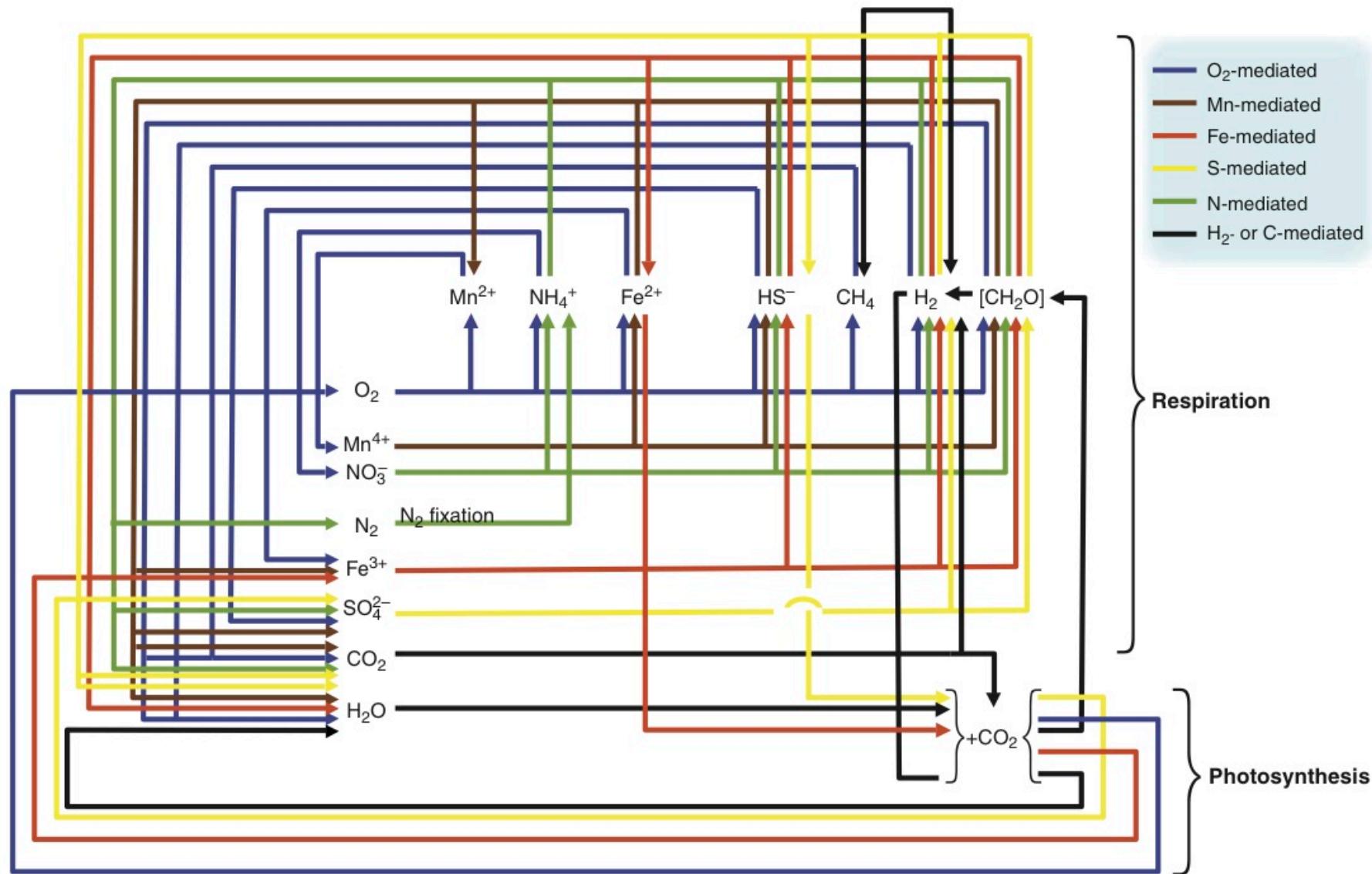


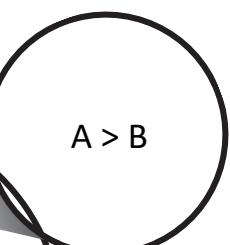
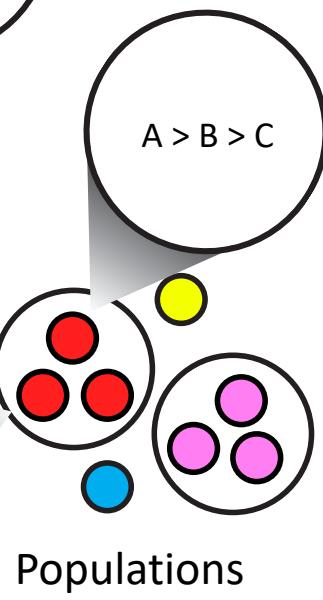
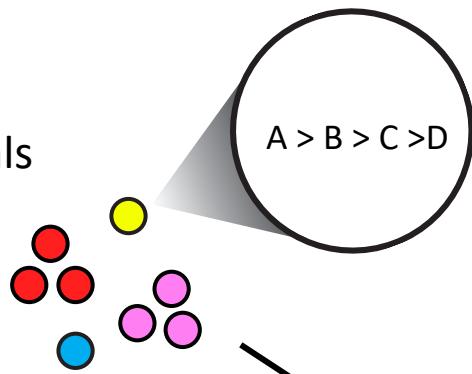
# Automated reconstruction of the nitrogen cycle along defined redox gradients in Saanich Inlet using the TreeSAPP pipeline

Julia Anstett | Hallam Lab | University of British Columbia

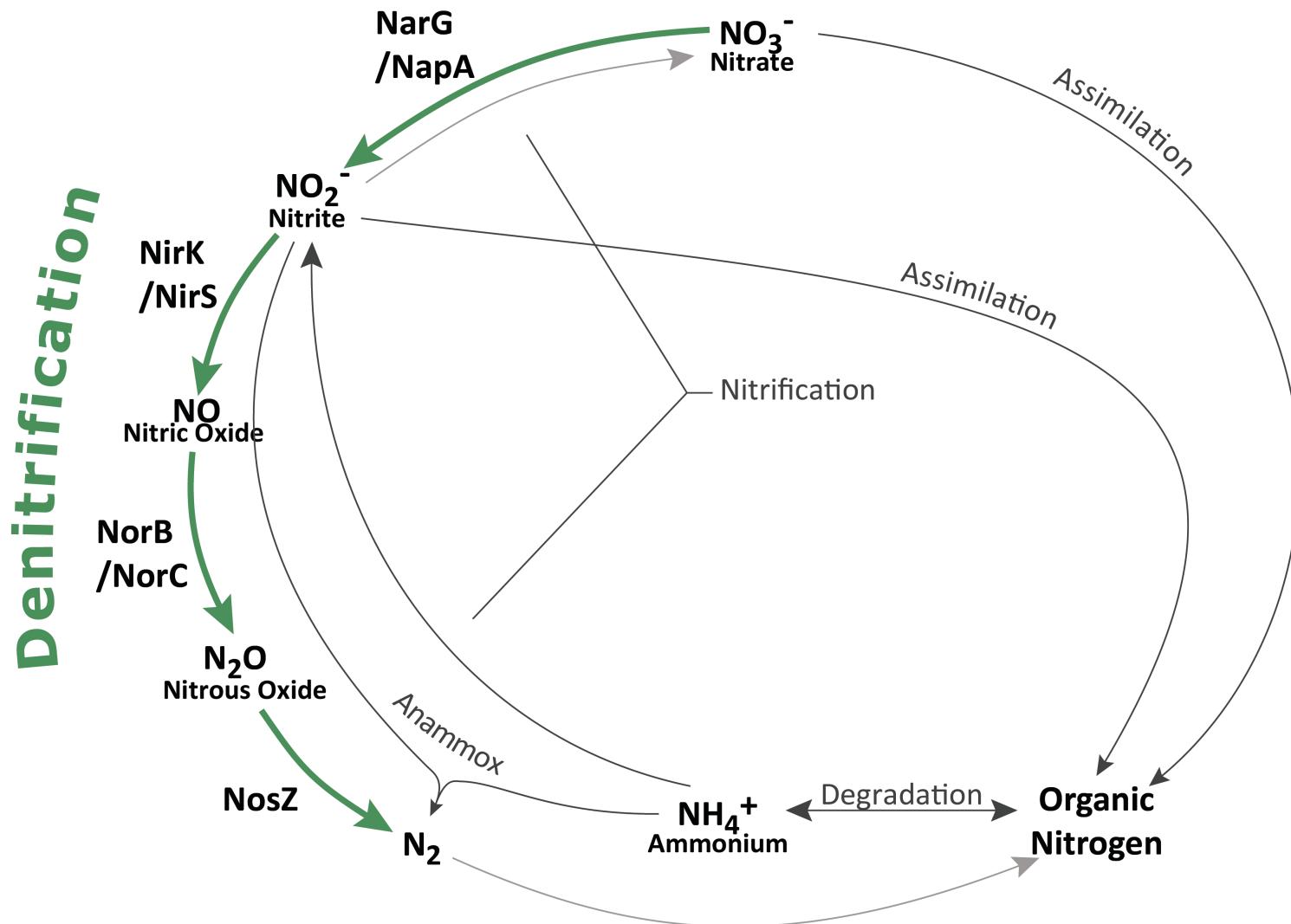




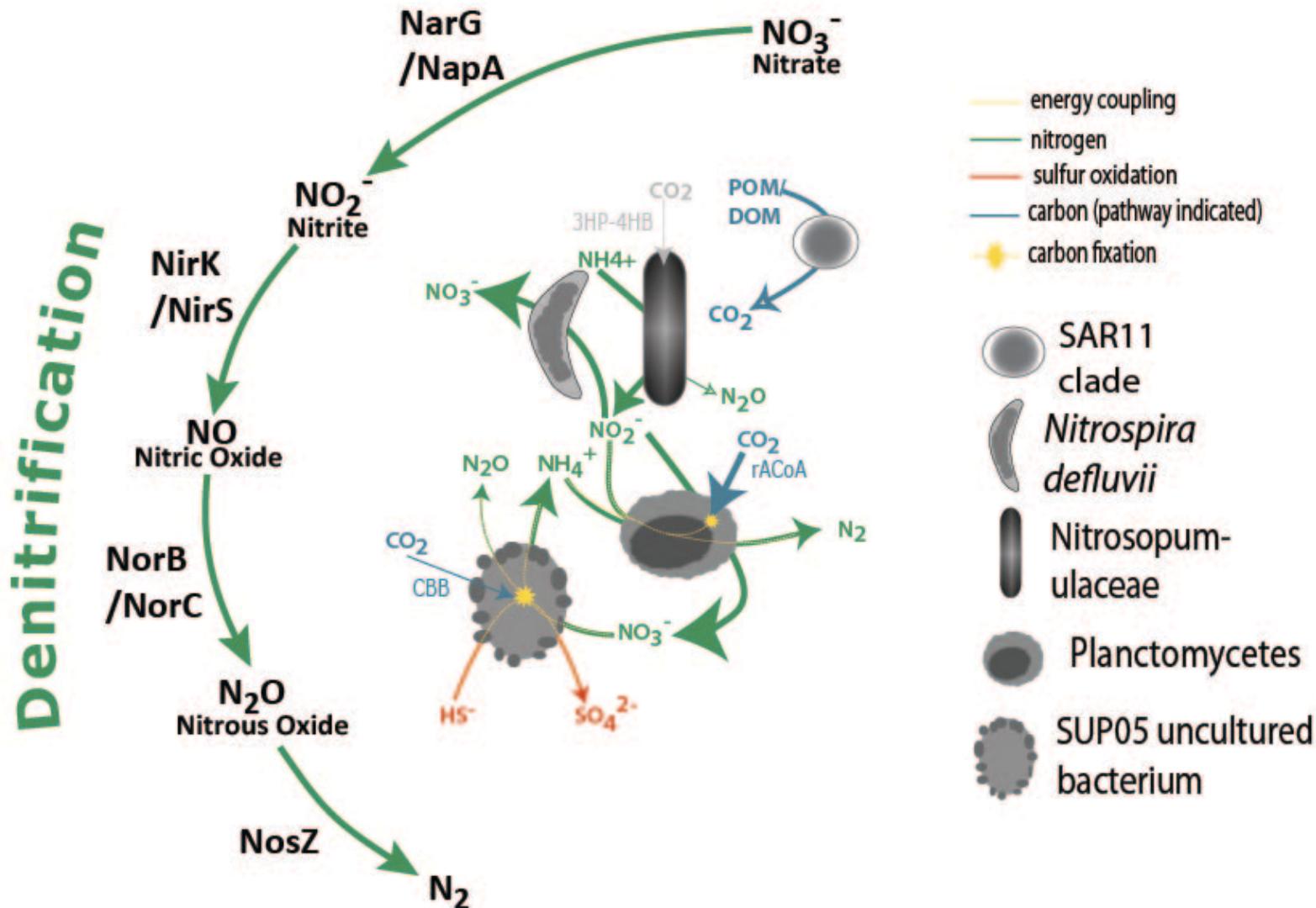
Individuals



# Distributed N Cycle

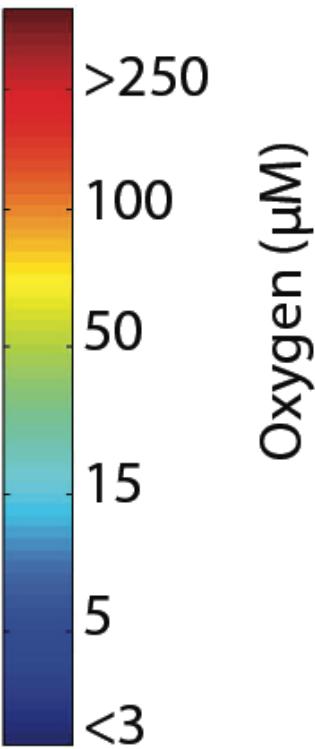
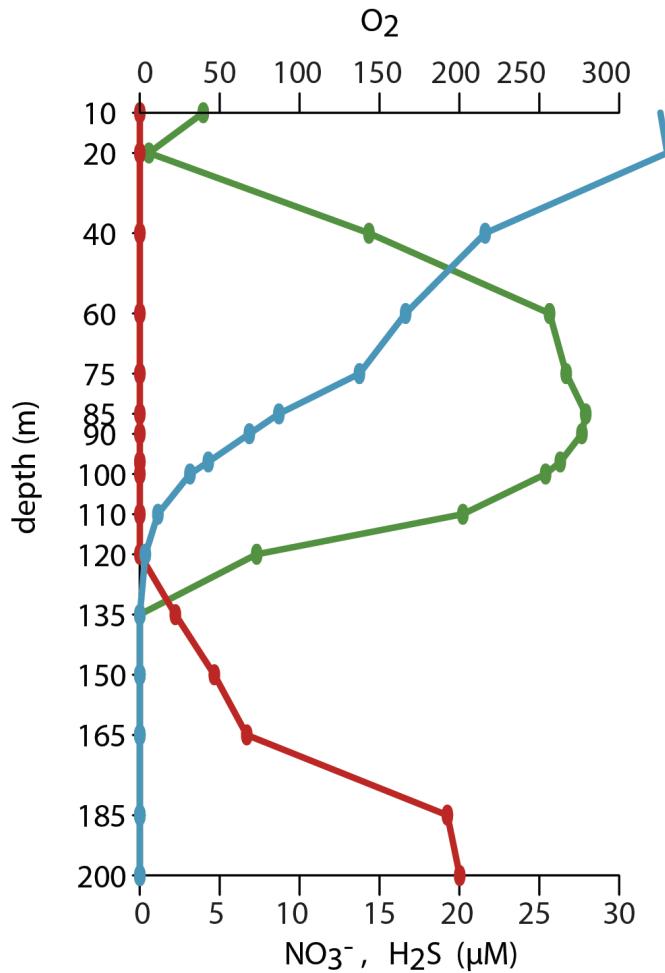


# Metabolic Coupling

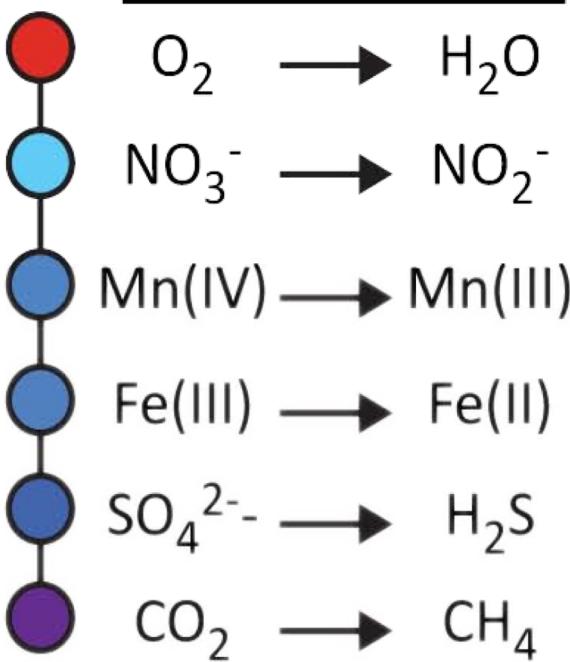


# Saanich Inlet Depth Profile

July 2010



Terminal Electron Acceptors

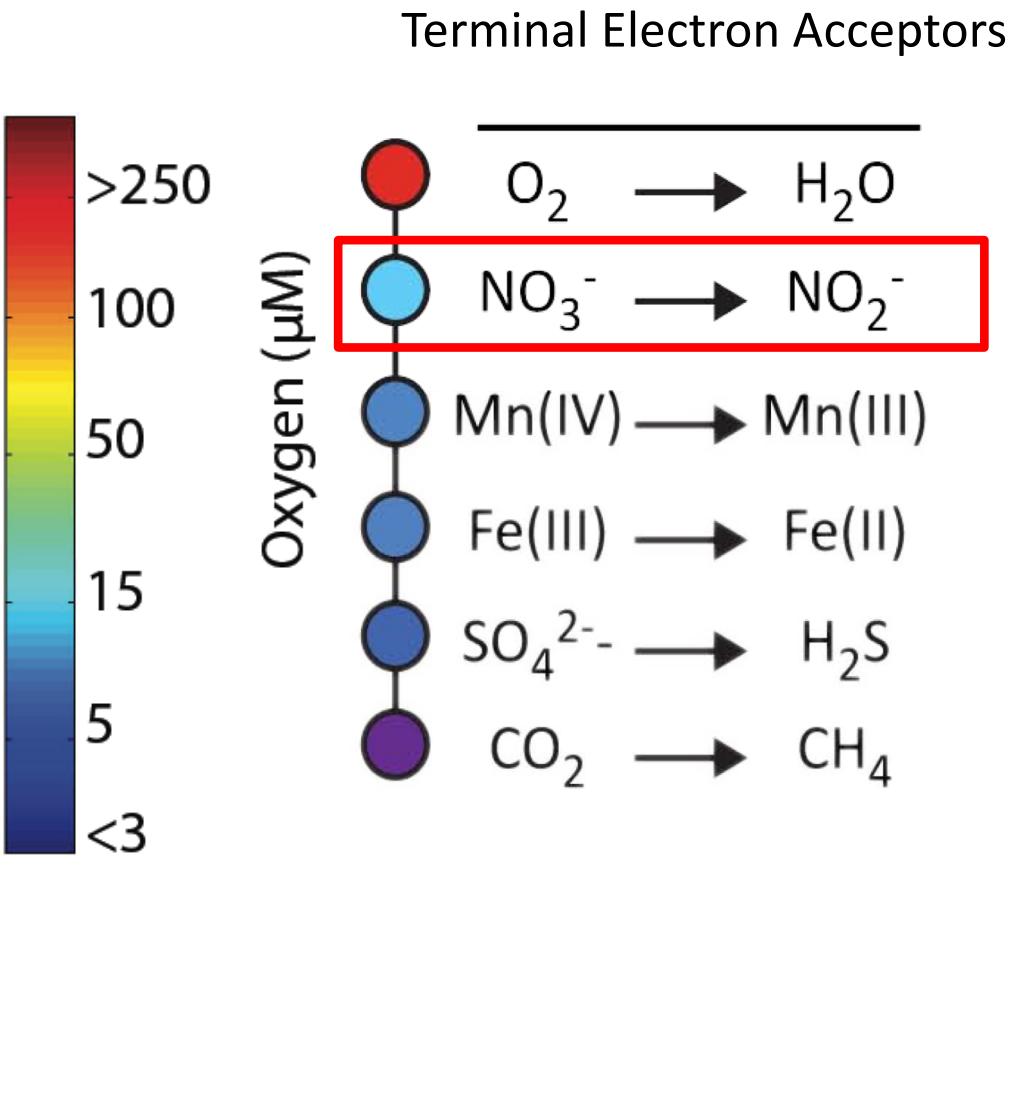
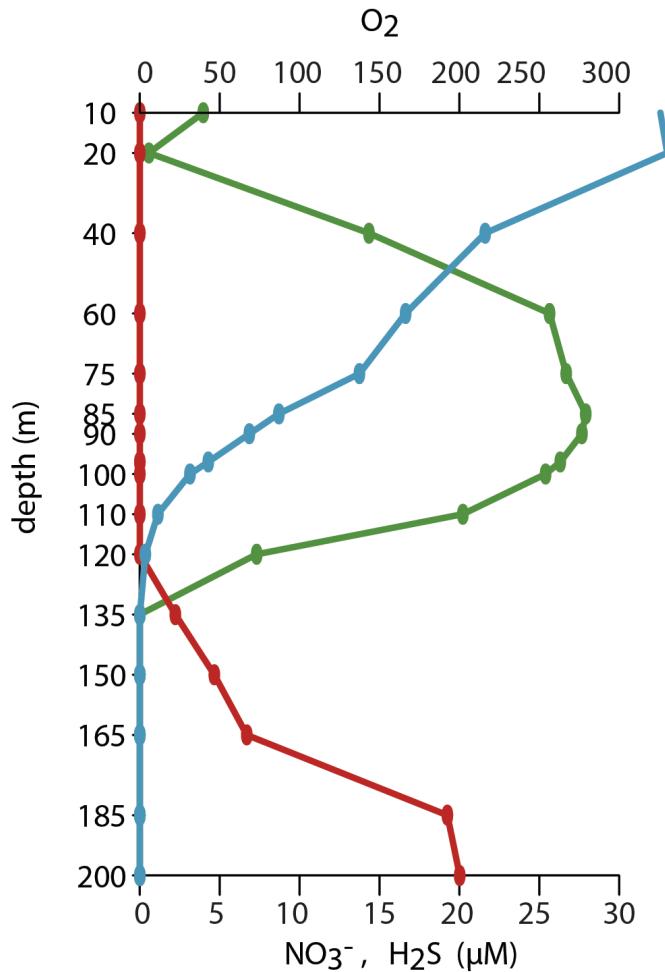


Hawley *et.al* 2017  
Wright *et. al* 2013

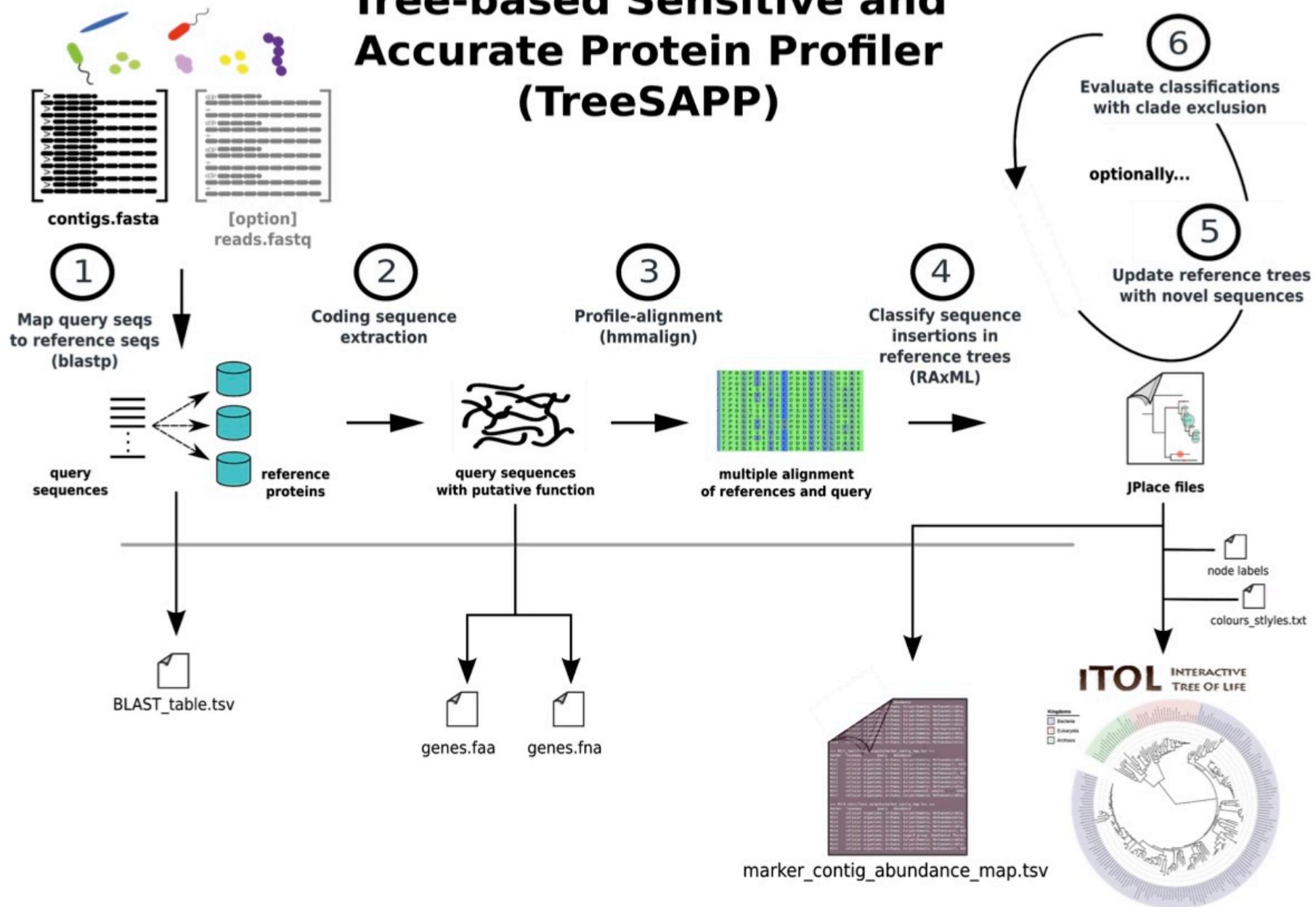
$O_2$   
 $NO_3^-$   
 $H_2S$

# Saanich Inlet Depth Profile

July 2010



# Tree-based Sensitive and Accurate Protein Profiler (TreeSAPP)



# TreeSAPP Data Inputs

- Isolate Genomes
- SAGs
- MAGs
- Metagenomic Contigs

# TreeSAPP Data Inputs

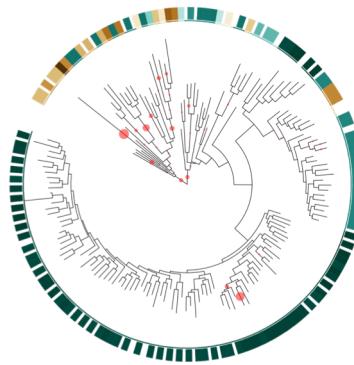
- Isolate Genomes
- SAGS
- MAGS
- Metagenomic Contigs
  - Samples Collected on August 1<sup>st</sup>, 2012
  - Sample depths: 10m, 100m, 120m, 135m, 150m, 165m, and 200m

### Colored ranges

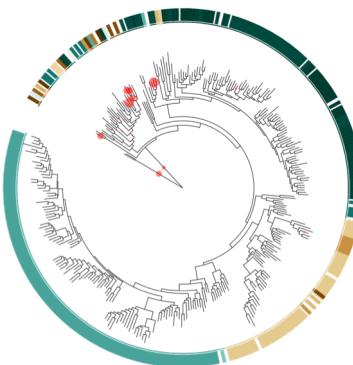
<span style="background-color: #8B4513; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	unclassified Acidobacteria
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<span style="background-color: #D9C38C; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Deferribacteres
<span style="background-color: #F0E68C; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Bacteroidetes Order II. Incertae sedis
<span style="background-color: #FADBD8; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Cytophagia
<span style="background-color: #F9E79F; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Flavobacteriia
<span style="background-color: #A9F5E0; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Gemmatimonadetes
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<span style="background-color: #1E8449; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Planctomycetia
<span style="background-color: #1E8449; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Alphaproteobacteria
<span style="background-color: #1E8449; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Betaproteobacteria
<span style="background-color: #1E8449; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Gammaproteobacteria
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<span style="background-color: #2ECC71; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Coriobacteriia
<span style="background-color: #A9F5E0; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Ardenticatenia
<span style="background-color: #F0E68C; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Deinococci
<span style="background-color: #F9E79F; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Bacilli
<span style="background-color: #F0E68C; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Clostridia
<span style="background-color: #C8A23E; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Negativicutes
<span style="background-color: #8B4513; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Thermodesulfobacteria
<span style="background-color: #8B4513; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	Bacteria candidate phyla
<span style="background-color: #1E8449; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span>	ecological metagenomes

# TreeSAPP Reference Trees

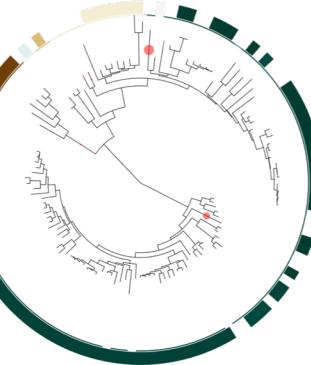
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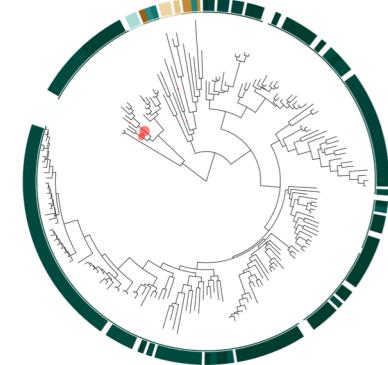
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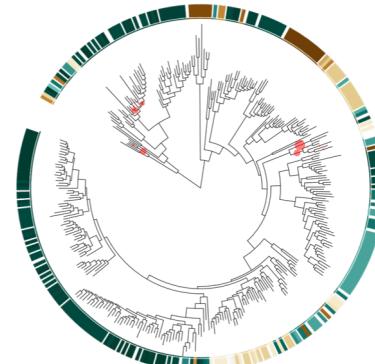
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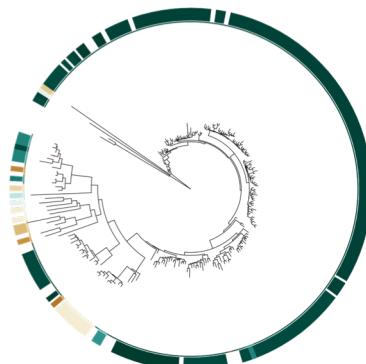
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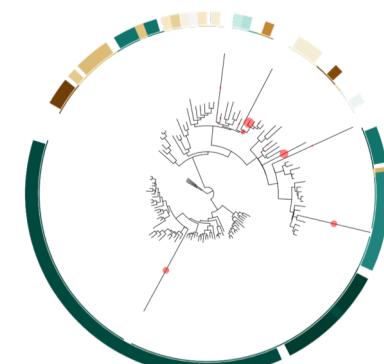
*norB*



*norC*



*nosZ*



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Jennifer Bonderoff

Kim Dill-McFarland

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