National Cancer Imaging Archive (NCIA)
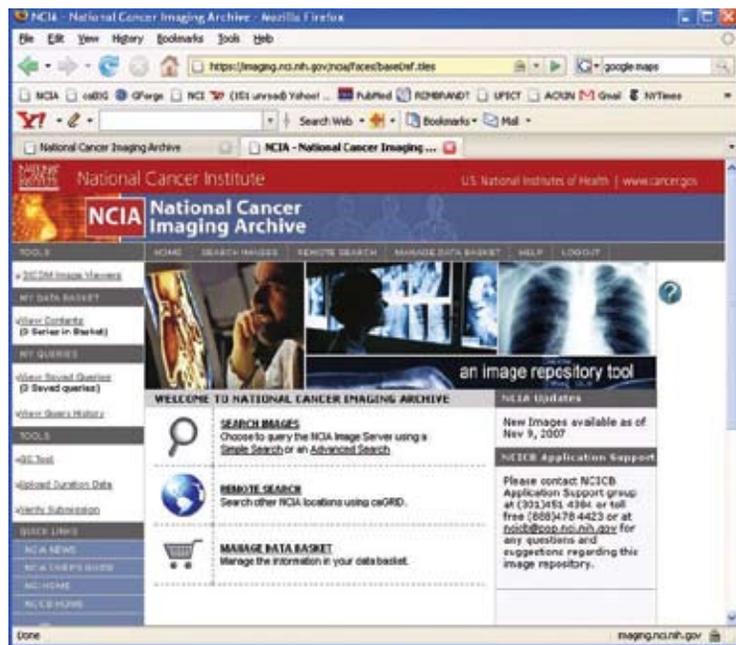
LIFE SCIENCES DISTRIBUTION

In vivo image repository

The National Cancer Imaging Archive (NCIA) is a searchable, national repository integrating *in vivo* cancer images with clinical and genomic data. NCIA provides the cancer research community, industry, and academia with public access to DICOM images, image markup, annotations, and rich meta data. This tool enables the development of imaging resources that lead to improved clinical decision support, accelerated decision-making, and quantitative imaging assessment of drug response.

NCIA provides Web-based access to de-identified DICOM images, markups, and annotations using role-based security. In addition to the NCI hosted NCIA, institutions can adapt NCIA for data storage by standing up an instance of NCIA at the institution with assistance from caBIG™ licensed service providers. The NCIA download package is a ZIP package that includes the NCIA application, supporting libraries, the RSNA MIRC application (with NCIA modifications), documentation, and a sample NCIA database.

Features:

- Searchable repository of *in vivo* cancer images
- Access to image archives and imaging resources
- Facilitates development and validation of analytical software tools that support lesion detection and classification software, accelerate diagnostic imaging decisions, and quantify imaging assessment of drug response

NCIA interface

Categories of Use:

☐ Biospecimens	☐ Data Sharing	■ **Imaging**	☐ Proteomics
☐ Clinical Trials Management	☐ Genome Annotation	☐ Microarrays	☐ Translational Research
☐ Data Analysis & Statistical Tools	☐ Infrastructure	☐ Pathways	☐ Vocabularies

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Architecture Overview

- **Application type:** Web application–remote application with data uploads/downloads through a Web interface

- **System requirements:** Minimal requirements include Windows or Linux operating system; Intel 64-bit Core Duo processor or AMD OpteronCPU with 160GB SATA hard drive capacity and 3GB of RAM; a typical workstation from a hardware vendor will be minimally sufficient

Installation and Administration:

- **Skill sets needed:** Experienced database administrators and J2 Engineers, specific experience in installing and supporting Web-based databases and FTP servers

- **Infrastructure needed:** Staff experienced in extracting images from PACS machines and the ability to package and submit them from the field center

- **Long-term administration needs:** Basic IT administrative support

Resources

Tool Overview Page	_____
Primary Workspace	*In Vivo* Imaging (IMAG)
IMAG Workspace Lead	Paul Mulhern: mulhern_paul@bah.com
NCIA Developers LISTSERV	https://list.nih.gov/cgi-bin/wa?SUBED1=ncia_developers&A=1
caBIG™ Tool Inventory	https://cabig.nci.nih.gov/inventory
NCI Center for Bioinformatics Applications Support	ncicb@pop.nci.nih.gov

Other Life Sciences Distribution Components:

- caArray
- Cancer Genome-Wide Association Studies (caGWAS)
- caTissue Core
- Clinical Trials Object Data System (CTODS)
- National Cancer Imaging Archive (NCIA)