Chapter 18 Licensed Functionality: BSL Curriculum Management System

The **BSL** Curriculum Management System is available through optional licensing in BSL 4.1 and above only. The license must be authorized to use this lesson customization tool. To add a license to an existing Biopac Student Lab installation, please contact BIOPAC.

Overview

The BSL Curriculum Management System is a licensed feature that allows instructors to add customized lesson content and create user-defined onscreen lesson instructions for any existing BSL Lesson. It also has a built-in networking feature allowing instructors to easily broadcast customized content to student workstations over a local network. The level of control over lesson customization in the BSL Curriculum Management System goes well beyond the scope of standard BSL Lessons & *PRO* and is ideal for instructors wishing to create, edit, and modify content in a seamless, flexible fashion.

This chapter is a guide to the powerful features available in the Curriculum Management System and covers:

- How to associate custom recording procedures, analysis procedures, introductions and data reports with any existing BSL Lesson. (Any user-defined PDF can be substituted for the default BSL Lesson PDFs.)
- How to edit onscreen HTML Journal content to create custom onscreen instructions.
- How to configure Instructor (Host) and Student (Client) network settings for sharing lesson content.
- How to share PRO Lessons and Shared Lessons over a network.
 - o BSL PRO Lessons H01-H36 and A02-A17
 - o Shared Lessons are custom lessons created by the instructor.

Activating the BSL Curriculum Management License

Activating the BSL Curriculum Management System license is accomplished via a BIOPAC License Key (a physical USB License Key containing the Curriculum Management System activation code).

The BIOPAC License Key (USB) allows access to the BSL Curriculum Management System from any machine that has BSL 4.1 installed. It's recommended to use this key on personal laptops or office computers. The key is only required to run the Curriculum Management portion of the BSL software.

To Use the BIOPAC License Key (USB):

1. Connect the Key to an available USB port. (Biopac Student Lab 4.1 must already be installed on the computer.)

Register the key online at www.biopac.com/my-account/product-registration/. Registration is recommended in order to receive hardware support, product updates and BIOPAC License protection/replacement options.

(If no BIOPAC account exists, a prompt will appear for creating one.)

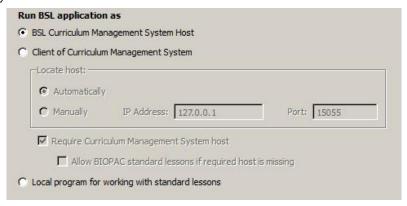


2. The USB key must remain connected in order to use the Curriculum Management System.

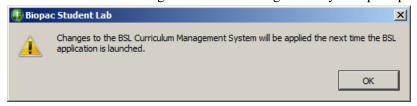
Enabling the BSL Curriculum Management System on the Instructor (Host) machine

The first step after license activation is to enable the BSL Curriculum Management System preference on the Instructor or "Host" machine.

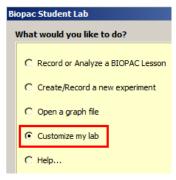
- 1. Launch BSL 4.1 and choose "Create/Record a new experiment" in the Startup Wizard. Click OK to create a new graph window.
- 2. Go to Display > Preferences > Lessons and enable the BSL Curriculum Management System Host option.



3. Click OK and dismiss the resulting Curriculum Management System prompt.



- 4. Close the BSL 4.1 application and relaunch it. The Curriculum Management System will now be present in the BSL Startup Wizard as the "Customize my lab" option.
- 5. Choose "Customize my lab" for access to the Curriculum Management System customization options.



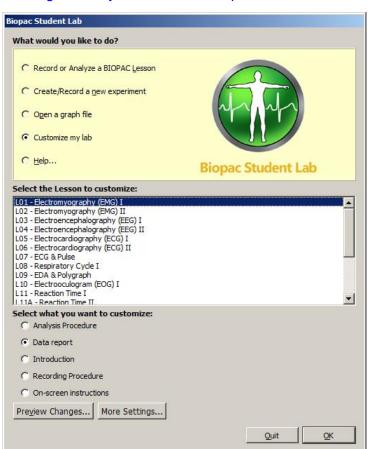
For information on setting up the Student (Client) machines to share the Instructor machine lesson content, see page 375.

Customize my lab - Accessing the BSL Curriculum Management System in the Startup Wizard

What does the "Customize my lab" option do? The "Customize my lab" Startup option is a portal into the BSL Curriculum Management System. This versatile feature enables the user to substitute modified lesson exercise content in place of the default BSL Lessons materials by selecting custom elements from within the BSL 4.1 Startup Wizard options. Your customized content must be in PDF format for Analysis Procedures, Introductions, and Recording Procedures, and BIOPAC's Journal (*.jcq) format for the Data Reports.

The Curriculum Management System also includes the powerful **BSL Visual Editor** (accessed via "Onscreen instructions"), a flexible HTML editing and design tool that enables detailed modification of the default onscreen Journal instructions accompanying each lesson recording. With the BSL Visual Editor, you can edit, add/format text, create/delete/modify tabs and details, as well as embed graphics and videos into every lesson segment ranging from setup, calibration and analysis. With the Curriculum Management System, implementing custom lesson plans becomes a simpler and more interactive experience. All edited content is presented for preview in the lower pane of the Editor and appears identically as in the actual lesson.

For example, let's say you want to modify BSL



Lesson 1 (EMG-1) to include variations on the default exercises. Simply edit the Lesson 1 Word document source (Word doc sources for all lesson procedures are included on the BSL 4.1 installation DVD). Save your changes, and then create a PDF file of the modified lesson. (Later versions of Word or other text editors, such as OpenOffice, support the conversion of doc format to PDF, as will the full version of Adobe Acrobat Pro.) This modified lesson can then be substituted for the default lesson. The Curriculum Management System's selectable options place the modified files in the Help Menu of the selected BSL Lesson where they are easily accessed by the student.

Modified lessons can be shared from the Instructor machine (host) with any Student machines (clients) over a local network. Sharing lessons does not require special networking expertise. All shared content is configured in the BSL Curriculum Management System's General settings via the checkbox options.

Need to revert to the default BSL Lesson or onscreen instructions? The original Lesson procedures and instructions are not overwritten by creating custom lesson content. Simply uncheck the custom content boxes in the Curriculum Management "Lessons" settings, or click the "Change" button and navigate to a different custom lesson file.

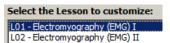
Custom onscreen instructions can also be reverted to the default Biopac instructions from the file menu of the BSL *PRO* application; File > Set up Curriculum Management System. On the Lessons pane of the displayed dialog, click the "Revert" button.

For more details on the Curriculum Management System settings, see page 363.

Access the BSL Curriculum Management System lesson customization options by choosing "Customize my lab" in the Startup Wizard.

Customize my Lab Radio Buttons and Controls

Select the Lesson to customize: The first step is to select the lesson to apply your custom content to. Choose a lesson from the list before continuing.



Select what you want to customize: Use the radio buttons to enable specific elements of your customized lesson content (Analysis Procedure, Data Report, Introduction, or Recording Procedure). Choose the desired option, click OK, and a File > Open dialog will be presented. Simply navigate to the location of your custom content and click "Open." This will place your custom PDF content in the Help Menu of the lesson selected for customization and place your custom Data Report and Analysis Procedure into the lesson Journal.





In the above example, a custom Analysis Procedure for L01 is being selected.

Lesson customization radio button details:

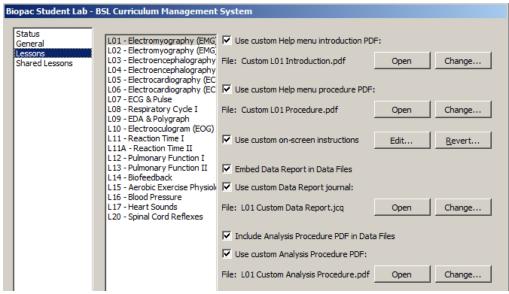
Radio Button	Function	
Analysis Procedure	Use the Analysis Procedure option for navigating to the directory containing the custom Analysis Procedure (PDF) to be used. Highlight the new file and click "Open." This will associate the custom Analysis Procedure with the selected lesson and embed it as a tabbed PDF file in the lesson Journal.	
Data Report	Use the Data Report option for navigating to the directory containing the custom Journal Data Report (*.jcq) file to be used. Highlight the new file and click "Open." This will place the new Data Report in the Analysis Journal of the selected lesson.	
Introduction	Use the Introduction option for navigating to the directory containing the custom Lesson Introduction (PDF) file to be used. Highlight the new file and click "Open." This will place the new Lesson Introduction in the Help Menu of the selected lesson.	
Recording Procedure	Use this option for navigating to the directory containing the custom Recording Procedure (PDF) file to be used. Highlight the new file and click "Open." This will place the new Recording Procedure in the Help Menu of the selected lesson.	
On-screen instructions	Opens the BSL Visual Editor, which is used to modify the default onscreen HTML Journal instruction content. Use this editor to edit and format text, add tabs, import pictures and videos, and more. See page 365 for details on using the BSL Visual Editor.	

Preview Changes

Use the "Preview Changes" option to conduct a trial run of the modified lesson. You also have the option of changing other default Lesson Preferences at this time.

More Settings

The "More Settings" dialog presents advanced options for setting up custom lesson content. It essentially performs the same function as the "Customize my lab" radio buttons, but with a greater degree of control and all custom content options presented on a master screen. This is also where custom lesson material for broadcast from the Instructor (host) computer to client (student) computers is selected. (See page 375.)



The above Lessons settings dialog may also be accessed from the BSL *PRO* application via the "File > Setup BSL Curriculum Management System" menu option. Options and controls are as follows:

Use custom Help menu introduction PDF: - enables option to use custom Introduction in Help menu and broadcasts intro to client (student) computers.

Open – opens the selected custom introduction file for preview.

Change... – opens a File > Open dialog for selecting a different Introduction file.

Use custom Help menu procedure PDF: - enables options for using custom Lesson Procedure in Help menu and broadcasts this content to the client (student) computers.

Open – opens the selected custom Lesson Procedure for preview.

Change... opens a File > Open dialog for selecting a different Lesson Procedure file.

Use custom onscreen instructions – enables the option to show customized Journal instructional content for the selected lesson. If unselected, the standard default onscreen instructions are shown.

Edit – opens BSL Visual Editor for editing the selected lesson Journal content

Revert... – discards custom Journal instructional content in favor of the original default content. (The following prompt will appear when choosing this option.)



Embed Data Report in data files – enables option to embed the standard or custom Data Report into the analysis Journal. If unselected, only the lesson segment summary will be displayed in the analysis Journal.

Use custom Data Report Journal – the custom Data Report will be embedded in place of the standard default data report. If unselected, the standard default Data Report will be used.

Open – opens the custom Data Report file for preview.

Change... – opens a File > Open dialog for selecting a different Data Report (*.jcq) file.

Include Analysis Procedure PDF in Data Files – when selected, the standard or custom Analysis Procedure PDF is embedded as a separate tab in the analysis Journal following the lesson.

Use custom Analysis Procedure PDF: – the custom Analysis Procedure will be embedded as a Journal tab in place of the default Analysis Procedure. If unselected, the default Analysis Procedure will be used.

Open – opens the selected custom Analysis Procedure for preview.

Change... opens a File > Open dialog for selecting a different Analysis Procedure file.

BSL Visual Editor

The BSL Visual Editor is a designing and editing tool used to modify the default onscreen Journal instructions for any selected lesson. If a custom lesson procedure is being used, the corresponding onscreen Journal instructional content can be edited to match the custom procedure.

The BSL Visual Editor is an important component in the Curriculum Management System and allows for flexible manipulation of onscreen Journal content of a running lesson. The Editor consists of a main toolbar area, two control docks, an editing window and a preview area.

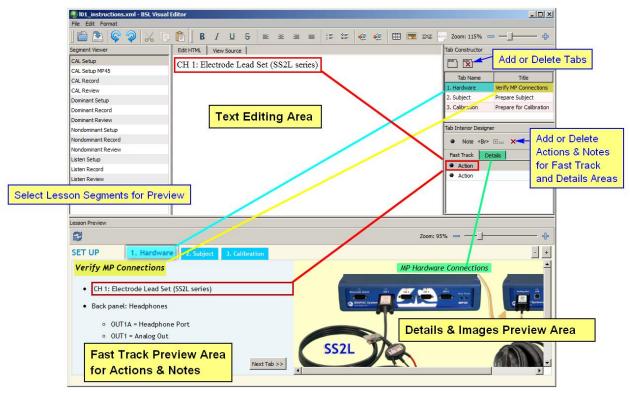
The launch BSL Visual Editor:

- Select the "Onscreen instructions" radio button in the "Customize my lab" Startup screen. (Click OK)
- Select "More Settings" and enable the "Use custom onscreen instructions" checkbox in the BSL Curriculum Management System settings window. (Click OK)
- In the BSL *PRO* application, File > "Set Up BSL Curriculum Management Settings" and enable the "Use custom onscreen instructions" checkbox in the BSL Curriculum Management System settings window. (Click OK)

The Editor can interactively modify the following areas of the lesson Journal:

- Fast Track text, including the addition of actions, notes and other text and graphics.
- Collapsible notes and pictures in the Details area
- Tab name and tab title, including the addition and deletion of tabs
- Standard text formatting tools are provided edit font size/style/ text and background color
- Text alignment, bulleting and numbering, increase/decrease indent
- Create and insert tables, hyperlinks or HTML code
- Undo, redo, cut, copy, paste, file open/save
- Zoom forward/back text and image size

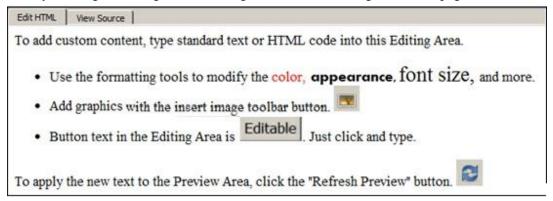
BSL Visual Editor Window



BSL Visual Editor Window

Main Text Editing Area

The Main Editing Area is the workspace for modifying text and other content appearing in the Lesson Preview Area and appears at the center of the BSL Visual Editor screen. Simply enter standard (or HTML) text into this field, or modify existing text using the formatting tools (see formatting toolbar on page 367).



Text Editing Area – View Source Tab

The "View Source" tab displays the raw HTML source code for items currently selected in the Editing Area. This field is not editable but the content can be copied into the Editing Area and modified externally.



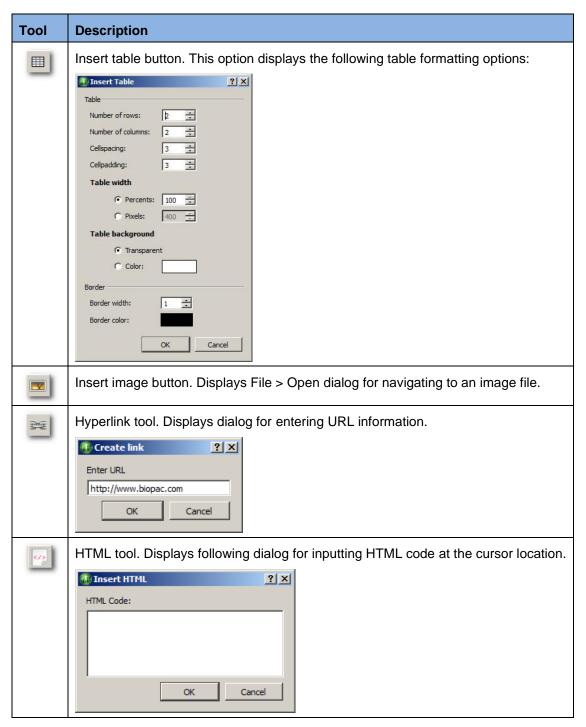
It's important to remember that the text in the Editing and Preview Areas mirrors the lesson text for the currently-selected lesson Segment. Other factors affecting Editing Area content are the various elements selected in the Tab Constructor and Tab Interior Designer. (See explanation of these controls below.)

BSL Visual Editor Toolbar

The following formatting tools are available in the Editor:



Tool	Description
	Open button. Launches a File > Open dialog for navigating to a lessons instructions file (*.xml format).
	Save button. Saves the current edits to the lesson instructions.
	Undo button. Removes the most recent editing or formatting operation.
	Redo button. Restores the most recent editing or formatting operation.
00	Cut button. Cuts the selected Editor text or content.
	Copy button. Copies the selected Editor text or content.
	Paste button. Pastes the selected Editor text or content.
В	Bold button. Toggles bold font style.
I	Italics button. Toggles italicized font style.
<u>U</u>	Underline button. Toggles underline of selected text.
S	Strikethrough button. Toggles strikethrough of selected text.
≣	Align left paragraph button.
臺	Align center paragraph button.
≡	Align right paragraph button.
	Align justified paragraph button.
1 = 2 =	Numbered list button.
0 = 0 =	Bulleted list button.
€	Increase indent button.
€ ≡	Decrease indent button.



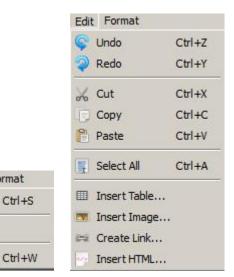
Zoom Tool

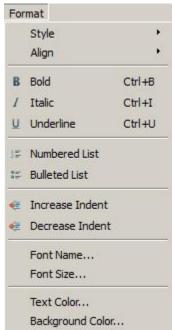


There are two independent Zoom tools in the BSL Visual Editor window. The Zoom tool on the top right controls the sizing of the Text editing Area content and the bottom right Zoom tool controls the sizing of the Preview Area content.

BSL Visual Editor Menus

The Editor menus display an alternate method for accessing the formatting toolbar options, plus a few additional controls.





File > Revert

Close

File Edit Format

Save

Revert

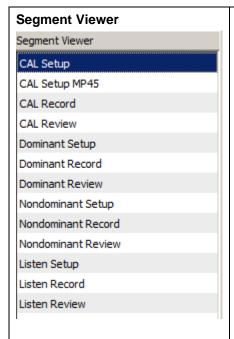
Discards global changes made to the currently open set of instructions.

Format > Font Name, Font Size, Text Color, Background Color

Additional formatting tools for operations not included in the formatting toolbar.

BSL Visual Editor Tools and Controls

BSL Visual Editor controls are described below on a sectional basis. Refer to the above image for their default Editor window locations.



The **Segment Viewer** is used to select available lesson recording segments for global editing and preview display. This control is dockable and can be positioned anywhere in the BSL Visual Editor window.

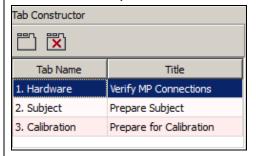
When a Segment Viewer entry is selected, the **Lesson Preview Area** displays all required actions for that segment in the lower half of the Editor screen. The Lesson Preview closely resembles the instructional Journal presented during the running of an actual lesson.

(The Lesson 1 CAL Setup segment is shown in this example preview.)



Segment Viewer Limitations: The Segment Viewer menu is not editable, and only one segment may be selected at a time. New lesson recording segments cannot be added, and default segments cannot be deleted.

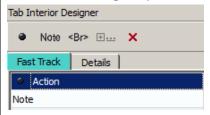
Tab Constructor (for Fast Track content)



Tab Name and **Tab Title** as they appear in the Fast Track Preview Area.



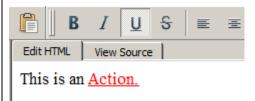
Tab Interior Designer (Fast Track)



Lesson Preview of Fast Track text.



Editing Area for entering/formatting Fast Track text.



The **Tab Constructor** is used for editing, adding and deleting tabs and tab text in the Fast Track Preview Area. This control is dockable and can be positioned anywhere in the BSL Visual Editor window.



The "**Tab Name**" and "**Title**" fields are <u>directly editable</u>. To change existing Tab text, click into the Tab Name or Title field to select and enter new text. Press **Enter** to accept the new edits. Newly-added Tabs will remain "Untitled" until new text is entered in the active Tab Name and Title fields.

Use the buttons to add new Tabs or remove existing Tabs.

New Tabs will appear in the Tab Name list below the currentlyselected Tab and to the right of the selected Tab in the Fast Track Preview. To delete a Tab, select it and click the Tab Delete button. (Red "X")

Use the **Tab Interior Designer** to select blocks of Lesson Preview text for editing. This control is dockable and can be positioned anywhere in the BSL Visual Editor window.

Fast Track selection:

The default formatting for BSL Lesson Fast Track text consists of **Actions** or **Notes**.

Actions are are indented and bulleted by default.

Notes appear as standard text.

Actions or Notes can be reformatted as desired in the main **Text Editing Area**. (See page 366.)

To enter or edit an Action or Note:

- Click on the desired Action or Note item in the list to select it. (The selected text will be outlined in red in the Lesson Preview.)
- 2. Type the new text into the Text Editing Area in the center of the Editor screen.
- 3. Apply the new text to the Preview by clicking the Refresh Preview button.

Tab Interior Designer "Fast Track" Tools:

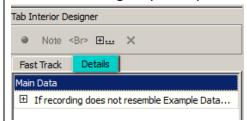
Use the button to add a new Fast Track Action.

Use the Note button to add a new Fast Track Note.

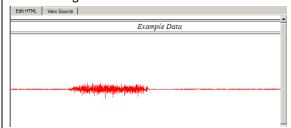
Use the SBr button to add an empty space to Fast Track.

Newly-added Actions or Notes appear below the currently-selected Action/Note in the Fast Track list. (Items in the list cannot be dragged to different locations.)

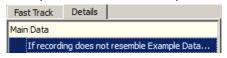
Tab Interior Designer (Details)



Text Editing Area with Main Data selected:



Example of Details with collapsible sub-text:



Enter collapsible sub-text in Text Editing Area:



Collapsible sub-text as it appears in preview:



Collapsible means that clicking the underlined Detail text in the Preview Area will show or hide the sub-text.

Use the Tab Interior Designer **Details** option to edit the right pane Preview Area content. This area is where supporting details, illustrations, pictures and videos are typically embedded.

The Details option consists of a **Main Data** entry, which displays the primary content in the Text Editing and Preview areas.

To select **Main Data** content for editing:

- 1. Click the Main Data field.
- Edit content by typing into the main Text Editing Area in the center of the screen. Import of graphics and videos are also supported. (See page 367 for more Text Editing Area tools.)

To add optional **Details** text to the Main Data:

- 2. Highlight the newly-added "Untitled" entry and enter the desired text.



3. Press the Enter key (or click anywhere in the Editor window) to apply the edit. The new Details text will appear in the lower right Preview area.

You may also:

- Add collapsible sub-text to the selected Detail by typing it into the Text Editing Area. (See left example.)
- Edit the existing Details of any selected lesson segment.
- Delete Details using the X button.

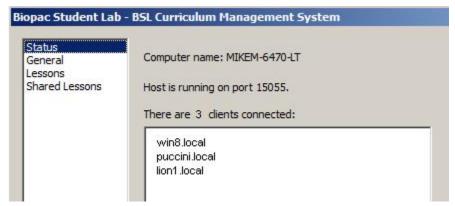
Additional BSL Curriculum Management System Settings

The global settings for BSL Curriculum Management are controlled and displayed in the panels within this screen. Access the BSL Curriculum Management Settings by:

- Clicking the More Settings... button in the BSL Startup Wizard's > Customize my lab option.
- Choosing File > Set Up BSL Curriculum Management System in the BSL 4.1 PRO application.

Status Panel

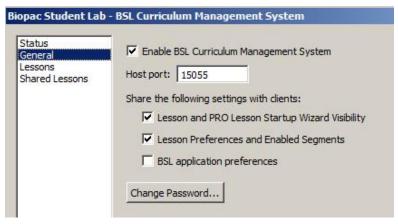
The Status panel displays current information about the Instructor (Host) and Student (Client) machines during a lesson session.



Control	Description
Computer name	Displays the Instructor (Host) machine name.
Host and port status	Displays whether the Host machine is running or stopped. If running, the Host machine's port number is displayed.
Connected Student (Client) machines	Lists all recognized Student (Client) computers on the network using the configuration from the Host machine. They may not be actively transferring data but should still be running BSL in client mode.

General Panel

The General panel contains basic options for configuring the Curriculum Management System that apply at the application level or are shared by all lessons:



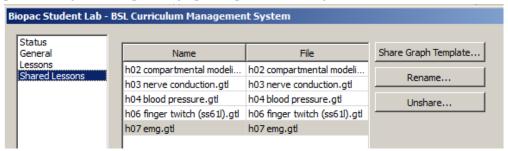
Control	Description
Enable BSL Curriculum Management System	Enables the BSL Curriculum Manager, allowing it to broadcast settings and content over the local network.
Host port	Current port number used by the Instructor (Host) machine. Default value is 15055.
Lesson and PRO Lesson Startup Wizard visibility	Clients restrict the available choices for the Lessons and <i>PRO</i> Lessons tabs on their Startup Wizard to match the lesson preference settings of the Host computer.
Lesson Preferences and Enabled Segments	Enables Student computers (Clients) to use the settings from the Host computer for individual lesson preferences (File > Lesson Preferences when running a lesson) as well as any customizations applied to the Host computer's lesson segment display. Changes to the Host computer's lesson preferences must be applied by running the specific lesson and altering the settings in File > Lesson Preferences.
BSL Application Preferences Enables Clients to use the Host computer's settings for all application preferences inste local preferences. This sharing is unidirectional; any changes in application preferences on a Client machine do not affect the Host. To make a permanent setting change, the Display > Preferences settings must be modified.	
Change Password	Use this option to set up or change a password to access any Curriculum Management Settings. When set, the password will be required when choosing "More Settings" option in the BSL Startup Wizard > "Customize my lab" option, or when using File > "Set Up BSL Curriculum Management System" in the BSL <i>PRO</i> application.

Lessons Panel

See page 364 for explanation of Lessons Settings panel.

Shared Lessons Panel

Shared Lessons are graph templates with instructor-provided titles made available for use on all Clients. These graph template files may have their own embedded Journals and PDFs to assist in distribution of Instructor materials. This panel configures the specific graph template files being shared.



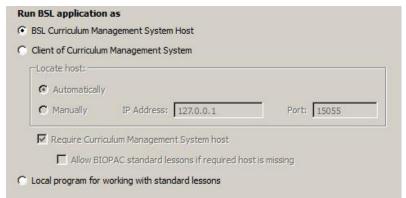
Control	Description	
Share Graph Template	Displays a dialog for navigating to the location of the graph or graph template to be shared.	
Rename	Displays a dialog for renaming the default title of the shared lesson under the "Name" field.	
Unshare	Removes the selected lesson from the shared lessons list.	

Setting Up Curriculum Management Instructor (Host) and Student (Client) Sharing

The BSL Curriculum Management System allows for the sharing of default and custom lessons and other instructional materials over a local network, and is split into "Host" software (including configuration controls and editors) and "Client" software. Depending on the Host machine settings, the following information may be shared:

- Application level preferences
- Standard and PRO Lesson visibility
- Shared instructor-generated *PRO* Lessons
- Individual lesson preferences
- Replacement help menu introduction and procedure lesson PDFs
- Customized lesson HTML instructions and content
- Replacement Data Report journal
- Replacement analysis instruction PDF for data files

The following Host-Client controls for BSL Curriculum Manager are found in the BSL *PRO* application's Display > Preferences > Lessons:



Control	Description
BSL Curriculum Management System Host	Allows this computer to "push" all customized lesson content to the other computers on the local network.
Client of Curriculum Management System	Allows this computer to receive the customized lesson content and onscreen instructions being "pushed" from the Curriculum Management System Host computer over the local network.
Locate Host – Automatically	Searches automatically for Curriculum Management System Hosts on the local network.
Locate Host – Manually	Allows the Curriculum Management System Host to be identified by a fixed I.P. address and port number. Use this option is auto-location is not supported on your network.
Require Curriculum Management System host	Check to prompt on application launch if no Curriculum Management System Host is detected.
Allow BIOPAC standard lessons if required host is missing	Allows access to the default uncustomized BSL Lessons if no Curriculum Management Host is detected.
Local program for working with standard lessons	Use the standard BSL Lesson Curriculum.This setting disables the Curriculum Management System.

NOTE: Before sharing the instructional content, enable or disable the desired lessons in the Curriculum Management Settings and the Display > Preferences > Lessons settings.

To share BSL Curriculum Management materials over the network, use the following steps:

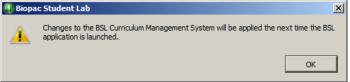
- 1. Launch the BSL *PRO* application on the Instructor (Host) computer.
- 2. Display Preferences > Lessons. Make sure that "Run BSL application as BSL Curriculum Management System Host" is enabled.



- 3. Launch the BSL *PRO* application on the Student (Client) computer.
- 4. Display > Preferences > Lessons. Make sure that "Run BSL application as Client of Curriculum Management System" is enabled.



- 5. Check "Locate host Automatically." (If your network does not support auto-location, contact your network administrator to obtain the correct I.P. address and port information, and use the "Locate Host Manually" setting.)
- 6. Click OK, and click OK to the configuration change confirmation dialog.



- 7. Close the BSL application on the Student (Client) computer.
- 8. Relaunch the BSL application on the Student (Client) computer. The following dialog will appear:



9. The Student (Client) computer will connect automatically to the Instructor (Host) computer over the network, and all configured Host preferences and shared materials will be available to the Clients.

Note: Although detection of multiple Instructor (Host) computers is supported, only one Host computer may be used at a time by a Client. If multiple BSL Curriculum Management Host computers are found on the network, the following message will be displayed.



Importing and Exporting Curriculum Management Settings

Customized content and saved Curriculum Management System preference settings can be exported into a proprietory custom settings archive file called *.csp format. The Import/Export functionality allows for customized content and preferences to be exported to a single file that can then be transferred between computers.

This feature is useful not only for backing up custom settings, but also offers the ability to edit content on an office/home computer and then easily move (import) those files to a host in the lab.

To access this feature, launch BSL and select the "Create and record a new experiment," then choose the File menu and note the two Import and Export Curriculum Management Settings options:

Import BSL Curriculum Management System Settings...

Export BSL Curriculum Management System Settings...

In order to use the **Import** option, a saved Curriculum Management Settings archive (*.csp) file must be available. A saved settings file must first be created by using the "**Export**..." option, or a saved settings file must be available from another machine with BSL installed.

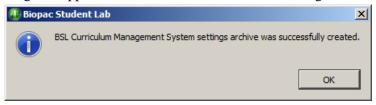
To Export Curriculum Management Settings

1. Choose the "Export BSL Curriculum Management Settings" option. This launches a File > Save As dialog.



2. Name the settings archive (*.csp) file and Save it to a location of your choice.

The following confirmation dialog will appear after the archived Curriculum Management settings are exported.



To Import Curriculum Management Settings

- 1. Choose the "Export BSL Curriculum Management Settings" option. This launches a File > Open dialog.
- 2. Navigate to the location of the saved *.csp file, select the file and click Open.



The following confirmation dialog will appear after the archived Curriculum Management settings are imported.

