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Research Interests

Bioengineering, 3D in vitro models, differentiation, sarcoma and rare tumors

Strengths or Unique Resources

Sarcoma clinical specimens (fresh-frozen, FFPE) and PDX models

Type of collaborator you seek

Bioengineers, Epigenetics, Bioinformaticians

Publication List

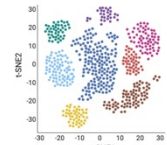
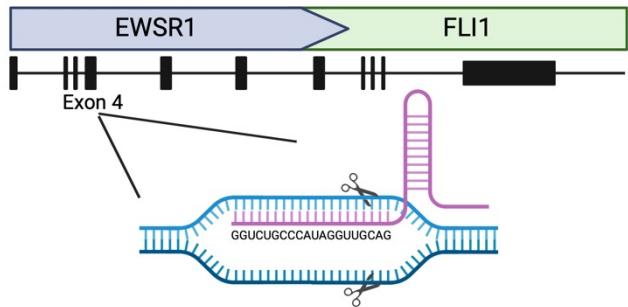


Small Round Cell Sarcomas

	H&E	Patients /year	5-year survival	Median age
Ewing sarcoma		150	70% (15-30%)	15
CIC-rearranged SRCS		20	40%	30
BCOR-rearranged SRCS		20	75%	17
DSRCT		50	15%	22

Credit: Cidre-Arar
 Disease Primer 2022

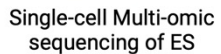
Role of the EWS::FLI1 fusion oncoprotein in differentiation



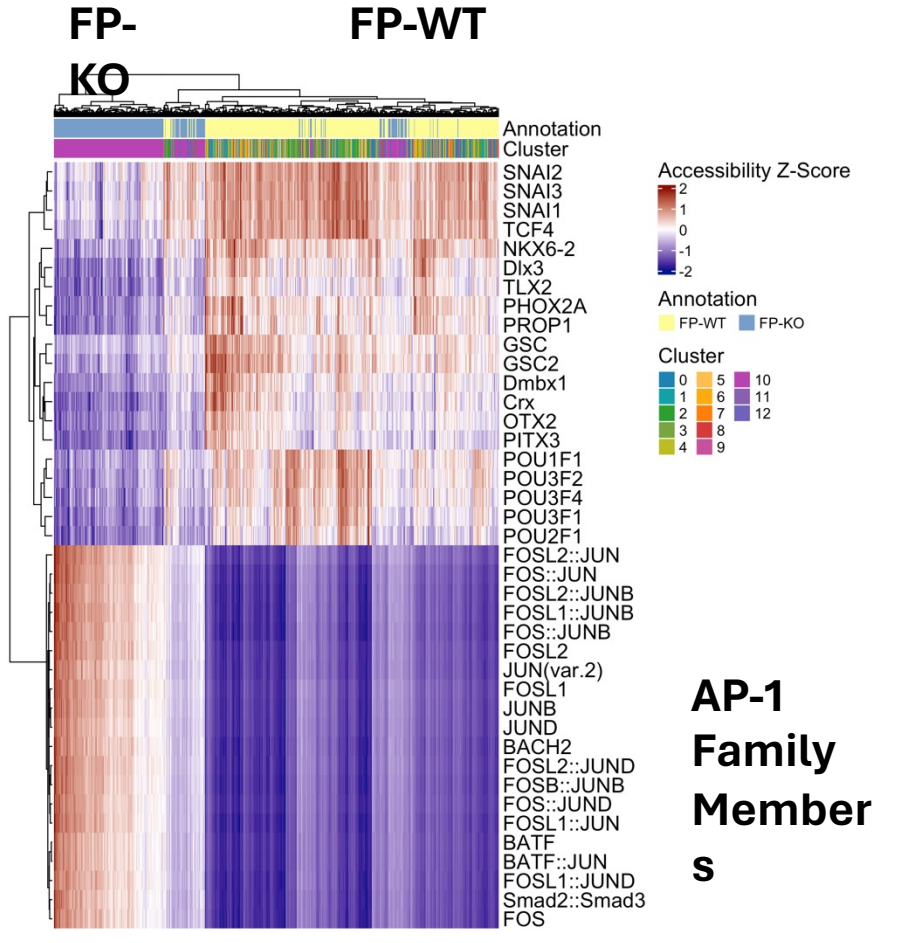
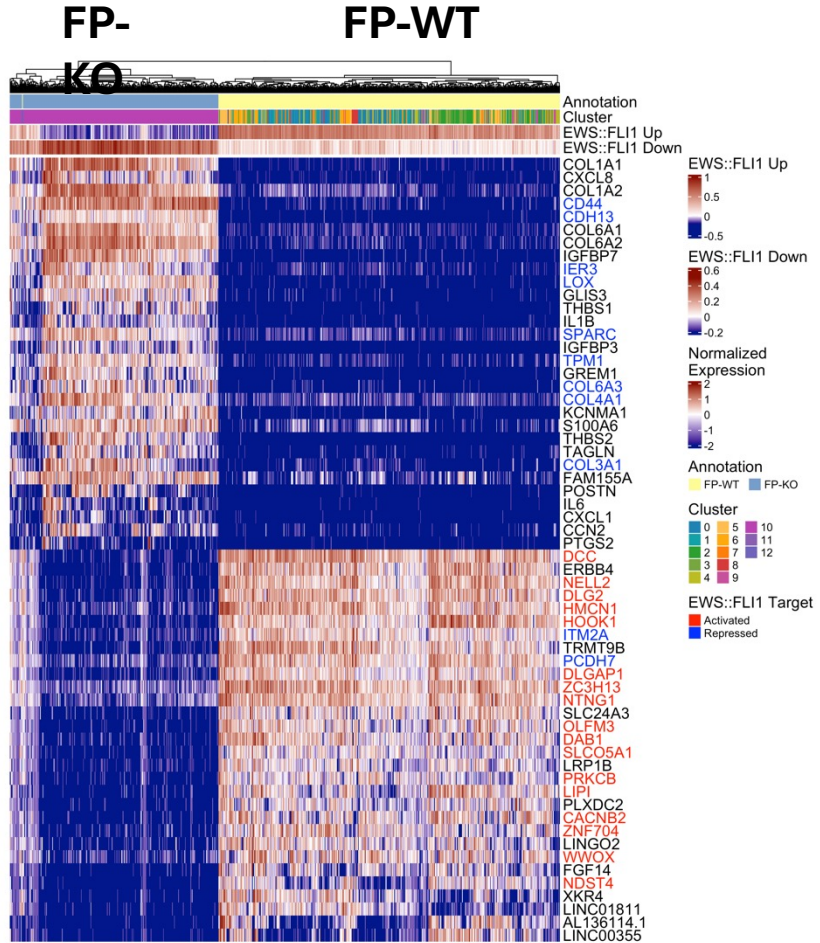
Analysis of phenotype affected by FP loss

Analysis of change in open chromatin by FP loss

Ewing Sarcoma Cell Line A673



Single-cell Multi-omic sequencing of ES

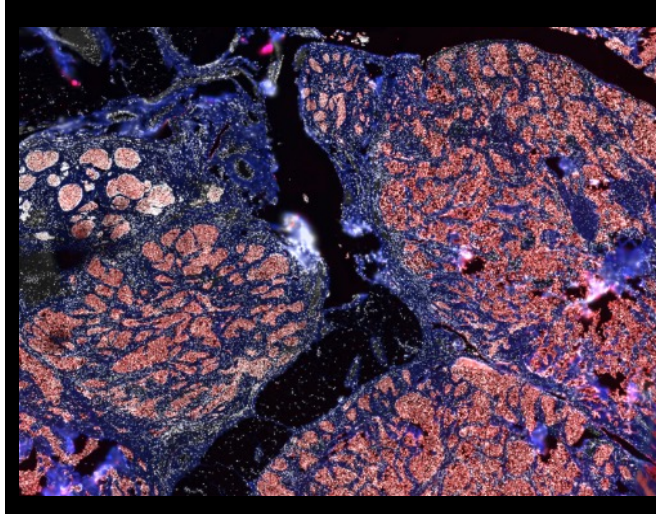


Small Round Cell Sarcoma Landscape

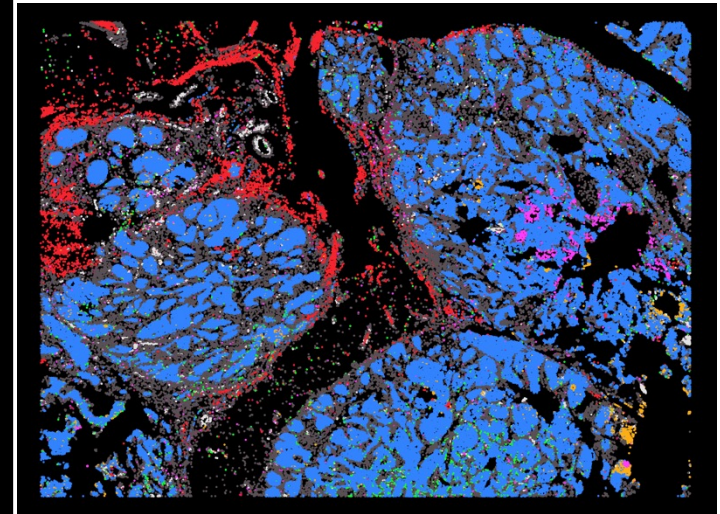
Resources and Expertise

- Single-cell Multi-omics
- Sequential Immunofluorescence
- In vitro and In vivo Models
 - Cell Lines
 - PDX

Sequential Immunofluorescence



Spatial Analysis



Questions and needs

- What is the role of the fusion oncoprotein on cell differentiation and fate?
- Can we identify critical gene regulatory networks that can reverse the oncogenic effects of the fusion protein?
- Organoid and 3D culture model for high-throughput drug screening