METHODS AND SYSTEMS FOR EXPERIMENT DESIGN AND ANALYSIS

BACKGROUND

[0001] Generally, users perform biological studies by gathering and comparing various sets of biological data. For example, a user may run various qPCR-based experiments to gather distinct types of biological data, such as genotyping data or gene expression data, about a gene of interest to the study. If the user wishes to compare various types of biological data, it is often done manually. The number of samples needed for one experiment may also be great and it is often difficult to isolate a particular sample for a user to examine and visualize so that a user may quickly and easily get valuable information from the data. Further, labs or facilities often operate several biological instruments. It may be difficult to track maintenance or calibration of the instruments

SUMMARY

[0002] In one exemplary embodiment, a method for identifying a reaction site associated with an amplification curve from a plurality of amplification curves is provided. The method includes receiving amplification data from a plurality of reaction sites, wherein each reaction site contains a sample and generating a plurality of amplification curves from the amplification data. The method further includes displaying a first portion of the plurality of amplification curves on a display screen, and displaying a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen. The method includes shifting from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein ~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~ different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by activating a zoom button, and dynamically adjusting the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen. The list is configured to be scrollable.

[0003] In another exemplary embodiment, a non-transitory computer-readable storage medium encoded with processor-executable instructions, the instruction for identifying a reaction site associated with an amplification curve from a plurality of amplification curves, is provided. The instructions comprise instructions for receiving amplification data from a plurality of reaction sites, wherein each reaction site contains a sample, and generating a plurality of amplification

curves from the amplification data. The instructions further include instructions for displaying a first portion of the plurality of amplification curves on a display screen and displaying a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen. The instructions further include instructions for shifting from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein ~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~ different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by activating a zoom button, and dynamically adjusting the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen. The list is configured to be scrollable.

[0004] In yet another exemplary embodiment, a system for identifying a reaction site associated with an amplification curve from a plurality of amplification curves is provided. The system includes a receiver configured to receive amplification data from a plurality of reaction sites; a processor; a display screen; a zoom button; and a memory. The memory ~~is~~ has stored thereon encoded instructions~~, executable by the processor~~. The instructions include instructions for ~~receiving~~ causing the receiver to receive amplification data from a plurality of reaction sites, wherein each reaction site is adapted to contain~~s~~ a sample, and ~~generating~~ causing the data processor to generate a plurality of amplification curves from the amplification data. The instructions further include instructions for ~~displaying~~ causing the display screen to display a first portion of the plurality of amplification curves on ~~a~~ the display screen and ~~displaying~~ causing the display screen to display a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen. The instructions further include instructions for ~~shifting~~ causing the display screen to shift from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein ~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~ different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by activating the zoom button, and causing the display screen to dynamically adjust~~ing~~ the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen. The list is configured to be scrollable.

DESCRIPTION OF THE FIGURES

[0005] FIG. 1 illustrates an example of a graphical user interface for displaying amplification curves according to various embodiments described herein;

[0006] FIG. 2 illustrates an example of a graphical user interface for viewing a selection of amplification curves according to various embodiments described herein;

[0007] FIG. 3 illustrates an example of a graphical user interface for identifying amplification curves according to various embodiments described herein;

Claims:

1. A method for identifying a reaction site associated with an amplification curve from a plurality of amplification curves, the method comprising:

receiving amplification data from a plurality of reaction sites, wherein each reaction site contains a sample;

generating a plurality of amplification curves from the amplification data;

displaying a first portion of the plurality of amplification curves on a display screen;

displaying a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen;

shifting from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by activating a zoom button~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~; and

dynamically adjusting the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen, wherein the list is configured to be scrollable.

~~2. The method of claim 1, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming in.~~

~~3. The method of claim 1, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming out.~~

~~4~~2. The method of claim 1, wherein a first portion of the list is viewable on the display screen.

~~5~~3. The method of claim ~~4~~2, wherein a second portion of the list is viewable after scrolling the list down.

~~6~~4. The method of claim 1, further comprising:

providing information about the sample in a reaction site after a user selects an indication of the reaction site from the list.

~~7~~5. The method of claim 1, where the display screen is a touch screen.

~~8~~6. A non-transitory computer-readable storage medium encoded with processor-executable instructions, the instruction for identifying a reaction site associated with an amplification curve from a plurality of amplification curves, the instructions comprising instructions for:

receiving amplification data from a plurality of reaction sites, wherein each reaction site contains a sample;

generating a plurality of amplification curves from the amplification data;

displaying a first portion of the plurality of amplification curves on a display screen;

displaying a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen;

shifting from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by activating a zoom button~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~; and

dynamically adjusting the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen, wherein the list is configured to be scrollable.

~~9. The computer-readable storage medium of claim 8, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming in.~~

~~10. The computer-readable storage medium of claim 8, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming out.~~

~~11~~7. The computer-readable storage medium of claim ~~8~~6, wherein a first portion of the list is viewable on the display screen.

~~12~~8. The computer-readable storage medium of claim ~~11~~7, wherein a second portion of the list is viewable after scrolling the list down.

~~13~~9. The computer-readable storage medium of claim ~~8~~6, further comprising instructions for:

providing information about the sample in a reaction site after a user selects an indication of the reaction site from the list.

~~14~~10. The computer-readable storage medium of claim ~~8~~6, where the display screen is a touch screen.

~~15~~11. A system for identifying a reaction site associated with an amplification curve from a plurality of amplification curves, the system comprising:

a receiver configured to receive amplification data from a plurality of reaction sites;

a processor; ~~and~~

a display screen;

a zoom button; and

a memory having stored thereon encoded instructions, ~~executable by the processor,~~ the instructions comprising instructions for:

~~receiving~~ causing the receiver to receive amplification data from a plurality of reaction sites, wherein each reaction site is adapted to contain~~s~~ a sample;

~~generating~~ causing the data processor to generate a plurality of amplification curves from the amplification data;

~~displaying~~ causing the display screen to display a first portion of the plurality of amplification curves on ~~a~~ the display screen;

~~displaying~~ causing the display screen to display a list of indications of reaction sites associated with the first portion of the plurality of amplification curves alongside the first portion of the plurality of amplification curves on the display screen;

~~shifting~~ causing the display screen to shift from a view of the first portion of the plurality of amplification curves to display a view comprising a second portion of the plurality of amplification curves, wherein different portions of the plurality of amplification curves can be viewed in an amplification curve plot by zooming or unzooming the amplification curve plot by

activating the zoom button~~at least a portion of the second portion of the plurality of amplification curves are not included within the first portion of the plurality of amplification curves~~; and

causing the display screen to dynamically adjust~~ing~~ the list to display indications of reaction sites associated with ~~viewable amplification curves included in~~ the second portion of the plurality of amplification curves alongside the second portion of the plurality of amplification curves on the display screen, wherein the list is configured to be scrollable.

~~16. The system of claim 15, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming in.~~

~~17. The system of claim 15, further comprising adjusting a view of the first portion of the plurality of amplification curves or a view of the second portion of the plurality of amplification curves by zooming out.~~

~~18~~12. The system of claim ~~15~~11, wherein a first portion of the list is viewable on the display screen.

~~19~~13. The system of claim ~~18~~12, wherein a second portion of the list is viewable after scrolling the list down.

~~20~~14. The system of claim ~~15~~11, further comprising instructions for:

~~providing~~ causing the display screen to provide information about the sample in a reaction site after a user selects an indication of the reaction site from the list.