

2020-07-29

# MISO LIMS Training

## Introduction



# Agenda

- Introduction
  - MISO LIMS
  - Navigation
  - Entering Data
  - Getting Help
  - Projects
- Samples
- Libraries
- Sequencing

# MISO LIMS

- Laboratory Information Management System for next-generation sequencing centres
- Created by Earlham Institute (formerly TGAC)
- Developed by Ontario Institute for Cancer Research since 2015
  - Ongoing – new features still being added
- Track all lab processes from sample receipt to sequencing

# MISO LIMS

- Sample receipt and wet lab work
- Library receipt or preparation
- Pooling
- Sequencing
- Quality Control
- Location tracking
  - Barcoding
  - Tube storage
  - Freezers
  - Transfers – receipt, internal, and distribution
- Orders – communicating requirements between teams

# Navigating MISO

- Home Page
  - Widgets
  - Navigation Menu
    - Preparation
    - Instrument Runs
    - Tools
    - Misc
    - Institute Defaults
    - ENA
    - User Administration

The screenshot shows the MISO STAGING Dashboard. At the top left is the 'miso' logo. The main header is 'STAGING' with a 'Dashboard' sub-header. On the right, there are links for 'Help', 'Chat', 'Report a problem', and 'Logged in as: dcooke | Logout'. A left-hand navigation menu lists categories: 'Preparation' (Projects, Samples, Libraries, Library Aliquots, Pool Orders, Pools, Worksets, Boxes, Transfers), 'Instrument Runs' (Sequencing Orders: All, Outstanding, In-Progress; Sequencing: Containers, Runs; Array Scanning: Arrays), and 'Workflows' (Begin New Workflow). The main content area features a 'Search' box with a placeholder text: 'Search barcodable items by name, alias, or barcode. Alternatively, scan a barcode to see any matching items here.' To the right is an 'Instrument Status' section with three entries: 'M00146' (Completed RUN4629, Idle since 2020-07-15), 'M00753' (Completed RUN4630, Idle since 2020-07-15), and 'NB551051' (Completed RUN4628, Idle since 2020-07-15). Below this is a 'Project' search box with the text 'Search projects by name, alias, short name,'.

# List Pages

## Pools

Illumina
Oxford Nanopore
PacBio

### Illumina

Add   
Edit
Create Orders
Print Barcode(s)
Download
Parents
Add QCs
Edit QCs
Delete
Merge

Show 25  entries
Search: 
?

	Name	Alias	Description	Date Created	Dilutions	Concentration	
<input type="checkbox"/>	<a href="#">IPO11288</a>	<a href="#">XX POOL 1</a>		2019-03-08	1	3.6 ng/μL	
<input type="checkbox"/>	<a href="#">IPO11289</a>	<a href="#">XX POOL 2</a>		2019-03-08	1	3.6 ng/μL	
<input type="checkbox"/>	<a href="#">IPO11290</a>	<a href="#">XX POOL 3</a>		2019-03-08	1	3.6 ng/μL	
<input type="checkbox"/>	<a href="#">IPO11291</a>	<a href="#">XX POOL 4</a>		2019-03-08	1	3.6 ng/μL	
<input type="checkbox"/>	<a href="#">IPO11292</a>	<a href="#">XX POOL 5</a>		2019-03-08	1	3.6 ng/μL	EMPTY
<input type="checkbox"/>	<a href="#">IPO11296</a>	<a href="#">PR POOL 4</a>		2019-03-08	1	2.472047914 ng/μL	EMPTY
<input type="checkbox"/>	<a href="#">IPO11297</a>	<a href="#">PR POOL 5</a>		2019-03-08	1	2.588348896 ng/μL	EMPTY
<input type="checkbox"/>	<a href="#">IPO11294</a>	<a href="#">PR POOL 2</a>		2019-03-08	1	3.347579009 ng/μL	EMPTY

**Search syntax:**

- is:fulfilled
- is:active
- created:DATE
- changed:DATE
- creator:USER
- changedby:USER
- platform:PLATFORM
- index:NAME
- index:SEQ
- box:NAME

# Working with Tables

- Bulk entry in MISO is done using a table interface similar to Excel and other spreadsheet software
- Tables have import and export features
  - Can work in spreadsheet software outside of MISO
- In some cases, the bulk table does not include all information
  - Check the individual item page

# Bulk Pages

## Create Libraries

[Quick Help](#)

	Fill Boxes by Row	Fill Boxes by Column	Check QCs	Sort	Import	Export							
	Name	Alias	Sample Type	Project	Subproject	Sci. Name	External Name	Identity Alias	Donor Sex	Consent	Sample Class	Tissue Origin	Tissue T
1			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
2			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
3			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
4			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
5			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
6			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
7			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
8			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
9			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
10			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
11			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	
12			GENOMIC ▼	DEMO ▼	▼	Homo sapiens ▼		▼	Unknown ▼	This Project ▼	gDNA (aliquot)	▼	



# Edit Pages

## Edit Sample





Save

> Home > DEMO

< Previous Sample SAM268249

Quick Help 

### Sample Information

Sample ID:	268250
Project:*	DEMO 
Name:	SAM268250
Alias:*	DEMO_0001_Pa_P_nn_1-1_D_S1
Description:	
Matrix Barcode:	
Date of Receipt:	YYYY-MM-DD
Requisition ID:	
Scientific Name:*	Homo sapiens 
Sample Type:*	GENOMIC 
QC Status:	Ready 
QC Status Note:	
Discarded:	<input type="checkbox"/>

# Edit Pages (Continued)

Transfers								
Add <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> All <input type="checkbox"/> Delete								
Show 25 <input type="button" value="v"/> entries						Search: <input type="text"/>		
	ID <input type="button" value="v"/>	Items	Sender	Recipient	Transfer Time <input type="button" value="v"/>	Received	QC Passed	Last Modified <input type="button" value="v"/>
<input type="checkbox"/>	<a href="#">5359</a>	1	BioBank (University Health Network)	Unspecified (Internal)	2020-07-27	1/1 (0 pending)	1/1 (0 pending)	2020-07-27 09:12:13
Showing 1 to 1 of 1 entries						First Previous 1 Next Last		

Relationships									
Create <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> All <input type="checkbox"/> Edit Propagate Print Barcode(s) Download Parents Children Add QCs Edit QCs Add to Workset Attach Files Transfer Delete									
Show 25 <input type="button" value="v"/> entries						Search: <input type="text"/>			
	Name <input type="button" value="v"/>	Alias <input type="button" value="v"/>	Tissue Origin <input type="button" value="v"/>	Tissue Type <input type="button" value="v"/>	Sample Class <input type="button" value="v"/>	QC <input type="button" value="v"/>	Location	Creation Date <input type="button" value="v"/>	Last Modified <input type="button" value="v"/>
<input type="checkbox"/>	<a href="#">SAM268249</a>	<a href="#">DEMO_0001_Pa_P_nn_1-1</a>	n/a	n/a	Tissue	?	Unknown	2020-07-27 09:12:12	
<input type="checkbox"/>	<a href="#">SAM268248</a>	<a href="#">DEMO_0001</a>	n/a	n/a	Identity	?	Unknown	2020-07-27 09:12:11	
Showing 1 to 2 of 2 entries						First Previous 1 Next Last			

Changes		
Show 25 <input type="button" value="v"/> entries		Search: <input type="text"/>
Name <input type="button" value="v"/>	Summary <input type="button" value="v"/>	Time <input type="button" value="v"/>
admin	barcode: n/a → 11223344, volume: n/a → 42, volume units: n/a → MICROLITRES	2020-07-27 09:19:13
admin	Sample created.	2020-07-27 09:12:11
Showing 1 to 2 of 2 entries		First Previous 1 Next Last

# Working with Boxes

- Samples, libraries, library aliquots, and pools can be stored in barcoded tubes
- These tubes are stored in boxes
- Boxes are usually stored in freezers
- Boxes may also represent plates which do not have a barcode for each well
- The Box Contents diagram in MISO allows you to select and work with one or many box positions to choose or modify what is stored in the box
- The VisionMate scanner can be used to scan all of the tubes at once to quickly fill a box in MISO



# Edit Box Page

**Contents** Options ▾

Hold down Ctrl (Windows, Linux) or Command (Mac) to select multiple positions. Click a row or column header to select the entire row or column.

	01	02	03	04	05	06	07	08	09	10	11	12
A	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Position Search**

B01

B02

B03

B04

B05

B06

B07

B08

B09

B10

B11


B12

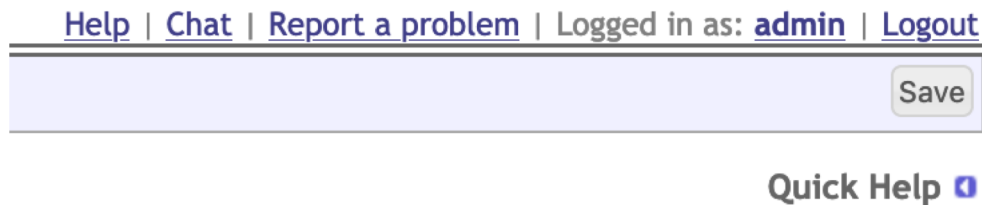
Show  entries List all Box Contents Search:

Position	Element Name	Element Alias
B01	<a href="#">LIB39970</a>	<a href="#">CPTRG_0111_Ov_M_PE_60702_EX</a>
B02	<a href="#">LIB39978</a>	<a href="#">CPTRG_0118_Ov_M_PE_60710_EX</a>

Showing 1 to 2 of 2 entries (filtered from 17 total entries) Last Next 1 Previous First

# Getting Help

- Links in Header
  - Help – User Manual
  - Chat – Gitter
  - Report a problem
- Quick Help
- Help Bubbles 



# Projects

- Represent a sequencing effort toward a particular goal
- Grouping of samples, libraries, sequencer runs, and other related items
- Samples belong to a project. Most other items are related indirectly through samples
  - Libraries and library aliquots belong to the project of the parent sample
  - Pools and runs may contain items from multiple projects
- Edit Project page shows all related items

# Exercise

Complete the following tutorials using Chrome or Firefox:

- Tutorial 3: Working with Boxes
- Tutorial 4: Working with Tables
- Tutorial 5: Project Coordination

<https://miso-lims.github.io/walkthroughs/>

Note: These are the OICR walkthroughs. Other labs may have an alternate site.



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