

RESEARCH PRESENTATIONS

CELLULAR/DEVELOPMENT

Christine Charvet

Deni Galileo

Sigrid Langhans

Hakeem Lawal

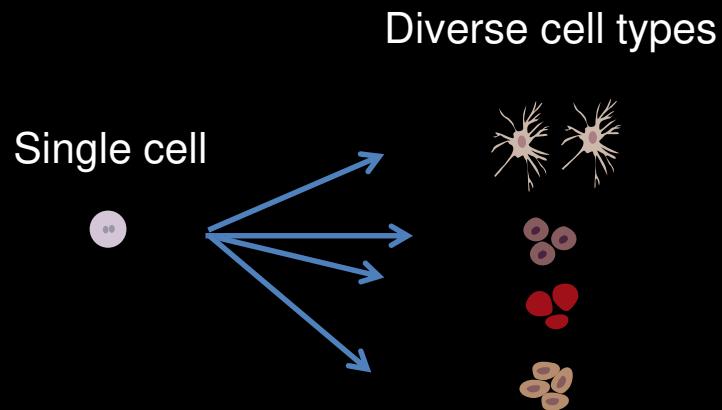
1) Diverse brains and behaviors



3) Timing of developmental processes: a means to identify conservation and variation



2) Variation emerges in development

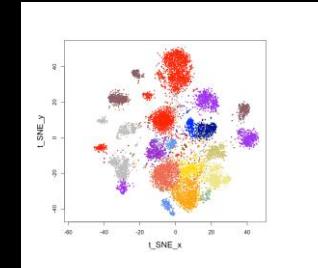


4) Integrating across scales of organization: what's special about our brains?

Neuroimaging



RNA sequencing



Behavior



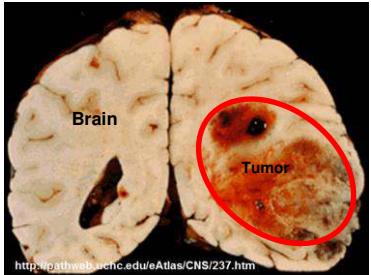
Glioblastoma Brain Cancer Research at UD

Deni S. Galileo, Department of Biological Sciences

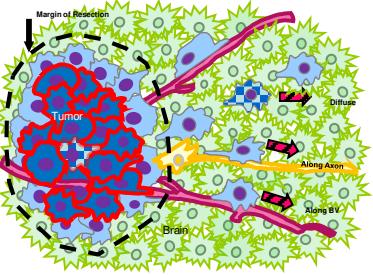


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Glioblastoma

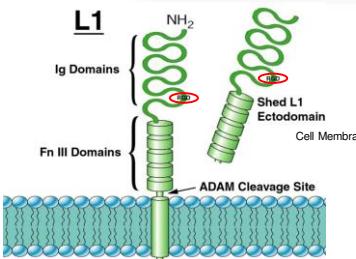


Glioblastoma (GBM)

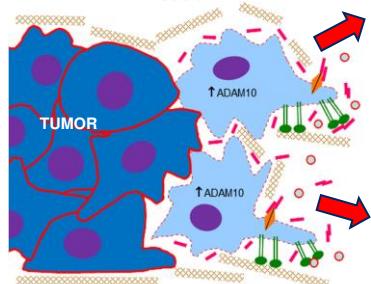


Glioblastoma Model

L1CAM Protein



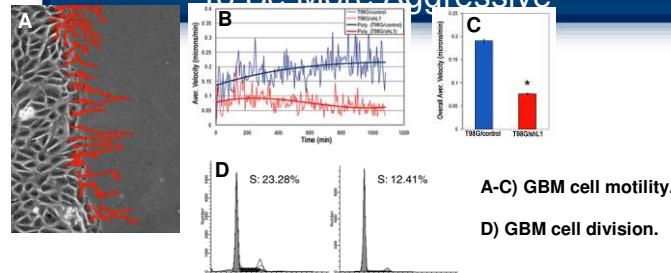
The L1 cell adhesion molecule (L1CAM)



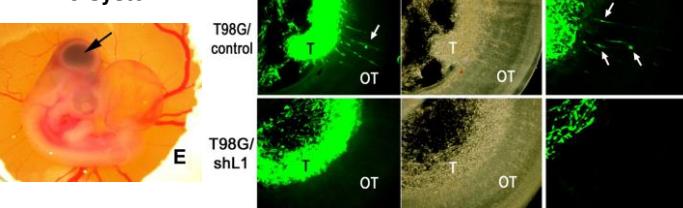
L1 Stimulation Model

L1CAM Causes GBM Cancer Cells

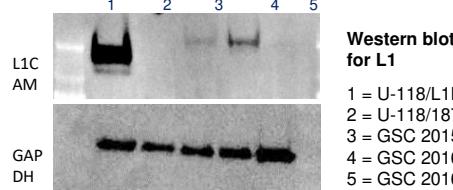
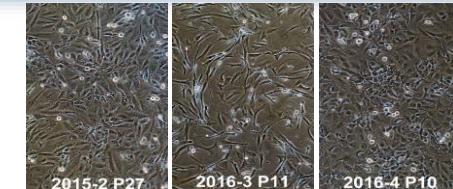
To Be More Aggressive



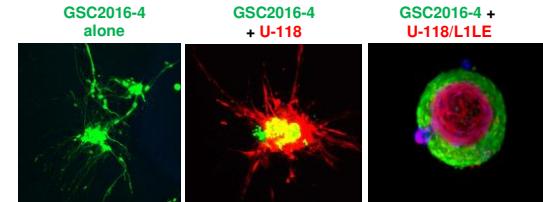
In vivo system



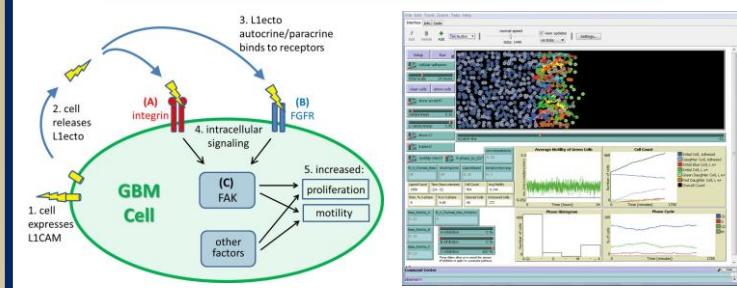
Role of L1CAM in Glioblastoma Stem Cells



L1CAM influences GSC behavior during tumor formation



Modeling GBM Cell Motility



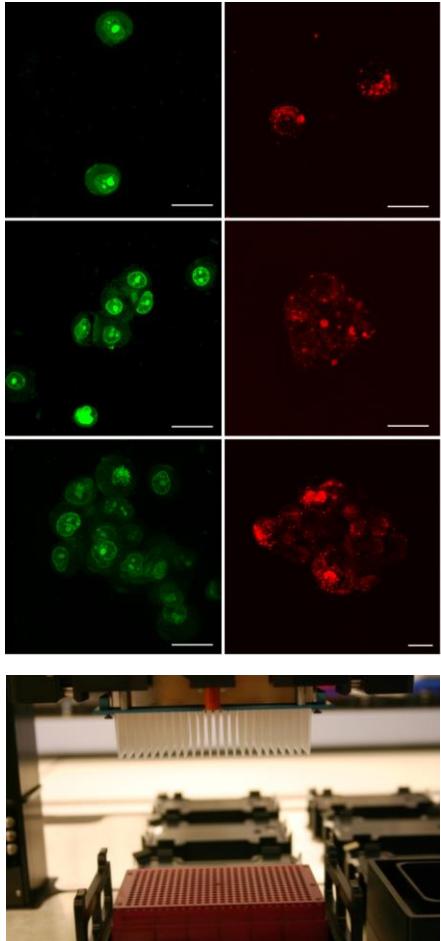
Current Projects

- Characterize several GSC lines for several GSC markers and L1 expression.
- Perform *in vitro* experiments to determine GSC responsiveness to L1 ectodomain and to tracks of L1 on a dish.
- Study potential GBM "trailblazer" cells.
- Modify L1 expression in GSCs and determine effects on their motility and proliferation *in vitro* and invasiveness *in vivo*.
- Generate experimental brain tumors with mixtures of GSCs and other GBM cell lines that are not stem cells (e.g., U-118).

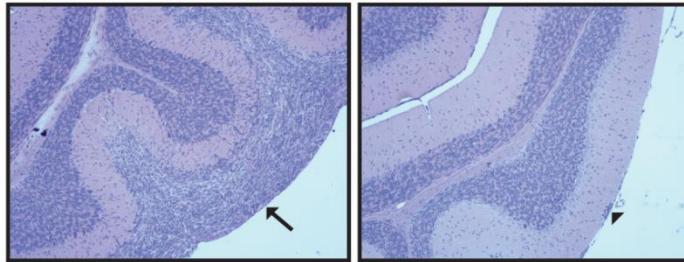
Cerebellar granule cells in health and disease

Sigrid A. Langhans, PhD

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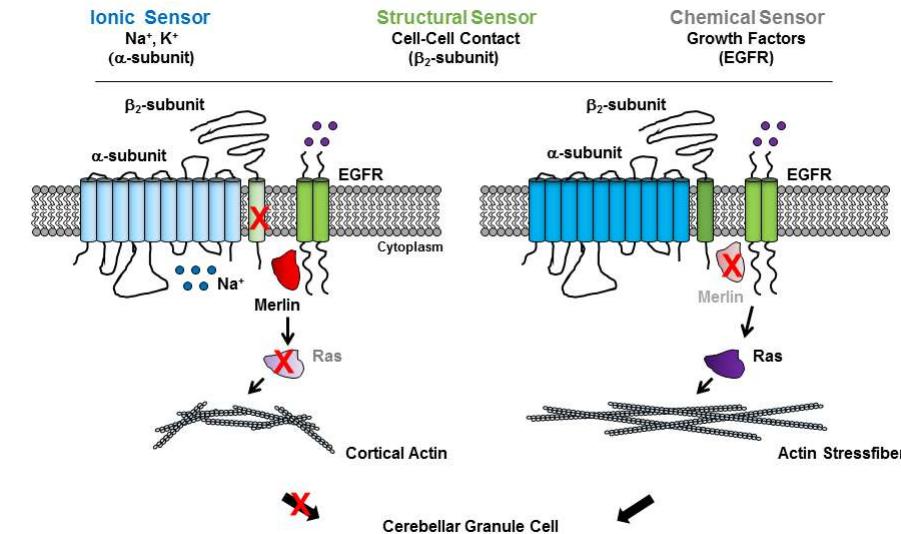


3D Culture Platform for
Automated High-Throughput
Drug Discovery

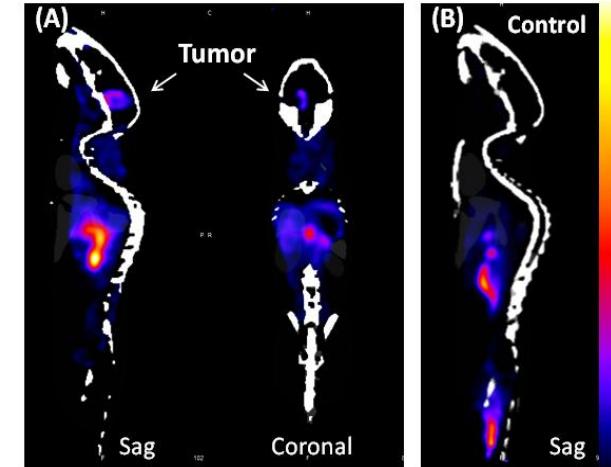
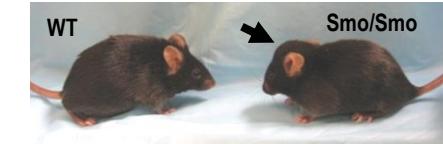


Proliferation, Migration, Differentiation

- Brain tumors
- Neurological disorders
- Neuropsychiatric disorders

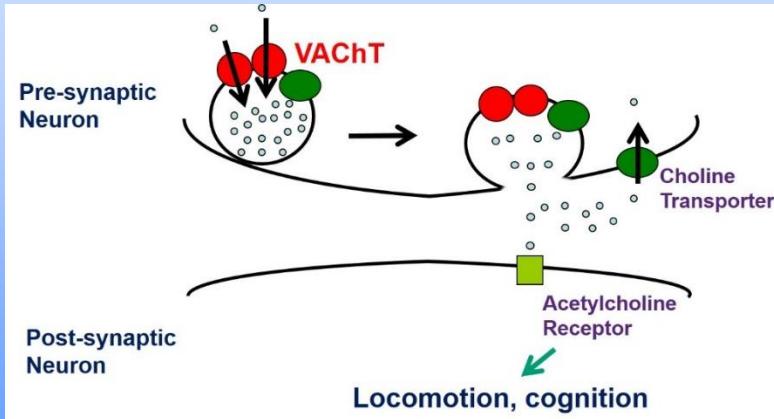


Na,K-ATPase and Developmental Signaling Pathways

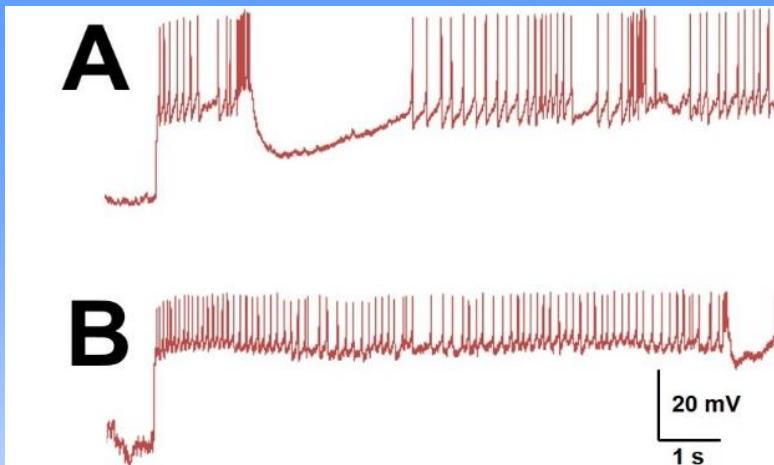


Non-Invasive Tumor
Imaging (PET)

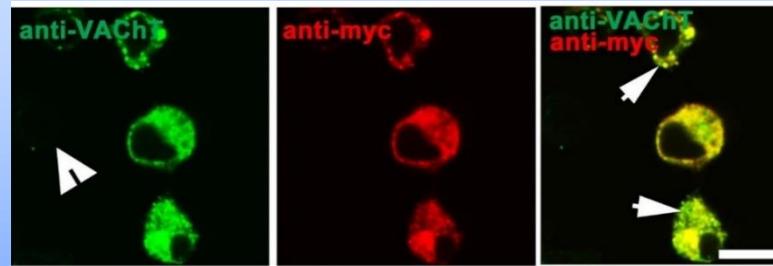
A Cholinergic Story: Effect of Changes in Central Acetylcholine Release on Synaptic Activity



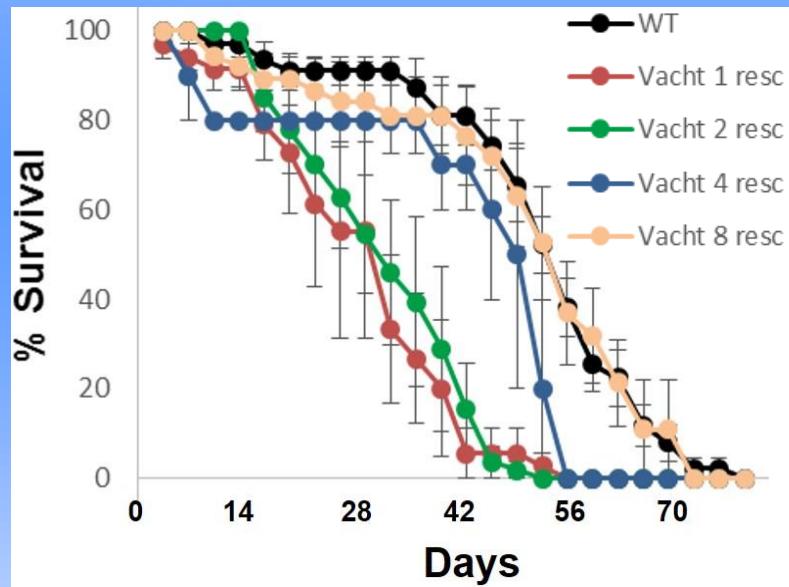
Aim : Elucidate the effect of cholinergic release on synaptic physiology and behavior during aging



Cholinergic neuronal firing decreases with age.
Grigoryev et al. *in prep*



VACHT expression in cultured cells and in fly CNS.
Boppana et al. 2017; Boppana & Lawal, 2017



Defects in *Vacht* alter lifespan in *Drosophila*.
White et al. *in prep*

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