

Metabolic Vulnerabilities and Mechanisms of Tumor Promotion in Glioma

Postdoctoral positions are available in the laboratory of [Sam McBrayer](#) at [Children's Medical Center Research Institute \(CRI\)](#) at UT Southwestern, an institution that brings together leaders in the fields of regenerative medicine, cancer biology and metabolism. [Our laboratory](#) studies metabolic reprogramming in cancer using isocitrate dehydrogenase (IDH) mutant glioma as a disease model ([Cell, 2018](#)). We pursue a multidisciplinary approach to study the pathobiology of these brain tumors, utilizing biochemical assays, isogenic cell culture models and patient-derived glioma stem-like cell lines *in vitro* and patient-derived xenograft models *in vivo*.

We also rely on expertise in mouse genetics ([PNAS, 2018](#)) and an interest in *in vivo* genetic engineering to create new mouse models of IDH mutant glioma using recombinant AAV and CRISPR/Cas9 technologies. By working across these different platforms, we aim to discover the molecular mechanisms through which IDH1 mutations promote gliomagenesis and create targetable collateral vulnerabilities. Ongoing work in the McBrayer Laboratory is focused on using the models and approaches detailed above to address three key questions:

- 1) How do IDH1 mutations promote glial cell transformation *in vivo*?
- 2) How do glioma cells couple the catabolism of specific amino acids with the synthesis of nitrogenous metabolites that are required for growth?
- 3) How can we exploit metabolic liabilities conferred by IDH mutations to develop new strategies for glioma therapy?

The McBrayer Laboratory is part of CRI, which offers a rich training environment for postdoctoral fellows, including excellent opportunities for mentorship and access to facilities and equipment that support impactful research.

Candidates should be highly motivated and creative and must hold a Ph.D. and/or an M.D. degree. Applicants should be interested in cancer biology, metabolism, epigenetics, mouse genetics, bioinformatics, glioma pathobiology or translational cancer research. Experience in one or more of the following disciplines is desirable: biochemistry, molecular biology, metabolism, epigenetics, bioinformatics.

Information on our postdoctoral training program and benefits can be found in our [Postdoc Handbook](#) or at <http://www.utsouthwestern.edu/postdocs>. Interested candidates should send a CV, a summary of past research experience and future research interests and a list of three references to:

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