

## Accelerating genomic studies with Platform for Science software

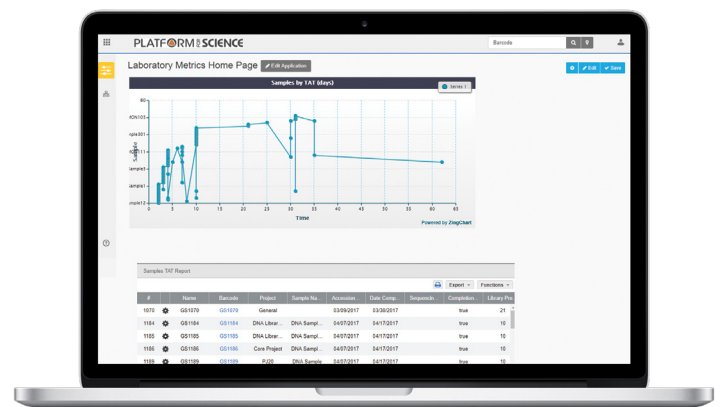
### Empowering the future of medicine with genomic studies

Genomic studies largely utilizing Next Generation Sequencing (NGS) are providing physicians and researchers with life changing information on complex diseases such as heart disease, cancer, and diabetes. These new discoveries provide a deeper understanding of how multiple genes and environmental factors interact and can lead to earlier diagnoses, intervention, and the creation of targeted treatments. There are many components that make up a genomic study such as study design and protocols, tracking of materials, equipment, and samples, maintaining and storing data, analyzing data and generating reports.

Thermo Fisher™ Platform for Science™ software is a flexible, scalable, and extensible solution for genomic laboratories. The software is cloud-native leveraging Amazon Web Services (AWS) and provides the tools to connect disparate laboratory equipment and software systems into one platform. Workflows specific to your laboratory can be easily configured on the platform without the use of any custom code, allowing labs to keep their deployment of Platform for Science software up to date with process changes that occur in the lab.

### Key benefits to utilizing a genomics solution on Platform for Science software

- Reduction in your Platform for Science software implementation timelines by utilizing applications
- Complete tracking from sample receipt through sequencing and reporting
- Early insight into assay run performance
- Informed decision making and efficient project planning
- Visibility into what's going in the lab via system dashboards and reports
- Helps increase quality in lab procedures and data produced

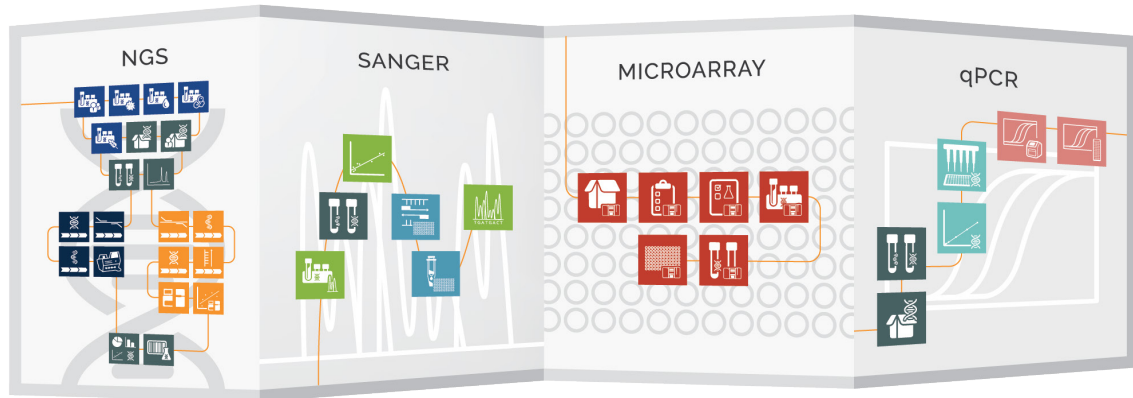


## A variety of genomics and NGS offerings

We understand that each laboratory performs their genomics workflows slightly differently and multiple techniques are often used together, which is why we have created a variety of genomic solutions for Platform for Science software. These solutions are comprised of a series of applications (apps), which are subsets of functionality for specific functions such as nucleic acid extraction and

library prep. The apps are based upon industry common practices and can be quickly configured to reflect your labs specific attributes and processes.

Thermo Fisher continues to add applications to its marketplace as new technologies and techniques become available for genomics.

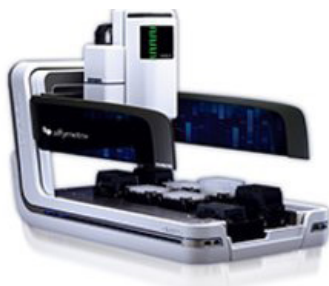


## Current Genomics Solutions Available:

The genomics solutions currently available for Platform for Science software support a variety of platforms and utilize applications to support functionality such as sample accessioning, sample preparation, QC and library prep, PCR, and sequencing.

## Axiom Genotyping solution

- Instruments Supported:



- For Use With:
  - 96 and 384 format array plates
  - Applied Biosystems™ Nimbus™ Target Prep Instrument
  - Catalog or Custom Arrays
  - Applied Biosystems™ Gene Titan™ Multi-Channel Instrument
- Key Benefits
  - Manage workflows and track all metadata generated.
  - Easily navigate the system and track the status of samples with dashboards.
  - Provides a quality checkpoint where failed samples can be removed from the workflow and sent for reprocessing.
  - Dashboard provides an overview of work in progress.
  - Gain visibility into processing bottlenecks, sample failures, and reagent performance.
  - Track projects, samples, users, instruments, consumables, and shipping requests.

## Ion Torrent

- For Use With:
  - Ion Chef™ System
  - Ion OneTouch™ 2 System
  - Ion GeneStudio™ S5 Systems
  - Ion PGM™ System
  - Ion Proton™ System
- Key Benefits
  - All data lives in the sample platform, streamlining data review.
  - Metadata generated from the creation of Ion libraries is captured centrally, including reagent kit, lots consumed, and equipment and instruments utilized.
  - Easily add capabilities over time through apps, solution sets, and configuration- with no custom code.
  - Process extracted FFPE DNA or RNA samples through library prep and pooling with the Ion Chef System.
  - Execute sample enrichment and chip loading with the Ion OneTouch 2 and Ion Chef systems. Scientists can track reagents lots and plan runs for the Ion GeneStudio S5, Ion PGM, and Ion Proton Systems.

## qPCR

- For Use With:
  - qPCR instruments
- Key Benefits
  - Ensure sample and result quality instead of making it part of the list.
  - Easy generation of a sample sheet for preparation of OpenArray plates
  - Ability to capture plate or sample QC metrics
  - Natively works with other genomics applications available for Platform for Science software

## Illumina

- For Use With:
  - Illumina™ iSeq100
  - Illumina™ Miniseq
  - Illumina™ MiSeq
  - Illumina™ HiSeq
  - Illumina™ Novaseq
  - Illumina™ Infinium Microarray Technologies
- Key Benefits
  - Out of the box workflows for DNA-seq, RNA-seq, Amplicon, and Targeted Sequencing, as well as Infinium arrays
  - Rapid generation of sample sheets for Illumina sequencers
  - Complete tracking of prepared libraries through sequencing
  - Visibility into DNA amplification, fragmentation, precipitation, resuspension, hybridization, washing and scanning steps
  - All relevant workflow information is stored in one location including details such as date/time, scientist, reagent lots, and instruments used
  - Sample information including volume, concentration, derivatives, and chain of custody are maintained

## Capillary Electrophoresis and Sanger Sequencing

- For Use With:
  - Applied Biosystems™ SeqStudio™ Genetic Analyzer
  - Applied Biosystems™ 3500 and 3700 Series Genetic Analyzer
- Key Benefits
  - Provides scientists with a dashboard to manage samples ready to be run on the SeqStudio Genetic Analyzer.
  - Track run metadata such as instrument, SeqStudio cartridge, and application type.
  - Automated generation of Plate Template File for import into the SeqStudio Plate Manager.
  - Connect other instruments and software systems by utilizing the OData Application Programming Interface.

## Generating quality data that you can rely on

Implementing a laboratory information management system to track, maintain, and store your data promotes consistency and quality in laboratory procedures. To support laboratories performing work in a regulated environment, a Validated Cloud offering is available for customers to utilize. The validated cloud provides qualified infrastructure and additional security parameters for customers who may need to utilize these standards and controls. Thermo Fisher validation services are available to assist your team in performing system validation.

## Support beyond genomics and sequencing

NGS and other sequencing techniques can be used in many different types of laboratories and research environments. Thermo Fisher has created additional solutions to support genomics workflows. Learn more about how these applications can fit into your workflows for:

- Biobanking
- Microbiome research
- Biologics research and development
- Crop science and ag bio research and development

Find out more at [thermofisher.com/digitalscience](https://thermofisher.com/digitalscience)

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