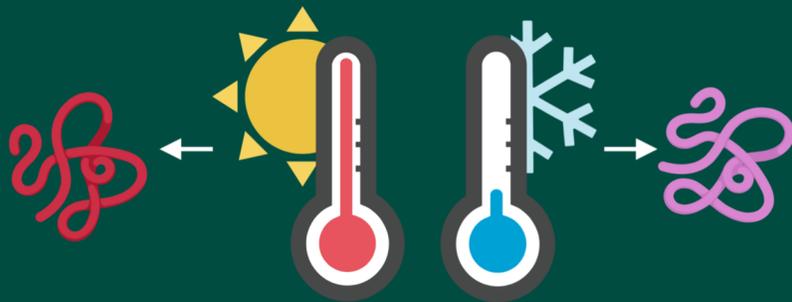


Prokaryote proteomes help identify temperature-associated amino acid residues



<https://www.maizegenetics.net/sarahjensen>

Would you like to learn more about this project?

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Development Goal:

Models to select for protein efficiency at elevated temperatures

Roadblock

We don't know which residues affect thermostability

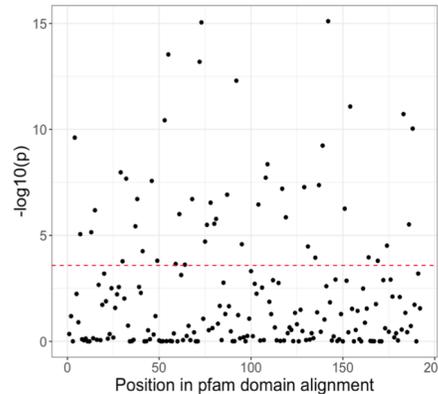
Research Goals:

- Identify temperature-sensitive sites in prokaryotes
- Understand biochemistry underlying improved protein thermotolerance

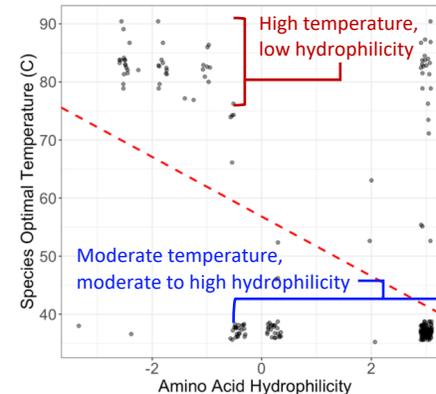
Hypotheses

Thermal adaptation is highly polygenic

Protein domains have many sites associated with temperature

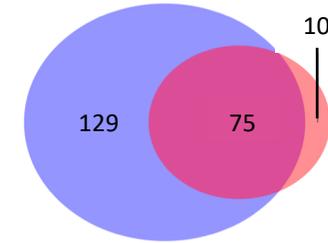


Individual sites can be associated with specific chemical properties



Many temperature-associated sites are present in both Archaea and Bacteria

Protein domain 4



Archaea
Both
Bacteria

Protein domain 118



Residues associated with thermostability in both Archaea and Bacteria are good candidates for further study

On average, 25% of residues matter for temperature adaptation

