

BACTERIAL PREDATORS:



Lerner, et al., 2012

Bacteriophage as a Probiotic Control of Vibriosis in Oyster Spats

Rebecca Vega Thurber, PhD; Rory Welsh, William
Burgess

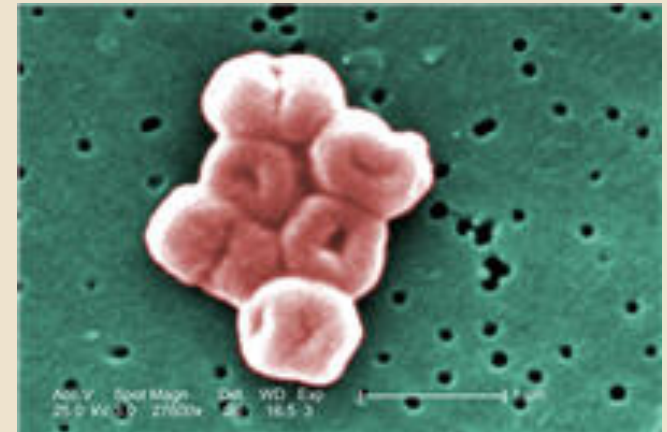
Briefly ... Why?



NOBANIS

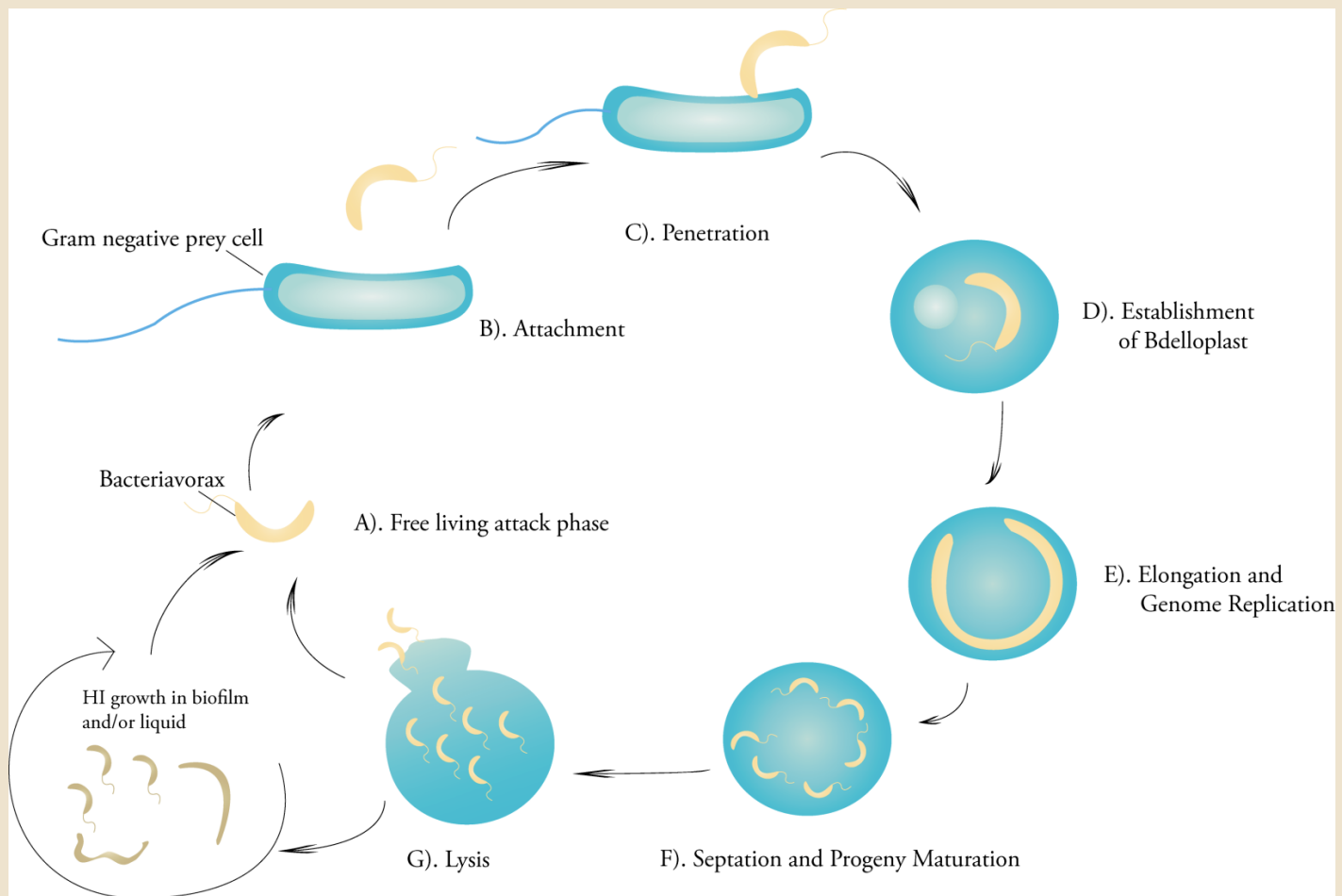
Bacteriovorax probiotics
matter to the oyster
industry specifically ...

... and generally, in control of drug-
resistant Gram-negatives.



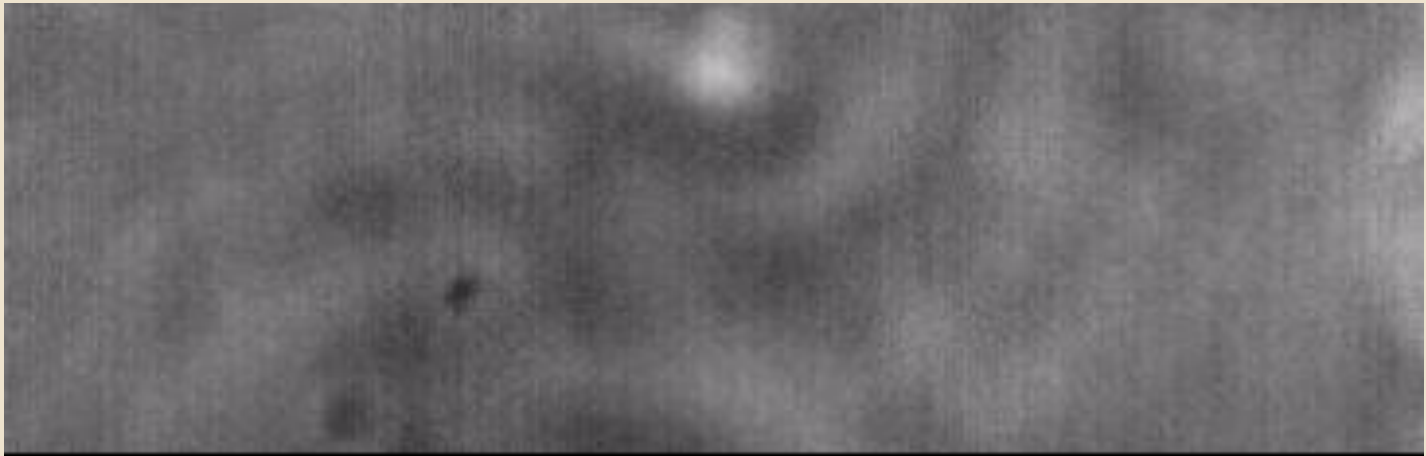
CDC

The Curious Life of Bacteriovorax



Welsh, Rosales, and Vega Thurber, in prep

The Chase



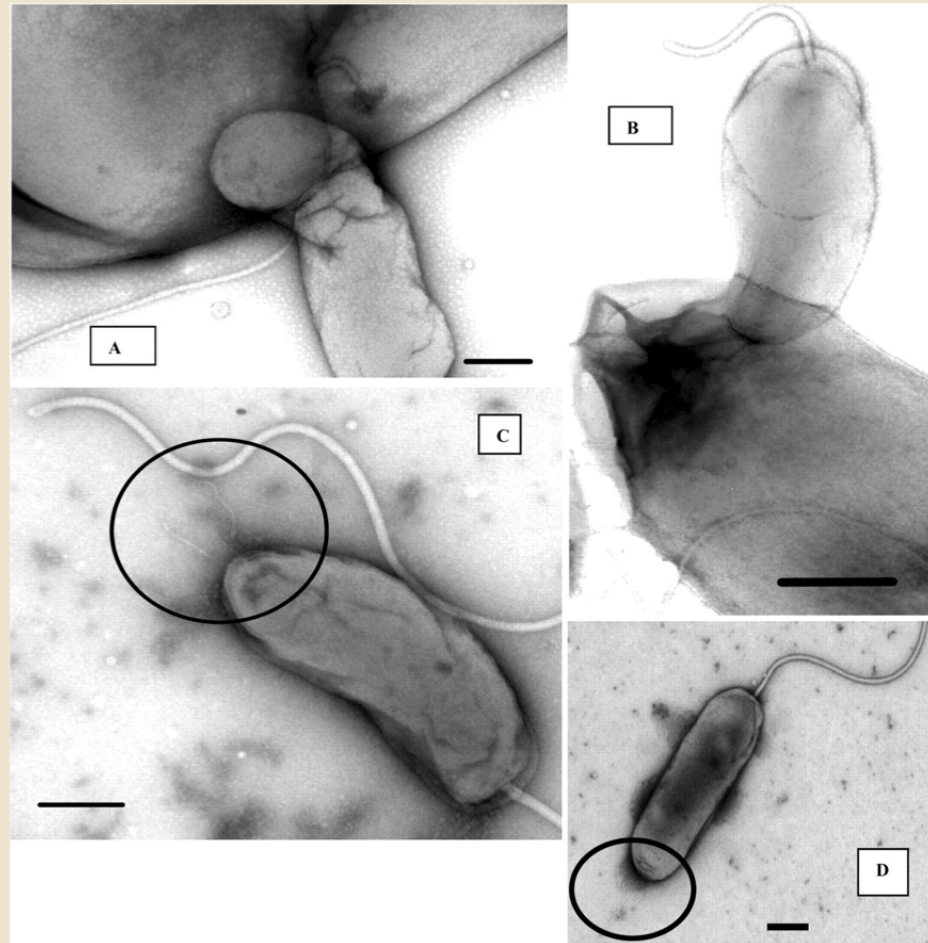
Environmental Microfluidics Group

The Capture



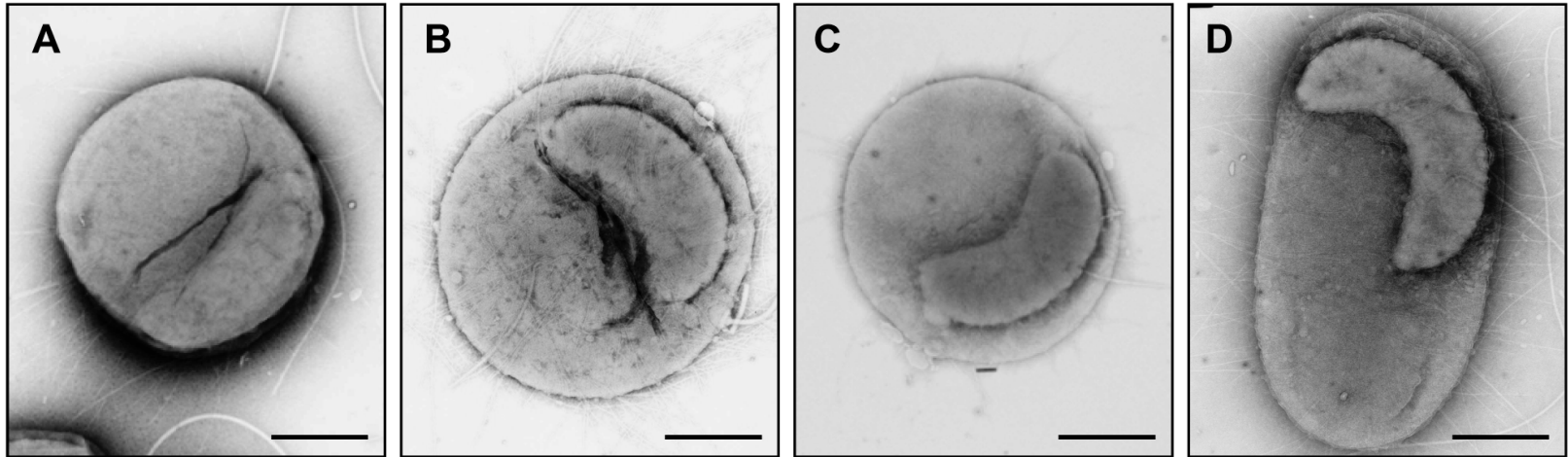
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Penetration of Prey Cells



Scale bar = 0.2 μm

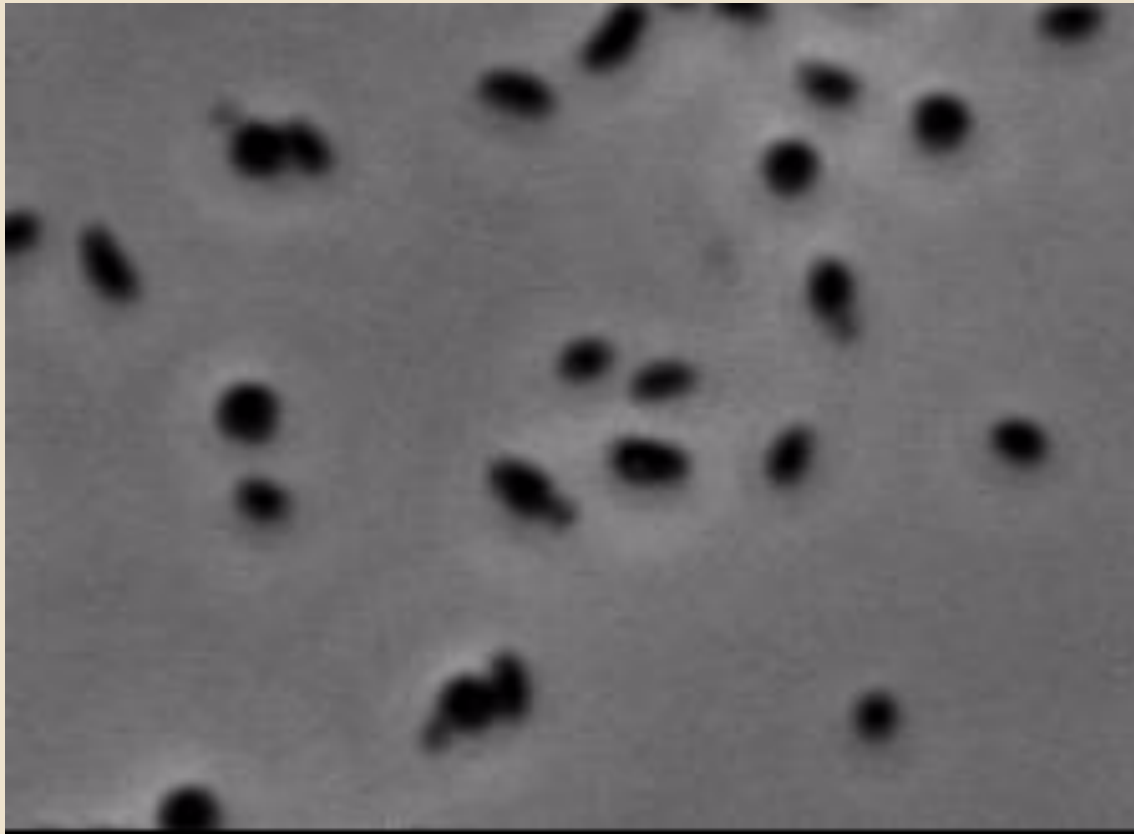
Bdelloblast Formation



Lerner, et al., 2012

Bdellovibrio and mutants preying upon other Gram-negative bacteria. Scale bar = 500 μm .

The Kill

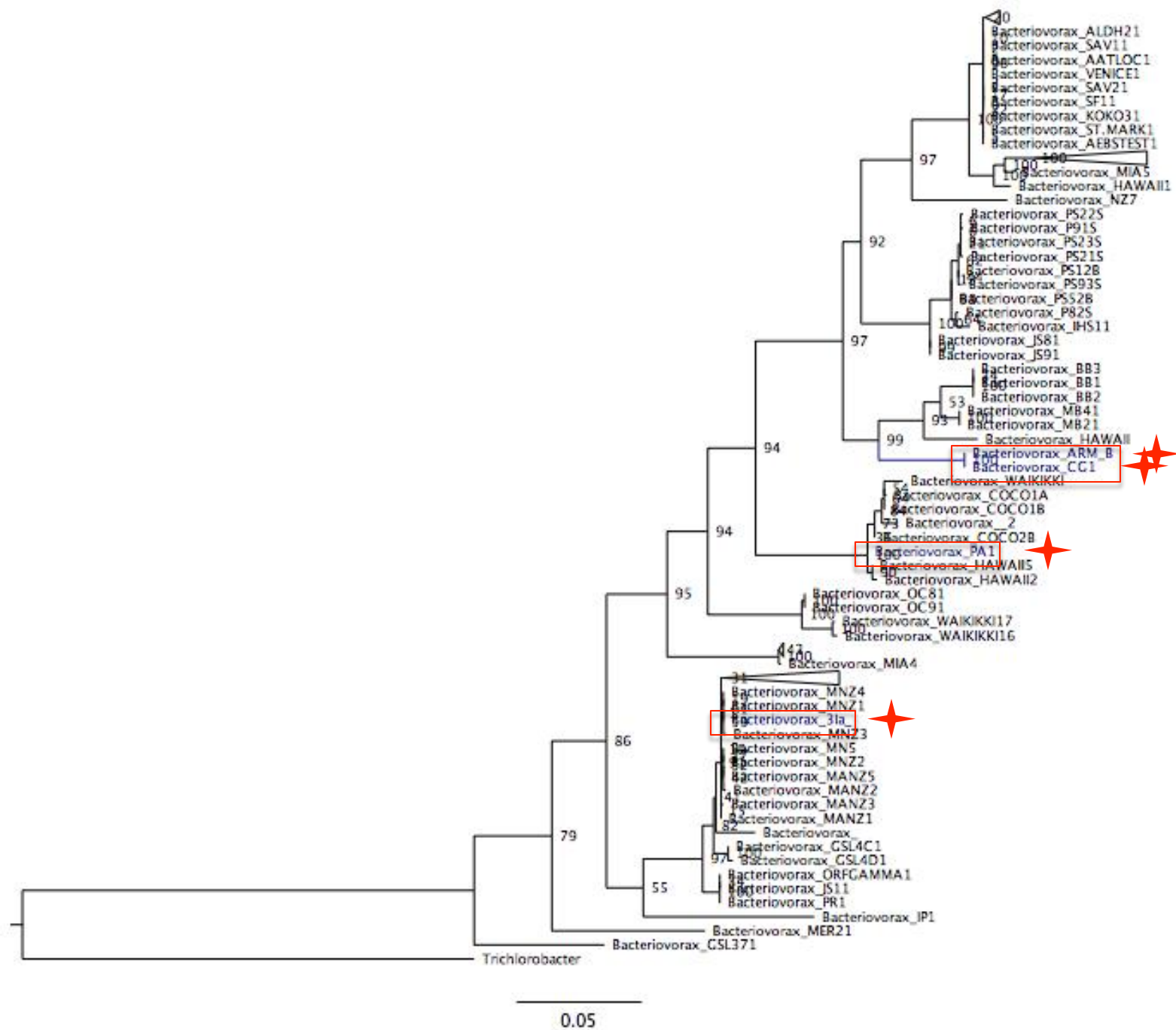


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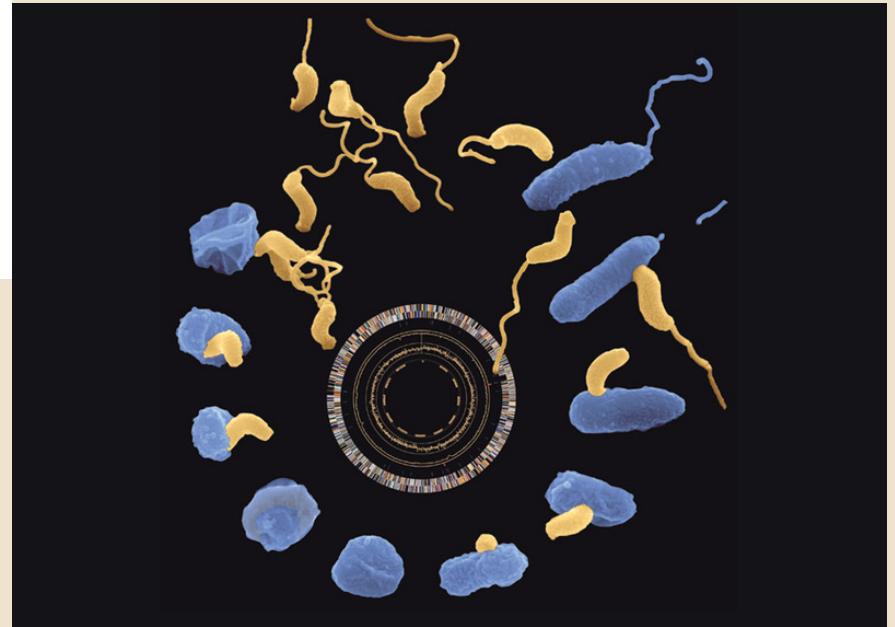
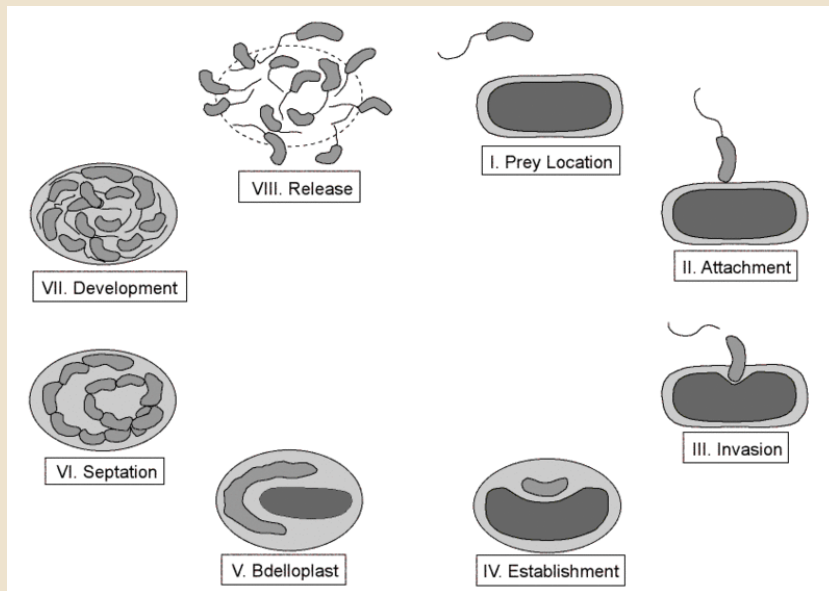
Why, cont.



- Revolution in cell biology?

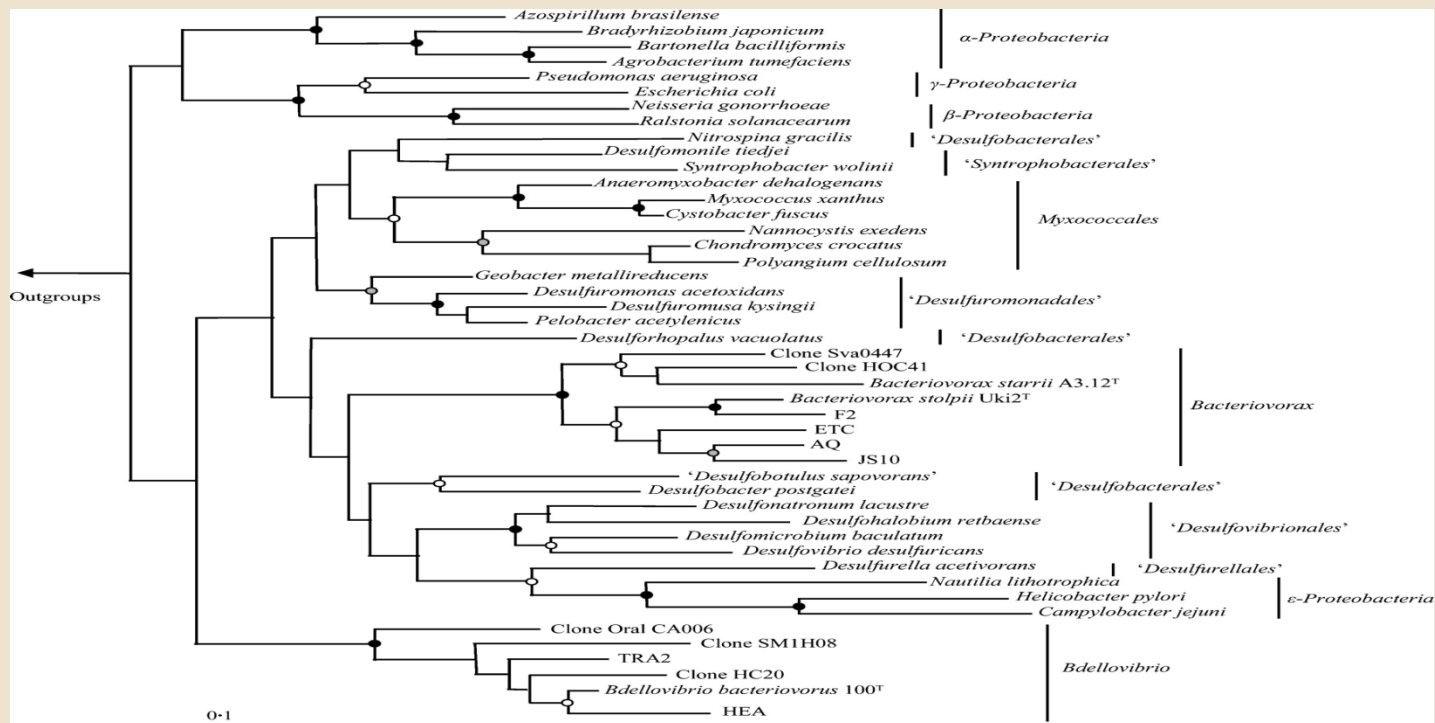


Septation, Maturation, Escape



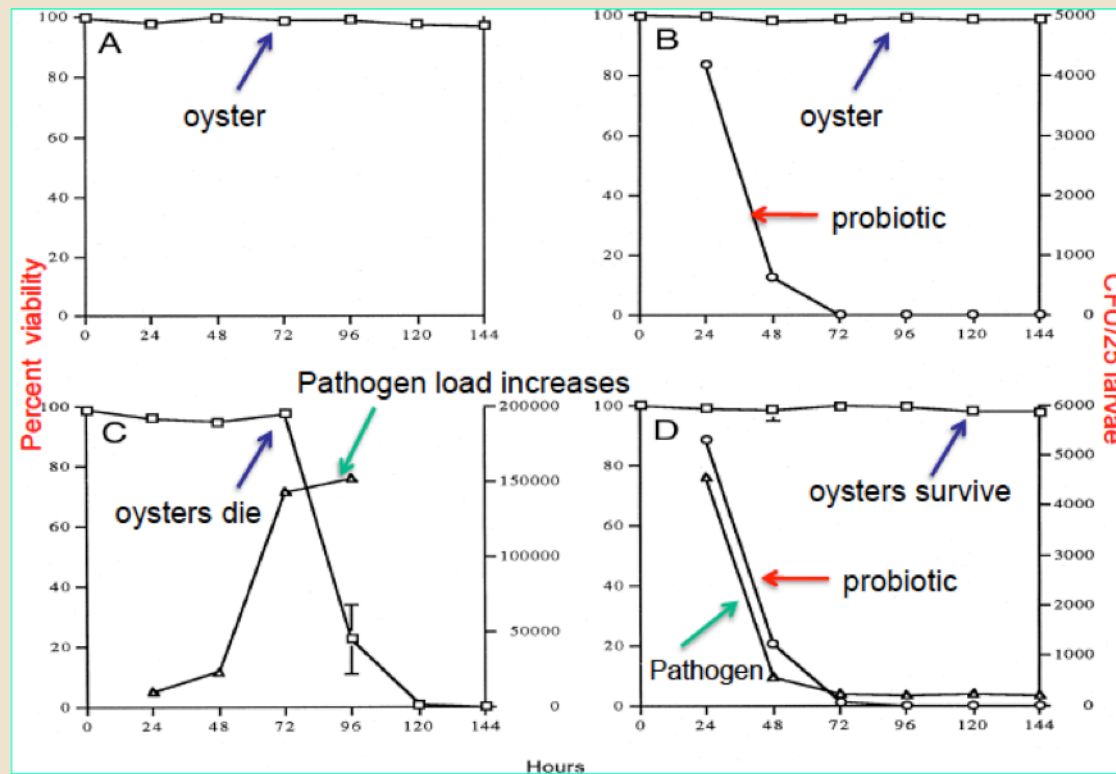
What We Do

- Identify how many species and strains there are.
- Construct phylogenetic trees



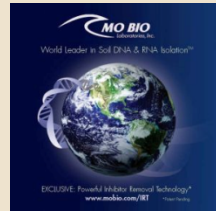
What We Do, cont.

- Determine efficiency of various Bx strains against various *Vibrios*



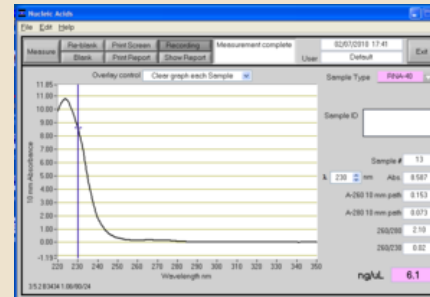
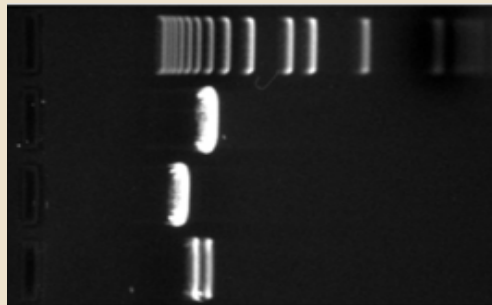
How

DNA extraction



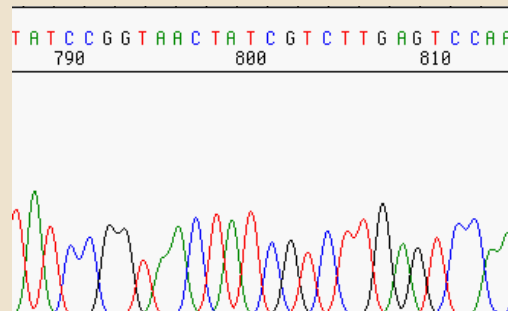
PCR

Agarose gel

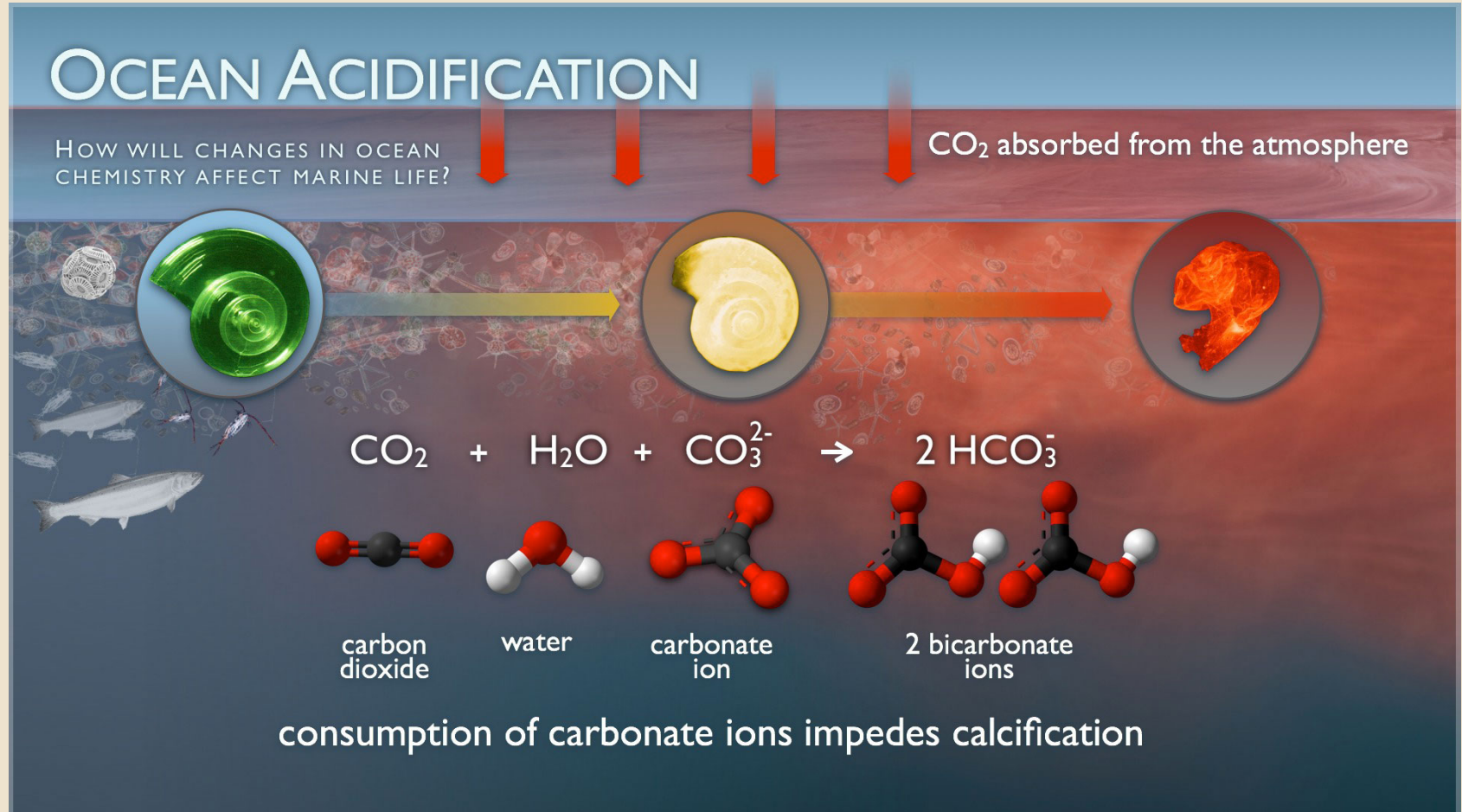


Quantitation

Sequencing



Ocean Acidification

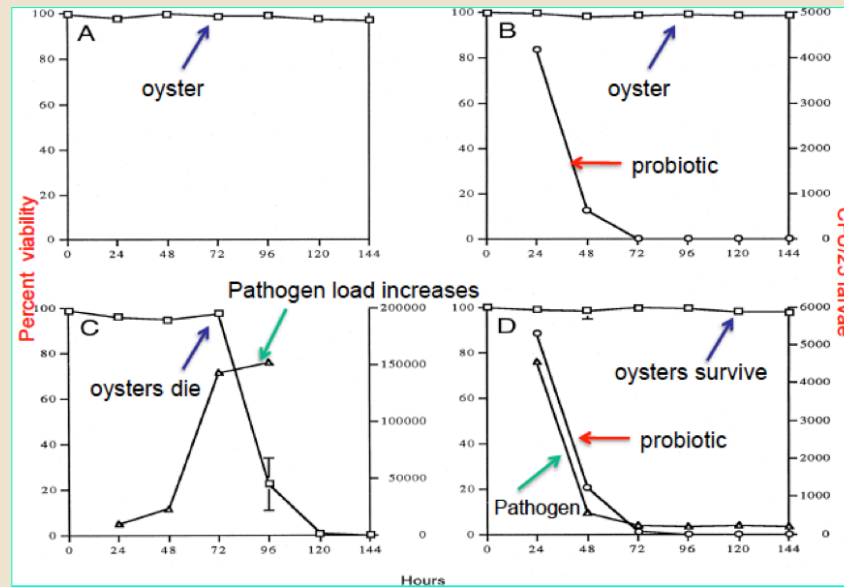


How, cont.

- DNA extraction (organismal/environmental)
- PCR of 16S encoding DNA (universal and specific primers)
- From amplification, could go to agarose gel for purity testing, or to quantitation by Qubit or NanoDrop, or both.
- From quantitation (at least), sequencing.

How, cont.

- With known starting concentrations, check OD over time.



- Or inoculate oyster larvae with vibrios, with Bx, with vibrios and Bx, track survival: grand finale.

Acknowledgments

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- Rory Welsh
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