Accessibility/Usability Design Review of the STAR CellBio Designs

Overall:
The Accessibility/Usability team reviewed the designs for STAR CellBio application. The team completed an accessibility and usability review to verify the site content is easily available to the widest possible audience.

Usability Issues
Overall, the site takes very complex information and presents it clearly to users. Our main usability concern is the lack of a global/main navigation, as there is no site-wide navigation. Our concern is that it could be difficult for users to orient themselves and to find needed information. Additional usability concerns are detailed in the report.

Accessibility Issues
There are a several accessibility issues with the designs and we have included recommendations for fixing these issues when coding the site. They include:

- Color issues where foreground and background text create insufficient contrast and fail all three standard contrast tests.
- Video is used throughout the site. All videos should be captioned and the video controls should be accessible to keyboard only users and users of assistive technology.
- The visual elements of the experiments that may not be accessible to users with visual impairments. We would be happy to work with you to recommend ways to make them accessible.

We are planning to conduct usability testing on the application in February. We will also do an accessibility code review at that time. Optimally, if the issues described here are resolved prior to usability testing, we can then focus on other issues that would come up in the testing sessions.

We are happy to answer questions about this review or provide additional information as needed. Please contact Usability at usability@mit.edu or Accessibility at accessibility@mit.edu.

Requested by: Lourdes Aleman
Reviewed by: Katherine Wahl and Chris LaRoche
Date: January 18, 2013
JPGs supplied by the STAR team were reviewed

Home Page – STAR CellBio

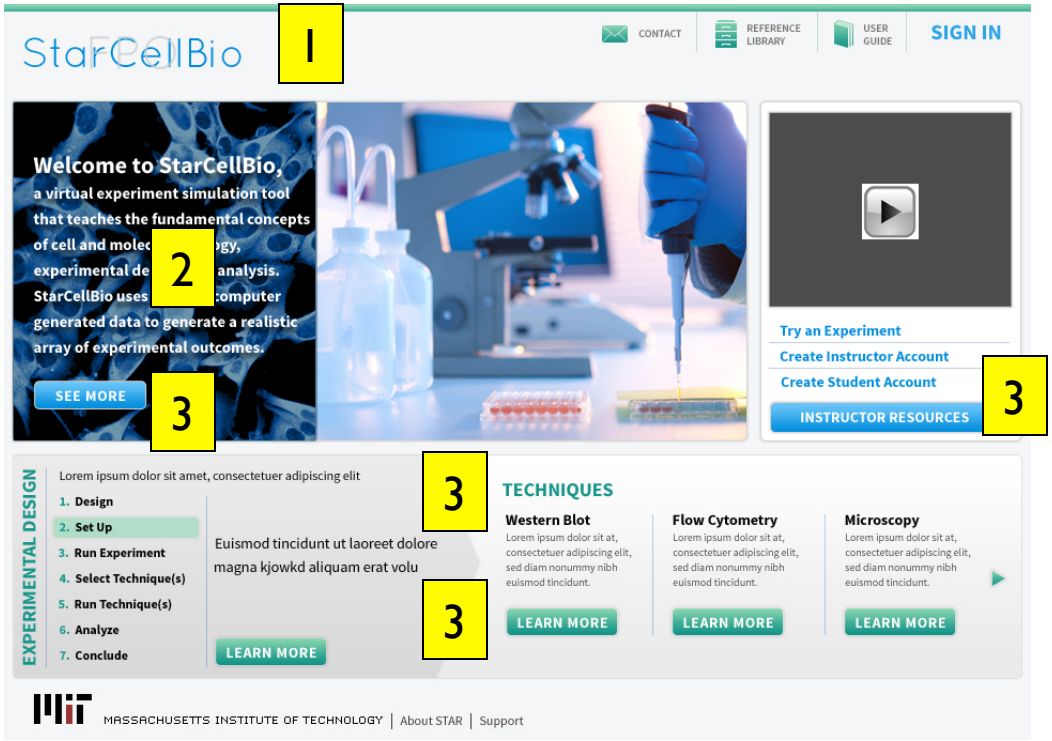
1. **Navigation.** There is no clear main navigation to the Web site. This may make it difficult for users to orient themselves and develop a mental model of the site. It also makes it difficult for the user to know where to start—there is some introductory information on the left, some links on the right (that could be easily overlooked), and then a clear path to the experiment at the bottom.

2. **Text on top of an image.** The text over this image is difficult to read because the image bleeds through. This can be problematic for all users but particularly those with visual disabilities or cognitive disabilities. A solid background is recommended.

3. **Color Contrast.** There's an official measurement for color difference and contrast between foreground and background text. There is insufficient contrast between the white text and green or blue background on the buttons and between the green or blue text and the gray background.

   Change Mandatory: Yes
   Action Item: Choose different color combinations and test to ensure the text passes all three color tests. This follows the **WCAG 2.0 guideline: 1.4.3** regarding minimum contrast.
   See details here:
   http://webaim.org/standards/wcag/checklist

   Test with the free contrast analysis tool: :
   http://www.paciellogroup.com/resources/contrast-analyser.html



Home Page – STAR CellBio

4. **Redundant links.** 'See More' and 'Learn More' links used throughout the page do not give users a sense of context and can be particularly difficult for a user of assistive technology like a screen reader. We recommend using a more descriptive link like 'More information about Star Cell Bio' or 'Learn More about Western Blot.'

   Change Mandatory: Yes
   Action Item: Make link text unique and give context

5. **Captions.** All video should be captioned for users who are deaf, have cognitive disabilities, and those for whom English is a second language. Captions will also help search engines index the content of your video, thus ensuring more people find the site. TechTV has information about how to add captions to your videos.

   Captioning Information: http://techtv.mit.edu/faq/#captions

6. **Video controls.** The featured video is well labeled and positioned. The large play button represents good usability but the buttons should be clearly labeled when the site is coded so that users of assistive technology (like a screen reader) or keyboard only users could access it as well.

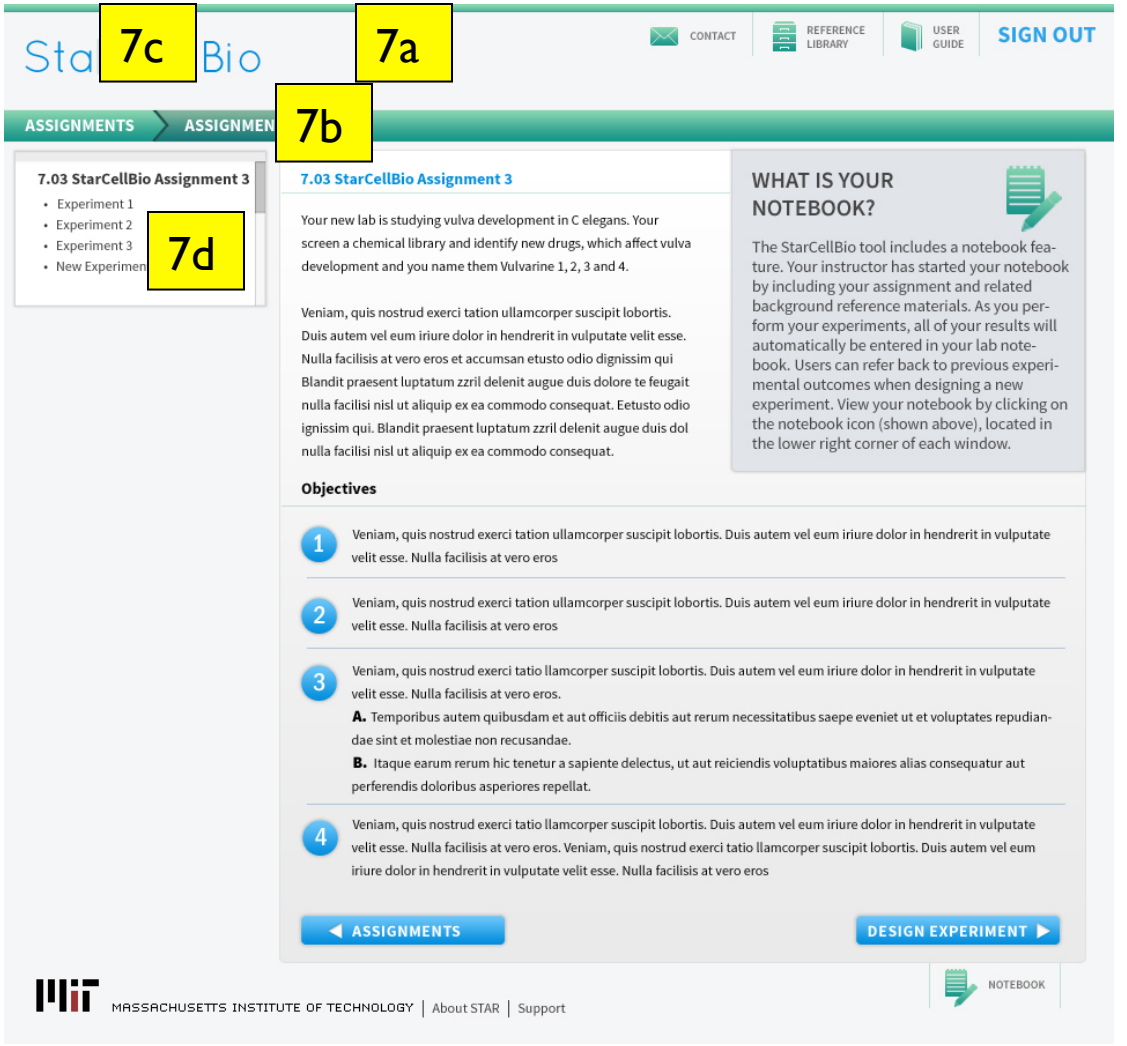
7. **Navigation.** While it's difficult to tell how the links will behave from static designs, it appears that navigating around the site will be difficult.

   a. It's not entirely clear how the user would get to this page from the home page. While it looks like the user could get back to the assignments page with the breadcrumbs at the top, any other navigation would be difficult.

   b. These appear to be breadcrumbs, which are an excellent redundant form of navigation, but they may not be enough information to help users get back to another section of the site, not just assignments.

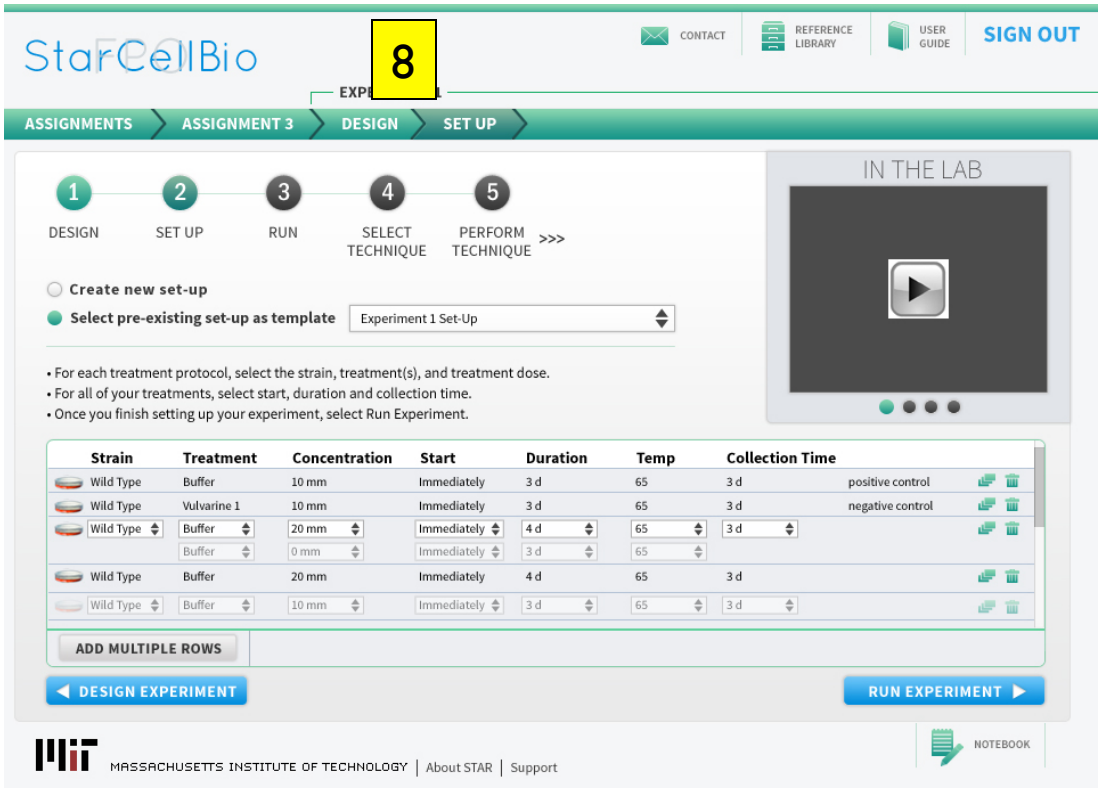
   c. There is no home link visible. While the logo in the upper left may be a link to the home page and is excellent redundancy, consider also including a home link and general navigation as this is considered a best practice and is standard behavior within Web sites.

   d. Are these links that can be used to get to other experiments? If so, this would be a good way of moving around among the experiments within this assignment.



Set up – STAR CellBio

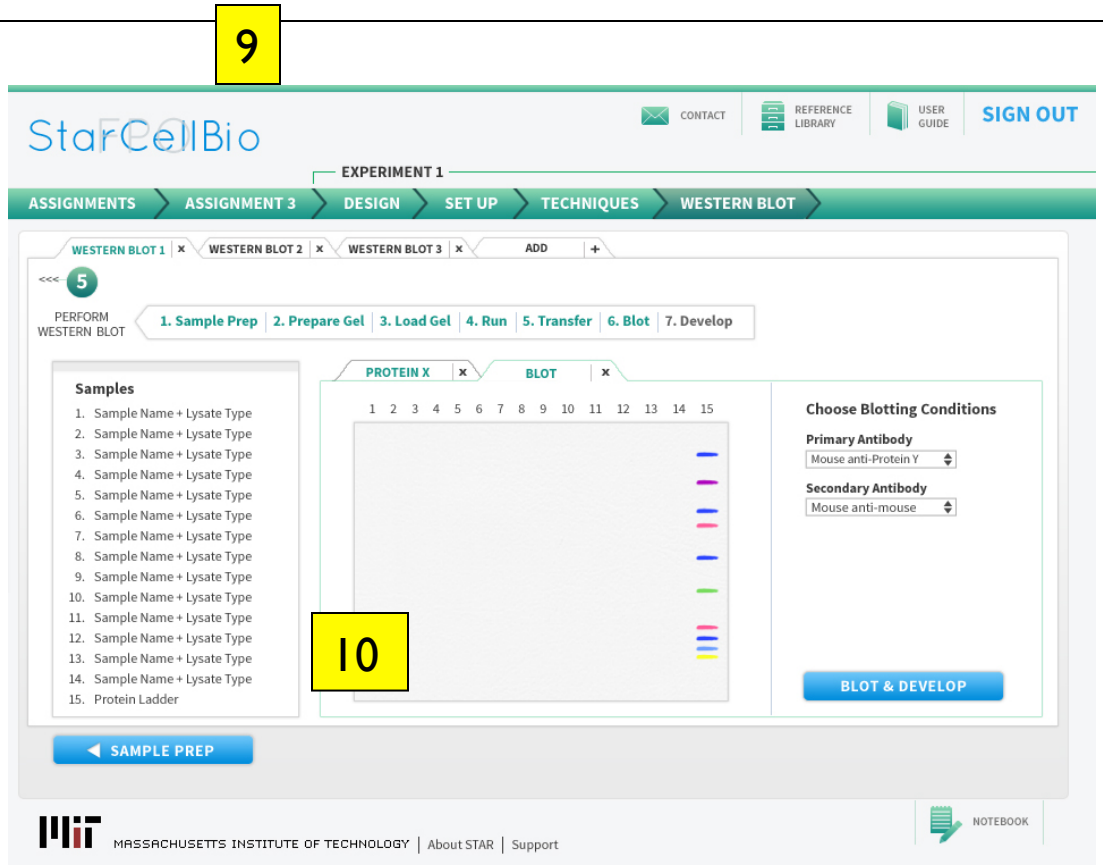
8. **Interactivity.** There looks to be a lot of interactivity on this page that is difficult to evaluate using static images. We look forward to exploring this in conjunction with the usability testing for both usability and accessibility.



Western Blot– STAR CellBio

9. **Information density.** There is a tremendous amount of information on this page that is nicely subdivided. We have concerns about users facing cognitive overload and we hope to assess this further through usability testing.

10. **Accessibility of the Western Blot.** As we discussed, making this graphic accessible to users with visual disabilities may be difficult. We are happy to discuss different approaches and ideas with you.



General resources for further learning

Accessibility

- WCAG 2.0 Checklist (basis of review): http://webaim.org/standards/wcag/checklist
- WebAim: Constructing a POUR website: http://webaim.org/articles/pour/
- WebAim's Accessibility Tips for Designers: http://webaim.org/resources/designers/
- Paciello Group's Contrast Analysis Tool: http://www.paciellogroup.com/resources/contrast-analyser.html

Accessibility laws that MIT must follow as recipients of federal funding

- Section 504 - http://learningdisabilities.about.com/od/disabilitylaws/p/Section504.htm
- Section 508 - http://www.section508.gov/index.cfm?fuseAction=stds