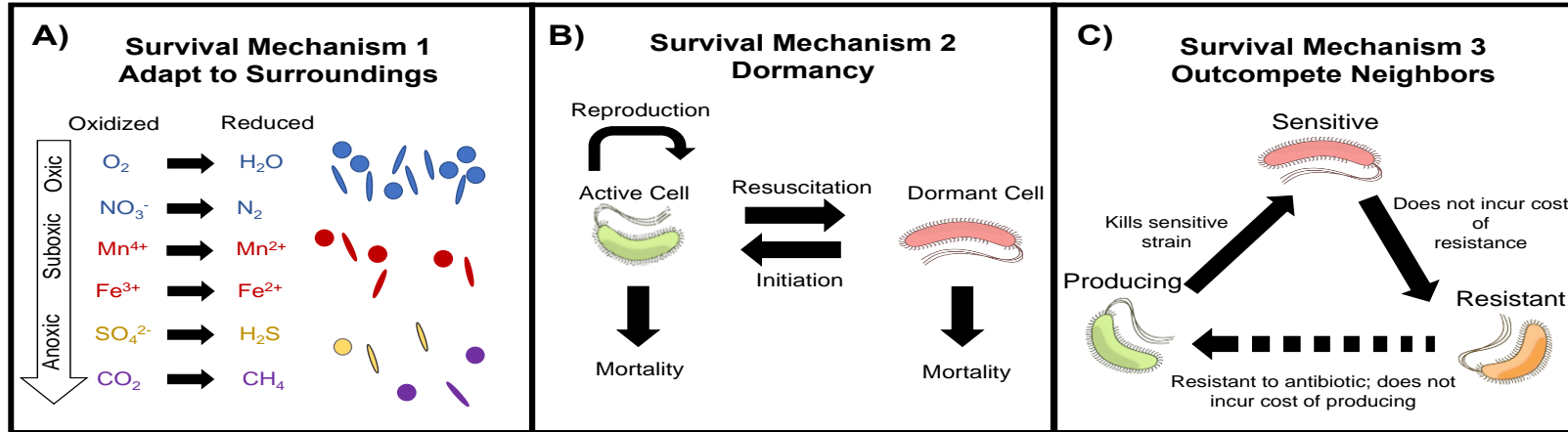


Brandi Kiel Reese

Dauphin Island Sea Lab/University of South Alabama

*“What is the geophysical, chemical, and biological character of the seafloor environment and how does it affect global elemental cycles and understanding of the origin and evolution of life?”* Sea Change: 2015-2025 Decadal Survey of Ocean Sciences

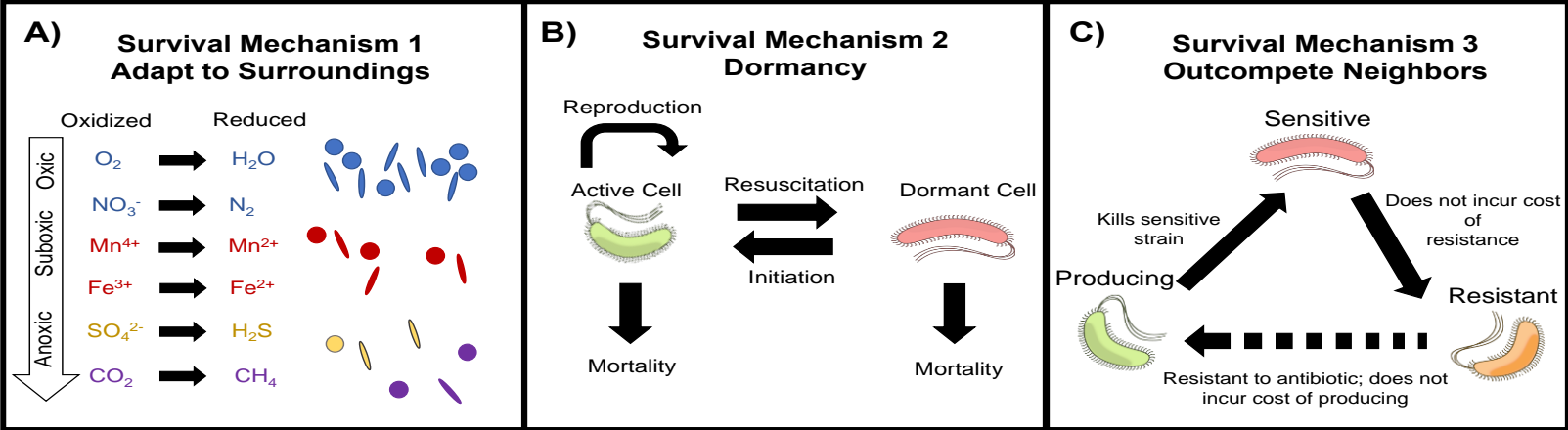


(Mullis et al., 2022)

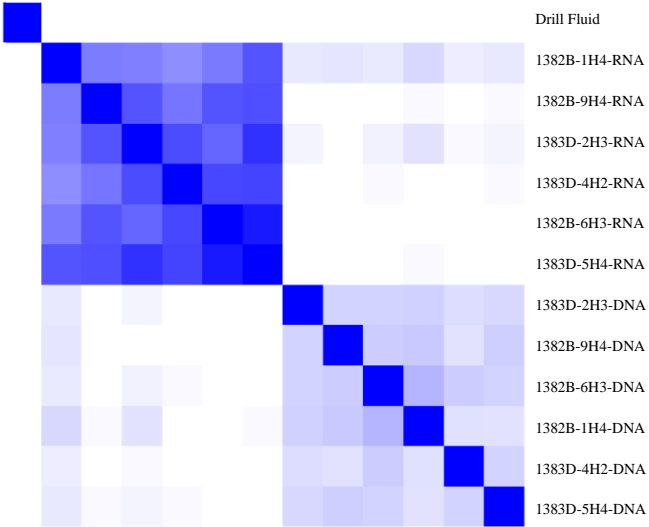
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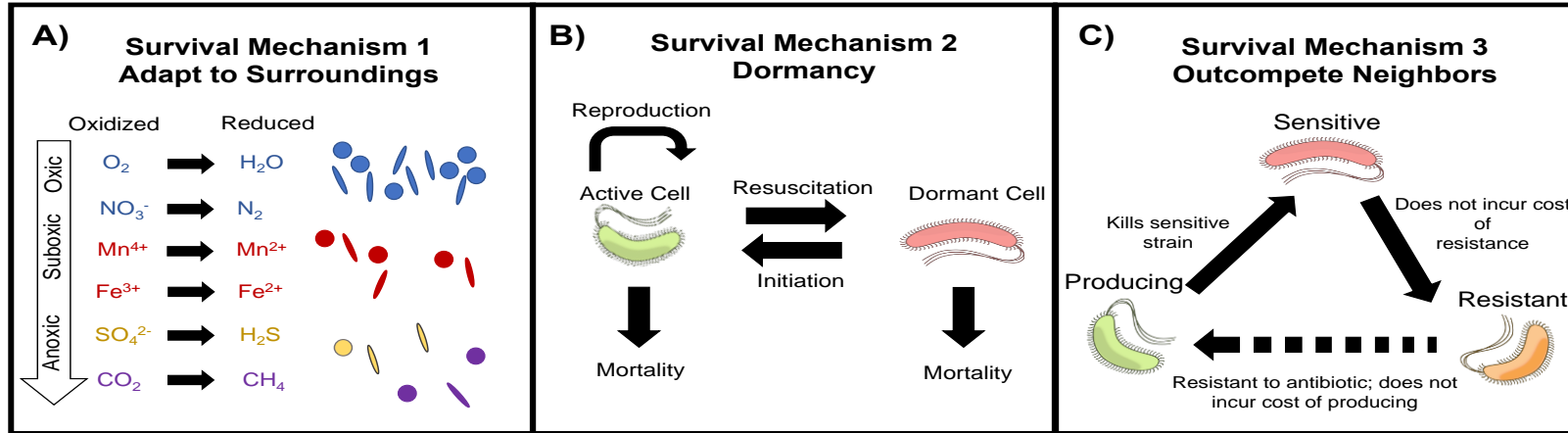
RNA tells us that it is ACTIVE  
(Kiel Reese et al., 2018)



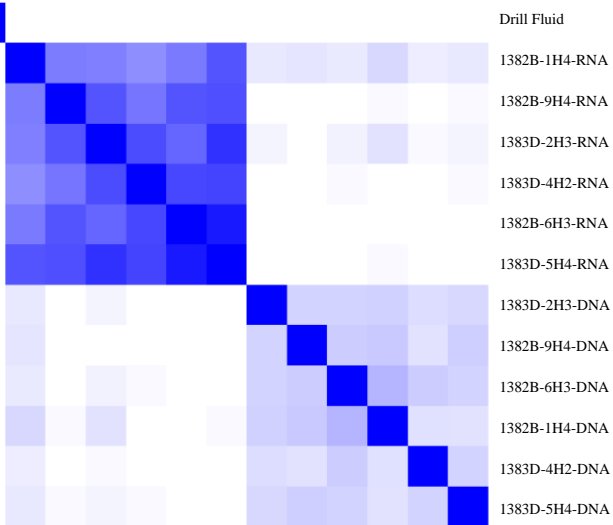
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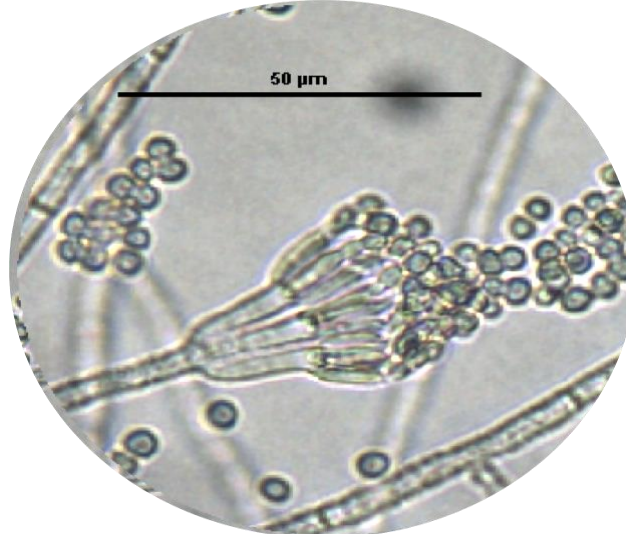
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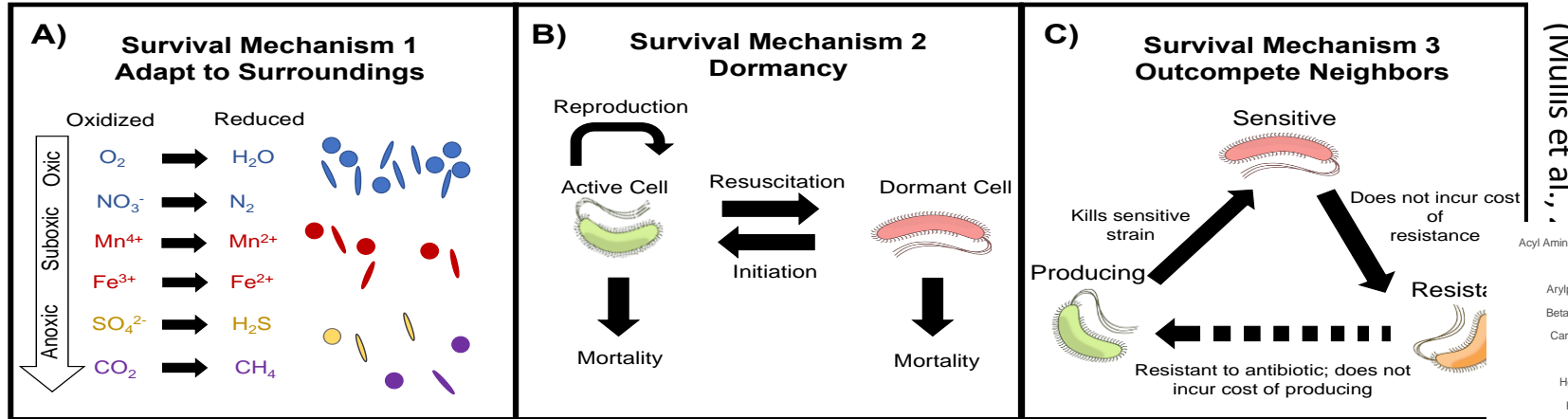
***Penicillim pacificagyrus* sp. nov. disc. 175 mbsf**  
(Kiel Reese et al., 2021; Sobol et al., 2023)



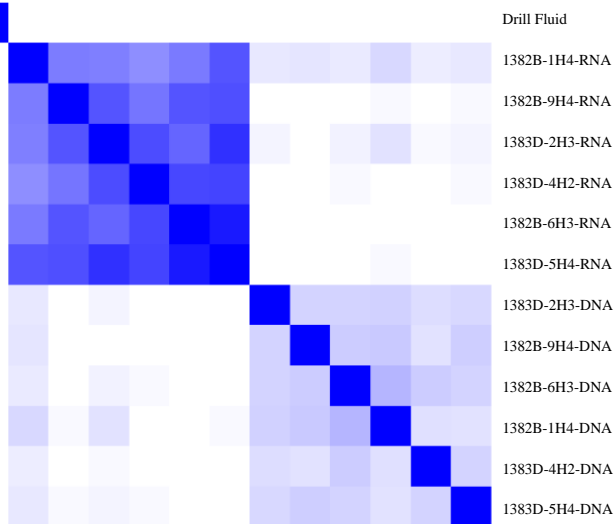
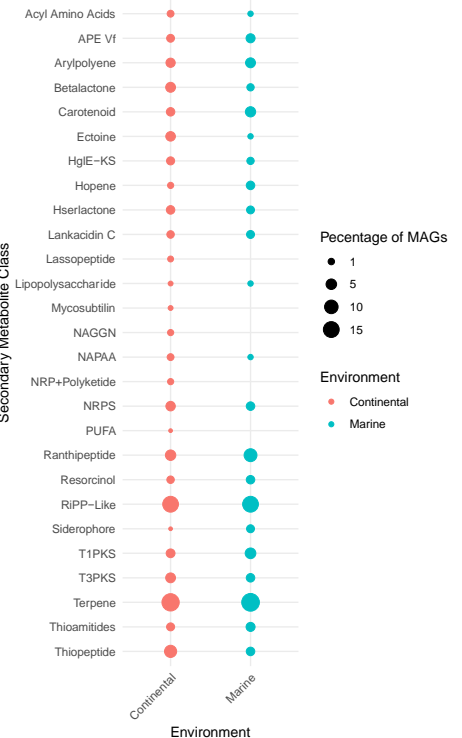
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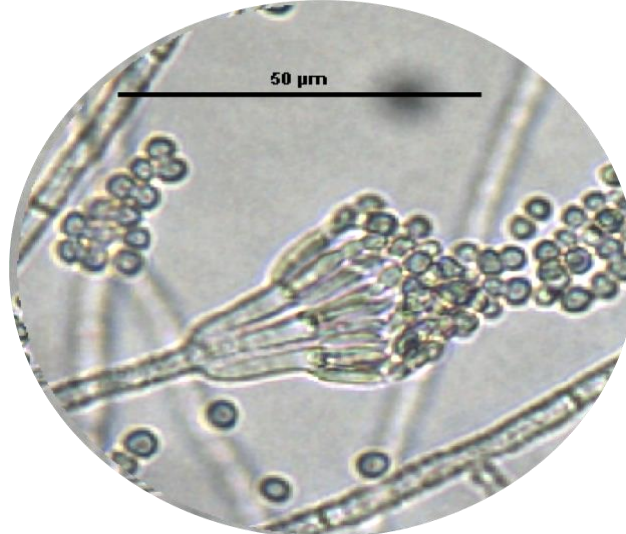
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(Kiel Reese et al., 2021; Sobol et al., 2023)

**Full length genes predict antimicrobials**  
(Mullis et al., 2019; and others in review)

# Importance of Scientific Ocean Drilling

- Microbiology NEEDS transdisciplinary science (and geologists need us too!)
- Access to fresh samples from the deep subsurface provides understanding to limits of life but also discoveries like **natural products**
- The subsurface is **still ALIVE** and this information is lost hours, days, weeks after drilling has commenced
- **CORK** observatories may be our last **window to the subsurface** if the scientific drilling door is closed

