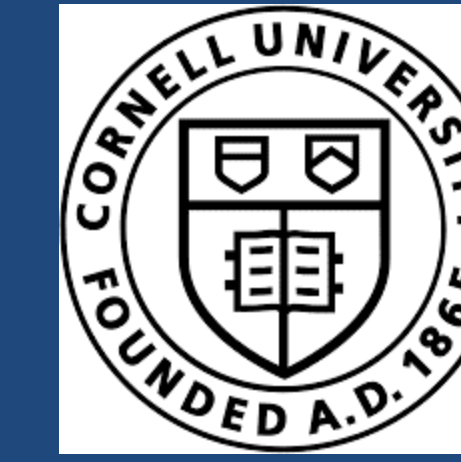


# No evidence for transgenerational immune priming in *Drosophila melanogaster*

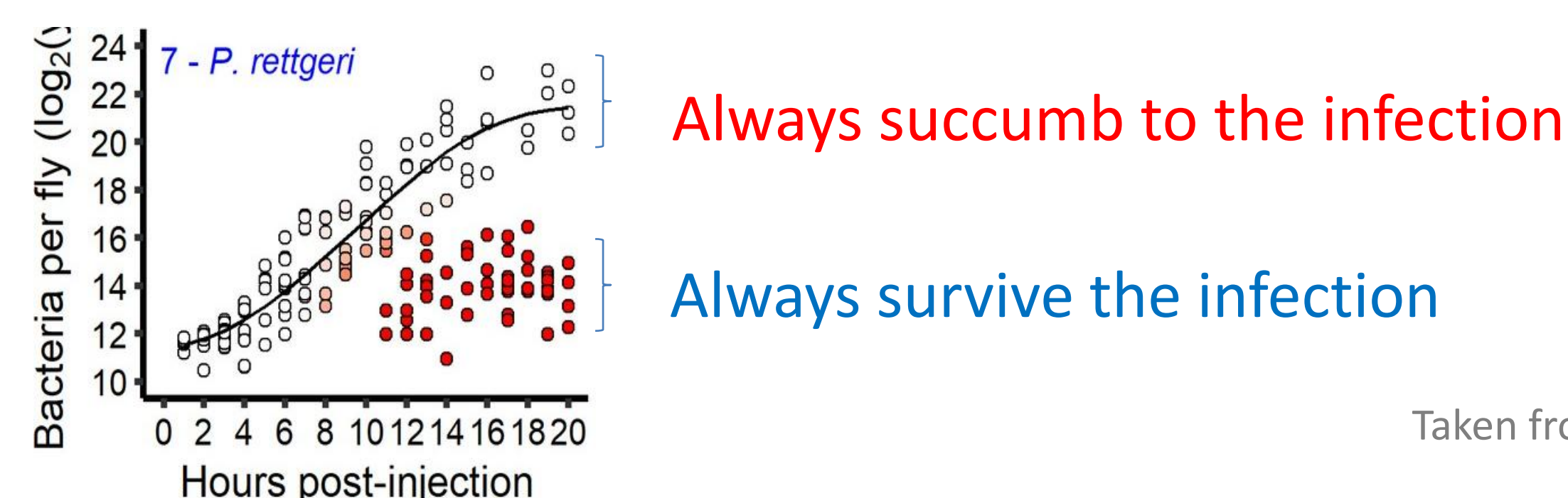
Radhika Ravikumar, Brian P. Lazzaro

Department of Entomology, Cornell University, Ithaca, NY  
Cornell Institute of Host-Microbe Interactions and Disease



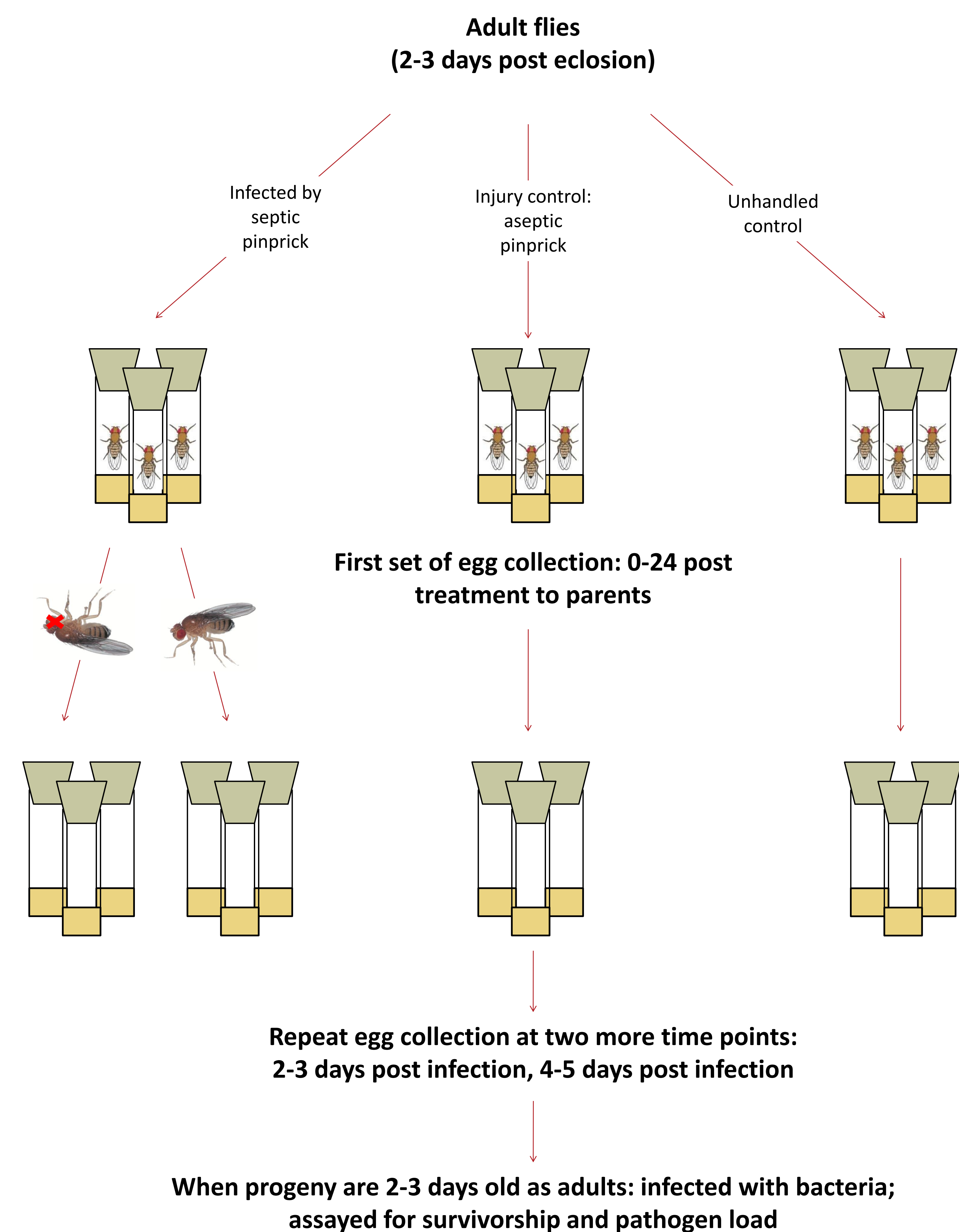
## OBJECTIVES of the STUDY

- Transgenerational immune priming: transfer of the parental immunological experience to their progeny<sup>1</sup>
- Existing literature has highly contradictory reports regarding whether transgenerational priming can be detected in insects or not. Some studies report the presence of priming against some, but not all, pathogens.
- The primary goal of our study was to test for this phenomenon in *Drosophila melanogaster*. To establish uniformity and reproducibility in our results, we tested for priming against 10 different phylogenetically distant bacterial pathogens.
- We also sought to establish a timeline of priming by collecting offspring at 3 time points post infecting parents. Each of these 3 sets of offspring were tested for priming to check how long after infection are parents capable of priming their offspring.



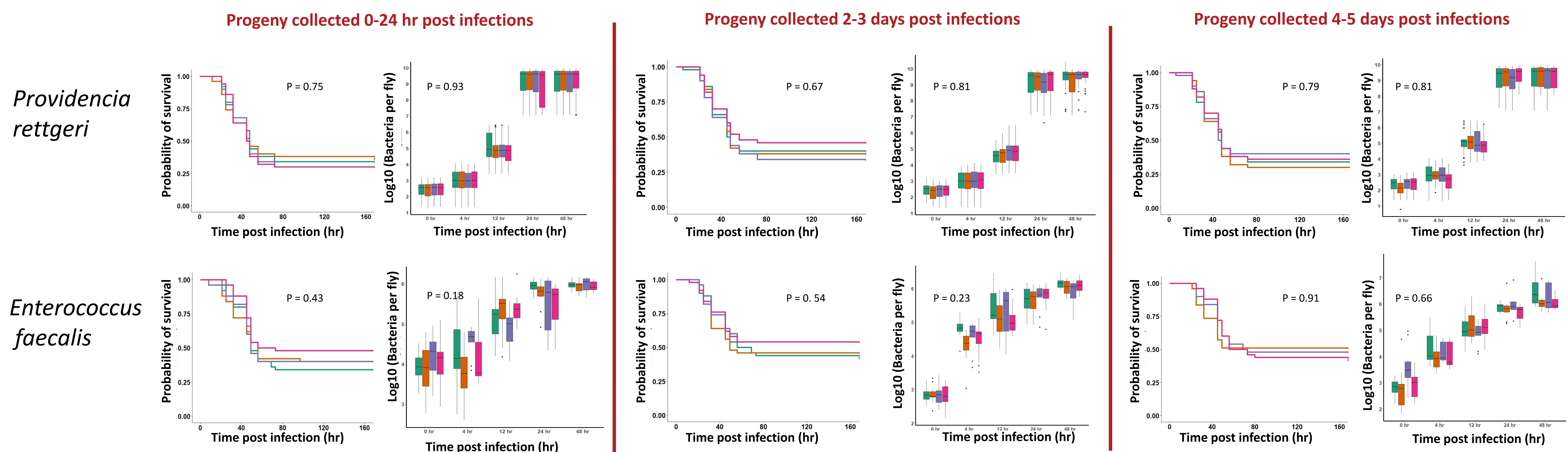
- Infected individuals can often be segregated into two groups based on pathogen loads. These loads dictate whether they survive an infection or not. To test whether differences in parents' ability to survive infection by suppressing pathogen growth affects their ability to prime offspring, we segregated eggs collected at each of the 3 time points based on the survival/death of the egg laying parent.

## EXPERIMENTAL DESIGN



## RESULTS

Progeny from: Dead infected parents (green), Alive infected parents (orange), Injury control parents (blue), Unhandled control parents (pink)



In addition to these two bacteria, we also performed infections with *Providencia sneebia*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Serratia marcescens*, *Micrococcus luteus*, *Staphylococcus aureus* and 2 strains of *Bacillus* (one forming biofilms and the other not). We found no evidence of transgenerational priming for any of these ten bacterial strains.

## REFERENCES AND ACKNOWLEDGMENTS

1.. Tetreau *et al.* ; *Front Immunol.* 2019

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