

**New Grantee Workshop**  
**Division of Cancer Biology**

# **DCB/NCI Research Resources**

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*Biophysics, Bioengineering and Computational Biology Branch*  
*Office of Cancer Genomics*

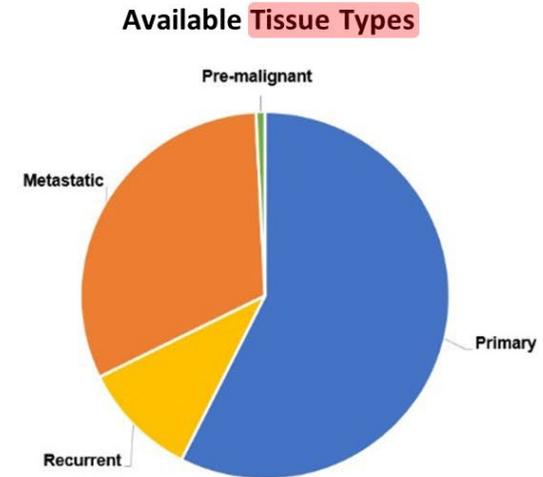
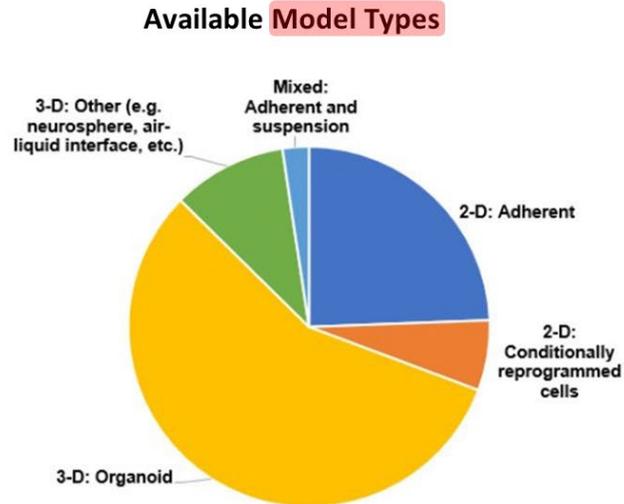
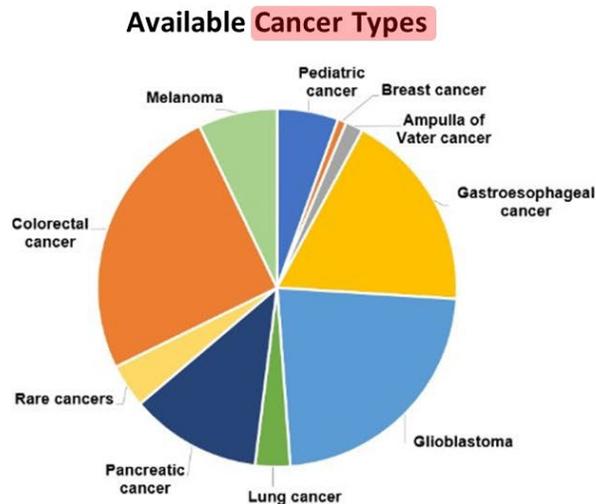
# Outline

1. In-vitro Model Systems
2. Structural Biology Resources
3. Data Resources
4. Informatics/Computational Tools
5. Epidemiology and Population Science Resources
6. Biospecimens, Biological Materials, Reagents
7. Drug Discovery and Development Resources
8. Clinical Research Resources

# In-vitro Model Systems

# Human Cancer Models Initiative (HCMI)- Next-generation Cancer Models

- Patient-derived next-generation cancer models and associated clinical, biospecimen and molecular characterization
- Case-associated data are available at NCI's Genomic Data Commons
- Models can be purchased at ATCC.
- Available models can be browsed through the HCMI Searchable Catalog
- Visit <https://www.cancer.gov/ccg/research/functional-genomics/hcmi>



# HCMC Searchable Catalog- Next-generation Cancer Models

Human Cancer Models Initiative
Searchable Catalog

- Search By Model Name
- Search By Altered Gene(s)
- Search By Research Somatic Variant
- Primary Site
- Research Somatic Variant Type
- Consequence
- Model Type
- Has Multiple Models
- Acquisition Site
- Clinical Tumor Diagnosis
- Clinical Stage Grouping
- Tissue Status
- Histological Subtype
- Histological Grade
- Age At Diagnosis (Years)
- Gender
- Available Molecular Characterizations
- Neoadjuvant Therapy

← Use the filter panel on the left to customize your model search.

Models By Primary Site

41 Total

Has Multiple Models

2D Versus 3D Growth

Most Frequently Mutated Genes

Showing 1 - 20 of 660 models Exclude 331 unexpanded models COLUMNS EXPORT

<input type="checkbox"/>	Name	Primary Site	Clinical Tumor Diagnosis	Tissue Status	Age At Acquisition (Years)	Age At Diagnosis (Years)	Has Multiple Models	Expansion Status	# Mutated Genes	# Research Somatic Variants	# Clinical Variants	# Histo-Pathological Biomarkers
<input type="checkbox"/>	<a href="#">HCM-BROD-0001-C18</a>	Rectum	Colorectal cancer	Metastasis	49	47	No	EXPANDED	453	499	1	0
<input type="checkbox"/>	<a href="#">HCM-BROD-0002-C71</a>	Brain	Glioblastoma	Primary	66	66	No	EXPANDED	113	114	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0003-C71</a>	Brain	Glioblastoma	Primary	82	82	No	EXPANDED	101	102	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0004-C64</a>	Kidney	Wilms tumor	Recurrent	5	3	No	UNEXPANDED	0	0	0	0
<input type="checkbox"/>	<a href="#">HCM-BROD-0007-C49</a>	Bronchus and...	Rhabdomyosarco...	Metastasis	13	12	No	EXPANDED	31	30	1	0
<input type="checkbox"/>	<a href="#">HCM-BROD-0008-C25</a>	Pancreas	Pancreatic cancer	Metastasis	64	63	No	EXPANDED	132	134	1	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0009-C25</a>	Pancreas	Pancreatic cancer	Metastasis	49	49	No	EXPANDED	77	83	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0010-C25</a>	Pancreas	Pancreatic cancer	Metastasis	53	53	No	EXPANDED	58	58	2	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0011-C71</a>	Brain	Glioblastoma	Primary	54	54	No	EXPANDED	58	58	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0012-C71</a>	Brain	Glioblastoma	Recurrent	56	56	No	EXPANDED	77	78	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0013-C71</a>	Brain	Glioblastoma	Recurrent	62	59	No	EXPANDED	0	0	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0014-C71</a>	Brain	Glioblastoma	Primary	68	68	No	EXPANDED	88	90	0	1
<input type="checkbox"/>	<a href="#">HCM-BROD-0015-C25</a>	Pancreas	Pancreatic cancer	Primary	62	62	No	EXPANDED	97	99	0	0
<input type="checkbox"/>	<a href="#">HCM-BROD-0016-C25</a>	Pancreas	Pancreatic cancer	Metastasis	66	66	No	EXPANDED	93	95	0	0
<input type="checkbox"/>	<a href="#">HCM-BROD-0019-C25</a>	Pancreas	Pancreatic cancer	Primary	80	80	No	EXPANDED	88	89	0	0

HCMC Catalog: <https://hcmi-searchable-catalog.nci.nih.gov>

Contact PD: Dr. Justin Benavidez ([justin.benavidez@nih.gov](mailto:justin.benavidez@nih.gov))

# Structural Biology Resources

## **NIGMS/NCI X-ray Beamline**

- Provides beam time on a peer-reviewed basis for investigations requiring advanced synchrotron capabilities.
- Offers X-ray beams of exceptional stability and tunability, a powerful biologist-friendly user interface, and a pipeline for data processing with modern software.
- If you are applying as a user of an NCI funded program, email [gmcauserinfo@anl.gov](mailto:gmcauserinfo@anl.gov).
- Program website: <https://www.gmca.aps.anl.gov/>
- Contact PD: Dr. Eric Johnson ([eric.johnsonchavarria@nih.gov](mailto:eric.johnsonchavarria@nih.gov))

## **National Cryo-Electron Microscopy Facility**

- Provides high resolution imaging services using Titan Krios Microscope
- Samples will be pre-screened for cancer relevance and need to be of quality ready for imaging at high resolution
- Users can apply for a 48-hour imaging session of up to two different samples
- Visit <https://www.cancer.gov/research/resources/cryoem/access>

## **NIH Common Fund Transformative High Resolution Cryo-Electron Microscopy Program**

- National CryoEM and CryoET centers: <https://www.cryoemcenters.org>

# Data Resources (Data Sources and Data Commons)

# Human Tumor Atlas Network (HTAN)- 3D maps of Human Tumors

Read the new collection of HTAN publications!

**HTAN** EXPLORE ANALYSIS TOOLS MANUAL ABOUT THE DATA ABOUT HTAN SUBMIT DATA SUPPORT NEWS Please cite HTAN

**Human Tumor Atlas Network**

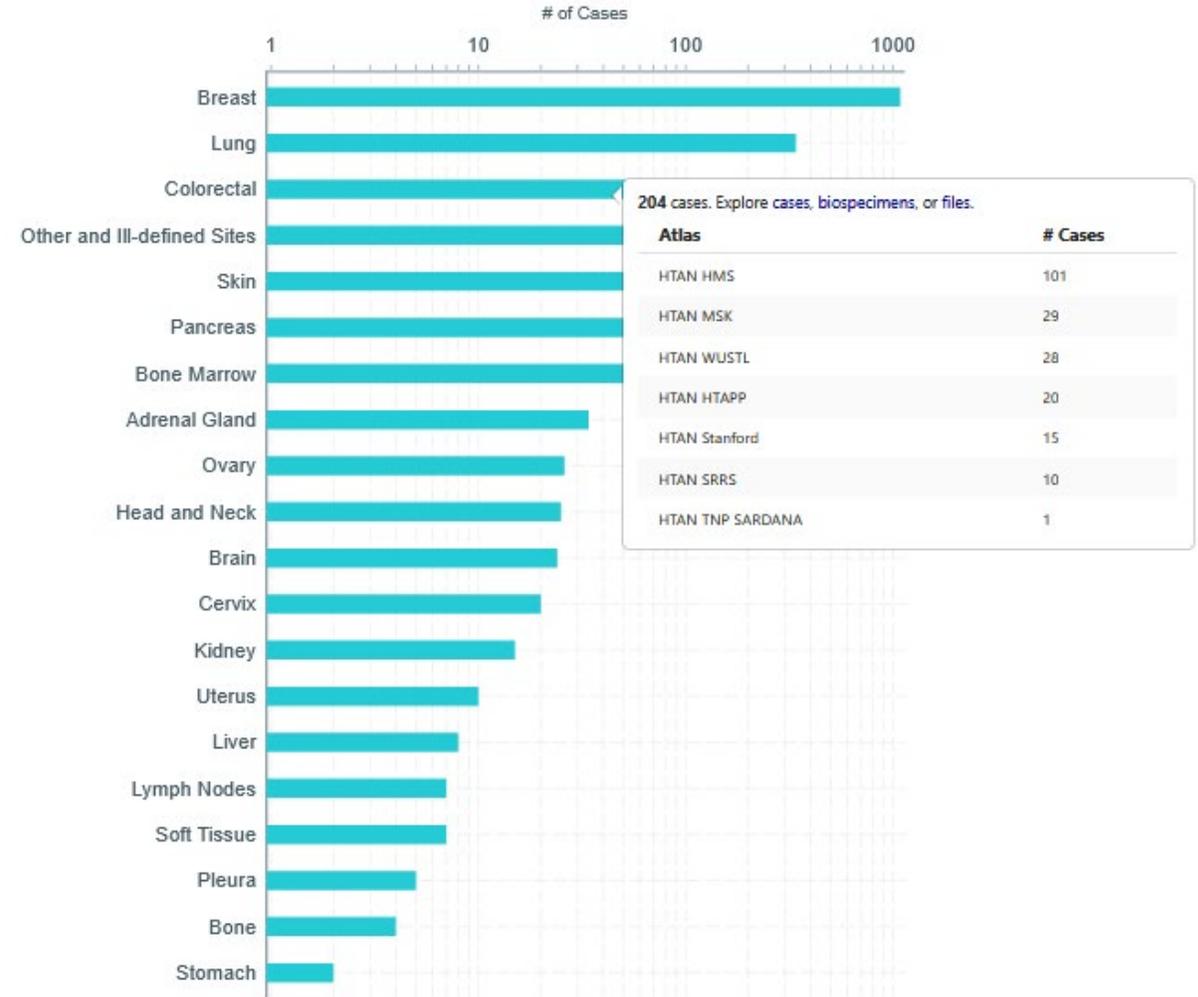
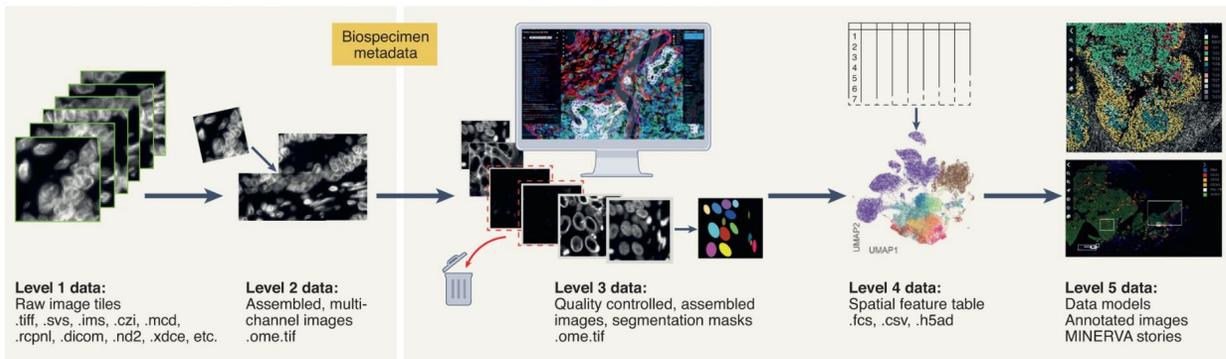
HTAN is a National Cancer Institute (NCI)-funded Cancer Moonshot<sup>SM</sup> initiative to construct 3-dimensional atlases of the dynamic cellular, morphological, and molecular features of human cancers as they evolve from precancerous lesions to advanced disease.

Explore Data Learn more Citing HTAN

Data Release V7.0 (Last updated 2025-11-26)

14 Atlases      20 Organs      2372 Cases      10585 Biospecimen

The latest HTAN data release includes tumors originating from 20 tumor sites.



HTAN Atlas: <https://humantumoratlas.org>

Program Contact: Dr. Sharmistha Ghosh-Janjigian  
([sharmistha.ghosh-janjigian@nih.gov](mailto:sharmistha.ghosh-janjigian@nih.gov))

# Cancer Complexity Knowledge Portal- Data from DCB Programs

- Cancer Systems Biology Consortium

<https://www.cancer.gov/about-nci/organization/dcb/research-programs/csbcc>

- Physical Sciences-Oncology Network

<https://www.cancer.gov/about-nci/organization/dcb/research-programs/psoc>

- The Cancer Tissue Engineering Collaborative

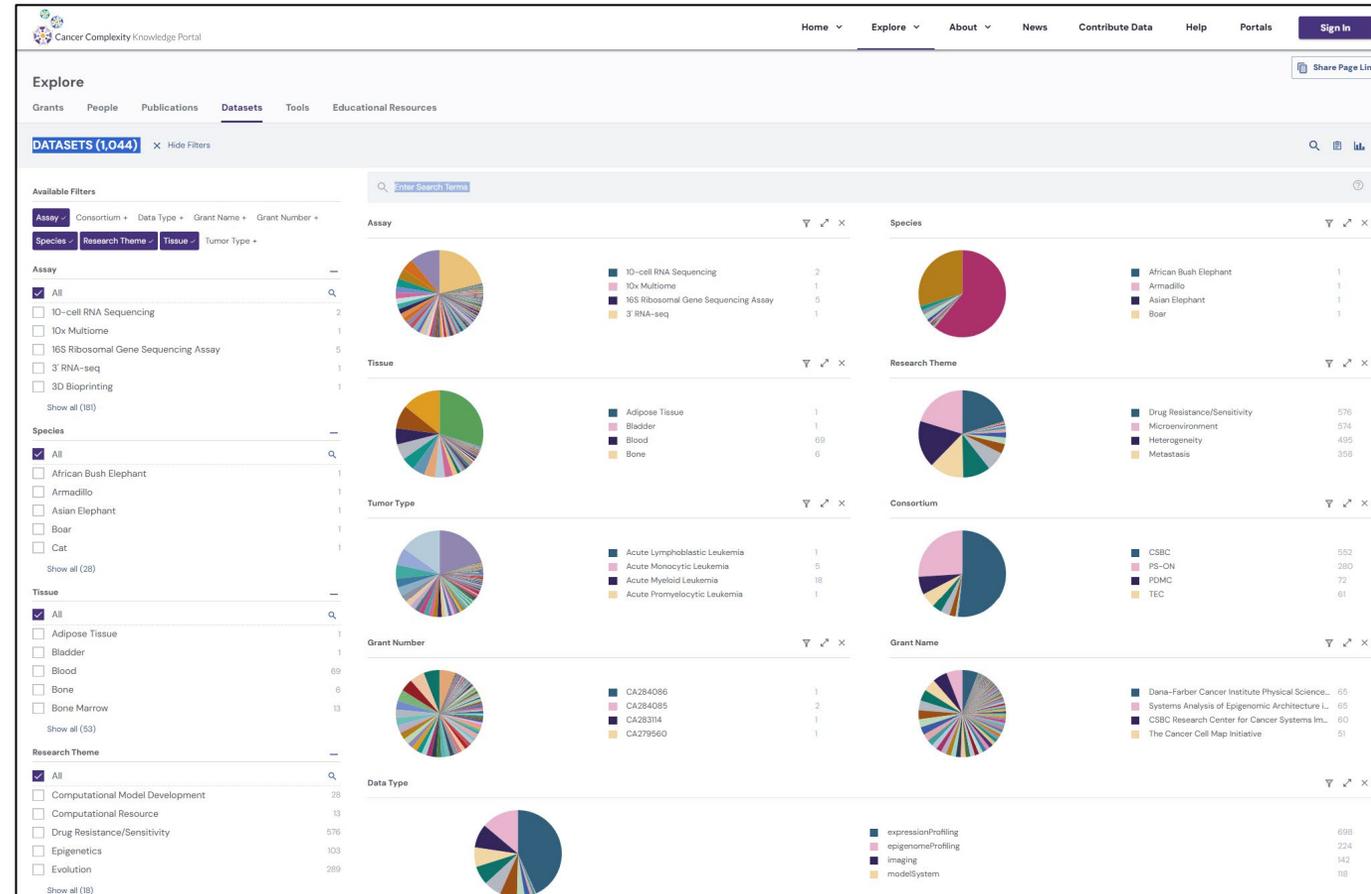
<https://www.cancer.gov/about-nci/organization/dcb/research-programs/tec>

- The Cellular Cancer Biology Imaging Research

<https://www.cancer.gov/about-nci/organization/dcb/research-programs/ccbir>

- The Metastasis Research Network

<https://www.cancer.gov/about-nci/organization/dcb/research-programs/metnet>



**Explore:** Browse data, publications, and tools.

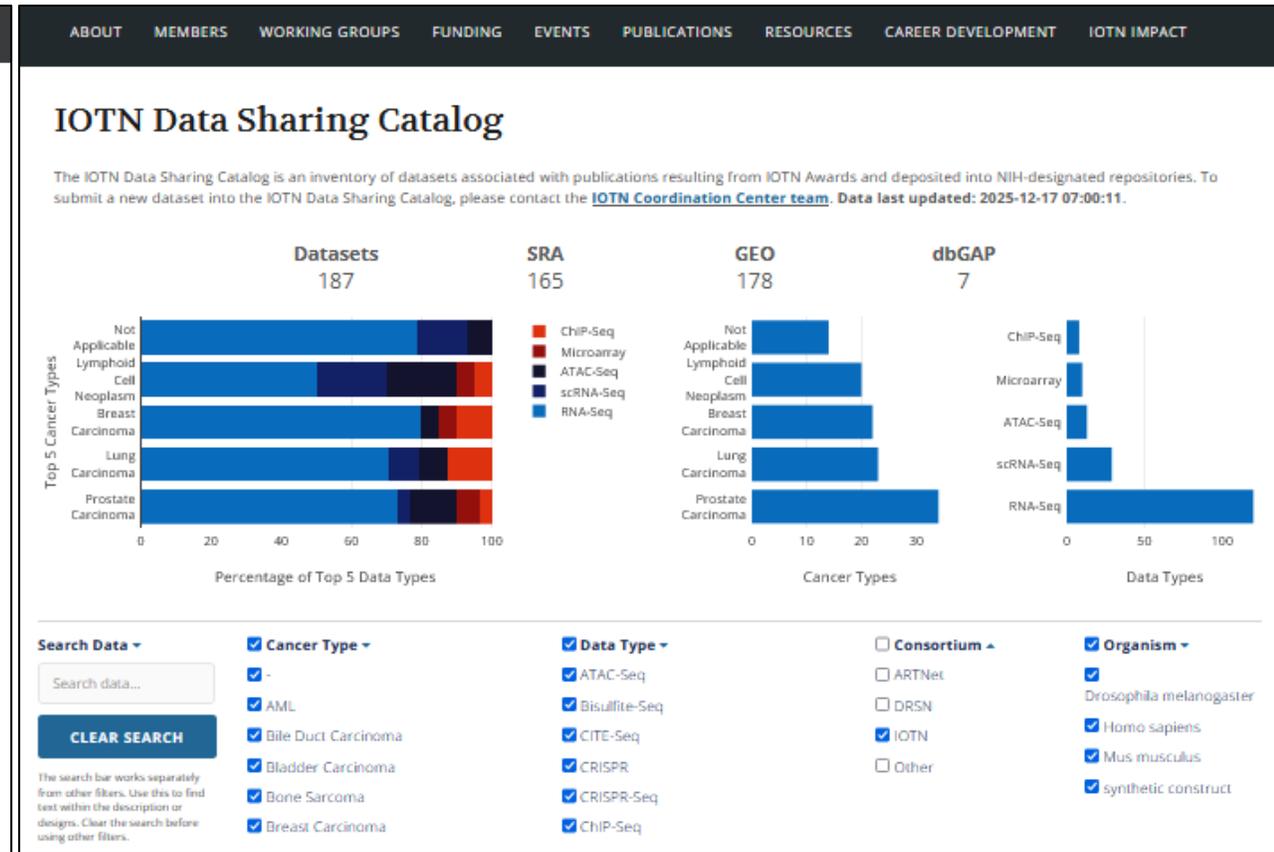
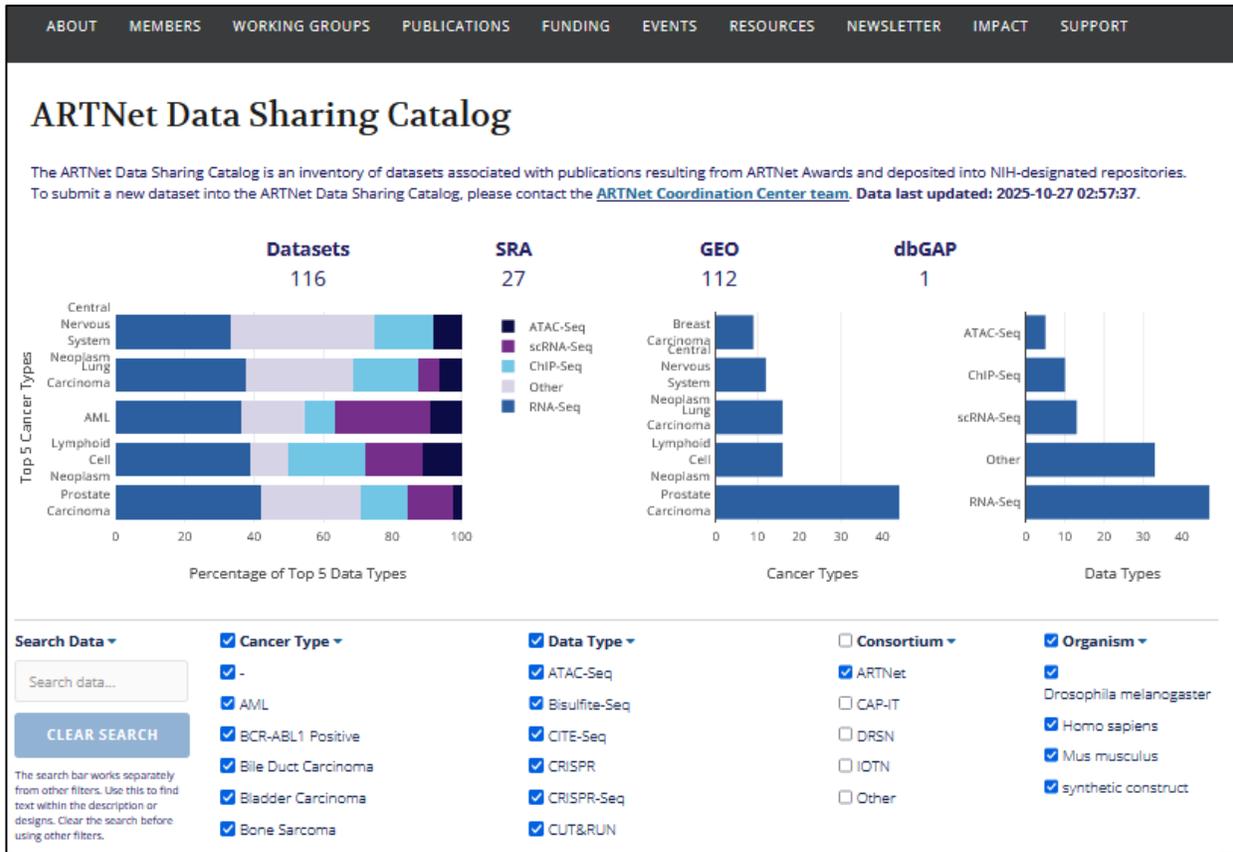
**Find:** Search, filter, and refine to find the right data.

**Access:** Download datasets, publications, and tools.

Portal website: <https://cancercomplexity.synapse.org/>

# Acquired Resistance to Therapy Network (ARTNet)

# Immuno-Oncology Translational Network (IOTN)



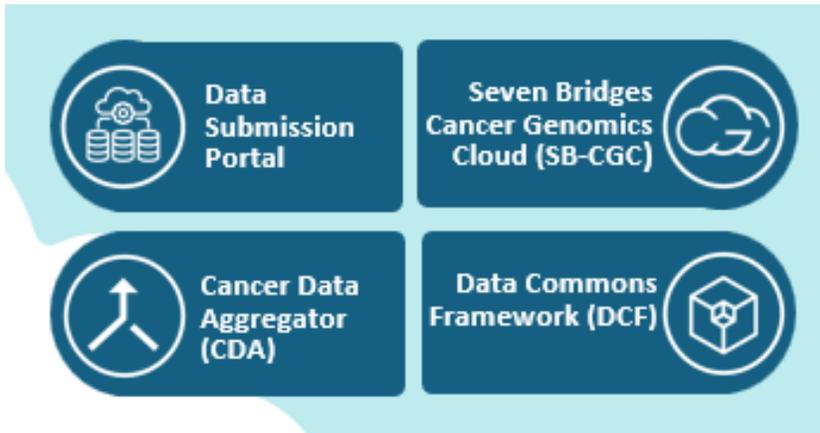
<https://nciartnet.org/en/resources/data-sharing-catalog/>  
 Contact: Dr. Alan Hutson ([alan.hutson@roswellpark.org](mailto:alan.hutson@roswellpark.org))  
 Dr. Jeffrey Hildesheim ([hildesheimj@mail.nih.gov](mailto:hildesheimj@mail.nih.gov))

<https://www.iotnmoonshot.org/en/resources/data-sharing-catalog/>  
 Contact: Dr. Lillian Kuo ([lillian.kuo@nih.gov](mailto:lillian.kuo@nih.gov))

# Cancer Research Data Commons (CRDC)

- A cloud-based data science infrastructure that provides secure access to a large, comprehensive, and expanding collection of cancer research data.
- Users can explore and use analytical and visualization tools for data analysis in the cloud.
- The NCI CRDC includes several data commons.

<https://datacommons.cancer.gov/>



Contact: [NCICRDC@mail.nih.gov](mailto:NCICRDC@mail.nih.gov)

CRDC DATA COMMONS	
DATA COMMON	KEY FEATURES
 <p><u><a href="#">Genomic Data Commons (GDC)</a></u></p>	<p>The GDC houses and shares harmonized genomic data, including WGS, WXS, RNAseq, miRNA-seq, scRNAseq, ATAC-seq, and DNA methylation data. The GDC supports free data downloading (both raw sequencing data and derived data), and hosts both open and controlled access data. The GDC Data Portal supports free online data exploration and analysis of custom cohorts.</p>
 <p><u><a href="#">Proteomic Data Commons (PDC)</a></u></p>	<p>PDC houses and shares mass spectrometry-based proteomic data. The PDC portal supports online data exploration and visualization. All data (both raw and derived data) are open access.</p>
 <p><u><a href="#">Imaging Data Commons (IDC)</a></u></p>	<p>The IDC houses and shares de-identified imaging data, including both radiology and pathology slide images. All images are harmonized using DICOM standards. All data in the IDC are open access.</p>
 <p><u><a href="#">Integrated Canine Data Commons (ICDC)</a></u></p>	<p>The ICDC houses and shares data from the veterinary records of pet dogs that naturally developed tumors. Key data types include WXS, WGS, RNA-Seq, and DNA Methylation. All data (including raw sequence data) are open access.</p>
 <p><u><a href="#">General Commons (GC)</a></u></p>	<p>The GC houses and shares data that are not a match for other CRDC Data Commons. Data go through quality control (QC) but are not harmonized. The GC includes both open and controlled access data.</p>
 <p><u><a href="#">Clinical and Translational Data Commons (CTDC)</a></u></p>	<p>The CTDC houses and shares clinical, biospecimen, and molecular characterization data from clinical trials and other studies. All CTDC data are controlled access.</p>

# Genomic Data Commons (GDC)

## Genomic Data Commons Data Portal

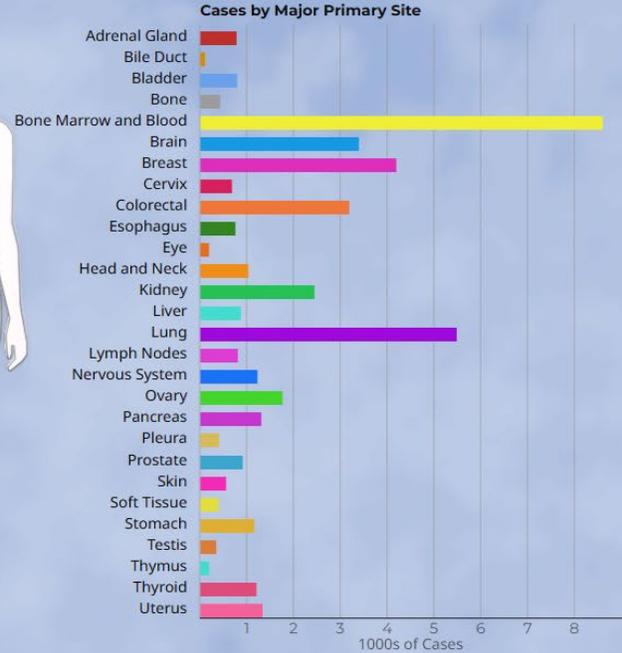
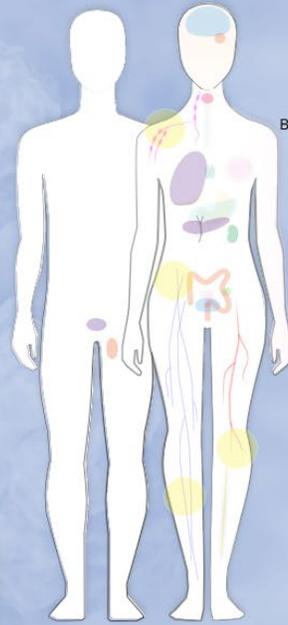
### Harmonized Cancer Datasets

A repository and computational platform for cancer researchers who need to understand cancer, its clinical progression, and response to therapy.

[Explore Our Cancer Datasets](#)

### Data Portal Summary

[Data Release 45.0 - December 04, 2025](#)



Explore all the data and tools at <https://portal.gdc.cancer.gov/>

## ANALYSIS TOOLS

<b>BAM Slicing Download</b> 4 Cases	<b>Clinical Data Analysis</b> 4 Cases	<b>Cohort Comparison</b> 4 Cases	<b>Cohort Level MAF</b> 4 Cases	<b>Copy Number Segment</b> 4 Cases	<b>Gene Expression Clustering</b> 4 Cases
<b>Mutation Frequency</b> 4 Cases	<b>OncoMatrix</b> 4 Cases	<b>ProteinPaint</b> 4 Cases	<b>Sequence Reads</b> 4 Cases	<b>Set Operations</b> 4 Cases	<b>Single Cell RNA-seq</b> 0 Cases

Contact: Dr. David Sturgill  
([david.sturgill2@nih.gov](mailto:david.sturgill2@nih.gov))

GDC Contact:  
<https://gdc.cancer.gov/contact-us>

# Childhood Cancer Data Initiative (CCDI)

The screenshot shows the NIH Childhood Cancer Data Initiative Data Catalog search results. The top navigation bar includes Home, Search Catalog, Participating Resources, CCDI Studies, About, and CCDI Hub. A search bar is present in the top right. The main content area displays search results for 'A Comprehensive Genomic Study of Pediatric Malignancy' (dbGaP) and 'AACR Project GENIE AKT1 Cohort' (GENIE). The left sidebar lists various resources such as All of Us, BPC, BTB, CancerModels.Org, cBioPortal, CBTRUS, CCDI, CCDI\_cBioPortal, CCDI\_ecDNA, CCSS, CEDCD, CGC, CGCI, Childhood Cancer Repository, CIVIC, COG, CRI iAtlas, dbGaP, DCEG, DepMap, FAPTP, Fibroregistry, GDC, GENIE, GEO, and HCMI. The search results include details like Case Disease Diagnosis, Case Count, and a description for each study.

**Childhood Cancer Data Catalog:** A searchable inventory of available childhood cancer datasets

The screenshot shows the NIH Childhood Cancer Data Initiative Hub dashboard. The top navigation bar includes Home, Explore, Studies, Cohort Analyzer, Resources, News, and About. A search bar is present in the top right. The main content area displays a summary of data: 40 STUDIES, 59,795 PARTICIPANTS, 68,140 SAMPLES, and 1,238,181 FILES. The dashboard features several donut charts and a bar chart. The donut charts show the distribution of participants across different categories: Study (30,717 Participants), Diagnosis (3,553 Participants), Sex at Birth (31,853 Participants), Race (43,283 Participants), and Data Category (4,927 Participants). The bar chart shows the distribution of participants by age at diagnosis (years).

**CCDI Hub:** Data repository and platform to access, download and analyze integrated datasets

<https://www.cancer.gov/research/areas/childhood/childhood-cancer-data-initiative>

Contact: [NCIChildhoodCancerDataInitiative@mail.nih.gov](mailto:NCIChildhoodCancerDataInitiative@mail.nih.gov)

# Informatics/Computational Tools

# Informatics Technology for Cancer Research- Informatics/Computational Tools

## Informatics Tools Supported by ITCR

The Informatics Technology for Cancer Research (ITCR) Program funds open source, informatics tools that support research across the cancer continuum. All of the tools are free for use by academic and non-profit researchers. Access to tools, code repositories and introductory videos is available through the links in the table below.

### On This Page

- [Clinical Informatics](#)
- [Digital Pathology and Dermatologic Imaging](#)
- [Epigenetics](#)
- [Genomics and Variant Interpretation](#)
- [Imaging and Radiation Research](#)
- [Immuno-oncology](#)
- [Informatics Platforms](#)
- [Network Biology](#)
- [Proteomics and Protein Structure](#)
- [Transcriptomics](#)
- [Visualization](#)
- [ITCR Connectivity Map](#)

Program: <https://itcr.cancer.gov/informatics-tools>

Catalog: <https://www.cancer.gov/about-nci/organization/cssi/resources/informatics-tools>

Tool Name	Tool Description	Tool Resources
<a href="#">Bioconductor</a>	The Bioconductor project offers over 2,000 open-source software and data packages and is essential to modern cancer genomics research. ITCR supports key infrastructure benefiting thousands of researchers from academia, government, and industry who use and develop Bioconductor tools, furthering our knowledge and treatment approaches for cancer.	<a href="#">Grant Info</a> <a href="#">Documentation</a> <a href="#">Introductory Video</a> <a href="#">Social Media</a> <a href="#">Code Repository</a>
<a href="#">CancerModels.Org</a>	CancerModels.Org is an open global research platform for patient-derived cancer models (PDCMs), including patient-derived xenografts, organoids, and cell line models. It is the largest open catalog of harmonized PDCMs and associated clinical, genomic, and functional data from academic and commercial providers.	<a href="#">Grant Info</a> <a href="#">Social Media</a> <a href="#">Code Repository</a>
<a href="#">cBioPortal for Cancer Research</a>	The cBioPortal for Cancer Genomics provides visualization, analysis and download of large-scale cancer genomics data sets.	<a href="#">Grant Info</a> <a href="#">Documentation</a> <a href="#">Social Media</a>
<a href="#">Galaxy</a>	Galaxy is a Web-based computational workbench that anyone can use to analyze large biomedical datasets. There are >9500 software tools and visualizations integrated into Galaxy for analysis of single-cell and bulk omics, live cell and molecular imaging, machine learning, microbiome, and much more. Galaxy also includes many ITCR tools and visualizations.	<a href="#">Grant Info</a> <a href="#">Introductory Video</a> <a href="#">Social Media</a> <a href="#">Code Repository</a>
<a href="#">Galaxy-P-Multi-omics</a>	A unified platform for integrative genomic-proteomic-metabolomic data analysis and informatics in cancer research.	<a href="#">Grant Info</a> <a href="#">Social Media</a> <a href="#">Code Repository</a> <a href="#">Code Repository</a>
<a href="#">GenePattern</a>	GenePattern is an analysis platform providing hundreds of tools for the analysis of multiple molecular data types. A web interface provides easy access to these tools and allows the creation of multi-step reproducible analysis pipelines. The GenePattern Notebook environment allows users to combine GenePattern analyses with Jupyter notebooks to create reproducible research narratives.	<a href="#">Grant Info</a> <a href="#">Introductory Video</a> <a href="#">Social Media</a> <a href="#">Code Repository</a>

# Epidemiology and Population Science Resources

# Surveillance, Epidemiology, and End Results Program (SEER)

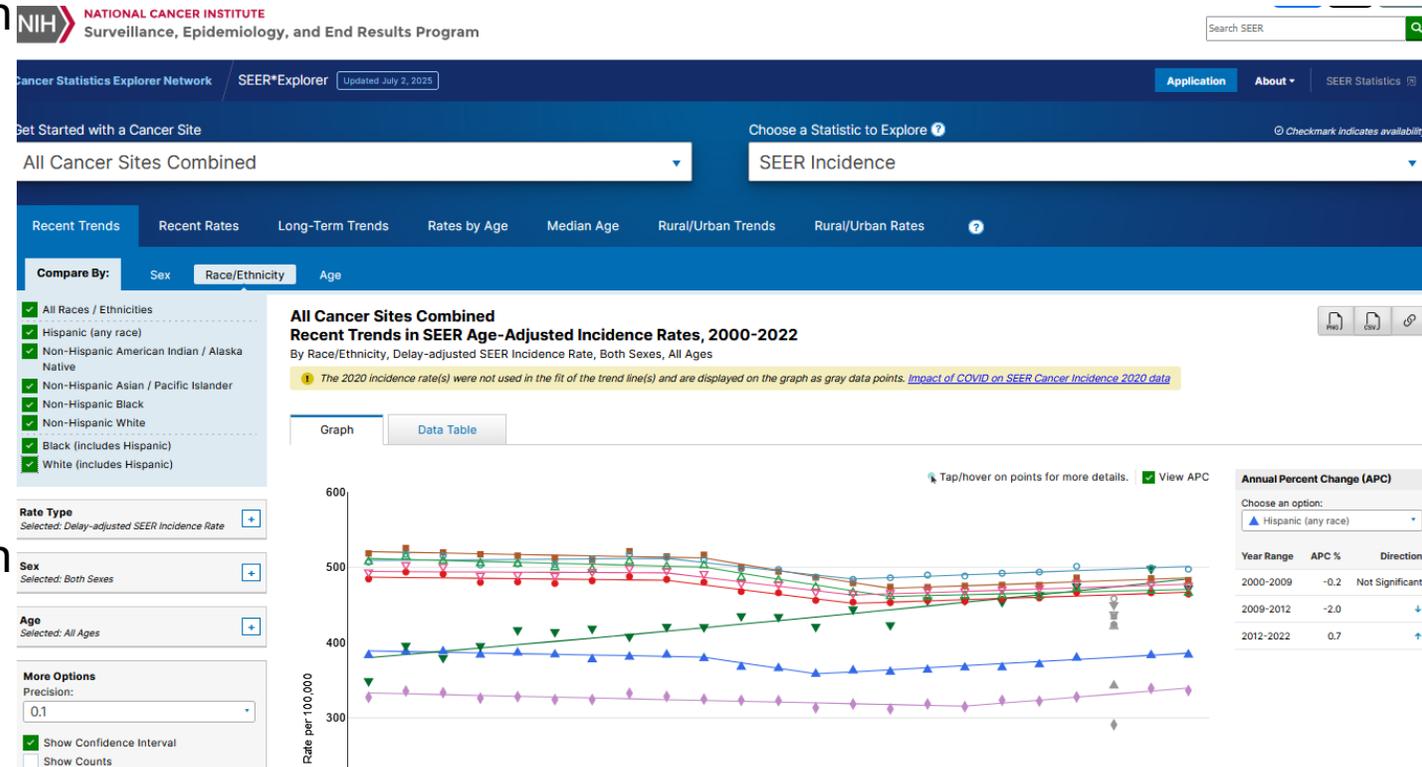
- Provides information on cancer statistics such as incidence, prevalence, and survival data from population-based US cancer registries.
- Data include age, sex, race, year of diagnosis, primary tumor site, tumor morphology, stage at diagnosis, and first course of treatment and vital status.
- SEER data files and SEER\*Stat software are available to users.
- The SEER program data can be explored through SEER\* Explorer and NCCR\* (National Childhood Cancer Registry) Explorer

SEER Program: <https://seer.cancer.gov>

[SEER\\* Explorer](#)

[NCCR\\* Explore](#)

Contact: [SEERInfo@ims.nci.nih.gov](mailto:SEERInfo@ims.nci.nih.gov)



Biospecimens, Biological Materials, Reagents

Drug Discovery and Development Resources

Clinical Research Resources

# Biological Materials, Reagents

- Repository of Chemical Agents (<https://dctd.cancer.gov/drug-discovery-development/reagents-materials/vialed-plated-compounds-0> )
- Repository of Natural Products (<https://dctd.cancer.gov/programs/dtp/organization/npb/npnnpd> )
- Repository of Biological Products (<https://frederick.cancer.gov/resources/repositories/Brb/> )
- Validated and Characterized Antibodies (<https://dctd.cancer.gov/drug-discovery-development/reagents-materials/antibodies> )
- NCI Formulary (<https://dctd.cancer.gov/drug-discovery-development/reagents-materials/formulary>)

(Visit <https://dctd.cancer.gov/drug-discovery-development/reagents-materials> for more information and additional resources.)

# Drug Discovery and Development Resources

- Patient-Derived Models Repository (PDMR) (<https://dctd.cancer.gov/drug-discovery-development/reagents-materials/pdmr> )
- NCI Experimental Therapeutics Program (NExT) (<https://dctd.cancer.gov/drug-discovery-development/services/next> )
- Nanotechnology Characterization Laboratory (<https://dctd.cancer.gov/research/research-areas/nanotech/ncl>)
- PREVENT Cancer Preclinical Drug Development Program (<https://prevention.cancer.gov/research-areas/networks-consortia-programs/prevent> )
- Validate Assays and Assay Services (<https://dctd.cancer.gov/drug-discovery-development/assays>)

Visit <https://dctd.cancer.gov/drug-discovery-development/services> for more information and additional resources.

# National Clinical Trials Network (NCTN) Navigator

- Annotated biospecimens and data from cancer clinical trials
- Specimens are donated by patients in NCI-sponsored Phase 3 clinical trials
- <https://www.cancer.gov/research/infrastructure/clinical-trials/nctn>

Navigator: <https://navigator.ctsu.org/navigator/login>

The screenshot shows the NCTN Navigator website. At the top, it says "NCTN Navigator | A Clinical Trials Specimen Resource" with the NCTN NAVIGATOR logo. Below the header, there's a navigation bar with "GUEST" and "Navigator Role: Navigator Guest" dropdowns, and links for "Contact FDS", "FAQ", and "Logout". A search bar is labeled "Query" and "Help". Below the navigation bar, there are statistics: "291 Trial(s)", "189778 Patient(s)", and "2880874 Specimen(s)". On the left, there's a sidebar menu with categories: TRIALS (Trial ID, Network Group, Primary Diagnosis, Agents, Study Design, Keyword), PATIENTS (Demographics), and SPECIMENS (Clinical Time Point, Anatomical Source, Specimen Type, Preservation Type, Pathological Status). The main content area shows "Trials: Trial ID" with a search input field and a "Next: Network Group" button. A "Query" section on the right contains a note: "NOTE: Complete query information is not currently available for all specimens. If you restrict your query based on specimen characteristics such as clinical time point or preservation type, you may exclude some specimens that would fit your search criteria but that do not have complete information in this database." Below the note, it says: "To search for specimens that do not have any associated patient demography information, exclude all demographic criteria from your search."



Navigator Process Flow

## Listings of NCI Resources

NCI Data Catalog: <https://www.cancer.gov/about-nci/organization/cbiit/catalog>

NCI Resources for Researchers: <https://www.cancer.gov/research/resources>

# Thank You



**NATIONAL  
CANCER  
INSTITUTE**

**[cancer.gov](https://cancer.gov)**

**[cancer.gov/espanol](https://cancer.gov/espanol)**