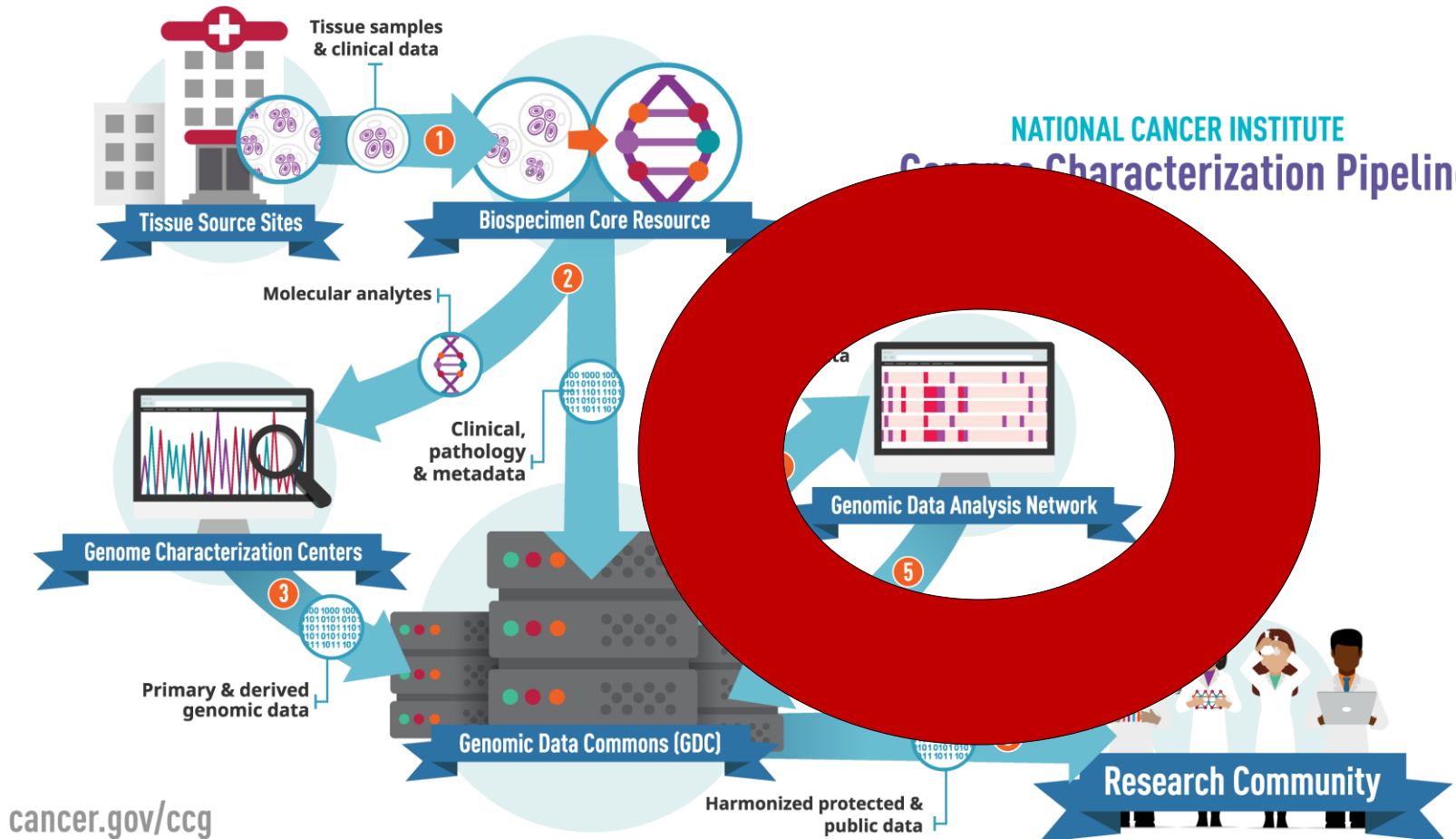National Cancer Institute

The Genomic Data Analysis Network (GDAN)

Background

- "Lessons learned" from the TCGA :
  - Need of high quality molecular analytes
  - Experiments performed utilizing strict standardized protocols
  - Deposit the results in structured formats in publicly accessible databases.
- The unique aspect of TCGA Project was the development and function of an integrated research network. Due to the TCGA success, all future CCG-approved genomics projects will utilize a similar model.

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Projects to be Served by Pipeline

- The proposed analytical network will serve to understand the data generated by CCG programs as well as collaborations with other divisions:

  – The Adjuvant Lung Cancer Enrichment Marker Identification and Sequencing Trials (ALCHEMIST)

  – Exceptional Responders (ER, in collaboration with DCTD)

  – Clinical Trials Sequencing Program (CTSP, in collaboration with DCTD)

  – Carcinomas of Unknown Primary (CUPP)

  – Refractory Cancers (Peripheral T-Cell Lymphomas, Recurrent GBMs)

- This resource that can be utilized by any NCI project that uses the characterization pipeline developed for TCGA and now available as a set of contracts.

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Composition of GDAN

- The whole network will be made up of specialized cores that will address the following competencies:

  - *Coding and Non-coding Mutations*
  - *Expression/mRNA Analysis.*
  - *Copy Number /Purity Analysis*
  - *miRNA analysis*
  - *Long non coding RNA analysis*
  - *Batch Effects/Integration*
  - *Methylation Analysis*
  - *Pathway analysis*
  - *Single Cell Sequencing Analysis*
  - *Analysis of circulating cell-free DNA (cfDNA) and circulating tumor DNA (ctDNA)*
  - *Long-read sequencing analysis*
  - *Special Genomics Analysis*
  - *Digital Imaging Analysis*

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Mechanisms of Award & Budget

- All awards are expected to be U24 Cooperative Agreements.
- Budget is as follows (in thousand dollars):

GDAC Type	Award Number	Amount /Year	FY2021	FY2022	FY2023	FY2024	FY2025
Specialized	10	500	5,000	5,000	5,000	5,000	5,000
		Total	5,000	5,000	5,000	5,000	5,000
Grand Total		25,000					

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PUBLICATIONS OF THE CANCER GENOME ATLAS

TCGA

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Questions?