

TCGA Glioma Phenotype Research Group

Summary

The Cancer Genome Atlas (TCGA) Glioma Phenotype Research Group is part of the [Cancer Imaging Project TCGA Radiology Initiative](#); an effort to build a research community focused on connecting cancer phenotypes to genotypes by providing clinical images matched to tissue specimens analyzed for [The Cancer Genome Atlas \(TCGA\)](#).

Imaging Source Site (ISS) Groups are being formed and governed by participants from institutions that have provided imaging data to the archive for a given cancer type. Modeled after TCGA analysis groups, ISS groups are given the opportunity to publish a marker paper for a given cancer type per the guidelines in the table above. This opportunity will generate increased participation in building these multi-institutional data sets as they become an open community resource. Current [The Cancer Genome Atlas Glioblastoma Multiforme Collection \(TCGA-GBM\)](#) (glioblastoma) and [The Cancer Genome Atlas Low Grade Glioma Collection \(TCGA-LGG\)](#) (low grade glioma) source sites include:

- Thomas Jefferson University
- Henry Ford Hospital
- University of California, San Francisco
- MD Anderson Cancer Center
- Emory University
- Mayo Clinic
- Case Western Reserve University School of Medicine

A number of other collaborators have also been invited to join the group by its members. Please contact Adam Flanders (adam.flanders@jefferson.edu) if you have scientific questions for TCGA-GBM/LGG ISS or if you are interested in collaborating with their group.

Publications

TCGA Glioma Phenotype Research Group Publications

1. Wangaryattawanich, P., M. Hatami, et al. **"Multicenter imaging outcomes study of The Cancer Genome Atlas glioblastoma patient cohort: imaging predictors of overall and progression-free survival."** Neuro-oncology, (2015): nov117 .
2. Colen RR, Wang J, Singh SK, Gutman DA, Zinn PO. **Glioblastoma: Imaging Genomic Mapping Reveals Sex-specific Oncogenic Associations of Cell Death.** Radiology. 2014.
3. Colen RR, Vangel M, Wang J, Gutman DA, Hwang SN, Wintermark M, Rajan J, Jilwan-Nicola M, Chen JY, Raghavan P, Holder CA, Rubin D, Huang E, Kirby J, Freymann J, Jaffee CC, Flanders A, Zinn PO. **Imaging genomic mapping of an invasive MRI phenotype predicts patient outcome and metabolic dysfunction: a TCGA glioma phenotype research group project.**BMC Medical Genomics, 2014. 7(1):30. doi:10.1186/1755-8794-7-30 ([link](#))
4. Gevaert O, Mitchell LA, Achrol AS, Xu J, Echegaray S, Steinberg GK, Chesier SH, Napel S, Zaharchuk G, Plevritis SK. **Glioblastoma Multiforme: Exploratory Radiogenomic Analysis by Using Quantitative Image Features.** Radiology, 2014. doi: 10.1148/radiol.14131731 ([link](#))
5. Jain R, Poisson L, Gutman D, Scarpace L, Hwang SN, Holder C, Wintermark M, Colen RR, Kirby J, Freymann J, Jaffe C, Mikkelsen T, Flanders A. **Outcome Prediction in Patients with Glioblastoma by Using Imaging, Clinical, and Genomic Biomarkers: Focus on the Nonenhancing Component of the Tumor.** Radiology. 2014 Aug;272(2):484-93. doi: 10.1148/radiol.14131691. Epub 2014 Mar 19. 2014 ([link](#))
6. Nicolasjilwan M, Hu Y, Yan C, Meerzaman D, Holder CA, Gutman D, et al. **Addition of MR imaging features and genetic biomarkers strengthens glioblastoma survival prediction in TCGA patients.** Journal of Neuroradiology, July 2014. doi: 10.1016/j.neurad.2014.02.006
7. Wassal E, Zinn P, Colen R. **DIFFUSION AND CONVENTIONAL MR IMAGING GENOMIC BIOMARKER SIGNATURE FOR EGFR MUTATION IDENTIFICATION IN GLIOBLASTOMA.** Neuro-Oncology. 2014;16(suppl 5):v156-v7.
8. Wassal E, Zinn P, Colen R. **DIFFUSION AND CONVENTIONAL MR IMAGING GENOMIC BIOMARKER SIGNATURE PREDICTS IDH-1 MUTATION IN GLIOBLASTOMA PATIENTS.** Neuro-Oncology. 2014;16(suppl 5):v157-v.
9. Amer A, Zinn P, Colen R. **IMMEDIATE POST OPERATIVE VOLUME OF ABNORMAL FLAIR SIGNAL PREDICTS PATIENT SURVIVAL IN GLIOBLASTOMA PATIENTS.** Neuro-Oncology. 2014;16(suppl 5):v138-v.
10. Amer A, Zinn P, Colen R. **IMMEDIATE POST-RESECTION PERICAVITARIAN DWI HYPERINTENSITY IN GLIOBLASTOMA PATIENTS IS PREDICTIVE OF PATIENT OUTCOME.** Neuro-Oncology. 2014;16(suppl 5):v138-v9.
11. Gutman DA, Cooper LAD, Hwang SN, Holder CA, Gao J, Aurora TD, Dunn WD, Scarpace L, Mikkelsen T, Jain R, Wintermark M, Jilwan M, Raghavan P, Huang E, Clifford RJ, Monkolwat P, Kleper V, Freymann J, Kirby J, Zinn PO, Moreno CS, Jaffe C, Colen R, Rubin DL, Saltz J, Flanders A, Brat DJ. **MR Imaging Predictors of Molecular Profile and Survival: Multi-institutional Study of the TCGA Glioblastoma Data Set.** Radiology. 2013 May;267(2):560-569,doi:10.1148/radiol.13120118 ([link](#))
12. Jain R, Poisson L, Narang J, Gutman D, Scarpace L, Hwang SN, Holder C, Wintermark M, Colen RR, Kirby J, Freymann J, Brat DJ, Jaffe C, Mikkelsen T. **Genomic Mapping and Survival Prediction in Glioblastoma: Molecular Subclassification Strengthened by Hemodynamic Imaging Biomarkers.** Radiology, 2013 Apr;267(1):212 –220, doi:10.1148/radiol.12120846 ([link](#))
13. Zinn PO, Colen RR. **Imaging Genomic Mapping in Glioblastoma.** Neurosurgery 60:126-130. Aug 2013 ([link](#))

14. Jain R, Poisson L, Narang J, Scarpace L, Rosenblum ML, Rempel S, Mikkelsen T. **Correlation of Perfusion Parameters with Genes Related to Angiogenesis Regulation in Glioblastoma: A Feasibility Study.** American Journal of Neuroradiology, 2012. 33(7):1343-1348 [Epub ahead of print] ([link](#))
15. Zinn PO, Sathyan P, Mahajan B, Bruyere J, Hegi M, et al. (2012) **A Novel Volume-Age-KPS (VAK) Glioblastoma Classification Identifies a Prognostic Cognate microRNA-Gene Signature.** PLoS ONE, 2012 7 (8): e41522. doi:10.1371/journal.pone.0041522 ([link](#))
16. Zinn PO, Majadan B, Sathyan P, Singh SK, Majumder S, et al. 2011**Radiogenomic Mapping of Edema /Cellular Invasion MRI-Phenotypes in Glioblastoma Multiforme.** PLoS ONE, 2011 6(10): e25451. doi: 10.1371/journal.pone.0025451 ([link](#))
17. Zinn, P. O., M. Hatami, et al. (2015). "138 Diffusion MRI ADC Mapping of Glioblastoma Edema/Tumor Invasion and Associated Gene Signatures." Neurosurgery 62: 210.

Publications written by other members of the research community can be found on our [TCIA Publications](#) page. Please contact us at help@cancerimagingarchive.net if you have a publication you would like us to add.

TCGA Genomics Publications

Read the [2008 Nature paper](#) and [2013 Cell paper](#) to learn more about the GBM genomic study. Read the [New England Journal of Medicine LGG paper](#) to learn more about the LGG genomic study. Additional TCGA publications can be found at: <http://cancergenome.nih.gov/publications>.

Publication Policies

Per TCGA and TCIA Guidelines, formal permission requests are no longer required to submit publications using TCGA-GBM or TCGA-LGG data. Please see the following links for more information about the freedom-to-publish criteria for these data sets:

Data Source	Status
TCGA Data Portal Publication Guidelines	No restrictions; all data available without limitations.
TCIA Data Usage Policies and Restrictions	No restrictions; all data available without limitations.

Please contact us at help@cancerimagingarchive.net if you have any questions about these policies.