DCB and NCI Resources for Researchers

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DCB Annual New Grantee Workshop
January 11, 2023

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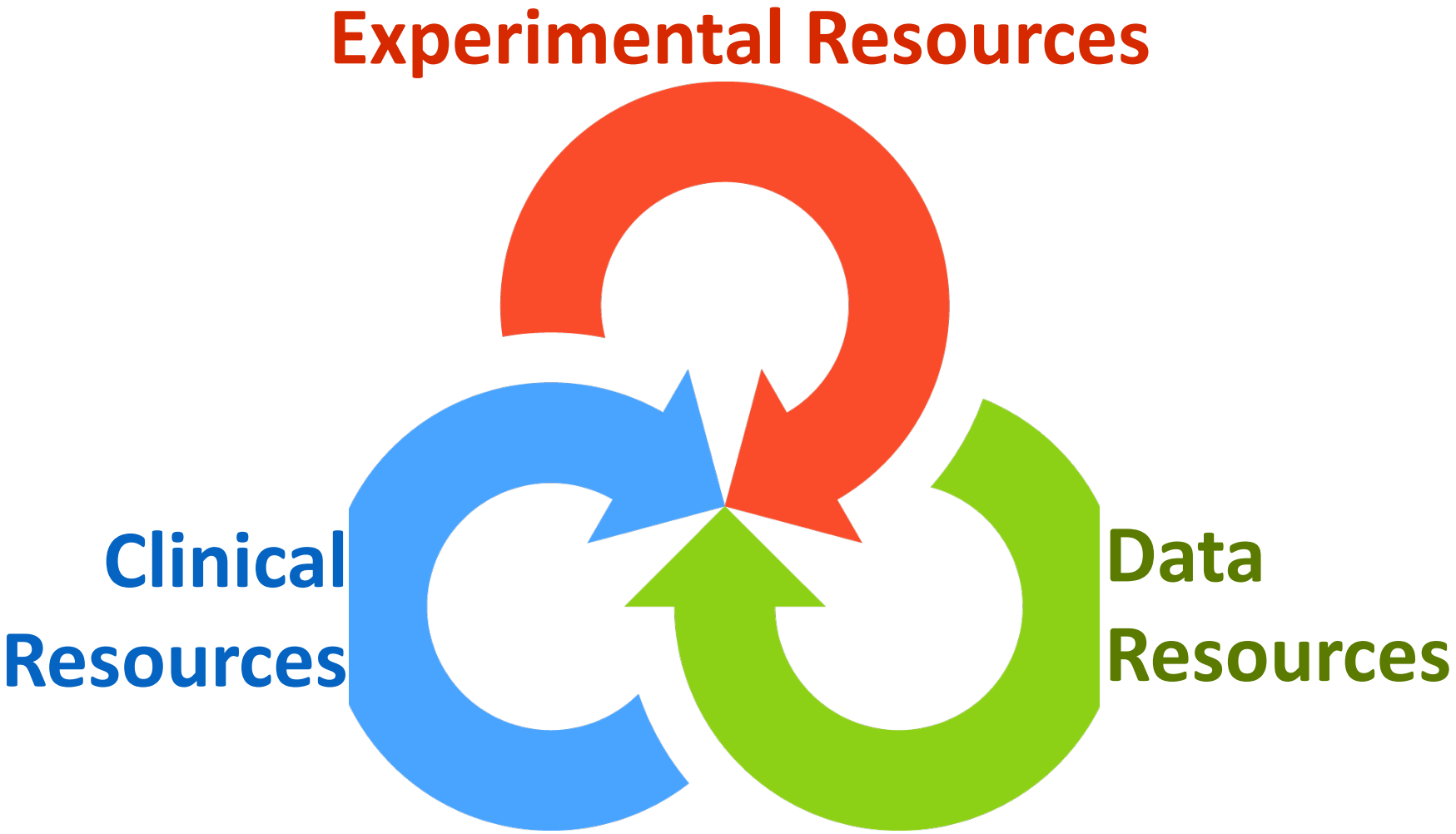
The **objective** is to raise awareness of the breadth of DCB and NCI resources available to all researchers by providing brief descriptions of these resources with reference links.

DCB and NCI Resources for Researchers

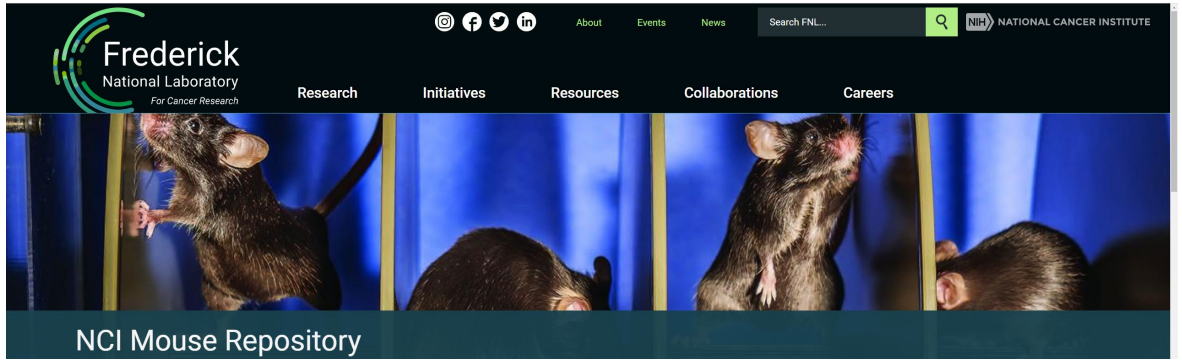


DCB and NCI Resources for Researchers

Experimental Resources

Animal Models, Cell Lines,
Reagents, Instrumentation, etc.

NCI Mouse Repository



Mouse Cancer Models

- Mice are cryopreserved
- Request frozen embryos or sperm
- Researchers are encouraged to submit their cancer models to the NCI Mouse Repository for archiving and distribution

miRNA Embryonic Stem Cell Collection

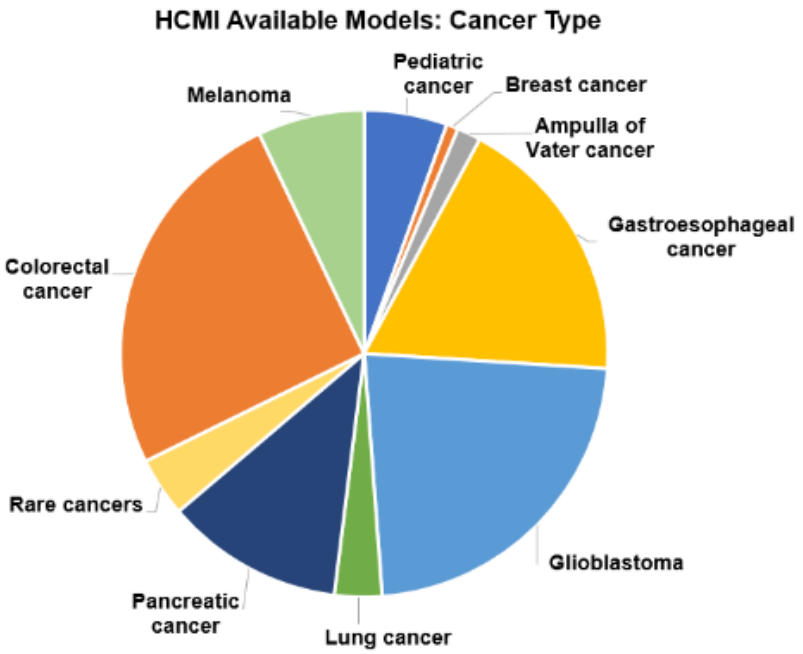
- ES cells overexpressing microRNA
- MicroRNAs are GFP labeled
- microRNA expression is inducible

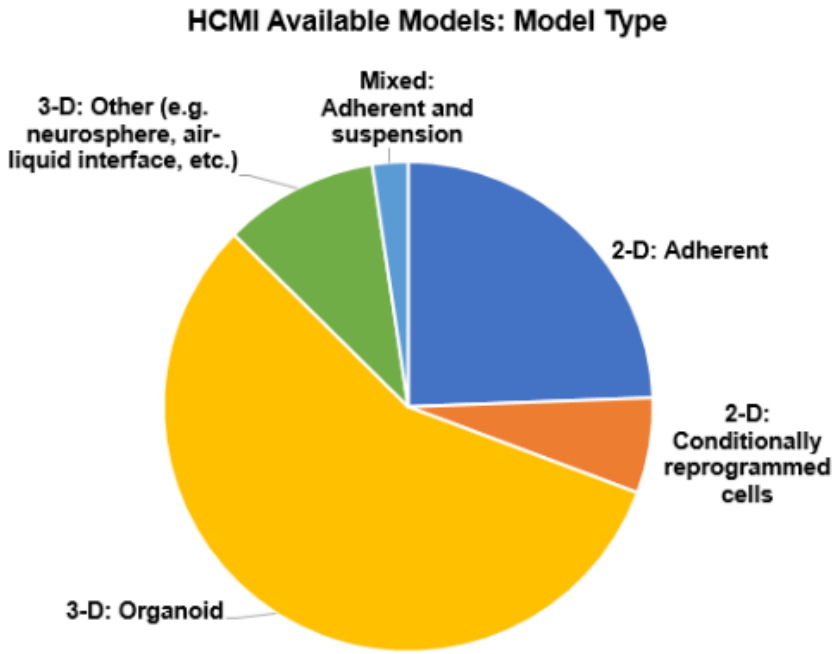
https://frederick.cancer.gov/resources/repositories/nci-mouse-repository

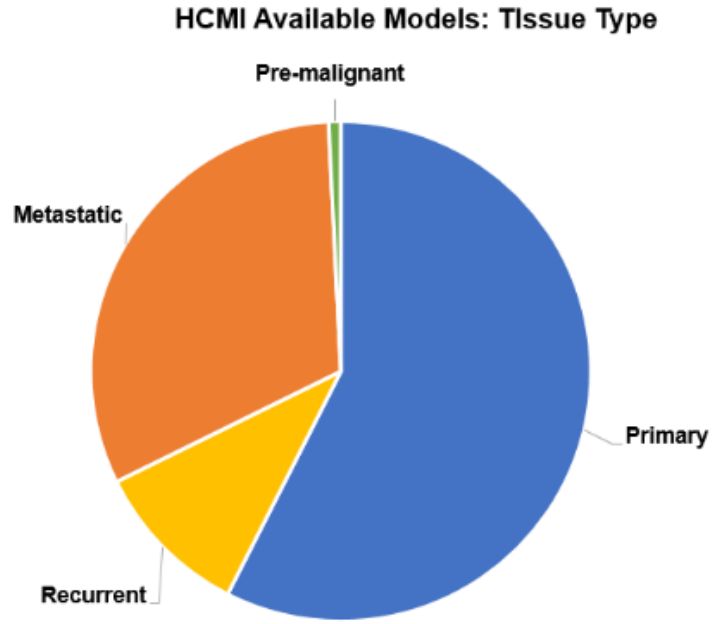
MouseRepository@mail.nih.gov

HCMI: Human Cancer Models Initiative

HCMI models and their case-associated data are available to researchers as a community resource.







https://hcmi-searchable-catalog.nci.nih.gov/

Developmental Therapeutics Program (DTP)

- **Repository of Chemical Agents**

  Small Molecules and Isolated Natural Products: More than 200,000 synthetic compounds and pure natural products for non-clinical research purposes

- **Repository of Natural Products**

  170,000 extracts from samples of more than 70,000 plants and 10,000 marine organisms collected from more than 25 countries, more than 30,000 extracts of diverse bacteria and fungi

- **Repository of Biologicals** - Monoclonal Antibodies, Cytokines and Cytokine Standards
- **Repository of Tumors and Tumor Cell Lines** (e.g.,NCI-60): Transplantable in vivo-derived tumors and in vitro-established tumor cell lines from various species
- **Repository of Patient-Derived Models**

https://dtp.cancer.gov/repositories/default.htm

ncidtpinfo@mail.nih.gov

NIH Tetramer Core

Why a tetramer core?

- To produce and distribute to the research community of major histocompatibility complex (MHC) tetramers and related reagents for the detection of T cell responses to viruses, bacteria, parasites, **tumors**, auto-antigens, and other model antigens.
- To encourage research to identify antigen-specific T cells by flow cytometry, even those present at low frequencies in fresh populations of lymphocytes sampled directly ex vivo
- Reagents are provided to qualified investigators at no cost, except for shipping and handling fees and in cases where the investigator is asked to provide the TCF with peptide or other appropriate ligands.

Reagents:

- CD1d Ligands
- MR1 Tetramers
- Non-MHC Tetramers
- Fluorophores and other labels
- Novel alleles

https://tetramer.yerkes.emory.edu/

BEI Resource Repository

- The BEI Resources Repository is a central repository that supplies organisms and reagents to the broad community of microbiology and infectious diseases researchers.
- There is no charge for research materials, but domestic investigators will be required to pay for shipping costs.

https://www.beiresources.org/Catalog.aspx

contact@beiresources.org

Biopharmaceutical Development Program

- Biopharmaceutical Development Program offers resources for and expertise in the development of investigational biological products that move promising treatments for cancer, rare diseases, AIDS, and infectious diseases into clinical trials.

- Provides analytical technologies for antibodies, recombinant proteins, peptide, DNA, and viral vaccines, oncolytic viruses, gene therapy products, cell therapies, and other biological and immunomodulating agents.

- Opportunities for collaboration are reviewed and approved by the National Cancer Institute using cooperative agreements.

https://frederick.cancer.gov/research/ biopharmaceutical-development-program

yovandij@mail.nih.gov

National Cryo-Electron Microscopy Facility

- Facility to provide cryo-EM images collected on state-of-the-art instruments to extramural academic users who can show that they have specimens of the required quality ready for imaging at high resolution

- Titan Krios microscope facility, where users can apply for a 48-hour imaging session of up to two different samples that will be loaded at one time together for each session.

https://www.cancer.gov/research/resources/cryoem/access

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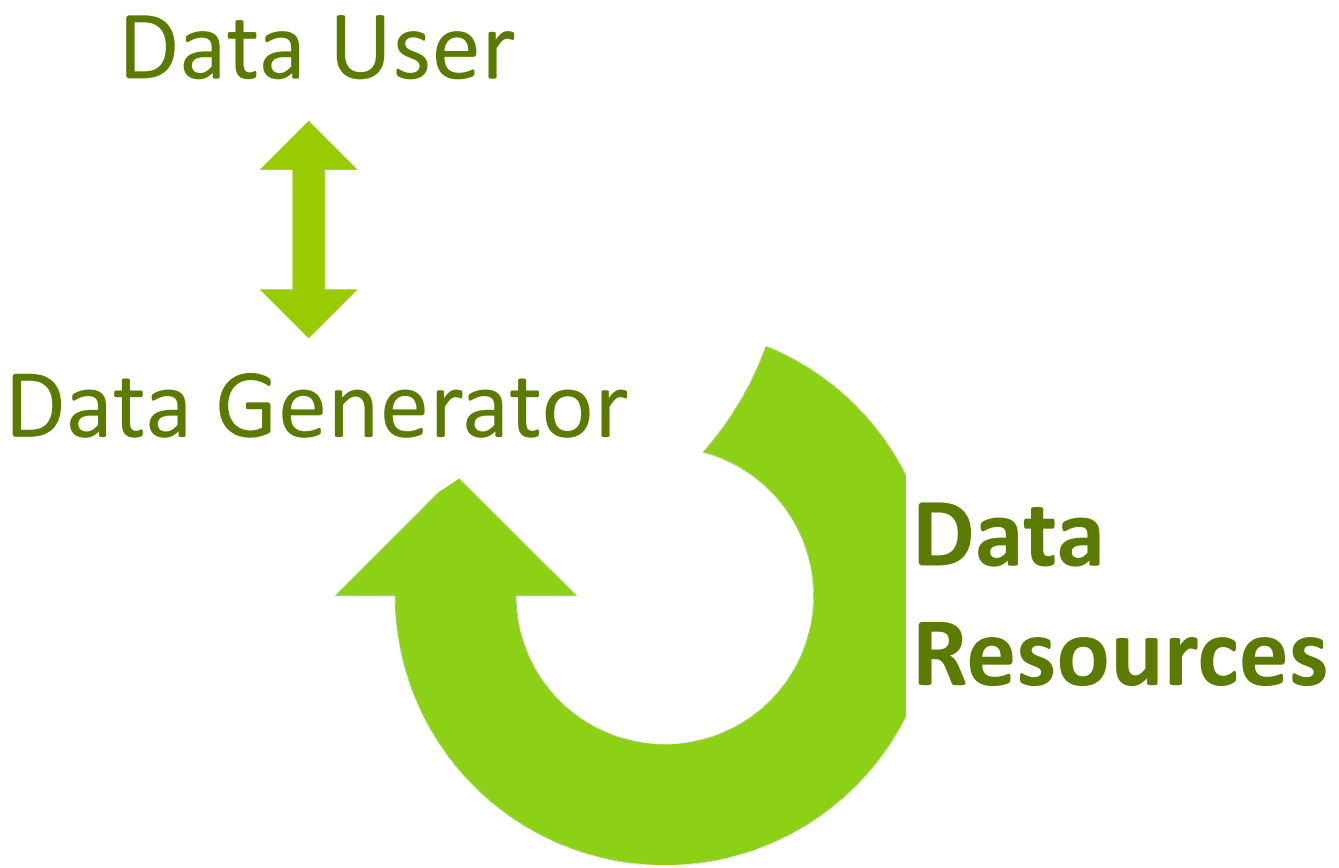
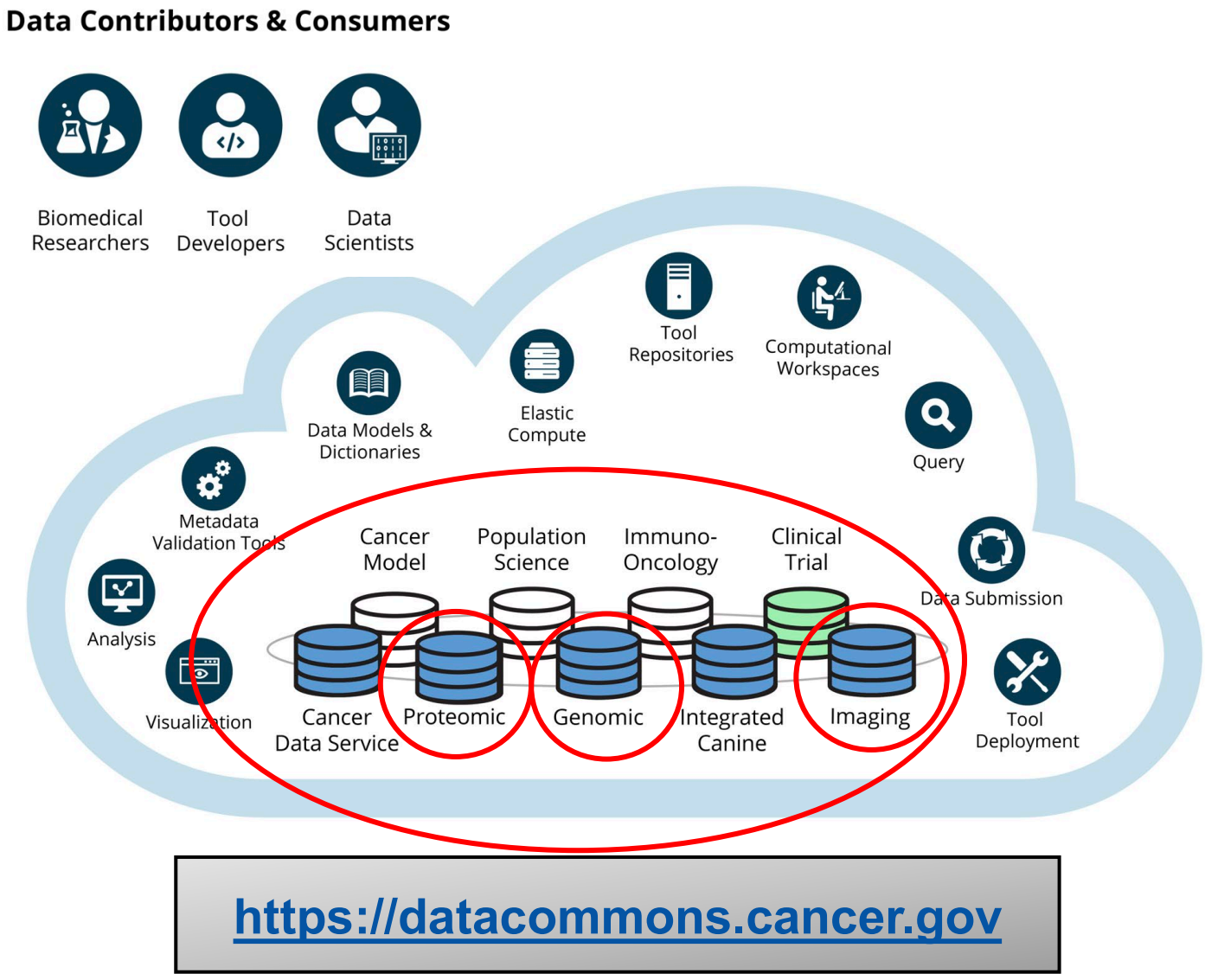


Surveillance, Epidemiology, and End Results Program (SEER)

- Provides information on cancer statistics in an effort to reduce the cancer burden among the U.S. population.
- Cancer data from registries covering 35% of the U.S. population
- SEER is managed by the Surveillance Research Program (SRP) in the Division of Cancer Control and Population Science (DCCPS), NCI
- Data includes cancer incidence and population data associated by age, sex, race, year of diagnosis, and geographic areas
- Releases new research data every spring based on the previous November's submission of data

https://seer.cancer.gov

Cancer Research Data Commons (CRDC)



https://datacommons.cancer.gov

- Data are stored in domain- or program-specific repositories, called **Data Repositories.**
  - Genomic Data Commons (includes **TCGA** Data) https://portal.gdc.cancer.gov
  - Proteomic Data Commons (includes **CPTAC** Data) https://pdc.cancer.gov/pdc
  - Imaging Data Commons (includes **TCIA** Data) https://portal.imaging.datacommons.cancer.gov
- **NCI Cloud Resources** provide compute capability for the users of CRDC data (hosted by The Broad Institute, Institute for Systems Biology, and Seven Bridges)
- Researchers can combine their own data and tools with CRDC data for integrative analysis

Cancer Moonshot Data Resources

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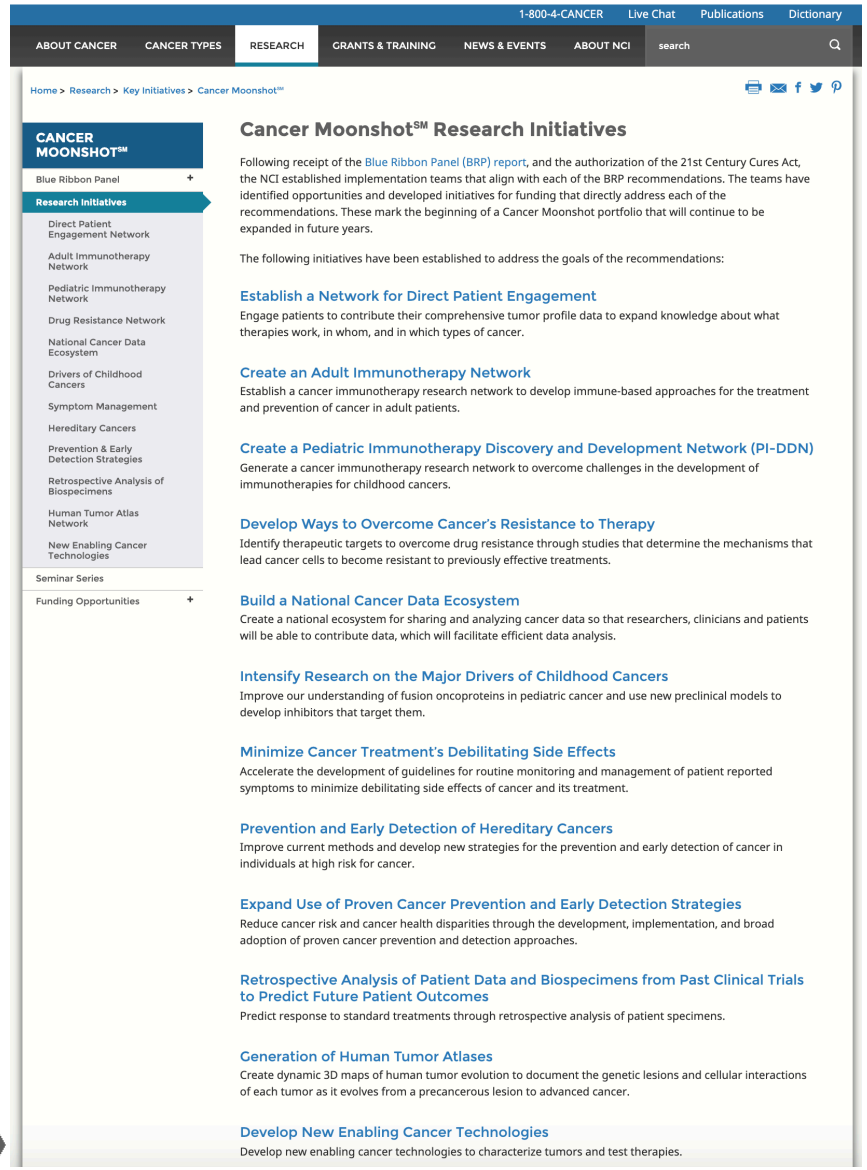
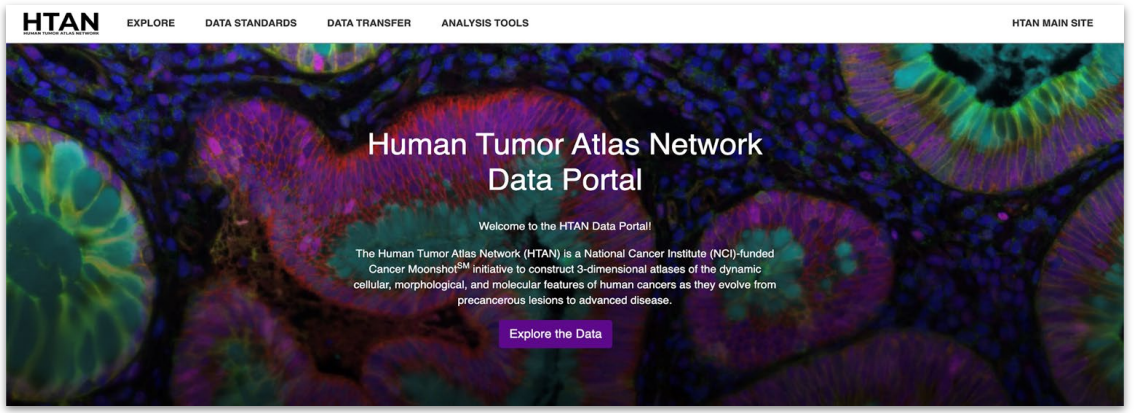




https://www.cancer.gov/research/key-initiatives/moonshot-cancer-initiative

https://www.iotnmoonshot.org/en/resources/data-sharing-catalog/

NCI Data Resources

CTD² Data Portal

The Broad Institute	4 Datasets
Columbia University	7 Datasets
Dana-Farber Cancer Institute	13 Datasets
Emory University	6 Datasets
Fred Hutchinson Cancer Research Center – 1	6 Datasets
Fred Hutchinson Cancer Research Center – 2	3 Datasets
Johns Hopkins University	2 Datasets
Oregon Health and Science University – 1	1 Datasets
Oregon Health and Science University – 2	0 Datasets
Stanford University	5 Datasets
Translational Genomics Research Institute (complete)	3 Datasets
University of California San Diego	0 Datasets
University of California San Francisco – 1	3 Datasets
University of California San Francisco – 2	4 Datasets
University of Texas MD Anderson Cancer Center (complete)	4 Datasets
University of Texas Southwestern Medical Center (complete)	8 Datasets

https://ocg.cancer.gov/programs/ctd2/data-portal

Cancer Systems Biology Consortium (CSBC)

https://csbconsortium.org

Physical Sciences - Oncology Network (PS-ON)

https://physics.cancer.gov

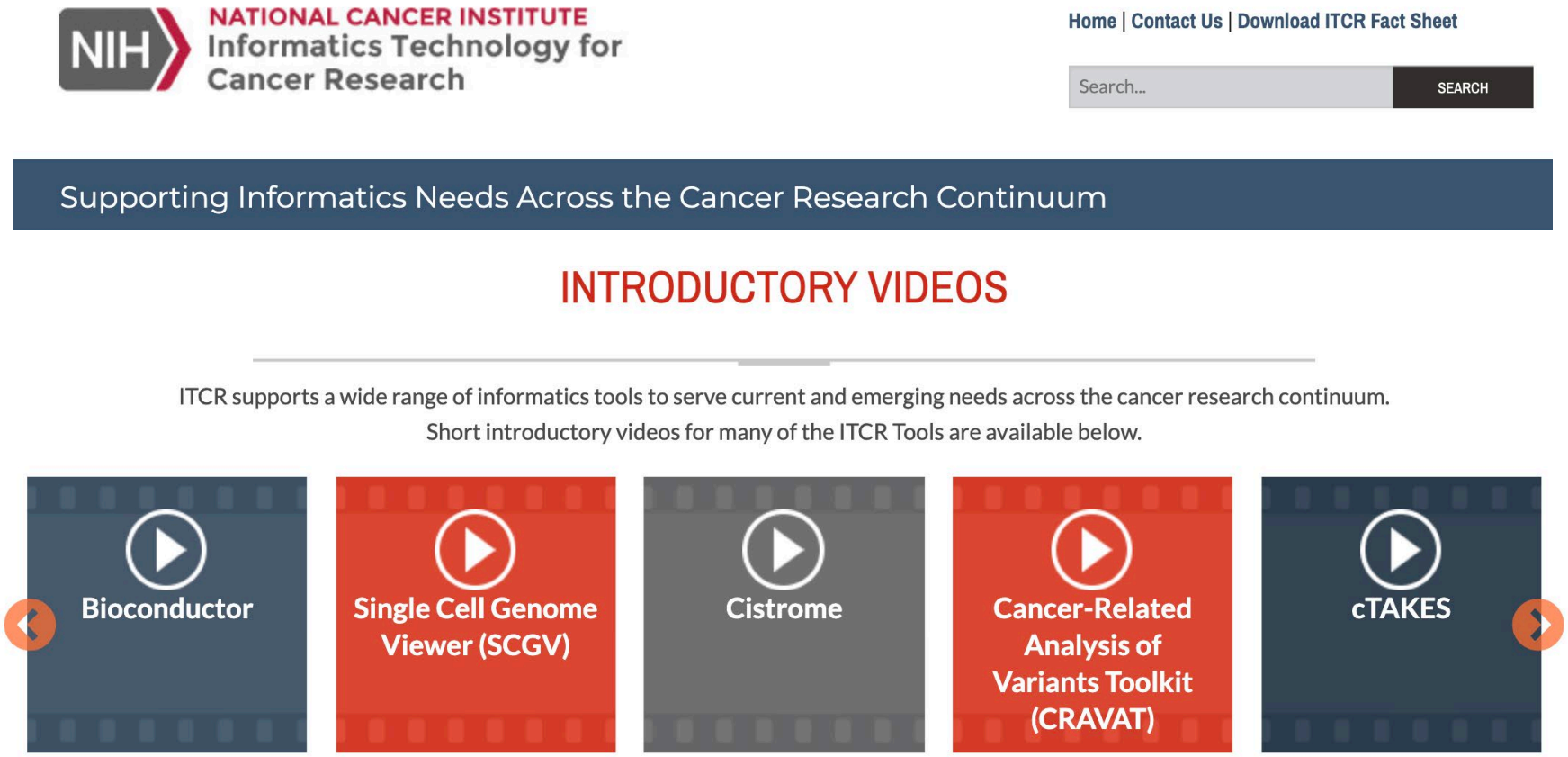
Cancer Complexity Knowlege Portal

https://www.cancercomplexity.synapse.org/

Data Analysis Tools

Informatics Technology for Cancer Research

https://itcr.cancer.gov



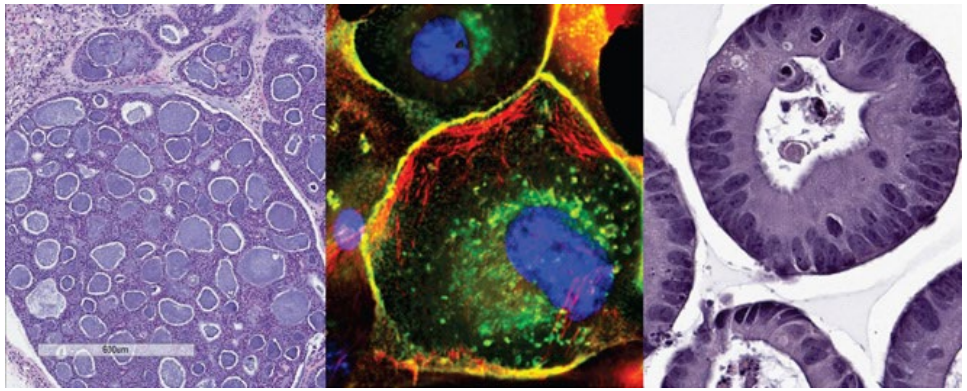
NCI Resources for Researchers

Clinical Resources

Patient-derived Models Repository (PDMR)

- A national repository of Patient-Derived Models (PDMs) comprised of patient-derived xenografts (PDXs), in vitro patient-derived tumor cell cultures (PDCs) and cancer associated fibroblasts (CAFs) as well as patient-derived organoids (PDOrg).

- Generated from primary and metastatic tumor tissues and blood specimens supplied by NCI-supported clinical trials, research programs and Cancer Centers
  - Patient-derived xenografts
  - Patient-derived tumor cell cultures
  - Cancer associated fibroblasts
  - Patient-derived organoids



https://pdmr.cancer.gov

NCI_PDM_Repository@mail.nih.gov

PREVENT Cancer Preclinical Drug Development Program (PREVENT)

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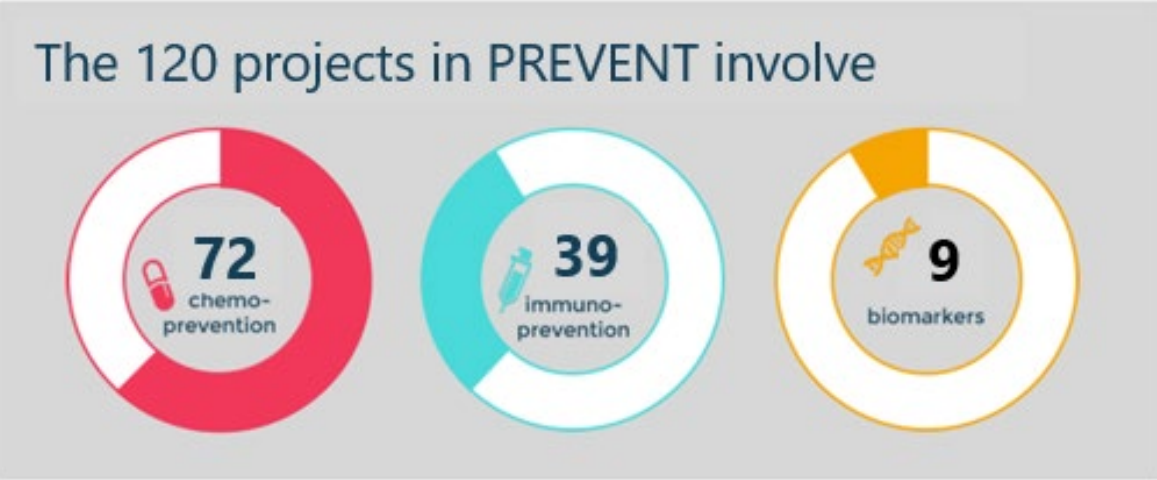
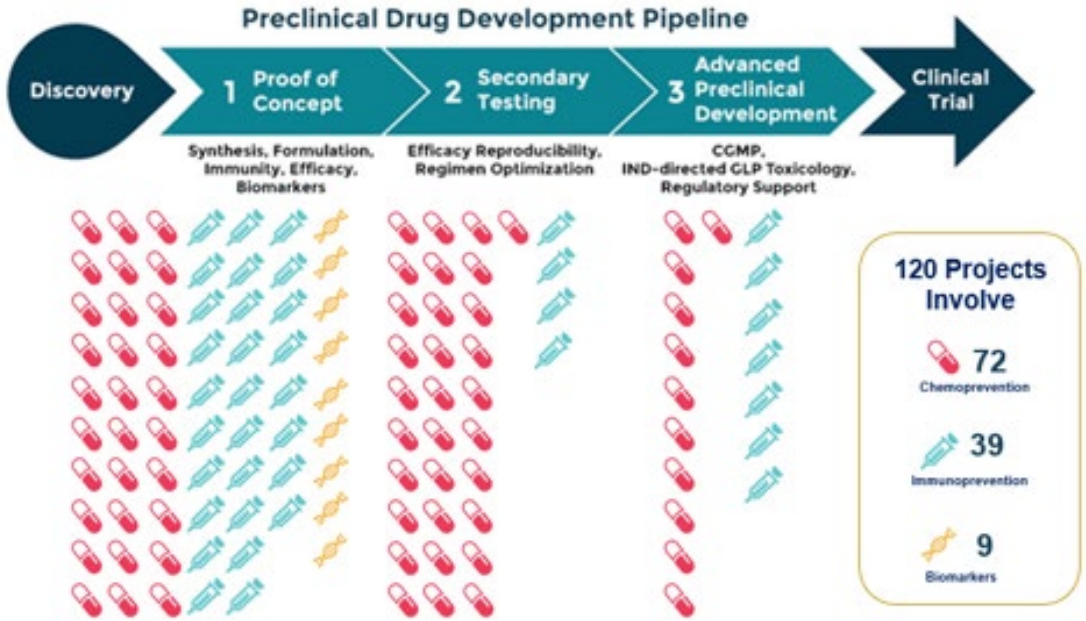
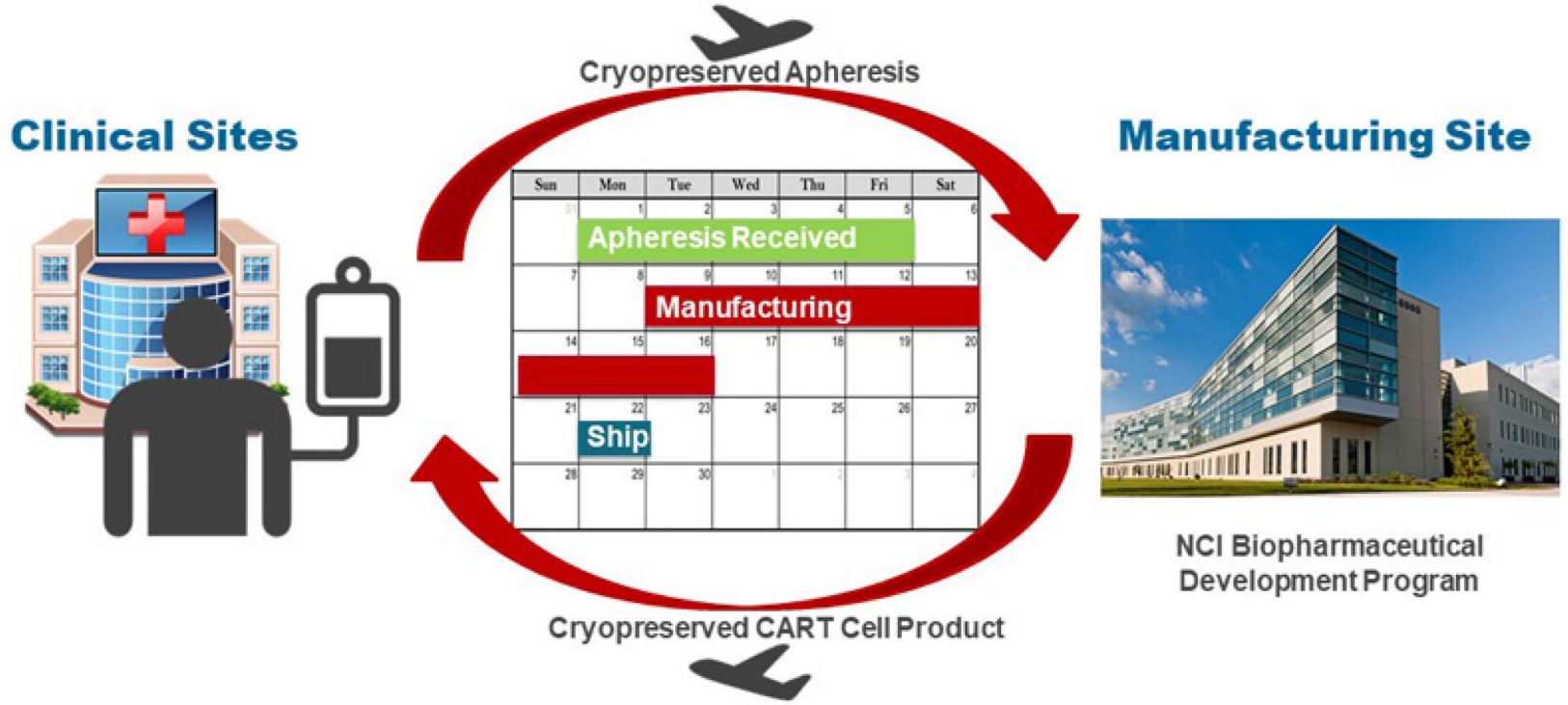
PREVENT Cancer Preclinical Drug Development Program (PREVENT) supports the best ideas in cancer prevention using NCI contract resources





https://prevention.cancer.gov/node/2976

NCI Experimental Therapeutics (NExT)



NCI Manufacturing for multi-center CAR-T cell trials at the Frederick National Lab for Cancer Research (FNLCR)

https://next.cancer.gov

Annotated Biospecimens

National Clinical Trials Network Navigator (NCTN Navigator)

- For cancer researchers interested in conducting studies using **specimens and clinical data collected from cancer treatment trials** (239 trials, 150 K patients, 2 M Specimen)

- Specimens are donated by patients in NCI-sponsored, completed Phase III trials and include **tumor tissue, nucleic acids, blood, bone marrow,…**

https://navigator.ctsu.org/navigator/login

Navigator Process Flow

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Experimental Resources

Clinical Resources

Data Resources

https://www.cancer.gov/research/resources

https://www.cancer.gov/about-nci/organization/dcb/researcher-resources