# DICOM Tools

Most image data and some associated data within The Cancer Imaging Archive (TCIA) is stored in DICOM format. There are a variety of both open source and commercial DICOM tools that could be used to manipulate and view these files. While TCIA does not endorse nor recommend any particular tool, here is a list of tools that we or our partners have used in our daily work.

Note: The images in this image repository need to be downloaded before you can view them using the viewers.

- ImageJ runs on Linux, Mac OS 9, Mac OS X, Windows, and the Sharp Zaurus PDA.
- FusionViewer open source & multiplatform PET/CT display software package
- OSIRIX (MAC OSX)
- AIM on ClearCanvas
- 3D Slicer
- MATLAB dicomread function and MATLAB dicominfo function (headers)
- https://www.dicompyler.com/

## Some overviews to get you started with DICOM medical image data like those in TCIA include:

- **I Do Imaging** at http://idoimaging.com/ includes demonstrations, a wiki, and a blog for several open source medical imaging viewers. Often shares screenshots as well as software, and getting-started guides for the free viewers and suites for working with medical images. Scroll down BELOW the big banner ad to the dropdown menus and select the Function/Speciality/Input Format/OutputFormat/Platform/Language to search, or scroll down for popular suites sorted in different ways. The blog and wiki are also quite helpful.
- **DICOM is Easy** includes a detailed tutorial which begins at http://dicomiseasy.blogspot.com/p/introduction-to-dicom.html
- An animated video produced by Alpha Grid on behalf of the Maastro Clinic in the Netherlands, explaining research which enables simple 2D scans to be effective in understanding the 3D composition of tumours. https://www.youtube.com/watch?v=Tq980GEVP0Y
- you can also search "DICOM tutorial" or DICOM overview" with your favorite search engine; there are many video walkthroughs for newbies on the Web as well.

## A number of research papers using TCIA data have reported using MATLAB in their analyses.

See this link: https://wiki.cancerimagingarchive.net/dosearchsite.action?queryString=MATLAB

### MRI Basic Science and Abbreviations

Study materials for physicists and other clinical scientists learning the basics of magnetic resonance imaging (MRI): http://www.revisemri.com.

Abbreviations only: http://www.revisemri.com/questions/misc/mri_abbrev

**DICOM standard abbreviations** in a table: https://wiki.cancerimagingarchive.net/display/Public/DICOM+Modality+Abbreviations

And here are links to helpful information about using TCIA.

https://wiki.cancerimagingarchive.net/display/Public/Frequently+Asked+Questions

https://wiki.cancerimagingarchive.net/display/Public/Searching+by+Collection

https://wiki.cancerimagingarchive.net/display/Public/The+Cancer+Imaging+Archive+User's+Guide

https://wiki.cancerimagingarchive.net/pages/Data+Analysis+Centers