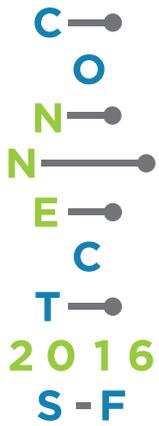# Workshops

PRODUCTION TRACK

DNAnexus is frequently deployed in production environments that have a wide variety of interesting and challenging requirements including: ensuring pipeline reproducibility, optimizing, turn-around time, introducing error control and retry logic, allowing for easy scalability of analyses, versioning of pipelines and their components, and ensuring compliance with regulatory requirements. DNAnexus clinical customers, like Natera or UCSF, apply these practices in test deployment and management of production operations across multiple performance sites, using advanced permissions and access protocols.

The production track is for those interested in:

- Reproducing pipelines consistently at scale
  - Uniform analytical treatment via version-controlled production processes
  - Data/sample management, filtering, and searching
- Running batch analyses
  - Leverage the command line to orchestrate batch analysis
  - Lock down a production pipeline to allow for easy use by members of your team
  - Use a previously-run pipeline as a starting point for a new analysis
- Managing complex projects across multiple groups globally
  - Discrete sharing of information with individual partners
  - Transfer ownership of data and securely access projects from anywhere in the world
- Operating consistently with CAP/CLIA requirements

Workshops

DEVELOPER TRACK

The DNAnexus Platform is incredibly flexible and provides a secure and centralized environment to efficiently build apps, monitor jobs, debug tools, and understand the performance of genomics applications in the cloud. DNAnexus customers like UCSF and Intermountain have developed custom, clinical pipelines leveraging a mixture of popular genomics tools and custom or modified analysis routines. Pharmaceutical companies like Regeneron and J&J have produced many research oriented pipelines that are in near constant development.

The developer track is for those interested in:

- App writing best practices
  - Versioning for uniform analytical treatment
  - Specifying and installing app dependencies
  - Selecting the optimal instance types for your app
  - Using parallel execution to scale your data analysis efficiently
  - Selecting instances for the fastest and cheapest executions
- Debugging fundamentals
  - How bioinformatics programs tend to fail and how to understand those errors
  - Catching and responding to errors within your app's code
- Tips & Tricks to the DNAnexus development environment
  - Running an interactive cloud workstation
  - Examining and parsing an object's JSON description
  - Chaining together command line tools using pipes
  - Making the most of the Swiss Army Knife app provided by DNAnexus