

Top New Developments at TCIA for 2015

2015 was an active year for TCIA! Here are some highlights of the developments and accomplishments. Happy New Year from TCIA!

New Data Sets

- **18 new data collections (adding data for 1207 subjects).** There are now 59 data collections for a total of over 28 million images and associated data.

A sample of the new data sets for 2015		
ISPY1	QIN GBM Treatment Response	Prostate-Cancer-MRI
QIN-Breast	TCGA-PRAD	Mouse-Mammary
QIN-ADC-Challenge	Soft-tissue-Sarcoma	CT Lymph Nodes
QIN-BRAIN-DSC-MRI	TCGA-LUSC	SPIE-AAPM Lung CT Challenge
QIN GBM DCE-MRI	TCGA-UCEC	NRG-1308

- **Imaging data linked to Proteomics.** TCIA now contains small subsets of [breast and ovarian data with both genomic and proteomic](#) data from the [Clinical Proteomic Tumor Analysis Consortium \(CPTAC\)](#) Phase III project. NCI's [Cancer Imaging Program](#) will continue to leverage TCIA to expand these types of data sets in 2016

New Features

- **Collection description links from the home page have been revamped to improve consistency and make it easier to find key information**
- **Internal enhancements** - improved curation workflow capabilities, expanded toolset designed for QC of radiation therapy imaging
- **Improved [metrics dashboard](#)**
- **[Digital Object Identifiers \(DOIs\)](#) now being generated for all new collections to provide academic credit to those who share their data on TCIA**

New Research Activities

- More than 33,000 unique users visited TCIA in 2015, downloading over 54 terabytes of data.
- TCIA resources have enabled researchers to share data relating to at least 103 papers published in 2015.
- **Data from the site was featured in two Medscape articles.**
- **TCIA was added as a [recommended data repository for PLOS ONE](#) articles to share imaging data.**
- [Five volunteer TCGA imaging cancer-type research groups](#) continued to investigate imaging-omics
- A new [TCGA bladder imaging-genomics](#) was formed.

NCI Grant - Funded Activities relied on TCIA:

- Two TCIA-related grant applications were funded this year.
 - [\(7U01CA187013-03\)](#) aims to implement additional capabilities for radiation therapy, high performance computing and cloud computing.
 - [\(1U01CA190254-01\)](#) plans to share ECOG-ACRIN clinical trial data through TCIA infrastructure in support of [NCI's Quantitative Imaging Network \(QIN\)](#).
 - TCIA continued to support QIN by serving as the official archive for the network. This year many QIN sites used TCIA for data analysis challenges and collaborative projects. There are currently 12 different QIN-related collections in the archive.
- NCI's [Information Technology for Cancer Research \(ITCR\)](#) grantees have also leveraged the site.
 - the [Quantitative image informatics for cancer research \(QIICR\)](#) U24 has used TCIA as a test bed for their extensions to [3D Slicer](#) and leveraged our [REST API](#) to provide direct access to TCIA data from within Slicer.
 - [\(5U24CA180927-02\)](#) is developing a cloud-based image biomarker optimization platform called [C-BIBOP](#) which will include imaging data stored locally or accessed through TCIA to support Challenges to improve segmentation and feature computation algorithms.

Academic Societies

- Provided data to challenges
 - the MICCAI [Computational Brain Tumor Cluster of Events \(CBTC\)](#) competitions
 - the [LUNGx SPIE-AAPM-NCI Lung Nodule Classification Challenge](#).
- Three TCIA technical courses and an imaging-omics workshop at this year's Radiological Society of North America (RSNA) Annual Meeting

Other Activities

- supported the Division of Cancer Treatment and Diagnosis Exceptional Responder precision medicine trial
- collected data for the planned [Coding4LungScreening \(C4LS\) challenge](#).