

Chartered by the state of Georgia in 1785, the University of Georgia is the birthplace of public higher education in America — launching our nation's great tradition of world-class education for all. What began as a commitment to inspire the next generation grows stronger today through global research, hands-on experiential learning and extensive outreach. One of America's "Public Ivies" and a top 10 best value in public higher education, the University of Georgia tackles some of the world's grand challenges — from combating infectious disease and securing the world's food supply to advancing economic growth and analyzing the environment.

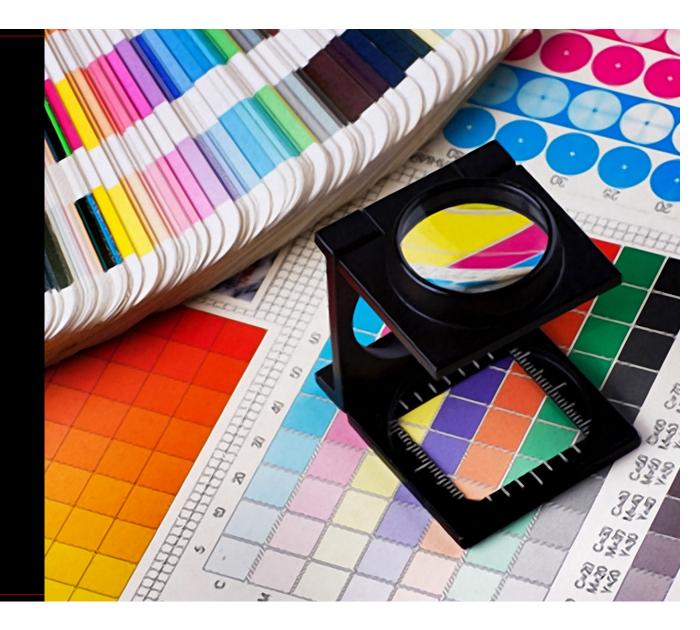
Located in Classic City of Athens, approximately an hour northeast of Atlanta, Georgia's flagship university thrives in a community that promotes the benefits of a culture-rich college town with a strong economic center.

Consistent Color Management

What you see is what you should get!

Peter Lee & Rick O'Quinn, UGA Marketing & Communications

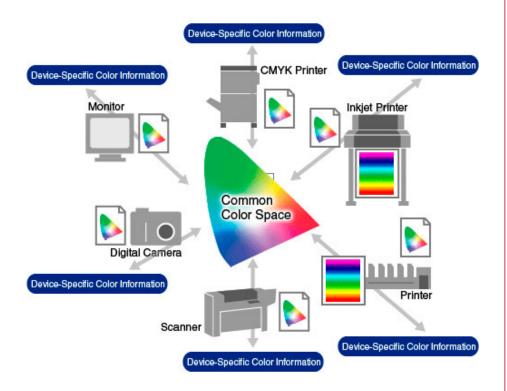




What is Color Management?

Controlled conversion of color between various devices

Displays Scanners Printers Printing press (proofing device) Cameras



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<u>Why Are You Here?</u>

I am eager to master color management!



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Why Are You Here?

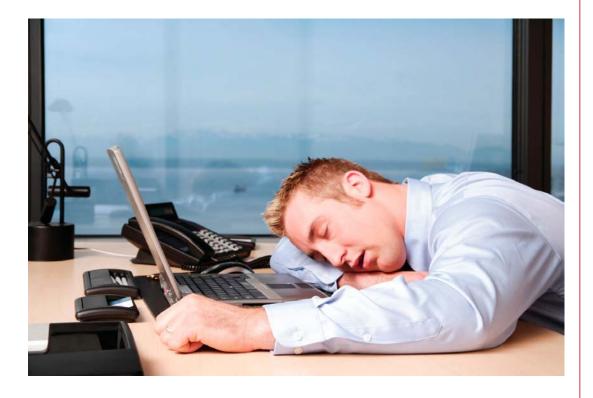
I can't master color management!



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Why Are You Here?

I quit trying to master color management!



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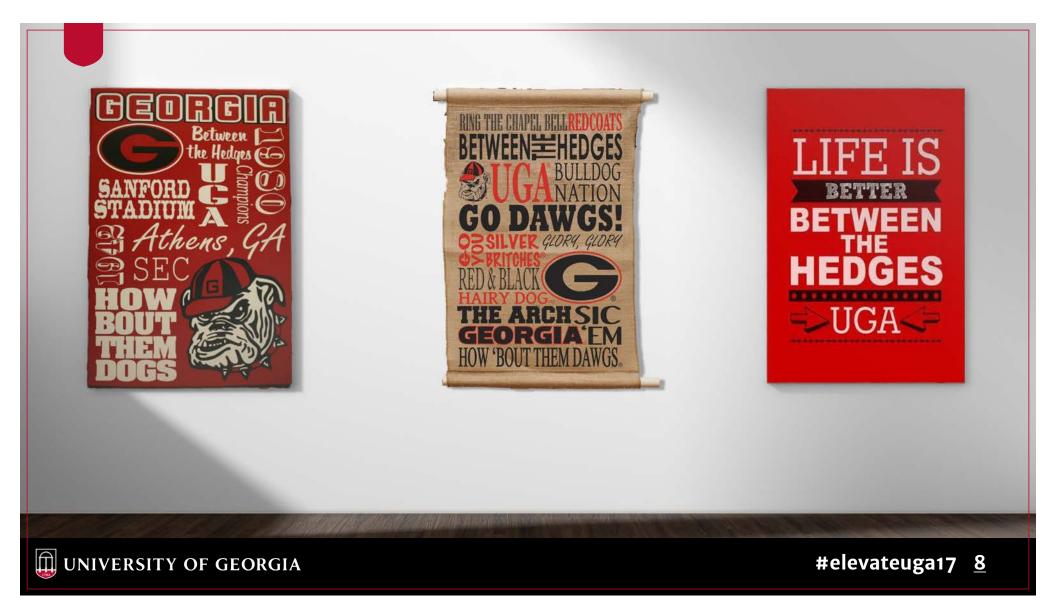
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Our Goal

Help you master color management... by learning how to capture the best color from the source, then obtain good color matching between various devices

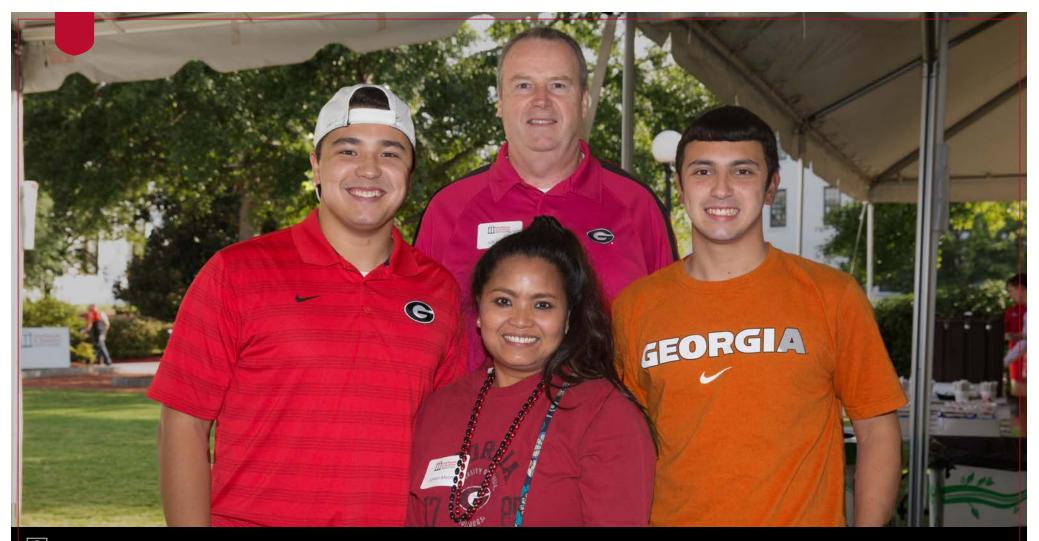


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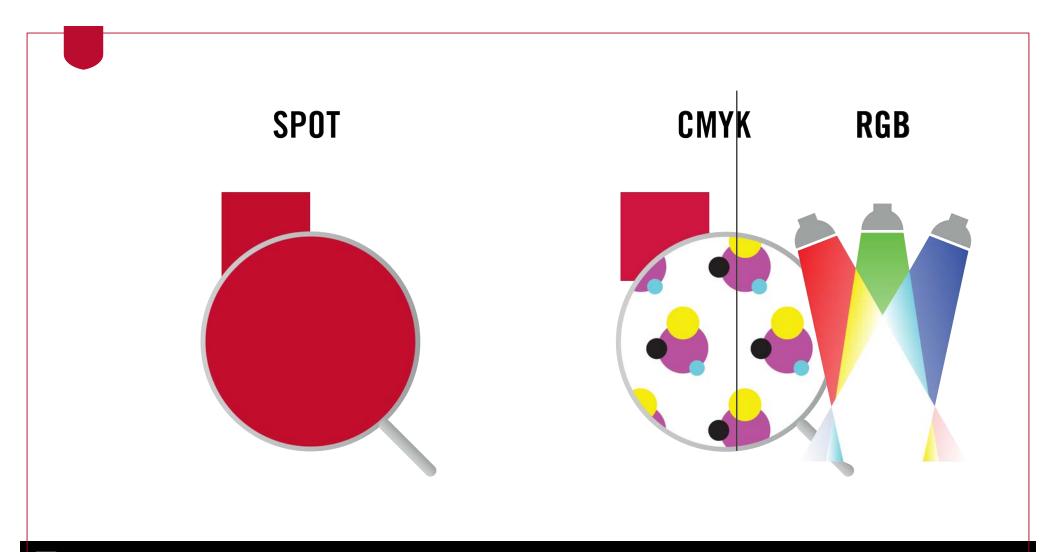


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SPOT CMYK RGB

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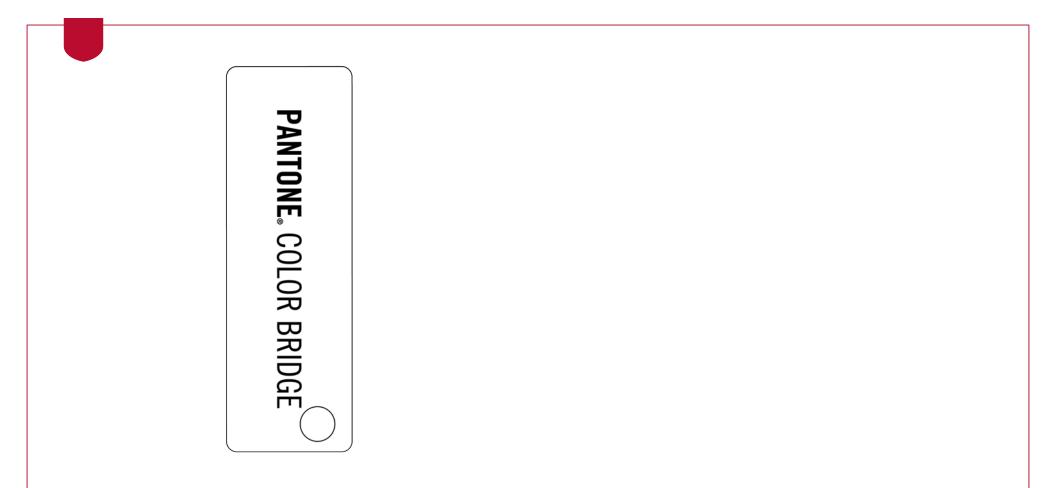
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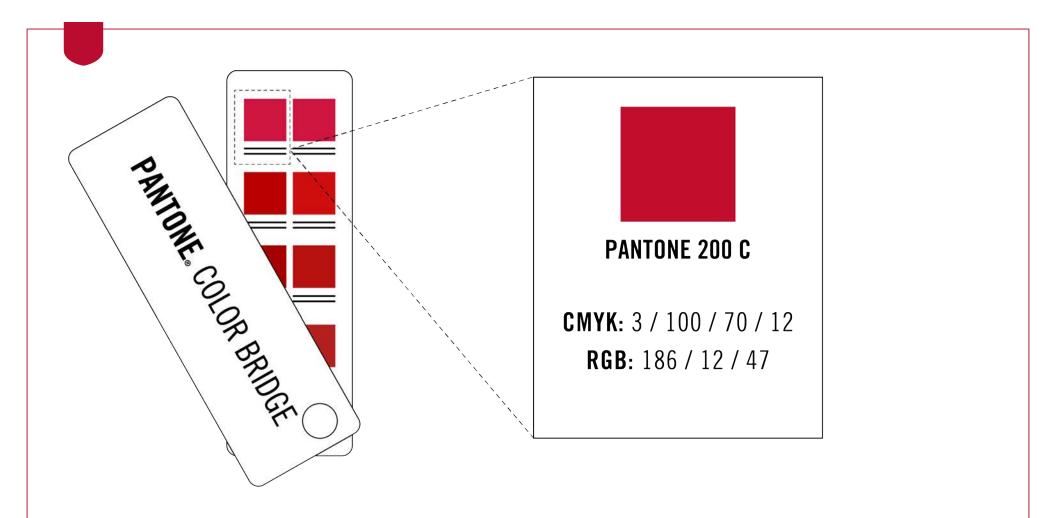


The **goal** is always the spot color.

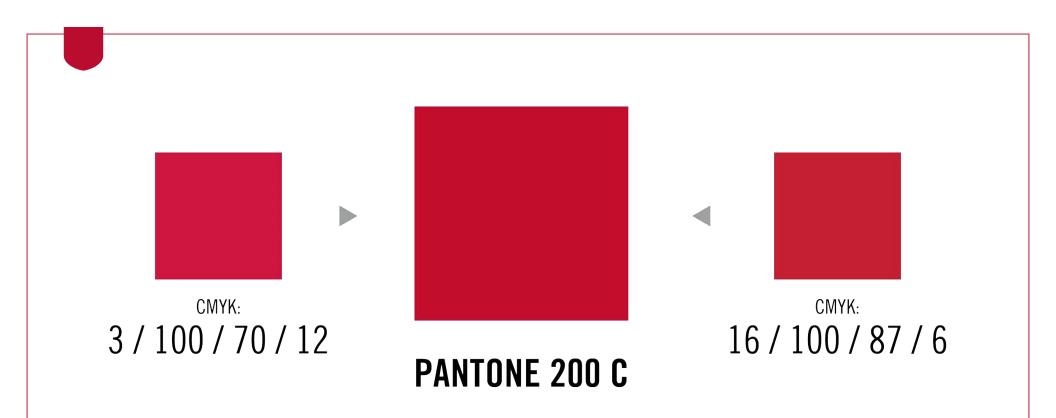
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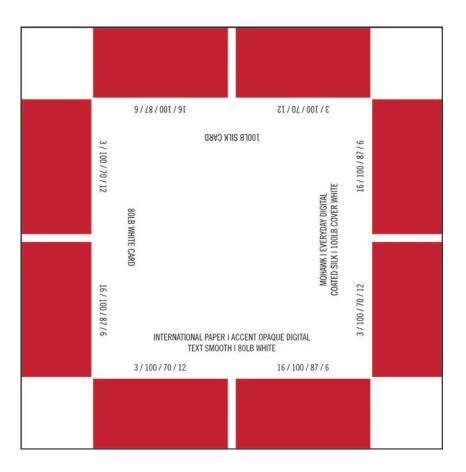




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Team **Pantone**?

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Team Adobe?

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Team Pant-obe?

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since September 2016

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Learning the Lingo

Words to live by



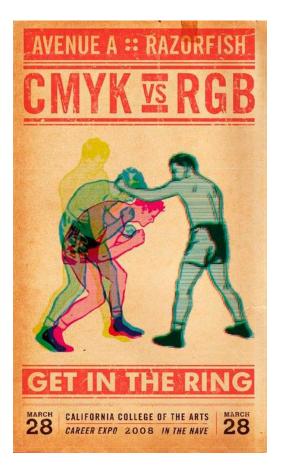
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Color Models

Abstract mathematical models describing blah, blah, blah....

- RGB
- CMYK
- Grayscale
- Lab
- Index

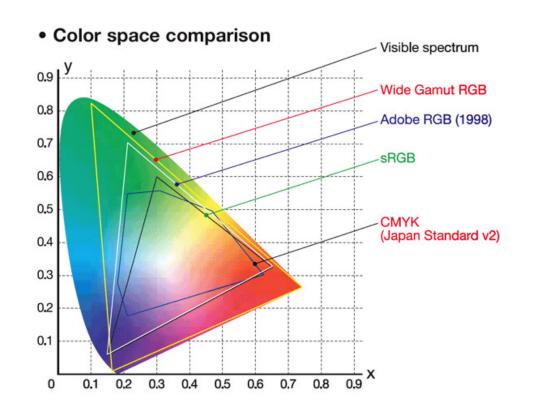


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Color Spaces

Also referred to as working space; a specific organization of colors within the broad color models

- AdobeRGB
- sRGB
- US Web Coated (SWOP)



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Calibration

Placing devices into a predetermined state

- Hardware
- Software
- Human eyeballs (not to be trusted)



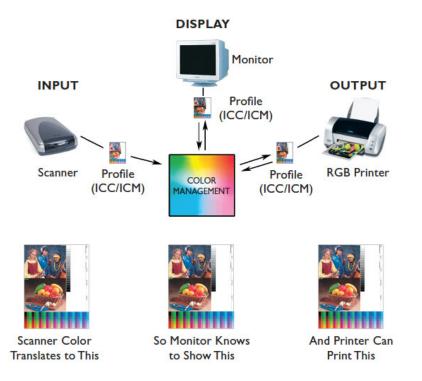
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ICC Profiles

A description of how a device reproduces color

- It's a translator
- Allows color to be mapped from source to destination
- Applies to all devices



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Making It Work

Displays, color space and conversions

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"I'm tired of paying \$35 for ink! So I refilled the cartridges with ketchup, mustard, blue soda, and black coffee."

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Display Calibration

Without a calibrated monitor, you are just guessing

Colorimeters & spectrophotometers work with software to measure color on a screen and create a profile

Puck-like devices such as:

- Spyder Pro
- Color Munki
- Manual software:
- Apple Display Calibrator Assistant

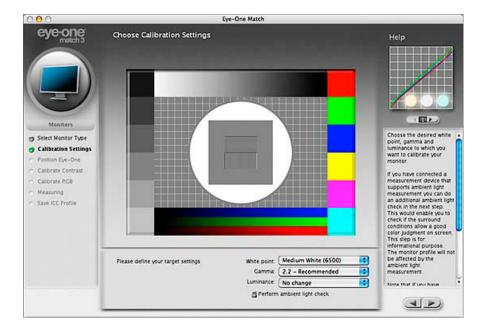


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Calibration Tools

User sets parameters, such as white point, contrast and brightness

Remember, displays change over time, therefore calibration is an never ending task



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Don't Diss the Display

You get what you pay for

Built-in or dedicated calibration tools

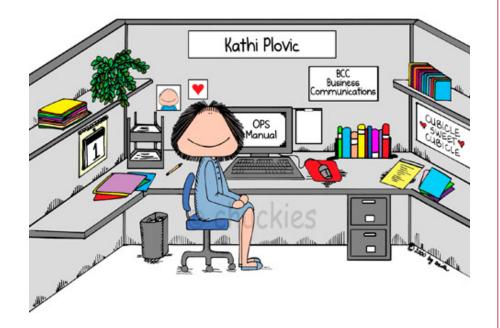
At a minimum, get a display that allows for adjustment of both brightness and contrast



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Where Do YOU Choose to Work?

Set a default color space in your imaging software



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Photoshop Color Settings

To set default color settings: Edit/Color Settings

Set default Working Spaces

- RGB
- CMYK
- Gray
- Spot

Control how embedded profiles are treated

| Working Spaces Conversion Options RGB: Adobe RGB (1998) CMYK: U.S. Web Coated (SWOP) v2 Gray: Gray Gamma 2.2 Spot: Dot Gain 20% | | | | Col | or Settings | | | |
|--|------------|-----------|------------------------|------------------|-----------------------------|-----------------------------|-------------------|----------|
| Working Spaces RGB: Adobe RGB (1998) CMYK: U.S. Web Coated (SWOP) v2 Gray: Gray: Gray: Dot Gain 20% Color Management Policies RGB: Preserve Embedded Profiles ~ Gray: Profile Mismatches: Ask When Opening Missing Profiles: Ask When Opening Conversion Options Engine: Adobe (ACE) Intent: Relative Colorimetric Compensate for Scene-referred Profiles Advanced Controls Desaturate Monitor Colors By: 20 % Blend RGB Colors Using Gamma: 1.45 Unsynchronized: Your Creative Cloud application | Settings: | PhotoCol | orSettings | | | | | <u> </u> |
| RGB: Profile Mismatches: Ask When Opening Missing Profiles: Ask When Opening | Working |) Spaces | | | Conve | rsion Options | | ОК |
| Gray: Gray Gamma 2.2 Spot: Dot Gain 20% Color Management Policies RGB: Preserve Embedded Profiles ~ CMYK: Preserve Embedded Profiles ~ Gray: Preserve Embedded Profiles ~ Gray: Preserve Embedded Profiles ~ Blend RGB Colors Using Gamma: 1.00 Ø Blend Text Colors Using Gamma: 1.45 Unsynchronized: Your Creative Cloud application | | RGB: | Adobe RGB (1998) | | - Engine: | Adobe (ACE) | | Cancel |
| Spot: Dot Gain 20% Color Management Policies Image: Compensate for Scene-referred Profiles RGB: Preserve Embedded Profiles CMYK: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Blend RGB Colors Using Gamma: 1.00 Image: Blend Text Colors Using Gamma: 1.45 Unsynchronized: Your Creative Cloud application | | СМҮК: | U.S. Web Coated (SWOP) | v2 | Intent: | Relative Colorimetric ~ | | Load |
| Color Management Policies RGB: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Profile Mismatches: Ask When Opening Ask When Pasting Missing Profiles: Ask When Opening Mask When Pasting | | Gray: | Gray Gamma 2.2 | | | ✓ Use Black Point Compe | nsation | Save |
| Color Management Policies RGB: Preserve Embedded Profiles CMYK: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Profile Mismatches: Ask When Opening Missing Profiles: Ask When Opening Unsynchronized: Your Creative Cloud application | | Spot: | Dot Gain 20% | | | ✓ Use Dither (8-bit/chann | el images) | |
| RGB: Preserve Embedded Profiles CMYK: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Profile Mismatches: Ask When Opening Missing Profiles: Ask When Opening | Color M | anagement | Policies | | | Compensate for Scene- | referred Profiles | Previe |
| CMYK: Preserve Embedded Profiles Gray: Preserve Embedded Profiles Profile Mismatches: Ask When Opening Missing Profiles: Ask When Opening Unsynchronized: Your Creative Cloud application | | | | les ~ | Advar | ced Controls | | |
| Gray: Preserve Embedded Profiles ✓ Profile Mismatches: Ask When Opening Image: Ask When Pasting Missing Profiles: Ask When Opening Image: Ask When Pasting Unsynchronized: Your Creative Cloud application Unsynchronized: Your Creative Cloud application | | | | | Des | aturate Monitor Colors By: | 20 % | |
| Profile Mismatches: Ask When Opening Image: Ask When Pasting Missing Profiles: Ask When Opening Image: Unsynchronized: Your Creative Cloud application | | | | | 🗌 Blen | d RGB Colors Using Gamma | 1.00 | |
| Missing Profiles: Ask When Opening Unsynchronized: Your Creative Cloud application | Profile Mi | | | | 🗹 Blen | d Text Colors Using Gamma | 1.45 | |
| | | | | Ask When I using | | synchronized: Your Creative | Cloud application | |
| Description | | grinder | Ask When Opening | | - 🕀 - " | | | |
| Description | | | | | | | | |
| PhotoColorSettings: UGA Photo Default, AdobeRGB1998, GrayGamma2.2 | | | | | | | | |
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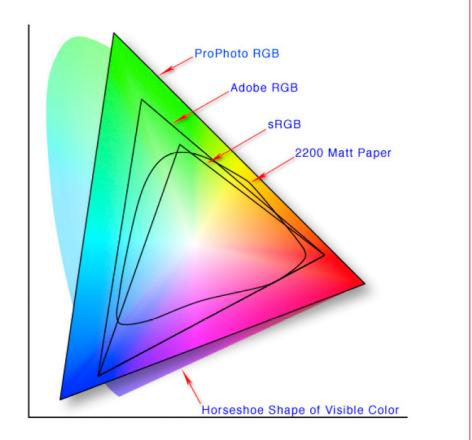
Capture Big Color

Start with a wide color space

In camera, use AdobeRGB or RAW

In Software, AdobeRGB or ProPhoto RGB

Avoid capturing or archiving images in sRGB



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Basic Color

sRGB



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AdobeRGB



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Bodacious Color

ProPhoto RGB



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If You Only Remember One Thing

Never use your monitor profile for your working space!

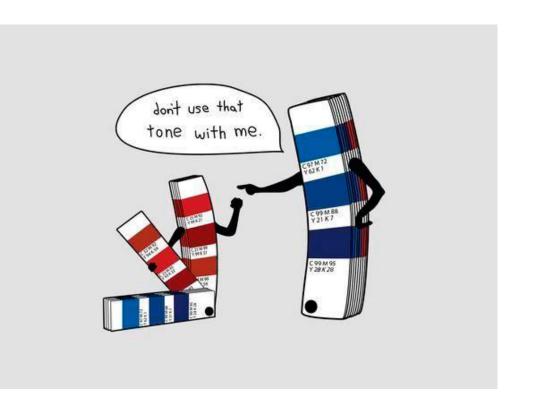
| Missing |) Profile | | × |
|---------|---|----------|------|
| | What would you Leave as is (do Assign working | | |
| | | OK Cance | el) |

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Maintain Order

Know how to handle color for output



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<u>Be a Converter</u>

Use the Convert to Profile function to control "translation" of color

| | Convert to Profile | |
|----------------------|---|---------------|
| - Source Profile: | Space Adobe RGB (1998) | ОК |
| - Destina | ation Space | Cancel |
| Profile: | sRGB IEC61966-2.1 | ᅌ 🛛 🗸 Preview |
| – Conver Engine: | Adobe (ACE) | Advanced |
| Intent: | Relative Colorimetric | |
| 🗸 Use 🛛 | Black Point Compensation Dither In Image to Preserve Appearance | |

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Not an Assigner

Only as a last resort for images with unknown color space

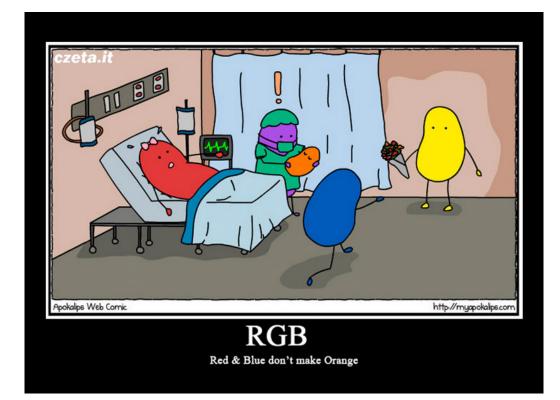
| | Assign Profile | |
|------------|--|--------------|
| | file: Ior Manage This Document RGB: Adobe RGB (1998) | OK Cancel |
| O Profile: | sRGB IEC61966-2.1 | 😒 🗸 Preview |

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Where Do Profiles Come From?

- Manufacturer's generic profiles
- Vendor provided profiles for output devices
- Create custom profiles



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Is Anyone Still Out There?

Questions?



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Resources

General color management: <u>http://www.digitaldog.net</u>

Visual calibration (Mac): <u>https://www.lifewire.com/use-mac-display-calibrator-assistant-for-accurate-color-2260919</u>

Photoshop color settings: <u>https://digital-photography-school.com/6-color-settings-photoshop-need-know/</u>

Camera calibration: <u>https://digital-photography-school.com/how-to-use-the-x-rite-</u> <u>colorchecker-passport-to-obtain-perfect-color/</u>

Monitor calibration: <u>https://digital-photography-school.com/why-is-monitor-calibration-important-and-how-to-do-it/</u>

Lynda.com: https://www.lynda.com/SharedPlaylist/aea6000dd7f14f9cb946fd6e4b602cf3

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