

Regeneration in multicellular systems

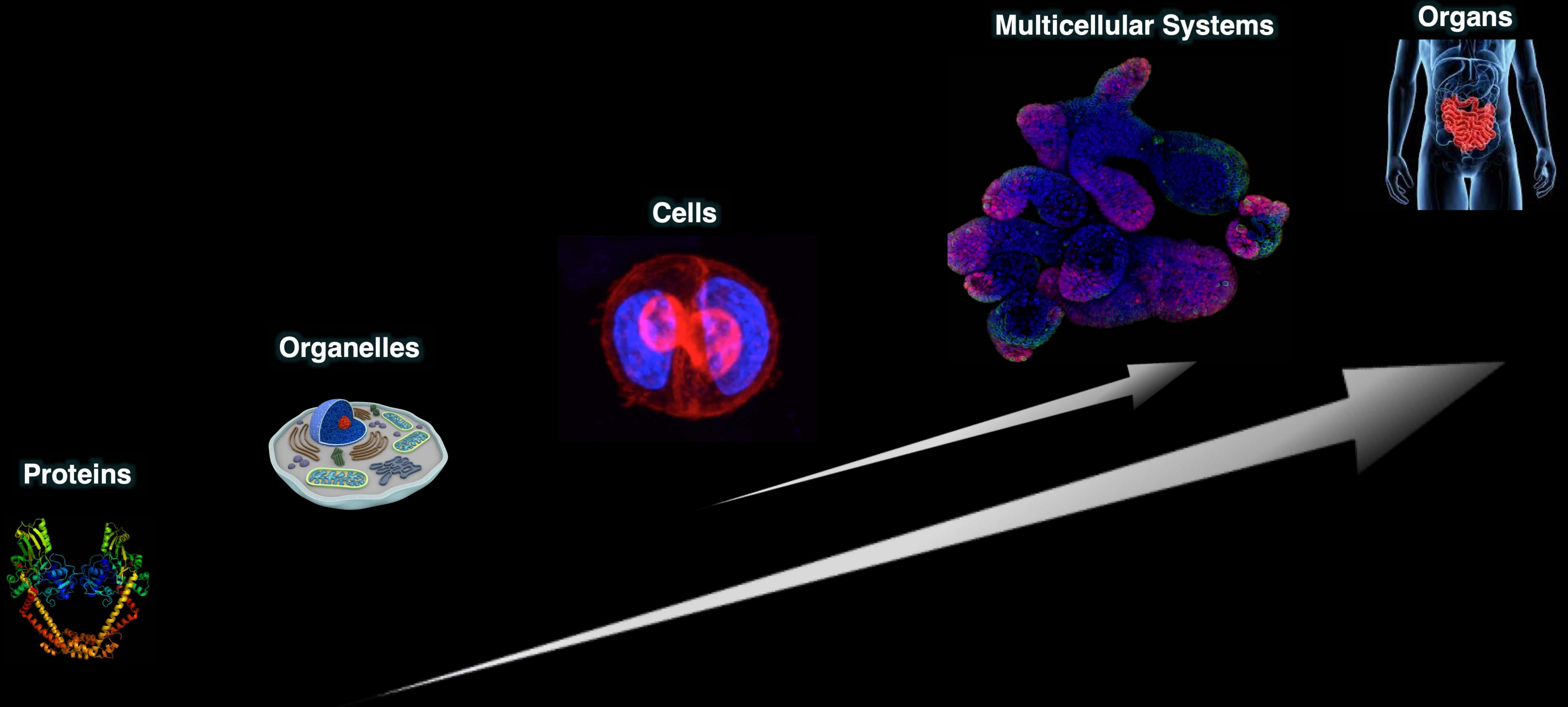
Prof. Prisca Liberali

Friedrich Miescher Institute for Biomedical Research

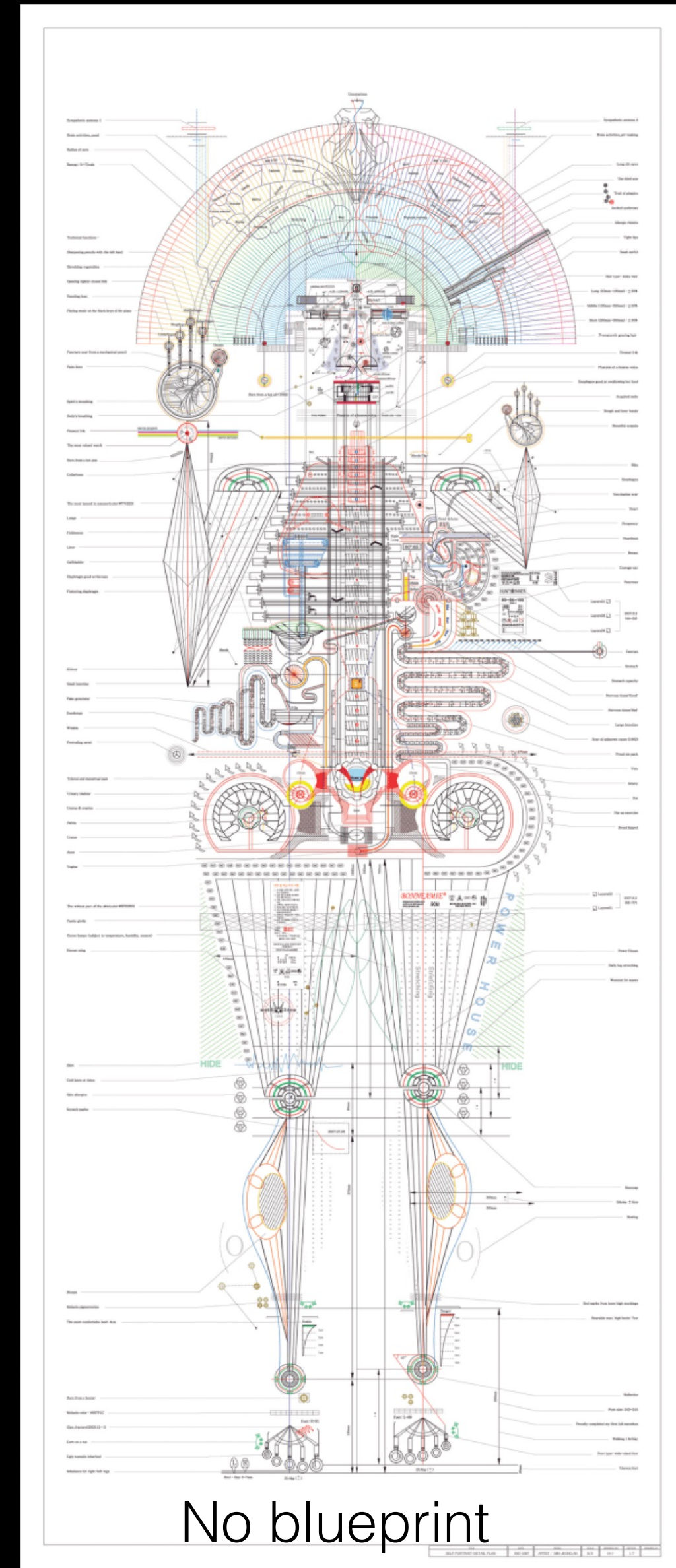
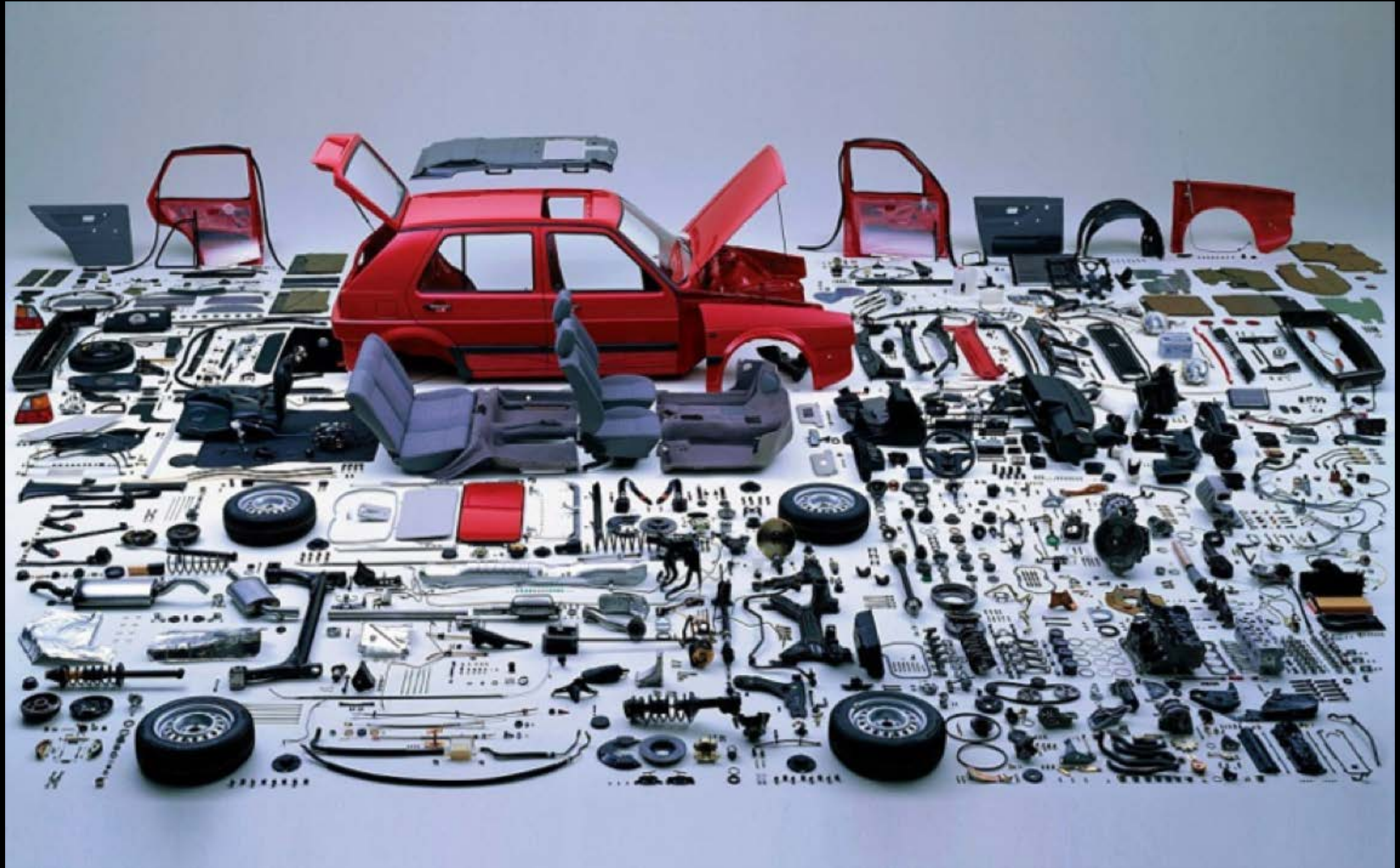
Basel

FMI

Regeneration across biological scales



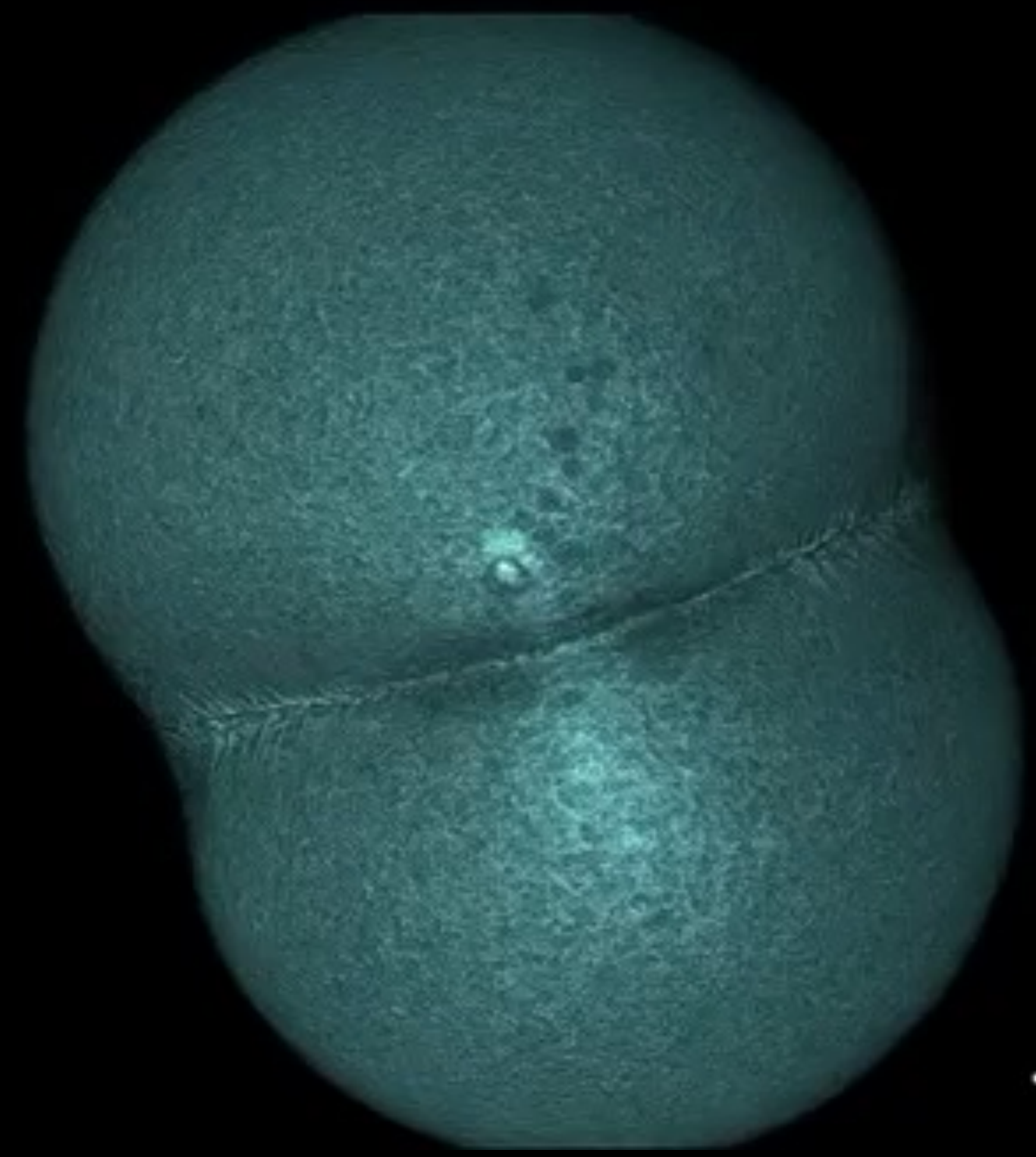
Tissues are not constructed machines



No blueprint

But built bottom open

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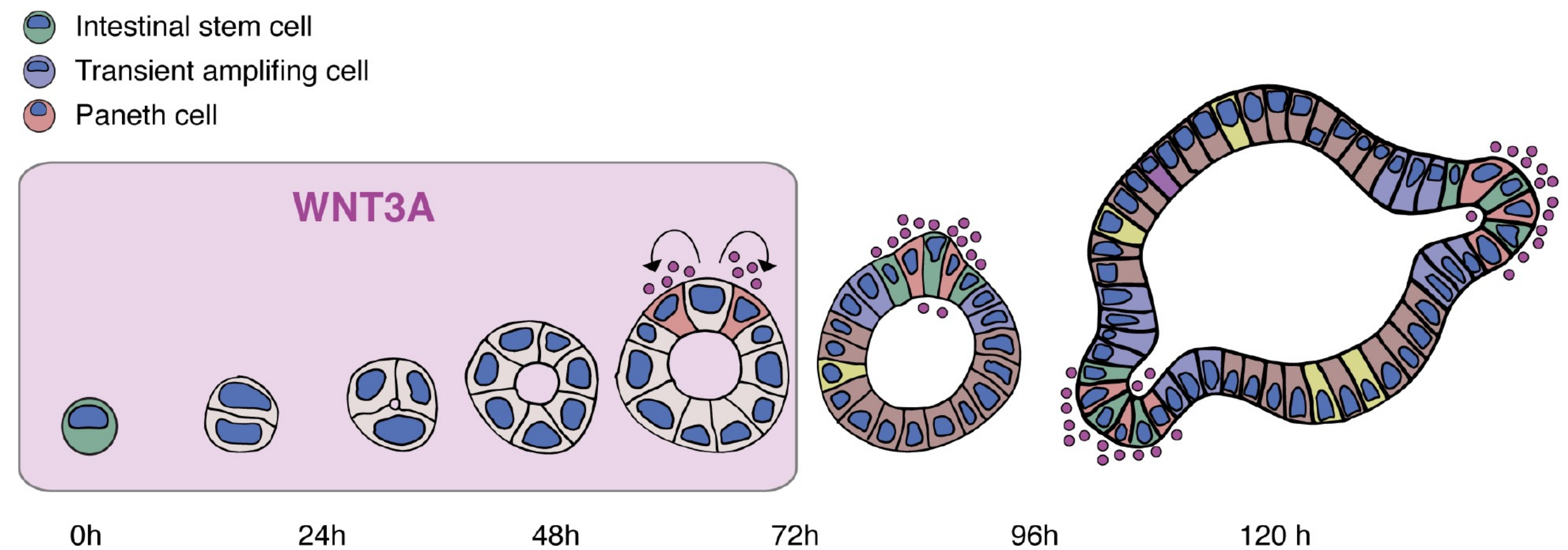
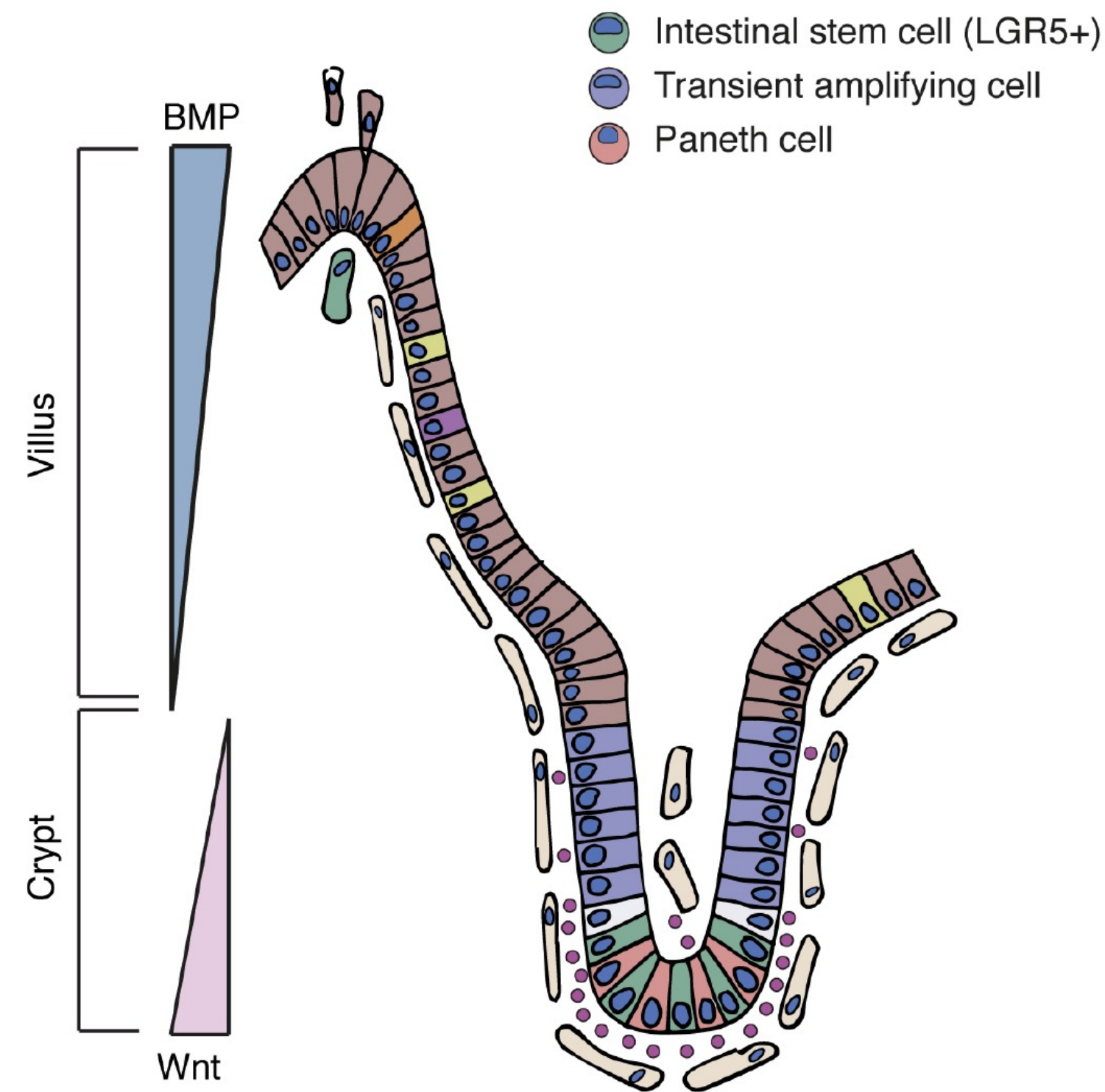


100 micron

How do single cells coordinate across scales

Small intestine

Intestinal organoids

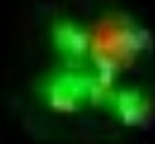
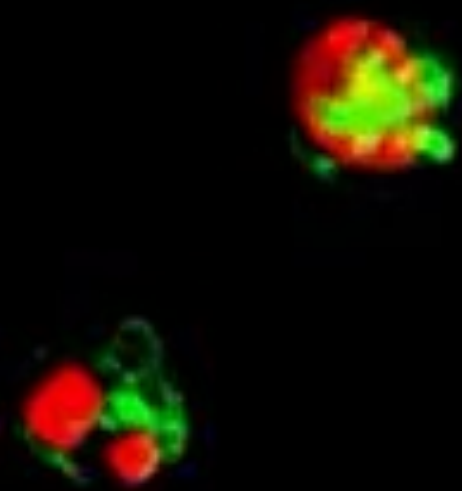


Controlled environments, accessible perturbations

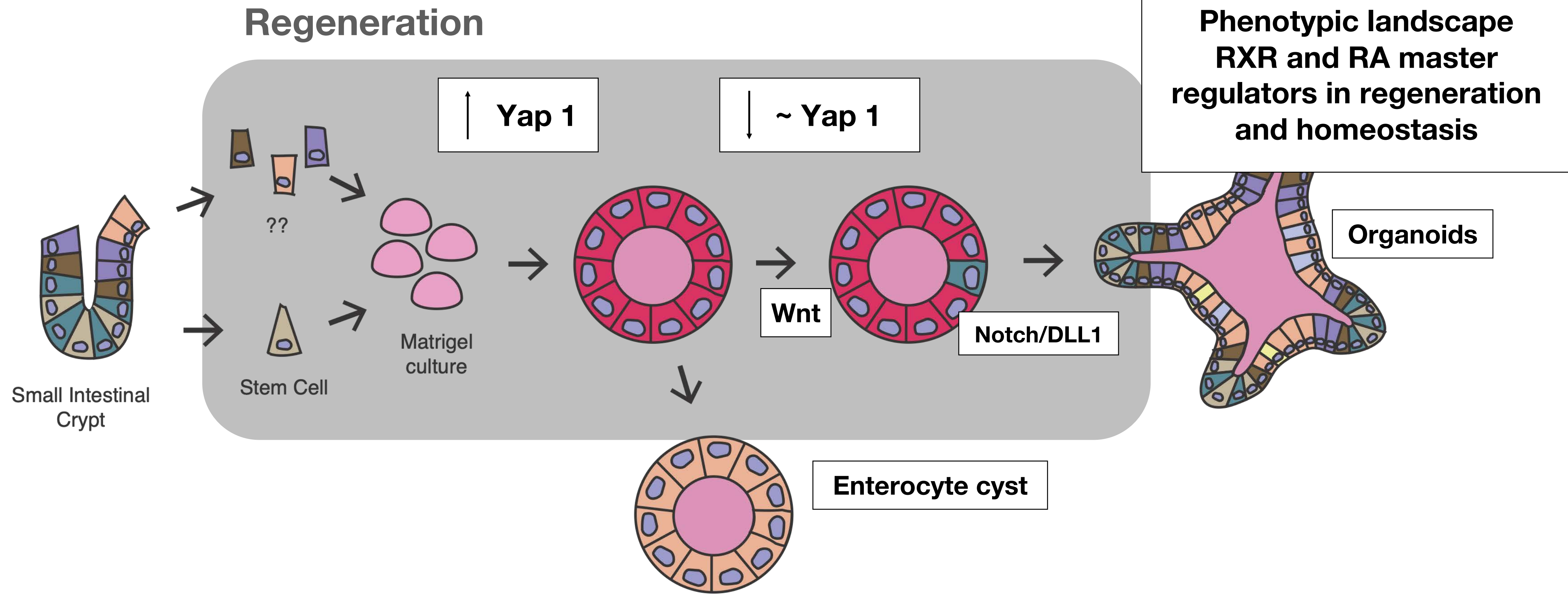
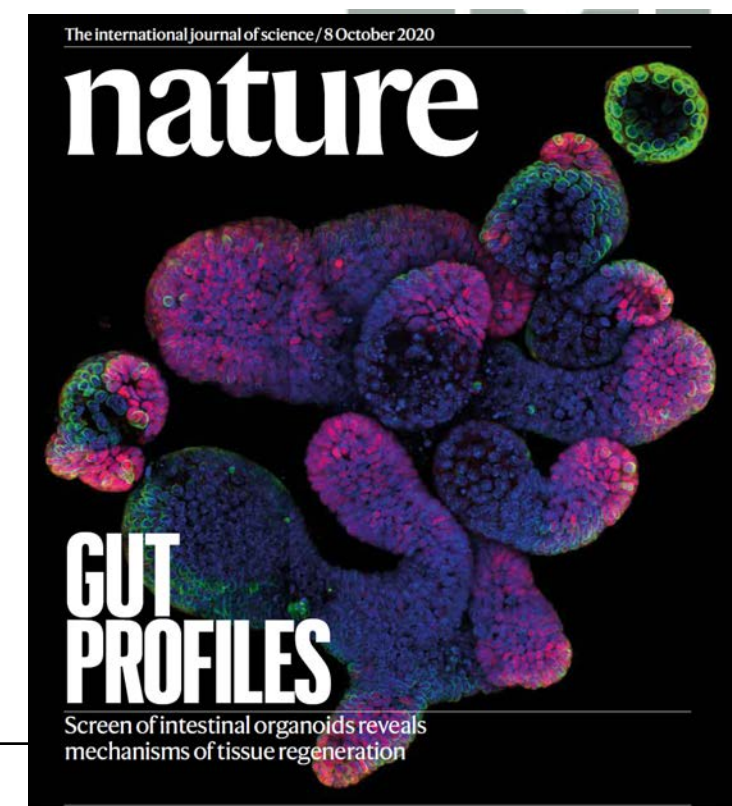
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MIP

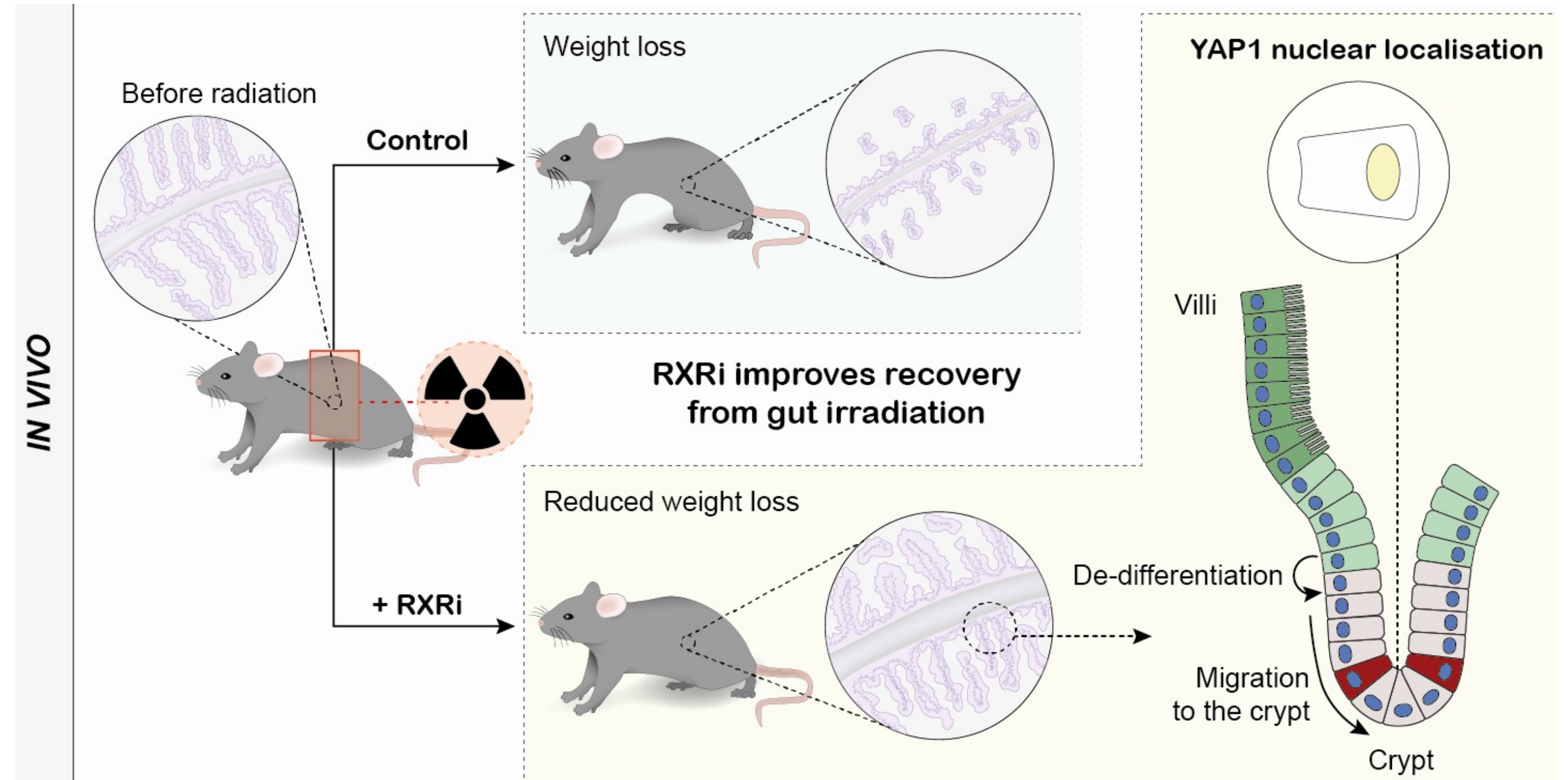
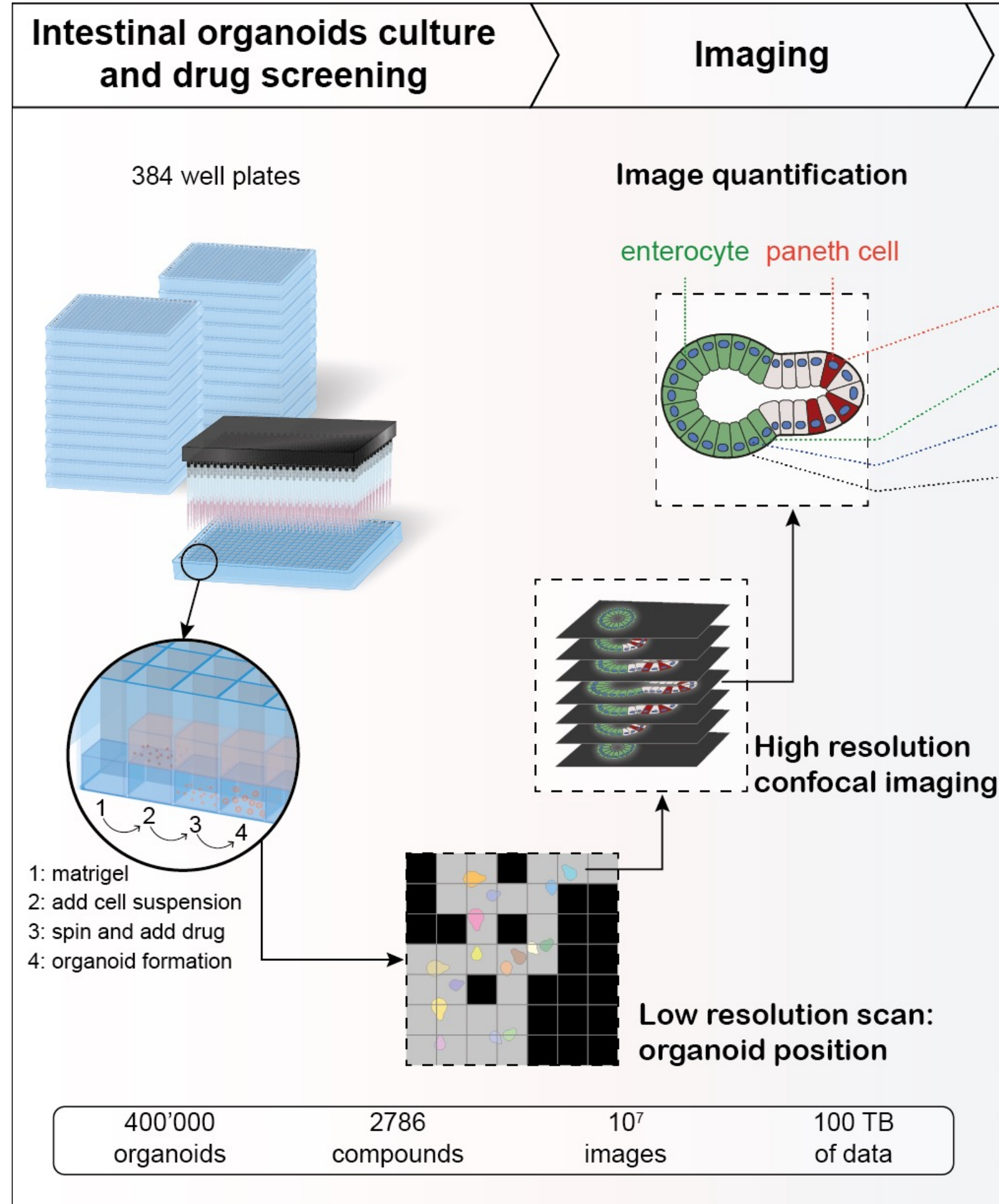
Z-plane



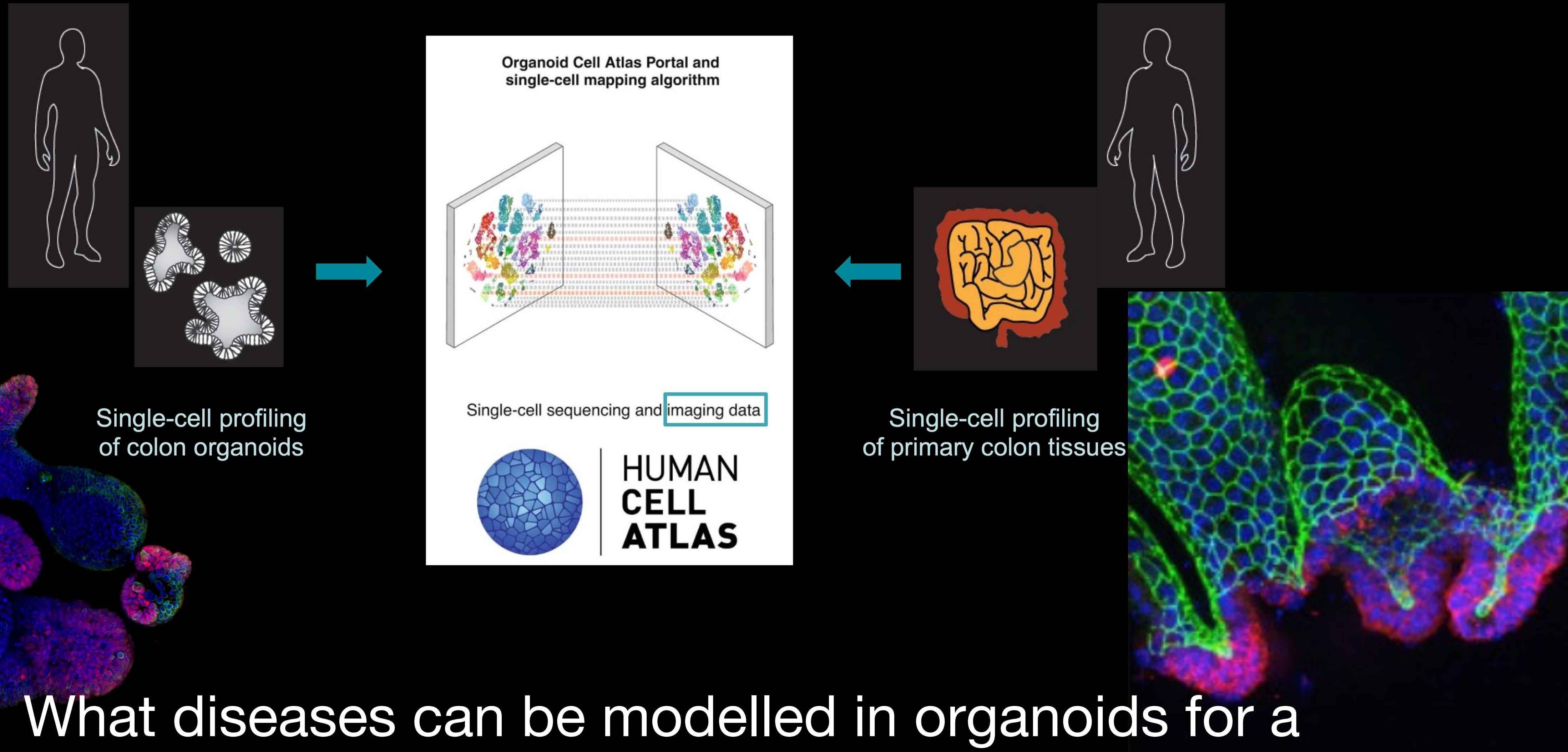
Intestinal organoids and intestinal regeneration



Intestinal regeneration



Human to human variability in aging, diseases and drug responses



What diseases can be modelled in organoids for a precision and predictive medicine?