NHGRI Genomic Data Science Analysis, Visualization, and Informatics Lab-space Clinical Resource (ACR)

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The Forefront of Genomics®

Analysis platform

Terra: 284 public workspaces

Dockstore: 1,051 analysis workflows

Bioconductor: 2,083 software packages

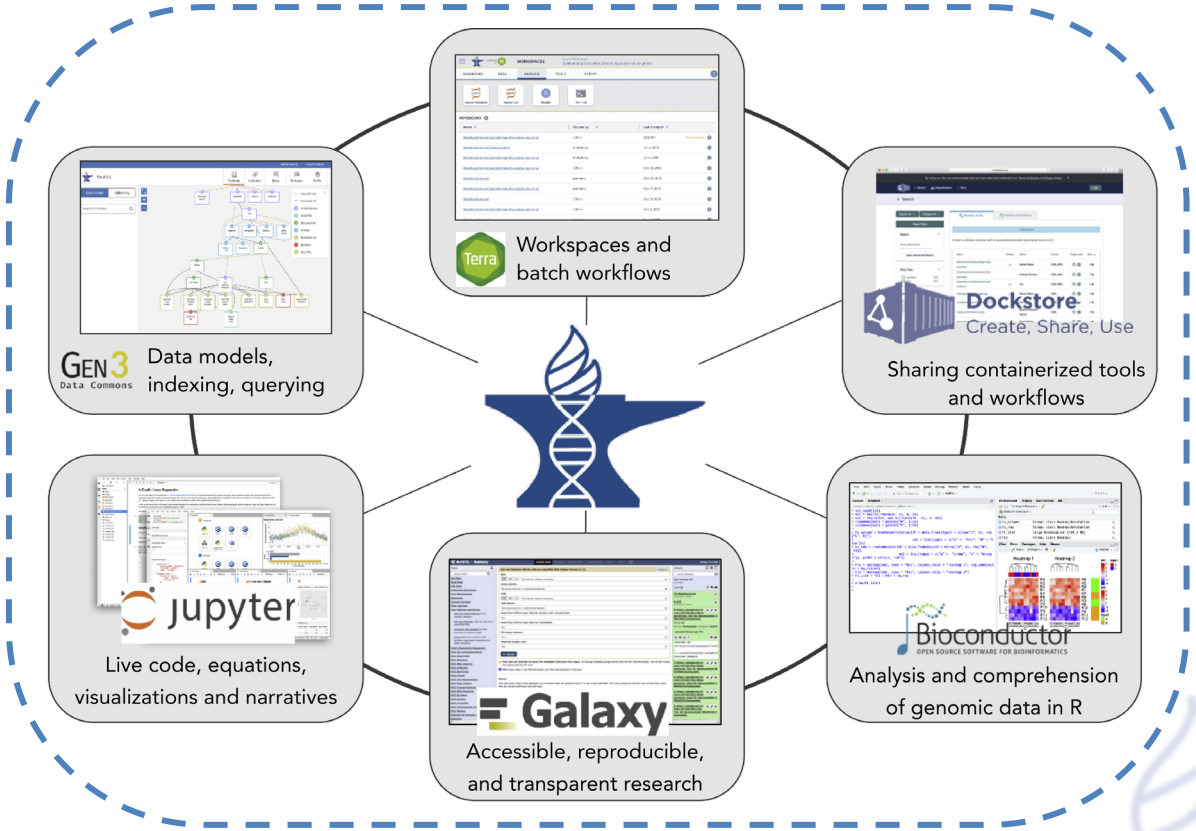
Galaxy: 8,568 tools (incl. PharmCat)

Jupyter, Gen3, seqr…

Global Alliance for Genomics & Health

Collaborate. Innovate. Accelerate.

HL7 FHIR



FedRAMP

FedRAMP certified

Implemented on Google Cloud Platform

Support For The Clinical Research Community

Incorporate	tools for clinical genomics implementation into AnVIL
Add	investigators with clinical research priorities in the development of AnVIL's infrastructure and services
Encourage	investigators to identify use cases for clinical research and analysis
Establish	trust relationships with clinical sites and hospitals
Support	NHGRI funded programs in their ability to utilize AnVIL for genomic-based clinical research

Approach, Requirement, & Process

A comprehensive approach is needed for AnVIL to serve the genomic based clinical research community

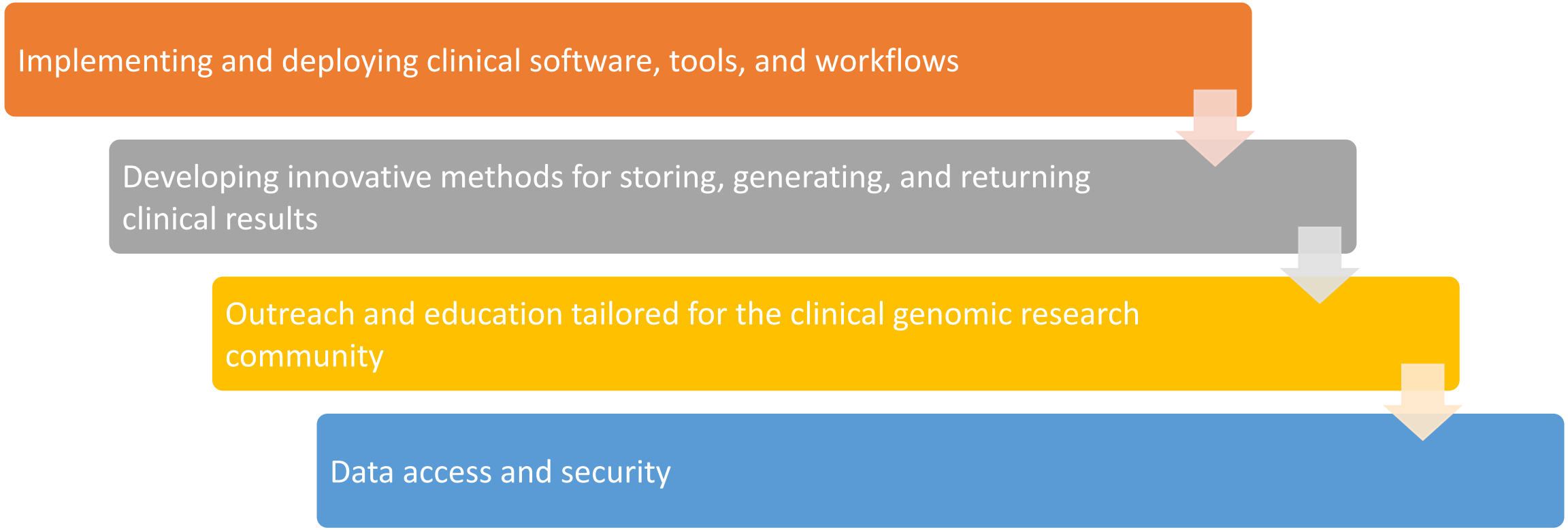
Requires clinical research expertise to add to the existing AnVIL team

Open competition to address both

ACR Goal

ACR will leverage the existing AnVIL ecosystem to provide a suite of interoperable clinical components to assist users in the transition to a collaborative all-digital environment to foster genomic-based clinical research

ACR Clinical Components



Implementing and deploying clinical software, tools, and workflows

- Provide user-friendly open-source software, tools, and workflows to visualize and analyze relationships between and among heterogenous datasets
- Provide a foundation for users to conduct research and development of digital health applications

Outreach and education tailored for the clinical genomic research community

Expand existing AnVIL outreach and educational resources to include:

- focus group sessions
- assisting investigators in developing use cases
- education sessions to serve specific groups
- soliciting and addressing ACR related users' feedback

Developing innovative methods for storing, generating, and returning clinical results

Develop and implement pilots using FHIR and GA4GH standards and APIs

Assist investigators in understanding how AnVIL can facilitate genomic-based clinical research

Data access and security

ACR is expected to adhere to the data access and security requirements of AnVIL

Address the security needs of clinical research sites in making AnVIL a HIPAA compliant resource.

ACR Team Expertise

- Clinical informatics
- Cloud platform experience
- Leverage and combine diverse datasets to conduct genomic-based clinical research analysis
- Building trust relationships with clinical research sites and hospitals

Budget Summary

- Three Cooperative Agreement (U24) awards
- Five years, FY 2023 - FY 2027
- AnVIL renewal: Limited to AnVIL Primary awardees
- ACR: Excludes AnVIL Primary Awardees

	FY23	FY24	FY25	FY26	FY27
ACR	$1.5M	$1.5M	$1.5M	$1.5M	$1.5M
AnVIL Renewal	$6.5M	$6.5M	$6.5M	$6.5M	$6.5M

A Secure, Federated Data Analysis Ecosystem

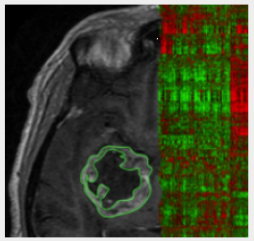
Galaxy

Pharmcat

PharmCAT:
Pharmacogenomics Clinical Annotation Tool via Galaxy

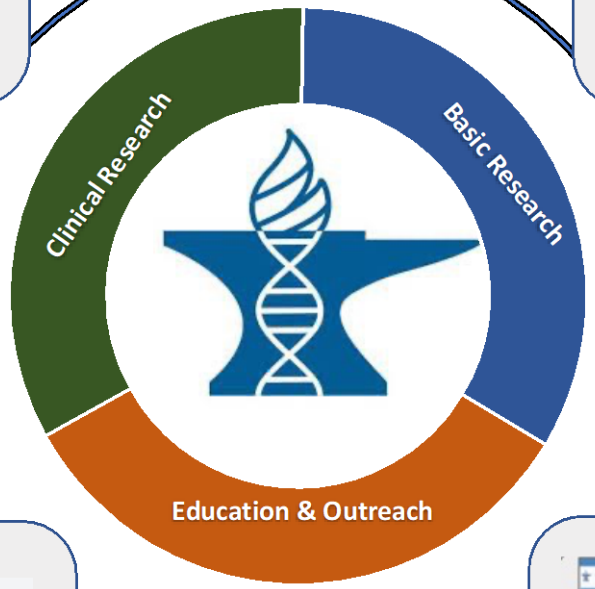
Test environment for developing genomic based health applications

Sharing containerized tools and workflows



Combining heterogenous data for genomic-based clinical research analysis

Analysis and comprehension of genomic data in R



seqr

An open source software platform for rare disease genomics

Terra

Workspaces and batch workflows

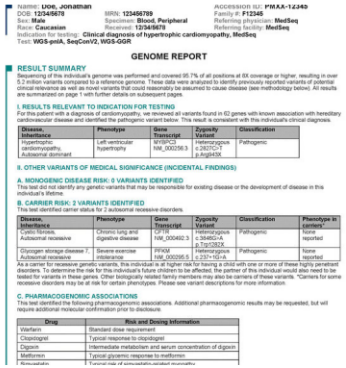
GEN3 Data Commons

Data models, indexing, querying

FedRAMP

HIPAA Compliant

FHIR



GENOME REPORT

RESULT SUMMARY

Clinical Research Reporting

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