

# The kinetics of Interferon- $\gamma$ induced RNA flow

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# Summary

Attempting to cover everything from imaging strategy to analysis method

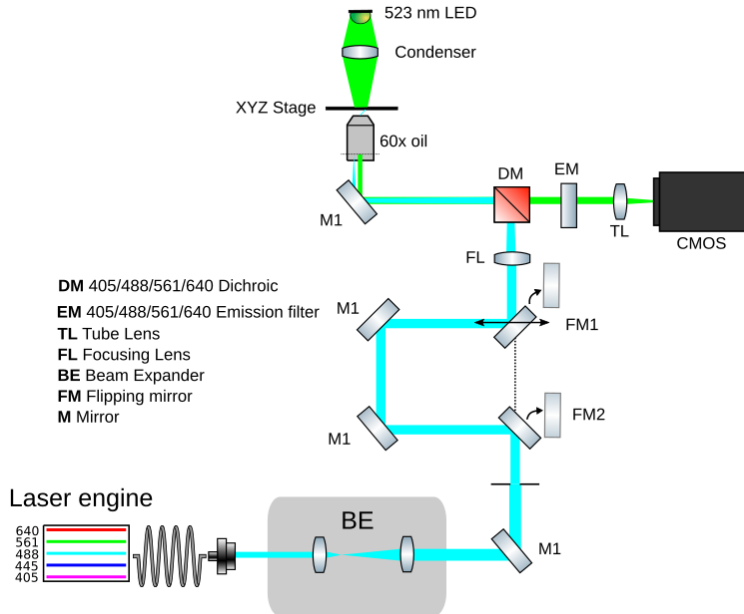
## Part 1

- ▶ Multiplexed imaging strategy
- ▶ Image stitching and registration

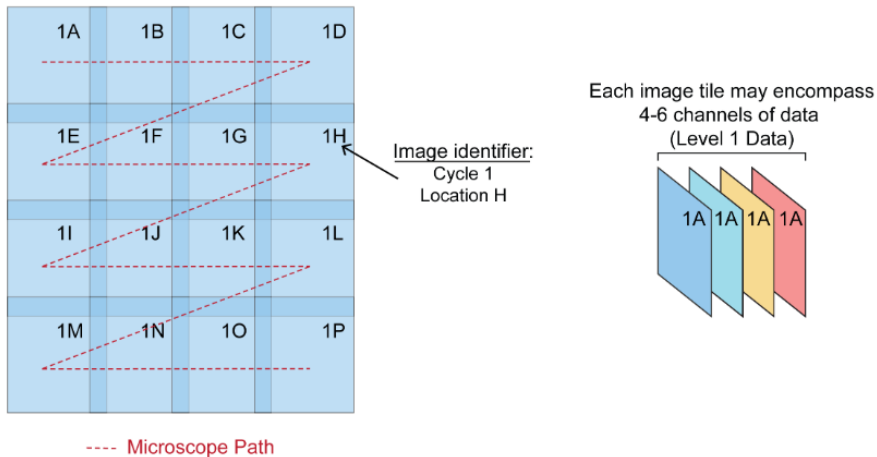
## Part 2

- ▶ Recap of the compartment model for RNA flow
- ▶ Gene selection based on RNA flow model
- ▶ Brief comments on probe design

# Imaging setup

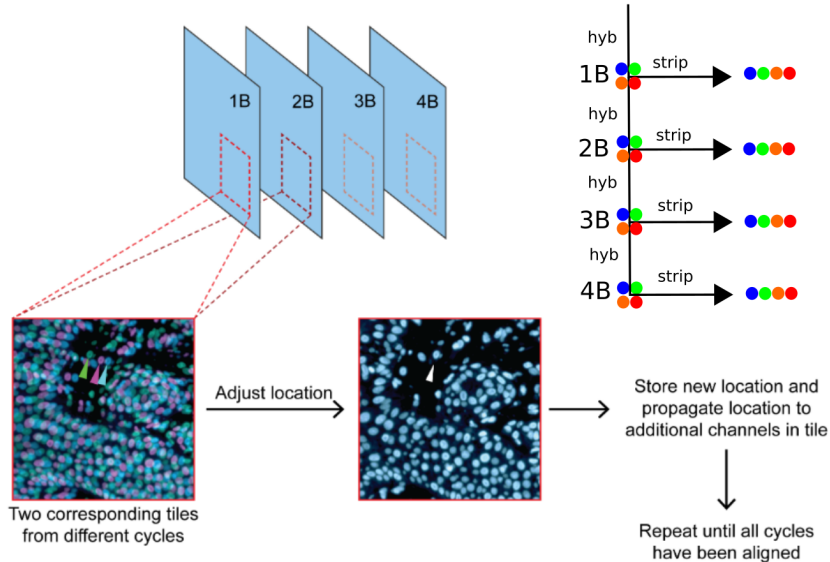


## 4-channel acquisition

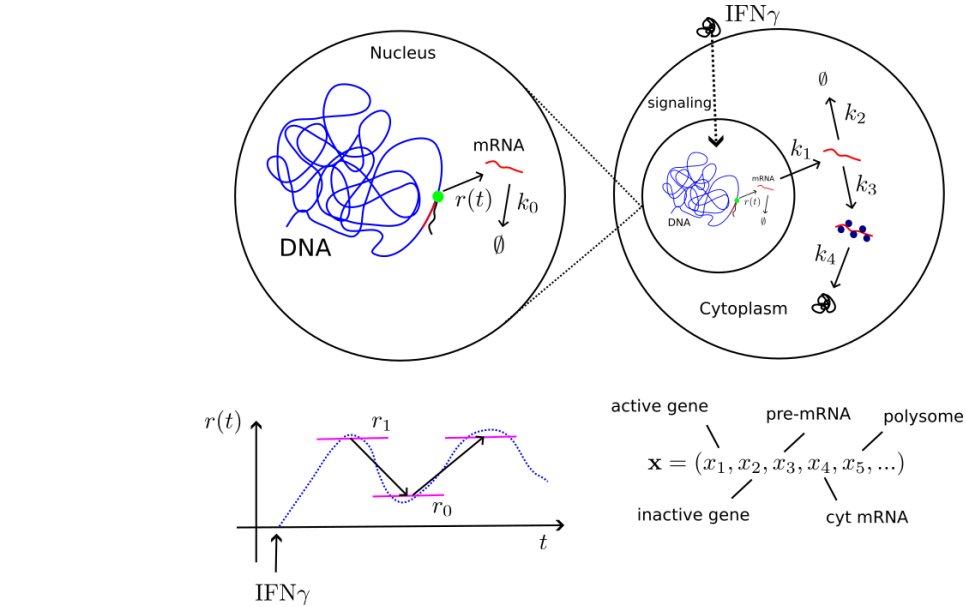


*Courtesy of the Laboratory of Systems Pharmacology at Harvard*

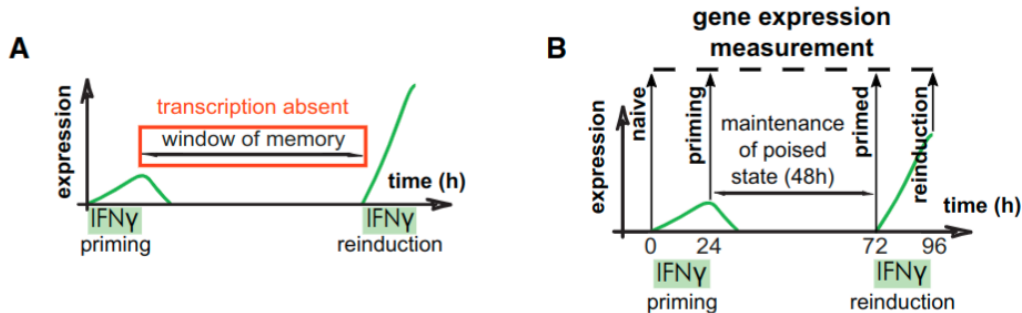
# 16-channel acquisition and registration



# A model for RNA Flow



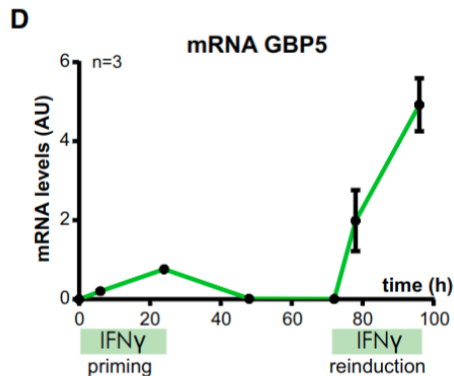
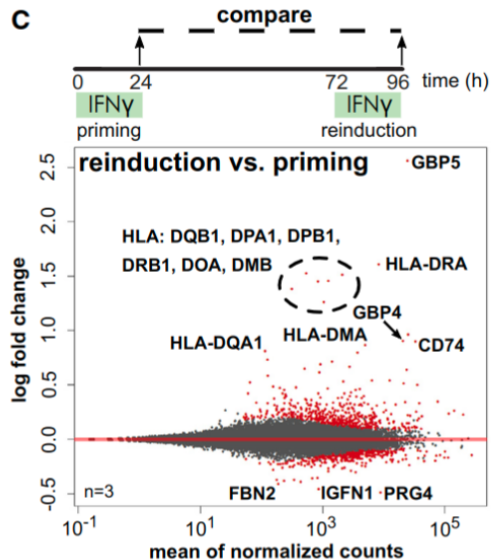
# The principle of Interferon- $\gamma$ induced transcriptional memory



**Figure 1**

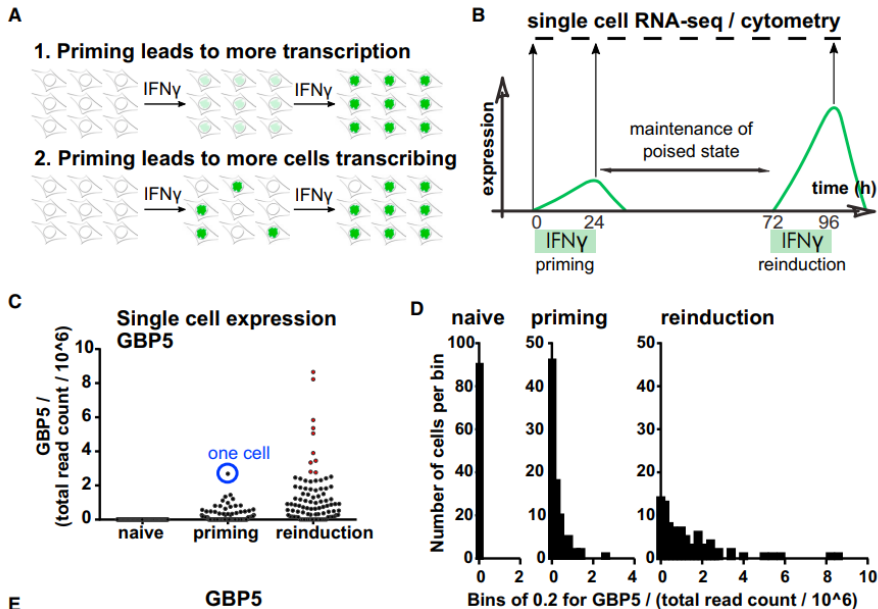
Siwek et al. *Activation of Clustered IFN $\gamma$  Target Genes Drives Cohesin-Controlled Transcriptional Memory*. Molecular Cell 2020

# Total RNA-seq identifies GBP5 as a memorized gene





# Single-cell RNA-seq identifies GBP5 as a memorized gene



# BLASTing probes for GPB5 and CD274

