

The regulatory landscape of the developing fly brain



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The **Drosophila brain** is the workhorse in neuroscience.

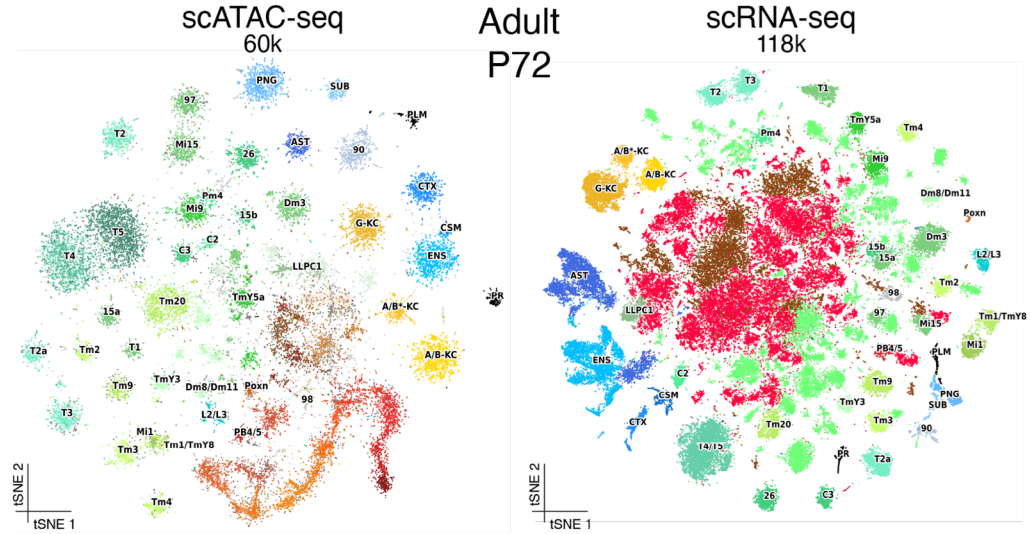
Positioned at a **sweet spot** of modest brain size versus complex behavior, it has been subject to connectomics, transcriptomics and genetic studies.

To fully understand the neuronal diversity we created an **epigenomic dataset of 240k cells**, and through integration with transcriptomics inferred **enhancer-GRNs**.

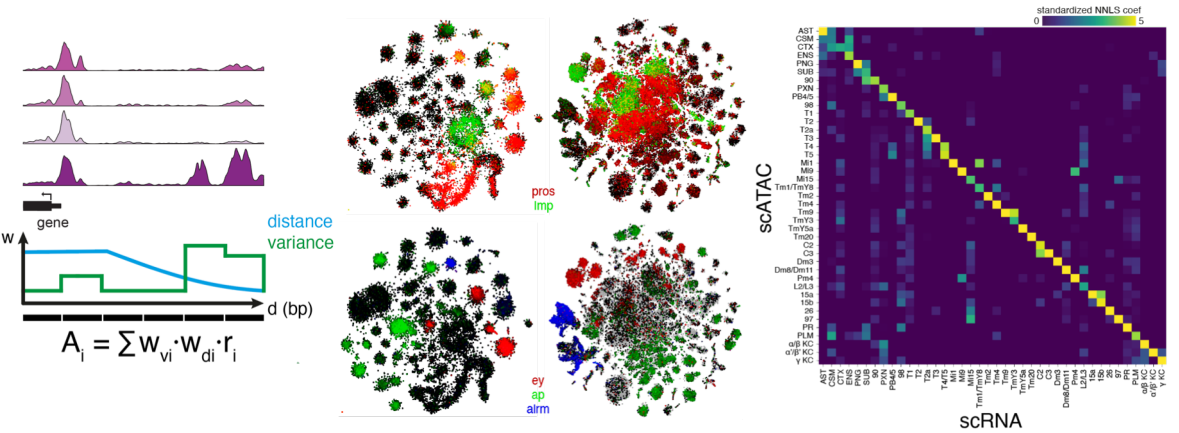
Finally, we study **neurogenesis and synaptogenesis** and reveal key regulators.

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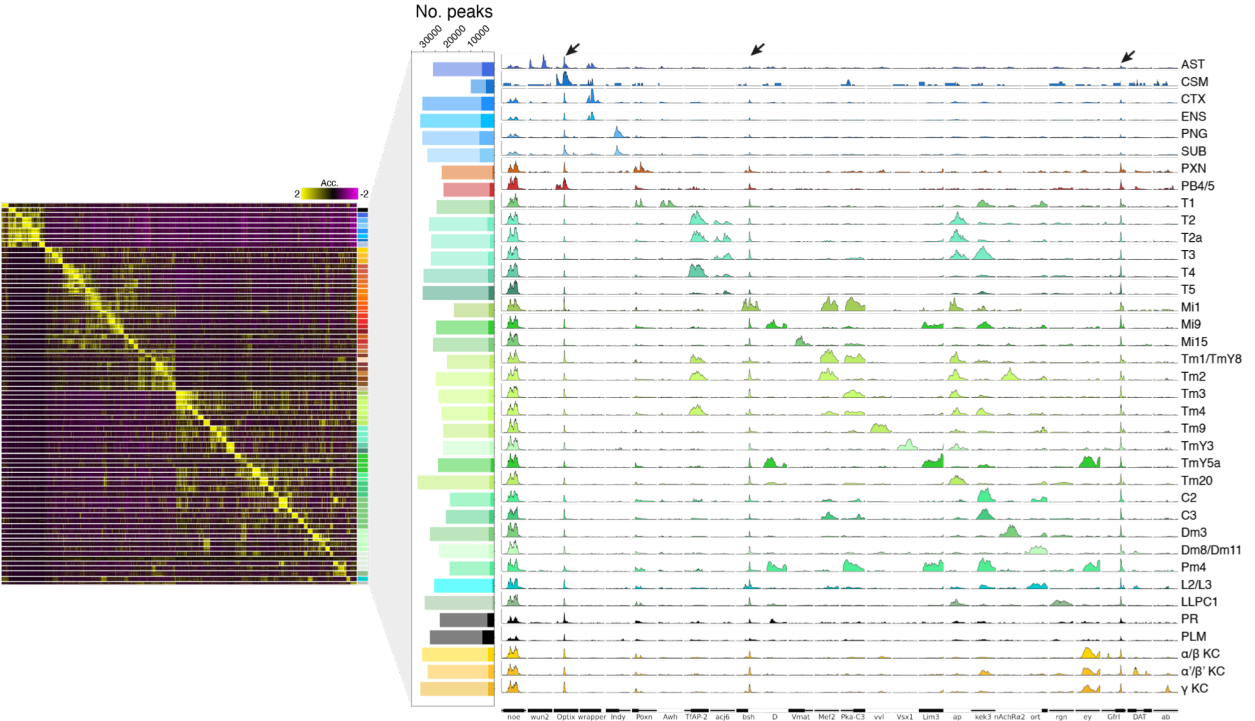
Adult brain atlas



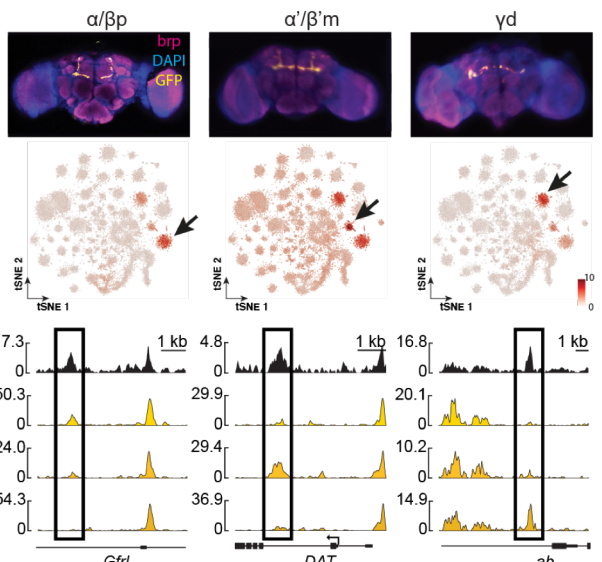
Integration with RNA-seq



Unique chromatin profiles

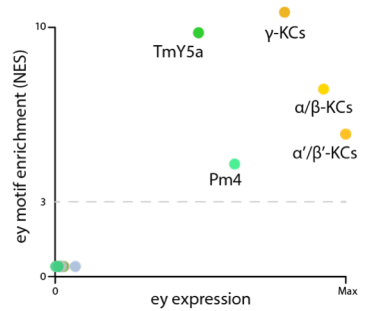


Validation with FACS

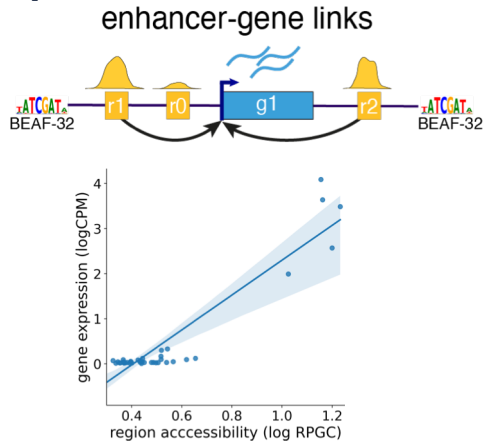


Building enhancer-GRNs

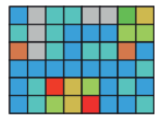
1. TF expression and motif enrichment



2. Region accessibility and expression

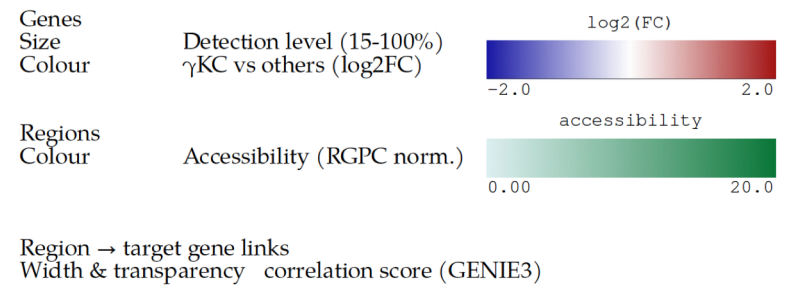
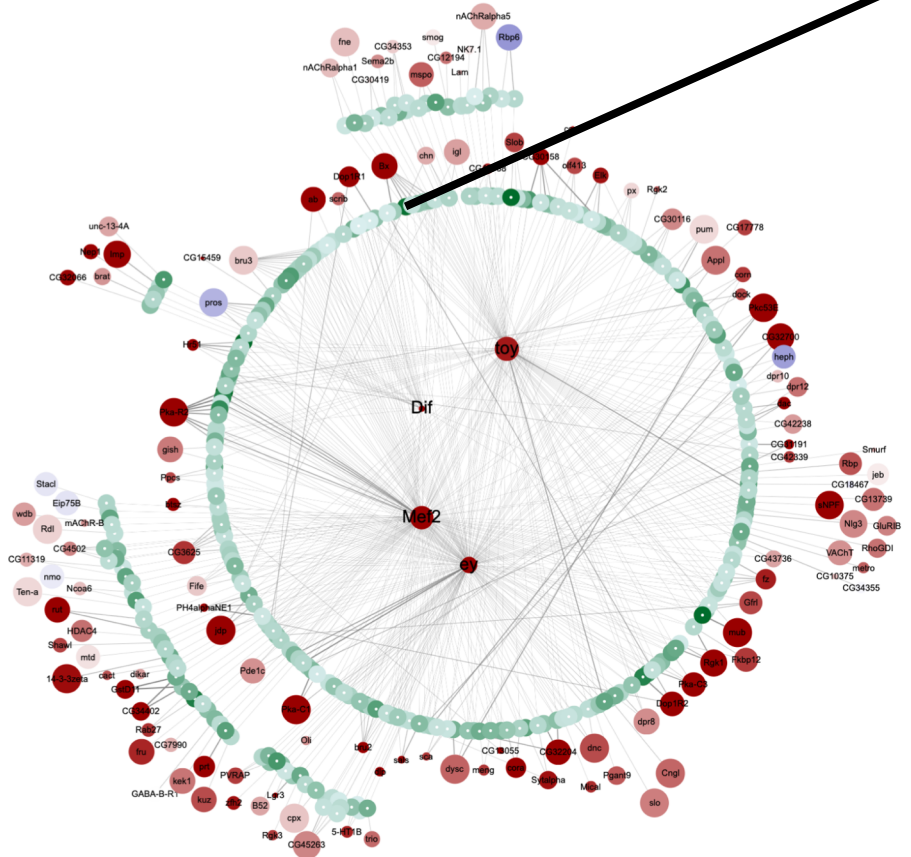


3. TF-target genes

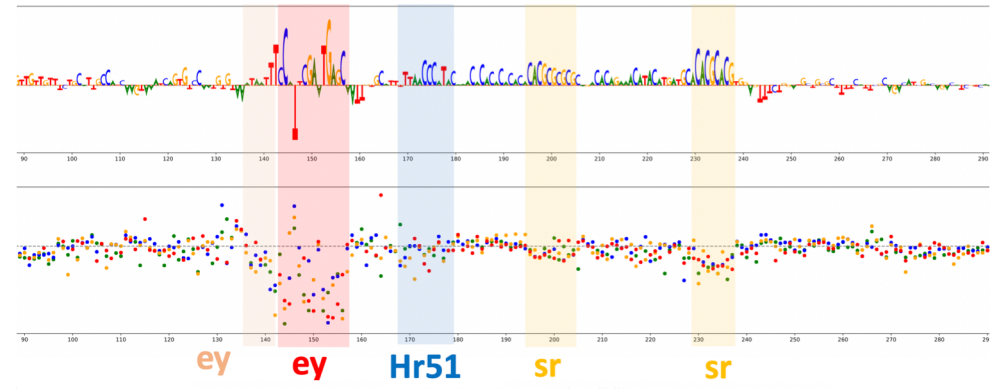


TF-gene coexpression

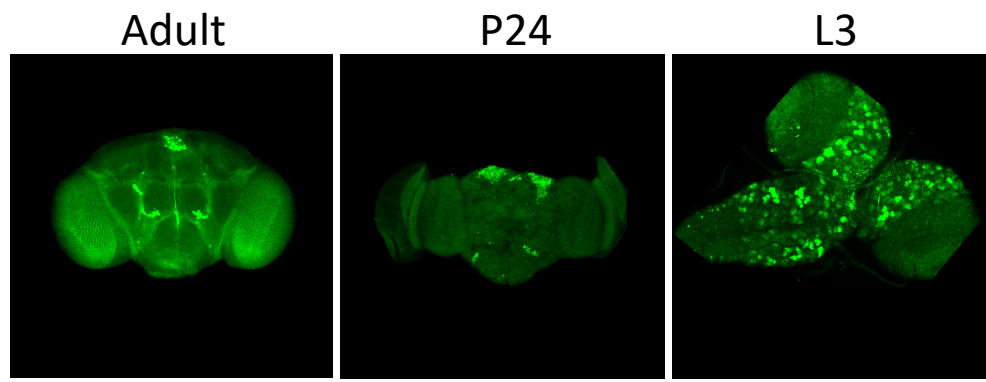
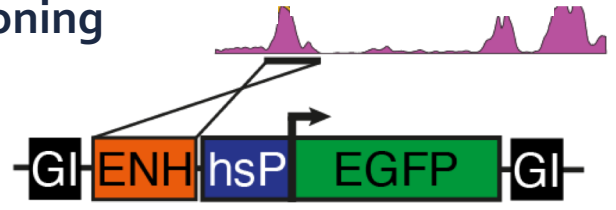
4. Enhancer-GRN



5. Deep learning overview



6. Enhancer cloning

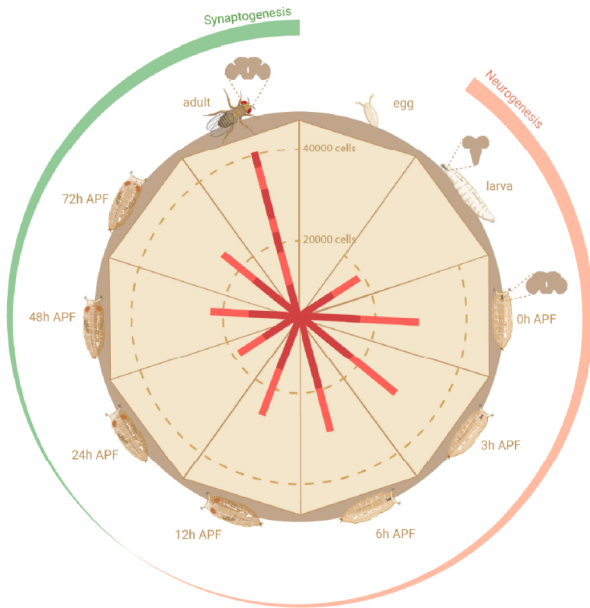


Adult

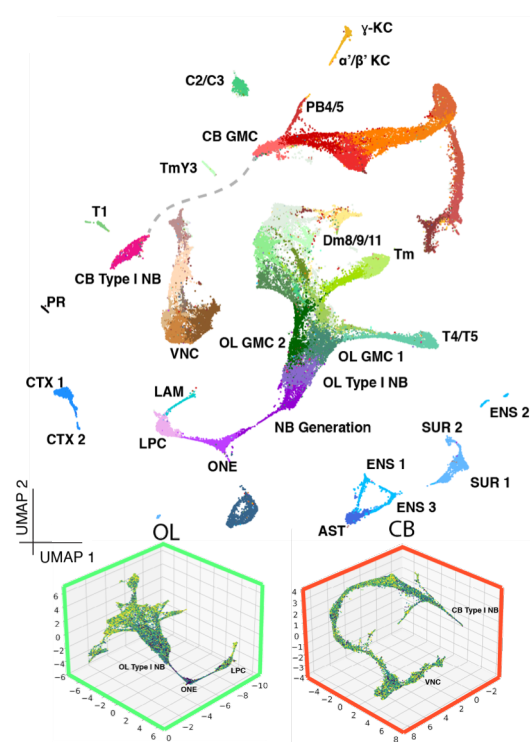
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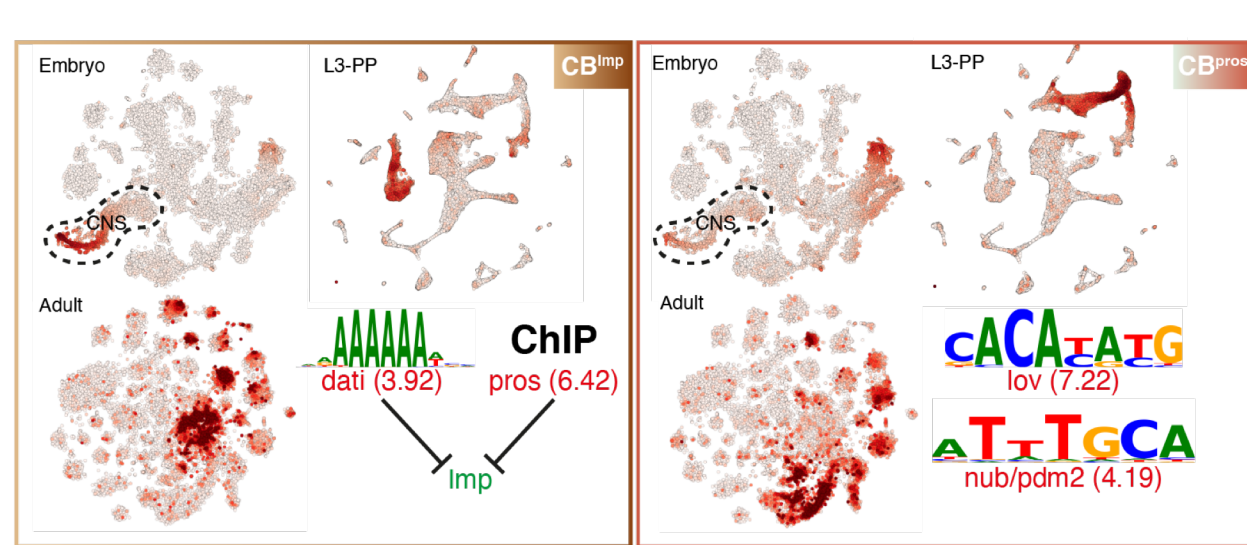
How it's made



Larva-pupa atlas



CB reprogramming



OL neurogenesis

