

nathan lemoine

# THE DIRT ON ELEPHANTS

LEGACIES OF MEGACARCASSES ON BELOWGROUND  
FUNCTION IN KRUGER NATIONAL PARK



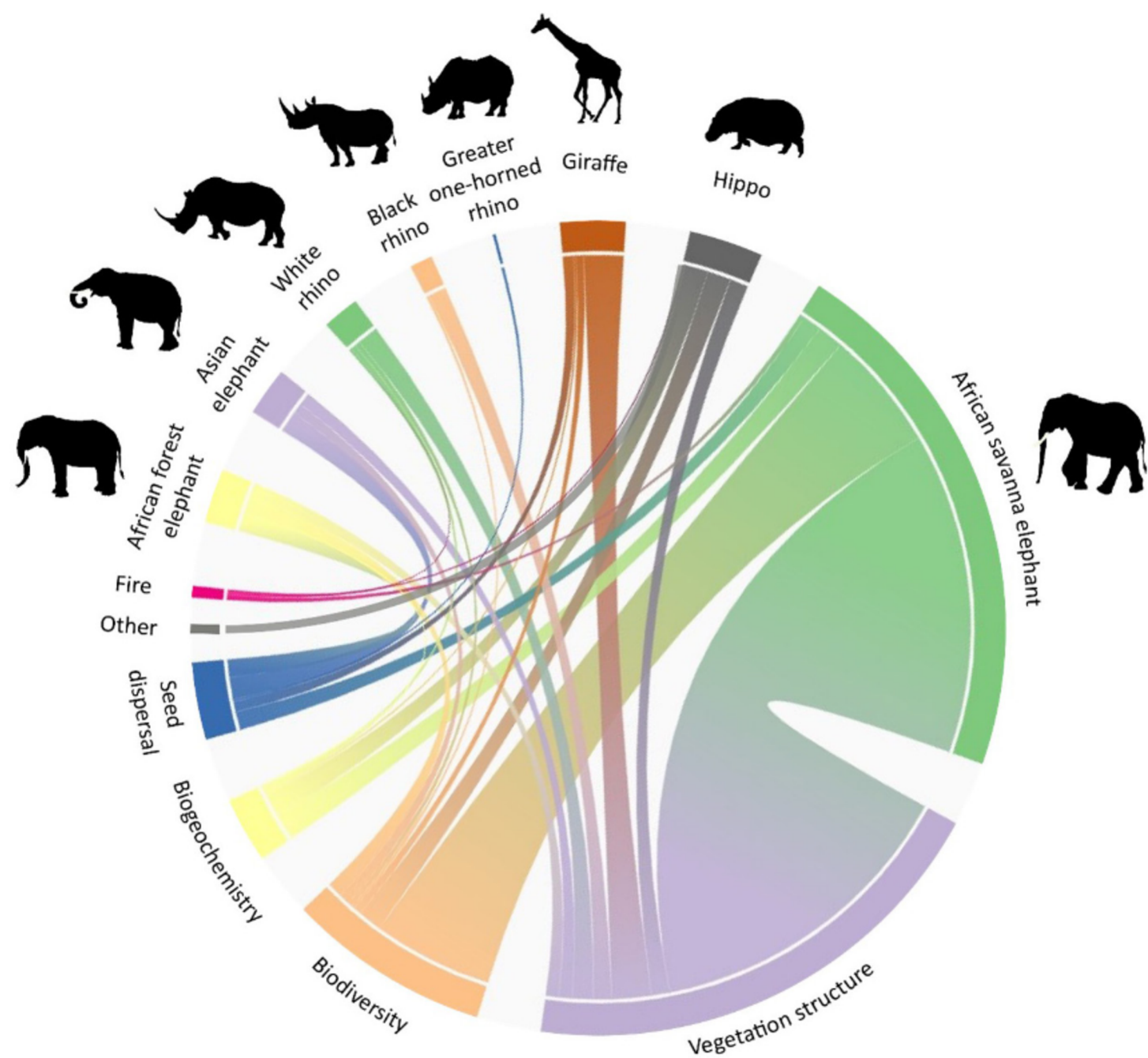




T. BOUYER



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FORBES ET AL. 2019

# PROBOSCIDOGEOCHEMISTRY

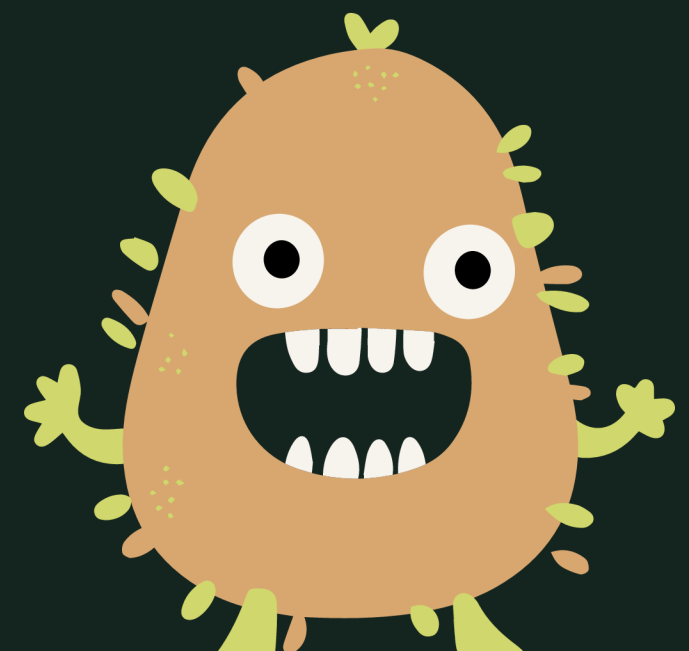
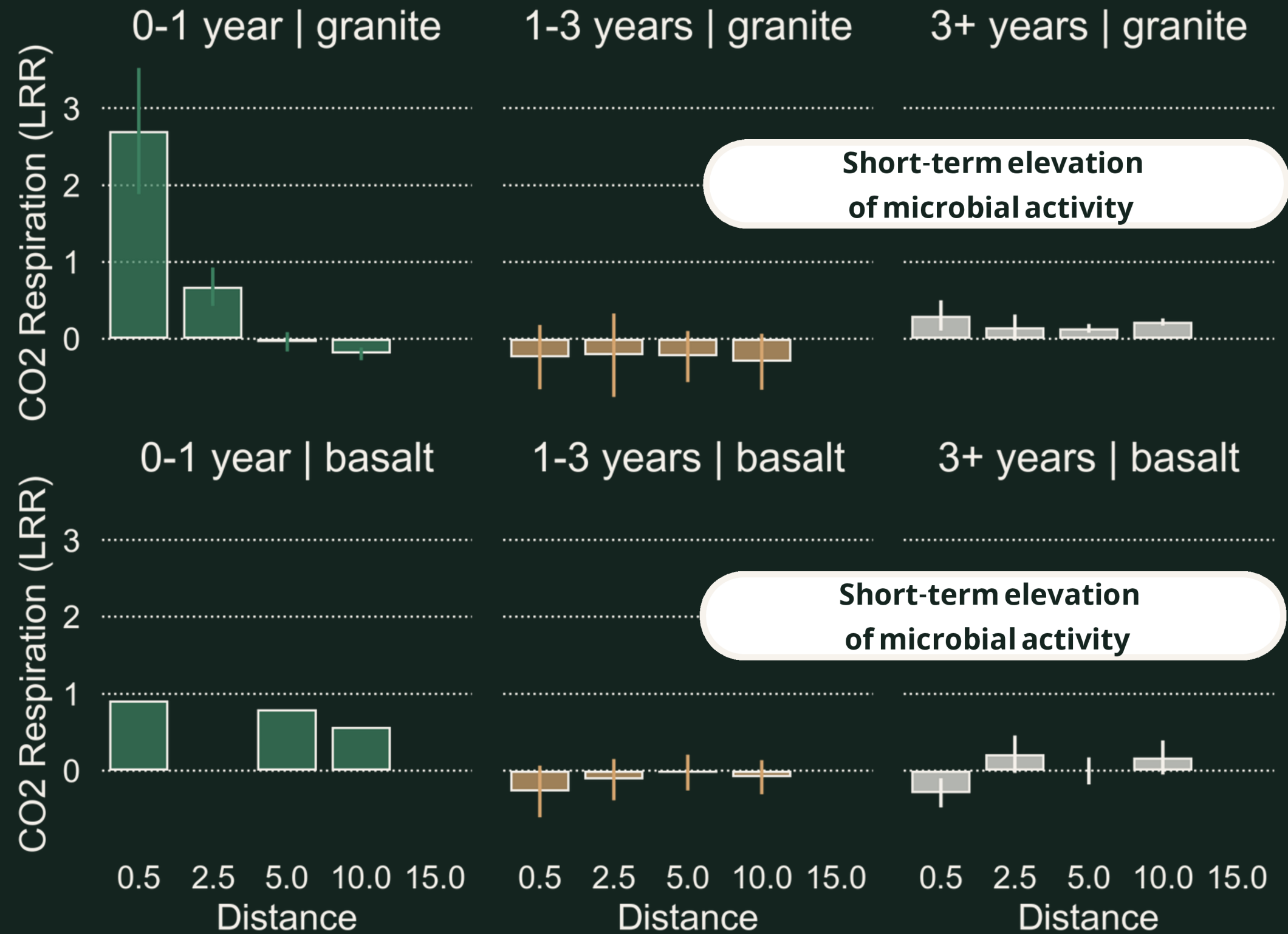
elephant carcasses and soil function

# PROBOSCIDOGEOCHEMISTRY

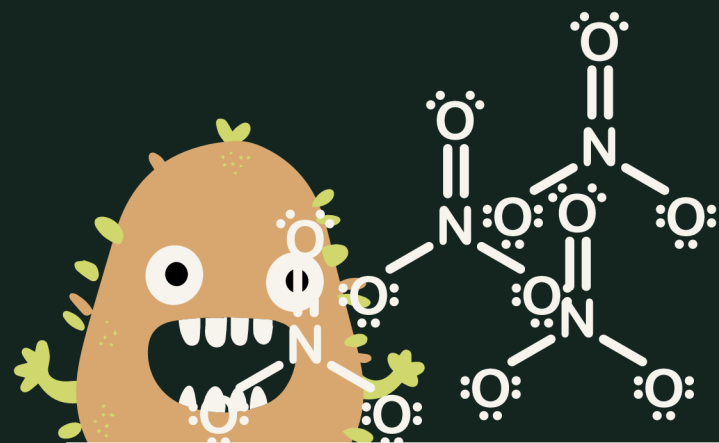
- soil microbial activity [CO<sub>2</sub> flux]
  - soil microbial enzyme activity
    - $\beta$ -glucosidase [C-limitation]
    - urease [N-limitation]
    - acid phosphatase [P-limitation]
  - soil metabolic profiles [Ecoplates]
- 
- soil microbial load [<sup>16</sup>S copy number]
  - soil microbial communities [<sup>16</sup>S/ITS]
  - soil microbial carbon use efficiency



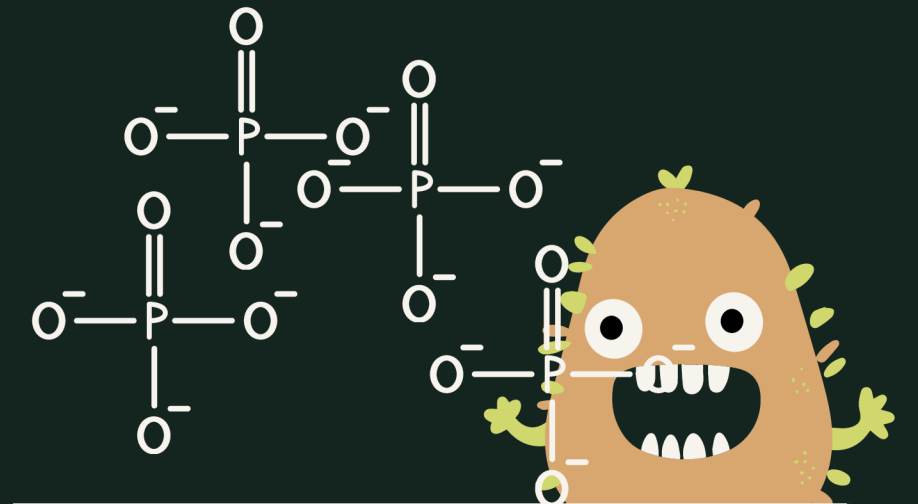
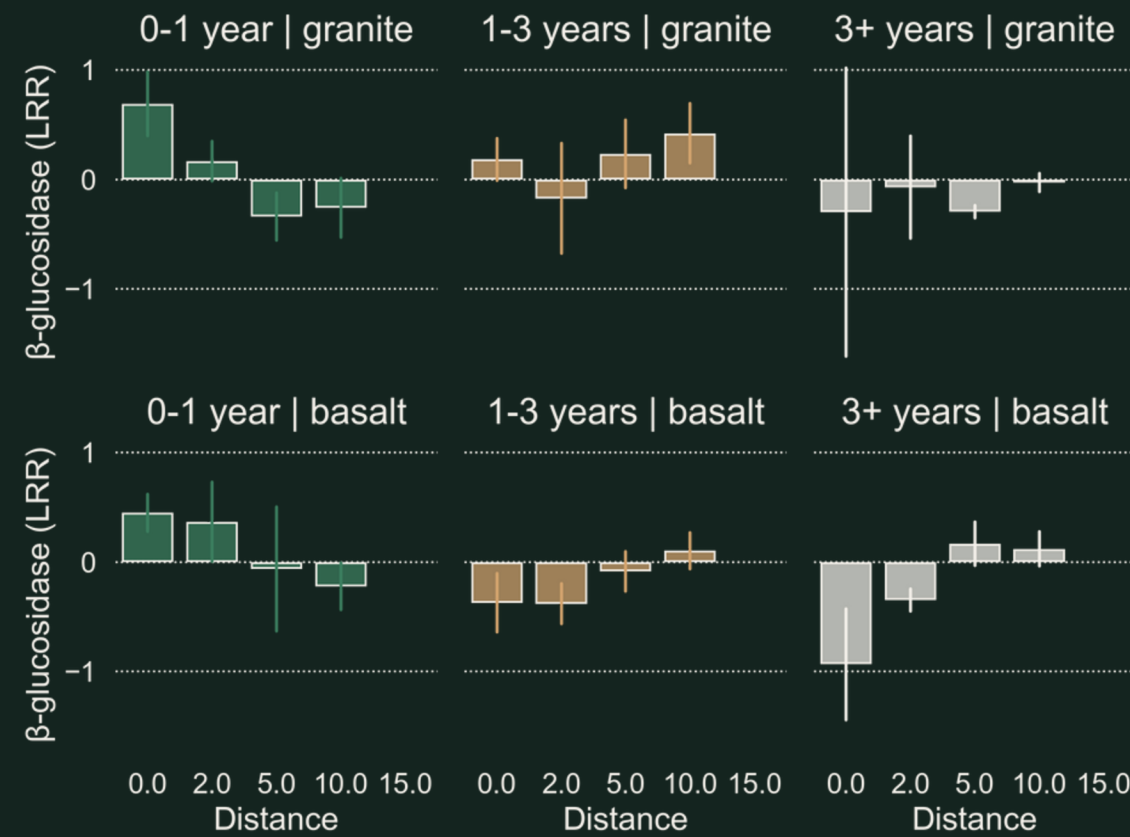
# MICROBIAL RESPIRATION



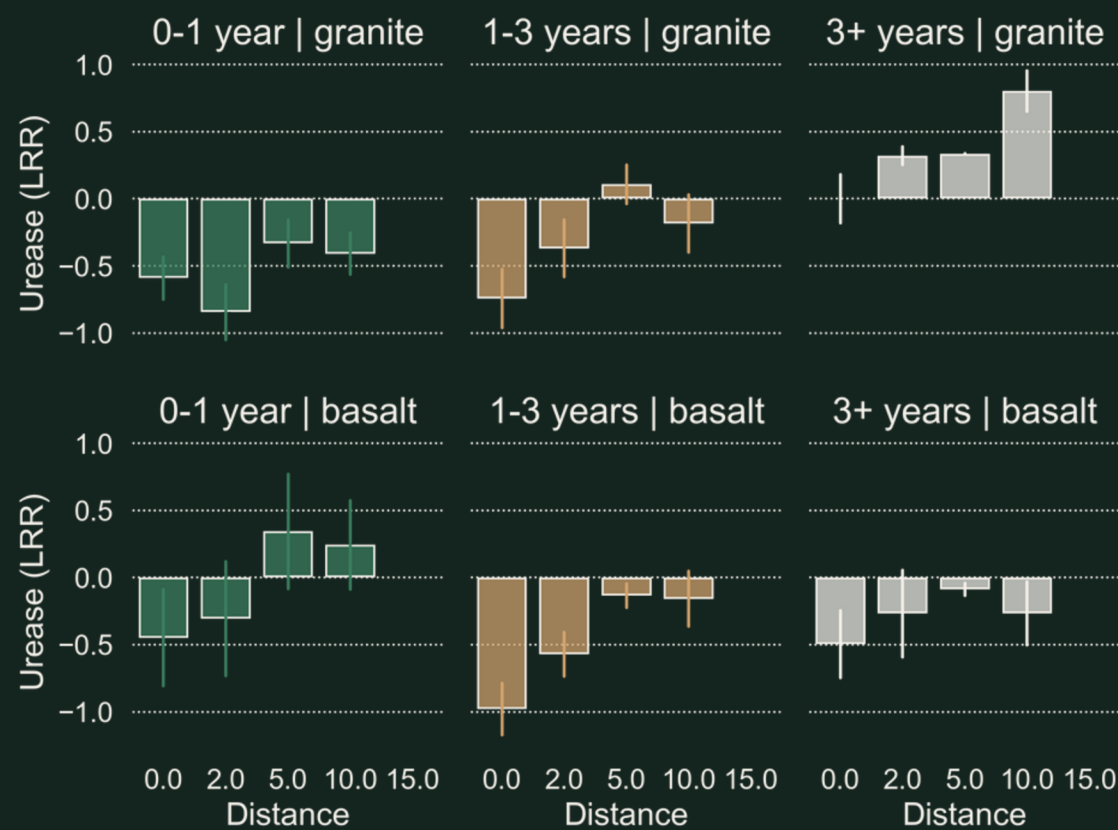
# MICROBIAL ENZYME ACTIVITY



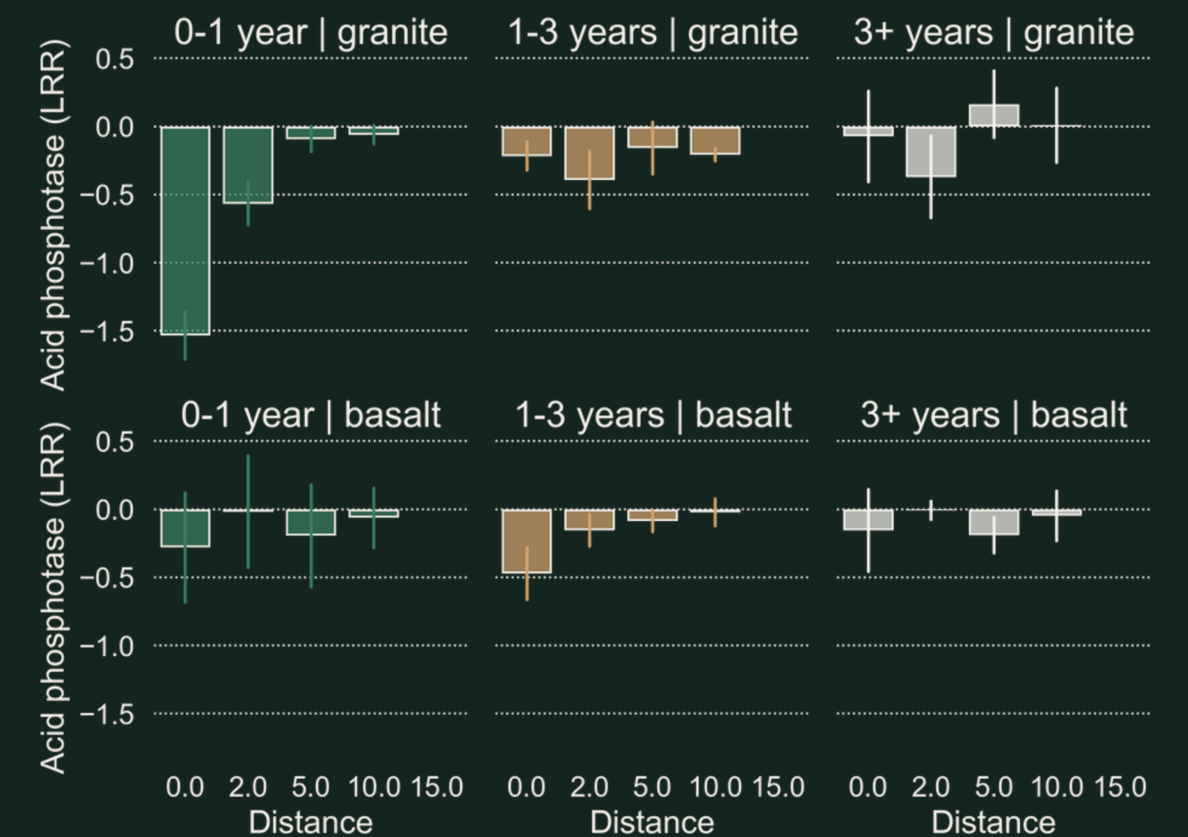
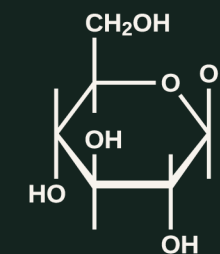
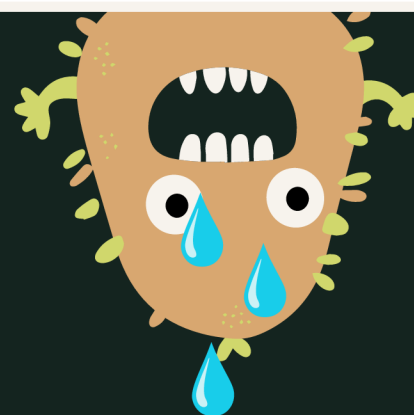
Long term shift from  
N replete to N limited



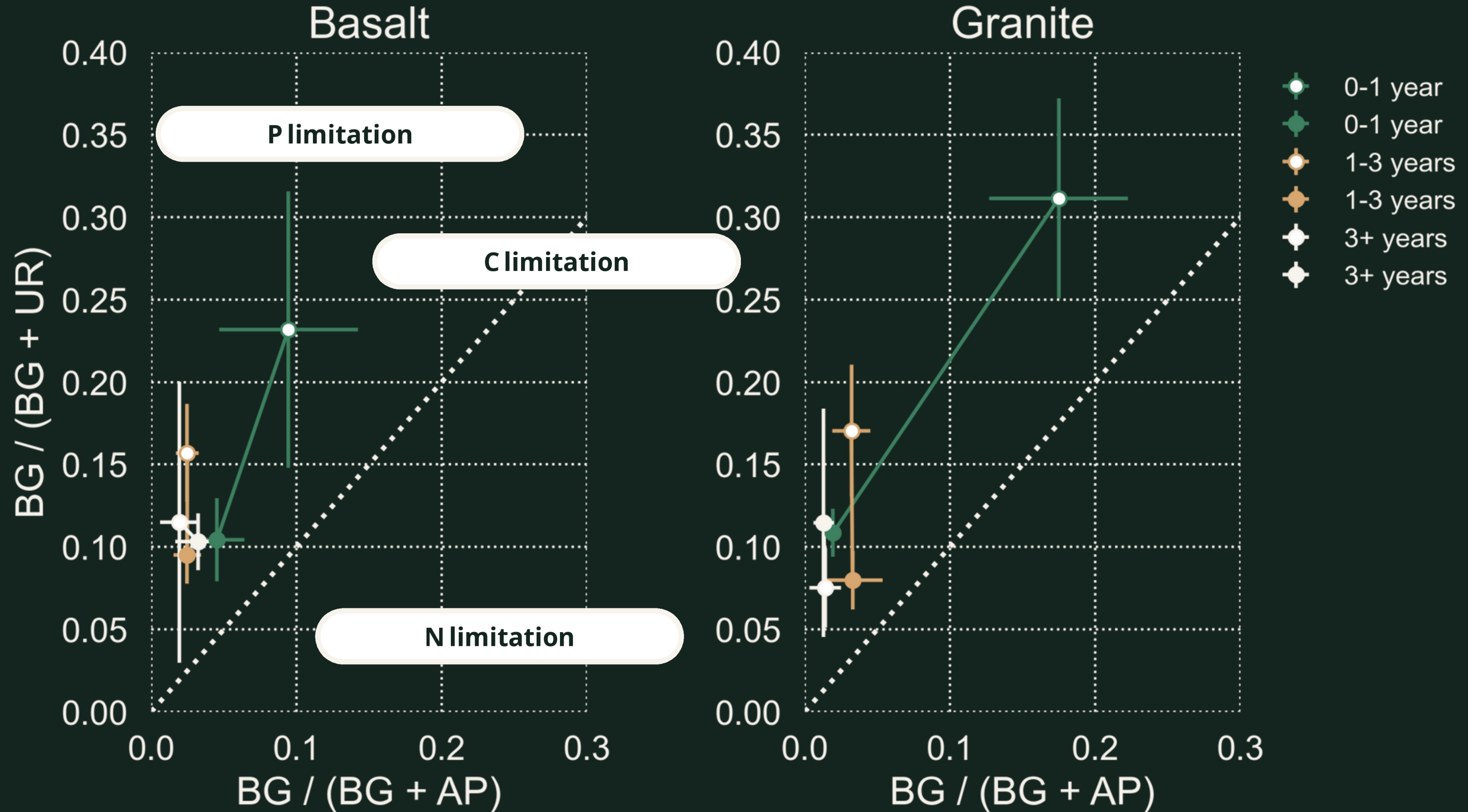
Long term shift from  
P replete to P neutral



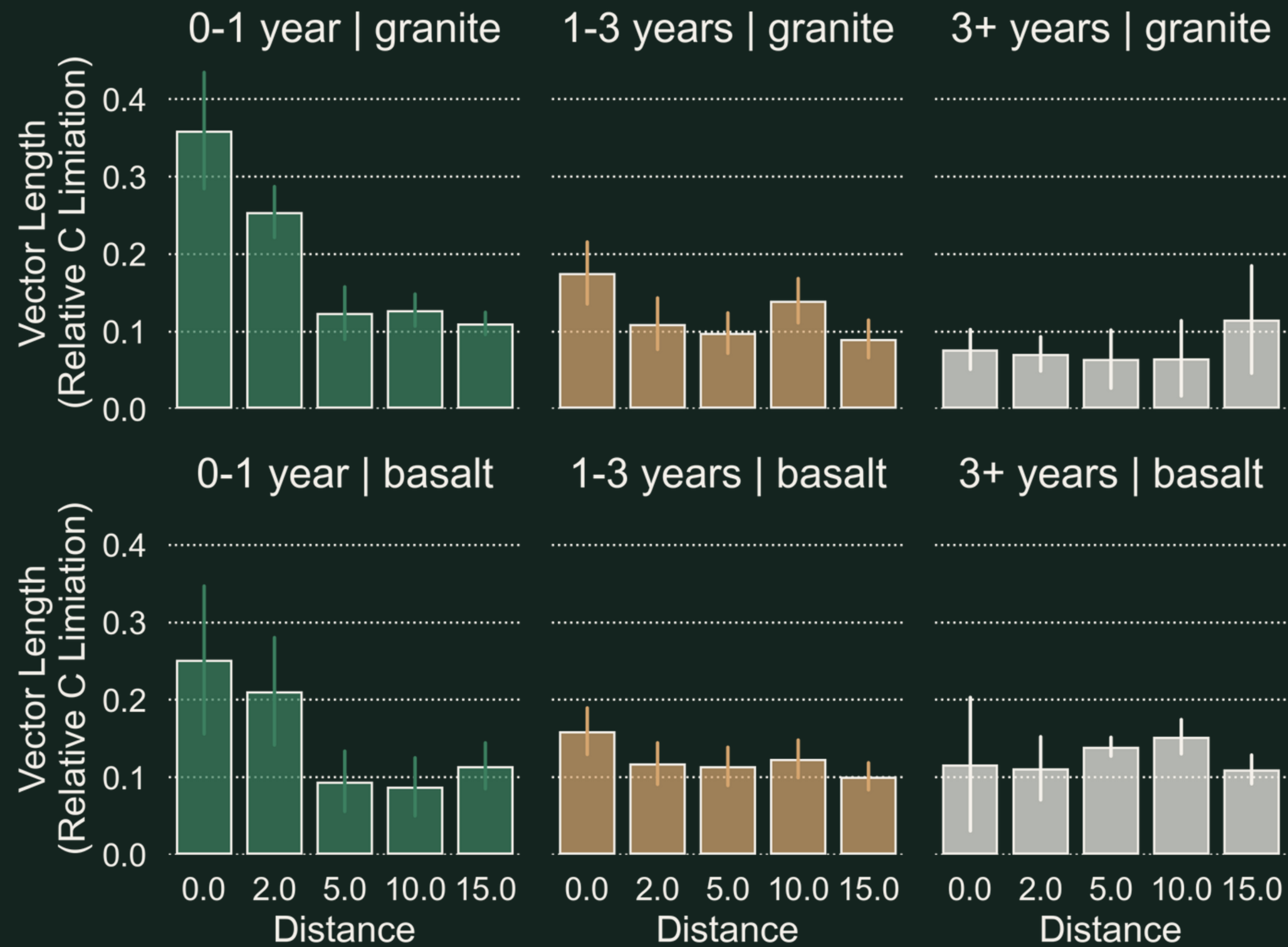
Short-term induction of  
C limitation



# MICROBIAL ENZYME ACTIVITY



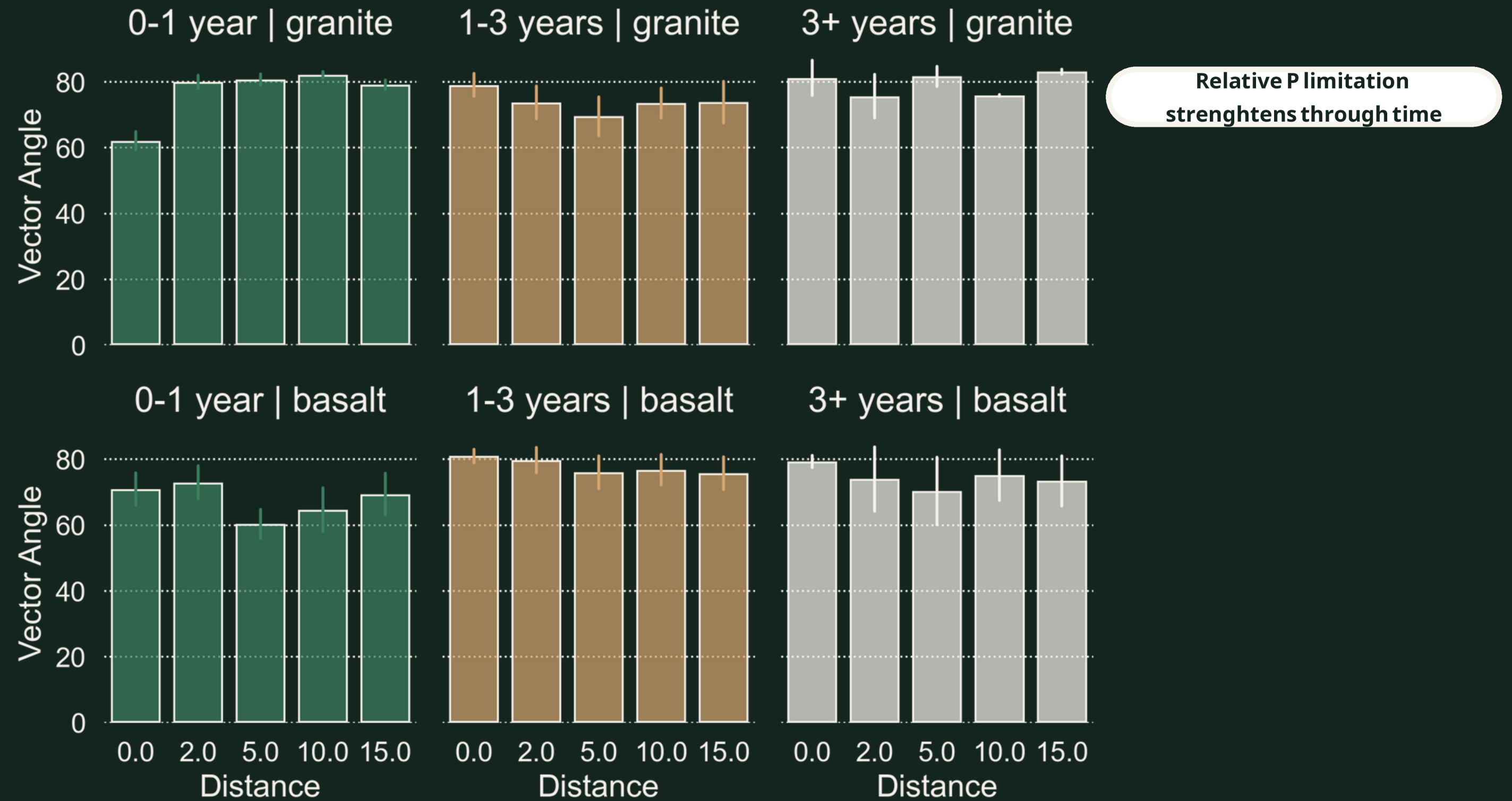
# MICROBIAL ENZYME ACTIVITY



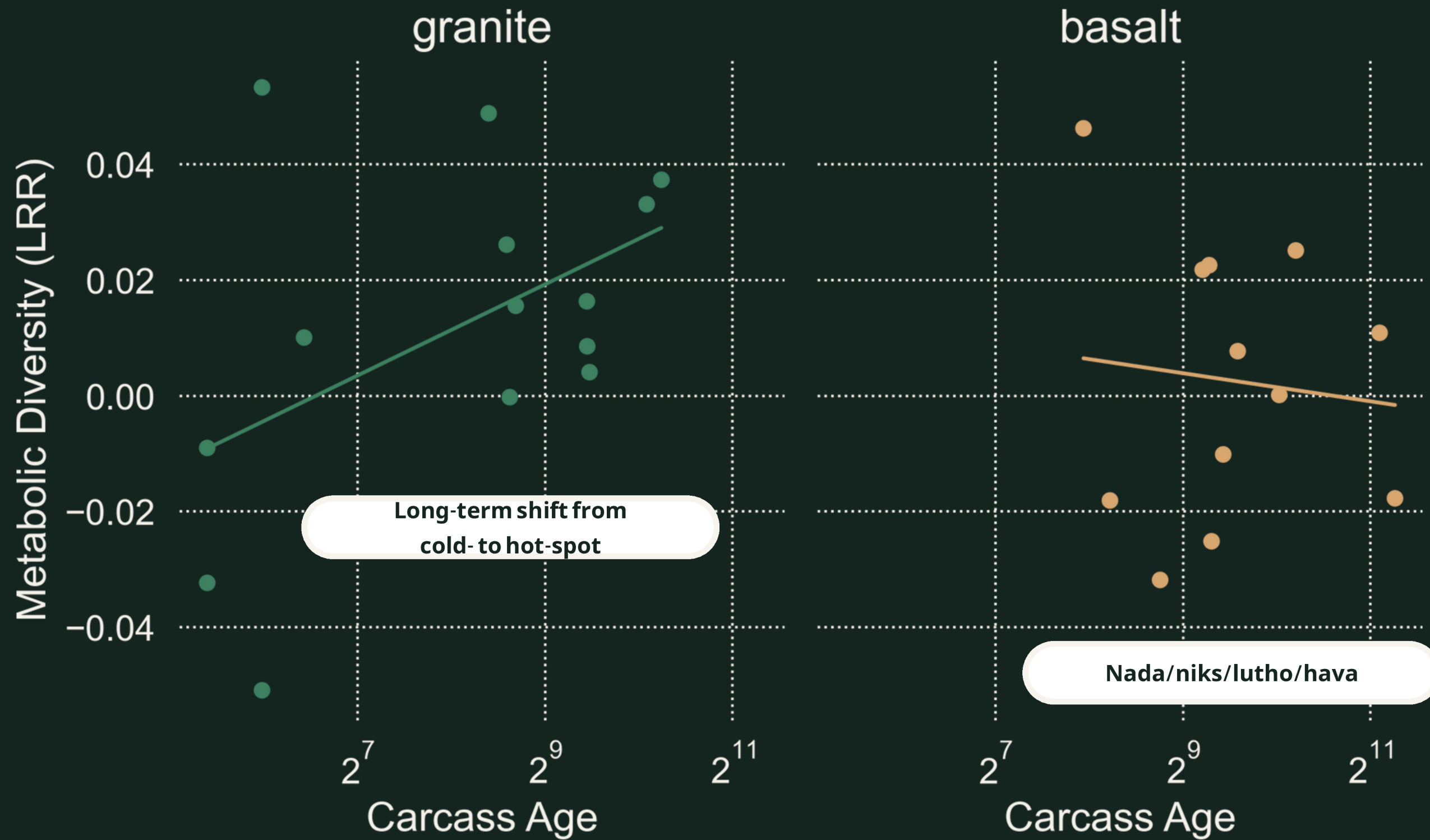
Relative C limitation weakens through time

Relative C limitation weakens through time

# MICROBIAL ENZYME ACTIVITY



# MICROBIAL FUNCTIONAL DIVERSITY



proboscidogeochemistry

THANK YOU FOR  
ATTENTIVE  
LISTENING.

