



## GNomEx

Genomic Experiment Repository & LIMS

### CONFIGURATION

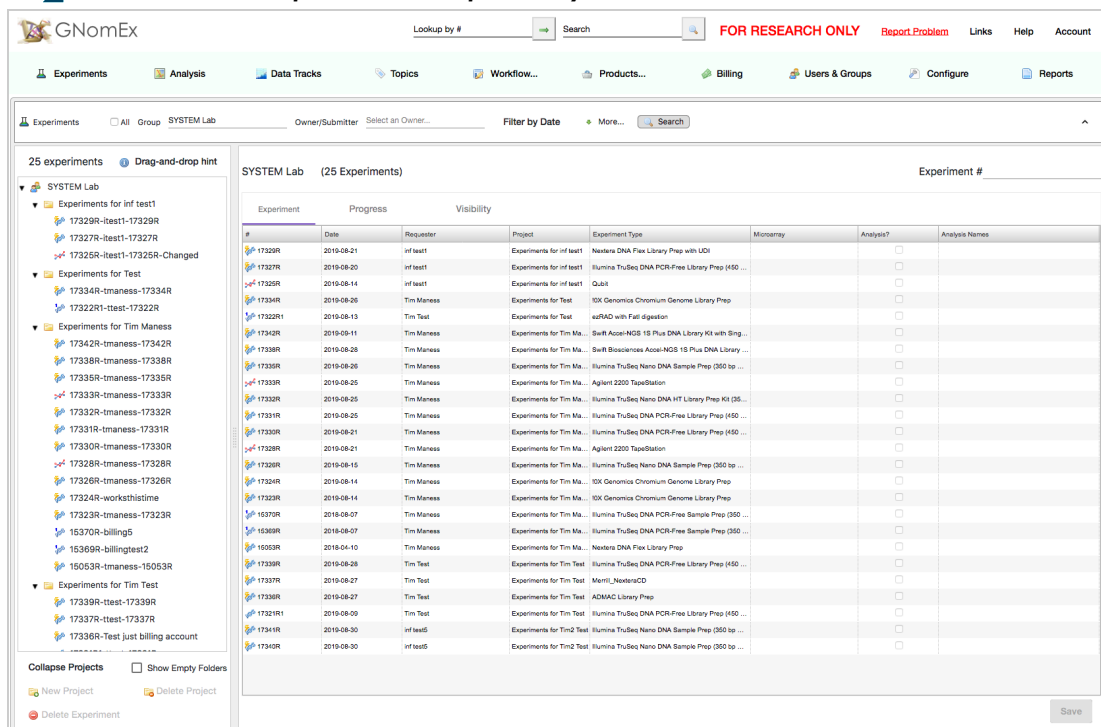
GNomEx has unlimited configuration options. Users have complete control of what data should be collected for an experiment or analysis. New experiment platforms can be defined as new sequencing hardware becomes available. Multiple cores can be defined to support different sequencing centers.

### COLLABORATION

GNomEx documents, organizes, and tracks high-throughput next-generation sequencing experiments performed by the High-Throughput Genomics and Bioinformatic Analysis Shared Resource.

### INTEGRATION

Integrates with itBioPath for access to specimen data and ordering of experiments. Linked to other HCI databases (CCR, RSR, Tumor Registry, Molecular Profiling, and CORE) for access to critical data from research and clinical systems.



The screenshot shows the GNomEx web application interface. At the top, there is a navigation bar with links for Experiments, Analysis, Data Tracks, Topics, Workflow, Products, Billing, Users & Groups, Configure, and Reports. Below this is a search bar and a filter by date dropdown. The main content area displays a list of experiments under the 'SYSTEM Lab' group. The list includes columns for Experiment #, Date, Requester, Project, Experiment Type, Monocore, Analysis?, and Analysis Names. The experiments are organized into folders, such as 'Experiments for inf test1', 'Experiments for Test', and 'Experiments for Tim Maness'.

Experiment #	Date	Requester	Project	Experiment Type	Monocore	Analysis?	Analysis Names
17329R	2019-08-21	inf test1	Experiments for inf test1	Nanopore DNA Flow Library Prep with UDI		<input type="checkbox"/>	
17327R	2019-08-20	inf test1	Experiments for inf test1	Illumina TruSeq DNA PCR-Free Library Prep (450 ...		<input type="checkbox"/>	
17325R	2019-08-14	inf test1	Experiments for inf test1	Qubit		<input type="checkbox"/>	
17324R	2019-08-28	Tim Maness	Experiments for Test	10X Genomics Chromium Genome Library Prep		<input type="checkbox"/>	
17322R1	2019-08-13	Tim Test	Experiments for Test	acRAD with Fast digestion		<input type="checkbox"/>	
17342R	2019-09-11	Tim Maness	Experiments for Tim Ma...	Swift Asses-NGS 15 Plus DNA Library Kit with Sing...		<input type="checkbox"/>	
17338R	2019-08-28	Tim Maness	Experiments for Tim Ma...	Swift Biosciences Asses-NGS 15 Plus DNA Library ...		<input type="checkbox"/>	
17335R	2019-08-28	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq Nano DNA Sample Prep (350 bp ...		<input type="checkbox"/>	
17333R	2019-08-25	Tim Maness	Experiments for Tim Ma...	Agilent 2200 TapeStation		<input type="checkbox"/>	
17332R	2019-08-25	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq Nano DNA HT Library Prep Kit (35...		<input type="checkbox"/>	
17331R	2019-08-25	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq DNA PCR-Free Library Prep (450 ...		<input type="checkbox"/>	
17330R	2019-08-21	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq DNA PCR-Free Library Prep (450 ...		<input type="checkbox"/>	
17328R	2019-08-21	Tim Maness	Experiments for Tim Ma...	Agilent 2200 TapeStation		<input type="checkbox"/>	
17326R	2019-08-15	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq Nano DNA Sample Prep (350 bp ...		<input type="checkbox"/>	
17324R	2019-08-14	Tim Maness	Experiments for Tim Ma...	10X Genomics Chromium Genome Library Prep		<input type="checkbox"/>	
17322R	2019-08-14	Tim Maness	Experiments for Tim Ma...	10X Genomics Chromium Genome Library Prep		<input type="checkbox"/>	
15370R	2018-08-07	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq DNA PCR-Free Sample Prep (350 ...		<input type="checkbox"/>	
15368R	2018-08-07	Tim Maness	Experiments for Tim Ma...	Illumina TruSeq DNA PCR-Free Sample Prep (350 ...		<input type="checkbox"/>	
15030R	2018-04-10	Tim Maness	Experiments for Tim Ma...	Nanopore DNA Flow Library Prep		<input type="checkbox"/>	
17339R	2019-08-28	Tim Test	Experiments for Tim Test	Illumina TruSeq DNA PCR-Free Library Prep (450 ...		<input type="checkbox"/>	
17337R	2019-08-27	Tim Test	Experiments for Tim Test	Mentill_NanoporeCD		<input type="checkbox"/>	
17336R	2019-08-27	Tim Test	Experiments for Tim Test	ADMAC Library Prep		<input type="checkbox"/>	
17321R1	2019-08-09	Tim Test	Experiments for Tim Test	Illumina TruSeq DNA PCR-Free Library Prep (450 ...		<input type="checkbox"/>	
17341R	2019-08-30	inf test5	Experiments for Tim2 Test	Illumina TruSeq Nano DNA Sample Prep (350 bp ...		<input type="checkbox"/>	
17340R	2019-08-30	inf test5	Experiments for Tim2 Test	Illumina TruSeq Nano DNA Sample Prep (350 bp ...		<input type="checkbox"/>	

GNomEx is a software solution developed by the Huntsman Cancer Institute (HCI) Research Informatics Shared Resource (RISR). It documents, organizes, and tracks data produced by the High-Throughput Genomics and Bioinformatic Analysis Shared Resource.

GNomEx serves as a data repository for genomic experiments and analyses. It also serves as a laboratory information management system (LIMS) that records information at all steps of the experimental process.

Through GNomEx, researchers can submit experiment requests electronically, check the status of pending experiments, and collect results for both raw and analyzed data files.

In addition to capturing experiment requests, researchers can organize experiments within project folders, and they can create and search structured annotations on projects, experiments, and their samples.

GNomEx helps manage experiments as they are performed in the laboratory. It tracks experimental parameters at every workflow step, documents protocols associated with experimental handling of the samples, registers barcodes for the tracking of sequencing data and flowcells, and manages billing.

## REPORTING

Experiment results and downstream analyses can be downloaded as individual files or at the folder level.

Guest users can browse experiments and download data that has been made publicly available.

## SECURITY

Safeguards experiment annotations and data files so that only permitted researchers are allowed access. Investigators can broaden access to an experiment in order to share it with outside collaborators or make it publicly available.

## GNomEx Features

GNomEx documents, organizes, and tracks experiments performed by the High-Throughput Genomics and Bioinformatic Analysis Shared Resource.

**Experiment Ordering** – A wizard-like interface walks the researcher through the steps of ordering an experiment (submitting a request). Automatic email functionality keeps the researcher informed on sample quality and experiment status.

**Experiment Annotation** – Supports annotating experiments with the experiment design and sample characteristics.

**Experiment Browsing and Searching** – Organizes experiments within project folders. Supports browsing by experiment platform, date, and name of the researcher or lab group. Allows performing simple text searches as well as advanced, criteria-based searches on experiments and associated analyses.

**Serving Experimental Results and Analysis Data Files** – Allows downloading experiment results and downstream analyses as individual files or at the folder level.

**Public Experiment Repository** – Guest users can browse experiments and download data that the researcher has made publicly available.

**Laboratory Workflow** – Supports tracking experiment progress via a worklist and each lab step involved in the sequencing. Provides screens for managing and documenting laboratory protocols associated with experimental processes.

**Billing** – Generates charges based on structured pricing sheets that the core facility reviews and approves. Automatically emails each lab's billing contact an invoice of the services performed during the month. GNomEx interfaces with the University general ledger system for electronic billing.

## Requirements

- Google Chrome (latest)
- Microsoft Edge (latest)
- Safari (latest)

## Services Available

Training  
Technical Support  
Application Configuration  
Query and Report Generation

