**StarCellBio USER INTERFACE**

**1. Links at the top or bottom of every page**

* About Star

Navigate to <http://star.mit.edu/about.html>

* Support

Link to a new page that reads:

This work has received funding from the following grants:

- NSF TUES Grant

- Howard Hughes Medical Institute (HHMI) Professors Grant

* MIT logo

Navigate to <web.mit.edu>

* Contact Us: Have you built a window like the one shown on page 2 in Cheryl’s document? If not, can we link to a page like this one: <http://star.mit.edu/feedback.html?project=StarGenetics&source=web>
* Reference Library: coming soon!
* User Guide: A first draft of this has been sent to you.

**2. The StarCellBio Logo**

* When clicked, navigate to the StarCellBio homepage.
* The logo is still being designed. In the meantime, format StarCellBio as follows:

Star in light blue (R: 60, G: 170, B: 224)

CellBio in dark blue (R: 44, G: 116, B: 187)

Font: Source Sans Pro

Size: 24? 28? 36?

**3. The panel at the bottom of home page and the assignments overview page**

**EXPERIMENTAL DESIGN**

Each experiment consists of 7 steps:

**1.** **Design** – State the objective that the experiment will address, your hypothesis for the experiment, and think about the technique that will best suit your experiment.

**2.** **Set Up** – Specify the strain(s), treatment(s), treatment concentration(s), treatment start time, treatment duration and collection time for your experiment.

**3. Run Experiment** – Perform your experiment and collect your samples.

**4. Select Technique(s)** – Select the appropriate experimental technique that is best suited for your experiment.

**5. Run Technique(s)** – Perform western blotting, flow cytometry and/or microscopy.

**6. Analyze** – Analyze the results of your experiment.

**7. Conclude** – Form a conclusion that addresses how your results fit your original hypothesis.

**TECHNIQUES**

* The **Learn More** buttons will navigate to the appropriate position in the **Reference Library**.
* The arrow to the right of microscopy is not needed at this time.

**Western Blot**

Western blotting detects overall changes in the amount or chemical modifications of a particular protein.

**Flow Cytometry**

Flow cytometry uses lasers to count and analyze the size, shape and properties of individual cells within a heterogeneous population of cells.

**Microscopy**

Microscopy uses microscopes to view cells, tissues and organisms that otherwise cannot be observed with the human eye.

**4. Home Page**

1. **SEE MORE** - This will go to a new page with screenshots of the program. We can’t design this page until the program is built.

- Remove the button for now.

2. The text over the cell image:

Welcome to StarCellBio, a virtual experiment simulation tool that teaches the fundamental concepts of cell and molecular biology, experimental design, and analysis. StarCellBio uses real and computer-generated data to generate a realistic array of experimental outcomes.

3. **Create Instructor Account**, **Create Student Account**, and **Instructor Resources** won’t work. They should take you to a new page that says:

This page is under construction

4. **Try an Experiment** takes the student to the assignments overview page displaying the usability test question.

5. The video on the homepage cannot be built until the program has been made. Once the first version of the program is done, we can put a screenshot there as a placeholder.

6. **SIGN IN** - I’m not sure what Ivan is thinking about here for the usability test…

**5. Lab Notebook Feature**

* Will this be working? If not, there are 2 options. 1) Remove the Lab Notebook icon at the bottom of the page and the “What is your notebook?” feature on the assignments overview page. 2) Alternatively, keep the Lab Notebook icon, and it should take students to a new page that says:

This page is under construction

* The “What is your Notebook” feature can read:

**WHAT IS YOUR NOTEBOOK?**

The StarCellBio software program includes a lab notebook feature. Your instructor has started your notebook by including your assignment and any related background reference materials, if relevant. As you perform your experiments, all of your results will automatically be entered in your lab notebook. Users can refer back to previous experimental outcomes when designing a new experiment. View your notebook by clicking on the notebook icon (shown above), which is located in the lower right corner of each subsequent window.

**6. Experimental Design Page**

* Only display the Western blot technique under the question (Note the changes to this question):

What technique may be best suited for the analysis of this experiment?

* The Western Blotting technique box:

**Western Blot**

Western blotting detects overall changes in the amount or chemical modifications of a particular protein. **Learn More**

**7. In the Lab Feature** (on the Experimental Set Up page)

insert information here on links/videos, etc.

**8. Select Technique(s) Page**

* Remove the right arrow on the right side of the page since we don’t have more techniques yet.
* There are 2 options:

1. Only display a Western Blot Technique panel. Keep it the same size as if there were three techniques.

- Western blot text below the scrollable window should read:

Western blotting detects overall changes in the amount or chemical modifications of a particular protein. **Learn More**

2. Keep all 3 technique panels, but have either the whole Flow Cytometry and Microscopy technique panels or the **New Flow Cytometry** and **New Microscopy** buttons grayed out. Use the same descriptions of the three techniques as the panel on the home page and the Assignments overview page.

**9. Western Blotting Pages**

*A. Sample Preparation Page*

* Samples window. Display the following information (for the usability test): Strain, treatment name, and treatment concentration.
* There is only one Lysate Type option: Whole Cell
* In the Lab Feature.

Insert information here on videos, links, etc.

* If a student selects more than 14 samples then a window should appear that says:

Remember that the gel only has 15 lanes and one lane must be reserved for the protein marker.

[Ok] button

With a checkbox for: Don’t show again.

* When a student selects **Prepare lysates** with more than 14 samples selected, then the following error message appears:

The gel only has 15 lanes and one lane must be reserved for the protein marker. Please reduce the number of samples to 14.

*B. Prepare Gel*

* Only one option: 10%

*C. Load Gel - Develop Pages*

* Samples Window. Display the following information (for the usability test): Strain, treatment name, and treatment concentration in the following format:

Wild-type: 10 µM Vulvarine 1