

# CIP TCGA Radiology Initiative

## Background

Driven by input from the scientific community, the [Cancer Imaging Program \(CIP\)](#) stands at the crossroad of two powerful scientific requisites: the need for cross-disciplinary research and the increase of inter-institutional data sharing. [The Cancer Imaging Archive \(TCIA\)](#) is building a research community focused on connecting cancer phenotypes to genotypes by providing clinical images matched to subjects from [The Cancer Genome Atlas \(TCGA\)](#). TCGA began in 2006 as a three-year pilot jointly sponsored by the National Cancer Institute (NCI) and National Human Genome Research Institute (NHGRI). The TCGA pilot project (focused initially on glioblastoma, ovary, and lung cancers) confirmed that an atlas of genomic changes could be constructed for specific cancer types. It also showed that national networks of research and technology teams working on related projects could pool their efforts, create an economy of scale, and develop an infrastructure for making the data publicly accessible. Freely available data enables researchers across the world to make and validate important discoveries. The success of that pilot encouraged the National Institutes of Health (NIH) to invest in TCGA's efforts to collect and characterize more than 20 additional tumor types and make findings freely accessible for researchers to download via [TCGA Data Portal](#).

As an opportunity to leverage this wealth of new biomedical knowledge, CIP used its agreements with TCGA Tissue Site Source institutions to collect clinical diagnostic images for TCIA that match genomically analyzed tissue cases in the 20-plus cancer types that TCGA has characterized.

## Ongoing Research Efforts

Imaging Source Site (ISS) Groups are being populated 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 ISS groups include:

| <b>Group Name</b>                     | <b>Tumor Type</b>                            |
|---------------------------------------|--|
| TCGA Bladder Phenotype Research Group | Urothelial Bladder Carcinoma (BLCA)          |
| TCGA Breast Phenotype Research Group  | Breast invasive carcinoma (BRCA)             |
| TCGA Glioma Phenotype Research Group  | Glioblastoma (GBM), lower grade glioma (LGG) |
| TCGA Renal Phenotype Research Group   | Kidney renal clear cell carcinoma (KIRC)     |
| TCGA Ovarian Phenotype Research Group | Ovarian serous cystadenocarcinoma (OV)       |

# TCGA Collections Publication Guidelines

Historically TCIA had implemented publication guidelines derived from the policy outlined by the The Cancer Genome Atlas, TCGA. These were followed **in addition** to the publication policy of the TCGA Data Portal: <http://cancergenome.nih.gov/abouttcga/policies/publicationguidelines>. **As of 10/30/2018 all cancer types are now available for use without any special restrictions.** Please be sure to follow TCIA's regular [Data Usage Policies and Restrictions](#), and to also provide attribution recognizing the TCGA data collection efforts. An example of a proper attribution is:

"The results <published or shown> here are in whole or part based upon data generated by the TCGA Research Network: <http://cancergenome.nih.gov/>."

## References

The following links contain publications from the main TCGA project as well as their posted publication guidelines:

- [TCGA Publications](#)
- [TCGA Publication Guidelines](#)

Included below are some posters and presentations which help summarize the CIP TCGA Radiology Initiative and its supporting components such as TCIA.

- [TCIA Workshop at 2014 TCGA Symposium](#) - Presented at TCGA Scientific Symposium, May 12, 2014 in Washington, DC.
- [Imaging and Genomics: Is There a Synergy?](#) - Published in *Radiology* 2012 ,264:329–31.
- [A Scalable Methodology for Correlating Clinical Imaging Features with TCGA Data](#) - Presented at TCGA Network Symposium, November 17–18, 2011 Washington, DC.
- [The Cancer Imaging Archive: a Repository of Advanced Imaging Information Correlated with TCGA Samples](#) - Presented at TCGA Network Symposium, November 17–18, 2011 Washington, DC.