FLOW CYTOMETRY

Sample Prep

1. Define your flow cytometry cell treatments, analyses and conditions.

Cell Treatments		Analysis	Conditions	
[X] Fixed Cells	[ ] Live Cells	Dye/Stain	Dye/Stain Name	
[ ] Fixed Cells	[X] Live Cells	Antibody-labeling	Antibody Name	x
[X] Fixed Cells	[X] Live Cells	*Select Analysis*	*Conditions*	x

ADD

BACK

SAVE AND CONTINUE

Notes: I'm just showing what would appear in the last drop down menu / text box even though this instructor only has two analyses each with one condition.

If the instructor selects both fixed and live cells here, then both treatment/analysis/condition combinations will be shown on later pages.

The first row cannot be deleted, but other added rows can be deleted.

Analyze

2. Define the flow cytometry histogram for each sample.

This is the cell treatment/analysis/condition combination, populated from the first page.

A. Fixed cells, Dye/Stain, Dye/Stain Name

Apply to all?

1. Strain A, Treatment A, 100 ng/mL, 30 C

Select from a template **Draw new histogram** ○

2. Strain A, Treatment A, 100 ng/mL, 37 C

Select from a template **Draw new histogram** ○

3. Strain A, Treatment B, 200 ng/mL, 30 C

Select from a template **Draw new histogram** ○

4. Strain A, Treatment B, 200 ng/mL, 37 C

Select from a template **Draw new histogram** ○

5. Strain B, Treatment A, 100 ng/mL, 30 C

Select from a template **Draw new histogram** ○

6. Strain B, Treatment A, 100 ng/mL, 37 C

Select from a template **Draw new histogram** ○

B. Live cells, Antibody-labeling, Antibody Name

1. Strain A, Treatment A, 100 ng/mL, 30 C

Select from a template **Draw new histogram** ○

This list of samples continues for all of the samples with this treatment combination, then the next treatment combination, if applicable, will follow.

The samples for this question are grouped by Cell Treatment/ Analysis/Conditions as the instructor is more likely to want to copy/paste a histogram by analysis/conditions than by sample.

There are two options for each sample: Select from a preset histogram OR Draw their own histogram

When the instructor selects one of the buttons, then a pop up window appears - see next two pages to see what the windows look like.

Another option is that you have a library of histogram templates - possibly on the right side and you drag a histogram from the library to the appropriate sample.

Once the instructor selects a histogram, then the instructor can edit the histogram as needed - see Page 6.

BACK **SAVE AND CONTINUE**

Maybe this window should actually have two different modes - one to select a template and one to draw a new histogram. That would simplify the selection on the previous page as we wouldn't need two different pop up windows, each accessed through it's own button.

Notes: If the instructor selects "select from template", then a pop up window will appear with various histograms from which he/she can select.
The instructor can navigate to the next sample within this window without having to close the pop up window after each sample. This popup window will contain all of the samples for a particular treatment/analysis/condition combination.
As more template histograms are put in this window, we will need to think about a way to sort them - perhaps a drop down menu at the top and the user can select the organism (yeast vs mammalian) and/or analysis performed (cell cycle analysis, etc).
Each of the histograms in this window is a button. There should also be a hover state when hovering over a histogram.

This is what the pop up window to select a histogram will look like:

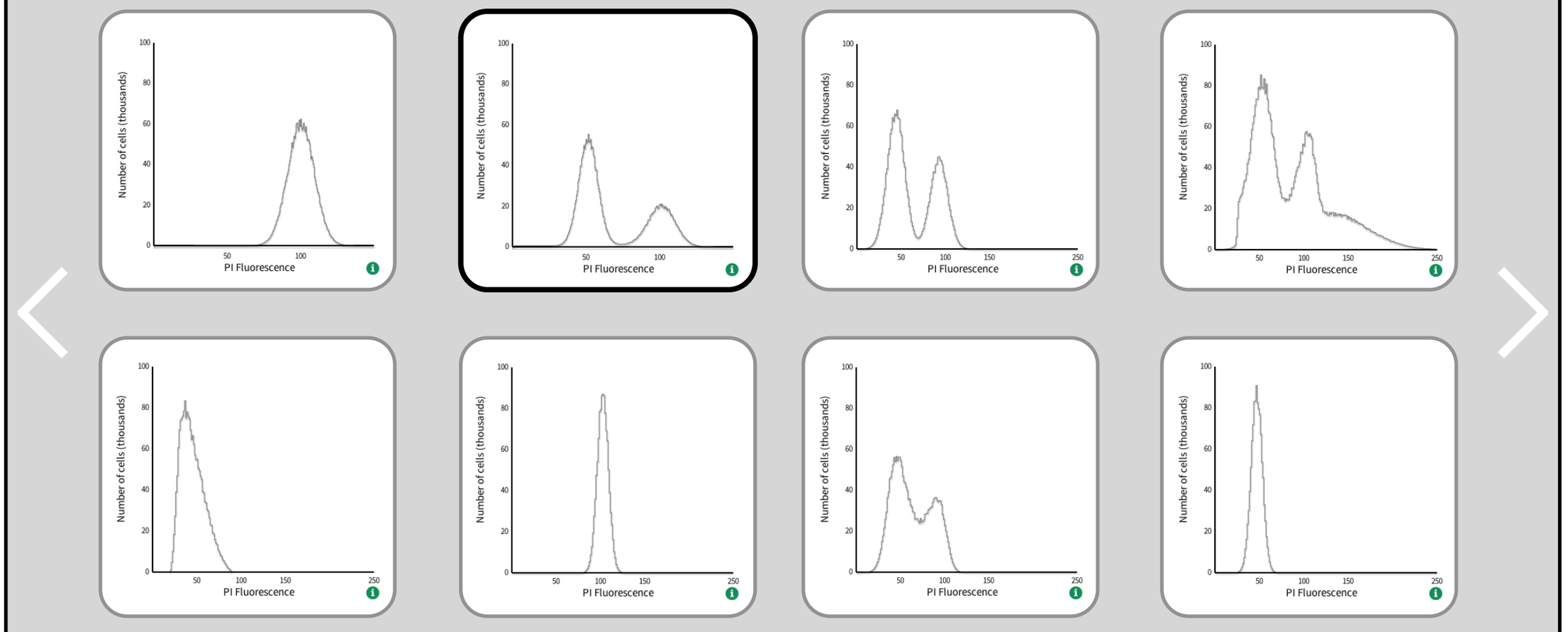
A. Fixed cells, Dye/Stain, Dye/Stain Name

X

Sample Name

PREVIOUS NEXT

SELECT HISTOGRAM TEMPLATE:



CANCEL OK

Maybe this window should actually have two different modes - one to select a template and one to draw a new histogram. That would simplify this selection as we wouldn't need two different pop up windows, each accessed through it's own button.

Notes: If the instructor selects to draw a new histogram, then a pop up window will appear.
A blank histogram with labeled axes and default scale will be generated. The instructor can also answer a couple of questions to have a basic curve filled in. The instructor can then edit the curve, draw their own curve, move the curve left & right.

This is what the pop up window to draw a histogram will look like:

A. Fixed cells, Dye/Stain, Dye/Stain Name

Sample Name PREVIOUS NEXT

X

DRAW NEW HISTOGRAM:

Histogram specifications

Number of peaks

(•) One peak ( ) Two peaks ( ) More than two peaks

Organism Type

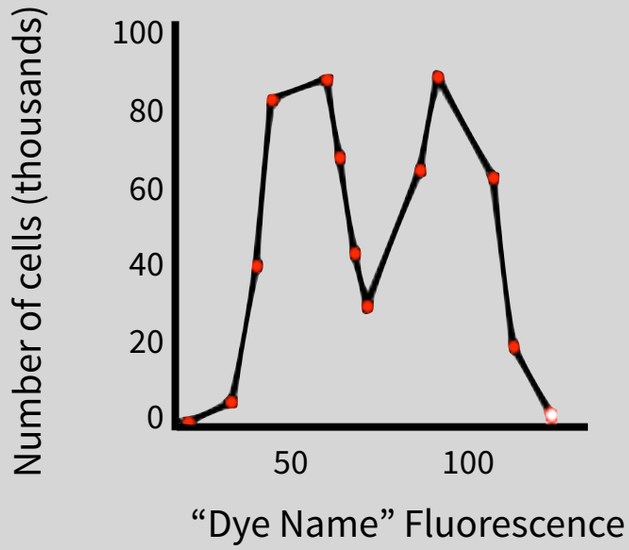
(•) Haploid ( ) Diploid

Editing Tools

Talk to Shloka & Ivan about how the instructor can draw the histograms.

Move the graph left/right

Get points on the curve so that you can more easily "mold" into position



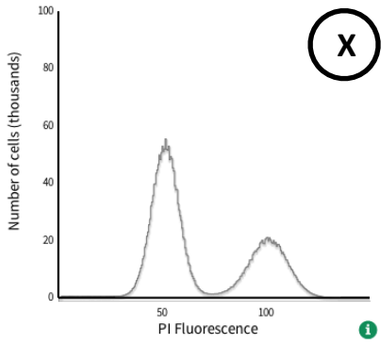
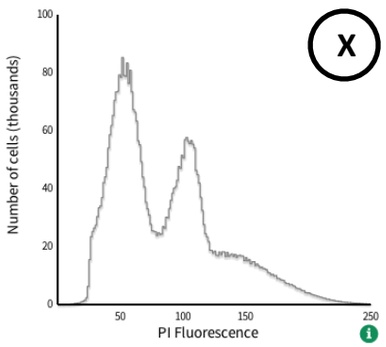
Notes: The axis range should be editable as well as the axes labels.

CANCEL OK

Analyze

4. Define the flow cytometry histogram for each sample.

A. Fixed cells, Dye/Stain, Dye/Stain Name

Sample	Edit	Apply to all
1. Strain A, Treatment A, 100 ng/mL, 30 C 		
2. Strain A, Treatment A, 100 ng/mL, 37 C 		
3. Strain A, Treatment B, 200 ng/mL, 30 C		

Select from a template Draw new histogram

This list of samples continues for all of the samples with this treatment combination, then the next treatment combination, if applicable, will follow.

Notes: If the instructor selects edit then a pop up window will appear just like on page 5 with the editing controls to edit the histogram curves.

I'm not sure how the instructor selects a new histogram from a template. Does the instructor first delete the selected histogram and then use one of the buttons when they reappear, or can the instructor access the templates in the popup window that appears if the instructor selects "edit"?

If the instructor deletes the histogram then the original selection buttons will re-appear.

The edit icon will either be disabled or not visible prior to a histogram being selected. Same goes for the apply to all - the radio button doesn't work until a histogram is selected for a sample.

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