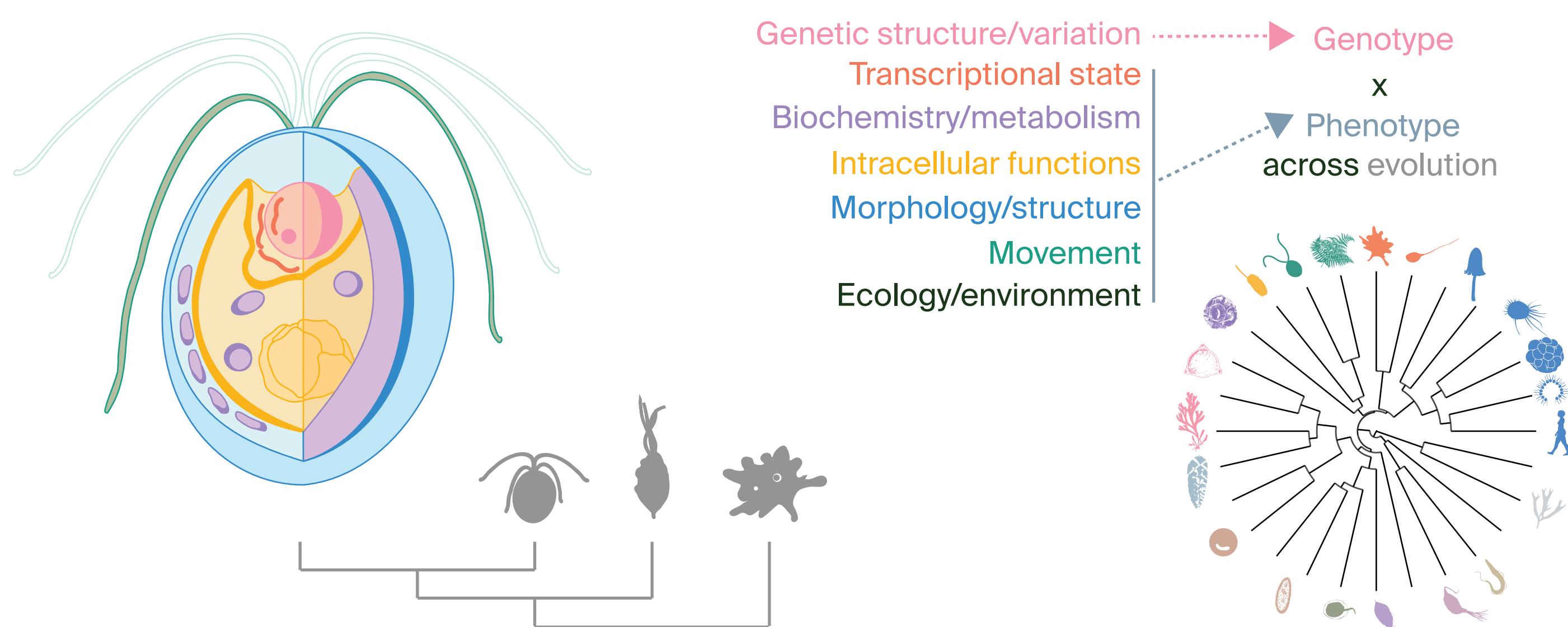


# Toward whole-organism genetic mapping: The Arcadia *Chlamydomonas* Diversity Collection

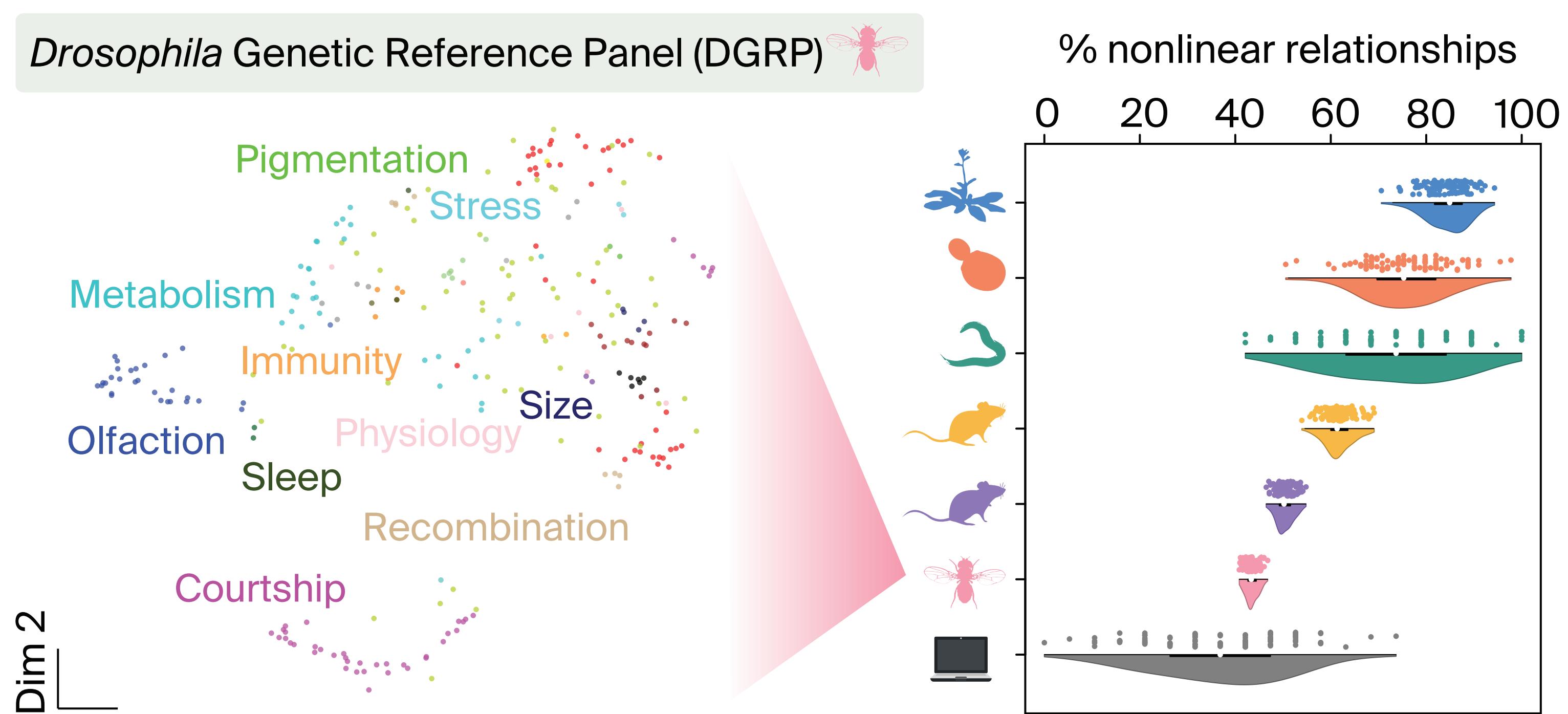
Presented by  Ryan York [@ryanayork](https://twitter.com/ryanayork)



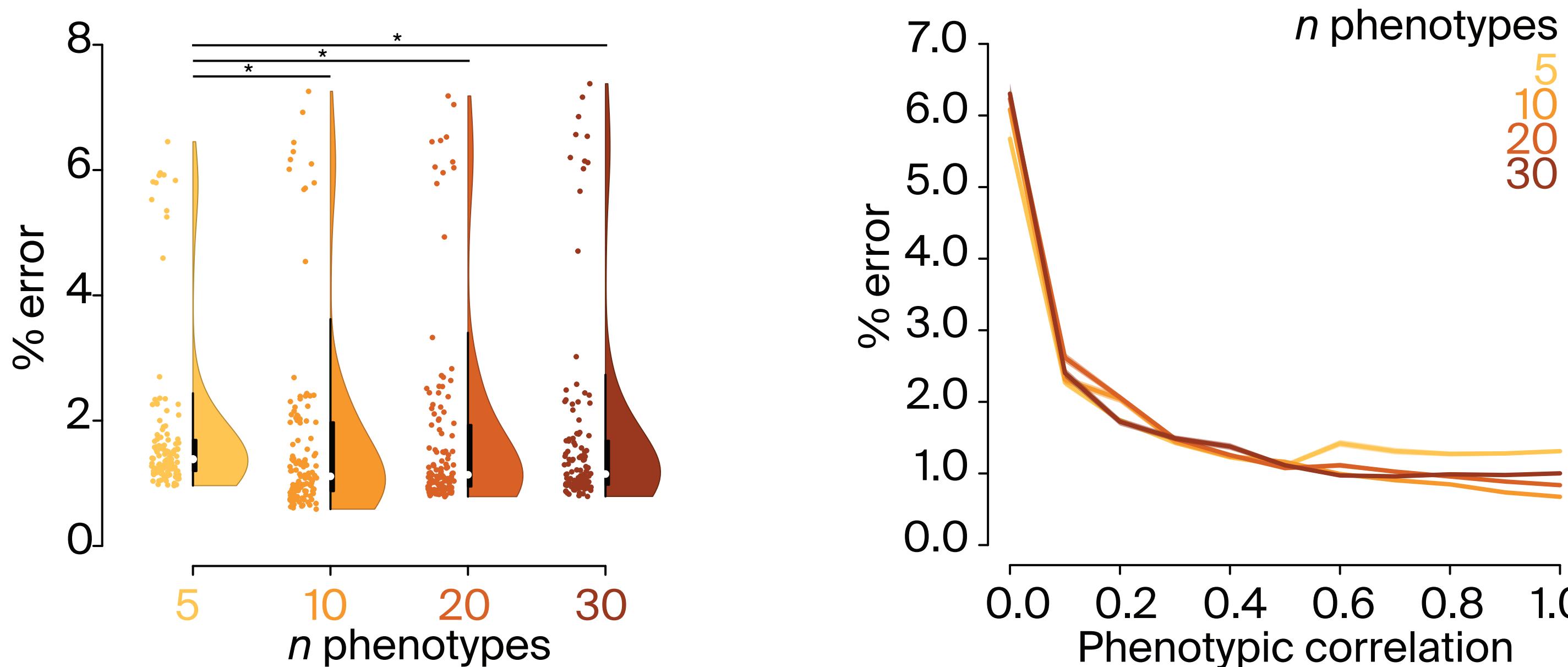
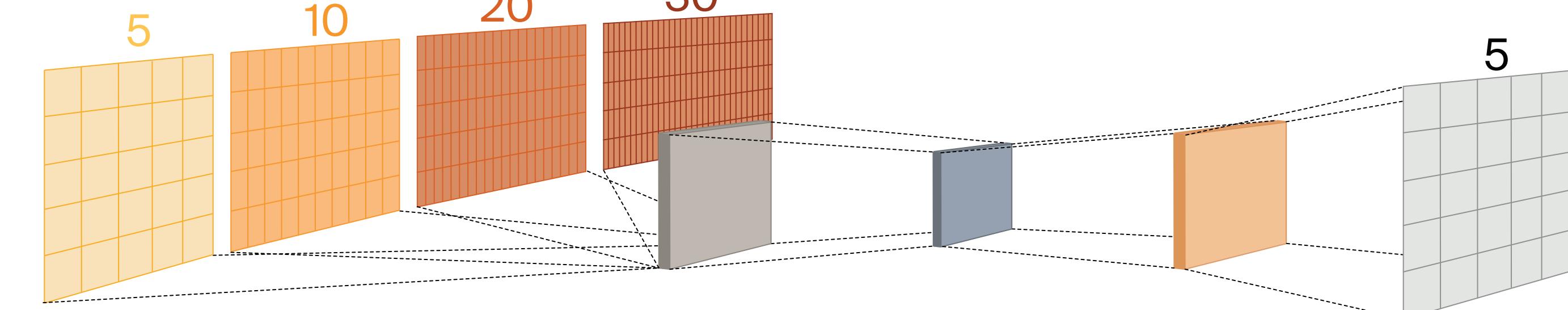
## Goal: Decode biology across the tree of life



## Biological relationships are often nonlinear

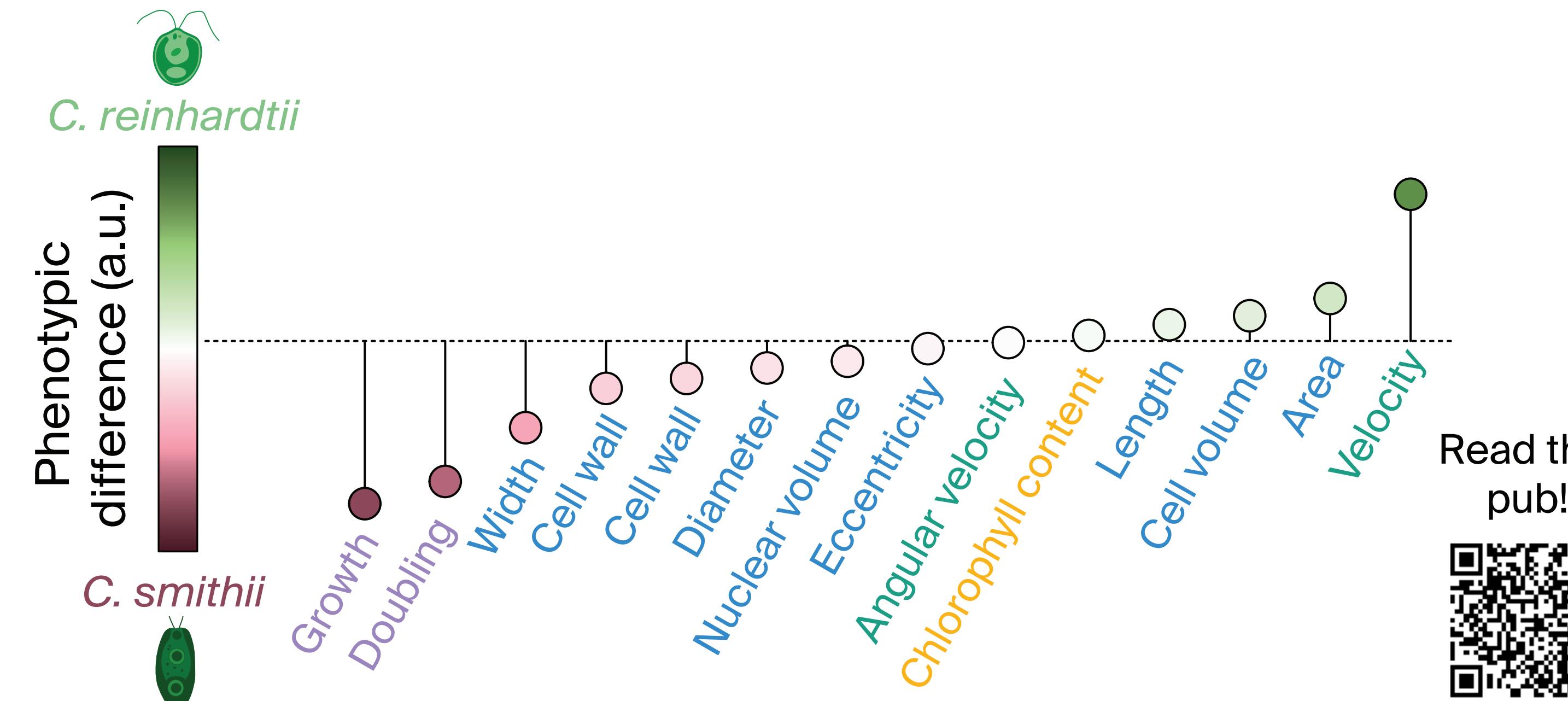


Leveraging multiple phenotypes (and accounting for nonlinearity) significantly increases accuracy

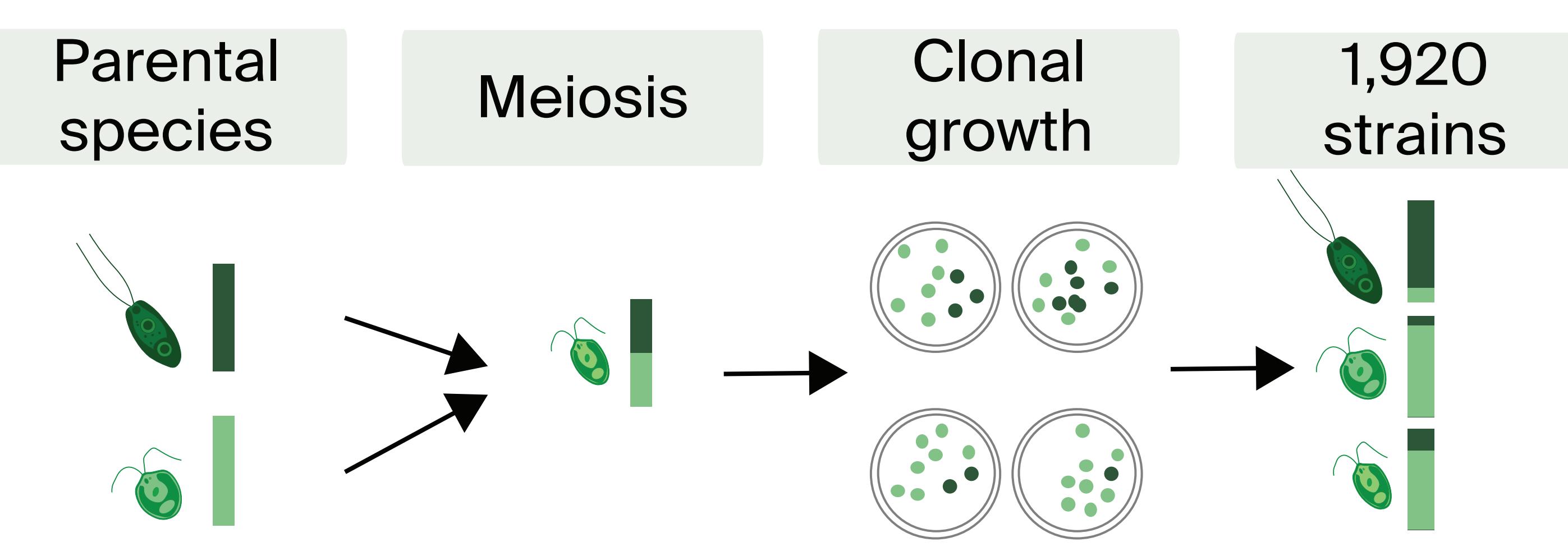


Data, code, and interactive notebooks for reproducing these analyses are available on GitHub: [bit.ly/nonlinearity](https://bit.ly/nonlinearity)

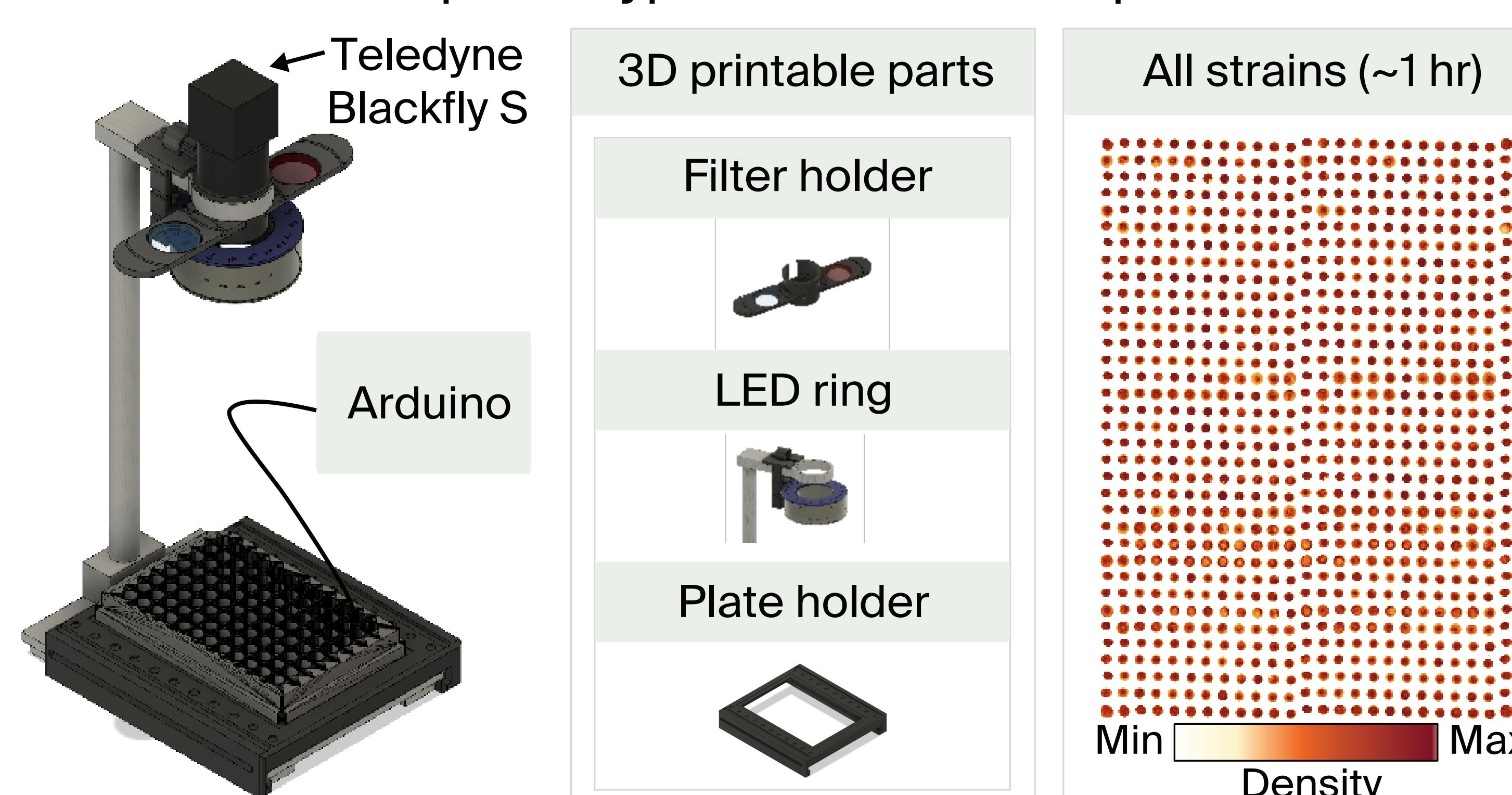
## Broad phenotypic differences within *Chlamydomonas*



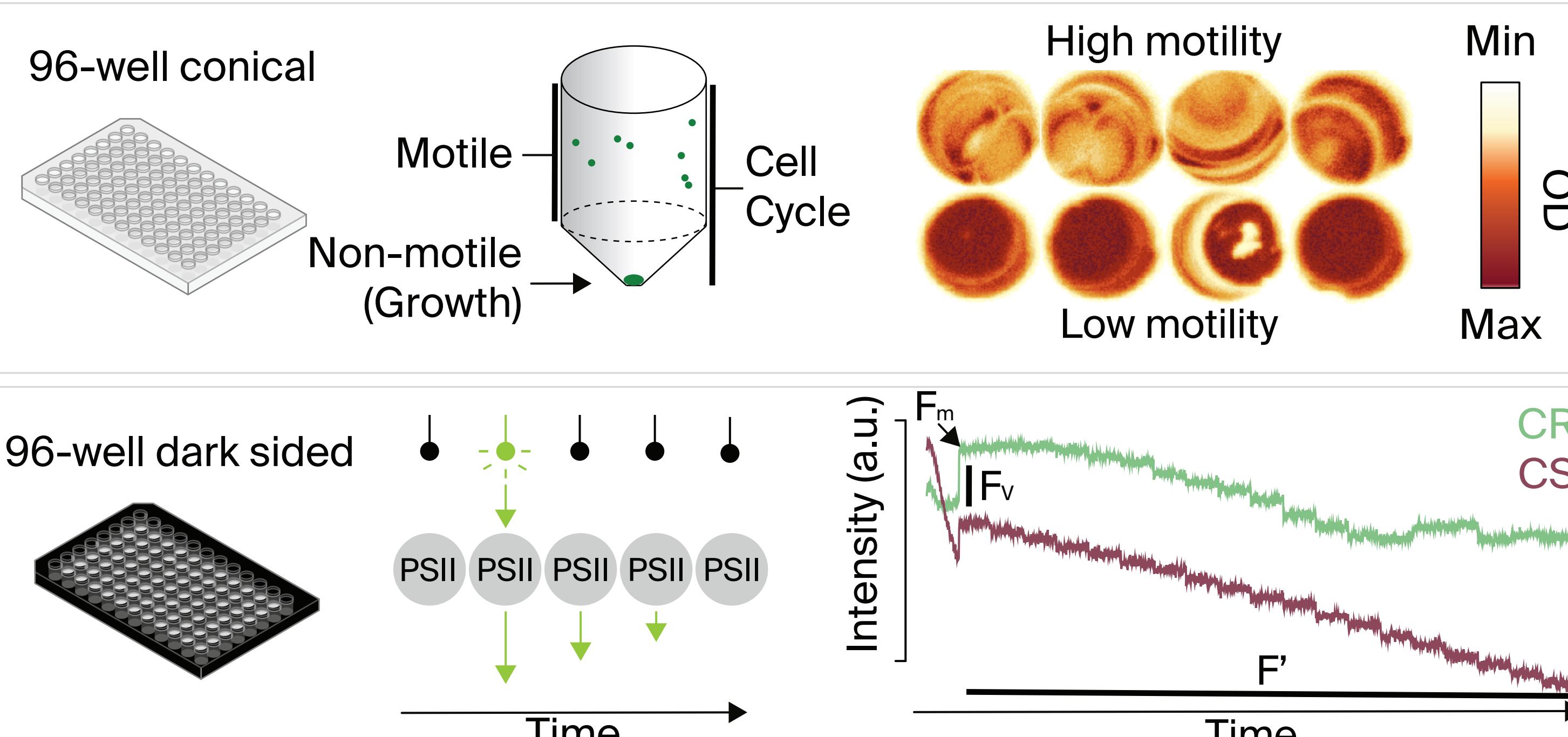
## The Arcadia *Chlamydomonas* Diversity Collection (ACDC)



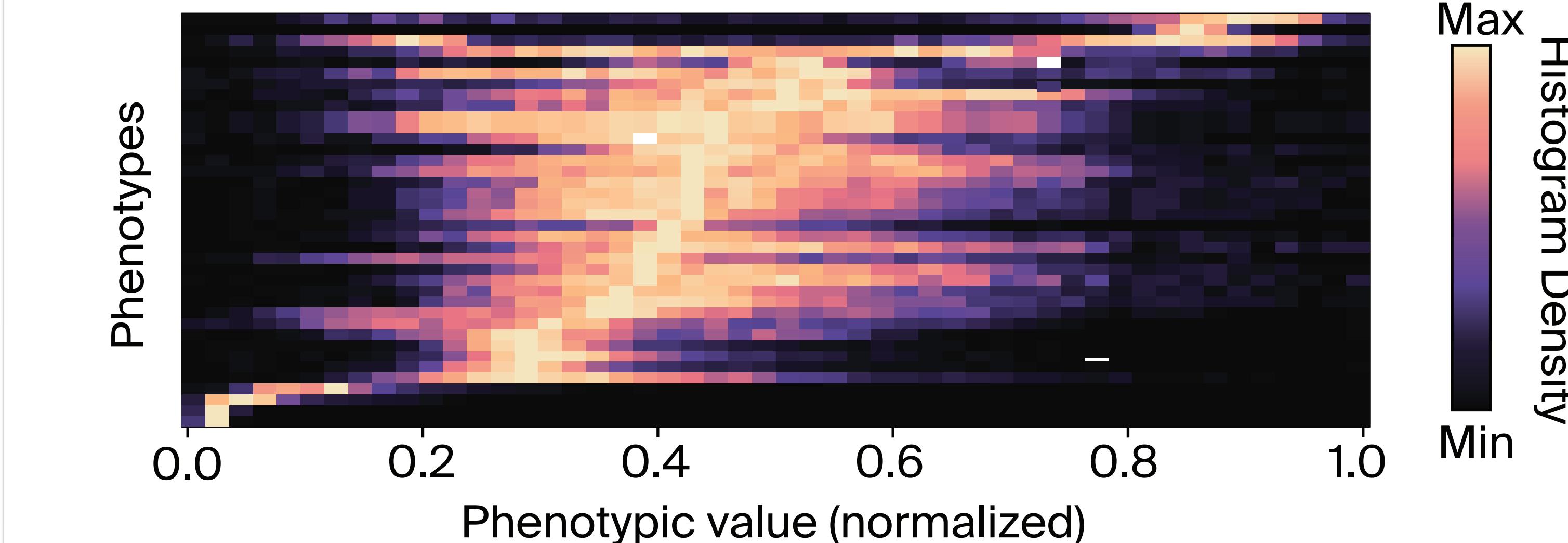
## The Arcadia phenotype-o-mat: a \$400 plate reader



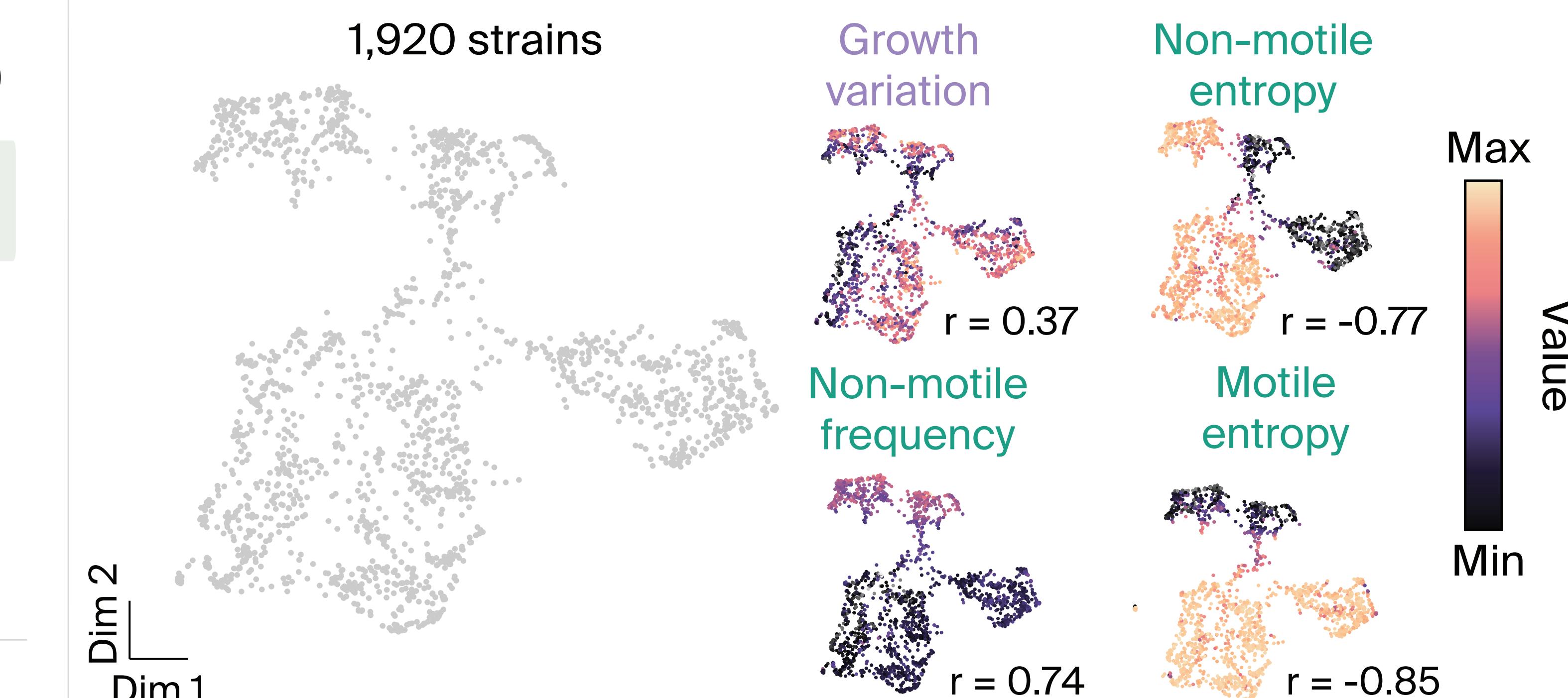
## High-throughput, multidimensional phenotyping



## Charting *Chlamydomonas* phenotypic space



## ACDC strains display extensive phenotypic variation



## Open-source community resources



Comment on the pub:

[Harnessing genotype-phenotype nonlinearity to accelerate biological prediction](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8500000/)

Post with #ArcadiaGenetics



All other published work: [research.arcadiascience.com](https://research.arcadiascience.com)



## A NOTE ON SHARING WITH US!

Part of our mission is to share as much useful research as we can.

If you choose to share a protocol or other useful information with us after viewing this poster, please understand that we may act upon this knowledge and share it when we publish our work. We publish quickly on an independent platform, so this may happen soon after you share, and we cannot wait for you to publish elsewhere.

If you decide to share anyway, yay! That's what science is all about. If your input is useful, we will include you as a contributor to the publication and explain that your role was in providing "Critical Feedback," likely with an additional description of what you shared.

tl;dr – If you're not ready for everyone to know about something, please refrain from sharing it with us.

## Contributors

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