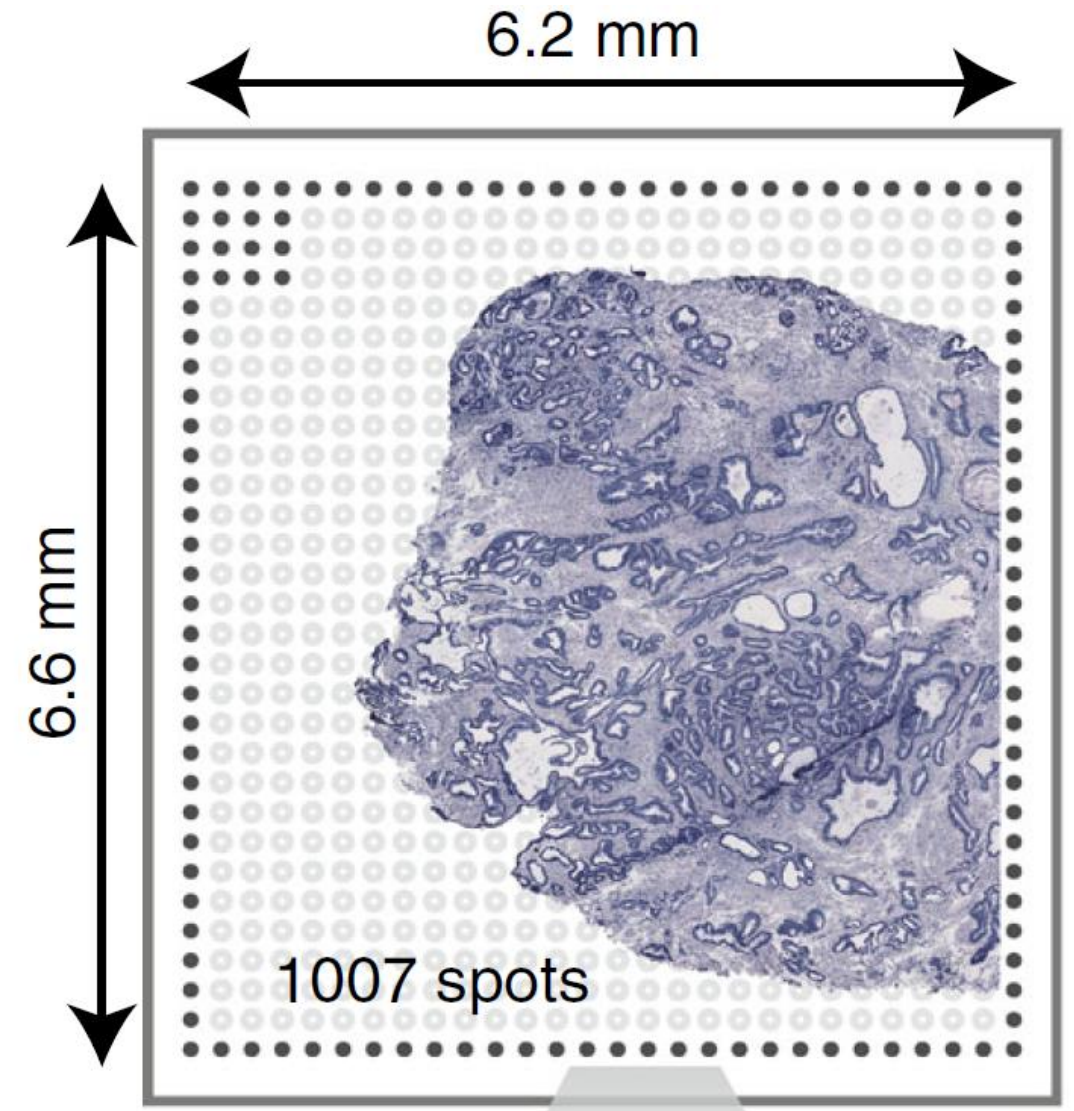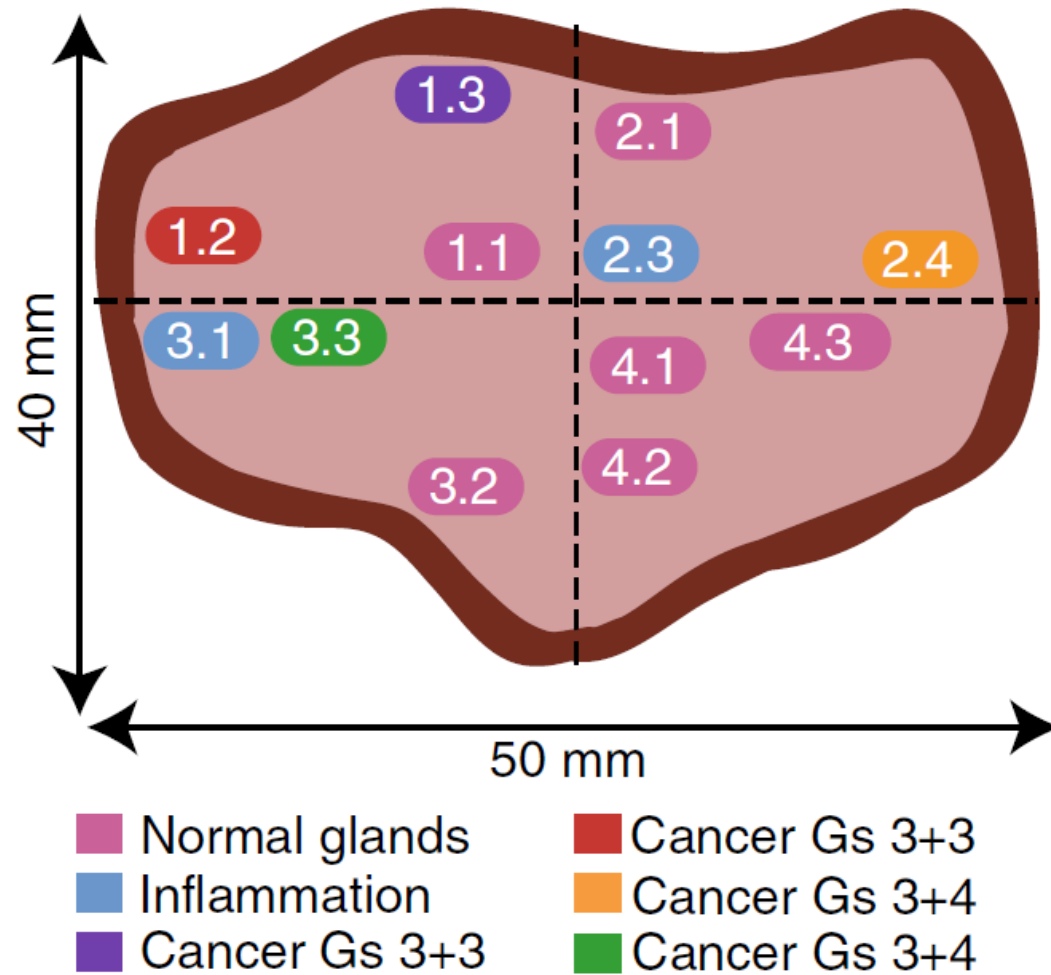# Analysis of Prostate Cancer data from Berglund et al., 2018
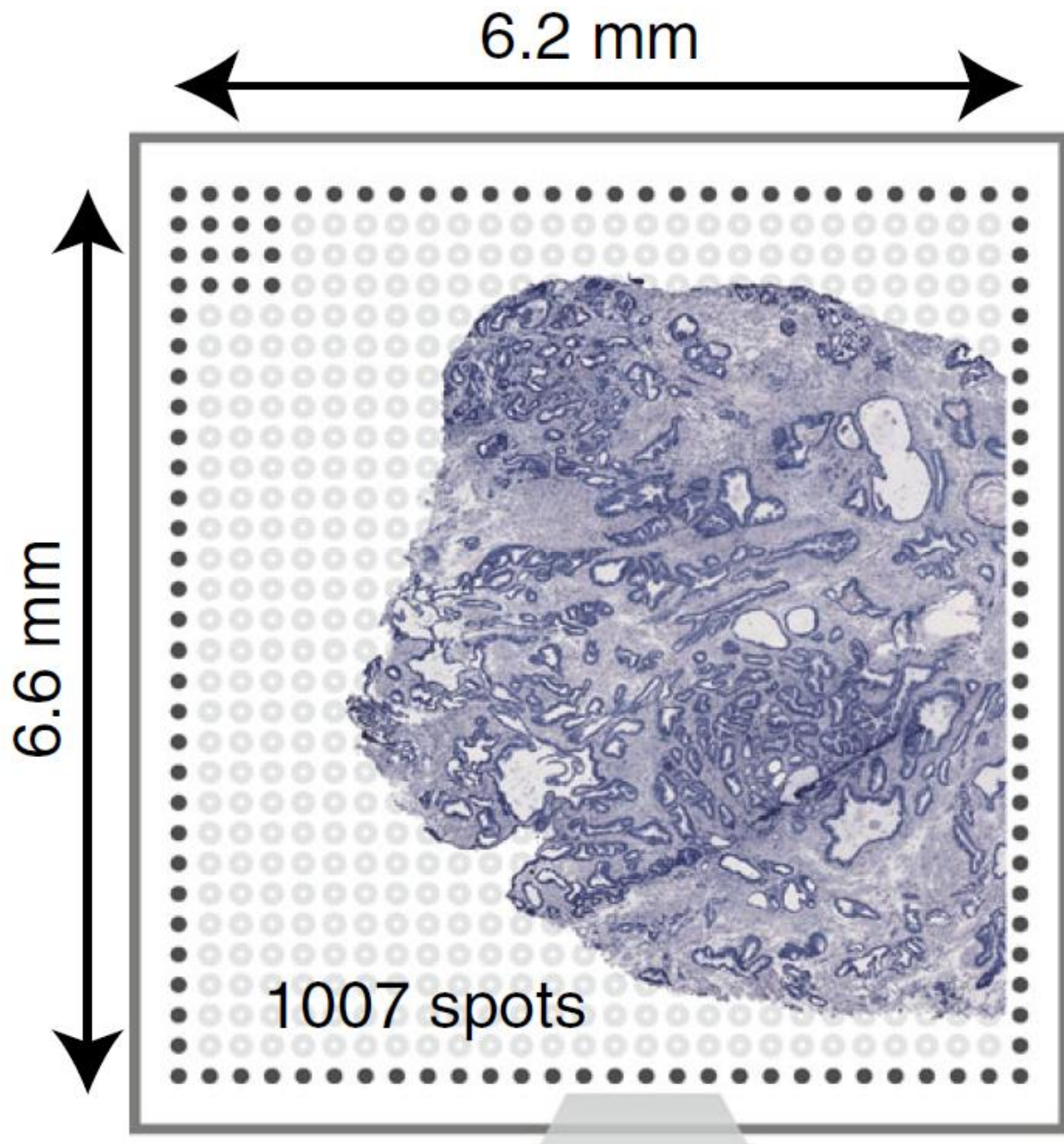
4/29

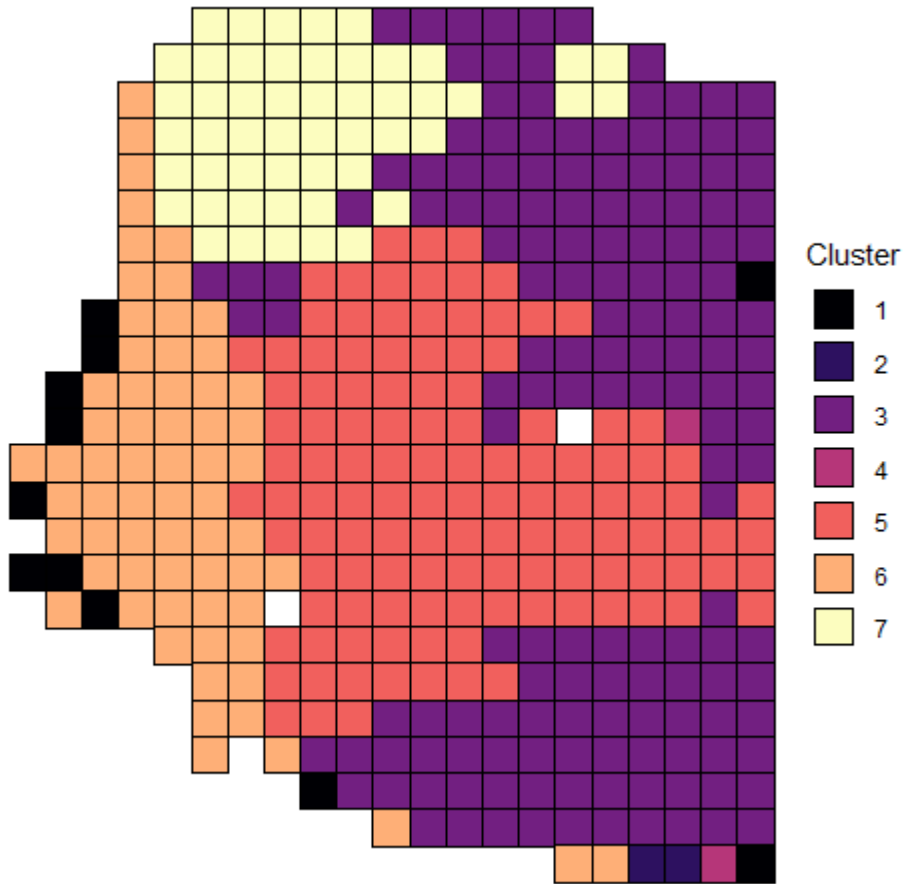# Prostate cancer sample 1.2
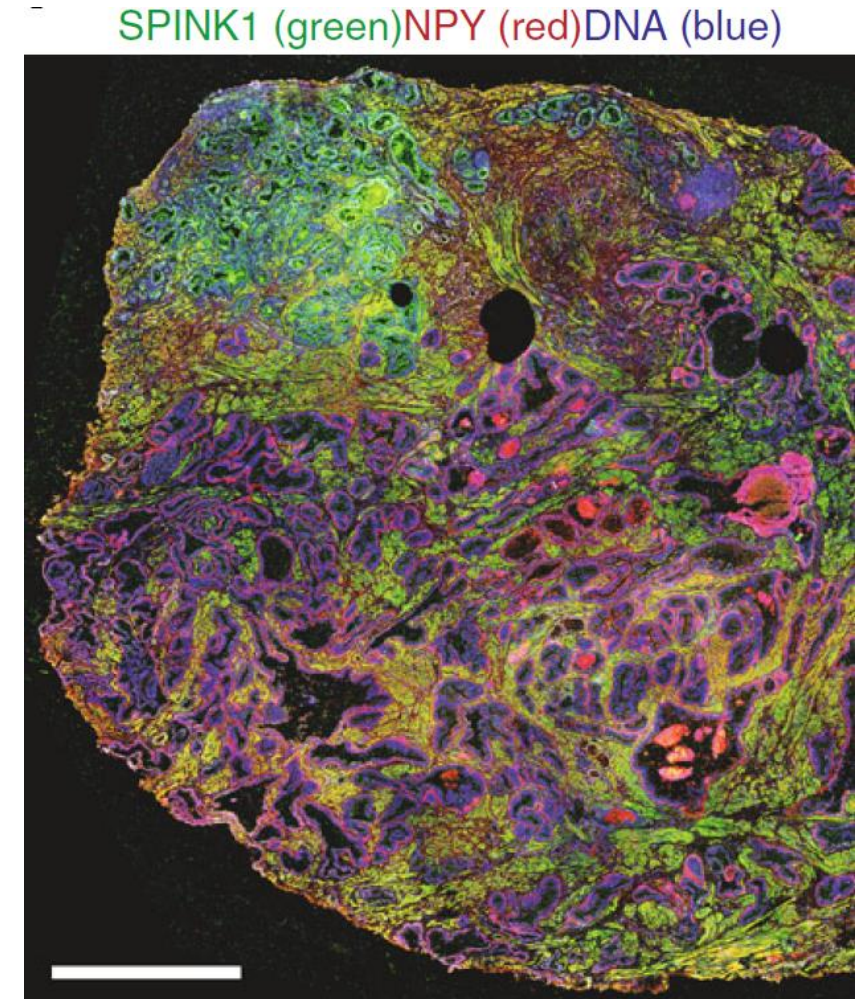

Normal glands · Inflammation · Cancer Gs 3+3 · Cancer Gs 3+3 · Cancer Gs 3+4 · Cancer Gs 3+4

6.2 mm · 6.6 mm · 1007 spots

Berglund, et al. 2018

Spatial Clustering

Cluster
- 1
- 2
- 3
- 4
- 5
- 6
- 7

6.2 mm

6.6 mm

1007 spots

Spatial Clustering

Cluster
- 1 (black)
- 2 (dark purple)
- 3 (purple)
- 4 (magenta)
- 5 (red)
- 6 (orange)
- 7 (pale yellow)

SPINK1 (green) NPY (red) DNA (blue)
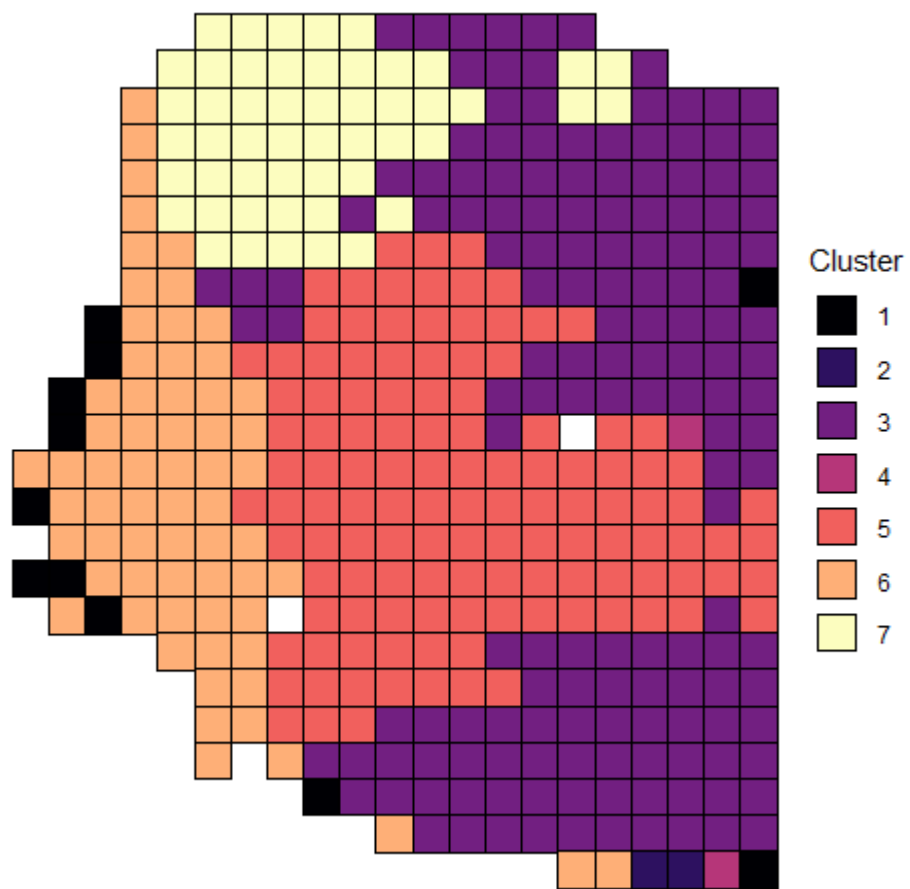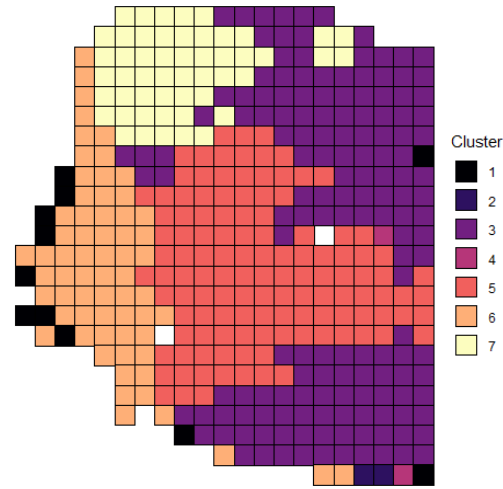
SPINK1 = cancer marker
NPY = PIN marker

Spatial Clustering
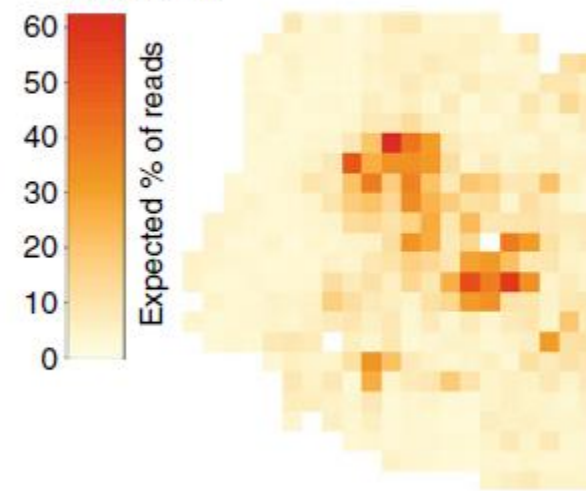
Cluster
- 1 — N/A (black)
- 2 — N/A (dark purple)
- 3 — Stroma (purple)
- 4 — N/A (magenta)
- 5 — PIN glands (red)
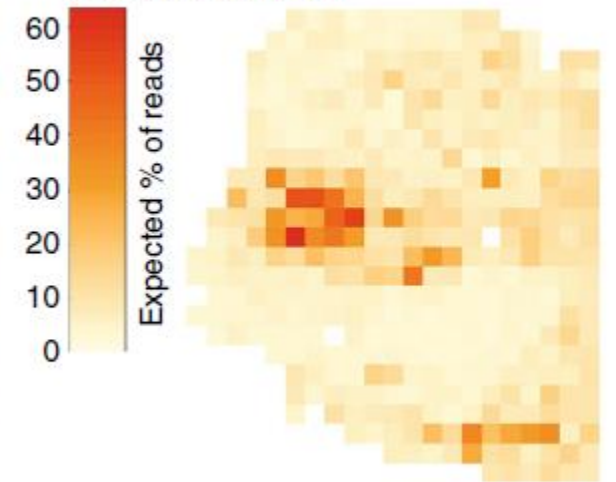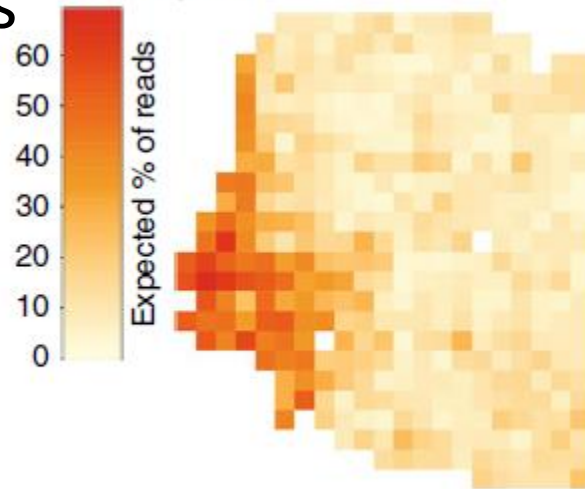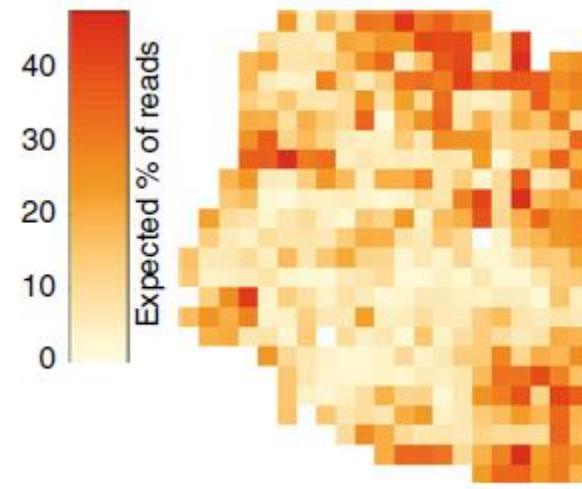- 6 — Normal glands (orange)
- 7 — Cancer (pale yellow)

PIN glands

Immune profile - UBC, NR4A1, IER2, JUN, FOS enriched

Normal glands

Stroma

Cancer

Berglund, et al. 2018

Spatial Clustering

Cluster

■ (black)	1	Normal glands
■ (dark navy)	2	Immune
■ (purple)	3	Stroma
■ (magenta-purple)	4	N/A
■ (pink/red)	5	N/A
■ (salmon/orange)	6	PIN glands
■ (light orange)	7	N/A
■ (pale yellow)	8	Cancer
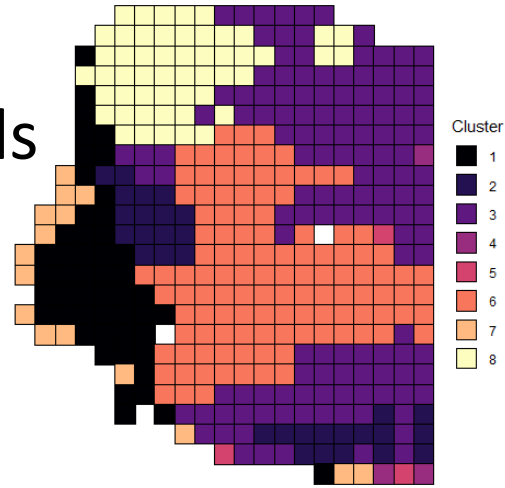
PIN glands
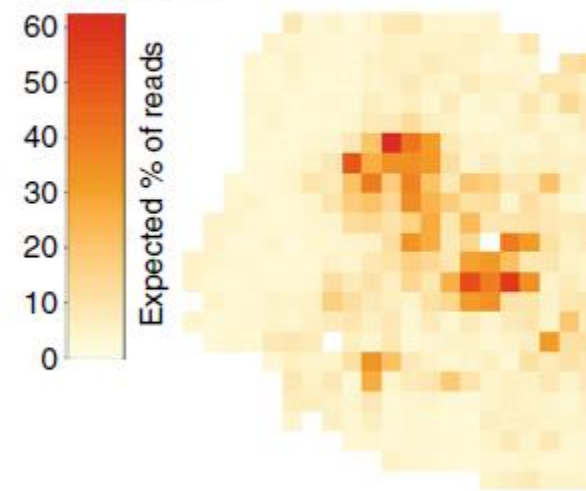
Immune profile - UBC, NR4A1, IER2, JUN, FOS enriched

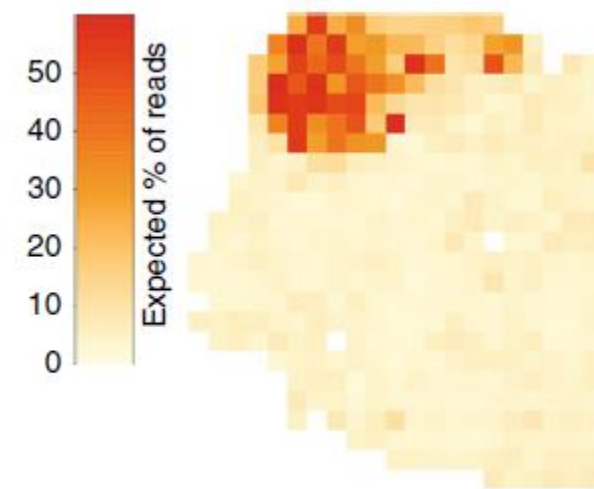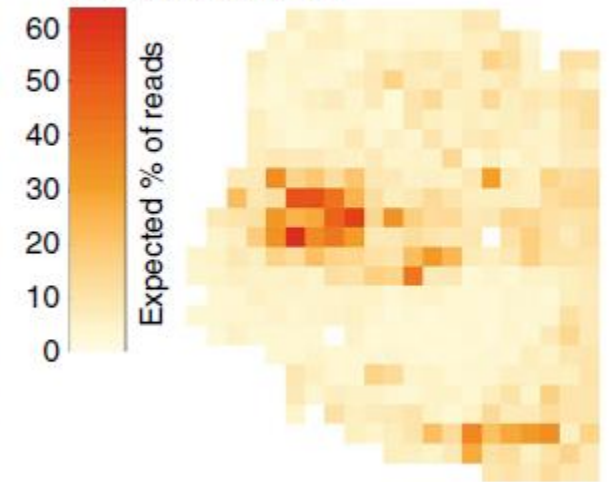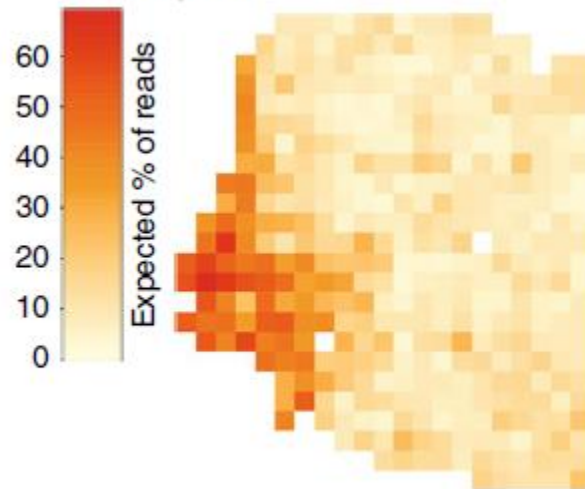Normal glands

Stroma
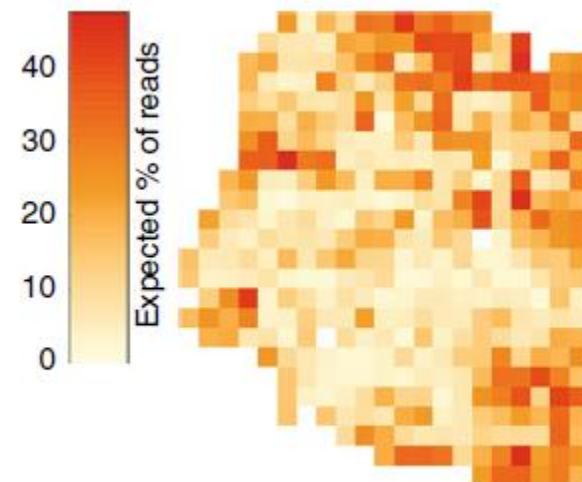
Cancer

Berglund, et al. 2018
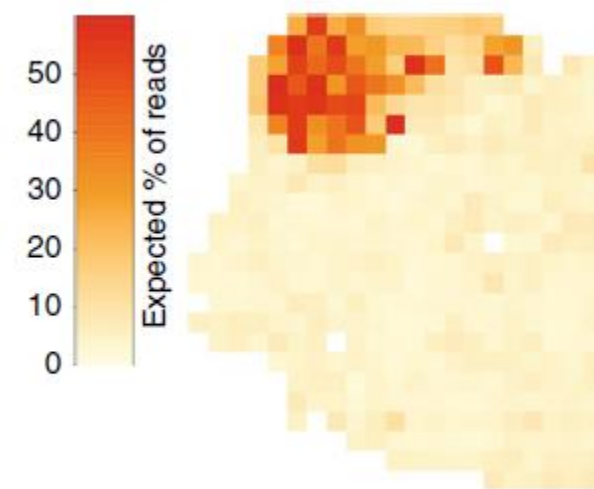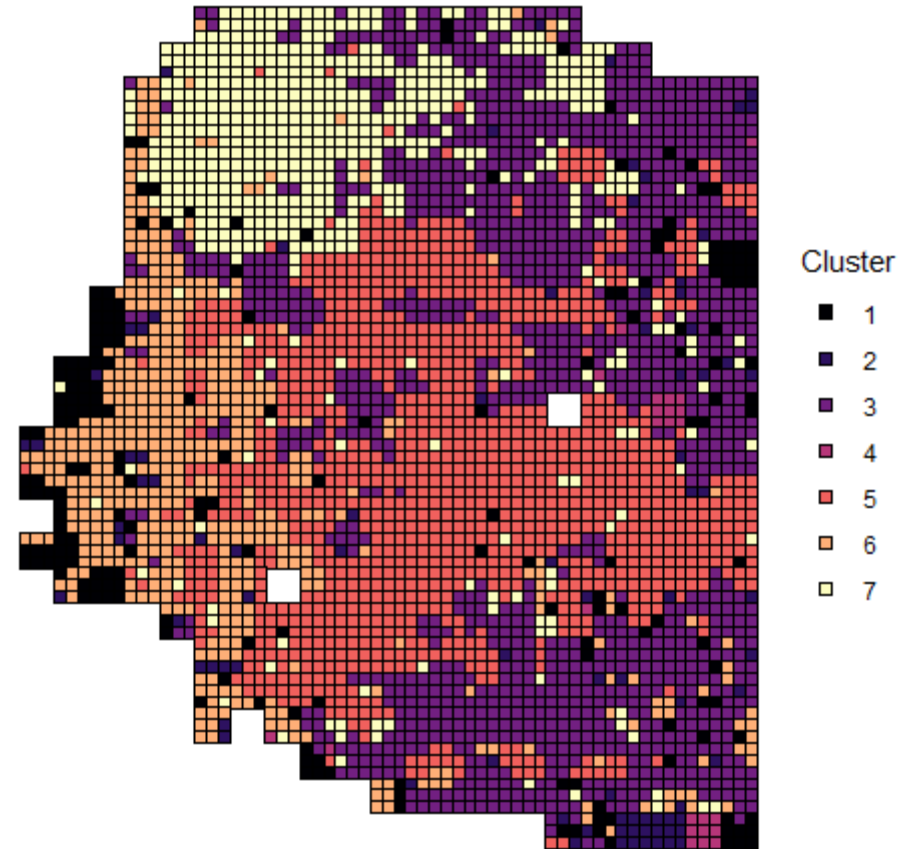
Deconvolution

- Can deconvolution increase resolution?
    - Berglund et al. suggest the center and periphery of the cancer have different gene expression (metabolic alteration in center, stress/inflammation in periphery)

Deconvolution