ROSALIND®
Powered by ONRAMP

ACCELERATE YOUR RESEARCH

Exploring nCounter® data analysis on the ROSALIND discovery & collaboration platform.

nanoString®

QUICK START GUIDE

Learn more at www.onramp.bio/nanostring

An Interactive Experience for Analyzing and Collaborating with your Genomic Datasets

Why ROSALIND?

ROSALIND is a cloud-based muliti-omics discovery and collaboration platform that enhances the data analysis experience. We offer standardized pipelines for RNA-seq, scRNA-seq, ChIP-seq, ATAC-seq, smallRNA-seq, and nCounter data. Simply upload your files and receive same-day results including: quality control, differential expression, pathways, and much more.

Scientists of every skill level can utilize ROSALIND since no programming or bioinformatics expertise is required. ROSALIND instantly provides powerful downstream analysis and truly insightful visualizations on gene expression datasets. Our interactive analysis is designed to be easy to use and save valuable time. ROSALIND even offers the ability to share experiments and collaborate in real-time.

Why use NanoString nCounter for Gene Expression Analysis?

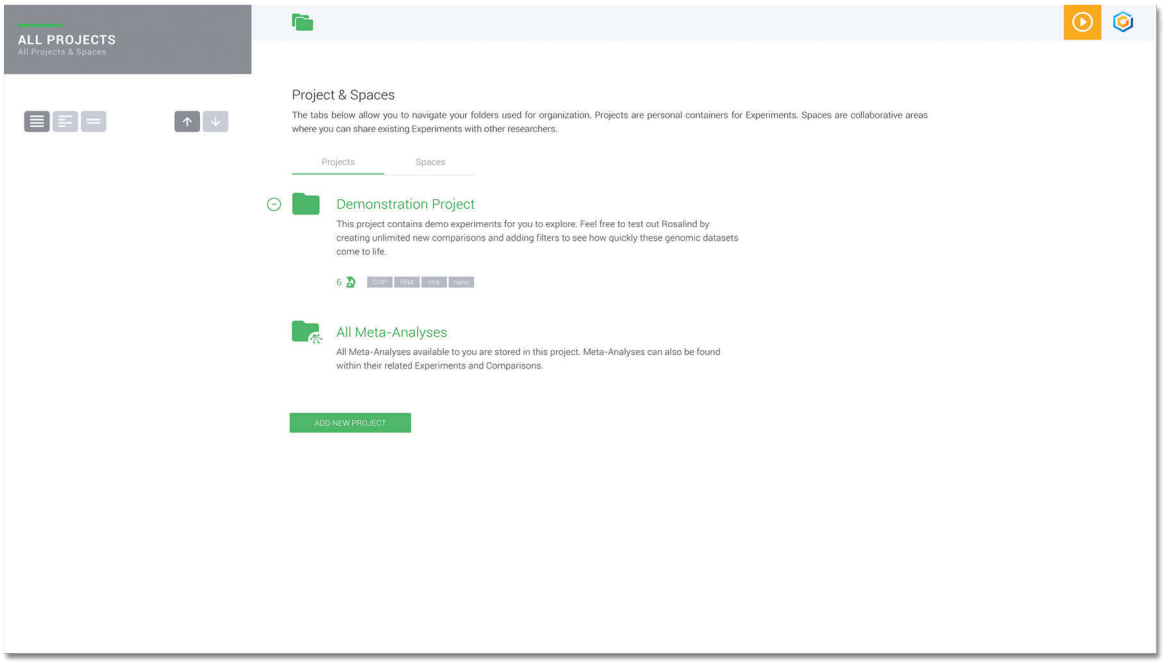
The study of gene expression provides valuable insights into the nature of diseases and the effect of treatments by quantifying the activity of RNA in a biological sample. Scientists working in Oncology, Immunology, Infectious Diseases (more recently, COVID-19), Regenerative Medicine, Drug Discovery and other areas of research often conduct experiments between healthy and disease states to identify differentially expressed genes and biological pathways to discover therapeutic targets. Comparisons between these differential patterns reveal unique gene signatures that are valuable for drug and diagnostic development.

NanoString's nCounter Analysis System utilizes a proprietary molecular barcoding technology to count RNA molecules directly without reverse transcription or amplification. This enables development of highly multiplexed gene expression assays that are simple to run and highly reproducible. Because it doesn't rely on enzymology, nCounter is highly tolerant of Formalin Fixed Paraffin Embedded (FFPE) tissue and other sample types where RNA degradation and/or effects of fixation are a concern. nCounter is often utilized in translational research studies and clinical trials as well as basic research.

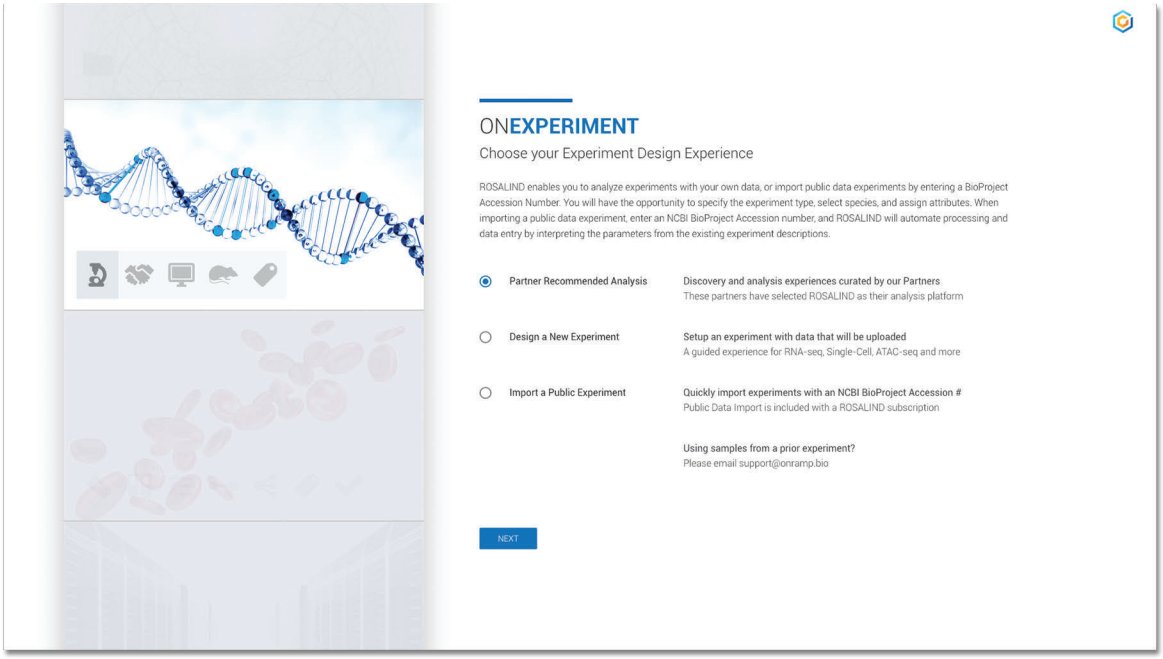
NanoString offers a catalogue of pre-designed Panels spanning a wide range of biology with specific emphasis on Oncology/ImmunoOncology, Immunology, and Neuroscience. The panels consist of hundreds of highly curated and annotated genes covering a particular area of biology. These panels can be customized by adding genes specified by the end-user. NanoString also offers fully customizable designs to fit virtually any research need.

Analyze More

Setup your experiment in minutes.



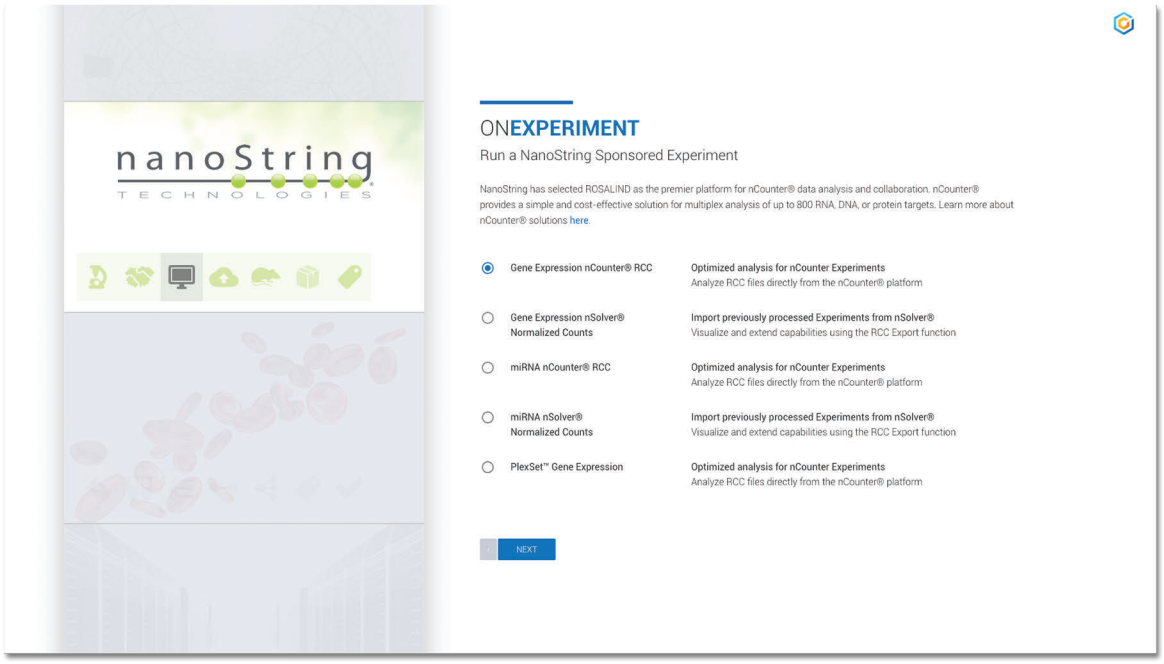
Beginning your experiment design is as easy as clicking ADD NEW PROJECT or ADD NEW EXPERIMENT from anywhere across the platform.



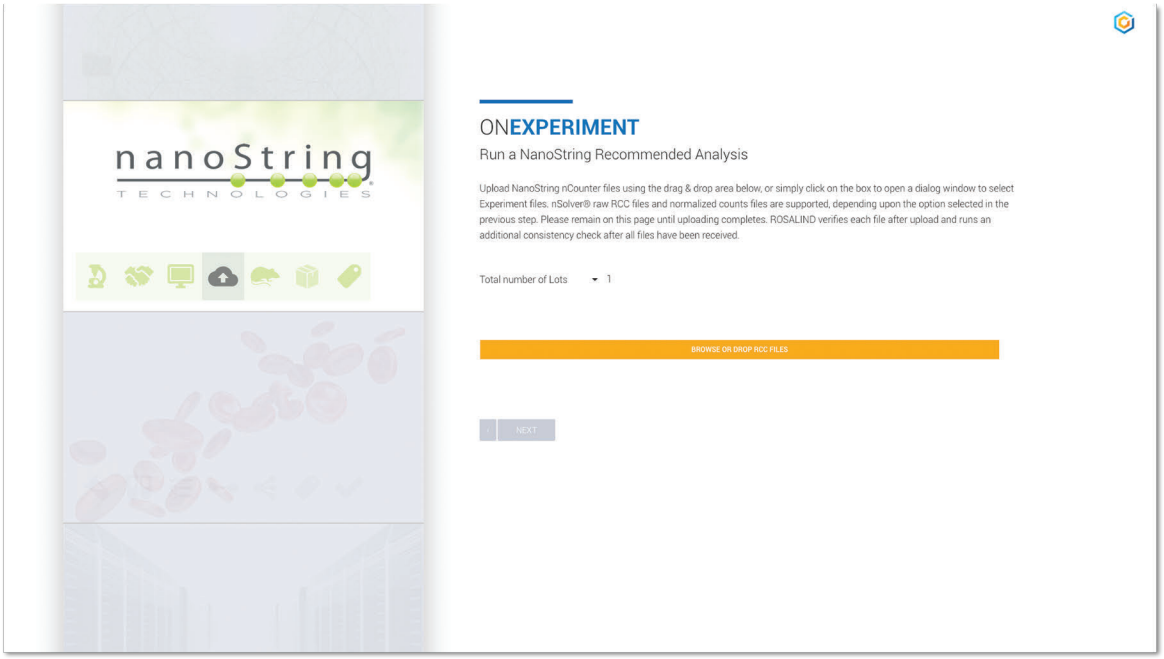
Begin your NanoString experiment by selecting the radio button: "Partner Recommended Analysis" and clicking NEXT.

Analyze More

Setup your experiment in minutes.



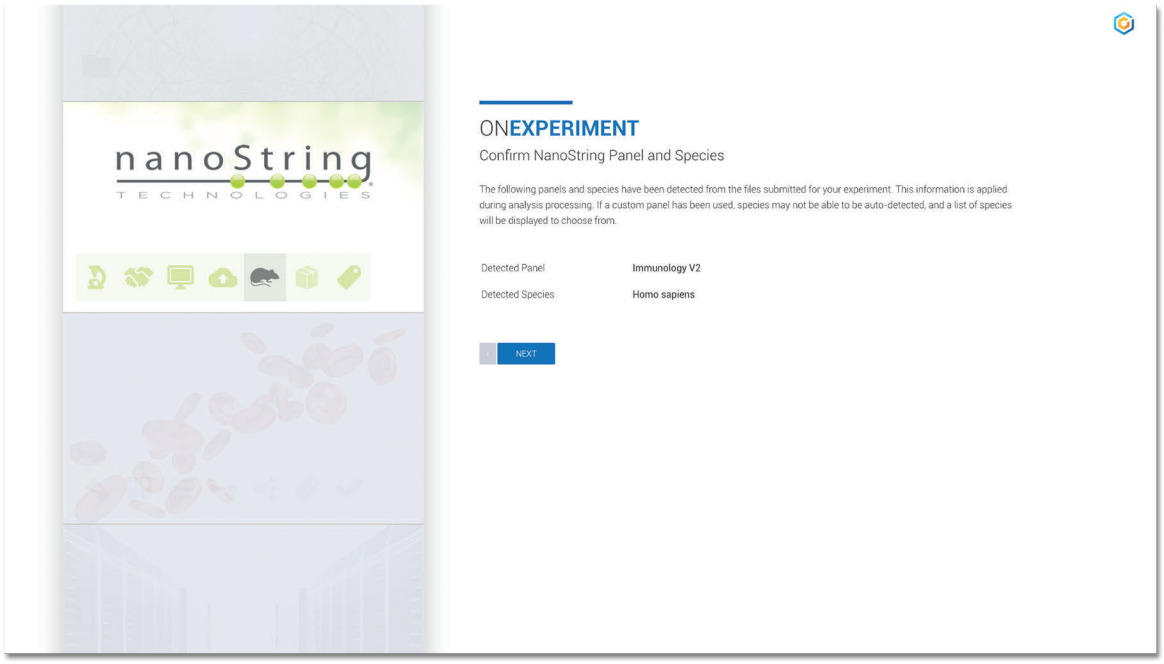
Choose one of the various nCounter® experiment types from the list provided.



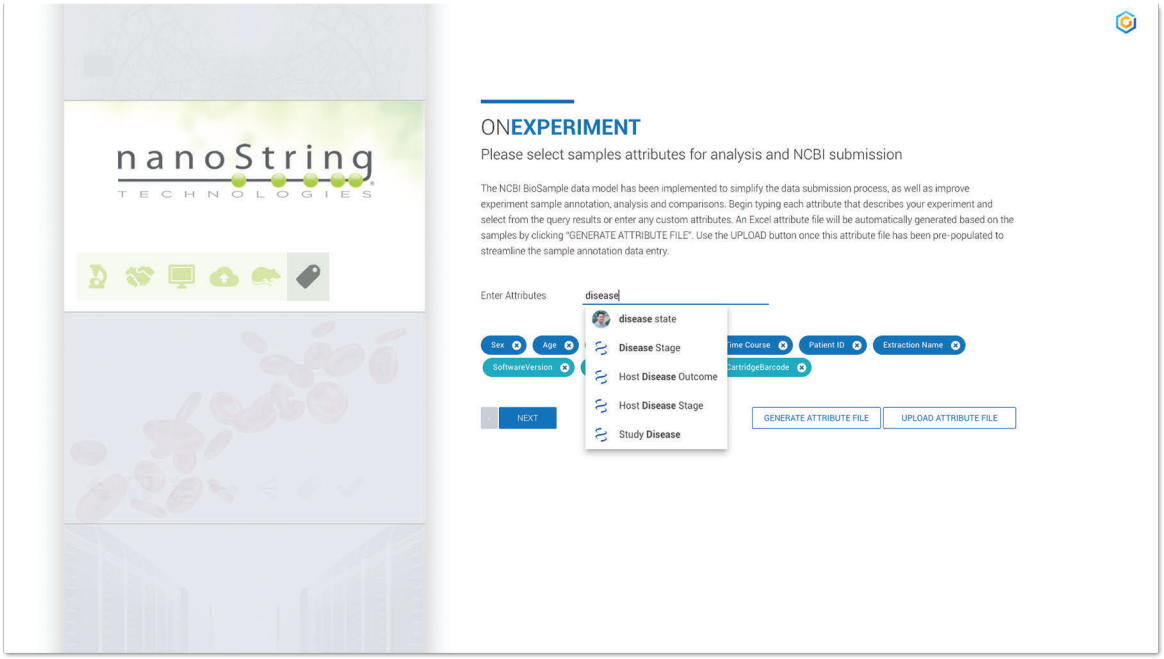
Upload NanoString nCounter® files using the drag and drop box, or click on the box to open a dialog window to add the RCC files for your experiment.

Analyze More

Setup your experiment in minutes.



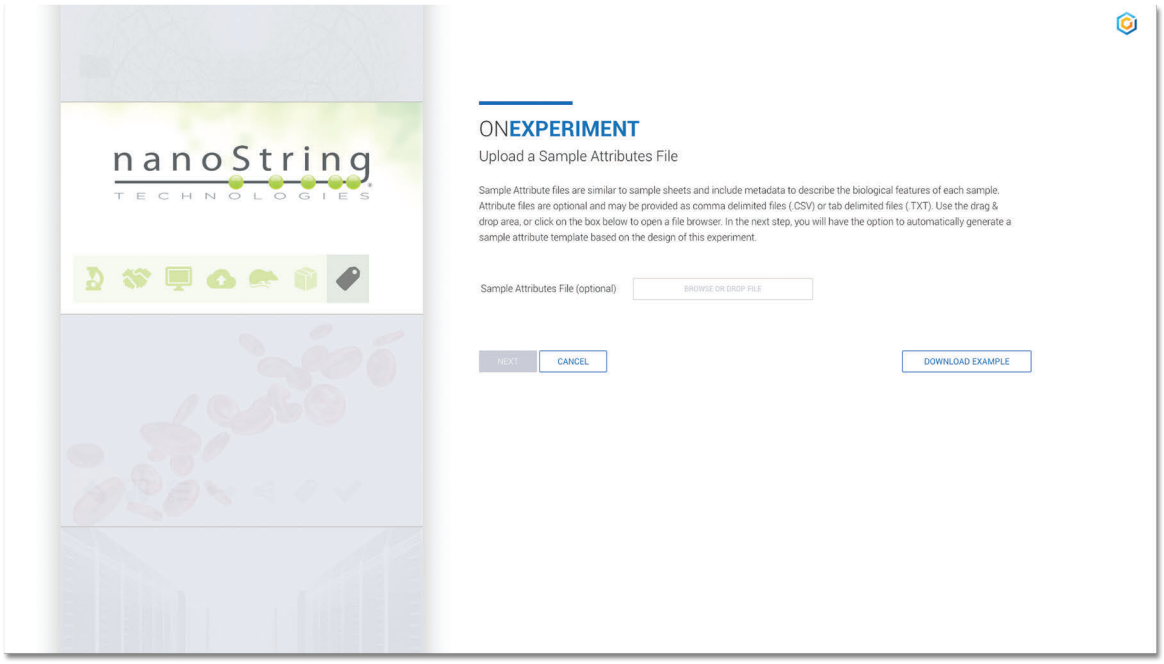
NanoString panels and species are usually autodetected. If not, you can also use the dropdown menu to select the desired species.



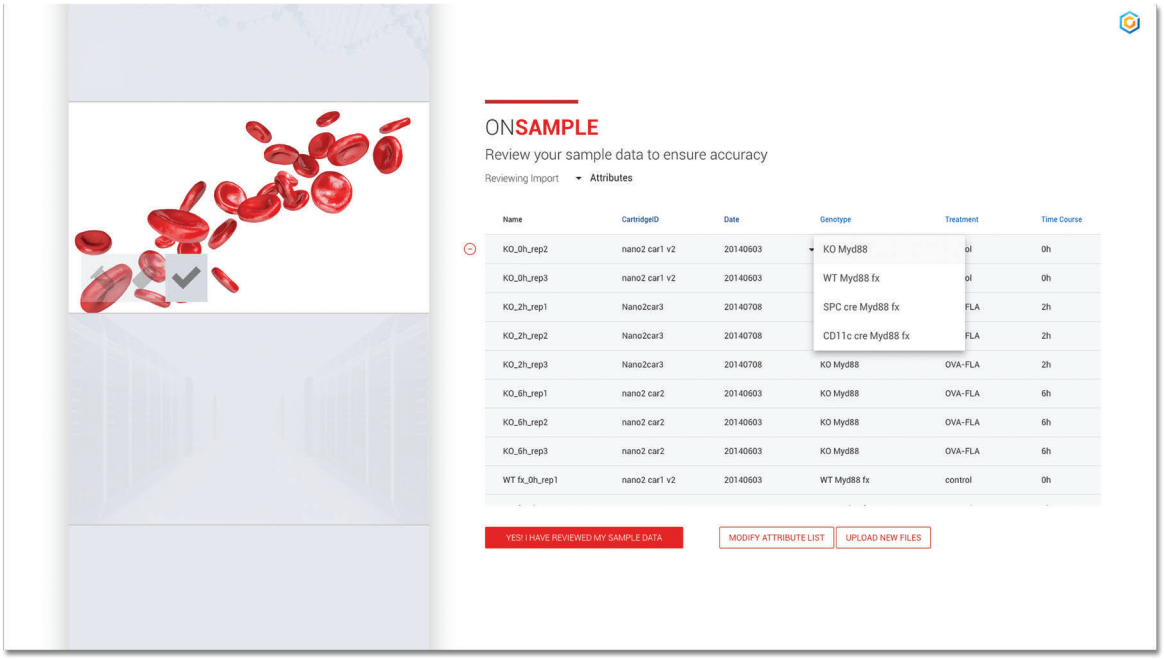
ROSALIND uses the NCBI BioProject and BioSample data model for annotating samples and to simplify GEO/SRA submissions. Click GENERATE ATTRIBUTE FILE for a custom file to edit annotation values in Excel and upload this file by clicking UPLOAD ATTRIBUTE FILE.

Analyze More

Setup your experiment in minutes.



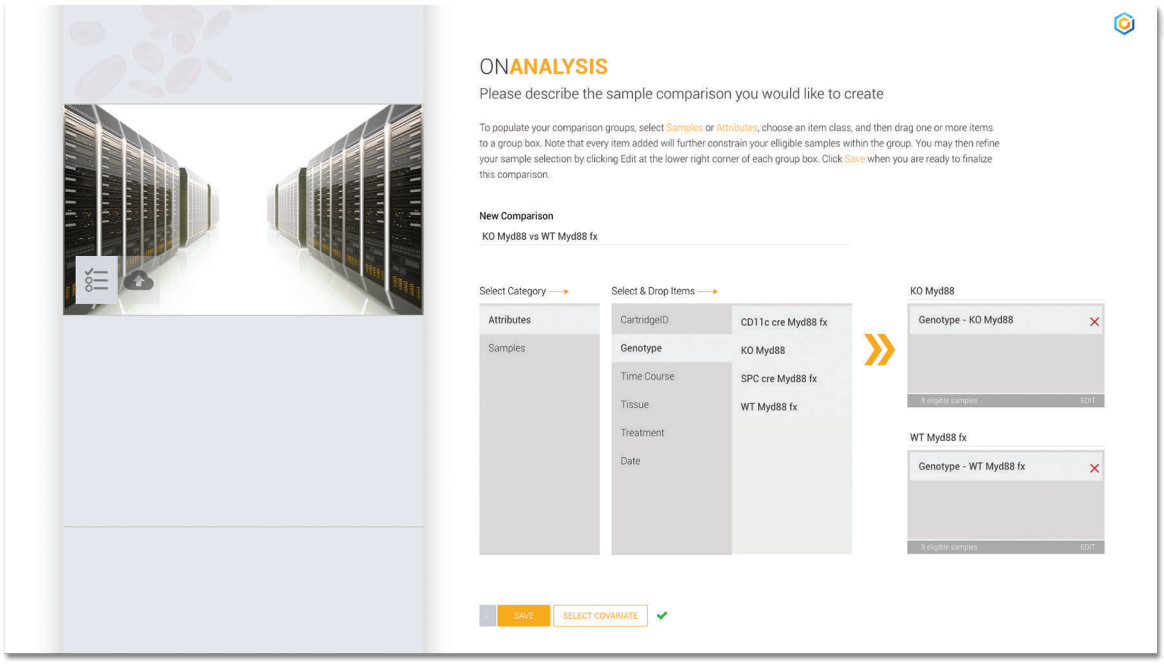
Uploading the pre-populated file can reduce the time it takes to define the metadata associated with your experiment. Additional guidance is offered by selecting DOWNLOAD EXAMPLE .



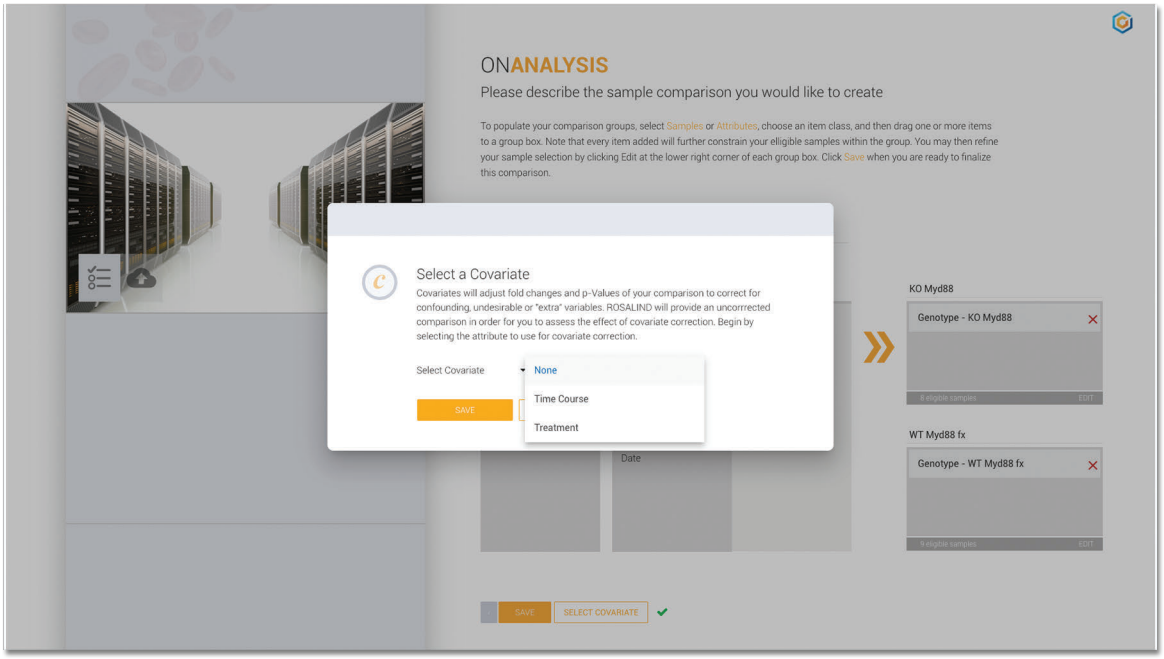
ROSALIND provides a sample sheet for easy review of your experiment design before you upload your data. Use this table to remove samples, change sample names and adjust sample parameters.

Analyze More

Setup your experiment in minutes.



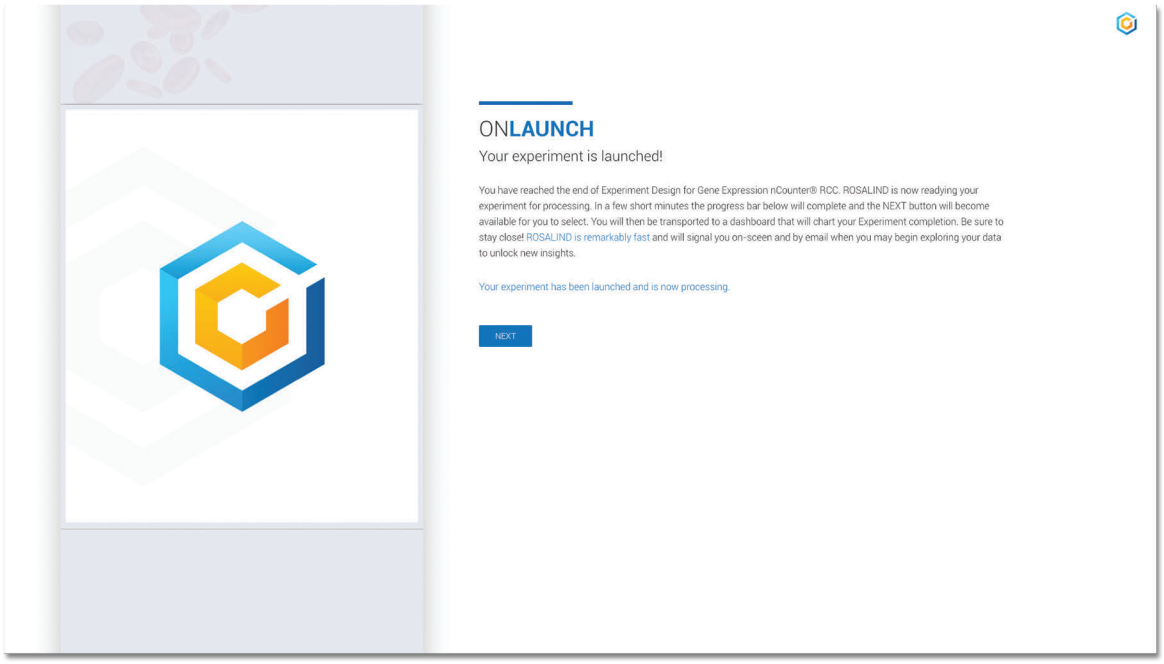
Comparisons can be set up now or after the experiment has been processed. Differential expression requires pairwise comparisons, eg treatment vs control. Drag attribute values or sample names to the condition and control boxes.



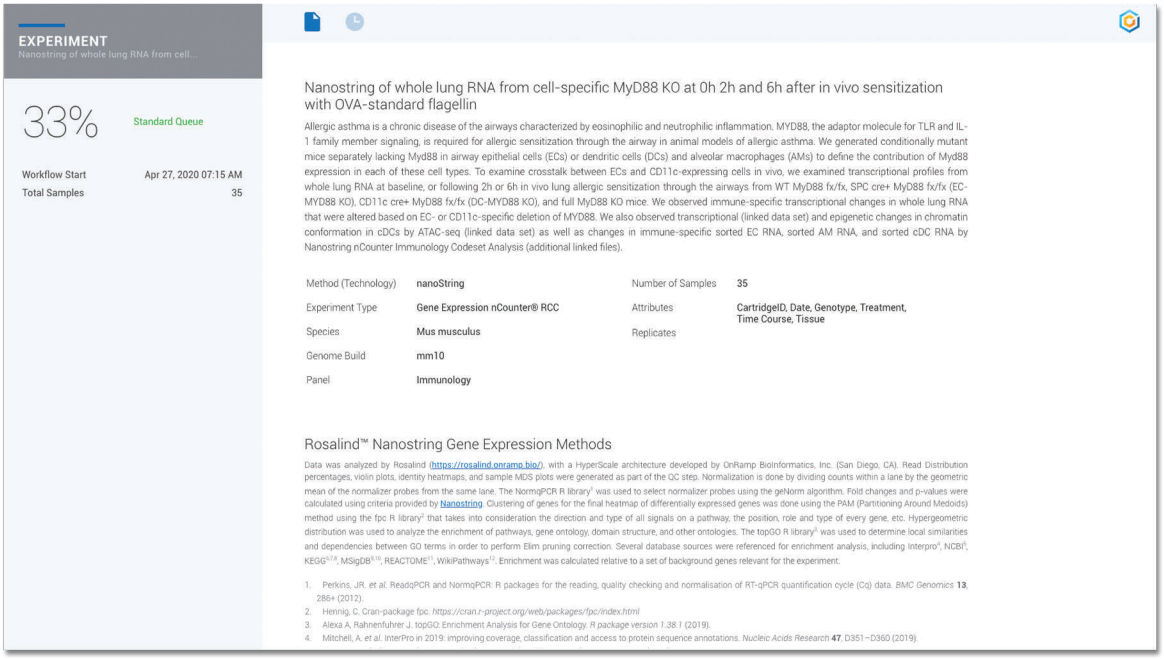
For an advanced analysis with covariate correction, click SELECT COVARIATE and choose any one of the valid covariate variables. Once all comparisons are defined, click SAVE and then NEXT to launch the experiment for analysis.

Analyze More

Setup your experiment in minutes.



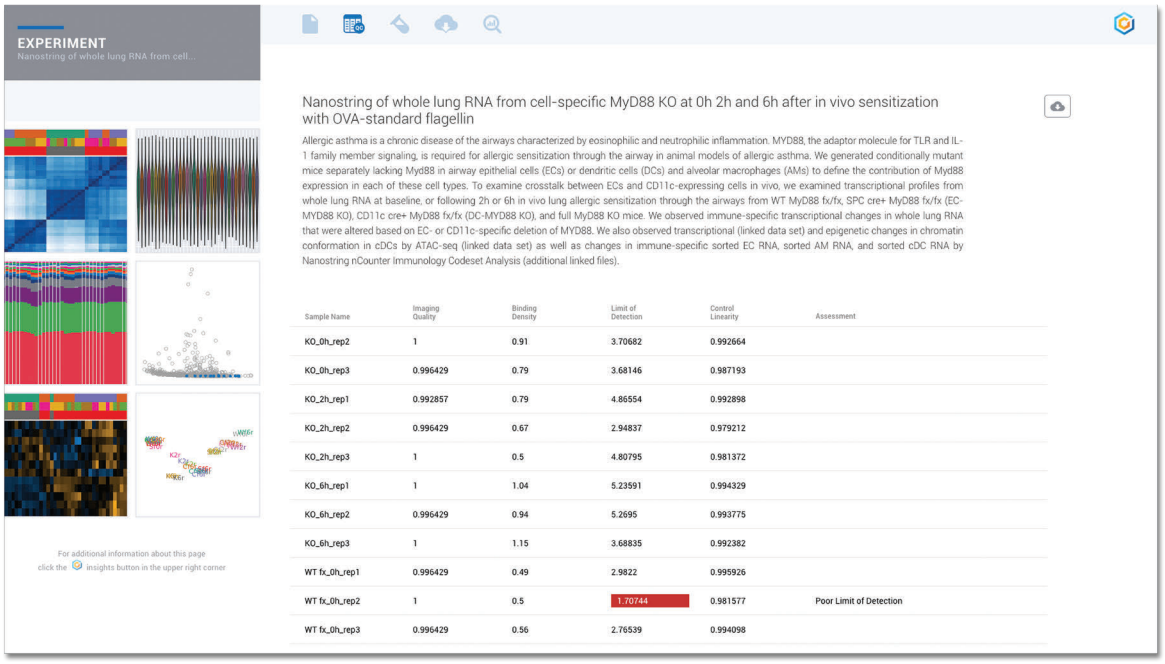
Once complete, you will receive an email to notify you that your experiment is ready for exploration.



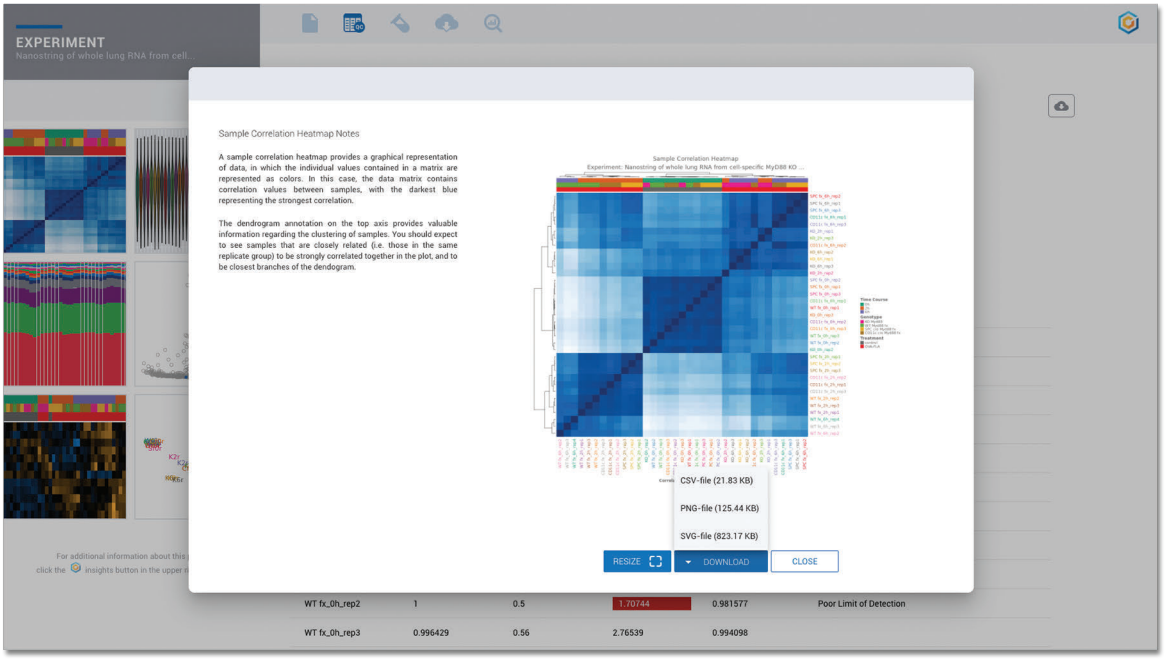
ROSALIND offers a way to monitor the experiment progress and important parameters while the analysis is underway.

Instant Quality Control

Optimized QC for NanoString experiments.



ROSALIND Quality Control has been optimized for NanoString Experiments to provide detailed plots for verification and validation of samples before diving into your results.

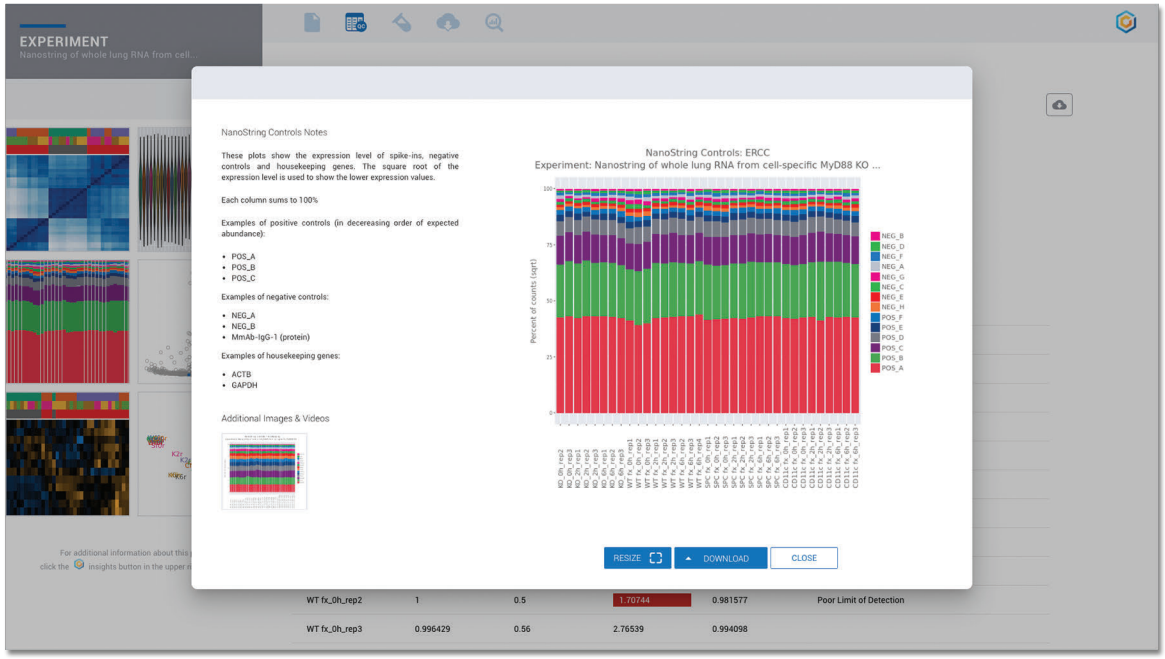


The Sample Correlation Heatmap provides a quick snapshot of each sample and their correlation. All figures are publication ready and made available to download in CSV, SVG, and PNG file formats.

Instant **Quality Control**

Optimized QC for NanoString experiments.

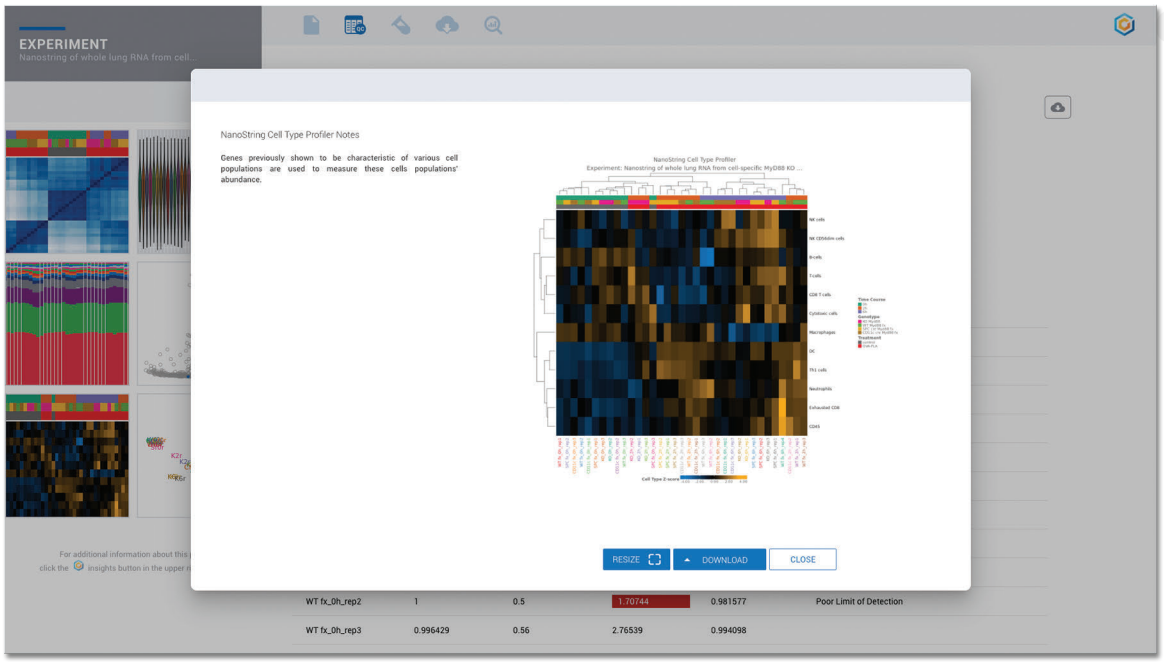
The Variance Plot shows the expression variance of all targets and highlights which ones were used for housekeeping normalization.



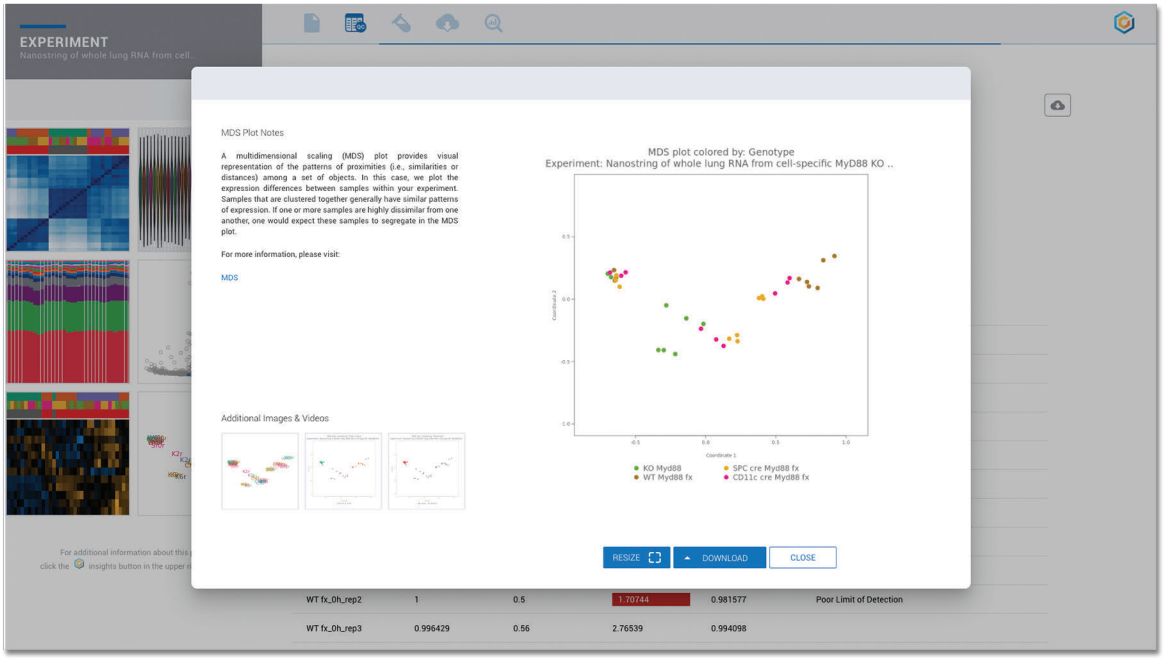
Review expression levels of NanoString controls and click the thumbnail on the lower left to view levels for the housekeeping genes.

Instant **Quality Control**

Optimized QC for NanoString experiments.



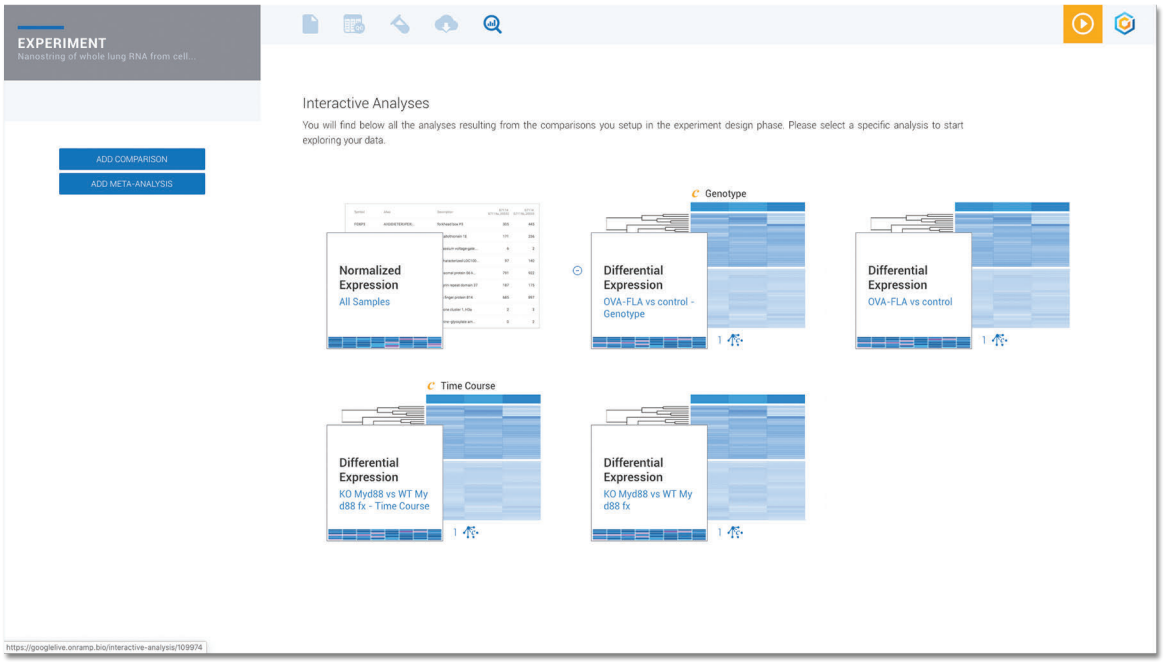
NanoString Cell Type Profiling analysis provides insights into the abundance of individual cell types by quantifying the expression of marker genes. Click DOWNLOAD to access the complete Cell Type Profiling analysis.



Verify the separation and grouping of samples with multidimensional scaling plots. **ROSALIND** provides an MDS plot for every attribute in the experiment.

Interpret More

Interactive experiences allow deeper exploration.

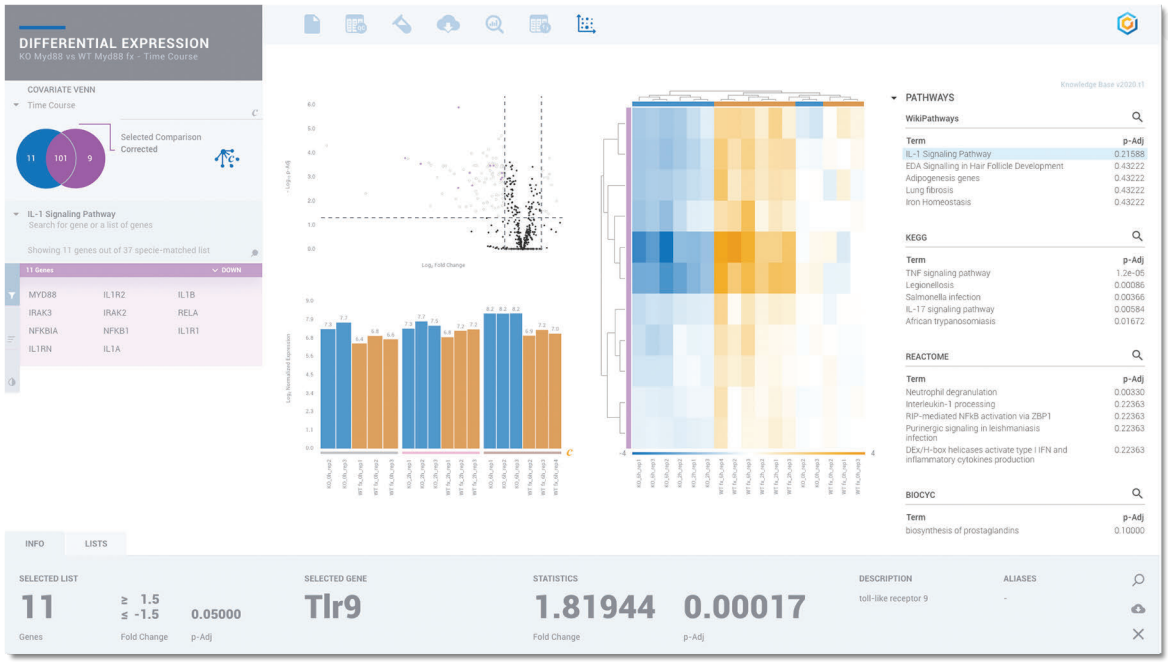


Explore differential expression results in each comparison, add new comparisons, meta-analyses, or investigate all gene expression levels within normalized expression.

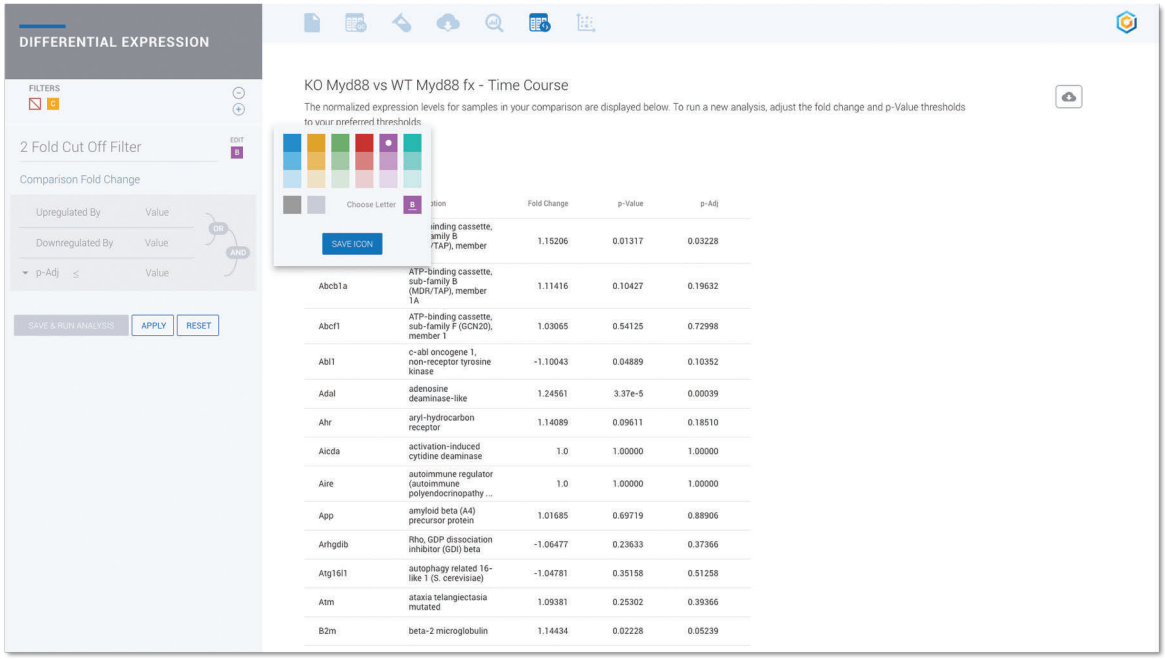
An interactive discovery experience provides dynamic charts of differentially expressed genes with deep interpretation from over 50 knowledge bases, including NanoString panel annotations, pathways, oncology, diseases, and more.

Interpret More

Interactive experiences allow deeper exploration.



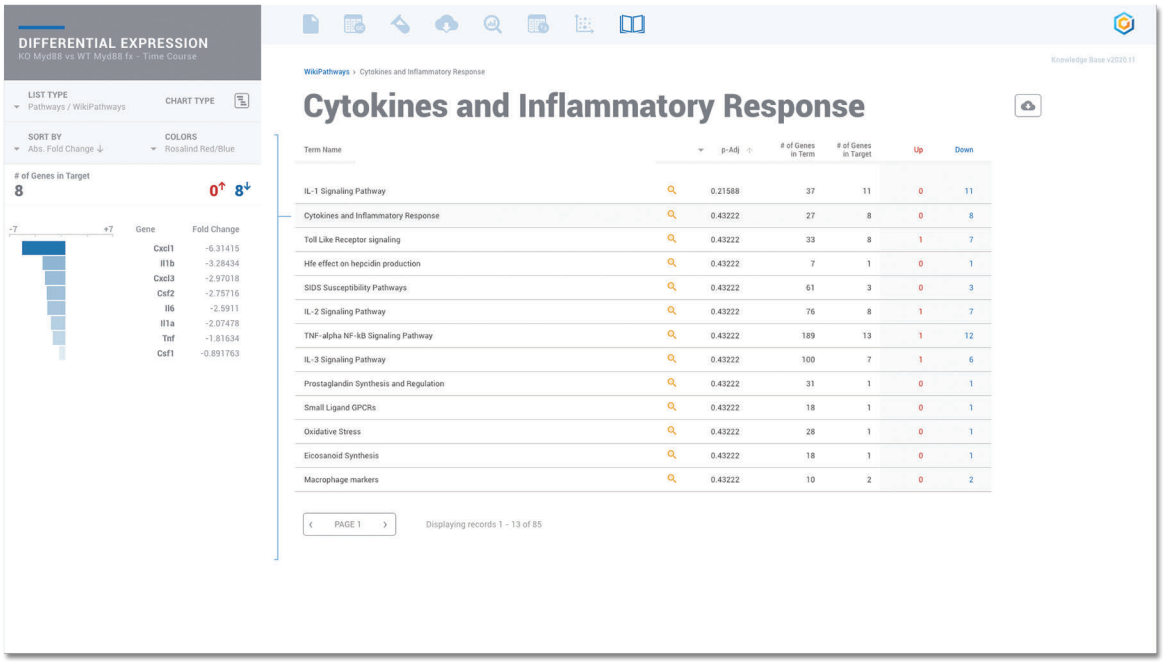
Select top pathways, gene lists or signatures for a focused experience showing only the results that are relevant to the area of interest.



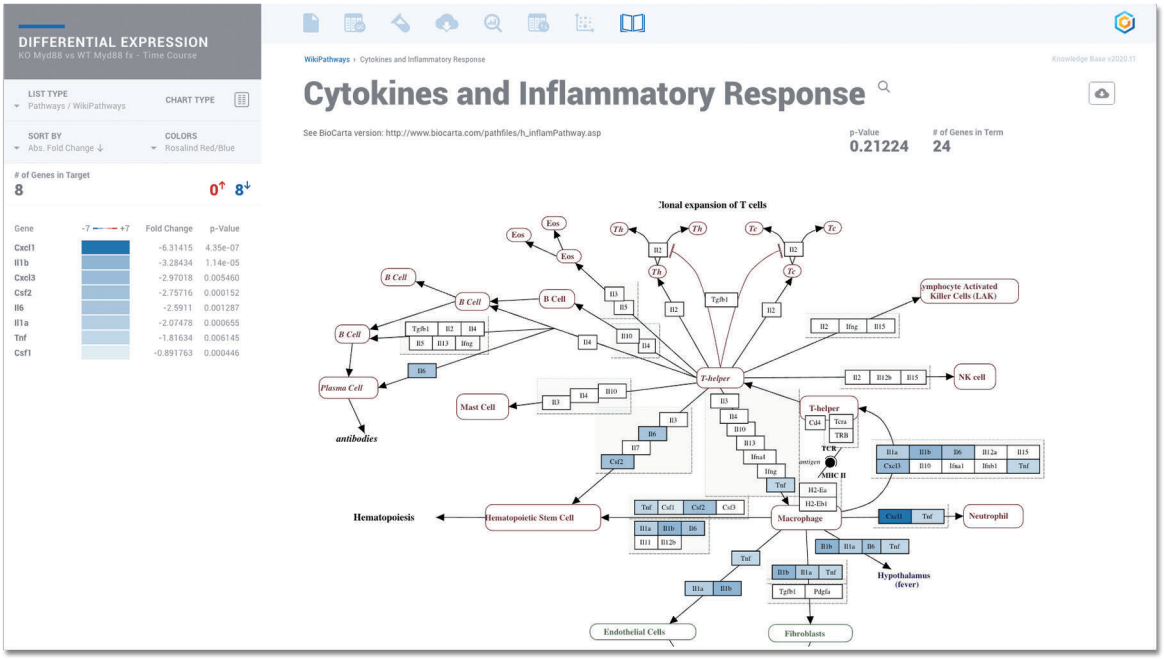
Adjust cut-offs by clicking the ⊕ button in the Filter Control to create a new filter and update the interactive graphs and pathway interpretation.

Interpret More

Interactive experiences allow deeper exploration.



Seamlessly explore more than 50 knowledge bases and discover the relationships between differentially expressed genes and each associated pathway, gene ontology, protein interaction and more.

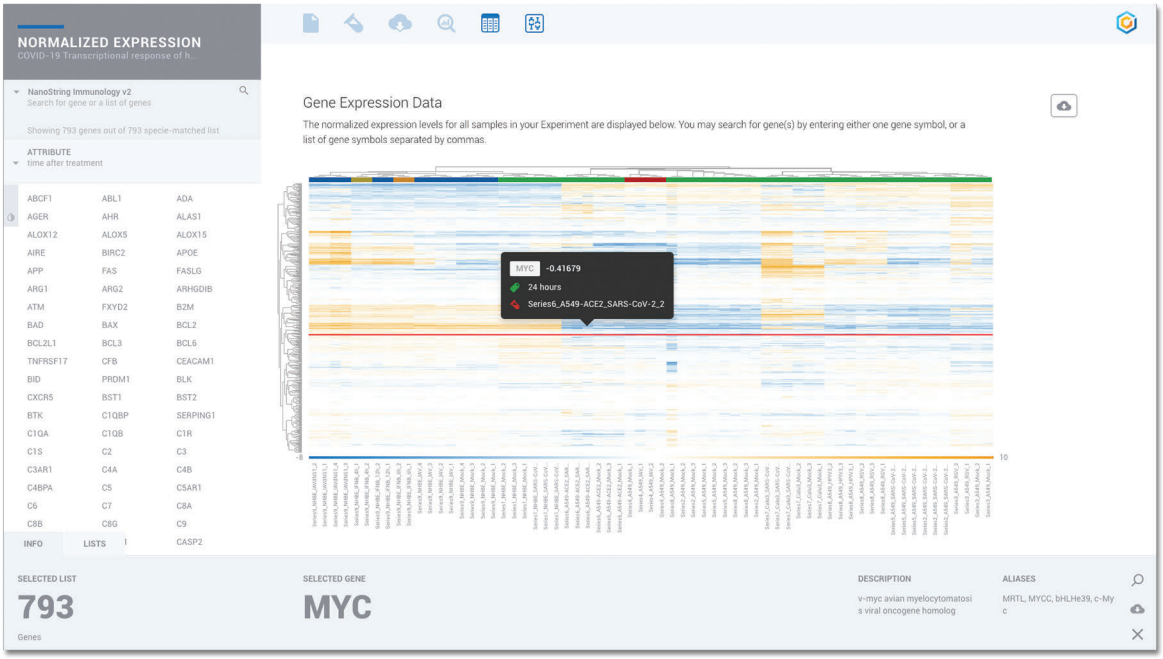


Fully interactive pathway diagrams and heatmaps enable rapid observation of gene expression and gene regulation effects.

Interpret More

Interactive experiences allow deeper exploration.

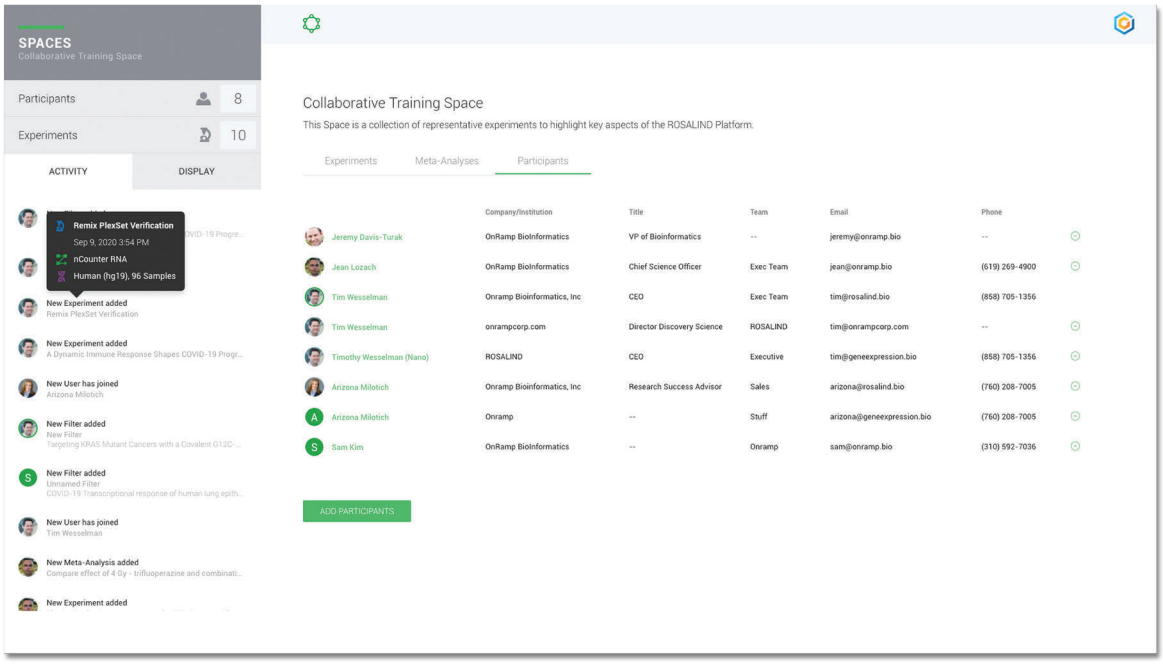
Select Normalized Expression to discover trends and patterns in expression levels across all samples and genes.



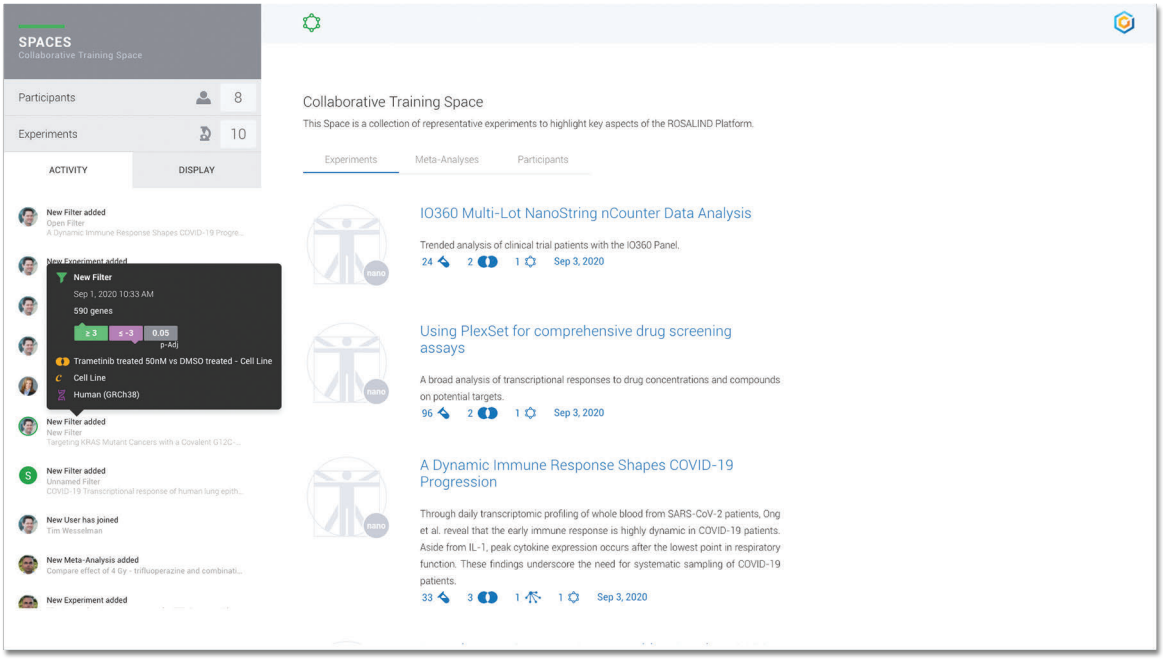
Custom heatmaps, box plots and bar plots show values across attributes and samples.

Collaborate Effortlessly

Share experiments without transferring or downloading data.



Easily create a space and invite colleagues or collaborators to work alongside you on your experiments.



Collaborate, explore and analyze the same data simultaneously without having to download, transfer or install anything.

About **ROSALIND**

Based in the Genomics Capital of San Diego, OnRamp.Bio provides ROSALIND®, the first-ever genomics analysis platform specifically designed for life science researchers to analyze and interpret datasets, without any prior bioinformatics skills.

Named in honor of pioneering researcher Rosalind Franklin, who made a major contribution to the discovery of the double-helix structure of DNA with her famous photograph 51, the ROSALIND® platform aims to simplify the practice of genomic data interpretation, so biologists, researchers and drug developers can harness the potential of genomic information from DNA sequencing to microarrays and mass spec, while reducing costs and increasing productivity.

ROSALIND® puts the researcher in the driver's seat of data analysis, and helps to free up valuable time for Bioinformatics Cores to offload standard analyses and focus precious resources on more complex challenges. ROSALIND® brings bioinformatics analyses to the bench by broadly expanding access to genomic and proteomic technologies for cancer research and precision medicine.

Learn More: **www.onramp.bio**

Register for Free: **www.onramp.bio/nanostring**

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