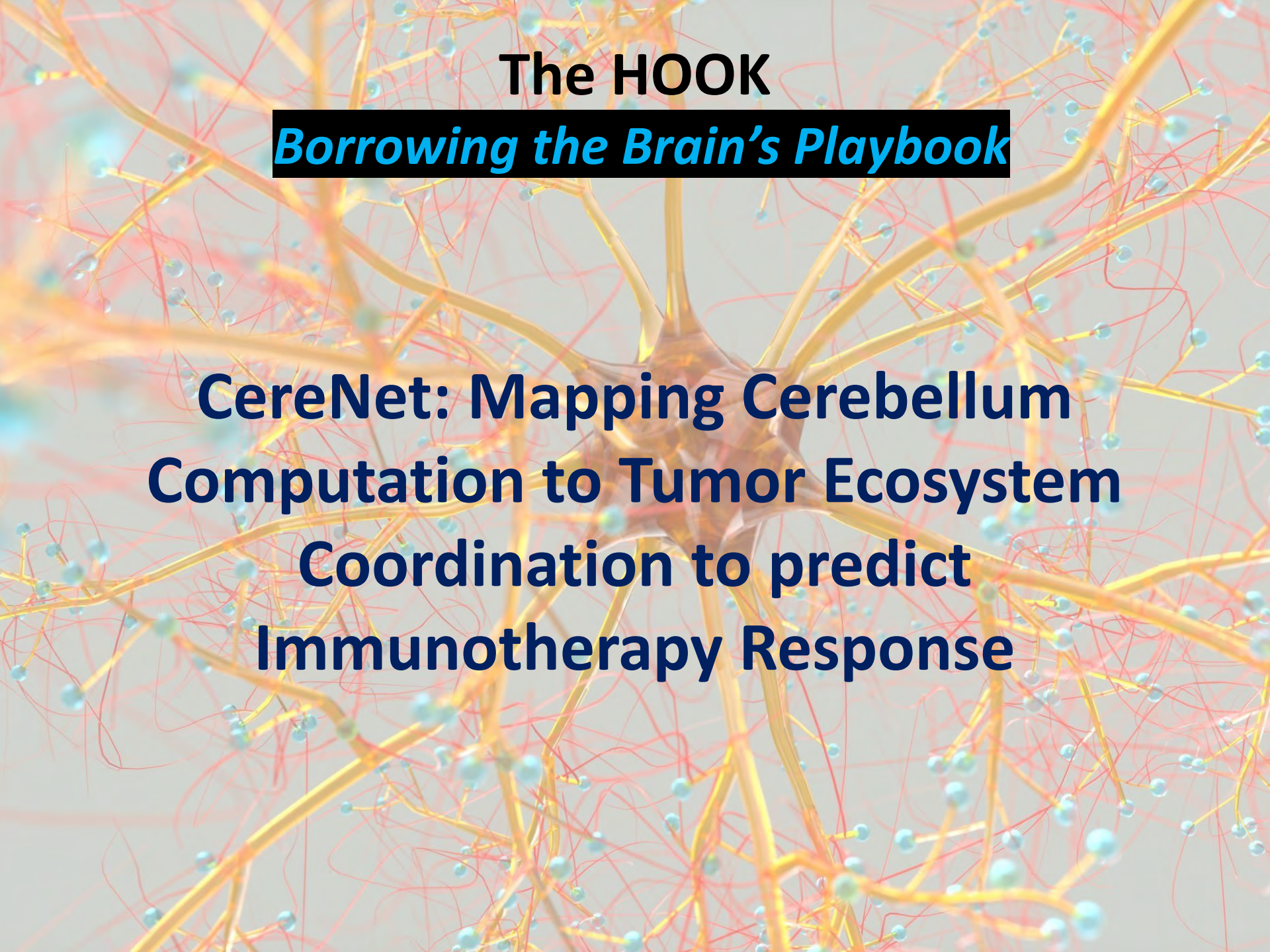




Lightning Talks

***Deepa Bedi, MD, PhD
Professor, Physiology
Director, Center for Biomedical Research***



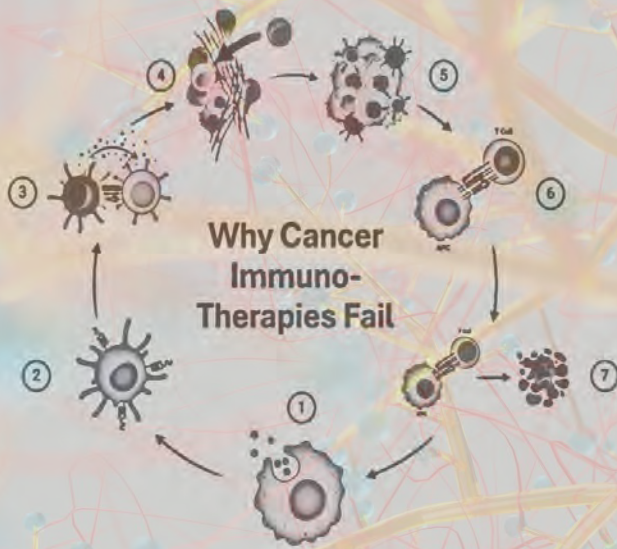
The HOOK

Borrowing the Brain's Playbook

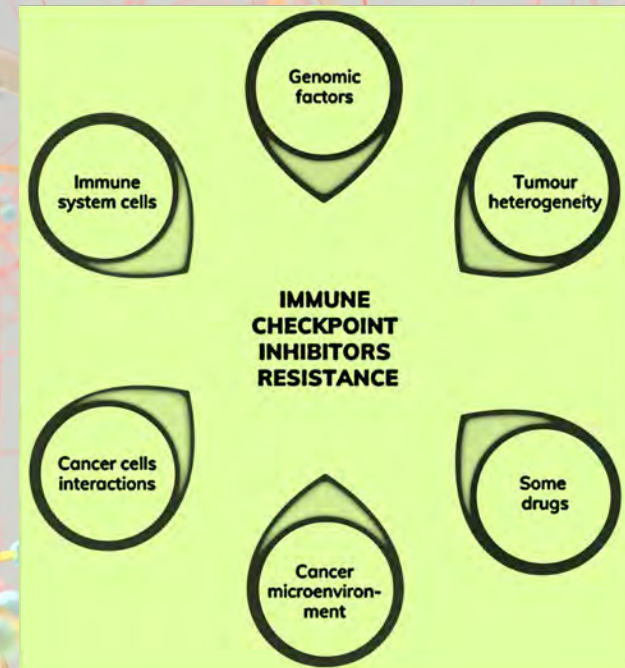
**CereNet: Mapping Cerebellum
Computation to Tumor Ecosystem
Coordination to predict
Immunotherapy Response**

THE PROBLEM

Immunotherapy Prediction Challenge

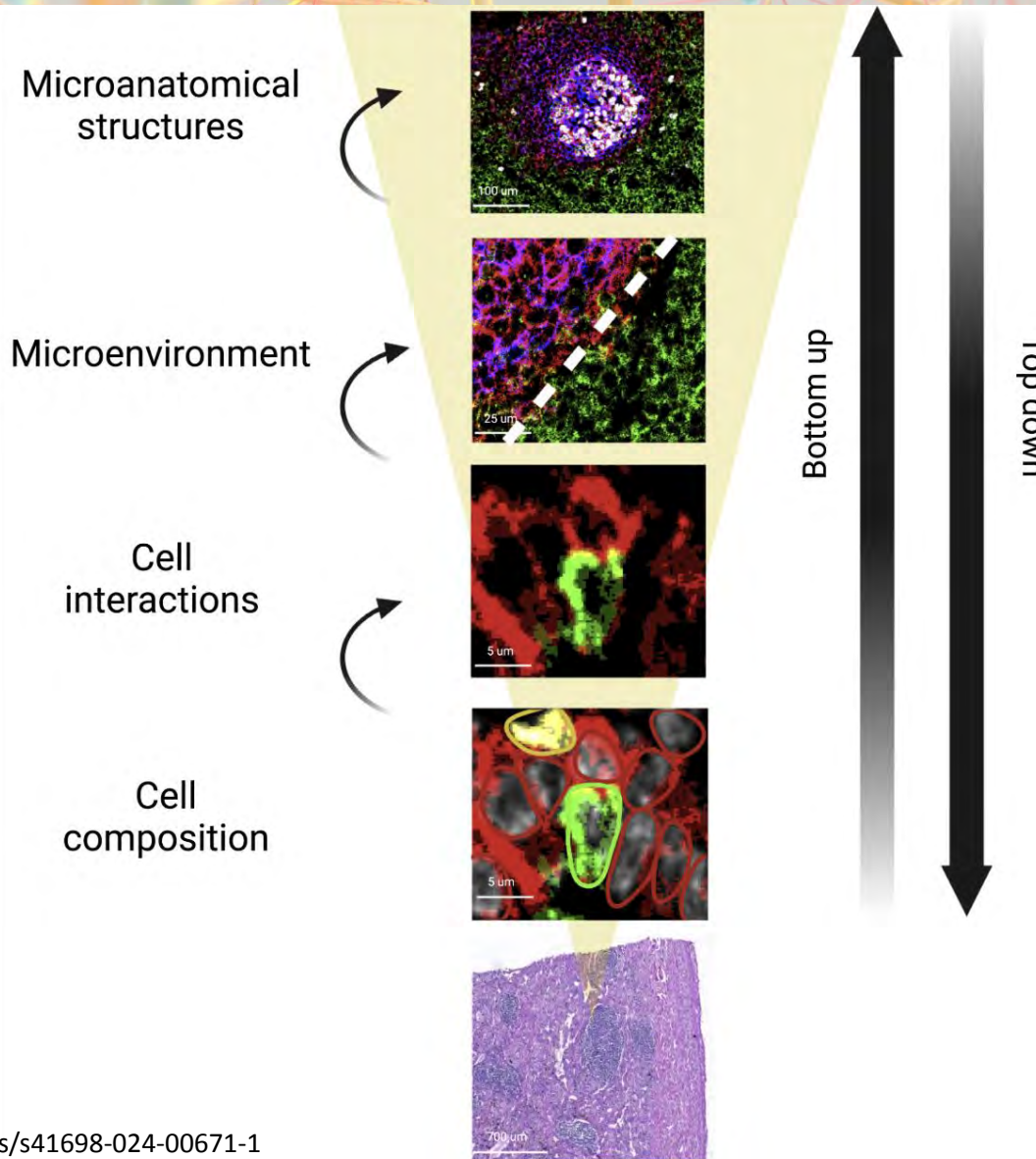


- Immune evasion of tumor cells
- Creation of suppressive tumor microenvironment
- Inadequate T cell activation
- Tumor heterogeneity
- Variability of patient immune systems



THE Present

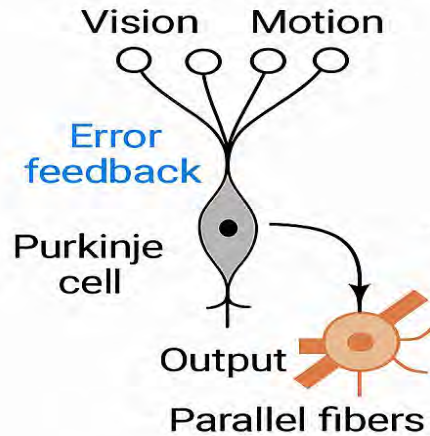
Spatial Biology



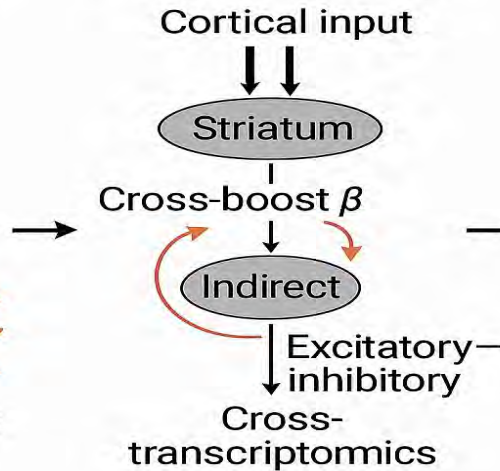
THE INNOVATION

Neuroscience Meets Spatial Biology

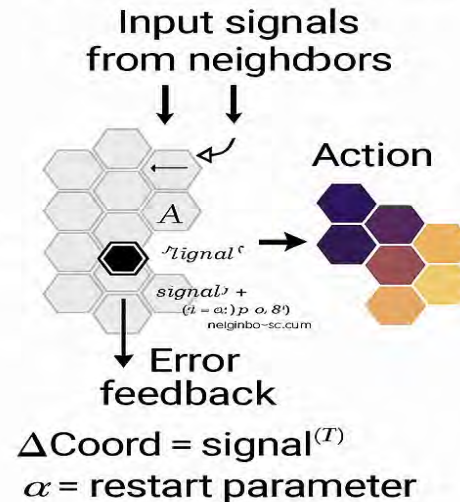
Cerebellum-Style Feedback



Basal Ganglia-Style Gating



Spatial Transcriptomics

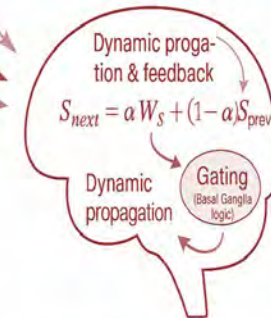


CereNet Engine

Inputs

Immune signal
Hypoxia
Stress etc.

CereNet: Models spatial signal flow, feedback, and dynamic tissue response



Output

Coordinated tumor zones
Ripple effect
Predicts functional zones & therapy response

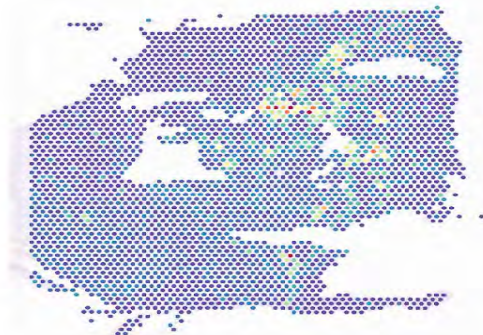
THE INNOVATION

Neuroscience Meets Spatial Biology

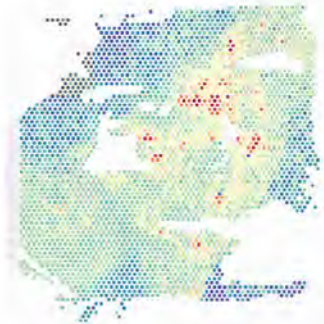
HCC4R — Gate (checkpoint)



HCC4R — Gated readiness (GR = W×G)



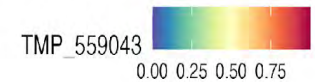
HCC4R — Wave (k=8)



HCC4R — GR = Wave × Gate (dots = Gate p70 boundary)



HCC4R — Coordination (neighbor agreement)



TNBC Dataset

