

# Postdoctoral Position in Cell Biology of Malignant Brain Tumors

## How to Apply

A cover letter is required for consideration for this position and should be attached as the first page of your resume. The cover letter should address your specific interest in the position and outline skills and experience that directly relate to this position.

## Job Summary

The Castro/Lowenstein Laboratory within the Department of Neurosurgery at The University of Michigan is accepting applications for a Post-Doctoral Fellowship position funded by NIH. The successful candidate will join an exciting and productive research team elucidating the molecular and physical basis of brain tumor growth, invasion and the response to novel therapeutics. In particular, we recently discovered (see the reference below) that brain tumors are organized dynamically, and that collagen plays an essential role in this dynamic organization.

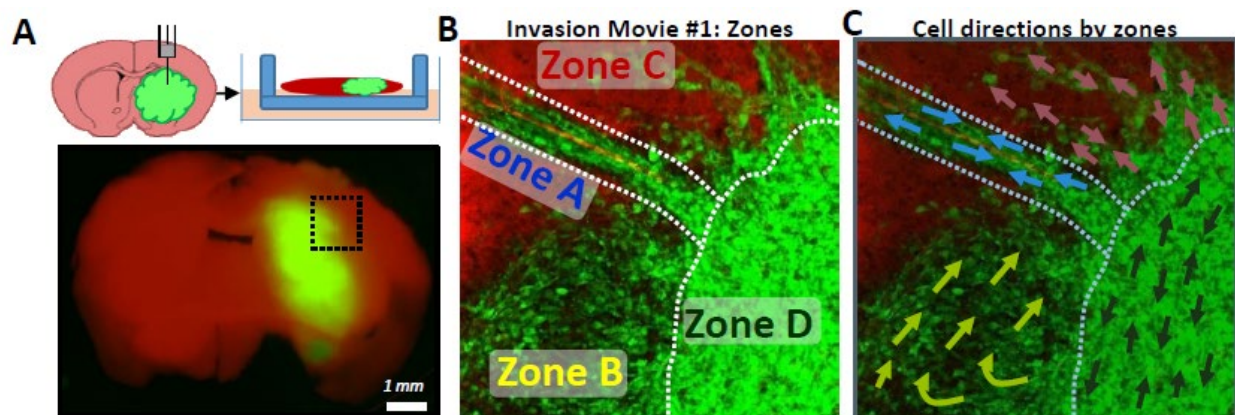
The project will study the molecular and cellular mechanisms involved in tumor progression; the role of the extracellular matrix in tumor growth and invasion; the formation and function of oncostreams (described in the reference below); and the molecular mechanisms which mediate the in vivo dynamic organization of tumor and immune cells within the tumor micro-environment. The project will also explore the role of extracellular matrix proteins and their role in tumor progression, and as potential therapeutic targets. The project has a strong translational component focusing on the development and implementation of novel therapeutic approaches in human clinical trials for brain cancer; these include gene therapy strategies, small molecules, and nano-technologies, and exploring ways to translate the research into early Phase clinical trials.

**Ref. to oncostreams:** Comba,..., Lowenstein et al., Spatiotemporal analysis of glioma heterogeneity reveals Col1A1 as an actionable target to disrupt tumor mesenchymal differentiation, invasion and malignancy; (in review in *Nature Communications*, 2022).

Manuscript available at: <https://www.biorxiv.org/content/10.1101/2020.12.01.404970v4>

For **further references**, search in PubMed for “Lowenstein P”,

or **email** Dr. Pedro Lowenstein at: “[pedrol@umich.edu](mailto:pedrol@umich.edu)”



### Collective invasion of collagen 1A1 enriched oncostreams contributes to malignant glioma behavior.

(A) Schematic representation of the experimental setup and location of imaging and quantification of tumor borders (GFP-positive, in green) grown in td/mt Tomato mice (in red). (B) Representative time-lapse scanning confocal microscope image of glioma cells at the tumor border, showing the subdivision into different Zones, A-D. (C) Preferred direction of movement of cells within different zones (Zone A, stream; Zone B, flock; Zone C, swarm; Zone D, stream). For further details, please see the manuscript Comba et al., indicated above.