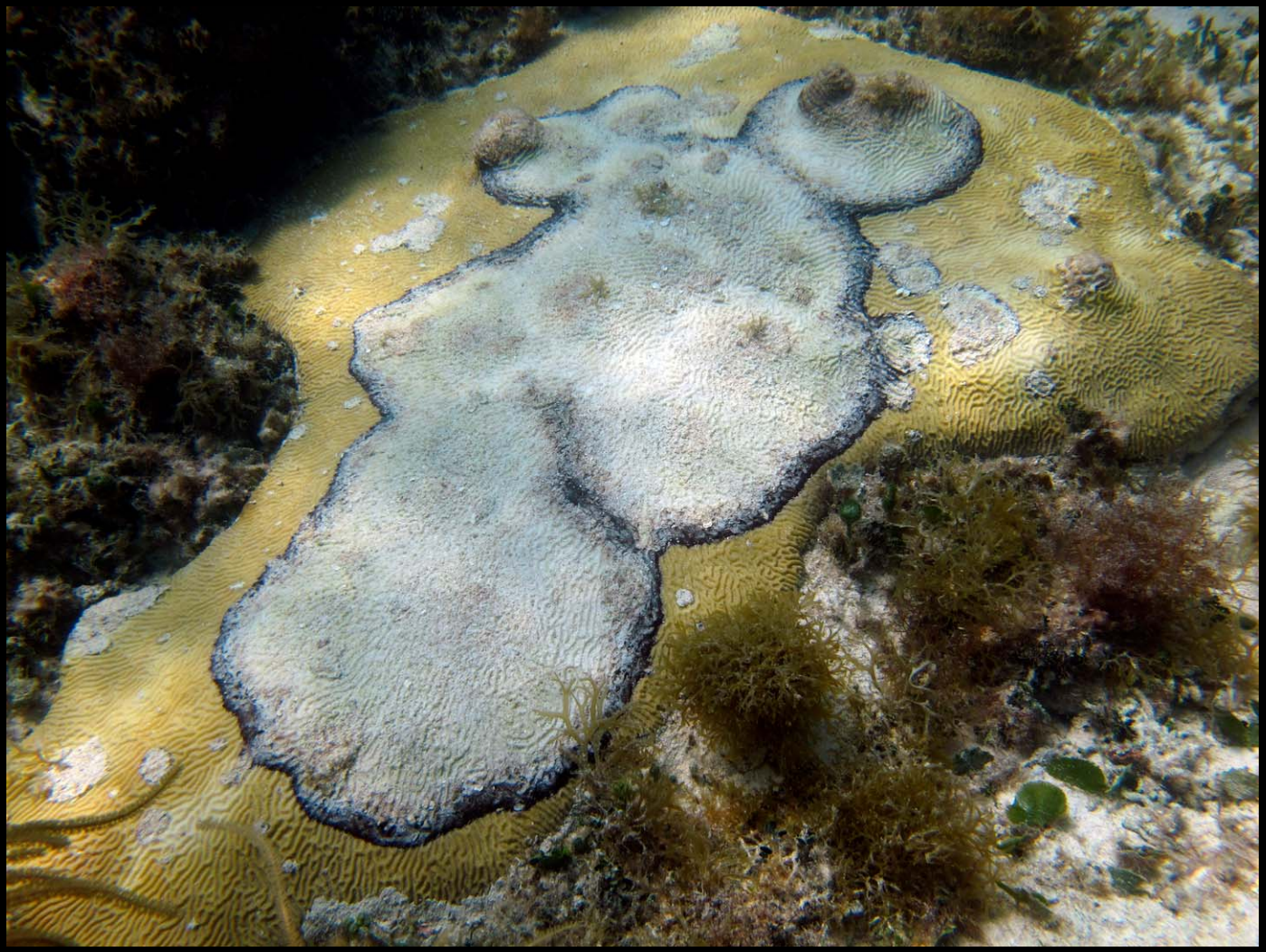
Coral disease sucks



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Distinguishing diseases based on macroscopic lesions can be difficult

Bleaching?

Predation?

White pox?

White plague?

White syndrome?

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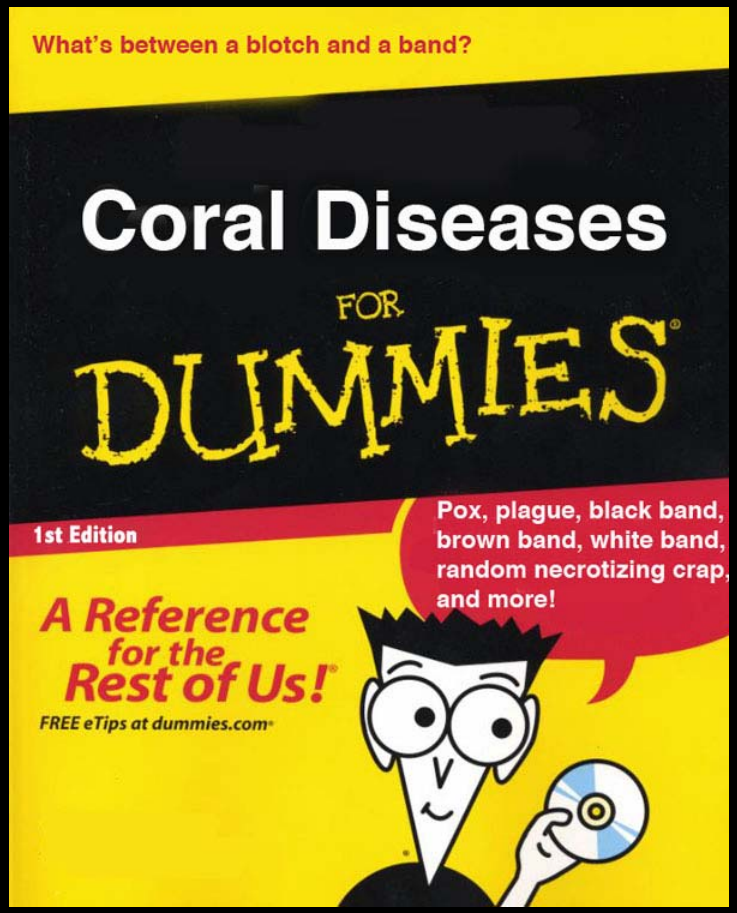
We aren't sure if most coral diseases are caused by a single pathogen or multiple opportunistic pathogens



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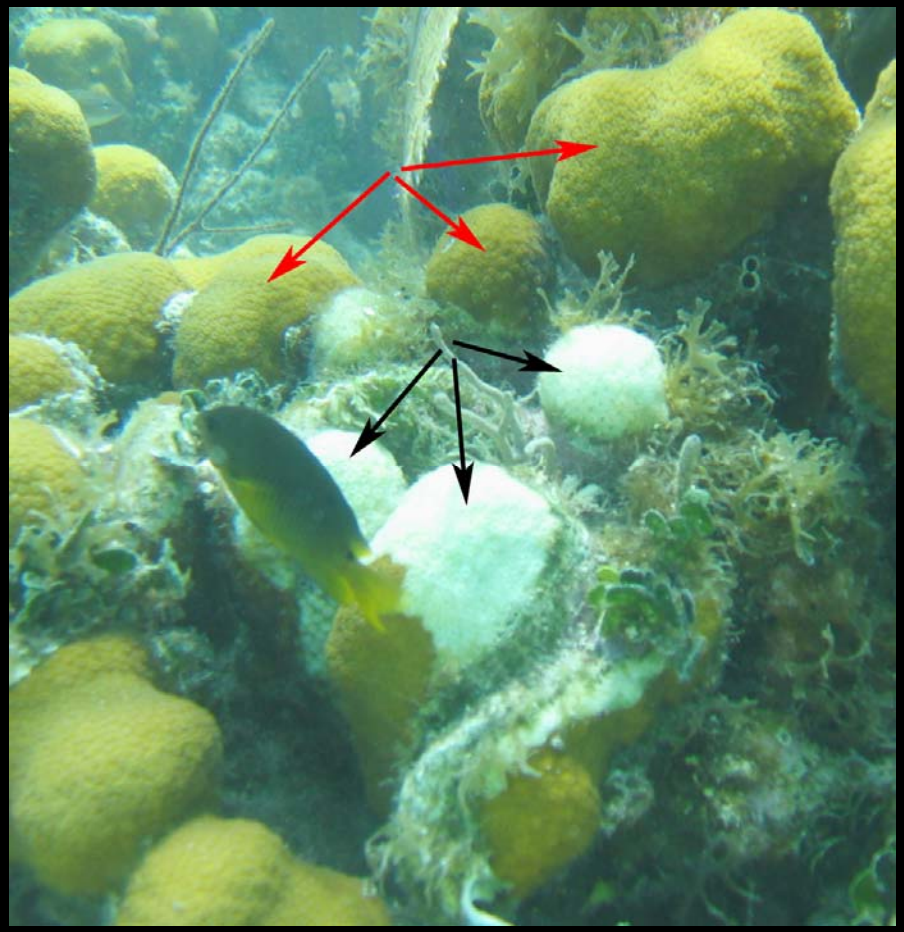
We need to understand microbial community shifts as coral goes from healthy to diseased



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PhyloChip G3 can show you an overview of the coral micro community

1.1 million DNA probes

~60,000 operational taxonomic units

(family to strain)

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I sampled healthy & white plague-affected *Montastraea annularis*

VIIS

July 2009

DRTO

Aug 2009

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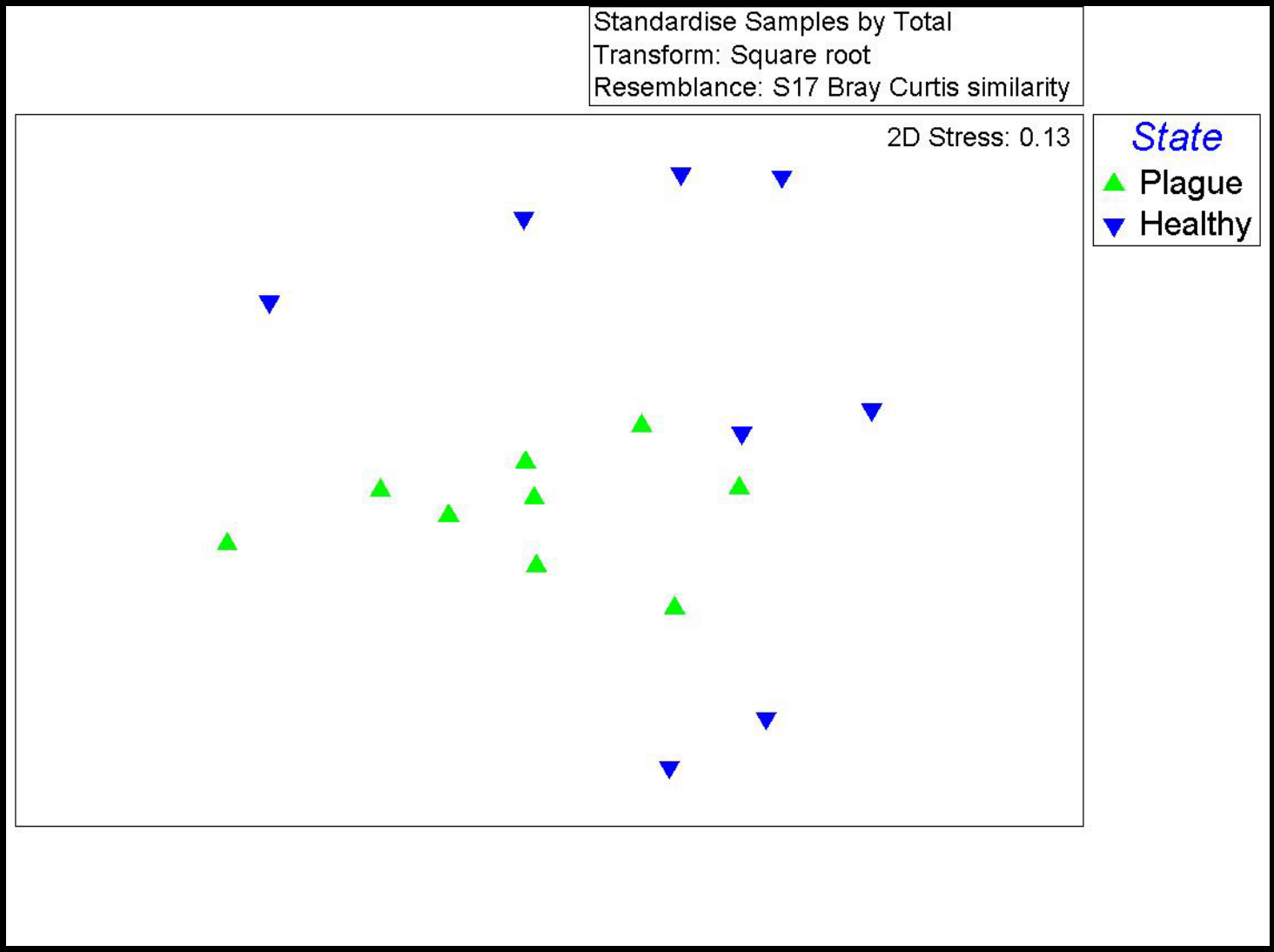
There is a distinction btw healthy & diseased corals but not btw sites



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Evidence of *Aurantimonas coralicida* was found in 3/9 diseased corals

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It’s impossible to discuss the remaining 59,999 OTUs in the time remaining + I’m still working on it

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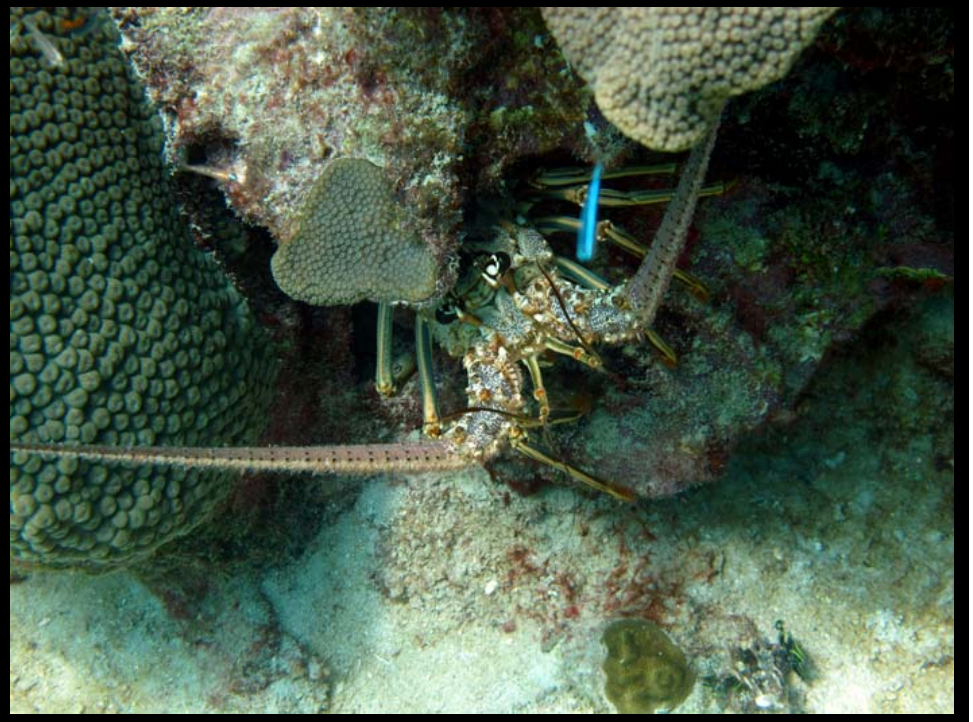
Thanks to Ginger Garrison, Peter Richardson, & Tracy McDole for assistance sampling

Any Questions?



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