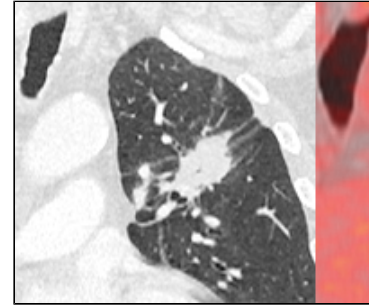




# NSCLC Radiogenomics

## Summary

Medical image biomarkers of cancer promise improvements in patient care through advances in precision medicine. Compared to genomic biomarkers, image biomarkers provide the advantages of being a non-invasive procedure, and characterizing a heterogeneous tumor in its entirety, as opposed to limited tissue available for biopsy. We developed a unique radiogenomic dataset from a Non-Small Cell Lung Cancer (NSCLC) cohort of 211 subjects. The dataset comprises Computed Tomography (CT), Positron Emission Tomography (PET)/CT images, semantic annotations of the tumors as observed on the medical images using a controlled vocabulary, segmentation maps of tumors in the CT scans, and quantitative values obtained from the PET/CT scans. Imaging data are also paired with gene mutation, RNA sequencing data from samples of surgically excised tumor tissue, and clinical data, including survival outcomes. This dataset was created to facilitate the discovery of the underlying relationship between genomic and medical image features, as well as the development and evaluation of prognostic medical image biomarkers.







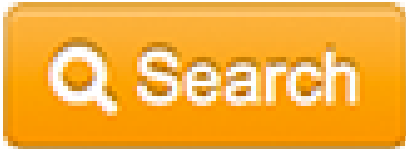
For scientific inquiries relating to the data-set, please contact Drs. Sandy Napel ([snapel@stanford.edu](mailto:snapel@stanford.edu)) or Sylvia K. Plevritis ([sylvia.plevritis@stanford.edu](mailto:sylvia.plevritis@stanford.edu)).

[Data Access](#) [Detailed Description](#) [Citations & Data Usage Policy](#) [Versions](#)

## Data Access

Click the **Download** button to save a ".tcia" manifest file to your computer, which you must open with the [NBIA Data Retriever](#). Click the **Search** button to open our Data Portal, where you can browse the data collection and/or download a subset of its contents.

Data Type	Download all or Query/Filter
Images (DICOM, 97.6 GB)	 
AIM Annotations (XML, zip)	
Clinical Data (csv)	

RNA sequence data (web) Note: 130 subject subset, restricted access until August 2018	
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Click the Versions tab for more info about data releases.

### Third Party Analyses of this Dataset

TCIA encourages the community to [publish your analyses of our datasets](#). Below is a list of such third party analyses published using this Collection:

- [QIN multi-site collection of Lung CT data with Nodule Segmentations](#)
- [NSCLC Radiogenomics: Initial Stanford Study of 26 Cases](#)

### Detailed Description

Collection Statistics	
Modalities	CT, PT, SEG, SR
Number of Patients	211
Number of Studies	303
Number of Series	1355
Number of Images	285,412
Image Size (GB)	97.6

This collection was originally submitted to TCIA as a 26 subject pilot data set. You can learn more about that subset of the collection in the following [Analysis Results](#) publication:

#### Data Citation

Napel, Sandy, & Plevritis, Sylvia K. (2014). NSCLC Radiogenomics: Initial Stanford Study of 26 Cases. The Cancer Imaging Archive. <http://doi.org/10.7937/K9/TCIA.2014.X7ONY6B1>

### Citations & Data Usage Policy

This collection is freely available to browse, download, and use for commercial, scientific and educational purposes as outlined in the [Creative Commons Attribution 3.0 Unported License](#). See [TCIA's Data Usage Policies and Restrictions](#) for additional details. Questions may be directed to [help@cancerimagingarchive.net](mailto:help@cancerimagingarchive.net).

**[Please be sure to include the following citations in your work if you use this data set:](#)**

#### Data Citation

Bakr, Shaimaa; Gevaert, Olivier; Echegaray, Sebastian; Ayers, Kelsey; Zhou, Mu; Shafiq, Majid; Zheng, Hong; Zhang, Weiruo; Leung, Ann; Kad

och, Michael; Shrager, Joseph; Quon, Andrew; Rubin, Daniel; Plevritis,

Sylvia; Napel, Sandy.(2017). Data for NSCLC Radiogenomics Collection. The Cancer Imaging Archive. <http://doi.org/10.7937/K9/TCIA.2017.7hs46erv>

**Publication Citation**

Primary publication coming soon

**Publication Citation**

Gevaert, O., Xu, J., Hoang, C. D., Leung, A. N., Xu, Y., Quon, A., ... Plevritis, S. K. (2012, August). Non-Small Cell Lung Cancer: Identifying Prognostic Imaging Biomarkers by Leveraging Public Gene Expression Microarray Data—Methods and Preliminary Results. *Radiology*. Radiological Society of North America (RSNA). <http://doi.org/10.1148/radiol.12111607>





**TCIA Citation**

Clark K, Vendt B, Smith K, Freymann J, Kirby J, Koppel P, Moore S, Phillips S, Maffitt D, Pringle M, Tarbox L, Prior F. **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, *Journal of Digital Imaging*, Volume 26, Number 6, December, 2013, pp 1045-1057. (paper)

**Other Publications Using This Data**

If you have a publication you'd like to add, please [contact the TCIA Helpdesk](#).

**Version 2 (Current): Updated 2017/02/28**

Data Type	Download all or Query/Filter
Images (DICOM, 97.6 GB)	  <p>(Requires the NBIA Data Retriever.)</p>
AIM Annotations (XML, zip)	
Clinical Data (csv)	

**Version 1: Updated 2015/12/22**

Data Type
<p>This collection was originally submitted to TCIA as a 26 subject pilot data set. You can learn more about that subset of the collection in the following Analysis Results publication:</p> <p><a href="#">NSCLC Radiogenomics: Initial Stanford Study of 26 Cases</a></p>