Color Correction in Final Cut Studio

Introduction to Color

Part **1**

Getting Started with Color

NOTE ▶ This tutorial is excerpted from *Apple Pro Training Series: Color Correction in Final Cut Studio,* by Michael Wohl and David Gross, ISBN 0-321-63528-0. For more information or to buy the book, see www.peachpit.com/apts.

NOTE ▶ Before beginning this tutorial, you must install Final Cut Pro 7 and Color 1.5. Check the Final Cut Studio Installer disc for more information. Then follow these steps:

1   Click to download the Online Tutorial Media.zip file.
2   Double-click the downloaded Online Tutorial Media.zip to unarchive the tutorial media. (If you are using Safari, this file will be located in your Downloads folder.) This will create a Color Book Files folder in the same location on your system.
3   Drag the Color Book Files folder to the root level of your Macintosh HD (main hard disk).
4   When you see the Color Book Files folder referenced in the PDF, find the folder by first navigating to your Macintosh HD. You may notice degraded video quality due to compression of files for download.

You can do a tremendous amount of color grading without ever leaving Final Cut Pro. However, Apple Color provides a whole new level of professional-quality grading tools that greatly increase the type and amount of changes you can make to your clips.

The myriad advantages of working in Color will become clear as you work through the remainder of the lessons in this book, but beware: Color looks and operates somewhat differently from the other programs in Final Cut Studio, and there is a moderately steep learning curve that you must traverse before you'll be comfortable using it.

But don't fear! This series of lessons will introduce you to this powerful program and will guide you through the most common workflow. You'll begin in Final Cut Pro, send your

sequence to Color, tour the Color interface, familiarize yourself with Color's intuitive task-based workflow, set preferences for your sequence, and experiment with some simple adjustments while you get to know the most important tabs, or *rooms*, in the Color interface. Finally, you'll send your finished work back to Final Cut Pro, returning you to that familiar interface where you can choose how you want to output your completed project.

Setting Up Your Computer

First of all, ensure that your system meets the minimum hardware requirements for using Color effectively. To display images properly, Color requires at least the standard graphics card that is included in any Mac Pro, 24-inch iMac, 2.5 GHz or faster Power Mac G5 Quad, or 17-inch MacBook Pro. The graphics card must have at least 256 MB of VRAM for 32-bit rendering, and 512 MB of VRAM to work with RED or DPX files.

Also, to show the entire Color interface, your primary display must be set to a minimum resolution of 1680 x 1050 pixels. A lower resolution compromises the interface shrinking interface text to an illegible size. For best results, you should use two monitors. When launching Color with two monitors, the software will automatically enable Dual Display Mode.
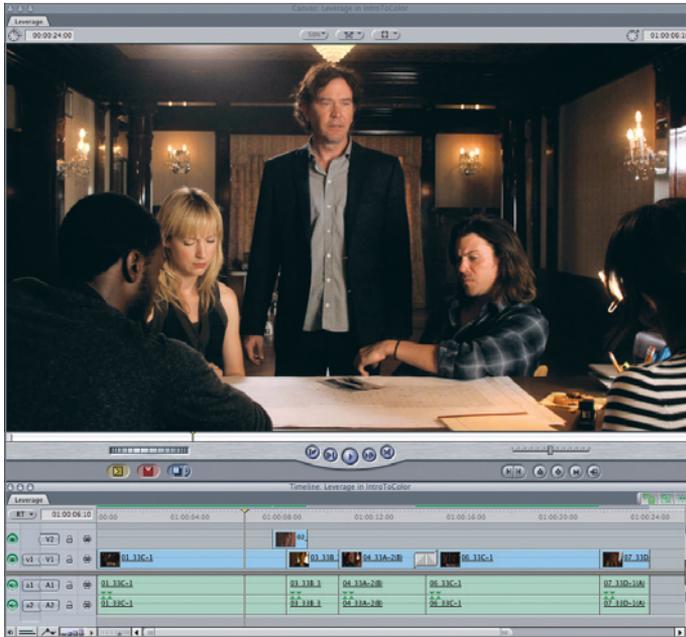
Additionally, to access Color's full functionality, you'll need a three-button mouse. This includes the Mighty Mouse that is provided with the desktop computers listed above, or any three-button, Macintosh-compatible mouse. To configure a three-button mouse, go to your computer's System Preferences, and in the Keyboard & Mouse pane set the left button to Primary Button, the right button to Secondary Button, and the middle button to Button 3.

Setting Up a Project

Before you start color correcting, you'll send a sequence of three clips from Final Cut Pro to Color. This is a common, real-world workflow that you're likely to use for all of your sequences.

1   In the Finder, navigate to Color Book Files > Lesson Files > Lesson 04.

2   Double-click **IntroToColor.fcp** to open the project in Final Cut Pro.

   The Leverage sequence should be open in the Canvas and Timeline.

3 Examine the clips in the sequence.

The sequence has already been partially graded using the Final Cut Pro Color Corrector 3-Way filter. There is a timecode generator filter applied to one of the clips, and a transition effect on one edit.

4 Double-click the first clip to open it into the Viewer.

5   Click the Color Corrector 3-way tab to bring it forward.

6   Click the Visible checkbox on and off to see the effect of the filter.

The contrast has been significantly increased to give the shot much more tonal range.

NOTE ▶ Be sure to leave the filter turned on. These settings will be retained when the sequence is sent to Color.

7   Double-click the second clip in the sequence and click the Color Corrector 3-way filter in the Viewer.

8   Click the Visible checkbox to turn off the filter.

By turning off the visibility of the filter, its settings will be ignored when the sequence is sent to Color.

NOTE ▶ There are additional limitations to how the Color Corrector 3-Way filter is translated into Color. If there is more than one filter applied in Final Cut Pro, only the last enabled filter will be applied, and any filter with Limit Effect settings applied will be ignored.
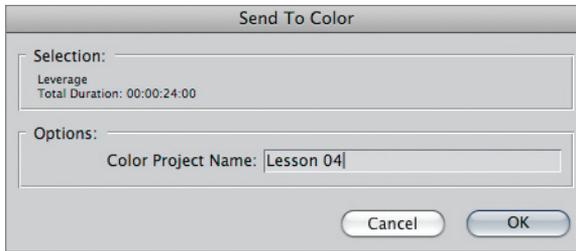
9   Play through the remainder of the sequence.

The rest of the clips all have various issues that you'll address in Color. The third shot has a color cast, the fourth shot is partially overexposed, and so on.

NOTE ▶ There is more to preparing a project for color grading than this simple example covers. For more information, you can search for "preparing your sequence to go to color" in the Color Help menu.

10   Choose File > Send to > Color.

NOTE ▶ If the Send to > Color command is dimmed, verify that either the Canvas or Timeline window is active.
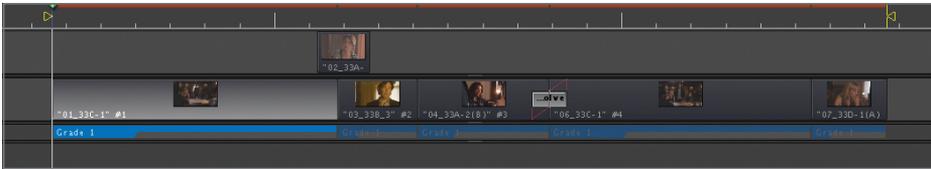
The Send To Color dialog appears.

11 In the Color Project Name field, type *Lesson 04*, and click OK.

> **NOTE ▶** If this is your first time launching Color, you will see a Choose Media Directory dialog. Click OK to accept the default location (~/Documents/Color Documents/).

Color will open automatically, and an identical sequence will appear in the Color Timeline.

The Color project is created and saved in your Documents > Color Documents folder with a *.colorproj* extension.

> **NOTE ▶** That default location can be changed in the User Prefs tab of the Setup room.

> **TIP ▶** Alternatively, you could launch Color, create a new project, and import your clips, but sending to Color directly from Final Cut Pro maintains your editing decisions, and processes only the edited portions of the clips in your sequence. Additionally, many settings from Final Cut Pro's motion tab and Color Correction 3-way filter will be translated directly to Color.
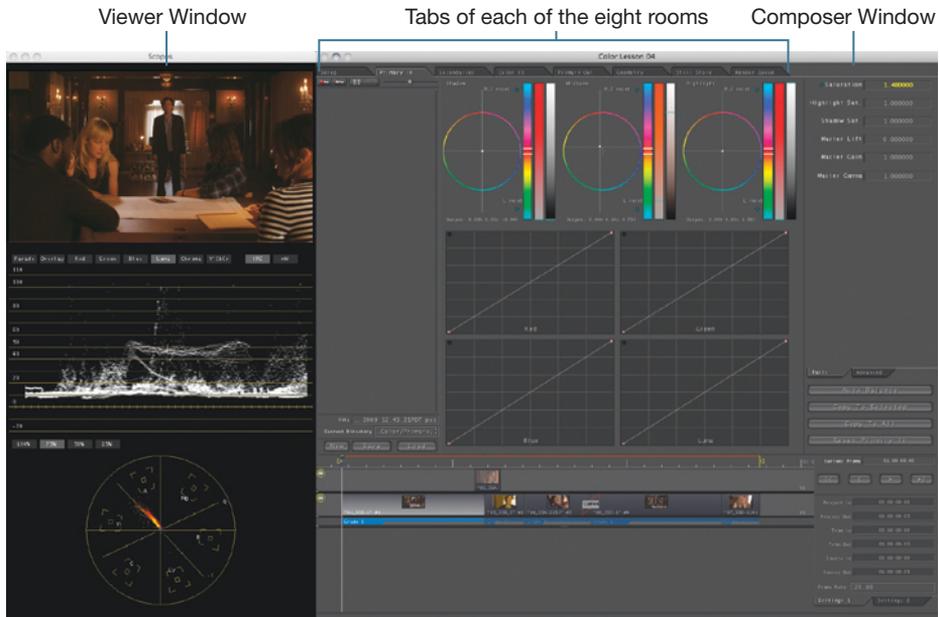
Final Cut Pro and Color communicate with each other through a language called *XML*. When you send your sequence from Final Cut Pro to Color, the software uses XML to track information about all of the video, audio, and effects editing you did in your Final Cut Pro sequence. Color reads this XML to re-create your sequence in the Color Timeline. If you have any audio clips, effects (except the Color Corrector 3-way filter), Motion projects or templates, or generators in your Final Cut Pro sequence, Color will temporarily ignore them or they'll appear as offline files in the Color Timeline. But because all of those elements are still described in XML, they will reappear when you return your rendered clips to Final Cut Pro.

> **TIP** In Color 1.5, you can now import and grade still images and freeze frames sent from Final Cut Pro, just be sure any freeze frames are on track V1.

This communication between Final Cut Pro and Color saves you the time and trouble of having to import individual clips into Color before you can begin your color grading. Also, because the edited version of your footage is sent to Color, media management becomes easier because Color is working only with your used media.

Understanding the Eight Rooms: Color's Task-Based Workflow

The Color interface is divided into two windows: the Viewer and the Composer. In the Viewer window, you see your video image and the various scopes. In the Composer window, you'll find the Timeline, as well as all the color-correction controls, which are divided into eight tabs called *rooms*. Each room performs a different function in the color grading workflow, and they're arranged from left to right in the order in which you'll typically apply corrections. Additional tabs appear at the bottom of some rooms and access additional tools and controls. These tabs are also arranged in the order in which you would typically use them.

Viewer Window   Tabs of each of the eight rooms   Composer Window

Setup Room

In the Setup room, you customize user preferences and project settings, such as interface colors, Auto Save, and Broadcast Safe specifications. The Setup room also contains areas in which you can view a sequential list or graphical display of all your shots, group shots together that will require the same corrections, and save entire grades for future use.

Primary In Room

In the Primary In room, you begin your color corrections, making adjustments that affect the entire image, such as contrast and color balancing.

Secondaries Room

In the Secondaries room, you apply color corrections to specific portions of the image, rather than to the entire image. For example, if you'd like to enhance only the color of a sky or a person's face, you would perform that work in the Secondaries room.

Color FX Room

In the Color FX room, you combine and apply imaging filters to create styled looks using a node-based system. Effects that you build in the Color FX room can be saved and applied to future shots.

Primary Out Room

The Primary Out room is almost identical to the Primary In room except that the final corrections made here are applied after the changes that were made in all the other rooms. Final tweaks can best be made in the Primary Out room.

Geometry Room

In the Geometry room, you adjust the size and position of the frame, draw custom shapes for isolating secondary color corrections, and motion-track shapes to moving objects.

Still Store

In the Still Store, you can save freeze frames of shots and use a split-screen display to compare them with other shots in the Timeline.
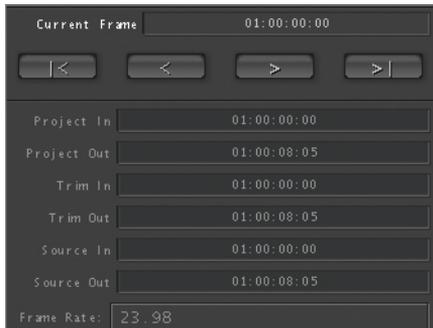
Render Queue

In the Render Queue, you choose which shots you want to render before returning the sequence to Final Cut Pro.

Navigating Your Sequence

Before you can utilize the powerful grading tools in Color, you have to understand which clips will be affected as you adjust Color's controls. Color's Timeline is visible no matter which room is active, and it provides an overview of your entire project. When you use the Send To Color command from Final Cut Pro, your entire Final Cut Pro Timeline is replicated in Color, including multiple layers, speed effects, and transitions with handles (although Color does not display or render transition effects).

Navigating Clip to Clip

The Color Timeline navigation is similar, but not identical, to the Timeline navigation in Final Cut Pro. Navigation buttons are located to the right of Color's main Timeline display.

1   Press Home to move the playhead to the beginning of the sequence.

2   Click the Next Clip button (or press the Down Arrow key) to jump from clip to clip.

3   Click the Previous Clip button (or press the Up Arrow key) to move backward one clip at a time.

4   Press the Left and Right arrows to step through individual frames of the current clip.

    TIP ▶ You can also drag the playhead in the ruler area to move to a new frame or to scrub through your clips.

It's very important to understand that the Timeline playhead position determines which clip is affected by changes you make in any of the color correction rooms. Moving from clip to clip will update the controls in the rooms to show the settings that are currently active for that clip. Active clips are displayed in a lighter color than the other clips.

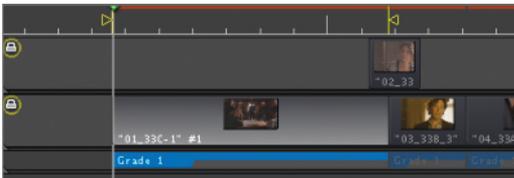   NOTE ▶ Although you can select a clip in the Timeline, doing so will not activate it for grading.

5   Position the playhead over the first clip, `01_33C-1`.

Playing Clips

It is absolutely critical to preview your clips often during color grading work. Remember, you're working on moving images; while you make adjustments that might appear perfect on a single frame, other sections of the same clip may require different adjustments.

Color has two playback modes. In the default mode, playback loops around the current clip; in the alternate mode, playback moves from clip to clip across an entire sequence or a marked area (as it does in Final Cut Pro). You can verify which mode you're in by checking the positions of the In and Out points in the Timeline ruler.

The In and Out points indicate which area of the Timeline will be looped when you begin playback.
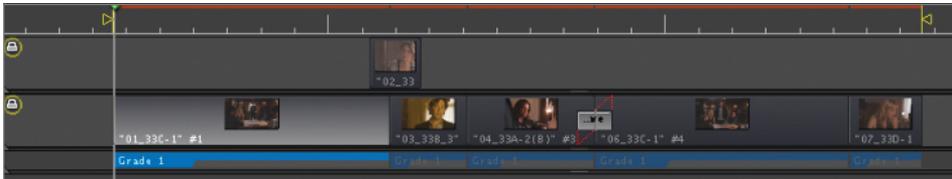
Although Play Forward and Play Backward buttons are present in the Timeline navigation area, it's far more intuitive to use the familiar keyboard shortcuts: spacebar, J, K, and L.

> **NOTE ▸** The J, K, and L shortcut keys work only when the Timeline is active.

1 Press L (or the spacebar) to start playback.

The clip plays and loops until you press K or press the spacebar a second time.

2 Choose Timeline > Toggle Playback Mode (or press Shift-Command-M).

The In and Out points move to encompass the entire sequence.

3 Press L or the spacebar again.
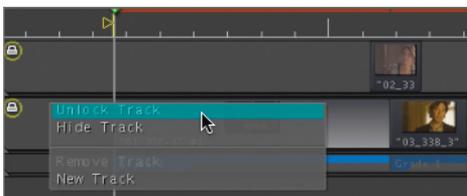
Now the sequence plays across multiple clips.

TIP ▶ You can set a custom playback range by placing manual in and out points in the Color timeline by pressing I and O,

Locking and Hiding Tracks

Color's Timeline includes a wide variety of editing tools, such as ripple, roll, slip, add edit, and others that you probably use in Final Cut Pro. However, editing in Color will undermine your ability to round-trip between Color and Final Cut Pro.
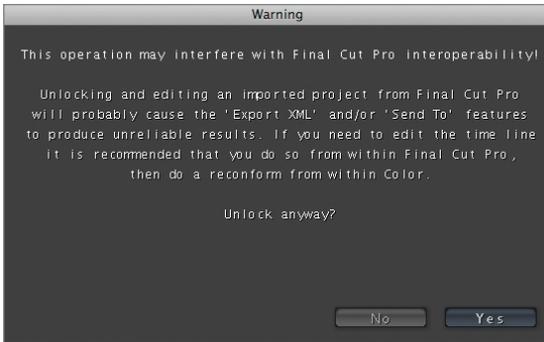
Because of this, when a Color project is created using the Send to > Color command in Final Cut Pro (as previously described), Color automatically locks the Timeline tracks to prevent any accidental changes.

You can tell if a track is locked by the presence of a lock icon in the upper-left corner of the track. You won't be able to make any editorial changes to the clips on that track unless you unlock it.

Tracks can be locked or unlocked by right-clicking (or Control-clicking) the track and, from the shortcut menu, choosing Lock Track or Unlock Track.

Attempting to unlock a track triggers a warning about Final Cut Pro interoperability.

Also found in that shortcut menu is the Hide Track command. Hiding a track disables clips on that track from appearing in the Viewer or in the grading rooms. Applying this command is similar to clicking the Enable button in the Final Cut Pro Timeline track header area.

> **TIP** ▶ You can use this command to hide the clips on V2 or a higher track that are obscuring a clip on a lower track.

1   Right-click the bottom track in the Timeline.

2   From the shortcut menu, choose Hide Track.

The track is hidden and the Viewer displays black. Color correction cannot be applied to clips on a hidden track.

3   Right-click the track again, and from the shortcut menu, choose Show Track.

NOTE ▶ Hidden tracks can still be rendered, and when the sequence is returned to Final Cut Pro, tracks hidden in Color will not be hidden in Final Cut Pro.

Zooming In and Out

Although editing clips in the Color Timeline is a rare occurrence, it's common to zoom in and out to better see the boundaries of the clips you're grading.

1   Choose Timeline > Zoom In or press Command-+ (plus).

    The Timeline zooms in.

2   Choose Timeline > Zoom Out or press Command--- (minus).

    The Timeline zooms back out.

    TIP ▶ Pressing Shift-Z zooms the Timeline to fit, just as in Final Cut Pro.

    This is a familiar and easy way to zoom in and out on the Timeline. Color provides another way to zoom, but it's hidden in a nontraditional place. If you right-click the Timeline ruler and drag, Color enables a zooming function.

3   Right-click the ruler area of the Timeline and don't release the mouse button.

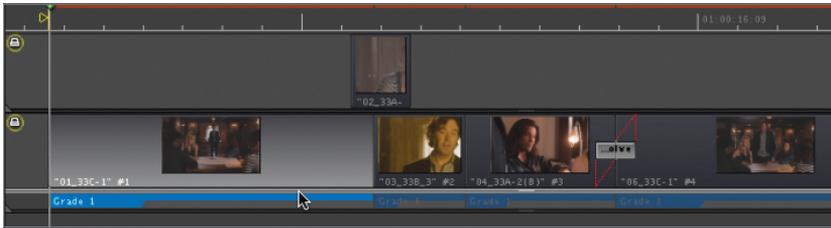4   With the right mouse button still held down, drag right to zoom in and drag left to zoom out.

    TIP ▶ If you're working with a multi-touch trackpad, you can use a pinch open gesture to zoom in and pinch close to zoom out. You can also scroll through the Timeline using a two-finger swipe gesture.

Resizing Tracks

In addition to zooming in and out on the temporal scale, you may also want to enlarge your Timeline tracks to see the thumbnails more clearly, or reduce the tracks to view more of them simultaneously.

Color tracks can be resized in a manner similar to the way track sizes are adjusted in Final Cut Pro.

1   Click the black line beneath the clip icons in the Timeline.

NOTE ▶ Don't click the bar beneath the grade tabs; this expands the area showing the grades and corrections applied to the clips.

2   Drag the line up or down to enlarge or shrink all Timeline tracks.

TIP ▶ Shift-drag to enlarge or shrink individual tracks.